E Line contactors

xStart series contactors

xStart C series contactors

D Line contactors

Powering Business Worldwide

1.1 Control relays XTRG

Contents, system overview

1

Control relays XTRG

Contents

Control relays XTRG

Product description

Part of the E Line family of controls, the XTRG control relay offers space savings, enhanced reliability and more efficient use of materials. Rated to operate thermal currents up to 10A, AC voltages up to 660V or DC voltages up to 250V, the XTRG contactor relay offers optimum performance in a compact package.

Features

- 10A Control relay
- 690V Insulation rating
- 660VAC or 250VDC Operational voltage
- Up to 5 sets of normally open or normally closed contacts with add-on blocks
- All common AC control voltages
- DIN rail or panel mount options
- Unique 27mm design

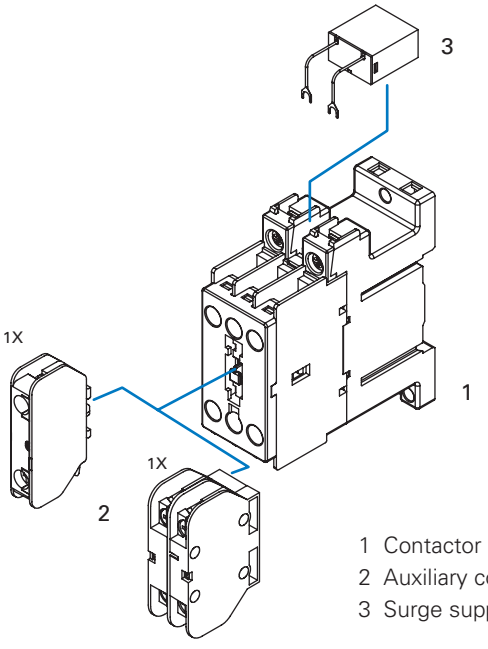
System overview

Control relays are used to remotely switch small loads or in complex control schemes. The XTRG relay can be integrated with contactors from the E Line ramily of motor controls to create compact, efficient control panels for a multitude of applications.

Standards and certifications

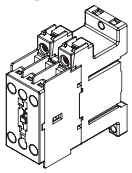
- GB 14048
- IEC/EN 60947
- CCC
- CE

Accessory overview



1 Contactor relay
2 Auxiliary contact modules
3 Surge suppressor

XTRG



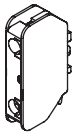
Control relays

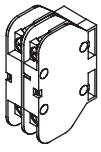
Connection type	Contact N/O=Normally open N/C=Normally closed		Rated operational current AC-15 I_e (A) 220V 230V 240V	380 V 400 V 415 V	Conventional thermal current, open, 40°C I_{th} (A)	Circuit symbol	Can be combined with auxiliary contact module	AC operation Part no. Article no. Actuating voltage 220V 50HZ	Standard package
Screw terminals	3 N/O	-	4	1.9	10		XTCGXFAC10 XTCGXFAC..	**XTRG10B30DT** 168044	1 piece
Screw terminals	2 N/O	1 N/C	4	1.9	10		XTCGXFAC10 XTCGXFAC..	**XTRG10B21DT** 167927	1 piece
Screw terminals	1 N/O	2 N/C	4	1.9	10		XTCGXFAC10 XTCGXFAC..	**XTRG10B12DT** 167968	1 piece
Screw terminals	-	3 N/C	4	1.9	10		XTCGXFAC10 XTCGXFAC..	**XTRG10B03DT** 167978	1 piece

Alternate actuating voltages

Coil Voltage	3NO	2NO/1NC	1NO/2NC	3NC
24VAC 50Hz	**XTRG10B30B5** 168040	**XTRG10B21B5** 167923	**XTRG10B12B5** 167933	**XTRG10B03B5** 167974
36VAC 50Hz	**XTRG10B30DS** 168041	**XTRG10B21DS** 167924	**XTRG10B12DS** 167934	**XTRG10B03DS** 167975
48VAC 50Hz	**XTRG10B30C5** 168042	**XTRG10B21C5** 167925	**XTRG10B12C5** 167966	**XTRG10B03C5** 167976
110VAC 50Hz	**XTRG10B30E5** 168043	**XTRG10B21E5** 167926	**XTRG10B12E5** 167967	**XTRG10B03E5** 167977
220VAC 50Hz	**XTRG10B30DT** 168044	**XTRG10B21DT** 167927	**XTRG10B12DT** 167968	**XTRG10B03DT** 167978
380VAC 50Hz	**XTRG10B30DU** 168047	**XTRG10B21DU** 167930	**XTRG10B12DU** 167971	**XTRG10B03DU** 167936

Auxiliary contact, top mounting





Auxiliary contact modules

Connection type		Conventional thermal current open, 40°C $I_{th} = I_e$ AC-1 A	Contact N/O=Normally open N/C=Normal closed		Circuit symbol	Can be combined with control relay	Part no. Article no.	Standard package
Screw terminals	1 pole	10	1 N/O	-		XTRG10B..	**XTCGXFAC10** 167939	1 piece
Screw terminals	1 pole	10	-	1 N/C		XTRG10B..	**XTCGXFAC01** 167940	1 piece
Screw terminals	2 pole	10	2 N/O	-		XTRG10B..	**XTCGXFAC20** 167941	1 piece
Screw terminals	2 pole	10	1 N/O	1 N/C		XTRG10B..	**XTCGXFAC11** 167942	1 piece
Screw terminals	2 pole	10	-	2 N/C		XTRG10B..	**XTCGXFAC02** 167943	1 piece

Coil surge supressor

Coil voltage	RC	Varistor
24-48V	**XTCGXRSCN2** 167946	**XTCGXVSCN2** 167949
110-220V	**XTCGXRSCDV** 167947	**XTCGXVSCDV** 167950
380-440V	**XTCGXRSCCM** 167948	**XTCGXVSCCM** 167951

1.1 Control relays XTRG

Technical data

1

General

			XTRG10B..	XTCGXFAC..
Standards			IEC/EN 60947, GB 14048	
Mechanical lifespan				
AC operated	Operations	x 10^6	10	10
Maximum operating frequency				
Maximum operating frequency	Operations/h		3600	3600
Climatic proofing			Damp heat, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30	
Ambient temperature				
Operation		°C	-25~55	-25~55
Storage		°C	-40~80	-40~80
Protection type			IP20	IP20
Weight approximate weight		kg	0.17	0.02

Contacts

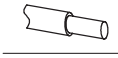
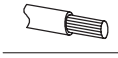
			XTRG10B..	XTCGXFAC..
Rated impulse withstand voltage	U_{imp}	VAC	6000	6000
Overvoltage category/degree of pollution			III/3	III/3
Rated insulation voltage	U_i	VAC	690	690
Rated operational voltage	U_e	VAC	660	660
Rated operational current				
AC-15				
120V	I_e	A	6	6
240V	I_e	A	4	4
380V	I_e	A	1.9	1.9
480V	I_e	A	1.5	
500V	I_e	A	1.4	
600V	I_e	A	1.2	
DC-13				
125V	I_e	A	0.55	0.55
250V	I_e	A	0.27	0.27
Conventional thermal current	I_{th}	A	10	10
Electrical lifespan				
at U_e=230V, AC-15, 3A	Operations	x 10^6	1	1

Magnet system

			XTRG10B..
Voltage tolerance			
AC operated	Pick-up	x U_C	0.85-1.1
Power consumption	Pick-up	VA	30
	Sealing	VA	6
	Sealing	W	2

Terminals

XTRG10B..

	mm²	mm²	Nm
	0.75-2.5	0.75-2.5	0.8
	0.75-2.5	0.75-2.5	

XTCGXFAC..

A1 / A2 / Aux

	mm²	Nm
	0.75-2.5	0.8

Contactors XTCG

Contents

Contactors XTCG

Product description

The XTCG is the flagship of the E Line family of motor controls. The XTCG contactor offers space savings, enhanced reliability and more efficient use of materials. Boasting AC-3 ratings up to 95A @ 400V and with a maximum operating voltage of 660V, XTCG offers tremendous performance in a small package.

Features

- Technologically advanced contact design
- 690V insulation rating
- Operating voltage up to 660VAC
- Up to (3) add on auxiliary contact modules
- All common AC control voltages
- DIN rail or panel mount options
- Unique space saving design

System overview

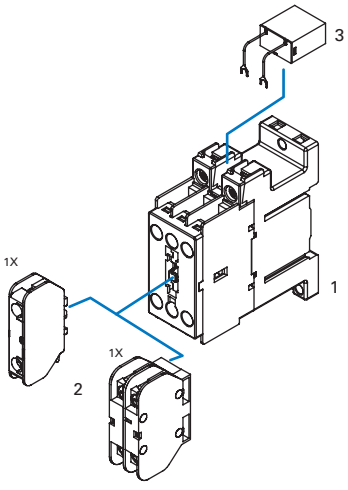
3 phase contactors are used to start motors or control industrial loads. The E Line family of contactors allows the starting of motors up to 45kW, and when combined with an XTOD overload relay or PKZC motor protective circuit breaker offers a complete package of protection and control for long life and reliable operation.

Standards and certifications

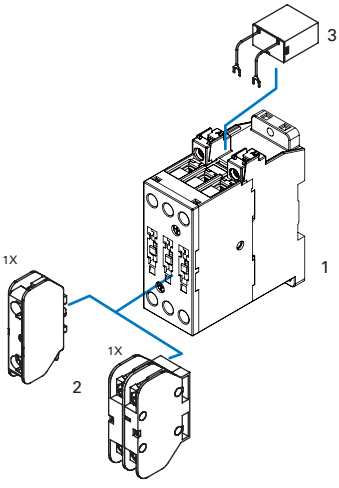
- GB 14048
- IEC/EN 60947
- CCC
- CE

Accessory overview

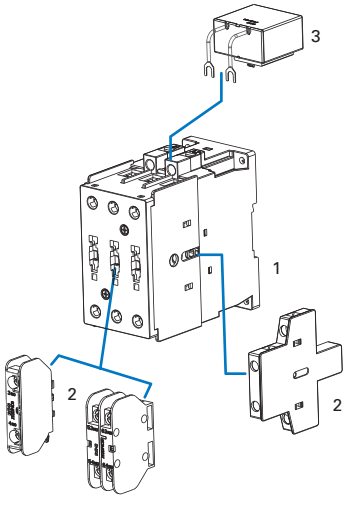
7-12A Frame



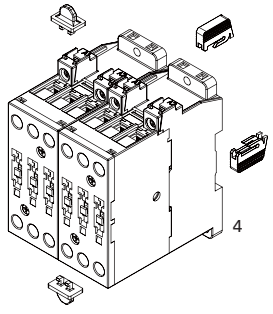
18-38A Frame



40-95A Frame



With mechanical interlock



1 Contactor relay
2 Auxiliary contact modules
3 Surge suppressor
4 Interlocking kit

1

XTCG

3-pole contactors

Connection type	Rated operational current AC-3 I_e (A) 380V	Max motor rating for 3-phase motors, 50-60Hz AC-3 P kW 220V	380V	660V*	Conventional thermal current, open, 40 °C $I_{th} = I_e$ AC-1(A)	Circuit symbol	AC operation Part no. Article no. Actuating voltage 220V 50Hz	Standard package
Screw terminals	7	2.2	3	3.5	20		**XTCG007B00DT** 167984	1 piece
Screw terminals	9	2.5	4	4.5	20		**XTCG009B00DT** 167994	1 piece
Screw terminals	12	3.5	5.5	5.5	20		**XTCG012B00DT** 168004	1 piece
Screw terminals	18	5	7.5	7.5	25		**XTCG018C00DT** 168014	1 piece
Screw terminals	25	7.5	11	11	35		**XTCG025C00DT** 168024	1 piece
Screw terminals	32	10	15	15	40		**XTCG032C00DT** 168034	1 piece
Screw terminals	38	10	15	15	40		**XTCG038C00DT** 174459	1 piece
Screw terminals	40	12.5	18.5	22	60		**XTCG040D00DT** 172214	1 piece
Screw terminals	50	15.5	22	30	70		**XTCG050D00DT** 172224	1 piece
Screw terminals	65	20	30	37	80		**XTCG065D00DT** 172234	1 piece
Bolts terminals	80	25	37	37	110		**XTCG080E00DT** 172244	1 piece
Bolts terminals	95	30	45	45	120		**XTCG095E00DT** 172254	1 piece

* 40-95A is 690V.

Auxiliary contact modules

Connection type		Conventional thermal current open, 40°C $I_{th} = I_e$ AC-1 A	Contact N/O=Normally open N/C=Normal closed		Circuit symbol	Can be combined with control relay	Part no. Article no.	Standard package
Top mounting								
Screw terminals	1 pole	10	1 N/O	-		XTCG007B00.. XTCG009B00.. XTCG012B00.. XTCG018C00.. XTCG025C00.. XTCG032C00.. XTCG038C00.. XTCG040D00.. XTCG050D00.. XTCG065D00.. XTCG080E00.. XTCG095E00..	**XTCGXFAC10** 167939	1 piece
Screw terminals	1 pole	10	-	1 N/C			**XTCGXFAC01** 167940	1 piece
Screw terminals	2 pole	10	2 N/O	-			**XTCGXFAC20** 167941	1 piece
Screw terminals	2 pole	10	1 N/O	1 N/C			**XTCGXFAC11** 167942	1 piece
Screw terminals	2 pole	10	-	2 N/C			**XTCGXFAC02** 167943	1 piece
Side mounting								
Screw terminals	2 pole	10	1 N/O	1 N/C		XTCG040D00.. XTCG050D00.. XTCG065D00.. XTCG080E00.. XTCG095E00..	**XTCGXSAE11** 172260	1 piece

Alternate actuating voltages

Coil voltage	7A	9A	12A	18A	25A	32A	38A
24VAC 50Hz	**XTCG007B00B5** 167980	**XTCG009B00B5** 167990	**XTCG012B00B5** 168000	**XTCG018C00B5** 168010	**XTCG025C00B5** 168020	**XTCG032C00B5** 168030	**XTCG038C00B5** 174455
36VAC 50Hz	**XTCG007B00DS** 167981	**XTCG009B00DS** 167991	**XTCG012B00DS** 168001	**XTCG018C00DS** 168011	**XTCG025C00DS** 168021	**XTCG032C00DS** 168031	**XTCG038C00DS** 174456
48VAC 50Hz	**XTCG007B00C5** 167982	**XTCG009B00C5** 167992	**XTCG012B00C5** 168002	**XTCG018C00C5** 168012	**XTCG025C00C5** 168022	**XTCG032C00C5** 168032	**XTCG038C00C5** 174457
110VAC 50Hz	**XTCG007B00E5** 167983	**XTCG009B00E5** 167993	**XTCG012B00E5** 168003	**XTCG018C00E5** 168013	**XTCG025C00E5** 168023	**XTCG032C00E5** 168033	**XTCG038C00E5** 174458
220VAC 50Hz	**XTCG007B00DT** 167984	**XTCG009B00DT** 167994	**XTCG012B00DT** 168004	**XTCG018C00DT** 168014	**XTCG025C00DT** 168024	**XTCG032C00DT** 168034	**XTCG038C00DT** 174459
380VAC 50Hz	**XTCG007B00DU** 167987	**XTCG009B00DU** 167997	**XTCG012B00DU** 168007	**XTCG018C00DU** 168017	**XTCG025C00DU** 168027	**XTCG032C00DU** 168037	**XTCG038C00DU** 174462

General

XT Basic device			CG007	CG009	CG012	CG018	CG025	CG032
Standards			IEC/EN 60947, GB 14048					
Lifespan, mechanical								
AC operated	Operations	x 10^6	10	10	10	10	10	10
Operating frequency								
AC operated	Operations/h		3600	3600	3600	3600	3600	3600
Climatic Proofing			Damp heat,constant,to IEC60068-2-78 Damp heat,cyclic,to IEC60068-2-30					
Ambient temperature								
Operation		°C	-25~55	-25~55	-25~55	-25~55	-25~55	-25~55
Storage		°C	-40~80	-40~80	-40~80	-40~80	-40~80	-40~80
Protection type			IP20	IP20	IP20	IP20	IP20	IP20
Weight		kg	0.17	0.17	0.17	0.35	0.35	0.35
Terminal capacity of main cable								
Solid/stranded		AWG						
Terminal capacity of control circuit cable		mm^2	0.75-2.5	0.75-2.5	0.75-2.5	0.75-2.5	0.75-2.5	0.75-2.5
Main cable connection screws / bolts			M3.5	M3.5	M3.5	M5	M5	M5
Tightening torque		Nm	0.8	0.8	0.8	2	2	2
Control circuit cable connection screws			M3.5	M3.5	M3.5	M3.5	M3.5	M3.5
Tightening torque		Nm	0.8	0.8	0.8	0.8	0.8	0.8
Main contacts								
Rated impulse withstand voltage	U_{imp}	V AC	6000	6000	6000	6000	6000	6000
Overvoltage category / pollution degree			III/3	III/3	III/3	III/3	III/3	III/3
Rated insulation voltage	U_i	V AC	690	690	690	690	690	690
Rated operational voltage	U_e	V AC	660	660	660	660	660	660
Making capacity (cos φ to IEC/EN60947)	380V	A	70	90	120	180	250	320
Breaking capacity (cos φ to IEC/EN60947)	380V	A	56	72	96	144	200	256
Electrical lifespan								
AC-3		Op.	1,500,000	1,500,000	1,500,000	1,000,000	1,000,000	1,000,000
AC-4		Op.	100,000	100,000	100,000	100,000	100,000	100,000
Magnet systems								
Voltage tolerance AC operated	Pick-up	x U_c	0.85-1.1	0.85-1.1	0.85-1.1	0.85-1.1	0.85-1.1	0.85-1.1
Power consumption of coil in a cold state and 1.0 xU_c	Pick-up	VA	30	30	30	80	80	80
	Sealing	VA	6	6	6	8.1	8.1	8.1
	Sealing	W	2	2	2	2.4	2.4	2.4

1.1 Contactors XTCG
Technical data

40A	50A	65A	80A	95A
XTCG040D00B5 172210	**XTCG050D00B5** 172220	**XTCG065D00B5** 172230	**XTCG080E00B5** 172250	**XTCG095E00B5**
XTCG040D00DS 172211	**XTCG050D00DS** 172221	**XTCG065D00DS** 172231	**XTCG080E00DS** 172251	**XTCG095E00DS**
XTCG040D00C5 172212	**XTCG050D00C5** 172222	**XTCG065D00C5** 172232	**XTCG080E00C5** 172252	**XTCG095E00C5**
XTCG040D00E5 172213	**XTCG050D00E5** 172223	**XTCG065D00E5** 172233	**XTCG080E00E5** 172253	**XTCG095E00E5**
XTCG040D00DT 172214	**XTCG050D00DT** 172224	**XTCG065D00DT** 172234	**XTCG080E00DT** 172254	**XTCG095E00DT**
XTCG040D00DU 172217	**XTCG050D00DU** 172227	**XTCG065D00DU** 172237	**XTCG080E00DU** 172257	**XTCG095E00DU**

CG038	CG040	CG050	CG065	CG080	CG095
IEC/EN 60947, GB 14048					
10	5	5	5	5	5
3600	3600	3600	3600	3600	3600
Damp heat,constant,to IEC60068-2-78 Damp heat,cyclic,to IEC60068-2-30					
-25~55	-25~55	-25~55	-25~55	-25~55	-25~55
-40~80	-40~80	-40~80	-40~80	-40~80	-40~80
IP20	IP20	IP20	IP20	IP20	IP20
0.35	0.76	0.76	0.76	1.25	1.25
0.75-2.5	0.75-2.5	0.75-2.5	0.75-2.5	0.75-2.5	0.75-2.5
M5	M6	M6	M6	M8	M8
2	2.5	2.5	2.5	6	6
M3.5	M3.5	M3.5	M3.5	M3.5	M3.5
0.8	0.8	0.8	0.8	0.8	0.8
6000	6000	6000	6000	6000	6000
III/3	III/3	III/3	III/3	III/3	III/3
690	690	690	690	690	690
660	690	690	690	690	690
320	400	500	650	800	950
256	320	400	520	640	760
1,000,000	900,000	900,000	900,000	900,000	900,000
100,000					
0.85-1.1	0.85-1.1	0.85-1.1	0.85-1.1	0.85-1.1	0.85-1.1
80	190	190	190	300	300
8.1	20	20	20	26	26
2.4	4	4	4	6	6

Auxiliary contact

			XTCGXFAC..	XTCGXSAE11
Rated impulse withstand voltage	U_{imp}	VAC	6000	6000
Overvoltage category/degree of pollution			III/3	III/3
Rated insulation voltage	U_i	VAC	690	690
Rated operational voltage	U_e	VAC	660	690
Rated operational current				
AC-15				
120V	I_e	A	6	6
240V	I_e	A	4	4
380V	I_e	A	1.9	1.9
DC-13				
125V	I_e	A	0.55	0.55
250V	I_e	A	0.27	0.27
Conventional thermal current	I_{th}	A	10	10
Electrical lifespan				
at U_e=230V, AC-15, 3A	Operations	x 10^6	1	1

Terminals

7-12A

	mm²	mm²	Nm	Aux Contact mm²	Nm
	0.75 - 2.5	0.75 - 2.5	0.8	0.75 - 2.5	0.8
	0.75 - 2.5	0.75 - 2.5			

18-38A

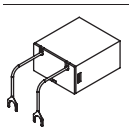
	mm²	mm²	Nm	Aux Contact mm²	Nm
	1 - 6 (1 - 10)*	1 - 6 (1 - 10)*	2	0.75 - 2.5	0.8
	1 - 4 (1 - 10)*	1 - 4 (1 - 10)*			

40-65A

	mm²	mm²	Nm	Aux Contact mm²	Nm
	2.5 - 25	2.5 - 16	2.5	0.75 - 2.5	1.2
	2.5 - 25	2.5 - 16			

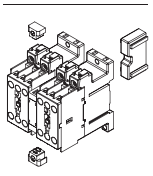
80-95A

	mm²	mm²	Nm	Aux Contact mm²	Nm
	6 - 50	6 - 25	6	0.75 - 2.5	1.2
	6 - 50	6 - 25			



Coil surge supressor (7-38A)

Coil voltage	RC	Varistor
24-48V	**XTCGXRSCN2** 167946	**XTCGXVSCN2** 167949
110-220V	**XTCGXRSCDV** 167947	**XTCGXVSCDV** 167950
380-440V	**XTCGXRSCCM** 167948	**XTCGXVSCCM** 167951

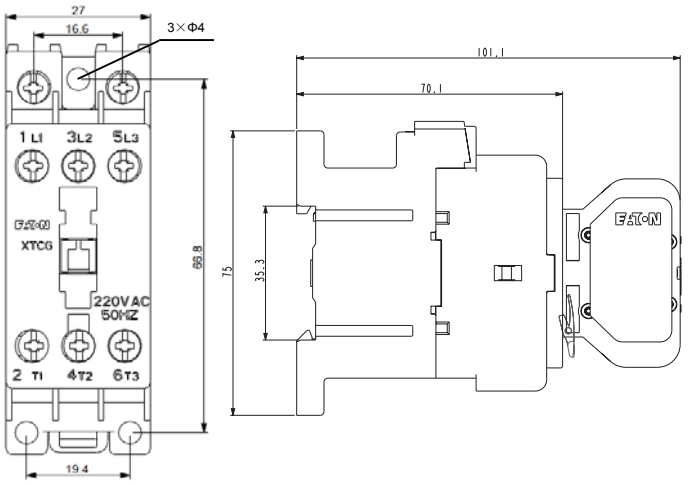


Mechanical interlock

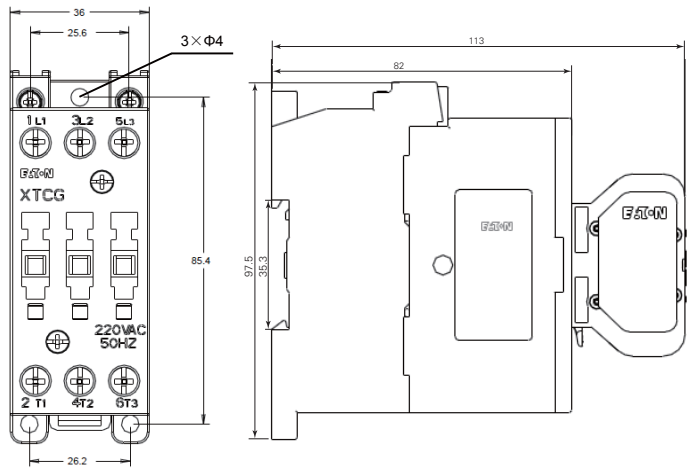
7-12A	18-38A	40-65A	80-95A
XTCGXMLB 167944	**XTCGXMLC** 167945	**XTCGXMLD** 172261	**XTCGXMLE** 172262

1 **Contactors**

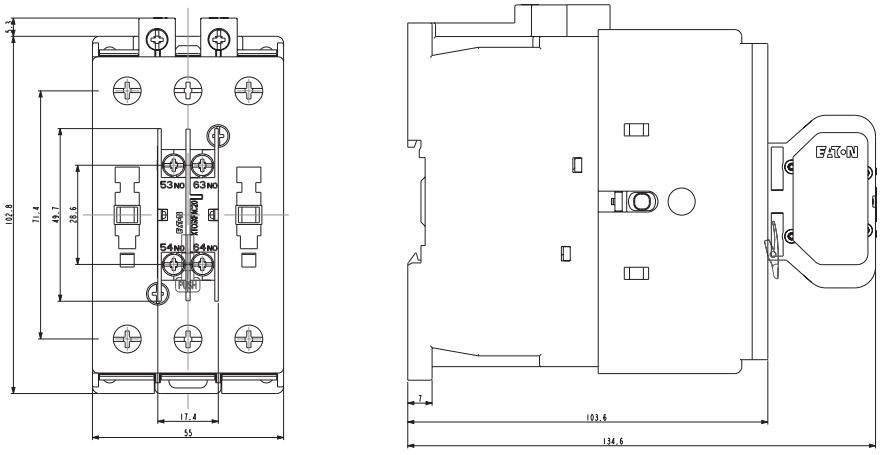
7-12A Frame



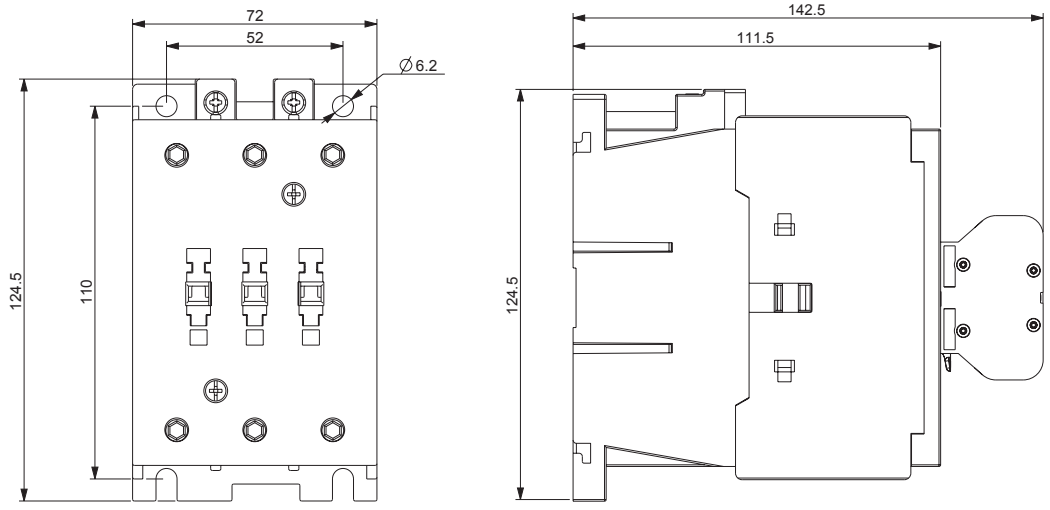
18-38A Frame



40-65A Frame



80-95A Frame



Mini contactor relays, contactor relay, contactors

Continual operation requires high operational reliability in the components used. The DILM contactor achieves the best lifespan values in AC-3 applications and is ideal for heavy AC-4 jogging.

Mini contactor relay DILE…,contactor relays, contactors up to 12 A AC-3 at 400 V

- Compact dimensions for the highest packing densities
- Extended performance range up to 5.5 kW at 400 V

AC and DC contactor system DILM…, contactor relays, 3 pole contactors up to 170 A AC-3 at 400 V, 4 pole contactors up to 200 A AC-1

- Easier engineering through identical construction sizes for AC- and DC-operated contactors
- Energy savings and higher packing density in control panel due to minimized heat dissipation
- High wiring security through doubled box terminals
- Less coupler relays: direct actuation from the PLC for contactors up to 32 A
- Easy engineering through integrated suppressor circuits for DC
- Uniform accessories for 3- and 4-pole contactors
- Mechanical interlock double conductor run mountable without additional separation gap
- Direct fieldbus connection through the communication system SmartWire-DT ®, through plug-in type protective module

High rated contactors - contactors up to 1600 A AC-3 at 400 V, contactors up to 2600 A AC-1

- Compact dimensions with high switching power
- Direct actuation from the PLC saves coupler relays
- Easy engineering through wide range coils
- Cost and energy savings for control panel ventilation due to reduced heat dissipation
- Long lifespan through vacuum technology from 580 A

SmartWire-DT ®

The DIL product range offers contact elements which can be connected to the SmartWire-DT® communication system. →Protective modules, Page 73

Eaton After Sales Service

Testing switching devices in compliance with regulations applicable to this technology
→See Catalog

1.2 Mini contactor relays, contactor relay, contactors DIL
Contents

Mini contactor relays, contactor relay, contactors DIL

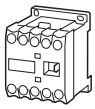
Contents

Mini contactor relays, contactor relay, contactors DIL

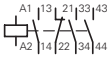
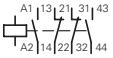
Contents

1 Ordering

Screw terminals



DILER mini contactor relays

Rated operational current AC-15 220 V 230 V 240 V	Rated operational current AC-15 380 V 400 V 415 V	Conventional free air thermal current	Contact N/O = normally open contact NC = normally closed contact		Distinctive number	Circuit symbol	For use with
I_e A	I_e A	I_{th} A					
6	3	10	4 N/O	–	40E		DILE…
			3 N/O	1 NC	31E		DILE…
			2 N/O	2 NC	22E		DILE…

Notes

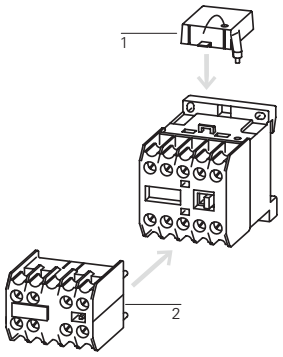
Coil terminal marking as specified in EN 50005
Contact numbers to EN 50011
The following applies to DC-operated contactors:
- Integrated diode-resistor combination
- Coil rating 2.6 W

Information relevant for export to North America

Product Standards	IEC/EN 60947-4-1; UL508; CSA-C22.2 No.14-05; CE marking
UL File No.	E29184
UL CCN	NKCR
CSA File No.	012528
CSA Class No.	3211-03
NA Certification	UL Listed, CSA certified

AC operation		DC operation			
Part no. Article no.	**Price** See price list	**Part no.** Article no.	**Price** See price list	Std. pack	**Notes**
DILER-40(230V50Hz) 051759		**DILER-40-G(24VDC)** 010223		5 off	
DILER-31(230V50Hz) 051768		**DILER-31-G(24VDC)** 010157			
DILER-22(230V50Hz) 051777		**DILER-22-G(24VDC)** 010042			

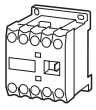
With screw terminals:

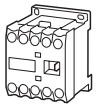


Accessories	Page
1 Suppressor	→ 19
2 Auxiliary contact modules	→ 17
Further actuating voltages	→ 77

DILEM contactors

Rated operational current	Max. motor rating for three-phase motors, 50 - 60 Hz						Conventional thermal current $I_{th} = I_e$ AC-1 at 50 °C		Contact		Circuit symbol	For use with
AC-3	AC-3			AC-4								
380 V 400 V	220 V 230 V	**380 V 400 V**	660 V 690 V	220 V 230 V	**380 V 400 V**	660 V 690 V	Open	Enclosed	N/O = normally open contact NC = normally closed contact			
I_e	P	**P**	P	P	**P**	P	$I_{th} = I_e$	$I_{th} = I_e$				
A	kW	**kW**	kW	kW	**kW**	kW	A	A				
3 pole with auxiliary contact Screw terminals												
6.6	1.5	**3**	3	1.1	**2.2**	2.2	20	16	1 N/O	–		…DILEM DILE…
6.6	1.5	**3**	3	1.1	**2.2**	2.2	20	16	–	1 NC		DILE…
9	2.2	**4**	4	1.5	**3**	3	20	16	1 N/O	–		…DILEM DILE…
9	2.2	**4**	4	1.5	**3**	3	20	16	–	1 NC		DILE…
12	3.5	**5.5**	6.5	2	**3**	2.2	20	16	1 N/O	–		…DILEM DILE…
12	3.5	**5.5**	6.5	2	**3**	2.2	20	16	–	1 NC		DILE…
4 pole Screw terminals												
9	2.2	**4**	4	1.5	**3**	3	20	16	–	–		…DILEM DILE…





1)

Information relevant for export to North America

Product Standards	IEC/EN 60947-4-1; UL 508; CSA-C22.2 No.14-05; CE marking
UL File No.	E29096
UL CC	NLDX
CSA File No.	012528
CSA Class No.	3211-04
NA Certification	UL Listed, CSA certified
See also	→ Page 91

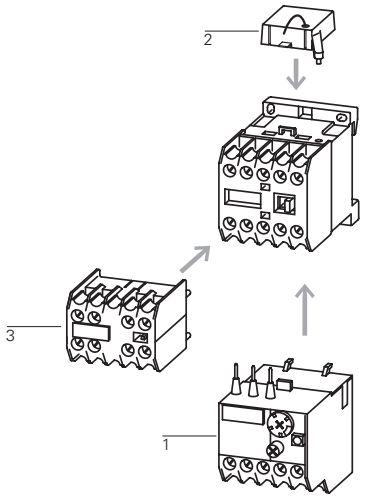
2)

Information relevant for export to North America

Product Standards	IEC/EN 60947-4-1; UL 508; CSA-C22.2 No.14-05; CE marking
UL File No.	E29096
UL CCN	NLDX
CSA File No.	012528
CSA Class No.	2411-03,3211-04
NA Certification	UL Listed, request filed for CSA

AC operation		DC operation			
Part no. Article no.	**Price** See price list	**Part no.** Article no.	**Price** See price list	Std. pack	**Notes**
DILEEM-10(230V50Hz) [1] 051608		**DILEEM-10-G(24VDC)** [1] 051643		5 off	
DILEEM-01(230V50Hz) [1] 051633		**DILEEM-01-G(24VDC)** [1] 051650			
DILEM-10(230V50Hz) [1] 051786		**DILEM-10-G(24VDC)** [1] 010213			
DILEM-01(230V50Hz) [1] 051795		**DILEM-01-G(24VDC)** [1] 010343			
DILEM12-10(230V50Hz) [2] 127075		**DILEM12-10-G(24VDC)** [2] 127132			
DILEM12-01(230V50Hz) [2] 127091		**DILEM12-01-G(24VDC)** [2] 127137			
DILEM4(230V50Hz) [1] 051804		**DILEM4-G(24VDC)** [1] 012701		5 off	

With screw terminals:



Accessories	Page
1 Overload relay	→ Overload relay catalog chapter 2
2 Suppressor	→ 19
3 Auxiliary contact module	→ 17
Enclosures totally insulated	
Further actuating voltages	→ 77
Accessories	→ 19

1

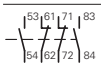
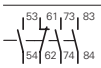
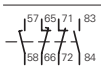
Screw terminals

DILE
Auxiliary contact modules

	Contact				Rated operational current		Conventional thermal current	Distinctive number/type of combinations with basic device		
	N/O = normally open contact S_F = NO early-make NC = normally closed contact $Ö_S$ = NC late-break				AC-15		I_{th}	DILER-40(-G)	DILER-31(-G)	DILER-22
					220 V 230 V 240 V	380 V 400 V 415 V	A			
					I_e	I_e				
					A	A				
2 pole	–	–	2 NC	–	4	2	10	–	–	–
	1 N/O	–	1 NC	–	4	2	10	–	–	–
4 pole	2 N/O	–	2 NC	–	4	2	10	–	–	–
2 pole	–	–	2 NC	–	4	2	10	42E	33	24
	1 N/O	–	1 NC	–	4	2	10	51E	42	33
	2 N/O	–	–	–	4	2	10	60E	51	42
	–	1 S_F	–	1 $Ö_S$	4	2	10	51	42	33
4 pole	–	–	4 NC	–	4	2	10	44E	35	26
	1 N/O	–	3 NC	–	4	2	10	53E	44	35
	2 N/O	–	2 NC	–	4	2	10	62E	53	44
	3 N/O	–	1 NC	–	4	2	10	71E	62	53
	4 N/O	–	–	–	4	2	10	80E	71	62
	1 N/O	1 S_F	1 NC	1 $Ö_S$	4	2	10	62	53	44

Information relevant for export to North America

Product Standards	IEC/EN 60947-4-1; UL 508; CSA-C22.2 No.14-05; CE marking
UL File No.	E29184
UL CCN	NKCR
CSA File No.	012528
CSA Class No.	3211-03
NA Certification	UL Listed, CSA certified

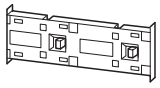
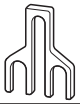
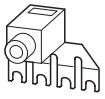
Circuit symbol	Can be combined with contactor	**Part no.** Article no.	**Price** See price list	Std. pack		**Notes**
	DILEM-10(-G)(…) DILEM-4(-G)(…) DILEEM-10(-G)(…) DILEM12-10(-G)(…)	**02DILEM** 010064		5 off	With interlocked opposing contacts	The following applies to ...DILEM auxiliary contacts: • Contacts to EN 50012 The following applies to ...DILE auxiliary contacts: • Contacts to EN 50005 Contacts according to EN50012 are to be prefered. Type E combinations compy with EN 50011 and are to be given preference. No interlocked opposing contacts in NO early-makes and NC late-breaks.
		**11DILEM** 010080		5 off	With interlocked opposing contacts	
		**22DILEM** 010112		5 off	With interlocked opposing contacts	
	DILEM-10(-G)(…) DILEM-01(-G)(…) DILEM-4(-G)(…) DILER40(-G) DILER31(-G) DILER22 DILEEM-10(-G)(…) DILEEM-01(-G)(…) DILEM12-10(-G)(…) DILEM12-01(-G)(…)	**02DILE** 010240		5 off	With interlocked opposing contacts	
		**11DILE** 010224		5 off	With interlocked opposing contacts	
		**20DILE** 010208		5 off	With interlocked opposing contacts	
		**11DDILE** 049824		5 off	–	
		**04DILE** 010256		5 off	With interlocked opposing contacts	
		**13DILE** 002397		5 off	With interlocked opposing contacts	
		**22DILE** 010288		5 off	With interlocked opposing contacts	
		**31DILE** 048912		5 off	With interlocked opposing contacts	
		**40DILE** 010304		5 off	With interlocked opposing contacts	
		**22DDILE** 049823		5 off	–	

VGDILE..., RCDILE..., MVDILE, BT480, P1DILEM

	Actuating voltage U_s V AC	Circuit symbol	For use with	Part no. Article no.	Price See price list	Std. pack	Information relevant for export to North America	
Suppressor circuits								
Varistor suppressor								
	24 - 48 AC		DILE...	**VGDILE48** 010320		10 off	Product Standards	IEC/EN 60947-4-1; UL 508; CSA-C22.2 No.14-05; CE marking
	110 - 250 AC			**VGDILE250** 010336		10 off	UL File No.	E29096
	380 - 415 AC			**VGDILE415** 010463		10 off	UL CCN	NLDX
							CSA File No.	012528
							CSA Class No.	3211-03
							NA Certification	UL Listed, CSA certified
RC-Suppressor								
	24 - 48 AC		DILE...	**RCDILE48** 044264		10 off	Product Standards	IEC/EN 60947-4-1; UL 508; CSA-C22.2 No.14-05; CE marking
	110 - 250 AC			**RCDILE250** 046320		10 off	UL File No.	E29184
							UL CCN	NKCR2
							CSA File No.	-
							NA Certification	UL Recognized

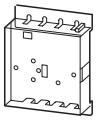
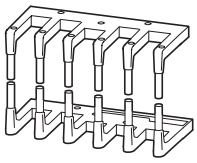
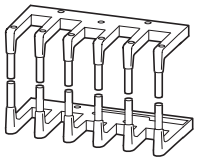
Notes For AC operated contactors 50 - 60 Hz.
DC operated contactor relays have an integrated suppressor.
Note drop-out delay.

VGDILE..., RCDILE..., MVDILE, BT480, P1DILEM

	For use with	Part no. Article no.	Price See price list	Std. pack	Information relevant for export to North America	
Mechanical interlocks						
For mechanical connection of contactor and timing relays in combinations. 0 mm distance between contactors.						
	DILE... DILET...	**V0DILE** 026634		50 off	UL/CSA certification not required	
Mechanical interlock						
For contactors with the same or different magnet system. 0 mm distance between contactors. Mechanical lifespan 2.5 x 10^6 operations. Additional auxiliary contact modules possible.						
 –	DILE...	**MVDILE** 010113		5 off	Product Standards	IEC/EN 60947-4-1; UL 508; CSA-C22.2 No.14-05; CE marking
					UL File No.	E29184
					UL CCN	NKCR2
					CSA File No.	012528
					CSA Class No.	3211-07
					NA Certification	UL Recognized, CSA certified
Paralleling link						
For parallel connection of contacts						
 –	DILE... DILE...	**BT480**[1] 052785		100 off	Product Standards	IEC/EN 60947-4-1; UL 508; CSA-C22.2 No.14-05; CE marking
					UL File No.	E29096
					UL CCN	NLDX
Consisting of two four-pole paralleling links.					CSA File No.	012528
					CSA Class No.	3211-07
					NA Certification	UL Listed, CSA certified
 	DILEEM DILEM12 DILEM	**P1DILEM**[2] 019095		5 off		

Notes
[1] Not protected against accidental contact as specified in VDE 0106 Part 100.
[2] 4th pole can be broken off
4 pole: I_{th} = 60 A open
3 pole: I_{th} = 50 A open
AC-1 current carrying capacity of the open contactor increases by a factor of 2.5
Protected against accidental contact in accordance with VDE 0106 Part 100

HDILE, ...DILEM, MVS

	Contact sequence	For use with	Part no. Article no.	Price See price list	Std. pack	Information relevant for export to North America
Sealable shrouds						
Transparent Snap-fitting on contactor. Can be used with open installation or on service distribution board. Protection type: IP40 front Can be drilled to accommodate timing relay setting dials.						
		DILE… DILET…	**HDILE** 010482		1 off	UL/CSA certification not required
Start-point bridge						
 		DILEEM DILEM12 DILEM	**S1DILEM**[1] 220218		20 off	
Reversing starter wiring kit						
Main current wiring for reversing combinations						
		DILEEM (+MVDILEM) DILEM12 (+MVDILEM) DILEM (+MVDILEM)	**MVS-WB-EM**[2] 220209		1 off	Product Standards UL File No. UL CCN CSA File No. CSA Class No. NA Certification
						IEC/EN 60947-4-1; UL 508; CSA-C22.2 No.14-05; CE marking E36332 NLRV7 012528 3211-06 UL Listed, CSA certified
Star-delta wiring kit						
Main current wiring for star-delta combination incl. star-point bridge						
		DILE(E)M (+MVDILEM) DILE(E)M12 (+MVDILEM) DILE(E)M star contactor	**MVS-SB-EM**[3] 220213		1 off	Product Standards UL File No. UL CCN CSA File No. CSA Class No. NA Certification
						IEC/EN 60947-4-1; UL 508; CSA-C22.2 No.14-05; CE marking E36332 NLRV7 012528 3211-06 UL Listed, CSA certified

Notes

[1] Protected against accidental contact in accordance with VDE 0106 Part 100

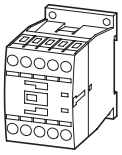
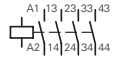
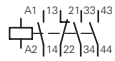
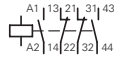
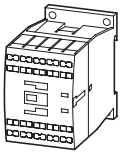
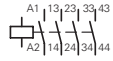
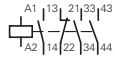
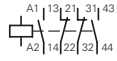
[2] The following control cables are integrated in addition to electrical interlock:
- Q11: A1 -Q12: 21
- Q11: 21 - Q12: A1
- Q11: A2 - Q12: A2

For use with overload relay separate mounting.

[3] The following control cables are integrated in addition to electrical interlock:
- Q13: A1 -Q15: 21
- Q13: 21 - Q15: A1
- Q13: A2 - Q15: A2

For use with overload relay separate mounting.

DILA
Basic devices with positively driven contacts

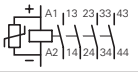
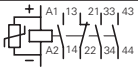
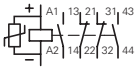
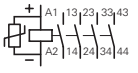
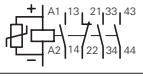
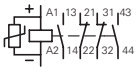
	Contact		Rated operational current		Conventional thermal current	Distinctive number	Can be combined with auxiliary contact	Circuit symbol
	N/O = normally open contact	NC = normally closed contact	AC-15		I_{th}			
			220 V 230 V 240 V	380 V 400 V 415 V	A			
			I_e	I_e				
			A	A				
Screw terminals								
	4 N/O	–	4	4	16	40E	DILA-XHI(V)…	
	3 N/O	1 NC	4	4	16	31E	DILA-XHI(V)…	
	2 N/O	2 NC	4	4	16	22E	DILA-XHI(V)…	
Spring-loaded terminals								
	4 N/O	–	4	4	16	40E	DILA-XHIC(V)…	
	3 N/O	1 NC	4	4	16	31E	DILA-XHIC(V)…	
	2 N/O	2 NC	4	4	16	22E	DILA-XHIC(V)…	

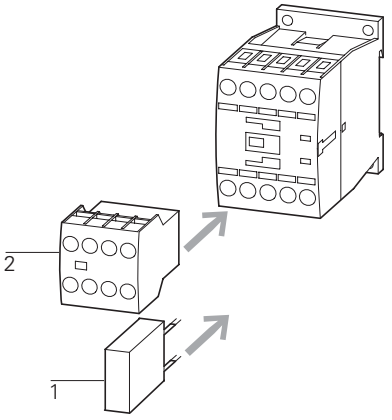
Notes

Contact numbers to EN 50011
Coil terminal markings to EN 50005
The following applies to DC-operated contactors:
- Integrated suppressor circuit

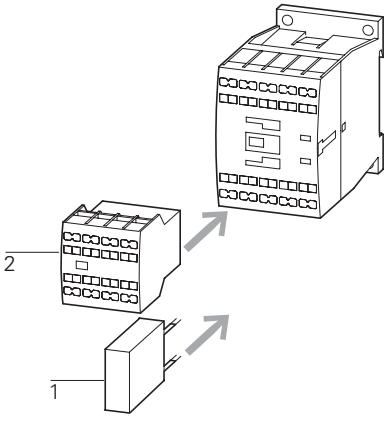
Information relevant for export to North America

Product Standards	IEC/EN 60947-4-1; UL 508; CSA-C22.2 No.14-05; CE marking
UL File No.	E29184
UL CCN	NKCR
CSA File No.	012528
CSA Class No.	3211-03
NA Certification	UL Listed, CSA certified

AC operation				DC operation			
Part no. Article no.	**Price** See price list	Std. pack	Circuit symbol	**Part no.** Article no.	**Price** See price list	Std. pack	**Notes**
DILA-40(230V50Hz) 276329		1 off		**DILA-40(24VDC)** 276344		1 off	**With screw terminals:**
DILA-31(230V50Hz) 276364		1 off		**DILA-31(24VDC)** 276379			
DILA-22(230V50Hz) 276399		1 off		**DILA-22(24VDC)** 276414			
DILAC-40(230V50Hz) 276441		1 off		**DILAC-40(24VDC)** 276456		1 off	**With spring-loaded terminals:**
DILAC-31(230V50Hz) 276473		1 off		**DILAC-31(24VDC)** 276488			
DILAC-22(230V50Hz) 276505		1 off		**DILAC-22(24VDC)** 276520			

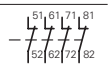
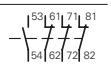
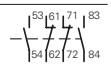
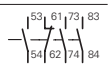
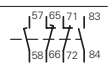
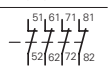
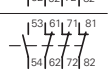
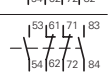
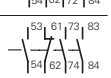
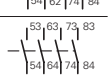
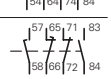


Accessories	Page
1 Suppressor	→ 61
2 Auxiliary contact modules	→ 47
Further actuating voltages	→ 79



Accessories	Page
1 Suppressor	→ 61
2 Auxiliary contact modules	→ 47
Further actuating voltages	→ 79

DILA...XHI...
DILA auxiliary contact modules

		Contact				Rated operational current AC-15 220 V 230 V 240 V I_e A	Rated operational current AC-15 380 V 400 V 415 V I_e A	Conventional thermal current I_{th} A	Circuit symbol
		N/O = normally open contact S_F = NO early-make NC = normally closed contact $Ö_S$ = NC late-break							
Screw terminals 	2 pole	–	–	2 NC	–	4	4	16	
		1 N/O	–	1 NC	–	4	4	16	
		2 N/O	–	–	–	4	4	16	
		–	1 S_F	–	1 $Ö_S$	4	4	16	
Screw terminals 	4 pole	–	–	4 NC	–	4	4	16	
		1 N/O	–	3 NC	–	4	4	16	
		2 N/O	–	2 NC	–	4	4	16	
		3 N/O	–	1 NC	–	4	4	16	
		4 N/O	–	–	–	4	4	16	
		1 N/O	1 S_F	1 NC	1 $Ö_S$	4	4	16	
Spring-loaded terminals 	2 pole	–	–	2 NC	–	4	4	16	
		1 N/O	–	1 NC	–	4	4	16	
		2 N/O	–	–	–	4	4	16	
		–	1 S_F	–	1 $Ö_S$	4	4	16	
Spring-loaded terminals 	4 pole	–	–	4 NC	–	4	4	16	
		1 N/O	–	3 NC	–	4	4	16	
		2 N/O	–	2 NC	–	4	4	16	
		3 N/O	–	1 NC	–	4	4	16	
		4 N/O	–	–	–	4	4	16	
		1 N/O	1 S_F	1 NC	1 $Ö_S$	4	4	16	

Information relevant for export to North America

Product Standards	IEC/EN 60947-4-1; UL 508; CSA-C22.2 No.14-05; CE marking
UL File No.	E29184
UL CCN	NKCR
CSA File No.	012528
CSA Class No.	3211-03
NA Certification	UL Listed, CSA certified

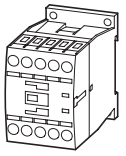
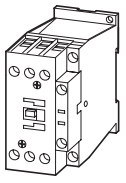
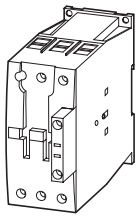
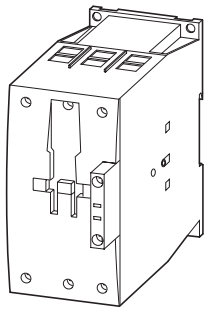
Distinctive number/type of combinations DILA(C)-40	DILA(C)-31	DILA(C)-22	**Part no.** Article no.	**Price** See price list	Std. pack	Description	**Notes**
42E	33	24	**DILA-XHI02** 276420		5 off	With interlocked opposing contacts	Type E combinations comply with EN 50011 and must be given preference. The other combinations comply with EN 50005 The DC operated contactor DILA(C)-22 must only be combined with 2 pole auxiliary contacts.
51E	42	33	**DILA-XHI11** 276421		5 off	With interlocked opposing contacts	
60E	51	42	**DILA-XHI20** 276422		5 off	With interlocked opposing contacts	
51	42	33	**DILA-XHIV11** 276423		5 off	–	
44E	35	26	**DILA-XHI04** 276424		5 off	With interlocked opposing contacts	
53E	44	35	**DILA-XHI13** 276425		5 off	With interlocked opposing contacts	
62E	53	44	**DILA-XHI22** 276426		5 off	With interlocked opposing contacts	
71E	62	53	**DILA-XHI31** 276427		5 off	With interlocked opposing contacts	
80E	71	62	**DILA-XHI40** 276428		5 off	With interlocked opposing contacts	
62	53	44	**DILA-XHIV22** 276429		5 off	–	
42E	33	24	**DILA-XHIC02** 276526		5 off	With interlocked opposing contacts	Type E combinations comply with EN 50011 and must be given preference. The other combinations comply with EN 50005 The DC operated contactor DILA(C)-22 must only be combined with 2 pole auxiliary contacts.
51E	42	33	**DILA-XHIC11** 276527		5 off	With interlocked opposing contacts	
60E	51	42	**DILA-XHIC20** 276528		5 off	With interlocked opposing contacts	
51	42	33	**DILA-XHICV11** 276529		5 off	–	
44E	35	26	**DILA-XHIC04** 276530		5 off	With interlocked opposing contacts	
53E	44	35	**DILA-XHIC13** 276531		5 off	With interlocked opposing contacts	
62E	53	44	**DILA-XHIC22** 276532		5 off	With interlocked opposing contacts	
71E	62	53	**DILA-XHIC31** 276533		5 off	With interlocked opposing contacts	
80E	71	62	**DILA-XHIC40** 276534		5 off	With interlocked opposing contacts	
62	53	44	**DILA-XHICV22** 276535		5 off	–	

1

Technical overview

DILM, DILE(E)M, DILMP

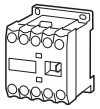
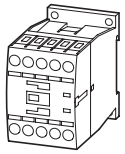
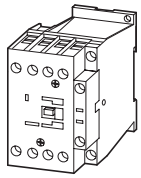
Contactors
3 pole

DIL		EEM	EM	EM12	M7	M9	M12	M15	M17	M25	M32	M38	M40	M50	M65	M80	M95	M115	M150	M170
Basic devices	Page	→ 15			→ 29				→ 29				→ 31			→ 57				
Complete unit	Page		–		→ Page 35			–	→ Page 35				→ Page 37			→ Page 37				
Rated-operational voltage		kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW
AC-3 Rated operational power for 3-phase motors 50 – 60 Hz																				
220 V – 230 V		1.5	2.2	3	2.2	2.5	3.5	4	5	7.5	10	11	12.5	15.5	20	25	30	37	48	52
380 V – 400 V		**3**	**4**	**5.5**	**3**	**4**	**5.5**	**7.5**	**7.5**	**11**	**15**	**18.5**	**18.5**	**22**	**30**	**37**	**45**	**55**	**75**	**90**
440 V		3.3	4.6	5.5	4.5	5.5	7.5	8.4	10.5	15.5	20	21	25	32	41	51	60	75	95	105
500 V		3	4	5.5	3.5	4.5	7	7.5	12	17.5	23	24	28	36	47	58	70	85	110	120
660 V/690 V		3	4	4	3.5	4.5	6.5	7	11	14	17	21	23	30	35	63	75	90	96	140
1000 V		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
AC-4 Rated operational power for 3-phase motors 50 – 60 Hz		⚠ Increase in life span for DILM7 – DILM150 to 200000 operations																		
220 V – 230 V		1.1	1.5	1.5	1	1.5	2	2	2.5	3.5	4	4	5	6	7	12	16	17	20	20
380 V – 400 V		**2.2**	**3**	**3**	**2.2**	**2.5**	**3**	**3**	**4.5**	**6**	**7**	**7**	**9**	**10**	**12**	**20**	**26**	**28**	**33**	**33**
440 V		2.4	3.3	3.3	2.4	3	3.6	3.6	5.5	7	8	8	10	12	14	25	32	35	41	41
500 V		2.2	3	3	2.5	2.8	3.5	3.5	6	8	9	9	11	13	16	29	36	40	47	47
660 V/690 V		2.2	3	3	2.9	3.6	4.4	4.4	6.5	8.5	10	10	12	14	17	26	35	43	48	48
1000 V		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
AC-1 Rated operational power under resistive load, 40 °C																				
220 V – 230 V		8	8	8	8	8	8	8	15	17	17	17	22	30	37	42	49	61	72	85
380 V – 400 V		**13**	**13**	**13**	**14**	**14**	**14**	**14**	**26**	**29**	**29**	**29**	**39**	**53**	**65**	**72**	**85**	**105**	**125**	**150**
440 V		15	15	15	16	16	16	16	30	34	34	34	45	58	71	80	94	116	138	170
500 V		18	18	18	19	19	19	19	34	38	38	38	51	66	81	90	107	132	156	194
660 V/690 V		23	23	23	25	25	25	25	45	51	51	51	68	91	111	125	148	182	216	268
1000 V		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Conventional thermal Current $I_{th} = I_e$ open at 40 °C		A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
		22	22	22	22	22	22	22	40	45	45	45	60	80	98	110	130	160	190	225

DILM, DILE(E)M, DILMP

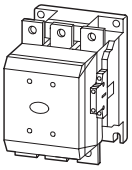
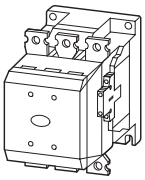
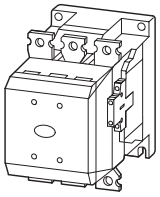
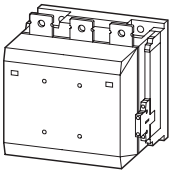
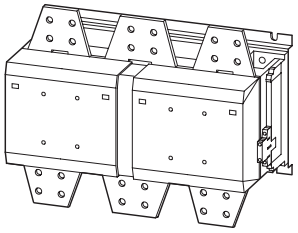
Contactors
4 pole

DIL		EM4	MP20	MP32
Rated operational voltage	Page	→ 15	→ Page 45	→ Page 45
AC-1 Conventional free air thermal current $I_{th} = I_e$ open, at 40 °C		A	A	A
up to 690 V		22	22	32

DILM, DILH, DILMP

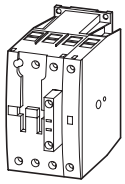
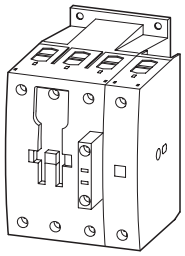
Contactors
3 pole

M185A	M225A	M250	M300A	M400	M500	M580	M650	M750	M820	M1000	M1600	H1400	H2000	H2200	H2600
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
→ Page 41			→ Page 41			→ Page 41		→ Page 41			→ Page 43				
kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW
55	70	75	90	125	155	185	205	240	260	315	500	–	–	–	–
90	**110**	**132**	**160**	**200**	**250**	**315**	**355**	**400**	**450**	**560**	**900**	–	–	–	–
115	142	157	190	255	345	370	420	480	525	650	1000	–	–	–	–
132	160	180	215	290	360	420	470	550	600	730	1180	–	–	–	–
175	215	240	286	344	344	560	630	720	750	1000	1600	–	–	–	–
108	108	108	132	132	132	600	600	800	800	1000	1770	–	–	–	–
41	51	62	75	92	112	143	161	181	209	260	430	–	–	–	–
75	**90**	**110**	**132**	**160**	**200**	**250**	**280**	**315**	**355**	**450**	**750**	–	–	–	–
85	102	125	140	186	229	290	326	367	418	520	830	–	–	–	–
96	116	143	172	214	260	330	370	417	474	590	940	–	–	–	–
127	155	189	229	283	344	440	494	556	633	780	1300	–	–	–	–
108	108	108	132	132	132	509	509	678	678	1000	1650	–	–	–	–
121	139	155	177	221	310	354	376	398	443	443	717	620	886	1075	1269
210	**241**	**268**	**306**	**382**	**535**	**612**	**650**	**689**	**766**	**766**	**1247**	**1071**	**1531**	**1870**	**2207**
243	279	310	354	443	620	709	753	797	886	886	1371	1240	1773	2058	2427
277	317	352	403	503	705	806	856	906	1007	1007	1558	1410	2015	2338	2758
365	419	465	532	664	930	1064	1130	1196	1330	1330	2151	1861	2660	3227	3806
554	635	705	806	1007	1410	1612	1712	1813	2015	2015	2420	2417	3223	4676	5516
A	A	A	A	A	A	A	A	A	A	A	A	A	A		
337	356	400	430	612	857	980	1041	1102	1225	1225	2200	1714	2450	2700	3185

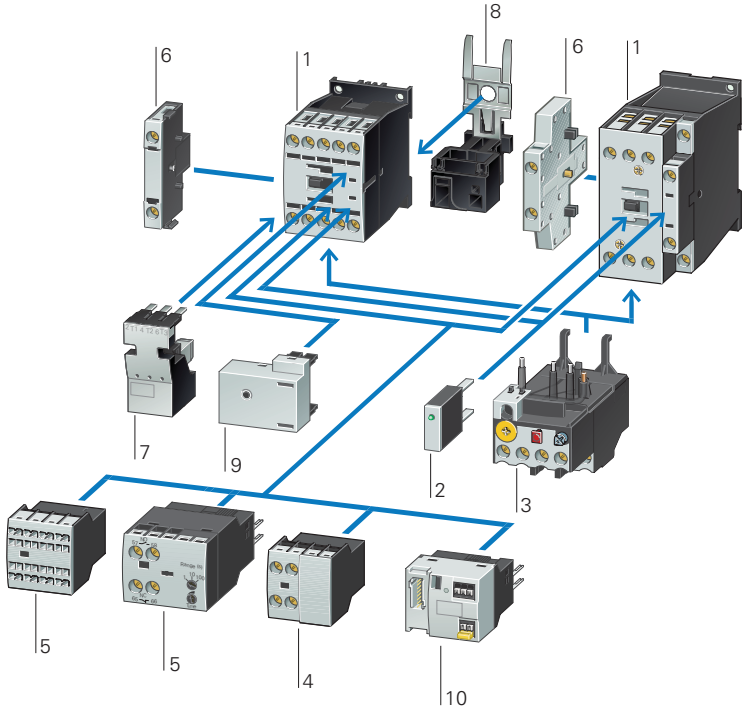
DILM, DILE(E)M, DILMP

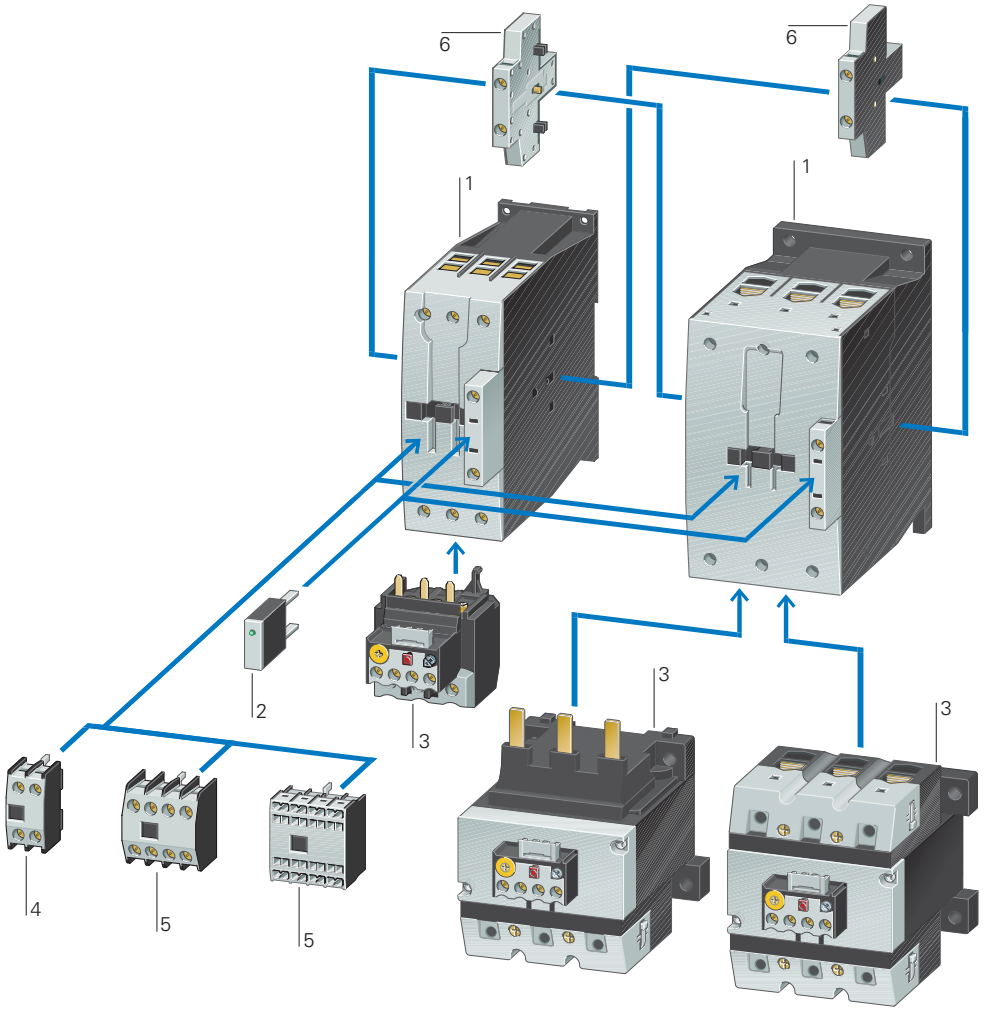
Contactors
4 pole

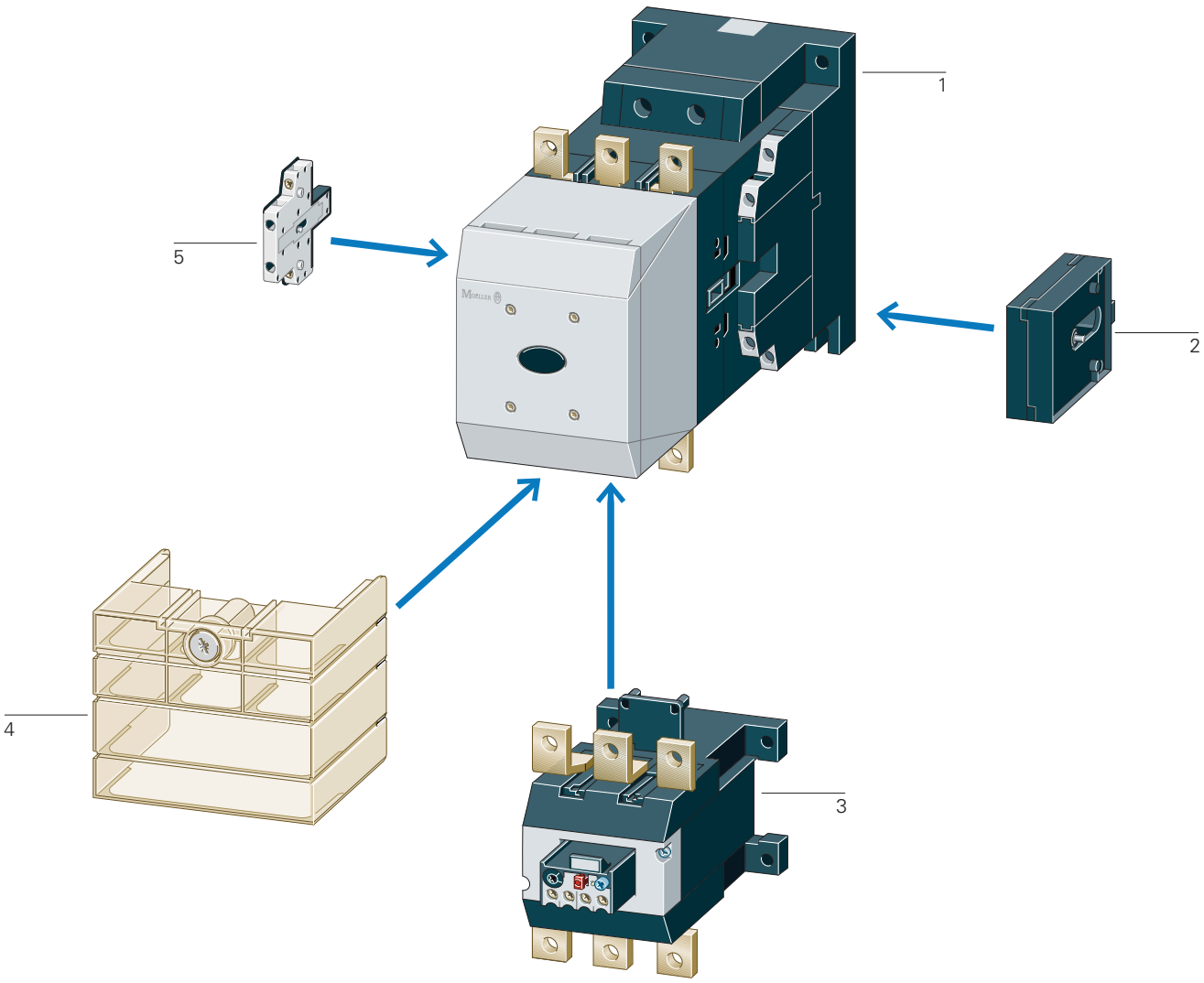
MP45	MP63	MP80	MP125	MP160	MP200
→ Page 45	→ Page 45		→ Page 45		
A	A	A	A	A	A
45	63	80	125	160	200

1 **System overview**





DILM7...DILM170



DILM185... DILH2600

Contactors 90 – 900 kW (AC-3/400 V) Comfort series 1
→ Page 41

Standard range 90–250kW 1
→ Page 39

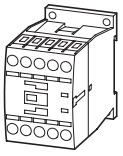
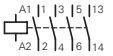
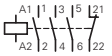
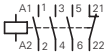
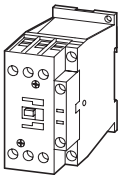
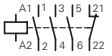
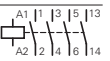
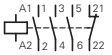
Mechanical interlock 2
→ Page 63

Overload relays 3
→ Overload relay catalog chapter 2

Terminal shroud 4
→ Page 72

Auxiliary contact modules 5
→ Page 50

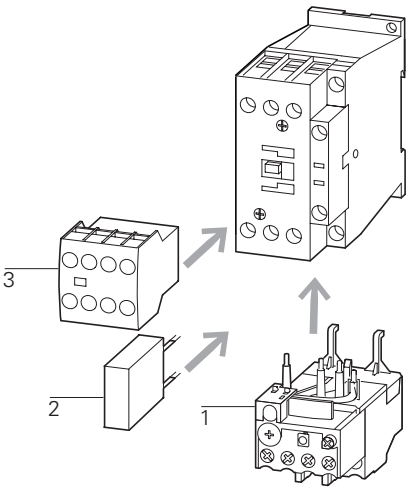
DILM
Basic device

Rated operational current	Max. motor rating for three-phase motors 50 - 60 Hz						Conventional thermal current $I_{th} = I_e$ AC-1 at 60 °C	Contact configuration		Circuit symbol
AC-3	AC-3			AC-4				N/O = normally open contact NC = normally closed contact		
380 V **400 V**	220 V 230 V	**380 V** **400 V**	660 V 690 V	220 V 230 V	**380 V** **400 V**	660 V 690 V	Open			
I_e **A**	P kW	**P** **kW**	P kW	P kW	**P** **kW**	P kW	$I_{th} = I_e$ A			
Screw terminals 3 pole 										
7	2.2	**3**	3.5	1	**2.2**	2.9	20	1 N/O	–	
7	2.2	**3**	3.5	1	**2.2**	2.9	20	–	1 NC	
9	2.5	**4**	4.5	1.5	**2.5**	3.6	20	1 N/O	–	
9	2.5	**4**	4.5	1.5	**2.5**	3.6	20	–	1 NC	
12	3.5	**5.5**	6.5	2	**3**	4.4	20	1 N/O	–	
12	3.5	**5.5**	6.5	2	**3**	4.4	20	–	1 NC	
15.5	4	**7.5**	7	2	**3**	4.4	20	1 N/O	–	
15.5	4	**7.5**	7	2	**3**	4.4	20	–	1 NC	
Screw terminals 3 pole 										
18	5	**7.5**	11	2.5	**4.5**	6.5	35	1 N/O	–	
18	5	**7.5**	11	2.5	**4.5**	6.5	35	–	1 NC	
25	7.5	**11**	14	3.5	**6**	8.5	40	1 N/O	–	
25	7.5	**11**	14	3.5	**6**	8.5	40	–	1 NC	
32	10	**15**	17	4	**7**	10	40	1 N/O	–	
32	10	**15**	17	4	**7**	10	40	–	1 NC	
38	11	**18.5**	21	4	**7**	10	40	1 N/O	–	
38	11	**18.5**	21	4	**7**	10	40	–	1 NC	

Information relevant for export to North America

Product Standards	IEC/EN 60947-4-1; UL 508; CSA-C22.2 No.14-05; CE marking
UL File No.	E29096
UL CCN	NLDX
CSA File No.	012528
CSA Class No.	2411-03, 3211-04
NA Certification	UL Listed, CSA certified
See also	→Page 91

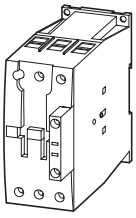
Can be combined with auxiliary contact	AC operation **Part no.** Article no.	**Price** See price list	DC operation **Part no.** Article no.	**Price** See price list	Std. pack	**Notes**
DILM32-XHI.. DILA-XHI(V)..	**DILM7-10(230V50Hz)** 276550		**DILM7-10(24VDC)** 276565		1 off	Contacts to EN 50 012. For all DC operated contactors DILM7 - DILM15 the following applies: • Integrated varistor-suppressor circuit. For DC operated contactors DILM17 - DILM170 the following applies: • Integrated suppressor circuit in actuating electronics For AC operated contactors DILM115 - DILM170 the following applies: • Integrated suppressor circuit in actuating electronics For DILM7-01 – DILM38-01 the following applies: • With mirror contact.
DILA-XHI(V)..	**DILM7-01(230V50Hz)** 276585		**DILM7-01(24VDC)** 276600			
DILM32-XHI.. DILA-XHI(V)..	**DILM9-10(230V50Hz)** 276690		**DILM9-10(24VDC)** 276705			
DILA-XHI(V)..	**DILM9-01(230V50Hz)** 276725		**DILM9-01(24VDC)** 276740			
DILM32-XHI.. DILA-XHI(V)..	**DILM12-10(230V50Hz)** 276830		**DILM12-10(24VDC)** 276845			
DILA-XHI(V)..	**DILM12-01(230V50Hz)** 276865		**DILM12-01(24VDC)** 276880			
DILM32-XHI.. DILA-XHI(V)..	**DILM15-10(230V50Hz)** [1] 290058		**DILM15-10(24VDC)** [1] 290073			[1] Electrical lifespan → 98
DILA-XHI(V)..	**DILM15-01(230V50Hz)** [1] 290093		**DILM15-01(24VDC)** [1] 290108			
DILM32-XHI.. DILA-XHI(V).. DILM32-XHI11-S	**DILM17-10(230V50Hz)** 277004		**DILM17-10(RDC24)** 277018			
DILA-XHI(V).. DILM32-XHI11-S	**DILM17-01(230V50Hz)** 277036		**DILM17-01(RDC24)** 277050			
DILM32-XHI.. DILA-XHI(V).. DILM32-XHI11-S	**DILM25-10(230V50Hz)** 277132		**DILM25-10(RDC24)** 277146			
DILA-XHI(V).. DILM32-XHI11-S	**DILM25-01(230V50Hz)** 277164		**DILM25-01(RDC24)** 277178			
DILM32-XHI.. DILA-XHI(V).. DILM32-XHI11-S	**DILM32-10(230V50Hz)** 277260		**DILM32-10(RDC24)** 277274			
DILA-XHI(V).. DILM32-XHI11-S	**DILM32-01(230V50Hz)** 277292		**DILM32-01(RDC24)** 277306			
DILM32-XHI.. DILA-XHI(V).. DILM32-XHI11-S	**DILM38-10(230V50Hz)** [1] 112428		**DILM38-10(RDC24)** [1] 112442			
DILA-XHI(V).. DILM32-XHI11-S	**DILM38-01(230V50Hz)** [1] 112456		**DILM38-01(RDC24)** [1] 112470			

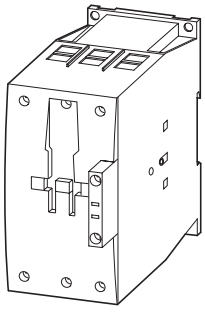


Accessories	**Page**
1 Overload relay	→ Overload relay catalog chapter 2
2 Suppressor	→ 62
3 Auxiliary contact module	→ 47
Further actuating voltages	→ 80
Accessories	→ 63

DILM
Basic device

Rated operational current	Max. motor rating for three-phase motors 50 - 60 Hz						Conventional thermal current $I_{th} = I_e$ AC-1 at 60 °C	Contact configuration		Circuit symbol
AC-3	AC-3			AC-4				N/O = normally open contact NC = normally closed contact		
380 V **400 V**	220 V 230 V	**380 V** **400 V**	660 V 690 V	220 V 230 V	**380 V** **400 V**	660 V 690 V	Open			
I_e **A**	P kW	**P** **kW**	P kW	P kW	**P** **kW**	P kW	$I_{th} = I_e$ A			
Screw terminals 3 pole										
40	12.5	**18.5**	23	5	**9**	12	50	–	–	
50	15.5	**22**	30	6	**10**	14	65	–	–	
65	20	**30**	35	7	**12**	17	80	–	–	
72	25	**37**	35	7	**12**	17	80	–	–	
Screw terminals 3 pole										
80	25	**37**	63	12	**20**	26	90	–	–	
95	30	**45**	75	16	**26**	35	110	–	–	
115	37	**55**	90	17	**28**	43	130	–	–	
150	48	**75**	96	20	**33**	48	160	–	–	
170	52	**90**	140	20	**33**	48	185	–	–	

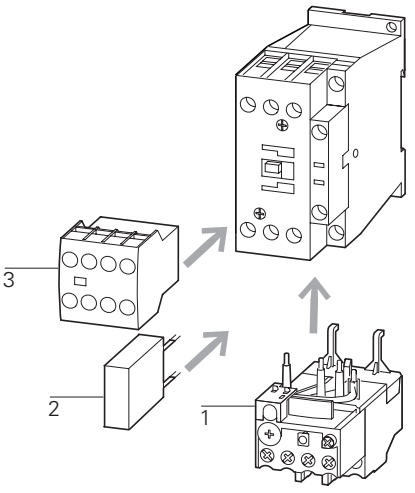




Information relevant for export to North America

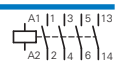
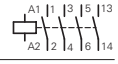
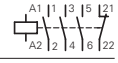
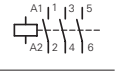
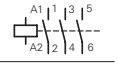
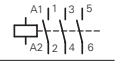
Product Standards	IEC/EN 60947-4-1; UL 508; CSA-C22.2 No.14-05; CE marking
UL File No.	E29096
UL CCN	NLDX
CSA File No.	012528
CSA Class No.	2411-03, 3211-04
NA Certification	UL Listed, CSA certified
See also	→ Page 91

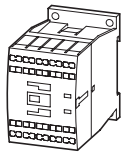
Can be combined with auxiliary contact	AC operation **Part no.** Article no.	**Price** See price list	DC operation **Part no.** Article no.	**Price** See price list	Std. pack	**Notes**
DILM150-XHI(V).. DILM1000-XHI(V)..	**DILM40(230V50Hz)** 277766		**DILM40(RDC24)** 277780		1 off	Contacts to EN 50012. For all DC operated contactors DILM7 - DILM15 the following applies: • Integrated varistor-suppressor circuit. For DC operated contactors DILM17 - DILM170 the following applies: • Integrated suppressor circuit in actuating electronics For AC operated contactors DILM115 - DILM170 the following applies: • Integrated suppressor circuit in actuating electronics For DILM7-01 – DILM38-01 the following applies: • With mirror contact. 1) Electrical lifespan → 98
DILM150-XHI(V).. DILM1000-XHI(V)..	**DILM50(230V50Hz)** 277830		**DILM50(RDC24)** 277844			
DILM150-XHI(V).. DILM1000-XHI(V)..	**DILM65(230V50Hz** 277894		**DILM65(RDC24)** 277908			
DILM150-XHI(V).. DILM1000-XHI(V)..	**DILM72(230V50Hz)**[1)] 107670		**DILM72(RDC24)**[1)] 107671			
DILM150-XHI(V).. DILM1000-XHI(V)..	**DILM80(230V50Hz)** 239402		**DILM80(RDC24)** 239416			
DILM150-XHI(V).. DILM1000-XHI(V)..	**DILM95(230V50Hz)** 239480		**DILM95(RDC24)** 239510			
DILM150-XHI(V).. DILM1000-XHI(V)..	**DILM115(RAC240)** 239548		**DILM115(RDC24)** 239555			
DILM150-XHI(V).. DILM1000-XHI(V)..	**DILM150(RAC240)** 239588		**DILM150(RDC24)** 239591			
DILM150-XHI(V).. DILM1000-XHI(V)..	**DILM170(RAC240)**[1)] 107013		**DILM170(RDC24)**[1)] 107016			

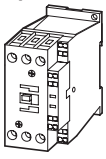


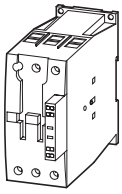
Accessories	**Page**
1 Overload relay	→ Overload relay catalog chapter 2
2 Suppressor	→ 61
3 Auxiliary contact module	→ 47
Further actuating voltages	→ 82
Accessories	→ 63

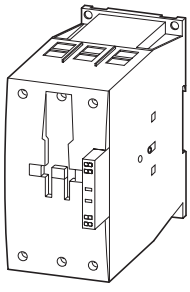
DILM
Basic device

Rated operational current AC-3	Max. motor rating for three-phase motors 50 - 60 Hz AC-3			AC-4			Conventional thermal current $I_{th} = I_e$ AC-1 at 60 °C	Contact configuration N/O = normally open contact NC = normally closed contact		Circuit symbol
380 V 400 V	220 V 230 V	**380 V** 400 V	660 V 690 V	220 V 230 V	**380 V** 400 V	660 V 690 V	Open			
I_e	P	**P**	P	P	**P**	P	$I_{th} = I_e$			
A	kW	**kW**	kW	kW	**kW**	kW	A			
Spring-loaded terminals 3 pole										
7	2.2	**3**	3.5	1	**2.2**	2.9	20	1 N/O	–	
7	2.2	**3**	3.5	1	**2.2**	2.9	20	–	1 NC	
9	2.5	**4**	4.5	1.5	**2.5**	3.6	20	1 N/O	–	
9	2.5	**4**	4.5	1.5	**2.5**	3.6	20	–	1 NC	
12	3.5	**5.5**	6.5	2	**3**	4.4	20	1 N/O	–	
12	3.5	**5.5**	6.5	2	**3**	4.4	20	–	1 NC	
15.5	4	**7.5**	7	2	**3**	4.4	20	1 N/O	–	
15.5	4	**7.5**	7	2	**3**	4.4	20	–	1 NC	
Spring-loaded terminals on auxiliary and control circuit terminals 3 pole										
18	5	**7.5**	11	2.5	**4.5**	6.5	35	1 N/O	–	
18	5	**7.5**	11	2.5	**4.5**	6.5	35	–	1 NC	
25	7.5	**11**	14	3.5	**6**	8.5	40	1 N/O	–	
25	7.5	**11**	14	3.5	**6**	8.5	40	–	1 NC	
32	10	**15**			**7**	10	40	1 N/O	–	
32	10	**15**			**7**	10	40	–	1 NC	
40	12.5	**18.5**			**9**	12	50	–	–	
50	15.5	**22**			**10**	14	65	–	–	
65	20	**30**			**12**	17	80	–	–	
80	25	**37**	63	12	**20**	26	90	–	–	
95	30	**45**	75	16	**26**	35	110	–	–	
115	37	**55**	90	17	**28**	43	130	–	–	
150	48	**75**	96	20	**33**	48	160	–	–	





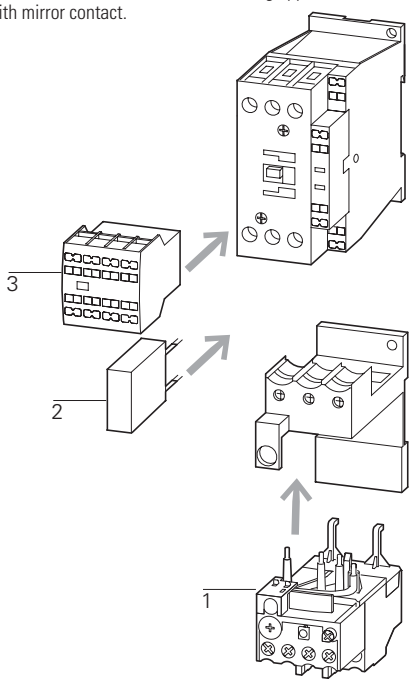




Information relevant for export to North America

Product Standards	IEC/EN 60947-4-1; UL 508; CSA-C22.2 No.14-05; CE marking
UL File No.	E29096
UL CCN	NLDX
CSA File No.	012528
CSA Class No.	2411-03, 3211-04
NA Certification	UL Listed, CSA certified
See also	→ Page 91

Can be combined with auxiliary contact	AC operation **Part no.** Article no.	**Price** See price list	DC operation **Part no.** Article no.	**Price** See price list	Std. pack	**Notes**
DILM32-XHIC.. DILA-XHIC(V)..	**DILMC7-10(230V50Hz)** 277389		**DILMC7-10(24VDC)** 277404		1 off	Contacts to EN 50 012. For DILMC7 – DILMC15 the following applies: • Auxiliary coil, and main current terminals with spring-loaded terminals. For DILMC17 – DILMC150 the following applies: • Auxiliary connections, coil connections with spring-loaded connection terminals. • Main current connections with screw terminals. For DC operated contactors DILMC7 - DILMC15 the following applies: • Integrated varistor-suppressor circuit. For DC operated contactors DILMC17 - DILMC150 the following applies: • Integrated suppressor circuit in actuating electronics For AC operated contactors DILMC115 - DILMC150 the following applies: • Integrated suppressor circuit in actuating electronics For DILMC7-01 – DILMC32-01 the following applies: • With mirror contact.
DILA-XHIC(V)..	**DILMC7-01(230V50Hz)** 277421		**DILMC7-01(24VDC)** 277436			
DILM32-XHIC.. DILA-XHIC(V)..	**DILMC9-10(230V50Hz)** 277453		**DILMC9-10(24VDC)** 277468			
DILA-XHIC(V)..	**DILMC9-01(230V50Hz)** 277485		**DILMC9-01(24VDC)** 277500			
DILM32-XHIC.. DILA-XHIC(V)..	**DILMC12-10(230V50Hz)** 277517		**DILMC12-10(24VDC)** 277532			
DILA-XHIC(V)..	**DILMC12-01(230V50Hz)** 277549		**DILMC12-01(24VDC)** 277564			
DILM32-XHIC… DILA-XHIC(V)…	**DILMC15-10(230V50Hz)** 293911		**DILMC15-10(24VDC)** 293926			
DILA-XHIC(V)…	**DILMC15-01(230V50Hz)** 293946		**DILMC15-01(24VDC)** 293961			
DILM32-XHIC.. DILA-XHIC(V)..	**DILMC17-10(230V50Hz)** 277581		**DILMC17-10(RDC24)** 277595			
DILA-XHIC(V)..	**DILMC17-01(230V50Hz** 277611		**DILMC17-01(RDC24)** 277625			
DILM32-XHIC.. DILA-XHIC(V)..	**DILMC25-10(230V50Hz)** 277641		**DILMC25-10(RDC24)** 277655			
DILA-XHIC(V)..	**DILMC25-01(230V50Hz)** 277671		**DILMC25-01(RDC24)** 277685			
DILM32-XHIC.. DILA-XHIC(V)..	**DILMC32-10(230V50Hz)** 277701		**DILMC32-10(RDC24)** 277715			
DILA-XHIC(V)..	**DILMC32-01(230V50Hz)** 277731		**DILMC32-01(RDC24)** 277745			
DILM150-XHIC(V).. DILM1000-XHIC..	**DILMC40(230V50Hz)** 277965		**DILMC40(RDC24)** 277979			
	DILMC50(230V50Hz) 277995		**DILMC50(RDC24)** 278009			
	DILMC65(230V50Hz) 278025		**DILMC65(RDC24)** 278039			
	DILMC80(230V50Hz) 239618		**DILMC80(RDC24)** 239652			
	DILMC95(230V50Hz) 239685		**DILMC95(RDC24)** 239715			
	DILMC115(RAC240) 239736		**DILMC115(RDC24)** 239741			
	DILMC150(RAC240) 239751		**DILMC150(RDC24)** 239765			

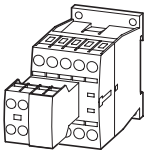


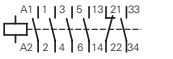
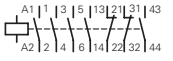
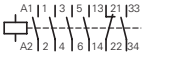
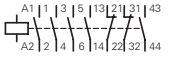
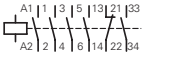
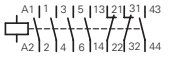
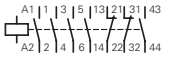
Accessories	**Page**
1 Overload relay	→ Overload relay catalog chapter 2
2 Suppressor	→ 61
3 Auxiliary contact module	→ 47
Further actuating voltages	→ 84
Accessories	→ 63

1

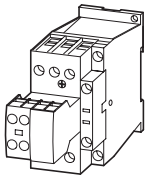
DILM complete device

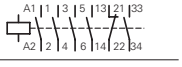
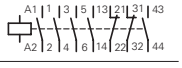
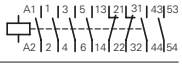
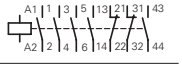
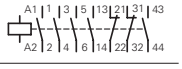
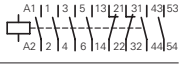
Screw terminals



Rated operational current AC-3	Max. motor rating for three-phase motors 50 - 60 Hz AC-3			AC-4			Conventional free air thermal current $I_{th} = I_e$ AC-1 at 60 °C	Contact Contact configuration: ⊖ = Safety function by positive opening according to IEC/EN 60947-5-1		Circuit symbol
380 V 400 V	220 V 230 V	**380 V 400 V**	660 V 690 V	220 V 230 V	**380 V 400 V**	660 V 690 V	Open			
I_e	P	**P**	P	P	**P**	P	$I_{th} = I_e$	N/O = normally open contact	NC = normally closed contact	
A	kW	**kW**	kW	kW	**kW**	kW	A			
7	2.2	**3**	3.5	1	**2.2**	2.9	20	2 N/O	1 NC	
7	2.2	**3**	3.5	1	**2.2**	2.9	20	2 N/O	1 NC	
7	2.2	**3**	3.5	1	**2.2**	2.9	20	3 N/O	2 NC	
9	2.5	**4**	4.5	1.5	**2.5**	3.6	20	2 N/O	1 NC	
9	2.5	**4**	4.5	1.5	**2.5**	3.6	20	2 N/O	1 NC	
9	2.5	**4**	4.5	1.5	**2.5**	3.6	20	3 N/O	2 NC	
12	3.5	**5.5**	6.5	2	**3**	4.4	20	2 N/O	1 NC	
12	3.5	**5.5**	6.5	2	**3**	4.4	20	2 N/O	1 NC	
12	3.5	**5.5**	6.5	2	**3**	4.4	20	3 N/O	2 NC	
15.5	4	**7.5**	7	2	**3**	4.4	20	2 N/O	2 NC	

Screw terminals

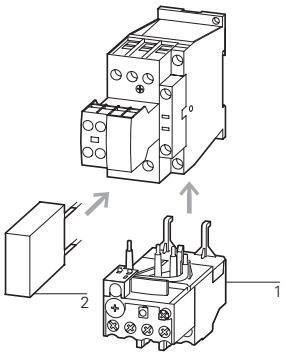


18	5	**7.5**	11	2.5	**4.5**	6.5	35	2 N/O	1 NC	
18	5	**7.5**	11	2.5	**4.5**	6.5	35	2 N/O	1 NC	
18	5	**7.5**	11	2.5	**4.5**	6.5	35	3 N/O	2 NC	
25	7.5	**11**	14	3.5	**6**	8.5	40	2 N/O	1 NC	
25	7.5	**11**	14	3.5	**6**	8.5	40	2 N/O	1 NC	
25	7.5	**11**	14	3.5	**6**	8.5	40	3 N/O	2 NC	
32	10	**15**	17	4	**7**	10	40	2 N/O	1 NC	
32	10	**15**	17	4	**7**	10	40	2 N/O	1 NC	
32	10	**15**	17	4	**7**	10	40	3 N/O	2 NC	

Information relevant for export to North America

Product Standards	IEC/EN 60947-4-1; UL 508; CSA-C22.2 No.14-05; CE marking
UL File No.	E29096
UL CCN	NLDX
CSA File No.	012528
CSA Class No.	2411-03, 3211-04
NA Certification	UL Listed, CSA certified
See also	→ Page 91

AC operation		DC operation			
Part no. Article no.	**Price** See price list	**Part no.** Article no.	**Price** See price list	Std. pack	**Notes**
DILM7-21(230V50Hz) 276620		**DILM7-21(24VDC)** 276635		1 off	
DILM7-22(230V50Hz) 106360		**DILM7-22(24VDC)** 106367			
DILM7-32(230V50Hz) 276655		**DILM7-32(24VDC)** 276670			
DILM9-21(230V50Hz) 276760		**DILM9-21(24VDC)** 276775			
DILM9-22(230V50Hz) 106361		**DILM9-22(24VDC)** 106368			
DILM9-32(230V50Hz) 276795		**DILM9-32(24VDC)** 276810			
DILM12-21(230V50Hz) 276900		**DILM12-21(24VDC)** 276915			
DILM12-22(230V50Hz) 106362		**DILM12-22(24VDC)** 106369			
DILM12-32(230V50Hz) 276935		**DILM12-32(24VDC)** 276950			
DILM15-22(230V50Hz) 106363		**DILM15-22(24VDC)** 106370			
DILM17-21(230V50Hz) 277068		**DILM17-21(RDC24)** 277082			
DILM17-22(230V50Hz) 106364		**DILM17-22(RDC24)** 106371			
DILM17-32(230V50Hz) 277100		**DILM17-32(RDC24)** 277114			
DILM25-21(230V50Hz) 277196		**DILM25-21(RDC24)** 277210			
DILM25-22(230V50Hz) 106365		**DILM25-22(RDC24)** 106372			
DILM25-32(230V50Hz) 277228		**DILM25-32(RDC24)** 277242			
DILM32-21(230V50Hz) 277324		**DILM32-21(RDC24)** 277338			
DILM32-22(230V50Hz) 106366		**DILM32-22(RDC24)** 106373			
DILM32-32(230V50Hz) 277356		**DILM32-32(RDC24)** 277370			



Accessories	**Page**
1 Overload relay	→ Overload relay Catalog Chapter 2
2 Suppressor	→ 61
Accessories	→ 63

For all DC operated contactors DILM7 - DILM15 the following applies:
- Integrated varistor suppressor circuit.

For DC operated contactors DILM17 - DILM170 the following applies:
- Integrated suppressor circuit in actuating electronics

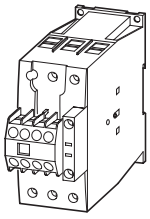
For AC operated contactors DILM115 - DILM170 the following applies:
- Integrated suppressor circuit in actuating electronics

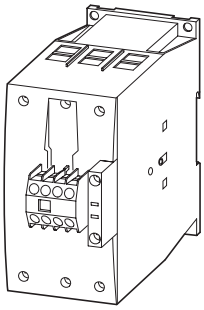
For DILM7 - DILM150 the following applies:
- With mirror contact.

Contacts to EN 50012

DILM complete device

Rated operational current AC-3	Max. motor rating for three-phase motors 50 - 60 Hz AC-3			AC-4			Conventional free air thermal current $I_{th} = I_e$ AC-1 at 60 °C	Contact Contact configuration: ⊖ = Safety function by positive opening according to IEC/EN 60947-5-1		Circuit symbol
380 V **400 V**	220 V 230 V	**380 V** **400 V**	660 V 690 V	220 V 230 V	**380 V** **400 V**	660 V 690 V	Open			
I_e	P	**P**	P	P	**P**	P	$I_{th} = I_e$	N/O = normally open contact	NC = normally closed contact	
A	kW	**kW**	kW	kW	**kW**	kW	A			
Screw terminals										
40	12.5	**18.5**	23	5	**9**	12	50	2 N/O	2 NC	
50	15.5	**22**	30	6	**10**	14	65	2 N/O	2 NC	
65	20	**30**	35	7	**12**	17	80	2 N/O	2 NC	
Screw terminals										
80	25	**37**	63	12	**20**	26	90	2 N/O	2 NC	
95	30	**45**	75	16	**26**	35	110	2 N/O	2 NC	
115	37	**55**	90	17	**28**	43	130	2 N/O	2 NC	
150	48	**75**	96	20	**34**	48	160	2 N/O	2 NC	

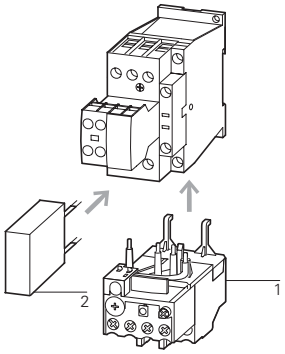




Information relevant for export to North America

Product Standards	IEC/EN 60947-4-1; UL 508; CSA-C22.2 No.14-05; CE marking
UL File No.	E29096
UL CCN	NLDX
CSA File No.	012528
CSA Class No.	2411-03, 3211-04
NA Certification	UL Listed, CSA certified
See also	→ Page 91

AC operation		DC operation			
Part no. Article no.	**Price** See price list	**Part no.** Article no.	**Price** See price list	Std. pack	**Notes**
DILM40-22(230V50Hz) 277798		**DILM40-22(RDC24)** 277812		1 off	
DILM50-22(230V50Hz) 277862		**DILM50-22(RDC24)** 277876			
DILM65-22(230V50Hz) 277926		**DILM65-22(RDC24)** 277940			
DILM80-22(230V50Hz) 239449		**DILM80-22(RDC24)** 239463			
DILM95-22(230V50Hz) 239527		**DILM95-22(RDC24)** 239541			
DILM115-22(RAC240) 239578		**DILM115-22(RDC24)** 239581			
DILM150-22(RAC240) 239598		**DILM150-22(RDC24)** 239601			



Accessories	**Page**
1 Overload relay	→ Overload relay Catalog Chapter 2
2 Suppressor	→ 61
Accessories	→ 63

For DC operated contactors DILM17 - DILM170 the following applies:
- Integrated suppressor circuit in actuating electronics

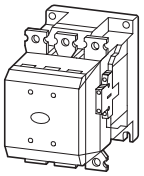
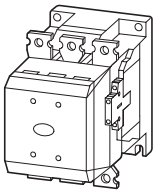
For AC operated contactors DILM115 - DILM170 the following applies:
- Integrated suppressor circuit in actuating electronics

For DILM7 - DILM150 the following applies:
- With mirror contact.

Contacts to EN 50012

1

DILM...S/22...
Standard device for currents greater than 150 A

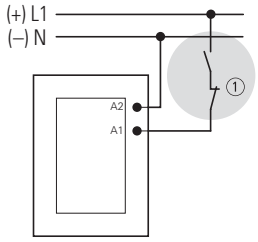
Rated operational current	Max. motor rating for three-phase motors 50 - 60 Hz						Conventional thermal current $I_{th} = I_e$ AC-1 at 40 °C	Circuit symbol	For use with
AC-3	AC-3			AC-4			Open		
380 V **400 V**	220 V 230 V	**380 V** **400 V**	660 V 690 V	220 V 230 V	**380 V** **400 V**	660 V 690 V	$I_{th} = I_e$		
I_e	P	**P**	P	P	**P**	P	A		
A	kW	**kW**	kW	kW	**kW**	kW			
DILM complete device 									
250	75	**132**	240	62	**110**	189	400		DILM820-XHI...
300	90	**160**	195	75	**132**	160	430		DILM820-XHI...
DILM complete device 									
400	125	**200**	344	92	**160**	283	612		DILM820-XHI...
500	155	**250**	344	112	**200**	344	857		DILM820-XHI...
580	185	**315**	344	112	**200**	344	920		DILM820-XHI...

Notes

[1] Availability from August 2010.
Previous DILM300/22, see Online Catalog at http://www.eaton.com/electrical

For all contactors the following applies:
- 660 V, 690 V or 1000 V: do not reverse directly
- Integrated suppressor circuit in actuating electronics.

DILM...-S contactors are actuated conventionally

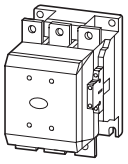
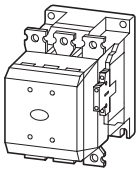
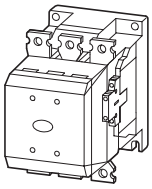
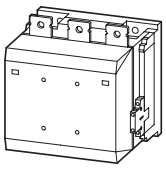
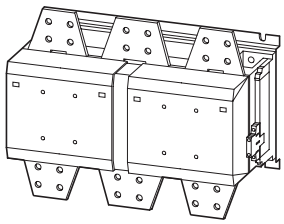


① Stopping in the event of an emergency (emergency switching off)

Accessories	**Page**
Auxiliary contact modules	→ 49
Enclosures totally insulated	
Further actuating voltages	→ 88

Part no. Article no.	**Price** See price list	Std. pack	**Information relevant for export to North America**	
DILM250-S/22(220-240V50/60Hz) 274190		1 off	Product Standards UL File No. UL CCN CSA File No. CSA Class No. NA Certification	IEC/EN 60947-4-1; UL 508; CSA-C22.2 No.14-05; CE marking E29096 NLDX 1017510 3211-04 UL Listed, CSA certified
DILM300A-S/22(220-240V50/60Hz) [1] 139559		1 off	Request filed for UL and CSA	
DILM400-S/22(220-240V50/60Hz) 274196		1 off	Product Standards UL File No. UL CCN CSA File No. CSA Class No. NA Certification See also	IEC/EN 60947-4-1; UL 508; CSA-C22.2 No.14-05; CE marking E29096 NLDX 012528 3211-04 UL Listed, CSA certified Additional approvals, → Page 93
DILM500-S/22(220-240V50/60Hz) 274199		1 off		
DILM570-S/22(220-240V50/60Hz) 110744		1 off		

DILM, DILH

	Rated operational current	Max. motor rating for three-phase motors 50 - 60 Hz								Conventional thermal current $I_{th} = I_e$ AC-1 at 60 °C	Circuit symbol
	AC-3	AC-3				AC-4				Open	
	380 V **400 V**	220 V 230 V	**380 V** **400 V**	660 V 690 V	1000 V	220 V 230 V	**380 V** **400 V**	660 V 690 V	1000 V	$I_{th} = I_e$	
	Ie	P	**P**	P	P	P	**P**	P	P	A	
	A	kW	**kW**	kW	kW	kW	**kW**	kW	kW		
Contactors, comfort DILM											
	**185**	55	**90**	140	108	41	**75**	102	77	275	
	225	70	**110**	150	108	51	**90**	110	77	315	
	**250**	75	**132**	195	108	62	**110**	160	109	330	
	300	90	**160**	195	132	75	**132**	160	109	350	
	**400**	125	**200**	344	132	92	**160**	283	132	500	
	500	155	**250**	344	132	112	**200**	344	132	700	
	**580**	185	**315**	560	600	143	**250**	440	509	800	
	650	205	**355**	630	600	161	**280**	494	509	850	
	750	240	**400**	720	800	181	**315**	556	678	900	
	820	260	**450**	750	800	209	**355**	633	678	1000	
	1000	315	**560**	1000	1100	260	**450**	780	1000	1000	
	**1600**	500	**900**	1600	1770	430	**750**	1300	1650	1800	

Notes

[1] Availability from August 2010.
Previous DILM185/22 to DILM300/22, see Online Catalog at http://www.eaton.com/electrical

For all contactors the following applies:
- 660 V, 690 V or 1000 V: do not reverse directly
- Integrated suppressor circuit in actuating electronics.

When operating contactors DILM580 to DILM1600 behind a frequency inverter or mains with strong harmonic loads, the suppressor circuit on the load side must be removed.

During high-voltage tests, the suppressor circuit on the load-side for DILM580 to DILH2600 contactors must be disconnected (see instructional leaflet).

Control voltages

RA250 ≙ 110 V - 250 V AC/DC

RAW250 ≙ 230 V - 250 V AC/DC

Accessories	**Page**
Auxiliary contact modules	→ 49
Suppressor circuits on load side	→ 72
Enclosures totally insulated	
Further actuating voltages	→ 83

Part no.	Price	Std. pack	Notes
	See price list		

DILM185A/22(RAC240)[1)]
139537

DILM225A/22(RAC240)[1)]
139547

DILM250/22(RA250)[2)]
208201

DILM300A/22(RA250)[1) 2)]
139556

DILM400/22(RA250)[3)]
208209

DILM500/22(RA250)[3)]
208213

DILM580/22(RA250)[3)]
208216

DILM650/22(RA250)[3)]
208219

DILM750/22(RA250)[3)]
208222

DILM820/22(RA250)[3)]
208225

DILM1000/22(RA250)[3)]
267214

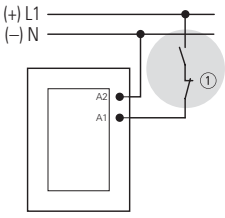
DILM1600/22(RAW250)[3)]
106727

1 off

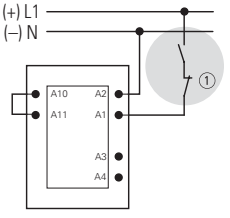
Conventional

A1/A2 are attached to power supply as normal

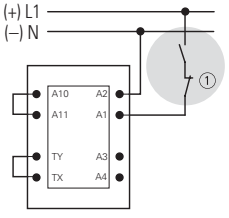
DILM 185 A, DILM 225 A



DILM250 to DILM1000, DILH1400

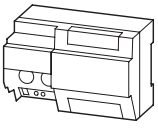


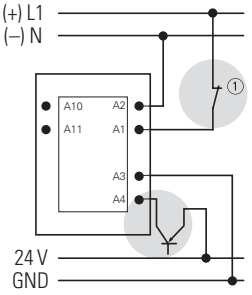
DILM1600 to DILH 2600

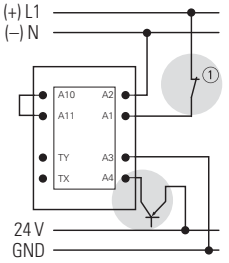


Directly from the PLC

A 24 V output from the PLC can be directly connected to the terminals A4/A24.

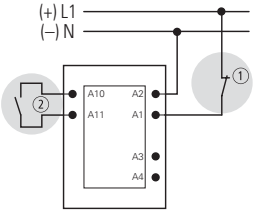


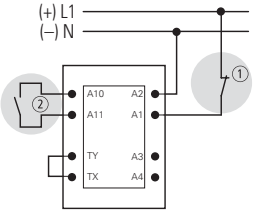




From a low-power command device

Low-power actuating devices such as PCB relays, pilot devices or position switches can be directly connected to A10/A11.





① Stopping in the event of an emergency (emergency switching off)
② Max. cable capacitance 6 nF

Information relevant for export to North America

1)

NA Certification	Request filed for UL and CSA

2)

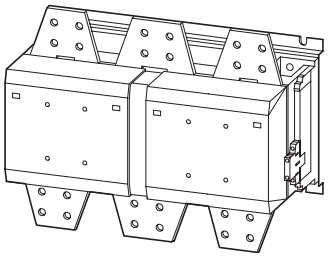
Product Standards	IEC/EN 60947-4-1; UL 508; CSA-C22.2 No.14-05; CE marking
UL File No.	E29096
UL CCN	NLDX
CSA File No.	1017510
CSA Class No.	3211-04
NA Certification	UL Listed, CSA certified

3)

Product Standards	IEC/EN 60947-4-1; UL 508; CSA-C22.2 No.14-05; CE marking
UL File No.	E29096
UL CCN	NLDX
CSA File No.	012528
CSA Class No.	3211-04
NA Certification	UL Listed, CSA certified
See also	Additional approvals, → Page 93

DILM, DILH

DILH comfort devices AC-1



Conventional thermal current $I_{th} = I_e$ AC-1 at 60 °C Open $I_{th} = I_e$ A	Circuit symbol	**Part no.**	**Price** See price list	Std. pack
1400		**DILH1400/22(RAW250)**[1] 272441		1 off
2000		**DILH2000/22(RAW250)**[1] 272442		1 off
2200		**DILH2200/22(RAW250)**[1] 111793		1 off
2600		**DILH2600/22(RAW250)**[2] 125945		1 off

Notes

For all contactors the following applies:
- 660 V, 690 V or 1000 V: do not reverse directly
- Integrated suppressor circuit in actuating electronics.

When operating contactors DILM580 to DILM1600 behind a frequency inverter or mains with strong harmonic loads, the suppressor circuit on the load side must be removed.

During high-voltage tests, the suppressor circuit on the load-side for DILM580 to DILH2600 contactors must be disconnected (see instructional leaflet).

Control voltages

RAW250 ≙ 230 V - 250 V AC/DC

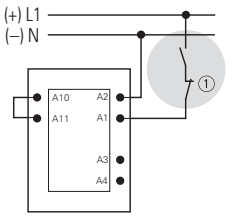
Accessories	**Page**
Auxiliary contact modules	→ 49
Suppressor circuits on load side	→ 72
Enclosures totally insulated	

Notes

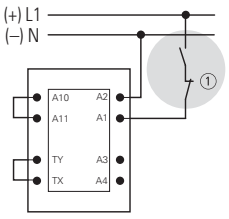
Conventional

A1/A2 are attached to power supply as normal

DILH1400

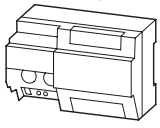


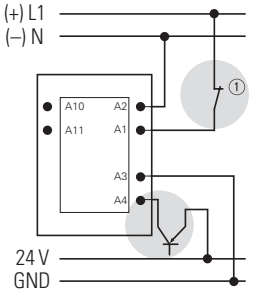
DILM1600 to DILH 2600

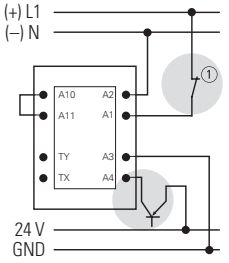


Directly from the PLC

A 24 V output from the PLC can be directly connected to the terminals A4/A24.

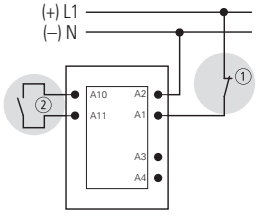


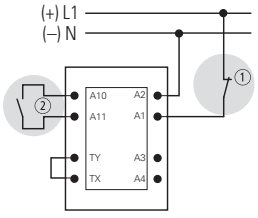




From a low-power command device

Low-power actuating devices such as PCB relays, pilot devices or position switches can be directly connected to A10/A11.





① Stopping in case of emergency (Emergency-stop)
② Max. cable capacitance 6 nF

Information relevant for export to North America

1)

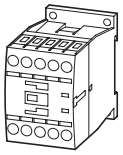
Product Standards	IEC/EN 60947-4-1; UL 508; CSA-C22.2 No.14-05; CE marking
UL File No.	E29096
UL CCN	NLDX
CSA File No.	012528
CSA Class No.	3211-04
NA Certification	UL Listed, CSA certified

2)

NA Certification	Request filed for UL and CSA

DILMP 4 pole

Contactors up to 200 A 4 pole



Rated operational current open			Conventional thermal current $I_{th} = I_e$ AC-1 at 50 °C	Circuit symbol	For use with
AC-1			Open		
40 °C	55 °C	70 °C			
			$I_{th} = I_e$		
A	A	A	A		
22	21	20	20		DILM32-XHI(C)… DILA-XHI(V)(C)…

Notes

[1] DILM1000-XHI…can only be fitted on the left of DILMP.

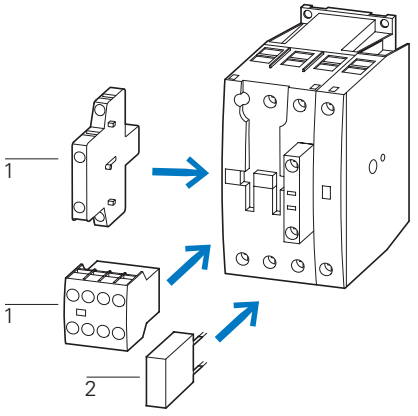
Contacts to EN 50012.
For DC operated contactors DILMP20 the following applies:
- Integrated varistor suppressor circuit.

For DC operated contactors DILMP32 - DILMP200 the following applies:
- Integrated suppressor circuit in actuating electronics.

For AC operated contactors DILMP125 - DILMP200 the following applies:
- Integrated suppressor circuit in actuating electronics.

For DILMP32-01 and DILMP45-01 the following applies:
- With mirror contact.

AC operation			DC operation			
Part no. Article no.	**Price** See price list	Std. pack	**Part no.** Article no.	**Price** See price list	Std. pack	**Notes**
DILMP20(230V50Hz,240V60Hz) 276970		1 off	**DILMP20(24VDC)** 276985		1 off	



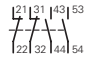
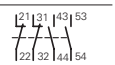
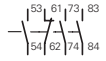
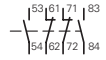
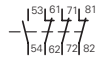
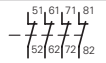
Accessories	Page
1 Auxiliary contact module	→ 47
2 Suppressor	→ 61
Further actuating voltages	→ 85
Accessories	→ 63

Information relevant for export to North America

Product Standards	IEC/EN 60947-4-1; UL 508; CSA-C22.2 No.14-05; CE marking
UL File No.	E29096
UL CCN	NLDX
CSA File No.	012528
CSA Class No.	2411-03, 3211-04
NA Certification	UL Listed, CSA certified
See also	→ Page 92

DILM, DILA
Auxiliary contact modules

With interlocked opposing contacts, except ...XHI(C)V

	Terminal type	Pole	Conventional thermal current $I_{th} = I_e$ AC-1 at 60 °C Open $I_{th} = I_e$ A	Contact configuration N/O = normally open contact S_F = N/O early-make NC = normally closed contact $Ö_S$ = NC late-break		Circuit symbol	For use with	Part no.	Price See price list	Std. pack
Top mounting auxiliary contacts 	Screw terminals	2 pole	16	1 N/O	1 NC		DILM(C)7-10… DILM(C)9-10… DILM(C)12-10… DILM(C)15-10… DILM(C)17-10… DILM(C)25-10… DILM(C)32-10… DILM38-…10 DILMP20… DILMP32-10… DILMP45-10… DILL…	**DILM32-XHI11** 277376		5 off
		2 pole	16	–	1 NC			**DILM32-XHI02** 277375		5 off
Top mounting auxiliary contacts 	Screw terminals	4 pole	16	2 N/O	2 NC			**DILM32-XHI22** 277377		5 off
		4 pole	16	3 N/O	1 NC			**DILM32-XHI31** 106112		5 off
Top mounting auxiliary contacts 	Spring-loaded terminals	2 pole	16	1 N/O	1 NC			**DILM32-XHIC11** 277751		5 off
		2 pole	16	–	2 NC			**DILM32-XHIC02** 277750		5 off
Top mounting auxiliary contacts 	Spring-loaded terminals	4 pole	16	2 N/O	2 NC			**DILM32-XHIC22** 277752		5 off
Top mounting auxiliary contacts 	Screw terminals	2 pole	16	1 N/O	–		DILM(C)9… DILM(C)9… DILM(C)12… DILM(C)15… DILM(C)17… DILM(C)25… DILM(C)32… DILM38… DILMP20… DILMP32… DILMP45… DILL…	**DILA-XHI20** 276422		5 off
		2 pole	16	1 N/O	1 NC			**DILA-XHI11** 276421		5 off
		2 pole	16	–	2 NC			**DILA-XHI02** 276420		5 off
		2 pole	16	1 S_F	1 $Ö_S$			**DILA-XHIV11** 276423		5 off
Top mounting auxiliary contacts 	Screw terminals	4 pole	16	4 N/O	–			**DILA-XHI40** 276428		5 off
		4 pole	16	3 N/O	1 NC			**DILA-XHI31** 276427		5 off
		4 pole	16	2 N/O	2 NC			**DILA-XHI22** 276426		5 off
		4 pole	16	1 N/O	3 NC			**DILA-XHI13** 276425		5 off
		4 pole	16	–	4 NC			**DILA-XHI04** 276424		5 off
		4 pole	16	1 N/O 1 S_F	1 NC 1 $Ö_S$			**DILA-XHIV22** 276429		5 off

Notes

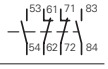
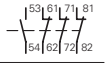
- Auxiliary NC usable as mirror contact according to IEC/EN 60947-4-1, Annex F
- Interlocked opposing contacts according to IEC/EN 60947-5-1 Annex L, inside the auxiliary contact modules, also for the integrated auxiliary contacts of the DILM 7 - DILM32

Information relevant for export to North America

Product Standards	IEC/EN 60947-4-1; UL 508; CSA-C22.2 No.14-05; CE marking
UL File No.	E29184
UL CCN	NKCR
CSA File No.	012528
CSA Class No.	3211-03
NA Certification	UL Listed, CSA certified

DILM, DILA
Auxiliary contact modules

With interlocked opposing contacts, except ...XHI(C)V

	Terminal type	Pole	Conventional thermal current $I_{th} = I_e$ AC-1 at 60 °C Open $I_{th} = I_e$ A	Contact configuration N/O = normally open contact S_F = N/O early-make NC = normally closed contact $Ö_S$ = NC late-break		Circuit symbol	For use with	**Part no.**	**Price** See price list	Std. pack
Top mounting auxiliary contacts 	Spring-loaded terminals	2 pole	16	2 N/O	–		DILM(C)7… DILM(C)9… DILM(C)12… DILM(C)15… DILM(C)17… DILM(C)25… DILM(C)32… DILM38… DILMP20… DILMP32… DILMP45… DILL…	**DILA-XHIC20** 276528		5 off
		2 pole	16	1 N/O	1 NC			**DILA-XHIC11** 276527		5 off
		2 pole	16	–	2 NC			**DILA-XHIC02** 276526		5 off
		2 pole	16	1 S_F	1 $Ö_S$			**DILA-XHICV11** 276529		5 off
Top mounting auxiliary contacts 	Screw terminals	2 pole	16	2 N/O	2 NC			**DILA-XHIR22**[1] 139580		5 off
		2 pole	16	1 N/O	1 NC			**DILA-XHIR11** 110140		5 off
Top mounting auxiliary contacts 	Spring-loaded terminals	4 pole	16	4 N/O	–		DILM(C)9… DILM(C)9… DILM(C)12… DILM(C)15… DILM(C)17… DILM(C)25… DILM(C)32…	**DILA-XHIC40** 276534		5 off
		4 pole	16	3 N/O	1 NC			**DILA-XHIC31** 276533		5 off
		4 pole	16	2 N/O	2 NC			**DILA-XHIC22** 276532		5 off
		4 pole	16	1 N/O	3 NC			**DILA-XHIC13** 276531		5 off
		4 pole	16	–	4 NC			**DILA-XHIC04** 276530		5 off
		4 pole	16	1 N/O 1 S_F	1 NC 1 $Ö_S$			**DILA-XHICV22** 276535		5 off

Notes

- Auxiliary NC usable as mirror contact according to IEC/EN 60947-4-1, Annex F
- Interlocked opposing contacts according to IEC/EN 60947-5-1 Annex L, inside the auxiliary contact modules, also for the integrated auxiliary contacts of the DILM 7 - DILM32

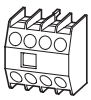
[1] 1 N/C + 1 N/O above microswitch for electronic applications

Information relevant for export to North America

Product Standards	IEC/EN 60947-4-1; UL 508; CSA-C22.2 No.14-05; CE marking
UL File No.	E29184
UL CCN	NKCR
CSA File No.	012528
CSA Class No.	3211-03
NA Certification	UL Listed, CSA certified
[1] NA Certification	Request filed for UL and CSA

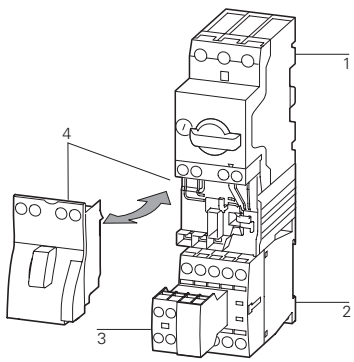
1

DILM
Auxiliary contact modules
With interlocked opposing contacts

	Connection type	Pole	conventional thermal current $I_{th} = I_e$ AC-1 at 60 °C Open $I_{th} = I_e$ A	Contact configuration N/O = normally open contact SF = N/O early make NC = normally closed contact ÖS = NC late-break		Circuit symbol	For use with	**Part no.** Article no.	**Price** See price list	Std. pack	**Notes**
Top mounting auxiliary contacts 	Screw terminals	2 pole	16	2 N/O	–		DILM40… DILM50… DILM65… DILM72… DILM80… DILM95… DILM115… DILM150… DILM170… DILMP63… DILMP80… DILMP125… DILMP160… DILMP200…	**DILM150-XHI20** 277945		5 off	Interlocked opposing contacts according to IEC/EN 60947-5-1 Annex L, inside the auxiliary contact modules Auxiliary NC usable as mirror contact according to IEC/EN 60947-4-1, Annex F
		2 pole	16	1 N/O	1 NC			**DILM150-XHI11** 277946		5 off	
		2 pole	16	1 N/O	1 NC			**DILM150-XHIA11** 283463		5 off	
		2 pole	16	–	2 NC			**DILM150-XHI02** 277947		5 off	
Top mounting auxiliary contacts 	Screw terminals	4 pole	16	4 N/O	–			**DILM150-XHI40** 277948		5 off	
		4 pole	16	3 N/O	1 NC			**DILM150-XHI31** 277949		5 off	
		4 pole	16	2 N/O	2 NC			**DILM150-XHI22** 277950		5 off	
		4 pole	16	2 N/O	2 NC			**DILM150-XHIA22** 283464		5 off	
		4 pole	16	1 N/O	3 NC			**DILM150-XHI13** 277951		5 off	
		4 pole	16	–	4 NC			**DILM150-XHI04** 277952		5 off	
		4 pole	16	1 N/O 1 S_F	1 NC 1 $Ö_S$			**DILM150-XHIV22** 277953		5 off	–
High version[1] 	Screw terminals	2 pole	16	2 N/O	–		DILM7… DILM9… DILM12… DILM15… DILL…	**DILA-XHIT20** 101042		5 off	Interlocked opposing contacts according to IEC/EN 60947-5-1 Annex L, inside the auxiliary contact modules Auxiliary NC usable as mirror contact according to IEC/EN 60947-4-1, Annex F
		2 pole	16	1 N/O	1 NC			**DILA-XHIT11** 101043		5 off	
		2 pole	16	–	2 NC			**DILA-XHIT02** 101041		5 off	
High version[1] 	Screw terminals	4 pole	16	2 N/O	2 NC			**DILA-XHIT22** 101044		5 off	

Notes

[1] Suitable for the combination with electrical wiringlinks in tool-less plug connection usable with:
DILM12-XSL
DILM12-XRL
DILM12-XS1
PKZM0-XDM12
PKZM0-XRM12
PKZM0-XSM12

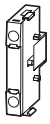
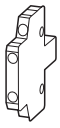
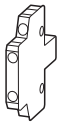
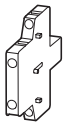


1 PKZM0
2 DILM7 - DILM15
3 DILA-XHIT
4 PKZM0-XDM12

Information relevant for export to North America

Product Standards	IEC/EN 60947-4-1; UL 508; CSA-C22.2 No.14-05; CE marking
UL File No.	E29184
UL CCN	NKCR
CSA File No.	012528
CSA Class No.	3211-03
NA Certification	UL Listed, CSA certified

DILM, DILA

Connection type	Pole	conventional thermal current $I_{th} = I_e$ AC-1 at 60 °C Open $I_{th} = I_e$ A	Contact configuration N/O = normally open contact SF = N/O early make NC = normally closed contact ÖS = NC late-break		Circuit symbol	For use with	**Part no.** Article no.	**Price** See price list	Std. pack	**Notes**
Side-mounting auxiliary contacts 	Screw terminals	1 pole	10	1 N/O	–		DILM(C)7… DILM(C)9… DILM(C)12… DILM(C)15… DILMP20… DILA(C)…	**DILA-XHI10-S** 115948		1 off	1)
		1 pole	10	–	1 NC			**DILA-XHI01-S** 115949		1 off	
	Spring-loaded terminals	1 pole	10	1 N/O	–			**DILA-XHIC10-S** 115950		1 off	
		1 pole	10	–	1 NC			**DILA-XHIC01-S** 115951		1 off	
Side-mounting auxiliary contacts 	Screw terminals	2 pole	10	1 N/O	1 NC		DILM17… DILM25… DILM32… DILM38…	**DILM32-XHI11-S** 101371		1 off	Can only be left on the contactor. Cannot be combined with mechanical interlock
Side-mounting auxiliary contacts 	Screw terminals	2 pole	10	1 N/O	1 NC		DILM250 - DILH2600	**DILM820-XHI11-SI** 208281		1 off	1)
		2 pole	10	1 N/O	1 NC			**DILM820-XHI11-SA** 208282		1 off	
		2 pole	10	1 S_F	1 $Ö_S$			**DILM820-XHI11V-SI** 208283		1 off	
Side-mounting auxiliary contacts 	Screw terminals	2 pole	10	1 N/O	1 NC		DILM40 - DILM225A DILMP63 - DILMP200	**DILM1000-XHI11-SI** 278425		1 off	
		2 pole	10	1 S_F	1 $Ö_S$			**DILM1000-XHIV11-SI** 278426		1 off	
		2 pole	10	1 N/O	1 NC			**DILM1000-XHI11-SA** 278427		1 off	

Notes 1)

- Interlocked opposing contacts according to IEC/EN 60947-5-1 Annex L, inside the auxiliary contact module, also for the integrated auxiliary contacts of the DILM7 – DILM32 (not NO early-make and NC late-break)
- Auxiliary NC usable as mirror contact according to IEC/EN 60947-4-1, Annex F (no NC late-breaks)
- No auxiliary contact is possible between 2 contactors with mechanical interlock.

Information relevant for export to North America

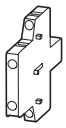
2)

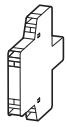
Product Standards	IEC/EN 60947-4-1; UL 508; CSA-C22.2 No.14-05; CE marking
UL File No.	E29184
UL CCN	NKCR
CSA File No.	012528
CSA Class No.	3211-03,3211-04
NA Certification	UL Listed, CSA certified

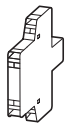
1

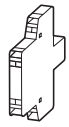
Engineering

DILM, DILH


DILM1000-XHI(V)11-SI


DILM820-XHI(V)11-SI


DILM1000-XHI(V)11-SA


DILM820-XHI(V)11-SA


DILM150-XHI20
DILM150-XHI11
DILM150-XHI02

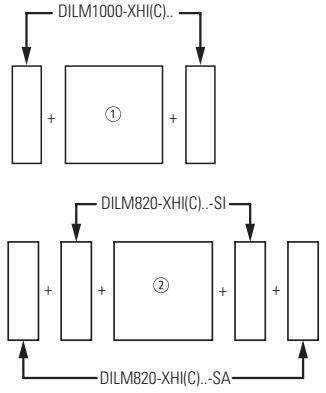

DILM150-XHI40
DILM150-XHI31
DILM150-XHI(V)22
DILM150-XHI13
DILM150-XHI04

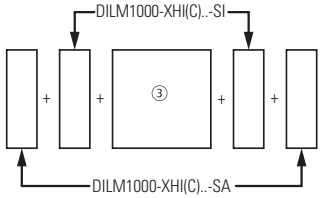

DILM150-XHIA11


DILM150-XHIA22

DILM40 ... DILM72	2 x	–	–	–	–	–	1 x	–
	–	–	2 x	–	1 x	–	–	–
	1 x	–	–	–	–	–	–	1 x
	–	–	1 x	–	–	1 x	–	–
DILM80 ... DILM170	2 x	–	2 x	–	–	–	–	–
	2 x	–	–	–	–	–	–	1 x
	2 x	–	–	–	–	–	1 x	–
	–	–	2 x	–	–	1 x	–	–
	–	–	2 x	–	1 x	–	–	–
DILM185A	2 x	–	2 x	–	–	–	–	–
DILM222A	2 x	–	–	–	–	–	–	–
DILM250 DILM1600	–	2 x	–	2 x	–	–	–	–
DILH1400 ... DILH2600	–	2 x	–	2 x	–	–	–	–

Notes **Side mounting auxiliary contacts**



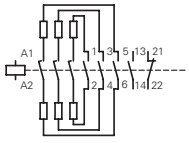
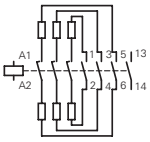


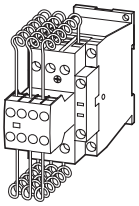
① DILM40 – DILM72
② DILM250 – DILH2600
③ DILM80-DILM225A

- Interlocked opposing contacts according to IEC/EN 60947-5-1 Annex L, inside the auxiliary contact module (not N/O early close and N/C late open)
- Auxiliary contacts can be used as mirror contacts according to IEC/EN 60947-4-1, Annex F (not N/C late open)
- No auxiliary contact is possible between two contactors with mechanical interlock.
- 2 auxiliary contacts DILM820-XHI11-SI are already built into the contactors DILM250 to DILH2600/22.
- 2 DILM1000-XHI11-SI auxiliary contacts are already installed in DILM185A and DILH225A contactors.

Ordering

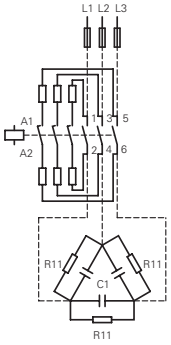
DILK

Three-phase capacitors 50 – 60 Hz Open 230 V	400 V	525 V	690 V	Circuit symbol	Part no. Article no.	Price See price list	Std. pack
kvar	kvar	kvar	kvar				
With series resistors Basic Units							
7.5	12.5	16.7	20		**DILK12-11(230V50Hz,240V60Hz)** 293988	1 off	
11	20	25	33.3		**DILK20-11(230V50Hz,240V60Hz)** 294010	1 off	
15	25	33.3	40		**DILK25-11(230V50Hz,240V60Hz)** 294032	1 off	
20	33.3	40	55		**DILK33-10(230V50Hz,240V60Hz)** 294054	1 off	
25	50	65	85		**DILK50-10(230V50Hz,240V60Hz)** 294076	1 off	



Notes

Weld-resistant for capacitors with inrush current peaks up to 180 x I_N
With group compensation multi-stage capacitor banks are connected to the mains as required. This can cause, transient currents of up to 180 x I_e to flow between the capacitors.
The capacitors are pre-charged via the early-make auxiliary contacts and the fitted wire resistors, thereby reducing the inrush current. The main contacts then close after a time lag and carry the continuous current.
The contactors for capacitors are weld-resistant with inrush current peaks up to 180 x I_e due to their special contacts.
DILK… cannot be combined with other auxiliary contacts.
For the switching of reactive-power compensation equipment please see Engineering notes on power factor correction → page 44.



Accessories	Page
Enclosures	totally insulated
Accessories	→ 63
Further actuating voltages	→ 87

Information relevant for export to North America

Product Standards	IEC/EN 60947-4-1; UL 508; CSA-C22.2 No.14-05; CE marking
UL File No.	E29096
UL CCN	NLDX
CSA File No.	012528
CSA Class No.	3211-04
NA Certification	UL Listed, CSA certified
See also	Further approvals → Page 77

1

Engineering

DILM, DILK

	Ordering data	Switching power 230 V	400 V 420 V 440 V	525 V	690 V
Part no.	Page	kvar	kvar	kvar	kvar
		Individual compensation, open version			
DILM7-…(…)	→29	1.5	3	3.5	5
DILM9-…(…)	→29	2	4	4.5	6
DILM12-…(…)	→29	2.5	4.5	5.5	7
DILM15-…(…)	→29	2.5	4.5	5.5	7
DILM17-…(…)	→29	6.5	12	14.5	19
DILM25-…(…)	→29	7	13.5	16	21
DILM32-…(…)	→29	7.5	14.5	17	22.5
DILM40(…)	→31	11	20.5	24.5	32
DILM50(…)	→31	11.5	22	26	34.5
DILM65(…)	→31	12.5	23.5	28	37
DILM80(…)	→31	16	30.5	36.5	48
DILM95(…)	→31	18	34	41	54
DILM115(…)	→31	24	46	54.5	72
DILM150(…)	→31	28	53	63.5	83.5
DILM185A(…)	→41	87	150	190	150
DILM300A(…)	→41	115	200	265	200
DILM580(…)	→41	175	300	400	300
		Group compensation, with choke, open version			
DILM7-…(…)	→29	4	7	7.5	12
DILM9-…(…)	→29	5	8	10	14
DILM12-…(…)	→29	5.5	10	12	16
DILM15-…(…)	→29	5.5	10	12	16
DILM17-…(…)	→29	7.5	18	20	28
DILM25-…(…)	→29	10	20	23	30
DILM32-…(…)	→29	12.5	25	25	32
DILM40(…)	→29	15	30	30	40
DILM50(…)	→29	20	40	40	48
DILM65(…)	→31	25	50	50	57
DILM80(…)	→31	30	60	70	90
DILM95(…)	→31	35	70	80	104
DILM115(…)	→31	50	95	100	125
DILM150(…)	→31	55	115	115	152
DILM185A(…)	→41	80	150	200	260
DILM225A(…)	→41	100	175	230	300
DILM250(…)	→41	110	190	260	340
DILM300A(…)	→41	130	225	290	390
DILM400(…)	→41	160	280	370	480
DILM500(…)	→41	220	390	500	680
		Group compensation, without choke, open version			
DILK12-…(…)	→52	7.5	12.5	16.7	20
DILK20-…(…)	→52	11	20	25	33.3
DILK25-…(…)	→52	15	25	33.3	40
DILK33-…(…)	→52	20	33.3	40	55
DILK50-…(…)	→52	25	50	65	85
DILM185A(…)	→52	66	115	145	115
DILM300A(…)	→52	85	150	195	150
DILM580(…)	→52	145	250	333	250

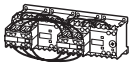
Notes

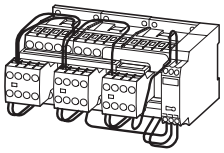
Use of the contactors DILM without series resistor for group compensation
When using the contactors for group compensation in a system without chokes each capacitor must have a minimum induction of approx. 6µH to limit the peak inrush current. This corresponds to an air-cored coil with 5 windings and a coil diameter of approximately ∅140 mm. The conductor cross section must correspond to the rated operational current.

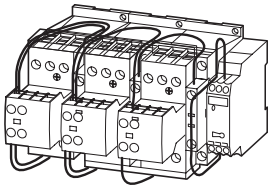
Ordering

Star-delta combinations SDAINL

Operating frequency: maximum 30 starts per hour







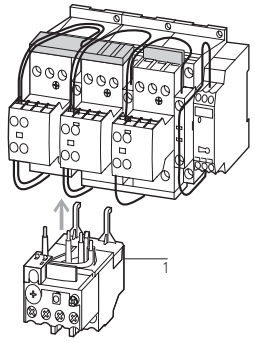
Rated operational current AC-3 400 V I_e A	Max. rated operational power for three-phase motors, 50 - 60 Hz AC-3 230 V P kW	400 V P kW	500 V P kW	690 V P kW	Max. change-over time s	**Part no.** Article no.	**Price** See price list	Std. pack
12	4	5.5	5.5	–	< 30	**SDAINLEM(230V50Hz)** 051840		1 off
12	3	5.5	5.5	5.5	< 20	**SDAINLM12(230V50Hz)** 278286		1 off
12	3	5.5	5.5	5.5	< 20	**SDAINLM12(400V50Hz)** 101380		1 off
12	3	5.5	5.5	5.5	< 20	**SDAINLM12(24VDC)** 100416		1 off
16	4	7.5	7.5	7.5	< 20	**SDAINLM16(230V50Hz)** 278311		1 off
16	4	7.5	7.5	7.5	< 20	**SDAINLM16(400V50Hz)** 101381		1 off
16	4	7.5	7.5	7.5	< 20	**SDAINLM16(24VDC)** 100417		1 off
22	5.5	11	11	11	< 20	**SDAINLM22(230V50Hz)** 278336		1 off
22	5.5	11	11	11	< 20	**SDAINLM22(400V50Hz)** 101382		1 off
22	5.5	11	11	11	< 20	**SDAINLM22(24VDC)** 100418		1 off
30	7.5	15	18.5	18.5	< 20	**SDAINLM30(230V50Hz)** 278361		1 off
30	7.5	15	18.5	18.5	< 20	**SDAINLM30(400V50Hz)** 101383		1 off
30	7.5	15	18.5	18.5	< 20	**SDAINLM30(RDC24)** 100419		1 off
45	11	22	30	22	< 20	**SDAINLM45(230V50Hz)** 278386		1 off
45	11	22	30	22	< 20	**SDAINLM45(400V50Hz)** 101384		1 off
45	11	22	30	22	< 20	**SDAINLM45(RDC24)** 100420		1 off
55	15	30	37	30	< 20	**SDAINLM55(230V50Hz)** 278411		1 off
55	15	30	37	30	< 20	**SDAINLM55(400V50Hz)** 101385		1 off
55	15	30	37	30	< 20	**SDAINLM55(RDC24)** 100421		1 off
70	18.5	37	45	37	< 20	**SDAINLM70(230V50Hz)** 239895		1 off
70	18.5	37	45	37	< 20	**SDAINLM70(400V50Hz)** 101386		1 off
90	22	45	55	45	< 20	**SDAINLM90(230V50Hz)** 239937		1 off
115	30	55	75	55	< 20	**SDAINLM115(230V50Hz)** 239963		1 off
140	37	75	90	90	< 20	**SDAINLM140(230V50Hz)** 240009		1 off
165	45	90	110	132	< 20	**SDAINLM165(230V50Hz)** 240035		1 off
200	55	110	132	160	< 20	**SDAINLM200(230V50Hz)** 101010		1 off
260	75	132	160	160	< 20	**SDAINLM260(230V50Hz)** 101031		1 off

Individual components of the combination				Spare auxiliary contacts			Notes
Mains contactor Q11	Delta contactor Q15	Star contactor Q13	Timing relays K1	Q11	Q13	Q15	
Part no.	Part no.	Part no.	Part no.				
DILEM-10 + 22DILEM	DILEM-01	DILEM-10 + 02DILEM	DILET	21 31 53 / 22 32 54	–	–	
DILM7-10 + DILA-XHI20	DILM7-01 + DILA-XHI20	DILM7-01 + DILA-XHI20	ETR4-51	63 / 64	63 / 64	63 / 64	
DILM7-10 + DILA-XHI20	DILM7-01 + DILA-XHI20	DILM7-01 + DILA-XHI20	ETR4-51	63 / 64	63 / 64	63 / 64	
DILM7-10 + DILA-XHI20	DILM7-01 + DILA-XHI20	DILM7-01 + DILA-XHI20	ETR4-51	63 / 64	63 / 64	63 / 64	
DILM9-10 + DILA-XHI20	DILM9-01 + DILA-XHI20	DILM7-01 + DILA-XHI20	ETR4-51	63 / 64	63 / 64	63 / 64	
DILM9-10 + DILA-XHI20	DILM9-01 + DILA-XHI20	DILM7-01 + DILA-XHI20	ETR4-51	63 / 64	63 / 64	63 / 64	
DILM9-10 + DILA-XHI20	DILM9-01 + DILA-XHI20	DILM7-01 + DILA-XHI20	ETR4-51	63 / 64	63 / 64	63 / 64	
DILM12-10 + DILA-XHI20	DILM12-01 + DILA-XHI20	DILM7-01 + DILA-XHI20	ETR4-51	63 / 64	63 / 64	63 / 64	
DILM12-10 + DILA-XHI20	DILM12-01 + DILA-XHI20	DILM7-01 + DILA-XHI20	ETR4-51	63 / 64	63 / 64	63 / 64	
DILM12-10 + DILA-XHI20	DILM12-01 + DILA-XHI20	DILM7-01 + DILA-XHI20	ETR4-51	63 / 64	63 / 64	63 / 64	
DILM17-10 + DILA-XHI20	DILM17-01 + DILA-XHI20	DILM17-01 + DILA-XHI20	ETR4-51	63 / 64	63 / 64	63 / 64	
DILM17-10 + DILA-XHI20	DILM17-01 + DILA-XHI20	DILM17-01 + DILA-XHI20	ETR4-51	63 / 64	63 / 64	63 / 64	
DILM17-10 + DILA-XHI20	DILM17-01 + DILA-XHI20	DILM17-01 + DILA-XHI20	ETR4-51	63 / 64	63 / 64	63 / 64	
DILM25-10 + DILA-XHI20	DILM25-01 + DILA-XHI20	DILM17-01 + DILA-XHI20	ETR4-51	63 / 64	63 / 64	63 / 64	
DILM25-10 + DILA-XHI20	DILM25-01 + DILA-XHI20	DILM17-01 + DILA-XHI20	ETR4-51	63 / 64	63 / 64	63 / 64	
DILM25-10 + DILA-XHI20	DILM25-01 + DILA-XHI20	DILM17-01 + DILA-XHI20	ETR4-51	63 / 64	63 / 64	63 / 64	
DILM32-10 + DILA-XHI20	DILM32-01 + DILA-XHI20	DILM25-01 + DILA-XHI20	ETR4-51	63 / 64	63 / 64	63 / 64	
DILM32-10 + DILA-XHI20	DILM32-01 + DILA-XHI20	DILM25-01 + DILA-XHI20	ETR4-51	63 / 64	63 / 64	63 / 64	
DILM32-10 + DILA-XHI20	DILM32-01 + DILA-XHI20	DILM25-01 + DILA-XHI20	ETR4-51	63 / 64	63 / 64	63 / 64	
DILM40 + DILM150-XHI31	DILM40 + DILM150-XHI11	DILM40 + DILM150-XHI11	ETR4-51	21 33 / 22 34	–	–	
DILM40 + DILM150-XHI31	DILM40 + DILM150-XHI11	DILM40 + DILM150-XHI11	ETR4-51	21 33 / 22 34	–	–	
DILM50 + DILM150-XHI31	DILM50 + DILM150-XHI11	DILM40 + DILM150-XHI11	ETR4-51	21 33 / 22 34	–	–	
DILM65 + DILM150-XHI31	DILM65 + DILM150-XHI11	DILM40 + DILM150-XHI11	ETR4-51	21 33 / 22 34	–	–	
DILM80 + DILM150-XHI31	DILM80 + DILM150-XHI11	DILM50 + DILM150-XHI11	ETR4-51	21 33 / 22 34	–	–	
DILM95 + DILM150-XHI31	DILM95 + DILM150-XHI11	DILM65 + DILM150-XHI11	ETR4-51	21 33 / 22 34	–	–	
DILM115 + DILM150-XHI31	DILM115 + DILM150-XHI11	DILM80 + DILM150-XHI11	ETR4-51	21 33 / 22 34	–	–	
DILM150 + DILM150-XHI31	DILM150 + DILM150-XHI11	DILM95 + DILM150-XHI11	ETR4-51	21 33 / 22 34	–	–	

Main circuit:
Depending on the type of coordination required (i.e. Type "1" or Type "2") it must be established whether the fuse protection and the input wiring for the mains contactor and delta contactor are to be common or separate.

The following applies for SDAINLM 140 – SDAINLM 260:
- On the mounting plate.

Circuit diagrams, Star-delta combinations → page 57

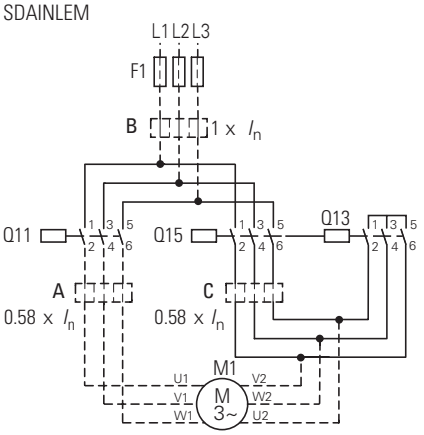


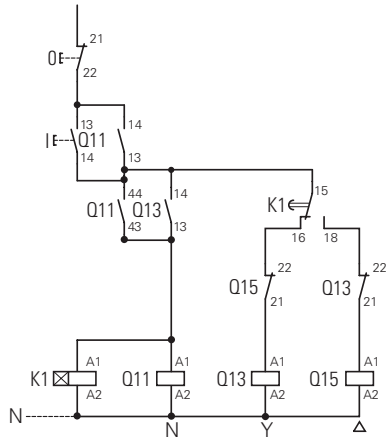
Accessories	Page
1 Overload relay	→ Overload relay Catalog Chapter 2
Accessories	→ 63

1 **Engineering**

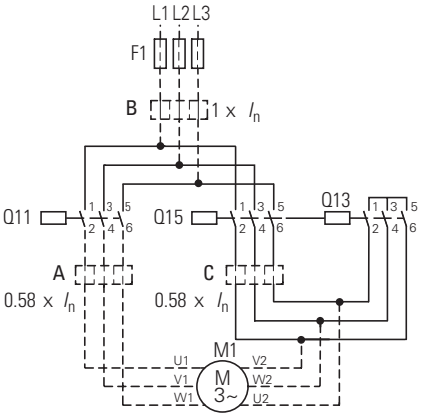
SDAINL
Circuit diagrams, Star-delta combinations

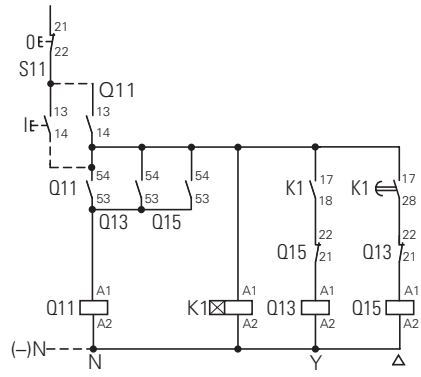
SDAINLEM



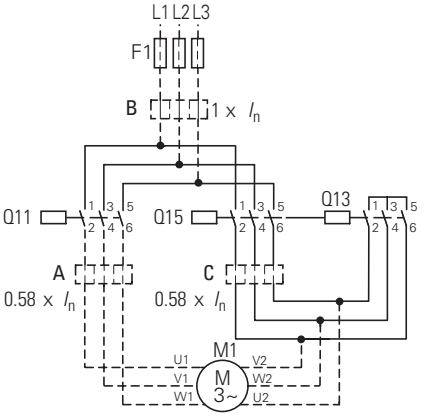


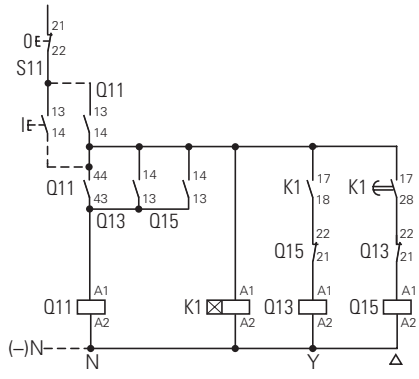
SDAINLM12…SDAINLM55





SDAINLM70…SDAINLM260





Overload relay settings

A: I_N x 0.58
Motor protected in Y and △- positions

B: I_N x 1
Only partial motor protection in Y position

C: I_N x 0.58
Motor not protected in Y position

Timing relay set to approx. 10 s

Starting

F 15 s

15 – 40 s

> 40 s

Main circuit:

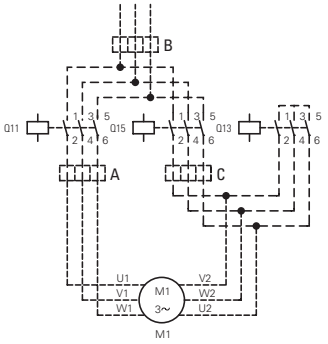
Depending on the type of coordination required (i.e. Type “1” or Type “2”) it must be established whether the fuse protection and the input wiring for the mains contactor and delta contactor are to be common or separate.

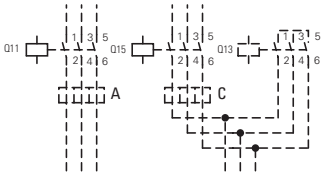
SDAINL
Components for self-assembly of star-delta combinations

Maximum operational rating of AC motors 50 - 60 Hz AC-3					Changeover time[1]			**Individual components of the combination** **Coil** to EN 50005 **Switching element** to EN 50005 and EN 50012				Spare auxiliary contacts		
230 V	400 V	500 V	690 V	1000 V				Mains contactor Q11	Delta contactor Q15	Star contactor Q13	Timing relay K1	Q11	Q15	Q13
kW	kW	kW	kW	kW	up to 12 s	up to 20 s	up to 30 s	Part no. DIL	Part no. DIL	Part no. DIL	Part no.			
90	160	200	250	132	●	●	●	M185A/22	M185A/22	M115/22	ETR4-51	21 31 / 22 32	31 43 / 32 44	31 43 / 32 44
110	200	250	315	160	●	●	–	M225A/22	M225A/22	M150/22	ETR4-51	21 31 / 22 32	31 43 / 32 44	31 43 / 32 44
132	250	315	400	200	●	●	●	M250/22	M250/22	M185A/22	ETR4-51	21 31 / 22 32	31 43 / 32 44	31 43 / 32 44
160	300	355	450	200	●	●	●	M300A/22	M300A/22	M185A/22	ETR4-51	21 31 / 22 32	31 43 / 32 44	31 43 / 32 44
200	355	450	560	220	●	●	–	M400/22	M400/22	M250/22	ETR4-51	21 31 / 22 32	31 43 / 32 44	31 43 / 32 44
250	450	560	600	220	●	●	●	M500/22	M500/22	M300A/22	ETR4-51	21 31 / 22 32	31 43 / 32 44	31 43 / 32 44
300	560	710	900	355	●	●	●	M580/22	M580/22	M400/22	ETR4-51	21 31 / 22 32	31 43 / 32 44	31 43 / 32 44
350	630	750	950	355	●	●	●	M650/22	M650/22	M400/22	ETR4-51	21 31 / 22 32	31 43 / 32 44	31 43 / 32 44
400	710	900	1200	1400	●	●	●	M750/22	M750/22	M580/22	ETR4-51	21 31 / 22 32	31 43 / 32 44	31 43 / 32 44
450	800	950	1300	1400	●	●	●	M820/22	M820/22	M580/22	ETR4-51	21 31 / 22 32	31 43 / 32 44	31 43 / 32 44
560	1000	1200	1700	1700	●	●	–	M1000/22	M1000/22	M650/22	ETR4-51	21 31 / 22 32	31 43 / 32 44	31 43 / 32 44

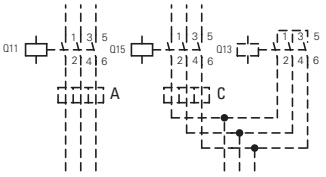
Notes [1] Longer changeover times please enquire

Components for self-assembly





Notes



Overload relay settings

I_N	Starting
A x 0.58 Motor protection in Y and △ positions	≦15 s
B x 1 In Y position only limited motor protection	15 – 40 s
C x 0.58 Motor not protected in Y position	> 40 s

Timing relay set to approx. 10 s

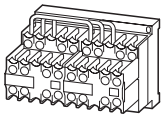
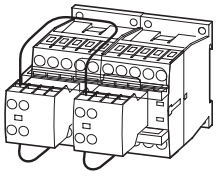
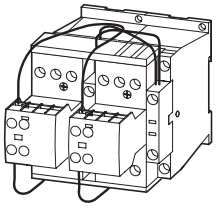
Main circuit:

Depending on the coordination type required (i.e. Type "1" or Type "2") it must be established whether the fuse protection and the input wiring for the mains contactor and delta contactor are to be common or separate.

Control circuit:
If the combinations are to be used within the scope of IEC/EN 60 204 Part 1, VDE 0113 Part 1, then Point 9.1.1 regarding the supply of control circuits, must be observed.

1 Ordering

DIUL reversing combinations

Rated operational current AC-3	Max. motor rating for three-phase motors 50 - 60 Hz AC-3			AC-4			Part no.	Price See price list	Std. pack
400 V	220 V 230 V	380 V 400 V	660 V 690 V	220 V 230 V	380 V 400 V	660 V 690 V			
I_e	P	P	P	P	P	P			
	kW	kW	kW	kW	kW	kW			
AC operation									
									
9	2.2	4	4	1.5	3	3	**DIULEM/21/MV(230V50Hz)** [1] 051849		1 Off
9	2.2	4	4	1.5	3	3	**DIULEM/21/MV-G(24VDC)** [2] 214655		1 Off
AC operation									
									
7	2.2	3	3.5	1	2.2	2.9	**DIULM7/21(230V50Hz)** [2] 278061		1 Off
7	2.2	3	3.5	1	2.2	2.9	**DIULM7/21(24VDC)** [2] 107021		1 Off
9	2.5	4	4.5	1.5	2.5	3.6	**DIULM9/21(230V50Hz)** [2] 278086		1 Off
9	2.5	4	4.5	1.5	2.5	3.6	**DIULM9/21(24VDC)** [2] 107022		1 Off
12	3.5	5.5	6.5	2	3	4.4	**DIULM12/21(230V50Hz)** [2] 278111		1 Off
12	3.5	5.5	6.5	2	3	4.4	**DIULM12/21(24VDC)** [2] 107023		1 Off
AC operation									
									
18	5	7.5	11	2.5	4.5	6.5	**DIULM17/21(230V50Hz)** [2] 278136		1 Off
18	5	7.5	11	2.5	4.5	6.5	**DIULM17/21(RDC24)** [2] 107024		1 Off
25	7.5	11	14	3.5	6	8.5	**DIULM25/21(230V50Hz)** [2] 278161		1 Off
25	7.5	11	14	3.5	6	8.5	**DIULM25/21(RDC24)** [2] 107025		1 Off
32	10	15	17	4	7	10	**DIULM32/21(230V50Hz)** [2] 278186		1 Off
32	10	15	17	4	7	10	**DIULM32/21(RDC24)** [2] 107026		1 Off
40	12.5	18.5	23	5	9	12	**DIULM40/11(230V50Hz)** [2] 278211		1 Off
50	15.5	22	30	6	10	14	**DIULM50/11(230V50Hz)** [2] 278236		1 Off
65	20	30	35	7	12	17	**DIULM65/11(230V50Hz)** [2] 278261		1 Off

Information relevant for export to North America

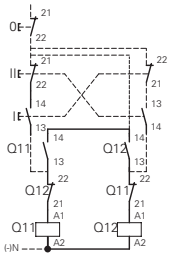
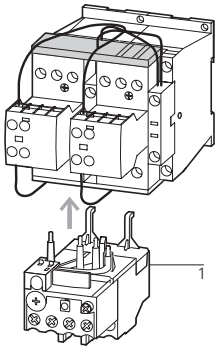
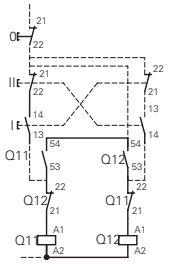
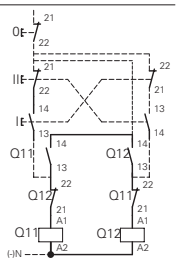
1)

Product Standards	IEC/EN 60947-4-1; UL 508; CSA-C22.2 No.14-05; CE marking
UL File No.	E29096
UL CCN	NLDX
CSA File No.	012528
CSA Class No.	3211-04
NA Certification	UL Listed, CSA certified

Information relevant for export to North America

2)

Product Standards	IEC/EN 60947-4-1; UL 508; CSA-C22.2 No.14-05; CE marking
UL File No.	E29096
UL CCN	NLDX
CSA File No.	012528
CSA Class No.	2411-03, 3211-04
NA Certification	UL Listed, CSA certified

Individual components of the combination		Spare auxiliary contacts			Circuit diagram	**Notes**
Contactor Q11	Contactor Q12	Q11	Q12	Mechanical interlock		
Part no.	Part no.					
DILEM-10 + 11DILEM	DILEM-10 + 11DILEM	33 34	33 34	+		
DILEM-10-G + 11DILEM	DILEM-10-G + 11DILEM	33 34	33 34	+		
DILM7-01 + DILA-XHI20	DILM7-01 + DILA-XHI20	63 64	63 64	+		
DILM7-01 + DILA-XHI20	DILM7-01 + DILA-XHI20	63 64	63 64	+		
DILM9-01 + DILA-XHI20	DILM9-01 + DILA-XHI20	63 64	63 64	+		
DILM9-01 + DILA-XHI20	DILM9-01 + DILA-XHI20	63 64	63 64	+		
DILM12-01 + DILA-XHI20	DILM12-01 + DILA-XHI20	63 64	63 64	+		
DILM12-01 + DILA-XHI20	DILM12-01 + DILA-XHI20	63 64	63 64	+		
DILM17-01 + DILA-XHI20	DILM17-01 + DILA-XHI20	63 64	63 64	+		
DILM17-01 + DILA-XHI20	DILM17-01 + DILA-XHI20	63 64	63 64	+		
DILM25-01 + DILA-XHI20	DILM25-01 + DILA-XHI20	63 64	63 64	+		
DILM25-01 + DILA-XHI20	DILM25-01 + DILA-XHI20	63 64	63 64	+		
DILM32-01 + DILA-XHI20	DILM32-01 + DILA-XHI20	63 64	63 64	+		
DILM32-01 + DILA-XHI20	DILM32-01 + DILA-XHI20	63 64	63 64	+		
DILM40 + DILM150-XHI11	DILM40 + DILM150-XHI11	–	–	+		
DILM50 + DILM150-XHI11	DILM50 + DILM150-XHI11	–	–	+		
DILM65 + DILM150-XHI11	DILM65 + DILM150-XHI11	–	–	+		

Accessories

1 Overload relay

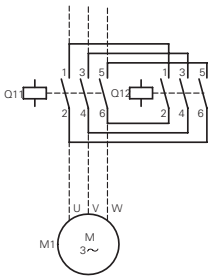
Accessories

Page

→ Overload relay Catalog Chapter 2

→ 63

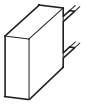
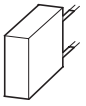
Reversing contactors



DIULM7/21 to DIULM65/11 with mechanical interlock

1 Ordering

DILM...-XSP...
Suppressor circuits

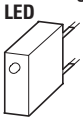
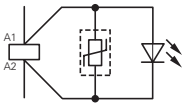
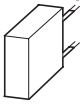
	Voltage U_s V	For use with	Circuit symbol	Part no. Article no.	Price See price list	Std. pack	Notes
RC suppressors 	24 - 48 AC	DILM7 - DILM15 DILMP20 DILA		**DILM12-XSPR48** 281199		10 Off	For AC operated contactors 50 - 60 Hz. DC operated contactors and DILM115 and DILM150 have an integrated suppressor. Note drop-out delay.
	110 - 240 AC			**DILM12-XSPR240** 281200		10 Off	
	240 - 500 AC			**DILM12-XSPR500** 281201		10 Off	
	24 - 48 AC	DILM17 - DILM32 DILK12 - DILK25 DILL... DILMP32 - DILMP45		**DILM32-XSPR48** 281202		10 Off	
	110 - 240 AC			**DILM32-XSPR240** 281203		10 Off	
	240 - 500 AC			**DILM32-XSPR500** 281204		10 Off	
	24 - 48 AC	DILM40 - DILM95 DILK33 - DILK50 DILMP63 - DILMP200		**DILM95-XSPR48** 281205		10 Off	
	110 - 240 AC			**DILM95-XSPR240** 281206		10 Off	
	240 - 500 AC			**DILM95-XSPR500** 281207		10 Off	
Varistor suppressors 	24 - 48 AC	DILM7 - DILM15 DILMP20 DILA		**DILM12-XSPV48** 281208		10 Off	For AC operated contactors 50 - 60 Hz. DC operated contactors and DILM115 and DILM150 have an integrated suppressor. Note drop-out delay.
	48 - 130 AC			**DILM12-XSPV130** 281209		10 Off	
	130 - 240 AC			**DILM12-XSPV240** 281210		10 Off	
	240 - 500 AC			**DILM12-XSPV500** 281211		10 Off	
	24 - 48 AC	DILM17 - DILM32 DILK12 - DILK25 DILL... DILMP32 - DILMP45		**DILM32-XSPV48** 281212		10 Off	
	48 - 130 AC			**DILM32-XSPV130** 281213		10 Off	
	130 - 240 AC			**DILM32-XSPV240** 281214		10 Off	
	240 - 500 AC			**DILM32-XSPV500** 281215		10 Off	
	24 - 48 AC	DILM40 - DILM95 DILK33 - DILK50 DILMP63 - DILMP200		**DILM95-XSPV48** 281216		10 Off	
	48 - 130 AC			**DILM95-XSPV130** 281217		10 Off	
	130 - 240 AC			**DILM95-XSPV240** 281218		10 Off	
	240 - 500 AC			**DILM95-XSPV500** 281219		10 Off	

Information relevant for export to North America

Product Standards	IEC/EN 60947-4-1; UL 508; CSA-C22.2 No.14-05; CE marking
UL File No.	E29096
UL CCN	NLDX
CSA File No.	227038
CSA Class No.	3211-07
NA Certification	UL Listed, CSA certified

Ordering

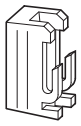
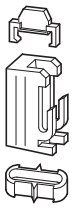
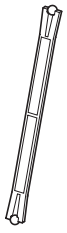
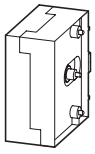
DILM...-XSP...
Suppressor circuits

	Voltage U_s V	For use with	Circuit symbol	Part no. Article no.	Price See price list	Std. pack	Notes
Varistor suppressors with integrated LED 	24 - 48 AC	DILM7 - DILM15 DILMP20 DILA		**DILM12-XSPVL48** 281220		10 Off	For AC operated contactors 50 - 60 Hz. DC operated contactors and DILM115 and DILM150 have an integrated suppressor. Note drop-out delay.
	130 - 240 AC			**DILM12-XSPVL240** 281221		10 Off	
	24 - 48 AC	DILM17 - DILM32 DILK12 - DILK25 DILL... DILMP32 - DILMP45		**DILM32-XSPVL48** 281222		10 Off	
	130 - 240 AC			**DILM32-XSPVL240** 281223		10 Off	
	24 - 48 AC	DILM40 - DILM95 DILK33 - DILK50 DILMP63 - DILMP200		**DILM95-XSPVL48** 281224		10 Off	
	130 - 240 AC			**DILM95-XSPVL240** 281225		10 Off	
Diode suppressor 	12 - 250 DC	DILM7 - DILM15 DILMP20 DILA		**DILM12-XSPD** 101672		10 Off	DC operated contactors. Prevention of negative switch-off voltage when the contactor is used together with a safety PLC.

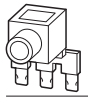
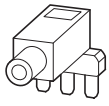
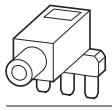
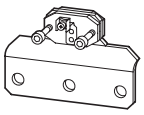
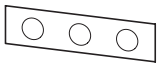
Information relevant for export to North America

Product Standards	IEC/EN 60947-4-1; UL 508; CSA-C22.2 No.14-05; CE marking
UL File No.	E29096
UL CCN	NLDX
CSA File No.	227038
CSA Class No.	3211-07
NA Certification	UL Listed, CSA certified

DILM...-XDILM..-XVB, DILM..-XMV

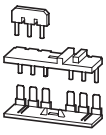
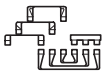
	For use with	Part no.	Price See price list	Std. pack	Notes	Information relevant for export to North America	
Mechanical interlocks							
For mechanically linking contactors in combinations 0 mm distance between contactors.							
	DILM7 - DILM72 DILA	**DILM32-XVB** 281227		50 Off	–	Product Standards UL File No. UL CCN CSA File No. CSA Class No. NA Certification	IEC/EN 60947-4-1; UL 508; CSA-C22.2 No.14-05; CE marking E36332 NLRV 012528 3211-05 UL Listed, CSA certified
	DILM80 - DILM170	**DILM150-XVB** 281226		10 Off	–	Product Standards UL File No. UL CCN CSA File No. CSA Class No. NA Certification	IEC/EN 60947-4-1; UL 508; CSA-C22.2 No.14-05; CE marking E29184 NKCR 012528 3211-03 UL Listed, CSA certified
Mechanical interlocks							
	DILM7 - DILM15 DILMP20 DILA	**DILM12-XMV** 281196		1 Off	For two contactors with AC or DC operation arranged vertically or horizontally. Distance between contactors 0 mm, including contactor connector Mechanical lifespan 2.5 x 10^6 operations. DILM 150-XMV including mounting plate for contactors. Additional auxiliary contact modules possible. →36	Product Standards UL File No. UL CCN CSA File No. CSA Class No. NA Certification	IEC/EN 60947-4-1; UL 508; CSA-C22.2 No.14-05; CE marking E29096 NLDX 012528 2411-03 UL Listed, CSA certified
	DILM17 - DILM38	**DILM32-XMV** 281197		1 Off			
	DILM40 - DILM72	**DILM65-XMV** 281198		1 Off		Product Standards UL File No. UL CCN CSA File No. CSA Class No. NA Certification	IEC/EN 60947-4-1; UL 508; CSA-C22.2 No.14-05; CE marking E29096 NLDX 012528 2411-03,3211-04 UL Listed, CSA certified
	DILM80 - DILM170	**DILM150-XMV** 240081		1 Off		Product Standards UL File No. UL CCN CSA File No. CSA Class No. NA Certification	IEC/EN 60947-4-1; UL 508; CSA-C22.2 No.14-05; CE marking E29096 NLDX 012528 2411-03 UL Listed, CSA certified
	DILM185A, DILM225A, DILM250, DILM300A, DILM400, DILM500, DILM570	**DILM500-XMV** 208289		1 Off	For contactors with the same or different magnet systems mounted horizontally or vertically, mechanical lifespan 5 x 10^6 operations. **No** auxiliary contact permitted between mechanical interlock and contactor. Combination only with consecutive installation sizes or DILM185A - DILM570.	Product Standards UL File No. UL CCN CSA File No. CSA Class No. NA Certification	IEC/EN 60947-4-1; UL 508; CSA-C22.2 No.14-05; CE marking E29184 NKCR 012528 3211-04 UL Listed, CSA certified
	DILM580, DILM650 DILM750, DILM820 DILM1000	**DILM820-XMV** 208288		1 Off	For contactors with the same or different magnet systems mounted horizontally or vertically, mechanical lifespan 5 x 10^6 operations. **No** auxiliary contact permitted between mechanical interlock and contactor. DILM820-XMV consists of interlock element and mounting plate.	Product Standards UL File No. UL CCN CSA File No. CSA Class No. NA Certification	IEC/EN 60947-4-1; UL 508; CSA-C22.2 No.14-05; CE marking E29184 NKCR 012528 3211-04 UL Listed, CSA certified
Set of spare parts for mechanical interlock							
Ball for mechanical interlock, incl. contactor connector.							
–	DILM80 - DILM170	**DILM150-XMVE** 107020		1 Off		UL/CSA certification not required	

DILM...-XP1, DILM...-XS1

	For use with	Circuit symbol	Part no.	Price See price list	Std. pack	Notes	Information relevant for export to North America	
Paralleling links for main contacts								
Consisting of 2 paralleling links								
	DILM7 - DILM15		**DILM12-XP1** 281193		5 Off	4th pole can be broken off AC-1 current carrying capacity of the open contactor increases by a factor of 2.5 Protected against accidental contact in accordance with VDE 0106 Part 100 A cover is included with DILM185-XP1 for protection against accidental contact. Connection cross section for DILM..-XP1 Technical data	Product Standards UL File No. UL CCN CSA File No. CSA Class No. NA Certification	IEC/EN 60947-4-1; UL 508; CSA-C22.2 No.14-05; CE marking E29096 NLDX 012528 3211-03 UL Listed, CSA certified
	DILM17 - DILM32		**DILM32-XP1** 281194		5 Off			
	DILM40 - DILM72		**DILM65-XP1** 281195		1 Off			
	DILM80 - DILM170		**DILM150-XP1** 284769		1 Off			
	DILM185A		**DILM185-XP1** 208292		1 Off		–	
Star-point bridges								
	DILM7 - DILM15		**DILM12-XS1** 281190		20 Off	• Designed as tool-less plug connection • Use as DILA-XHIT... contactor auxiliary contact → 49	Product Standards UL File No. UL CCN CSA File No. CSA Class No. NA Certification	IEC/EN 60947-4-1; UL 508; CSA-C22.2 No.14-05; CE marking E36332 NLRV 012528 3211-05 UL Listed, CSA certified
	DILM17 - DILM32		**DILM32-XS1** 281191		20 Off	• Use as DILA-XHIT... contactor auxiliary contact → 49	Product Standards UL File No. UL CCN CSA File No. CSA Class No. NA Certification	IEC/EN 60947-4-1; UL 508; CSA-C22.2 No.14-05; CE marking E36332 NLRV 012528 3211-04 UL Listed, CSA certified
	DILM40 - DILM72		**DILM65-XS1** 281192		10 Off	–		
	DILM80 - DILM170		**DILM150-XS1** 284768		5 Off	–	Product Standards UL File No. UL CCN CSA File No. CSA Class No. NA Certification	IEC/EN 60947-4-1; UL 508; CSA-C22.2 No.14-05; CE marking E36332 NLRV 012528 3211-03 UL Listed, CSA certified
	DILM185A - DILM400		**DILM400-XS1** 208291		1 Off	A cover is included for protection against accidental contact.	Product Standards UL File No. UL CCN CSA File No. CSA Class No. NA Certification	IEC/EN 60947-4-1; UL 508; CSA-C22.2 No.14-05; CE marking E36332 NLRV 012528 3211-03 UL Listed,
	DILM500		**DILM500-XS1** 208290		1 Off	A cover is included for protection against accidental contact.	Product Standards UL File No. UL CCN NA Certification	IEC/EN 60947-4-1; UL 508; CSA-C22.2 No.14-05; CE marking E29096 NLDX UL Listed

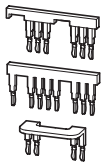
DILM...-XSL
Star-delta wiring kit

Main current wiring for star-delta combination Including star-point bridge

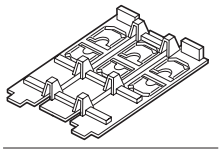
	For use with	Part no.	Price See price list	Std. pack	Notes	Information relevant for export to North America	
	DILM7/9/12/15 mains contactors DILM7/9/12/15 delta contactors DILM7/9/12/15 star contactors	**DILM12-XSL** 283130		1 Off	• Designed for tool-less plug connection • Use as DILA-XHIT... contactor auxiliary contact →49 The following control cables are integrated in addition to electrical interlock: • Q13: A1 - Q15: 21 • Q13: 21 - Q15: A1 • Q13: A2 - Q15: A2	Product Standards CSA File No. CSA Class No. NA Certification	IEC/EN 60947-4-1; UL 508; CSA-C22.2 No.14-05; CE marking 012528 3211-05 UL Listed, CSA certified
	DILM17/25/32 mains contactors DILM17/25/32 delta contactors DILM17/25/32 star contactors	**DILM32-XSL** 283131		1 Off	Consists of the following connection bridges: • Mains - delta contactors • Delta - star contactors • Star-point bridge	Product Standards UL File No. UL CCN CSA File No. CSA Class No. NA Certification	IEC/EN 60947-4-1; UL 508; CSA-C22.2 No.14-05; CE marking E36332 NLRV 012528 3211-04 UL Listed, CSA certified
	DILM40/50/65 mains contactors DILM40/50/65 delta contactors DILM40/50/65 star contactors	**DILM65-XSL** 101058		1 Off			
	DILM 80/95 mains contactors DILM80/95 delta contactors DILM50/65 star contactors	**DILM95-XSL** 101486		1 Off		–	
	DILM 115/150 mains contactors DILM115/150 delta contactors DILM80/95/115 star contactors	**DILM150-XSL** 101487		1 Off		Product Standards UL File No. UL CCN CSA File No. CSA Class No. NA Certification	IEC/EN 60947-4-1; UL 508; CSA-C22.2 No.14-05; CE marking E36332 NLRV 012528 2411-03,3211-04 UL Listed, CSA certified
	DILM 185/225 mains contactors DILM185/225 delta contactors DILM115/150 star contactors	**DILM225-XSL** 101488		1 Off		–	

DILM...-XRL, DILM...XIP2X
Reversing starter wiring kits

Main current wiring for reversing combinations

For use with	Part no.	Price See price list	Std. pack	Notes	Information relevant for export to North America	
						
DILM7 DILM9 DILM12	**DILM12-XRL** 283108		1 Off	• Designed for tool-less plug connection • As auxiliary contact DILA-XHIT...use → 49 The following control cables are integrated in addition to electrical interlock: • Q11: A1 - Q12: 21 • Q11: 21 - Q12: A1 • Q11: A2 - Q12: A2	Product Standards UL File No. UL CCN CSA File No. CSA Class No. NA Certification	IEC/EN 60947-4-1; UL 508; CSA-C22.2 No.14-05;CE marking E36332 NLRV 012528 3211-05 UL Listed, CSA certified
						
DILM17 DILM25 DILM32	**DILM32-XRL** 283109		1 Off	–	Product Standards	IEC/EN 60947-4-1; UL 508; CSA-C22.2 No.14-05; CE marking
DILM40 DILM50 DILM65	**DILM65-XRL** 101057		1 Off	–	UL File No. UL CCN CSA File No. CSA Class No. NA Certification	E36332 NLRV 012528 3211-04 UL Listed, CSA certified
						
DILM80 DILM95 DILM115 DILM150	**DILM150-XRL** 101681		1 Off	–	Product Standards UL File No. UL CCN CSA File No. CSA Class No. NA Certification	IEC/EN 60947-4-1; UL 508; CSA-C22.2 No.14-05; CE marking E36332 NLRV 012528 2411-03, 3211-04 UL Listed, CSA certified

DILM...-XRL, DILM...XIP2X
IP2X cover set

For use with	Part no.	Price See price list	Std. pack	Notes	Information relevant for export to North America
					
DILM17 DILM25 DILM32 DILM38 DILMP32 DILMP45	**DILM32-XIP2X** 118855		1 Off	Each cover set consists of two three-pole and two single-pole covers.	UL/CSA certification not required
					
DILM40 DILM50 DILM65 DILM72 DILMP63 DILMP80	**DILM65-XIP2X** 106491		8 Off	2 covers are required per phase The cover set consists of 8 covers	UL/CSA certification not required
					
DILM80 DILM95 DILM115 DILM150 DILM170 DILMP125 DILMP160 DILMP200 ZB150	**DILM150-XIP2X** 106492		8 Off		UL/CSA certification not required

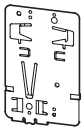
DILM12-XDSBS
Three-phase commoning links

Protected against accidental contact, short-circuit proof, Ue = 690 V, Iu = 35 ACan be extended by rotating by mounting

For use with	Part no.	Price See price list	Std. pack	Notes	Information relevant for export to North America	
DILM7 DILM9 DILM12 DILM15	**DILM12-XDSB0/3** 240084		5 Off	Suitable for 3 contactors. Length 112 mm	Product Standards UL File No. UL CCN CSA File No. CSA Class No. NA Certification	IEC/EN 60947-4-1; UL 508; CSA-C22.2 No.14-05; CE marking E36332 NLRV 012528 2411-03 UL Listed, CSA certified
DILM7 DILM9 DILM12 DILM15	**DILM12-XDSB0/4** 240085		5 Off	Suitable for 4 contactors. Length 157 mm		
DILM7 DILM9 DILM12 DILM15	**DILM12-XDSB0/5** 240086		5 Off	Suitable for 5 contactors. Length 202 mm		

DILM12-XDSBS
Incoming connection block

For use with	Part no.	Price See price list	Std. pack	Notes	Information relevant for export to North America	
DILM7 DILM9 DILM12 DILM15	**DILM12-XEK** 240083		5 Off	For three-phase commoning link, protected against accidental contact, U_e = 690 V, I_u = 35 A. Terminal capacities: Stranded 2.5…16 mm² Flexible with ferrule 2.5…16 mm² AWG14…8	Product Standards UL File No. UL CCN CSA File No. CSA Class No. NA Certification	IEC/EN 60947-4-1; UL 508; CSA-C22.2 No.14-05; CE marking E36332 NLRV 012528 2411-03 UL Listed, CSA certified

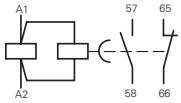
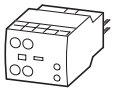
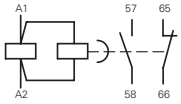
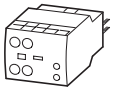
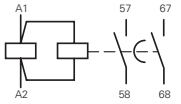


DILM12-XDSBS
Adapter plate

Enables clipping on of switches on to DIN rails

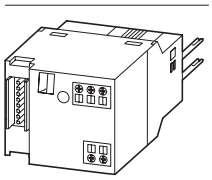
For use with	Part no.	Price See price list	Std. pack	Notes	Information relevant for export to North America	
DILM80 DILM95 DILM115 DILM150 DILM170	**NZM2-XC75** 260215		1 Off	For top-hat rail 75 mm	Product Standards UL File No. UL CCN CSA File No. CSA Class No. NA Certification	IEC/EN 60947-4-1; UL 489; CSA-C22.2 No.14-05; CE marking E140305 DIHS 022086 1437-01 UL Listed, CSA certified

DILM32-XTE
Electronic timer modules

		For use with	Circuit symbol	Part no. Article no.	Price See price list	Std. pack	Notes
On-delayed, Cannot be combined with top mounting auxiliary contacts Incl. suppressor circuits 	24 V AC/DC	DILM7 - DILM32 DILMP20 DILMP32-DILMP45 DILA		**DILM32-XTEE11(RA24)** 101440		1 Off	Time range can be selected 0.05 s...1 s 0.5 s...10 s 5 s...100 s
	100 … 130 V AC			**DILM32-XTEE11(RAC130)** 101441		1 Off	
	200 … 240 V AC			**DILM32-XTEE11(RAC240)** 101442		1 Off	
Off-delayed, auxiliary voltage-free Cannot be combined with top mounting auxiliary contactsIncl. suppressor circuits 	24 V AC/DC	DILM7 - DILM32 DILMP20 DILMP32-DILMP45 DILA		**DILM32-XTED11-1(RA24)** 105210		1 Off	Time range 0.05 s...1 s
	24 V AC/DC			**DILM32-XTED11-10(RA24)** 104943		1 Off	Time range 0.5 s...10 s
	24 V AC/DC			**DILM32-XTED11-100(RA24)** 104946		1 Off	Time range 5 s...100 s
	100 … 130 V AC			**DILM32-XTED11-1(RAC130)** 105211		1 Off	Time range 0.05 s...1 s
	100 … 130 V AC			**DILM32-XTED11-10(RAC130)** 104944		1 Off	Time range 0.5 s...10 s
	100 … 130 V AC			**DILM32-XTED11-100(RAC130)** 104947		1 Off	Time range 5 s...100 s
	200 … 240 V AC			**DILM32-XTED11-1(RAC240)** 105212		1 Off	Time range 0.05 s...1 s
	200 … 240 V AC			**DILM32-XTED11-10(RAC240)** 104945		1 Off	Time range 0.5 s...10 s
	200 … 240 V AC			**DILM32-XTED11-100(RAC240)** 104948		1 Off	Time range 5 s...100 s
For star-delta applications Cannot be combined with top mounting auxiliary contactsIncl. suppressor circuits 	24 V AC/DC	DILM7 - DILM32 DILMP20 DILMP32-DILMP45 DILA		**DILM32-XTEY20(RA24)** 101446		1 Off	Changeover time 1...30 s 50 ms changeover delay Sample circuit → Page 103
	100 … 130 V AC			**DILM32-XTEY20(RAC130)** 101447		1 Off	
	200 … 240 V AC			**DILM32-XTEY20(RAC240)** 101448		1 Off	

Information relevant for export to North America

Product Standards	IEC/EN 60947-4-1; UL 508; CSA-C22.2 No.14-05; CE marking
UL File No.	E29184
UL CCN	NKCR
CSA File No.	012528
CSA Class No.	3211-03
NA Certification	UL Listed, CSA certified

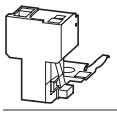
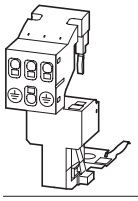
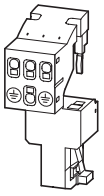


DIL-SWD..., DILM12-XMC
SWD contactor modules

SmarWire-DT ® module for installation on contactors. One module per contactor

	For use with	Part no. Article no.	Price See price list	Std. pack	Notes
Two digital inputs for potential-free contacts. 1 electrical interlock for the surface mounting of reversing starters. Messages: Contactor switch status, status of the digital inputs 1 and 2. Commands: Contactor actuation	DILM(C)7… - DILM(C)32 DILM38 DILA	**DIL-SWD-32-001**[1)] 118560		5 Off	• Take into account the max. current consumption of the contactor coils per SmartWire-DT ® line. • A2 terminals must not be bridged. • Wiring sets DILM 12-XRL and PKZM0-XRM12 cannot be used. • Connection terminals for electrical interlocking are not suitable for safety technology.
Two digital inputs for potential-free contacts. 1 electrical interlock for the surface mounting of reversing starters. 1-0-A switch for manual or automatic operation. Messages: contactor switching position, status of the digital inputs 1 and 2, 1-0-A switch position. Commands: Contactor actuation	DILM(C)7… - DILM(C)32 DILM38 DILA	**DIL-SWD-32-002**[1)] 118561		5 Off	

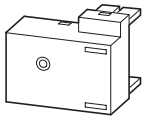
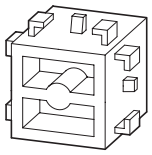
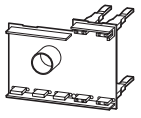
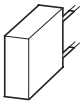
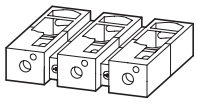
DIL-SWD..., DILM12-XMC
Wiring set for motor feeder plug

	For use with	Part no. Article no.	Price See price list	Std. pack	Notes
PE module with contact plate 	DILM(C)7 DILM(C)9 DILM(C)12 DILM(C)15	**DILM12-XMCE**[2)] 121764		5 Off	35x7.5 (15) mm mounting rail (as per DIN EN 60715) with PE function required. For connection of: PE 0.75 – 4 mm ^{2}
Motor plate with PE module and contact plate 	DILM(C)7 DILM(C)9 DILM(C)12 DILM(C)15	**DILM12-XMCP/E**[2)] 121769		1 Off	35x7.5 (15) mm mounting rail (as per DIN EN 60715) with PE function required. For connection of: L1, L2, L3, PE 0.75 – 2.5 mm^2
Motor plate with PE module and contact plate 	PKZM0/PKE + DILM(C)7 PKZM0/PKE + DILM(C)9 PKZM0/PKE + DILM(C)12 PKZM0/PKE + DILM(C)15 MSC-D(E)-…-M7… MSC-D(E)-…-M9… MSC-D(E)-…-M15…	**DILM12-XMCP/T**[2)] 121770		1 Off	For connection of: L1, L2, L3, PE 0.75 – 2.5 mm^2

Information relevant for export to North America

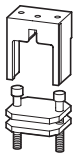
1) NA Certification Request filed for UL and CSA
2) Product Standards IEC/EN 60947-4-1; UL 508; CSA-C22.2 No. 14-05; CE marking
NA Certification Request filed for UL and CSA

DILM...-X...

	For use with	Part no. Article no.	Price See price list	Std. pack	Notes	Information relevant for export to North America	
Motor suppressor module							
Can be used at 380…575 V 50/60 Hz.							
	DILM7 - DILM15	**DILM12-XMSM** 109399		4 Off	• Tool-less version using tool-less plug connection • RC suppressor • Ambient temperature -25…+60 °C, open. • Insulated material, difficult to ignite according to UL 94. • Weight = 0.05 kg. • UL/CSA approval applied for	Product Standards UL File No. UL CCN NA Certification	IEC/EN 60947-4-1; UL 508; CE marking E300273 NMTR2 UL Listed
Test block							
Suitable for switching on contactor off-load							
	DILM7 - DILM38 DILA	**DILM32-XMAN** 110955		1 Off	–	UL/CSA certification not required	
Printed board contact							
For the adaption of a control circuit on a printed-circuit board							
	DILM7 - DILM15 DILA	**DILM12-XPBC** 109400		4 Off	–	–	
Load resistor							
For DC contactors in order to increase power consumption							
	DILM17 DILM25 DILM32 DILM38 DILMP32 DILMP45	**DILM32-XSPLW24** 112419		1 Off	Installed in a suppressor circuit enclosure. Required when using special PLC outputs for actuation, e.g.: Beckhoff safety controllers.	Product Standards CSA File No. CSA Class No. NA Certification	IEC/EN 60947-4-1; CSA-C22.2 No.14-05; CE marking 225135 3211-07 CSA certified
Extension terminals							
	DILM80 DILM95 DILM115 DILM150 DILM170	**DILM150-XZK** 104486		10 Off	Can be fitted on every main terminal of the contactor. Connection options: maximum 2 x 4 mm^2 solid maximum 2 x 2.5 mm^2 flexible with ferrule	Product Standards UL File No. UL CCN CSA File No. CSA Class No. NA Certification	IEC/EN 60947-4-1; UL 508; CSA-C22.2 No.14-05;CE marking E29184 NKCR 012528 2411-03, 2411-04 UL Listed, CSA certified
Cable terminal block							
With control circuit terminal Consisting of three flat ribbon terminals							
	DILM250 DILM300A DILM400	**DILM400-XKU-S** 208293		1 Off	Connection options: round conductors, flexible and stranded, ribbon cables.	Product Standards UL File No. UL CCN CSA File No. CSA Class No. NA Certification	IEC/EN 60947-4-1; UL 508; CSA-C22.2 No.14-05;CE marking E29184 NKCR 012528 3211-04 UL Listed, CSA certified

DILM...-XK...
Flat strip conductor terminal kit

With control cable connection



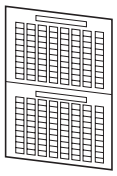
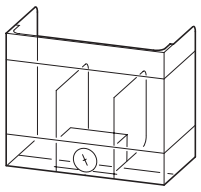
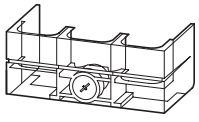
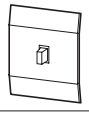
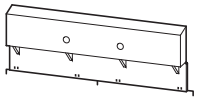
For use with	Part no. Article no.	Price See price list	Std. pack	Notes	Information relevant for export to North America
DILM580 DILM650 DILM750 DILM820	**DILM820-XKB-S** 208295		1 Off	Connection options: ribbon cables	

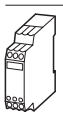
DILM...-XK...
Connection terminal sets for North America

Consist of three individual terminals

Conductor material	Cross-section X number of cores mm^2	For use with	Part no. Article no.	Price See price list	Std. pack	Notes	Information relevant for export to North America	
Copper, aluminum	2 x (AWG4 … MCM500)	DILM500/22	**DILM500-XK-CNA** 232192		1 Off	Including cover With control cable connection	Product Standards UL File No. UL CCN CSA File No. CSA Class No. NA Certification	IEC/EN 60947-4-1; UL 508; CSA-C22.2 No.14-05; CE marking E29184 NKCR 012528 3211-04 UL Listed, CSA certified
Copper, aluminum	4 x (AWG2 … MCM500)	DILM580/22 DILM650/22 DILM750/22 DILM820/22	**DILM820-XK-CNA** 232194		1 Off			

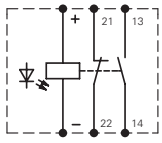
DILM...-XHB, DILM...-XAB

Description	For use with	Part no. Article no.	Price See price list	Std. pack	Notes	Information relevant for export to North America
Sealable shrouds						
Transparent						
	DILM32-XTE…	**DILM32-XTEPLH** 101449		1 Off	–	–
Device labelling, label sheet						
7.5 x 17 mm Colour: yellow HKS 3 (≈ RAL 1018)						
	Labelling with laser printer, plotter, film plotter, copier	**XGKE-GE** 207517		25 Off	1 off = 1 sheet 240 labels per sheet 1 sheet = DIN A4, Can be split into two DIN A5 sheets	UL/CSA certification not required
Covers						
Terminal cover						
	DILM185A DILM225A	**DILM225A-XHB** 139560		1 Off	To provide terminals with protection against accidental contact vertical from the front	UL/CSA certification not required
	DILM250 DILM300A DILM400	**DILM400-XHB** 208287		1 Off		
	DILM500	**DILM500-XHB** 208286		1 Off		
	DILM580 DILM650	**DILM650-XHB** 208285		1 Off		
	DILM750 DILM820, DILM1000	**DILM820-XHB** 208284		1 Off		
Shroud for star-point bridge						
	DILM400-XS1	**DILM400-XHBS1** 101687		1 Off	Can be combined with star-delta wiring kits DILM250-XSL and DILM400-XSL.	UL/CSA certification not required
Auxiliary contact seat cover						
	DILM7 - DILM38 DILMP32 DILMP45 DILA DILL	**DILM32-XAB** 129538		10 Off	For preventing manual actuation. Cannot be combined with additional surface mounting accessories .	UL/CSA certification not required
	DILM40 - DILM170 DILMP63 - DILMP200	**DILM150-XAB** 121712		10 Off		
Suppressor circuits for vacuum contactors (on load side)						
	DILM580 DILM650 DILM750 DILM820 DILM1000	**DILM1000-XSM** 125947		1 Off	For damping the cutout overvoltage when switching off inductive loads.	NA Certification Request filed for UL and CSA
	DILH2000 DILH2200 DILH2600	**DILH2600-XSM** 125946		1 Off		



DILM...-XSP...
Amplifier module for separate mounting

Input with integrated suppressor circuit for overvoltage limitation

Rated operational current AC-15 230 V I_e A	Rated operational current AC-15 400 V I_e A	Rated operational current DC 220 V I_e A	Actuating voltage U_s V DC	Actuating current I mA	Circuit symbol	For use with	Part no.	Price See price list	Std. pack	Information relevant for export to North America	
2	2	0.03	24	25		...DILM DIMLP... DILL... DILK...	**ETS4-VS3** 083094		1 Off	Product Standards UL File No. UL CCN CSA File No. CSA Class No. NA Certification	IEC/EN 60947-4-1; UL 508; CSA-C22.2 No.14-05; CE marking E36332 NLRV 012528 2411-03, 3211-04 UL Listed, CSA certified

Notes Contactor coils with rated operational current > 2 A must be actuated via the DILER-G mini contactor relay.
Rated operational current DC:
Making and breaking conditions DC-13, time L/R 300ms

DILM...-XSP...
Individual coils

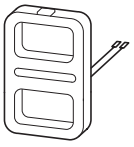
For use with	DC voltage Part no. Article no.	DC voltage Prices See price list	AC voltage Part no. Article no.	AC voltage Price See price list	Std. pack	Notes
DILM17 DILM25 DILM32 DILM38	**DILM32-XSP(RDC24)**[1] 281155		**DILM32-XSP(230V50Hz,240V60Hz)** 281141		1 Off	For additional actuating voltages → Page 86
DILM40 DILM50 DILM65 DILM72	**DILM65-XSP(RDC24)**[1] 281185		**DILM65-XSP(230V50Hz,240V60Hz)** 281171		1 Off	
DILM80 DILM95	**DILM95-XSP(RDC24)**[1] 230080		**DILM95-XSP(230V50Hz,240V60Hz)** 230062		1 Off	
DILM115 DILM150 DILM170	**DILM150-XSP(RDC24)**[1] 230115		**DILM150-XSP(RAC240)**[1] 230112		1 Off	
DILM185A DILM225A	**DILM225A-XSP(RDC24)**[1] 139568		**DILM225A-XSP(RAC240)**[1] 139565		1 Off	

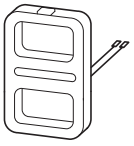
Notes [1] Incl. electronic module

Information relevant for export to North America

Product Standards	IEC/EN 60947-4-1; UL 508; CSA-C22.2 No.14-05; CE marking
UL File No.	E29096
UL CCN	NLDX
CSA File No.	012528
CSA Class No.	2411-03, 3211-04
NA Certification	UL Listed, CSA certified

DILM...-XSP/E...
Electronic modules including coils





For use with	DC voltage **Part no.** Article no.	**Price** See price list	AC voltage **Part no.** Article no.	**Price** See price list	Std. pack	**Notes**
DILM250 DILM300A	**DILM250-XSP/E(RA250)**[1] 208252		**DILM250-XSP/E(RA250)**[1] 208252		1 Off	For additional actuating voltages → Page 88
DILM400 DILM500	**DILM500-XSP/E(RA250)**[1] 208256		**DILM500-XSP/E(RA250)**[1] 208256		1 Off	
DILM580 DILM650 DILM750 DILM820 DILM1000	**DILM1000-XSP/E(RA250)**[1] 289145		**DILM1000-XSP/E(RA250)**[1] 289145		1 Off	
DILH1400	–		**DILH1400-XSP/E(RAW250)**[2] 289161		1 Off	
DILM250-S DILM300A-S	–		**DILM250-S-XSP/E(220-240V50/60Hz)**[2] 274202		1 Off	
DILM400-S DILM500-S	–		**DILM500-S-XSP/E(220-240V50/60Hz)**[2] 274205		1 Off	

1)

Information relevant for export to North America

Product Standards	IEC/EN 60947-4-1; UL 508; CSA-C22.2 No.14-05; CE marking
UL File No.	E29096
UL CCN	NLDX
CSA File No.	1017510
CSA Class No.	3211-04
NA Certification	UL Listed, CSA certified

2)

Information relevant for export to North America

Product Standards	IEC/EN 60947-4-1; UL 508; CSA-C22.2 No.14-05; CE marking
UL File No.	E29096
UL CCN	NLDX
CSA File No.	012528
CSA Class No.	3211-04
NA Certification	UL Listed, CSA certified

1.2 Contactor monitoring devices

Description, ordering

General

For safety-related off switching to safety category 3 and 4 according to EN 954-1, at present two contactors must be used in series. Especially with larger contactors this is an expensive solution.

Application

This is where the CMD can be used. The function of the CMD is to monitor the main contacts of a contactor against welding. For this the control voltage of the contactor is compared with the state of the main contacts which is reliably monitored using a mirror contact (IEC EN 60947-4-1 Annex F). If the coil is de-energized and the contactor does not drop out the CMD trips the upstream circuit-breaker/motor protective circuit breaker/switch-disconnector via a shunt release.

Safety

The CMD has a safety-compliant design so that in safety combinations with a circuit-breaker/motor protective circuit breaker/switch disconnector the reliable switch off in the case of a "welded contactor" can be guaranteed. In this application it replaces the series connection of a second contactor. As a component it conforms to safety category 3 according to EN 954-1 and EN ISO 13849.

Mounting

The CMD can be combined with the following Eaton components:

- Contactors:
  - DILEM
  - DILM7 to DILM150
  - DILM185(-S) to DILM500(-S):
  - DILM580 to DILM1600
  - DILH1400 … DILH2000
  - SE-1A-PKZ2 and S-PKZ2

For the wiring of the CMD the auxiliary N/C contact, mirror contact must be according to IEC/EN 60947-4-1 and the auxiliary N/O contact must be interlocked and opposing according to IEC/EN 60947-5-1. Also the auxiliary N/C contact for the feedback circuit must have a mirror contact function according to IEC/EN 60947-4-1.

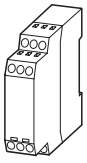
- Motor-protective circuit-breakers/ circuit-breakers:
  - PKZ2 + U-PKZ2(18VDC)
  - NZM1 + NZM1-XUVL
  - NZM2 + NZM2/3-XUV
  - NZM3 + NZM2/3-XUV
  - NZM4 + NZM4-XUV
  - N1 + NZM1-XUVL
  - N2 + NZM2/3-XUV
  - N3 + NZM2/3-XUV
  - N4 + NZM4-XUV

Auxiliary contact requirements per contactor:

	CMD	Self maintaining	Feedback circuit	Electrical interlock
DOL starter	1 N/O + 1 N/C	1S	1 B	
Reversing starter	1 N/O + 1 N/C	1S	1 B	1 B

Ordering

CMD contactor monitoring device

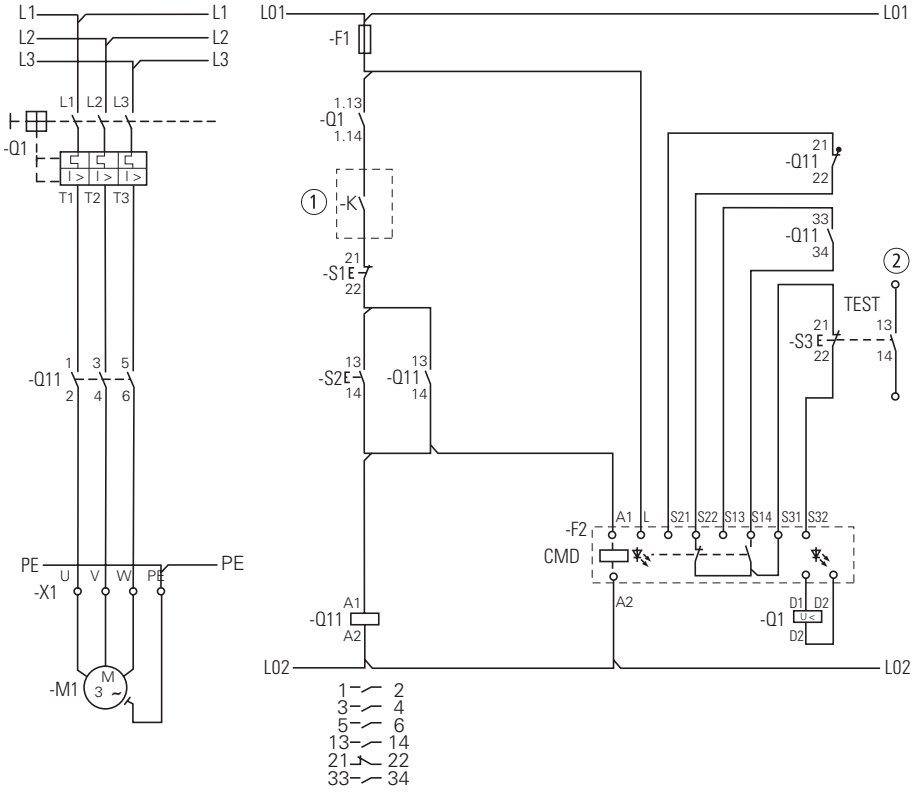


CMD

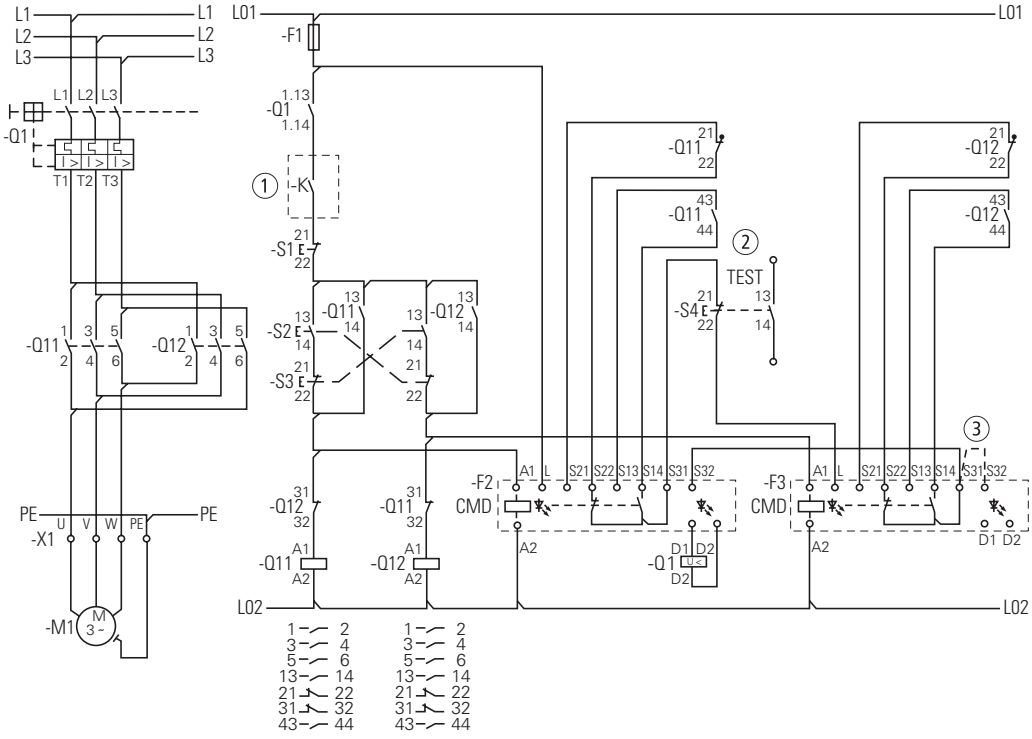
Part no. Article no.	Price See Price List	Std. pack
CMD(24VDC) 106170		1 Off
CMD(220-240VAC) 106172		1 Off

Engineering

DOL starter



Reversing starter



① Switching by safety relay of safety PLC
② Signal contact to PLC evaluation
③ CMD (24VDC)

1

Ordering

DILER, DILEEM

AC	DILER-40(...)	DILER-31(...)	DILER-22(...)	DILEEM-10(...)	DILEEM-01(...)
	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]
Standard voltages	See price list	See price list	See price list	See price list	See price list
24V 50Hz	010094	010251	010344	051604	051629
48V 50Hz	010190	010044	010201	051603	051628
240V 50Hz	010478	010300	010138	051602	051627
115V 60Hz	010270	010204	010211	051598	051624
42V 50Hz, 48V 60Hz	–	–	–	051612	051637
110V 50Hz, 120V 60Hz	051756	051765	051774	051611	051636
190V 50Hz, 220V 60Hz	051757	051766	051775	051610	051635
220V 50Hz, 240V 60Hz	051758	051767	051776	051609	051634
230V 50Hz, 240V 60Hz	051759	051768	051777	051608	051633
380V 50Hz, 440V 60Hz	051760	051769	051778	051607	051632
400V 50Hz, 440V 60Hz	051761	051770	051779	051606	051631
415V 50Hz, 480V 60Hz	051762	051771	051780	051605	051630
24V 50/60Hz	021924	021594	021704	051596	051621
42V 50/60Hz	033459	029869	029433	051595	051620
110V 50/60Hz	021961	021624	021871	051592	051618
230V 50/60Hz	052725	052509	052508	056674	058771

DILER, DILEEM

DC	DILER-40-G(...)	DILER-31-G(...)	DILER-22-G(...)	DILEEM-10-G(...)	DILEEM-01-G(...)
	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]
Standard voltages	See price list	See price list	See price list	See price list	See price list
12V DC	079711	079761	080728	051644	051649
24V DC	010223	010157	010042	051643	051650
48V DC	010255	010205	010346	051642	051648
110V DC	010287	010253	010043	051640	051646
220V DC	010303	010269	010091	051639	051645

Notes [1] To obtain the article number for ordering, read under selected part number and actuating voltage from the table. Devices with dual-voltage coils are to be ordered under a single article number.

DILEM

AC	DILEM-10(...)	DILEM-01(...)	DILEM12-10(...)	DILEM12-01(...)	DILEM4(...)
	Article no. [1]	Article no. [1]	Article no. [1]	Article no. [1]	Article no. [1]
Standard voltages	See price list	See price list	See price list	See price list	See price list
24V 50Hz	010005	010086	127067	127083	014754
48V 50Hz	010020	010294	–	–	–
240V 50Hz	010032	010151	–	–	014305
115V 60Hz	010024	010470	–	–	–
42V 50Hz, 48V 60Hz	051782	051791	–	–	–
110V 50Hz, 120V 60Hz	051783	051792	127072	127088	051801
190V 50Hz, 220V 60Hz	051784	051793	–	–	–
220V 50Hz, 240V 60Hz	051785	051794	–	–	051803
230V 50Hz, 240V 60Hz	051786	051795	–	–	051804
380V 50Hz, 440V 60Hz	051787	051796	–	–	–
400V 50Hz, 440V 60Hz	051788	051797	–	–	051806
415V 50Hz, 480V 60Hz	051789	–	–	–	–
24V 50/60Hz	021417	020402	127079	127095	022044
42V 50/60Hz	032174	033233	–	–	–
110V 50/60Hz	021455	020436	127081	127097	–
230V 50/60Hz	052302	051114	127082	127098	052506

DILEM

DC	DILEM-10-G(...)	DILEM-01-G(...)	DILEM12-10-G(...)	DILEEM12-01-G(...)	DILEM4-G(...)
	Article no. [1]	Article no. [1]	Article no. [1]	Article no. [1]	Article no. [1]
Standard voltages	See price list	See price list	See price list	See price list	See price list
12V DC	079594	079642	–	–	079680
24V DC	010213	010343	127132	127137	012701
48V DC	010245	010496	–	–	–
110V DC	010309	010136	–	–	–
220V DC	010325	010168	–	–	–

Notes

[1] To obtain the article number for ordering, read under selected part number and actuating voltage from the table. Devices with **dual-voltage coils** are to be ordered under a **single** article number.

DILA

AC

	With screw terminals			With Spring-loaded terminals		
	DILA-40(...)	DILA-31(...)	DILA-22(...)	DILAC-40(...)	DILAC-31(...)	DILAC-22(...)
	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]
Standard voltages	See price list	See price list	See price list	See price list	See price list	See price list
24V 50Hz	276316	276351	276386	276431	276463	276495
240V 50Hz	276318	276353	276388	–	–	–
110V 50Hz 120V 60Hz	276326	276361	276396	276438	276470	276502
190V 50Hz 220V 60Hz	276327	276362	276397	–	–	–
220V 50Hz 240V 60Hz	276328	276363	276398	–	–	–
230V 50Hz 240V 60Hz	276329	276364	276399	276441	276473	276505
380V 50Hz 440V 60Hz	276330	276365	276400	–	–	–
400V 50Hz 440V 60Hz	276331	276366	276401	–	–	–
24V 50Hz/60Hz	276333	276368	276403	276445	276477	276509
42V 50Hz/60Hz	276334	276369	276404	–	–	–
110V 50Hz/60Hz	276335	276370	276405	–	–	–
220V 50Hz/60Hz	276336	276371	276406	–	–	–
230V 50Hz/60Hz	276337	276372	276407	276449	276481	276513
Special voltages other than the already shown normal voltages[2]	See price list	See price list	See price list	See price list	See price list	See price list
...V 50Hz(12-500V)[3]	276341	276376	276411	276453	276485	276517
...V 60Hz(12-600V)[3]	276342	276377	276412	276454	276486	276518

DILA

DC

	With screw terminals			With Spring-loaded terminals		
	DILA-40(...)	DILA-31(...)	DILA-22(...)	DILAC-40(...)	DILAC-31(...)	DILAC-22(...)
	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]
Standard voltages	See price list	See price list	See price list	See price list	See price list	See price list
24V DC	276344	276379	276414	276456	276488	276520
48V DC	276345	276380	276415	–	–	–
110V DC	276347	276382	276417	276459	276491	276523
220V DC	276348	276383	276418	276460	276492	276524
Special voltages other than the already shown normal voltages[2]	See price list	See price list	See price list	See price list	See price list	See price list
...V DC(12-250V)[3]	276349	276384	276419	276461	276493	276525

Notes

1) The article number is a combination of part no. and operating voltage devices with dual-voltage coils can be ordered under a single article no.
2) With non-standard voltages the required actuating voltage from the defined range (...–...V) must be stated.
3) Minimum order quantity 10 units

DILM

AC	DILM7-10 (...)	DILM7-01 (...)	DILM9-10 (...)	DILM9-01 (...)	DILM12-10 (...)	DILM12-01 (...)	DILM15-10 (...)	DILM15-01 (...)
	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]
Standard voltages	See price list	See price list	See price list	See price list	See price list	See price list	See price list	See price list
24V 50Hz	276537	276572	276677	276712	276817	276852	290045	290080
240V 50Hz	276539	276574	276679	276714	276819	276854	–	–
42V 50Hz 48V 60Hz	276546	–	276686	–	276826	–	–	–
110V 50Hz 120V 60Hz	276547	276582	276687	276722	276827	276862	290055	290090
190V 50Hz 220V 60Hz	276548	276583	276688	276723	276828	276863	–	–
220V 50Hz 240V 60Hz	276549	276584	276689	276724	276829	276864	–	–
230V 50Hz 240V 60Hz	276550	276585	276690	276725	276830	276865	290058	290093
380V 50Hz 440V 60Hz	276551	276586	276691	276726	276831	276866	–	–
400V 50Hz 440V 60Hz	276552	276587	276692	276727	276832	276867	–	–
415V 50Hz 480V 60Hz	276553	–	276693	–	276833	–	–	–
24V 50Hz/60Hz	276554	276589	276694	276729	276834	276869	290062	290097
42V 50Hz/60Hz	276555	276590	276695	276730	276835	276870	–	–
110V 50Hz/60Hz	276556	276591	276696	276731	276836	276871	–	–
220V 50Hz/60Hz	276557	276592	276697	276732	276837	276872	–	–
230V 50Hz/60Hz	276558	276593	276698	276733	276838	276873	290066	290101
Special voltages other than the already shown normal voltages[2]	See price list	See price list	See price list	See price list	See price list	See price list	See price list	See price list
...V 50Hz (12 – 600V)[3]	276562	276597	276702	276737	276842	276877	290070	290105
...V 60Hz (12 – 600V)[3]	276563	276598	276703	276738	276843	276878	290071	290106

DILM

DC	DILM7-10 (...)	DILM7-01 (...)	DILM9-10 (...)	DILM9-01 (...)	DILM12-10 (...)	DILM12-01 (...)	DILM15-10 (...)	DILM15-01 (...)
	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]
Standard voltages	See price list	See price list	See price list	See price list	See price list	See price list	See price list	See price list
24V DC	276565	276600	276705	276740	276845	276880	290073	290108
48V DC	276566	276601	276706	276741	276846	276881	–	–
110V DC	276568	276603	276708	276743	276848	276883	–	–
220V DC	276569	276604	276709	276744	276849	276884	–	–
Special voltages other than the already shown normal voltages[2]	See price list	See price list	See price list	See price list	See price list	See price list	See price list	See price list
...V DC (12-250V)[3]	276570	276605	276710	276745	276850	276885	290078	290113

Notes

1) To obtain the article number for ordering, read under selected part number and actuating voltage from the table. devices with dual-voltage coils can be ordered under a single article no.
2) With non-standard voltages the required actuating voltage from the defined range (...–...V) must be stated.
3) Minimum order quantity 10 units

DILM

AC	DILM17-10 (...)	DILM17-01 (...)	DILM25-10 (...)	DILM25-01 (...)	DILM32-10 (...)	DILM32-01 (...)	DILM38-10(...)	DILM38-01(...)
	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]
Standard voltages	See price list	See price list	See price list	See price list	See price list	See price list	See price list	See price list
24V 50Hz	276991	277023	277119	277151	277247	277279	112378	112446
240V 50Hz	276993	–	277121	–	277249	–	112420	–
42V 50Hz 48V 60Hz	277000	–	277128	–	277256	–	112424	–
110V 50Hz 120V 60Hz	277001	277033	277129	277161	277257	277289	112425	112454
190V 50Hz 220V 60Hz	277002	–	277130	–	277258	–	112426	–
220V 50Hz 240V 60Hz	277003	–	277131	–	277259	–	112427	–
230V 50Hz 240V 60Hz	277004	277036	277132	277164	277260	277292	112428	112457
380V 50Hz 440V 60Hz	277005	–	277133	–	277261	–	112429	–
400V 50Hz 440V 60Hz	277006	277038	277134	277166	277262	277294	112430	112459
415V 50Hz 480V 60Hz	277007	–	277135	–	277263	–	112431	–
24V 50Hz/60Hz	277008	277040	277136	277168	277264	277296	112432	112461
42V 50Hz/60Hz	277009	–	277137	–	277265	–	112433	–
110V 50Hz/60Hz	277010	277042	277138	277170	277266	277298	112434	112463
220V 50Hz/60Hz	277011	277043	277139	277171	277267	277299	112435	112464
230V 50Hz/60Hz	277012	277044	277140	277172	277268	277300	112436	112465
Special voltages other than the already shown normal voltages[2]	See price list	See price list	See price list	See price list	See price list	See price list	See price list	See price list
...V 50Hz (24 – 600V)	277016[7]	277048[7]	277144[7]	277176[7]	277272[7]	277304[8]	112440[7]	112468[7]
...V 60Hz (24 – 600V)	277017[7]	277049[7]	277145[7]	277177[7]	277273[7]	277305[8]	112441[7]	112469[7]

DILM

DC	DILM17-10(...)	DILM17-01(...)	DILM25-10(...)	DILM25-01(...)	DILM32-10(...)	DILM32-01(...)	DILM38-10(...)	DILM38-01(...)
	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]
Standard voltages	See price list	See price list	See price list	See price list	See price list	See price list	See price list	See price list
RDC 24[3]	277018	277050	277146	277178	277274	277306	112442	112470
RDC 60[4]	277019	277051	277147	277179	277275	277307	112443	112471
RDC 130[5]	277020	277052	277148	277180	277276	277308	112444	112472
RDC 240[6]	277021	277053	277149	277181	277277	277309	112445	112473

Notes

1) To obtain the article number for ordering, read under selected part number and actuating voltage from the table. devices with dual-voltage coils can be ordered under a single article no.
2) With non-standard voltages the required actuating voltage from the defined range (...–...V) must be stated.
3) 24 – 27 V DC
4) 48 – 60 V DC
5) 110 – 130 V DC
6) 200 – 240 V DC
7) Minimum order quantity 10 units
8) Minimum order quantity 5 units

DILM

AC	DILM40(...)	DILM50(...)	DILM65(...)	DILM72(...)
	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]
Standard voltages	See price list	See price list	See price list	See price list
24V 50Hz	277753	277817	277881	–
240V 50Hz	277755	277819	277883	109183
42V 50Hz **48V 60Hz**	277762	277826	277890	–
110V 50Hz **120V 60Hz**	277763	277827	277891	109191
190V 50Hz **220V 60Hz**	277764	277828	277892	–
220V 50Hz **240V 60Hz**	277765	277829	277893	–
230V 50Hz **240V 60Hz**	277766	277830	277894	107670
380V 50Hz **440V 60Hz**	277767	277831	277895	–
400V 50Hz **440V 60Hz**	277768	277832	277896	109195
415V 50Hz **480V 60Hz**	277769	277833	277897	–
24V 50Hz/60Hz	277770	277834	277898	109197
42V 50Hz/60Hz	277771	277835	277899	–
110V 50Hz/60Hz	277772	277836	277900	109199
220V 50Hz/60Hz	277773	277837	277901	109200
230V 50Hz/60Hz	277774	277838	277902	109201
Special voltages other than the already shown normal voltages[2]	See price list	See price list	See price list	See price list
...V 50Hz (24 – 600V)	277778[8]	277842[8]	277906[8]	109205[7]
...V 60Hz (24 – 600V)	277779[8]	277843[8]	277907[8]	109206[7]

DILM

DC	DILM40(...)	DILM50(...)	DILM65(...)	DILM72(...)
	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]
Standard voltages	See price list	See price list	See price list	See price list
RDC 24[3]	277780	277844	277908	107671
RDC 60[4]	277781	277845	277909	–
RDC 130[5]	277782	277846	277910	–
RDC 240[6]	277783	277847	277911	109209

Notes

1) To obtain the article number for ordering, read under selected part number and actuating voltage from the table.
devices with dual-voltage coils can be ordered under a single article no.
2) With non-standard voltages the required actuating voltage from the defined range (...–...V) must be stated.
3) 24 – 27 V DC
4) 48 – 60 V DC
5) 110 – 130 V DC
6) 200 – 240 V DC
7) Minimum order quantity 10 units

DILM

AC	DILM80 (...)	DILM95 (...)
	Article no.[1]	Article no.[1]
Standard voltages	See price list	See price list
24 V 50 Hz	235904	239467
240V 50Hz	235910	239469
42V 50Hz 48V 60Hz	239394	239476
110V 50Hz 120V 60Hz	239399	239477
190V 50Hz 220V 60Hz	239400	239478
220V 50Hz 240V 60Hz	239401	239479
230V 50Hz 240V 60Hz	239402	239480
380V 50Hz 440V 60Hz	239403	239481
400V 50Hz 440V 60Hz	239404	239482
415V 50Hz 480V 60Hz	239405	239483
24V 50Hz/60Hz	239406	239484
42V 50Hz/60Hz	239407	239485
110V 50Hz/60Hz	239408	239486
220V 50Hz/60Hz	239409	239487
230V 50Hz/60Hz	239410	239488
Special voltages other than the already shown normal voltages [2]	See price list	list
...V 50Hz (24 – 600V) [13]	239414	239504
...V 60Hz (24 – 600V) [13]	239415	239509

DILM

DC	DILM80 (...)	DILM95 (...)
	Article no.[1]	Article no.[1]
Standard voltages	See price list	See price list
RDC 24[3]	239416	239510
RDC 60[4]	239417	239511
RDC 130[5]	239418	239512
RDC 240[6]	239419	239513

DILM

AC	DILM115 (...)	DILM150 (...)	DILM170 (...)	DILM185A/ 22(...)	DILM225A/ 22(...)
	Article no. [1]	Article no. [1]	Article no. [1]	Article no. [1]	Article no. [1]
Standard voltages	See price list	See price list	See price list	See price list	See price list
RAC 24[7]	239545	239585	107010	139534	139544
RAC 48[8]	239546	239586	107011	139535	139545
RAC 120[9]	239547	239587	107012	139536	139546
RAC 240[10]	239548	239588	107013	139537	139547
RAC 440[11]	239549	239589	107014	139538	139548
RAC 500[12]	239550	239590	107015	139539	139549

DILM

DC	DILM115 (...)	DILM150 (...)	DILM170 (...)	DILM185A/ 22(...)	DILM225A/ 22(...)
	Article no. [1]	Article no. [1]	Article no. [1]	Article no. [1]	Article no. [1]
Standard voltages	See price list	See price list	See price list	See price list	See price list
RDC 24[3]	239555	239591	107016	139540	139550
RDC 60[4]	239560	239592	107017	139541	139551
RDC 130[5]	239567	239593	107018	139542	139552
RDC 240[6]	239572	239594	107019	139543	139553

Notes

1) The article no. results from combining the part no. and the actuating voltage.
Devices with dual-voltage coils must be ordered under a single article no.
2) With non-standard voltages the required actuating voltage from the defined range (...–...V) must be stated.
3) 24 - 27 V DC
4) 48 – 60 V DC
5) 110 - 130 V DC
6) 200 - 240 V DC
7) 24 V 50/60 Hz
8) 42 – 48 V 50/60 Hz
9) 100 – 120 V 50/60 Hz
10) 190 – 240 V 50/60 Hz
11) 380 – 440 V 50/60 Hz
12) 480 – 500 V 50/60 Hz
13) Minimum order quantity 5 units

DILM

AC	DILMC7-10 (...)	DILMC7-01 (...)	DILMC9-10 (...)	DILMC9-01 (...)	DILMC12-10 (...)	DILMC12-01 (...)	DILMC15-10 (...)	DILMC15-01 (...)
	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]
Standard voltages	See price list	See price list	See price list	See price list	See price list	See price list	See price list	See price list
24 V 50 Hz	277379	277411	277443	277475	277507	277539	293938	293933
110V 50Hz 120V 60Hz	277386	277418	277450	277482	277514	277546	293908	293943
230V 50Hz 240V 60Hz	277389	277421	277453	277485	277517	277549	293911	293946
24V 50Hz/60Hz	277393	277425	277457	277489	277521	277553	293915	293950
230V 50Hz/60Hz	277397	277429	277461	277493	277525	277557	293919	293954
Special voltages other than the already shown normal voltages[2]	See price list	See price list	See price list	See price list	See price list	See price list	See price list	See price list
...V 50Hz (12 – 600V)[6]	277401	277433	277465	277497	277529	277561	293923	293958
...V 60Hz (12 – 600V)[6]	277402	277434	277466	277498	277530	277562	293924	293959

DILM

DC	DILMC7-10 (...)	DILMC7-01 (...)	DILMC9-10 (...)	DILMC9-01 (...)	DILMC12-10 (...)	DILMC12-01 (...)	DILMC15-10 (...)	DILMC15-01 (...)
	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]
Standard voltages	See price list	See price list	See price list	See price list	See price list	See price list	See price list	See price list
24V DC	277404	277436	277468	277500	277532	277564	293926	293961
110V DC	277407	277439	277471	277503	277535	277567	293929	293964
220V DC	277408	277440	277472	277504	277536	277568	293930	293965
Special voltages other than the already shown normal voltages[2]	See price list	See price list	See price list	See price list	See price list	See price list	See price list	See price list
...VDC (12 – 250V)[6]	277409	277441	277473	277505	277537	277569	293931	293966

DILM

AC	DILMC17-10 (...)	DILMC17-01(...)	DILMC25-10 (...)	DILMC25-01 (...)	DILMC32-10 (...)	DILMC32-01 (...)
	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]
Standard voltages	See price list	See price list	See price list	See price list	See price list	See price list
24 V 50 Hz	277570	277600	277630	277660	277690	277720
110V 50Hz 120V 60Hz	277578	277608	277638	277668	277698	277728
230V 50Hz 240V 60Hz	277581	277611	277641	277671	277701	277731
24V 50Hz/60Hz	277585	277615	277645	277675	277705	277735
220V 50Hz/60Hz	277588	277618	277648	277678	277708	277738
230V 50Hz/60Hz	277589	277619	277649	277679	277709	277739
Special voltages other than the already shown normal voltages[2]	See price list	See price list	See price list	See price list	See price list	See price list
...V 50Hz (24 – 600V)[6]	277593	277623	277653	277683	277713	277743
...V 60Hz (24 – 600V)[6]	277594	277624	277654	277684	277714	277744

DILM

DC	DILMC17-10 (...)	DILMC17-01 (...)	DILMC25-10 (...)	DILMC25-01 (...)	DILMC32-10 (...)	DILMC32-01 (...)
	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]
Standard voltages	See price list	See price list	See price list	See price list	See price list	See price list
RDC 24[3]	277595	277625	277655	277685	277715	277745
RDC 130[4]	277597	277627	277657	277687	277717	277747
RDC 240[5]	277598	277628	277658	277688	277718	277748

Notes

1) The article no. results from combining the part no. and the actuating voltage. Devices with dual-voltage coils must be ordered under a single article no.
2) With non-standard voltages the required actuating voltage from the defined range (...–...V) must be stated.
3) 24 - 27 V DC
4) 110 - 130 V DC
5) 200 - 240 V DC
6) Minimum order quantity 10 units

DILMP20

AC Standard voltages	DILMP20 (…) Article no.[1] See price list
240V 50Hz	–
110V 50Hz **120V 60Hz**	276967
230 V 50Hz **240V 60Hz**	276970
24V 50/60Hz	276974
230V 50/60Hz	276978

AC Standard voltages	DILMP20 (…) Article no.[1] See price list
RAC 24[4]	–
RAC 120[5]	–
RAC 240[6]	–

AC Non-standard voltages[2]	DILMP20 (…) Article no.[1] See price list
…V 50Hz (12 – 600V)[3]	276982
…V 60Hz (12 – 600V)[3]	276983

DILMP20

DC Standard voltages	DILMP20 (…) Article no.[1] See price list
24V DC	276985
RDC 24[7]	–

DC Non-standard voltages[2]	DILMP20 (…) Article no.[1] See price list
…V DC (12 – 250V)[3]	276990

Notes

[1] The article number is a combination of part no. and actuating voltage
[2] For non-standard voltages, state the actuating voltage selected from the range (…–…V) shown.
[3] Minimum order quantity: 10 units
[4] 24 V 50/60 Hz
[5] 100 – 120 V 50/60 Hz
[6] 190 – 240 V 50/60 Hz
[7] 24 – 27 V DC

DILM...XSP...

AC	DILM32-XSP (...)	DILM65-XSP (...)	DILM95-XSP
	Article no.[1]	Article no.[1]	Article no.[1]
Standard voltages	See price list	See price list	See price list
24V 50Hz	281130	281160	229984
240V 50Hz	281132	281162	229986
24V 60Hz	281134	281164	229988
115V 60Hz	281136	281166	229990
42V 50Hz 48V 60Hz	281137	281167	229994
110V 50Hz 120V 60Hz	281138	281168	230058
190V 50Hz 220V 60Hz	281139	281169	230059
220V 50Hz 240V 60Hz	281140	281170	230061
230V 50Hz 240V 60Hz	281141	281171	230062
380V 50Hz 440V 60Hz	281142	281172	230063
400V 50Hz 440V 60Hz	281143	281173	230064
415V 50Hz 480V 60Hz	281144	281174	230065
24V 50Hz/60Hz	281145	281175	230066
42V 50Hz/60Hz	281146	281176	230067
110V 50Hz/60Hz	281147	281177	230068
220V 50Hz/60Hz	281148	281178	230073
230V 50Hz/60Hz	281149	281179	230074
Special voltages other than the already shown normal-voltages [2]	See price list	See price list	See price list
...V 50Hz (24 – 600V)	281153 [13]	281183 [14]	230078 [14]
...V 60Hz (24 – 600V)	281154 [13]	281184 [14]	230079 [14]

DILM...XSP...

DC	DILM32-XSP (...)	DILM65-XSP (...)	DILM95-XSP
	Article no.[1]	Article no.[1]	Article no.[1]
Standard voltages	See price list	See price list	See price list
RDC 24[3]	281155	281185	230080
RDC 60[4]	281156	281186	230081
RDC 130[5]	281157	281187	230082
RDC 240[6]	281158	281188	230107

DILM...XSP...

AC	DILM150-XSP (...)	DILM225A-XSP (...)
	Article no.[1]	Article no.[1]
Standard voltages	See price list	See price list
RAC 24[7]	230109	139562
RAC 48[8]	230110	139563
RAC 120[9]	230111	139564
RAC 240[10]	230112	139565
RAC 440[11]	230113	139566
RAC 500[12]	230114	139567

DILM...XSP...

DC	DILM150-XSP (...)	DILM225A-XSP (...)
	Article no.[1]	Article no.[1]
Standard voltages	See price list	See price list
RDC 24[3]	230115	139568
RDC 60[4]	230116	139569
RDC 130[5]	230117	139570
RDC 240[6]	230122	139571

Notes

1) To obtain the article number for ordering, read under selected part number and actuating voltage from the table.
Devices with dual-voltage coils are to be ordered under a single article number.
2) With non-standard voltages the required actuating voltage from the defined range (...–...V) must be stated.
3) 24 – 27 V DC
4) 48 – 60 V DC
5) 110 – 130 V DC
6) 200 – 240 V DC
7) 24 V 50/60 Hz
8) 42 – 48 V 50/60 Hz
9) 100 – 120 V 50/60 Hz
10) 190 – 240 V 50/60 Hz
11) 380 – 440 V 50/60 Hz
12) 480 – 500 V 50/60 Hz
13) Minimum order quantity 10 units
14) Minimum order quantity 5 units

DILK, DILMF

AC	DILK12-11 (...)	DILK20-11 (...)	DILK25-11 (...)	DILK33-10 (...)	DILK50-10 (...)
	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]	Article no. [1]
Standard voltages	See price list	See price list	See price list	See price list	See price list
110V 50Hz, 120V 60Hz	293985	294007	294029	294051	294073
190V 50Hz, 220V 60Hz	293986	294008	294030	294052	294074
230V 50Hz, 240V 60Hz	293988	294010	294032	294054	294076
400V 50Hz, 440V 60Hz	293990	294012	294034	294056	294078
Special voltages other than the already shown normal voltages [2]	See price list	See price list	See price list		
...V 50Hz (24 – 600V) [3]	293997	294019	294041	–	–
...V 60Hz (24 – 600V) [3]	293998	294020	294042	–	–

Notes

[1] The article no. results from combining the part no. and the actuating voltage.
Devices with dual-voltage coils must be ordered under a single article no.
[2] With non-standard voltages the required actuating voltage from the defined range (...–...V) must be stated.
[3] Minimum order quantity 10 units

DILM

Complete comfort devices	DILM250 /22(...)	DILM300A /22(...)	DILM400 /22(...)	DILM500 /22(...)	DILM580 /22(...)	DILM650 /22(...)	DILM750 /22(...)	DILM820 /22(...)	DILM1000 /22(...)
	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]
Voltage variants	See price list	See price list	See price list	See price list	See price list	See price list	See price list	See price list	See price list
RDC 48[2]	208199	139554	208207	208211	–	–	–	–	–
RA 110[3]	208200	139555	208208	208212	208215	208218	208221	208224	–
RA 250[4]	208201	139556	208209	208213	208216	208219	208222	208225	267214
RAC 500[5] [6]	208202	139557	208210	208214	208217	208220	208223	208226	–

DILM

Complete units Standard	DILM250 -S/22(...)	DILM300A -S/22(...)	DILM400 -S/22(...)	DILM500 -S/22(...)
	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]
Voltage variants	See price list	See price list	See price list	See price list
110-120V 50/60Hz	274189	139558	274195	274198
220-240V 50/60Hz	274190	139559	274196	274199

DILM

Electronic module, incl. coil, for comfort model	DILM250-XSP/E(...)	DILM500-XSP/E(...)	DILM1000-XSP/E(...)
	Article no.[1]	Article no.[1]	Article no.[1]
Voltage variants	See price list	See price list	See price list
RDC 48[2]	208250	208254	–
RA 110[3]	208251	208255	289146
RA 250[4]	208252	208256	289145
RAC 500[5] [6]	208253	208257	289147

DILM

Electronic module, incl. coil, for standard model	DILM250-S-XSP/E(...)	DILM500-S-XSP/E(...)
	Article no.[1]	Article no.[1]
Voltage variants	See price list	See price list
110-120V 50/60Hz	274201	274204
220-240V 50/60Hz	274202	274205

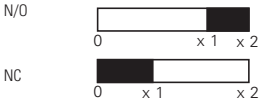
Notes

1) The article no. results from combining the part no. and the voltage variant.
2) 24 – 48 V DC
3) 48 – 110 V 40 – 60 Hz/48 – 110 V DC
4) 110 – 250 V 40 – 60 Hz/110 – 250 V DC
5) 250 – 500 V 40 – 60 Hz
6) DC on request

1 Engineering

DILM, DILA, DILE, DILH

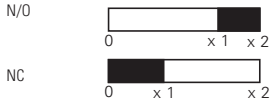
The diagrams show the closing and opening travel of the contacts at no load.



		x1	x2
DILE AC	N/O	1.9	2.8
	NC	0.95	2.8
…DILE	N/O	1.9	2.8
	NC	0.9	2.8
…DDILE	NO early-make	1.06	2.9
	Late-break N/C contact	1.86	2.9
	N/O	1.9	2.8
	NC	0.9	2.8
DILE DC	N/O	1.9	2.85
	NC	0.95	2.85
DILE…	N/O	1.9	2.8
	NC	0.9	2.8
…DDILE	NO early-make	1.06	2.9
	Late-break N/C contact	1.86	2.9
	N/O	1.9	2.8
	NC	0.9	2.8
DILA-AC	N/O	3.3	4.5
	NC	1.0	4.5
DILA-XHI	N/O	3.2	4.5
	NC	1.6	4.5
DILA-XHIV	NO early-make	2.0	4.5
	Late-break N/C contact	2.8	4.5
	N/O	3.2	4.5
	NC	1.6	4.5
DILA-DC	N/O	2.1	2.9
	NC	0.7	2.9
DILA-XHI	N/O	2.3	2.9
	NC	0.7	2.9
DILA-XHIV	NO early-make	1.1	2.9
	Late-break N/C contact	1.9	2.9
	N/O	2.3	2.9
	NC	0.7	2.9
DILM7/9 AC	N/O	3.3	4.5
	NC	1.0	4.5
DILM32-XHI, DILA-XHI	N/O	3.2	4.5
	NC	1.6	4.5
DILA-XHIV	NO early-make	2.0	4.5
	Late-break N/C contact	2.8	4.5
	N/O	3.2	4.5
	NC	1.6	4.5
DILM7/9 DC	N/O	2.1	2.9
	NC	0.7	2.9
DILM32-XHI, DILA-XHI	N/O	2.3	2.9
	NC	0.7	2.9
DILA-XHIV	NO early-make	1.1	2.9
	Late-break N/C contact	1.9	2.9
	N/O	2.3	2.9
	NC	0.7	2.9
DILM12/15/P20 AC	N/O	3.3	4.5
	NC	1.0	4.5
DILM32-XHI, DILA-XHI	N/O	3.2	4.5
	NC	1.6	4.5
DILA-XHIV	NO early-make	2.0	4.5
	Late-break N/C contact	2.8	4.5
	N/O	3.2	4.5
	NC	1.6	4.5
DILM12/15/P20 DC	N/O	3.3	4.4
	NC	1.0	4.4
DILM32-XHI, DILA-XHI	N/O	3.2	4.4
	NC	1.6	4.4

DILM, DILA, DILE, DILH

The diagrams show the closing and opening travel of the contacts at no load.



		x1	x2
DILA-XHIV	NO early-make	2.0	4.4
	Late-break N/C contact	2.8	4.4
	N/O	3.2	4.4
	NC	1.6	4.4
DILM17/25/32/P32/P45	N/O	4.0	6.0
	Auxiliary N/C	1.8	6.0
	Auxiliary N/O	3.2	6.0
DILM32-XHI, DILA-XHI	N/O	3.2	6.0
	NC	1.6	6.0
DILA-XHIV	NO early-make	2.0	6.0
	Late-break N/C contact	2.8	6.0
	N/O	3.2	6.0
	NC	1.6	6.0
DILM40/50/65/P63/P80	N/O	5.1	7.5
DILM150-XHI	N/O	5.7	7.5
	NC	3.9	7.5
DILM150-XHIV	NO early-make	3.8	7.5
	Late-break N/C contact	5.4	7.5
	N/O	5.7	7.5
	NC	3.9	7.5
DILM1000-XHI	N/O	5.5	7.5
	NC	3.6	7.5
DILM1000-XHIV	NO early-make	4.1	7.5
	Late-break N/C contact	5.0	7.5
DILM80/95/115/150/170/P125/P160/P200	N/O	8.0	11
DILM150-XHI	N/O	9.2	11
	NC	7.4	11
DILM150-XHIV	NO early-make	7.3	11
	Late-break N/C contact	8.9	11
	N/O	9.2	11
	NC	7.4	11
DILM1000-XHI	N/O	9.0	11
	NC	7.1	11
DILM1000-XHIV	NO early-make	7.6	11
	Late-break N/C contact	8.5	11
DILM185A/225A	N/O	10.0	13.0
DILM1000-XHI	N/O	10.0	13.0
	NC	8.1	13.0
DILM1000-XHIV	NO early-make	8.4	13.0
	Late-break N/C contact	9.5	13.0
DILM250/300A	N/O	10.1	13.1
DILM820-XHI	N/O	10.3	13.1
	NC	8.4	13.1
DILM820-XHIV	NO early-make	8.7	13.1
	Late-break N/C contact	9.8	13.1
DILM400/500/570	N/O	8.9	13.1
DILM820-XHI	N/O	10.3	13.1
	NC	8.4	13.1
DILM820-XHIV	NO early-make	8.7	13.1
	Late-break N/C contact	9.8	13.1
DILM580/650/750/820	N/O	2.0	4.1
DILM820-XHI	N/O	7.4	10.5
	NC	5.5	10.5
DILM820-XHIV	NO early-make	6.0	10.5
	Late-break N/C contact	6.8	10.5
DILM1000/1600, DILH1400/2000/2200/2600	N/O	2.0	4.1
DILM820-XHI	N/O	7.4	10.5
	NC	5.5	10.5
DILM820-XHIV	NO early-make	6.0	10.5
	Late-break N/C contact	6.8	10.5

DILE, DILM, SDAINL, DIUL

Components

Contactor selection

Part no.	With top mounting auxiliary contacts	With side mounting auxiliary contacts	With overload relay	With parallel connector	Insulated enclosures
DILE...(-G)(-C)	–	–	–	–	CI-K1-95-TS
DILE...(-G)(-C)	●	–	–	–	CI-K2-145-TS
DILE...(-G)	●	–	●	–	CI-K2-145-AD
DILE...(-G)	–	–	–	●	CI-K2-100-TS
DILE...(-G)	●	–	–	●	CI-K2-145-TS
DILM7 to DILM15	●	–	–	–	CI-K2-145-TS
DILM7 to DILM15	●	–	●	–	CI-K3-160-TS
DILM17 to DILM32	–	–	–	–	CI-K2-145-TS
DILM17 to DILM32	●	–	●	–	CI23E-150
DILM40 to DILM65	–	●	–	–	CI-K3-160-TS
DILM40 to DILM65	●	●	●	–	CI43E-150
DILM80 to DILM170	●	●	–	–	CI43E-200
DILM80 to DILM170	●	●	●	–	CI44E-200
DILM185A	–	●	–	–	CI48-250
DILM225A	–	●	–	–	CI48-250
DILM250	–	●	–	–	CI48-250
DILM300A	–	●	–	–	CI48-250
DILM400	–	●	–	–	CI48-250
DILM500	–	●	–	–	CI48-250
DILM580	–	●	–	–	CI48-250
DILM650	–	●	–	–	CI48-250
DILM750	–	●	–	–	CI48-250
DILM820	–	●	–	–	CI48-250
DIULE...	●	–	–	–	CI-K3-125-TS
DIULE...	●	–	●	–	CI-K3-125-TS
DIULM7 to DIULM12	●	–	–	–	CI-K4-160-TS
DIULM17 to DIULM32	●	–	–	–	CI23E-150
DIULM40 to DIULM65	●	–	–	–	CI43E-200
SDAINLEM...	●	–	–	–	CI-K5-125-TS CI-K5-125-M
SDAINLM12 to SDAINLM22	●	–	–	–	CI-K5-160-TS
SDAINLM30 to SDAINLM65	●	–	–	–	CI23E-150
SDAINLM70 to SDAINLM115	●	–	–	–	CI43E-200

Notes

CI-K small enclosure → See Catalog

Terminal for CI-K enclosure → See Catalog

CI enclosure → See Catalog

Insulated PE, N or PEN terminal for enclosure CI-K → See Catalog

1

for North America

DILE, DILA, DILM

Rating data for approved types

Contactors

Maximum alternating current-motor rating Single-phase		3-phase				GENERAL USE Maximum motor-rated current I_{th} Open/enclosed		
115 V 120 V HP	230 V 240 V HP	200 V 208 V HP	230 V 240 V HP	460 V 480 V HP	575 V 600 V HP	A	**Part no.**	NEMA size
½	1½	2	3	5	5	15/13.5	**DILEM(4)**	00
¼	1	1½	2	3	5	20	**DILM7-...(...)**	00
½	1½	3	3	5	7½	20	**DILM9-...(...)**	00
1	2	3	3	10	10	20	**DILM12-...(...)**	0
1	3		5	10	10	20	**DILM15-...(...)**	0
2	3	5	7½	10	15	35	**DILM17-...(...)**	0
2	5	7½	7½	15	20	35	**DILM25-...(...)**	1
3	5	10	10	20	25	40	**DILM32-...(...), DILM38-...(...)**	1
3	7½	10	15	30	40	55	**DILM40(...)**	2
3	10	15	20	40	50	65	**DILM50(...)**	2
5	15	20	25	40	60	80	**DILM65(...), DILM70(...)**	2
7½	15	25	30	60	75	125	**DILM80(...)**	3
7½	15	25	40	75	100	125	**DILM95(...)**	3
10	25	40	50	100	125	160	**DILM115(...)**	4
15	30	40	60	125	125	160	**DILM150(...), DILM170(...)**	4
–	–	50	60	125	150	225	**DILM185(...)**	4
–	–	60	75	150	200	250	**DILM225(...)**	4
–	–	75	100	200	250	350	**DILM250(...)**	5
–	–	100	125	250	300	350	**DILM300(...)**	5
–	–	125	150	300	400	450	**DILM400(...)**	5
–	–	150	200	400	500	550	**DILM500(...)**	6
–	–	200	200	400	600	630	**DILM580(...)**	6
–	–	200	250	500	600	700	**DILM650(...)**	6
–	–	250	300	600	700	800	**DILM750(...)**	6
–	–	290	350	700	860	850	**DILM820(...)**	6
–	–	350	400	800	1000	1000	**DILM1000(...)**	7
–	–	560	640	1200	1300	1600	**DILM1600(...)**	8

Further approvals →92

- Elevator control
- Refrigeration control
- Resistance air heating
- Incandescent lamps
- Electrical discharge lamps
- Capacitive switching

DILE, DILA, DILM

Approved rating data
UL -File No. E29184
for auxiliary contacts

	Pilot Duty		General Use			
	AC	DC	AC		DC	
Part no.			V	A	V	A
DIL(E)EM-10(-01) DILER-40(31)(22) ...(D)DILE	A600	P300	600	10	250	0.5
DILM7-10(-01) To DILM32-10(-01) DILA...	A600	P300	600	15	250	1
DILA-XHI... DILM32-XHI...	A600	P300	600	15	250	1
DILM...-XHI11-SI DILM...-XHI11-SA DILM...-XHI11V-SI	A600	P600	600	10	–	–

for North America

DILM, DILMP, DILK

Special purpose rating

	DIL	M7	M9	M12	M15	M17	M25 MP32 MP45	M32	M40 MP63	M50 MP80	M65 M72	M80 MP125	M95 MP160	M115	M150 M170 MP200
Electrical discharge lamps (ballast)															
480V 60Hz 3phase, 277V 60Hz 1phase	A	12	18	20	20	27	35	40	63	79	88	85	100	136	160
600V 60Hz 3phase, 347V 60Hz 1phase	A	12	18	20	20	27	35	40	63	79	88	85	100	136	160
Incandescent lamps (Tungsten)															
480V 60Hz 3phase, 277V 60Hz 1phase	A	8	11	14	14	23	32	40	55	74	88	85	100	136	160
600V 60Hz 3phase, 347V 60Hz 1phase	A	8	11	14	14	23	32	40	55	74	88	85	100	136	160
Resistance air heating															
480V60Hz 3phase, 277V60Hz 1phase	A	12	18	20	20	27	35	40	63	79	88	94	110	136	160
600V60Hz 3phase, 347V60Hz 1phase	A	12	18	20	20	27	35	40	63	79	88	94	110	136	160
Refrigeration control (CSA only)															
LRA 480V 60Hz 3phase	A	60	60	60	60	240	240	240	270	270	270	540	540	540	540
LRA 600V 60Hz 3phase	A	60	60	60	60	180	180	180	270	270	270	420	420	540	540
480V 60Hz 3phase	A	6	7.5	10	10	23	32	40	26	36	45	63	70	84	90
600V 60Hz 3phase	A	6	7.5	10	10	17	24	30	26	36	45	63	70	84	90
Elevator control															
200V 60Hz 3phase	HP (A)	¾ (3.7)	2 (7.8)	2 (7.8)	2 (7.8)	3 (11)	3 (11)	7½ (25.3)	7½ (25.3)	10 (32.2)	10 (32.2)	20 (62.1)	20 (62.1)	30 (92)	30 (92)
240V 60Hz 3phase	HP (A)	1½ (6.0)	2 (6.8)	2 (6.8)	3 (9.6)	3 (9.6)	5 (15.2)	7½ (22)	10 (28)	15 (42)	15 (42)	25 (68)	30 (80)	40 (104)	40 (104)
480V 60Hz 3phase	HP (A)	2 (3.4)	3 (4.8)	7½ (11)	7½ (11)	7½ (11)	10 (14)	20 (27)	25 (34)	30 (40)	30 (40)	50 (65)	60 (77)	75 (96)	75 (96)
600V 60Hz 3phase	HP (A)	3 (3.9)	5 (6.1)	7½ (9.6)	7½ (9.6)	10 (11)	15 (17)	20 (22)	30 (32)	40 (41)	40 (41)	60 (62)	75 (77)	100 (99)	100 (99)

DILM, DILMP, DILK

Special purpose rating

	DIL	K12	K20	K25	K33	K50
Capacitor Switching						
240V 60Hz 3phase	A	18	28	36	48	72
480V 60Hz 3phase	A	18	28	36	48	72
600V 60Hz 3phase	A	14.4	28	38.4	48	72
240V 60Hz 3phase	kvar	7.5	12	15	20	30
480V 60Hz 3phase	kvar	15	20	30	40	60
600V 60Hz 3phase	kvar	15	30	40	50	75

for North America

DILM

Short circuit current rating (SCCR)

Contactor	Basic Rating			480 V High Fault				600 V High Fault			
		Max. fuse	Max. CB		Max. fuse		Max. CB		Max. fuse		Max. CB
	kA	A	A	kA	A	kA	A	kA	A	kA	A
DILM7-...(...)	5	45	60	100	20 Class J	-	Fuse only	30	25	-	Fuse only
DILM9-...(...)	5	45	60	100	20 Class J	-	Fuse only	30	25	-	Fuse only
DILM12-...(...)	5	45	60	100	20 Class J	-	Fuse only	30	25	-	Fuse only
DILM15-...(...)	5	45	60		20 Class J	-	Fuse only	30	25	-	Fuse only
DILM17-...(...)	5	125	125	100	70 Class J	10	50	10	125	10	50
DILM25-...(...)	5	125	125	100	100 Class J	10	50	10	125	10	50
DILM32-...(...)	5	125	125	100	125 Class J	10	50	10	125	10	50
DILM38-...(...)	5	125	125	100	125 Class J	10	50	10	125	10	50
DILM40(...)	10	250	250	100	150 Class J	65	100	30	250	30	250
DILM50(...)	10	250	250	100	150 Class J	65	100	30	250	30	250
DILM65(...)	10	250	250	100	150 Class J	65	100	30	250	30	250
DILM72(...)	10	250	250	100	150 Class J	65	100	30	250	30	250
DILM80(...)	10	600	600	100	300 Class J	65	250	30	300	30	350
DILM95(...)	10	600	600	100	300 Class J	65	250	30	300	30	350
DILM115(...)	10	600	600	100	300 Class J	65	250	30	300	30	350
DILM150(...)	10	600	600	100	300 Class J	65	250	30	300	30	350
DILM170(...)	10	600	600	100	300 Class J	65	250	30	300	30	350
DILM185(...)	18	700	600	-	CB only	65	250	-	-	-	-
DILM225(...)	18	700	600	-	CB only	65	250	-	-	-	-
DILM250(...)	18	700	600	-	CB only	65	250	-	-	-	-
DILM300(...)	30	800	600	-	CB only	42	600	30	800	30	600
DILM400(...)	30	800	600	-	CB only	42	600	30	800	30	600
DILM500(...)	30	800	600	-	CB only	42	600	30	800	30	600
DILM570(...)	30	800	600	-	CB only	42	600	30	800	30	600
DILM580(...)	30	2000	1200	85	2000	85	1200	85	2000	85	1200
DILM650(...)	30	2000	1200	85	2000	85	1200	85	2000	85	1200
DILM750(...)	42	2000	1200	85	2000	85	1200	85	2000	85	1200
DILM820(...)	42	2000	1200	85	2000	85	1200	85	2000	85	1200
DILM1000(...)	85	2000	1200	85	2000	85	1200	85	2000	85	1200
DILM1600(...)	85	2000	-	85	2000	-	-	85	2000	85	-

DILM, DILEM

Part no. | Ordering data | Required accessories: **Paralleling links** | **Notes**

AC operated	**Page**	**Part no.**
DILEM-10(…)	→ 15	P1DILEM
DILEM-01(…)	→ 15	P1DILEM
DILEM4(…)	→ 15	P1DILEM
DILM7-…(…)	→ 29	DILM12-XP1
DILMP20(…)	→ 45	DILM12-XP1
DILM17-…(…)	→ 29	DILM32-XP1
DILM25-…(…)	→ 29	DILM32-XP1
DILM40(…)	→ 31	DILM65-XP1
DILM50(…)	→ 31	DILM65-XP1
DILM65(…)	→ 31	DILM65-XP1
DILM80(…)	→ 31	DILM150-XP1
DILM95(…)	→ 31	DILM150-XP1
DILM115(…)	→ 31	DILM150-XP1
DILM150(…)	→ 31	DILM150-XP1
DILM170(…)	→ 31	DILM150-KP1
DILM185A(…)	→ 41	DILM185-XP1
DILM225A(…)	→ 41	DILM185-XP1
DILM250(…)	→ 41	–
DILM300A(…)	→ 41	–
DILM400(…)	→ 41	–
DILM500(…)	→ 41	–
DILM580(…)	→ 41	–
DILM650(…)	→ 41	–
DILM750(…)	→ 41	–
DILM820(…)	→ 41	–
DILH1400(…)	→ 43	–
DILH2000(…)	→ 43	–
DILH2200(…)	→ 43	–
DILH2600(…)	→ 43	–

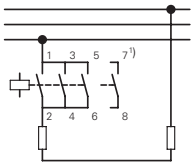
Accessories	**Page**
Auxiliary contact modules	→ 17 → 47
Set of paralleling links	→ 64
Enclosure	→ 74
Accessories	→ 63

1

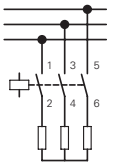
DILM, DILEM

Rating data

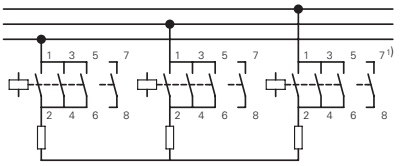
Single-phase rating AC-1



Three-phase rating AC-1



Three-phase rating AC-1



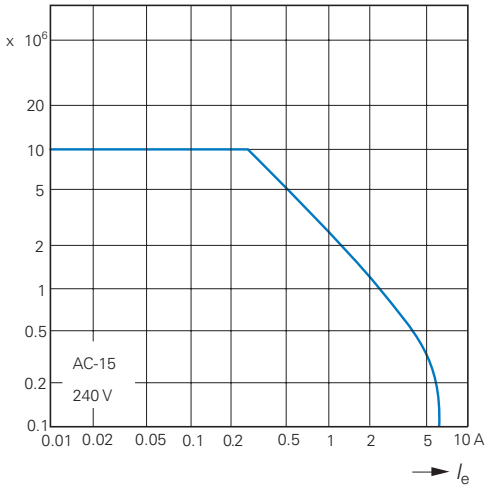
Voltage in V			Max. upstream fuse gG/gL	Rated operational current $I_e = I_{th}$ or I_{the}	Voltage in V			Max. upstream fuse gG/gL	Rated operational current $I_e = I_{th}$ or I_{the}	Voltage in V			Max. upstream fuse gG/gL	Rated operational current $I_e = I_{th}$ or I_{the}
220 230 240	380 400 440	660 690			220 230 240	380 400 440	660 690			220 230 240	380 400 440	660 690		
kW	kW	kW	A	A	kW	kW	kW	A	A	kW	kW	kW	A	A
Open version														
10	18	31	50	50	7	13	20	20	20	18	31	54	50	50
10	18	31	50	50	7	13	20	20	20	18	31	54	50	50
12	21	37	63	60	–	–	–	–	–	21	37	65	63	60
10	18	31	–	50	7	13	22	–	20	18	31	54	–	50
13	22	38	–	60	–	–	–	–	–	22	38	65	–	60
18	32	55	–	88	13	22	38	–	35	32	55	95	–	88
21	36	63	–	100	14	25	43	–	40	36	63	109	–	100
26	45	78	–	125	18	31	54	–	50	45	78	136	–	125
34	59	102	–	163	24	41	71	–	65	59	102	176	–	163
42	72	125	–	200	29	50	87	–	80	72	125	217	–	200
47	81	141	–	225	33	56	98	–	90	81	141	244	–	225
57	99	172	–	275	40	69	119	–	110	100	172	299	–	275
68	117	204	–	325	47	81	141	–	130	118	203	353	–	325
84	144	251	–	400	58	100	174	–	160	145	250	434	–	400
101	175	317	–	460	70	120	220	–	185	175	302	549	–	460
144	248	431	800	688	100	172	299	315	275	262	453	786	–	688
165	284	494	800	788	114	197	342	315	315	300	519	900	–	788
172	297	516	1000	825	120	206	357	400	330	333	576	1000	–	875
183	316	548	1000	875	126	219	380	400	350	381	658	1143	–	1000
261	451	784	1250	1250	181	313	543	500	500	476	825	1429	–	1250
366	632	1097	–	1750	253	438	760	800	700	667	1152	2000	–	1750
418	722	1254	–	2000	290	500	869	800	800	762	1316	2286	–	2000
444	767	1332	–	2125	308	531	923	1000	850	810	1400	2429	–	2125
470	812	1411	–	2250	326	563	977	1000	900	857	1480	2572	–	2250
523	903	1568	–	2500	362	625	1086	1000	1000	953	1646	2858	–	2500
732	1264	2195	–	3500	507	875	1520	–	1400	1334	2300	4000	–	3500
1045	1805	3135	–	5000	724	1251	2172	–	2000	1905	3290	5716	–	5000
1150	1985	3449	–	5500	796	1376	2389	–	2200	2095	3619	6288	–	5500
1358	2346	4075	–	6500	941	1626	2827	–	2600	2476	4277	7430	–	6500

Notes

1) Contact 7 – 8 only with DILEM4(-G), DILMP20...

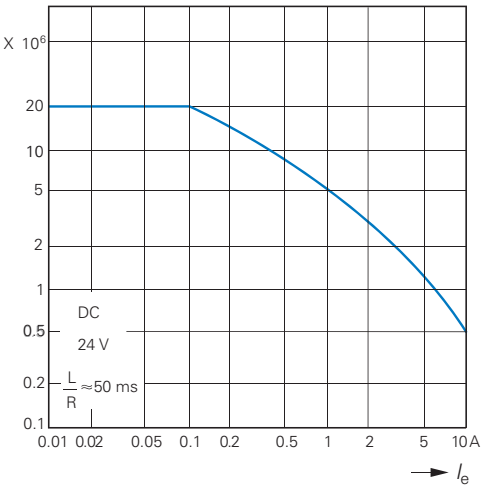
DILA (AC-15)

Component lifespan (operations)
I_e = Rated operational current



DILA DC[1)]

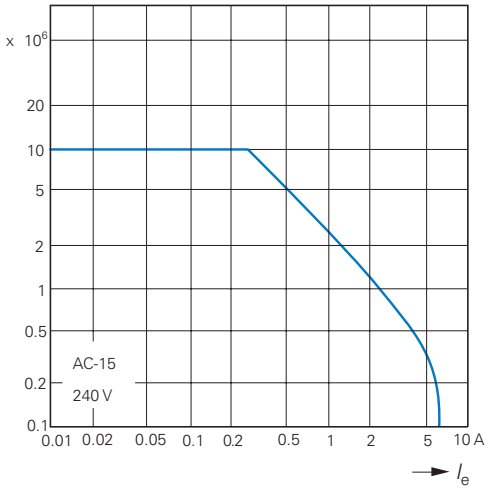
Component lifespan (operations)
I_e = Rated operational current



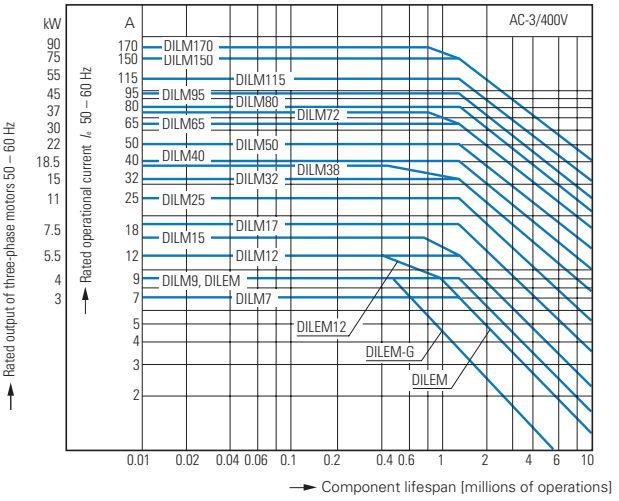
[1)] Three contacts in series

DILER (AC-15)

Component lifespan (operations)
I_e = Rated operational current



Normal switching duty



Normal AC induction motor

Operating characteristics

Make: from stop

Break: during run

Electrical characteristics:

Make: up to 6 X rated motor current

Break: 1 X rated motor current

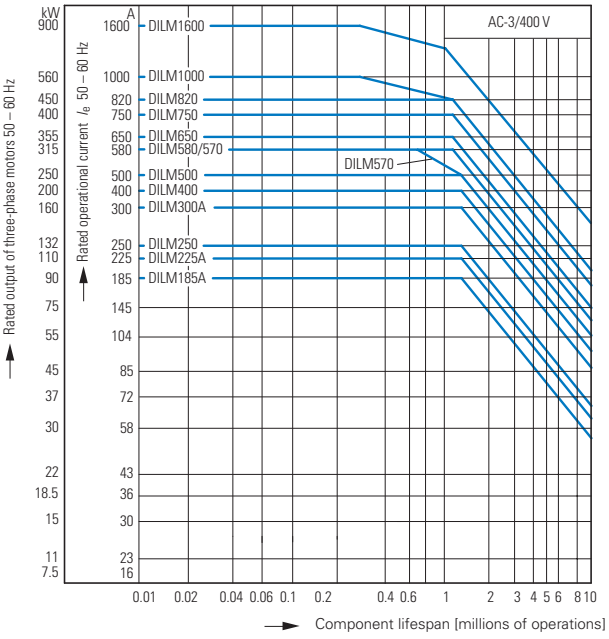
Utilization category

100 % AC-3

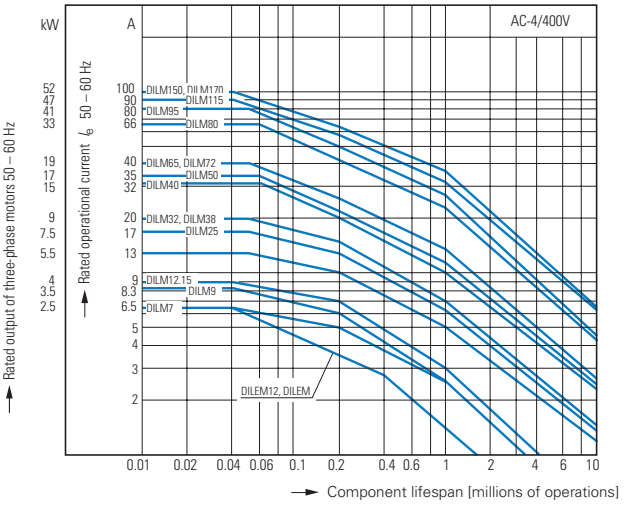
Typical applications:

Compressors	Lifts	Mixers
Pumps	Escalators	Agitators
Fan	Conveyor belts	Centrifuges
Hinged flaps	Bucket-elevator	Air conditioning sys-

General drives for manufacturing and processing machines



Extreme switching duty



Normal AC induction motor

Operating characteristics

Inching, plugging, reversing

Electrical characteristics:

Make: up to 6 X rated motor current

Break: 6 X rated motor current

Utilization category

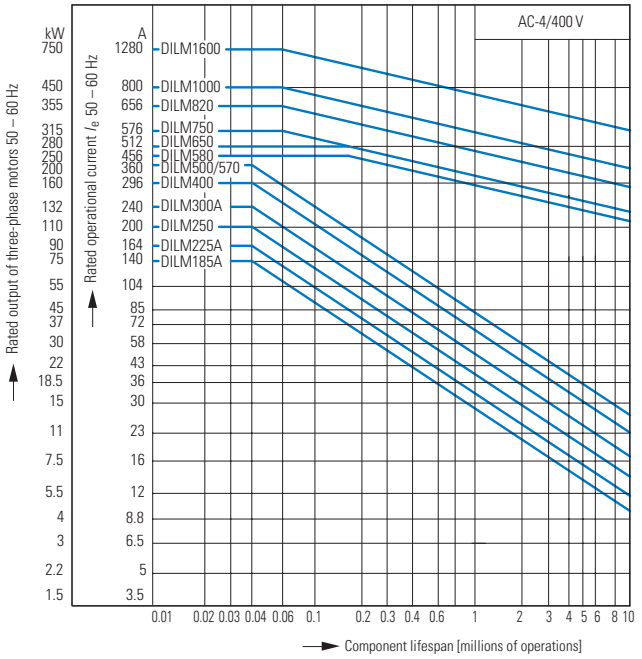
100 % AC-4

Typical applications:

Printing machines	Wire-drawing	Centrifuges

Special drives on manufacturing and processing machines

Extreme switching duty



Normal AC induction motor

Operating characteristics

Inching, plugging, reversing

Electrical characteristics:

Make:up to 6 X rated motor current

Break: 6 X rated motor current

Utilization category

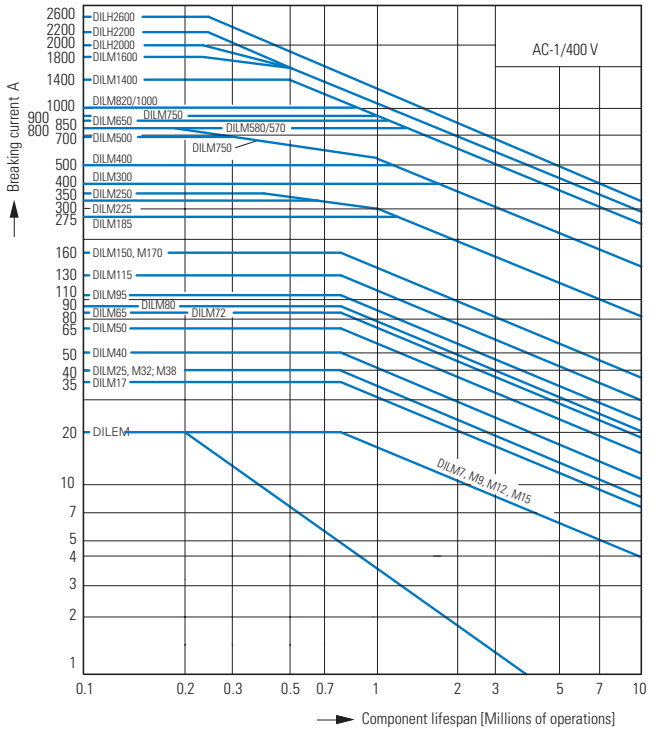
100% AC-4

Typical applications:

Printing machines | Wire-drawing machines | Centrifuges

Special drives on manufacturing and processing machines

Switching conditions for 3 pole, non-motor loads



Operating characteristics

Non inductive and slightly inductive loads

Electrical characteristics:

Make: 1 X rated operational current
Break:1 X rated operational current

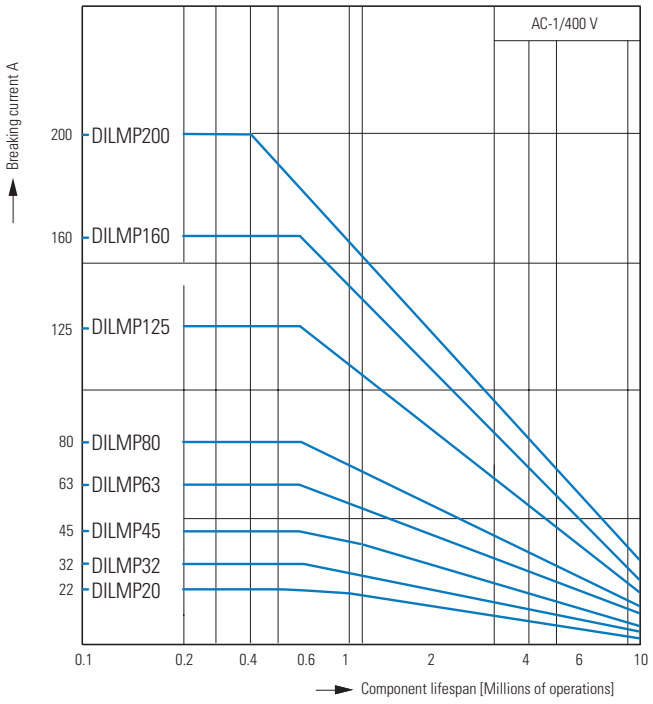
Utilization category

100% AC-1

Typical applications:

Electric heat

Switching conditions for 4 pole, non-motor loads



Operating characteristics

Non inductive and slightly inductive loads

Electrical characteristics:

Make: 1 X rated operational current
Break: 1 X rated operational current

Utilization category

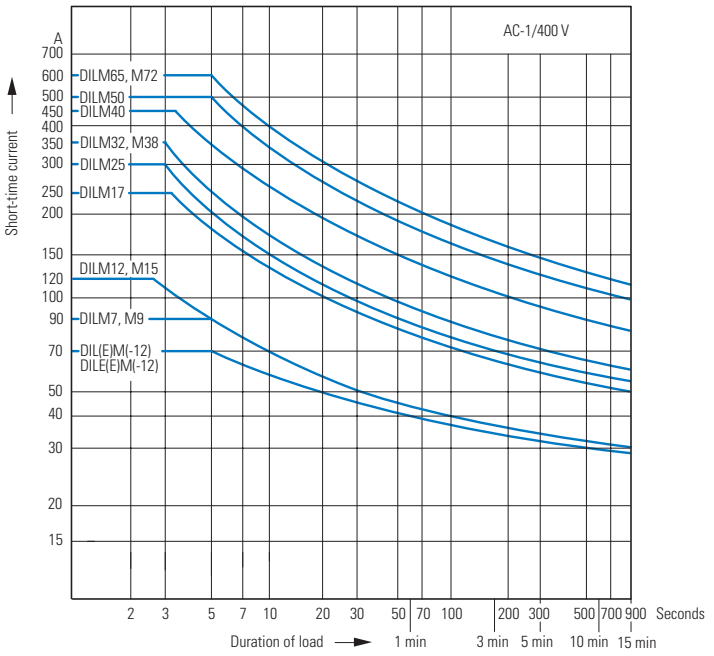
100% AC-1

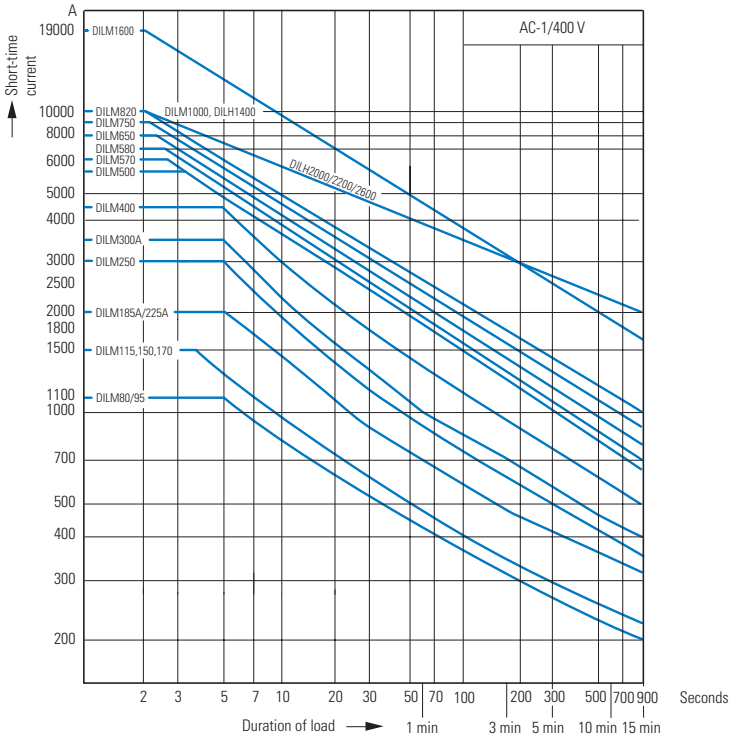
Typical applications:

Electric heat

Short-time loading 3 pole

Time interval between two loads: 15 minutes

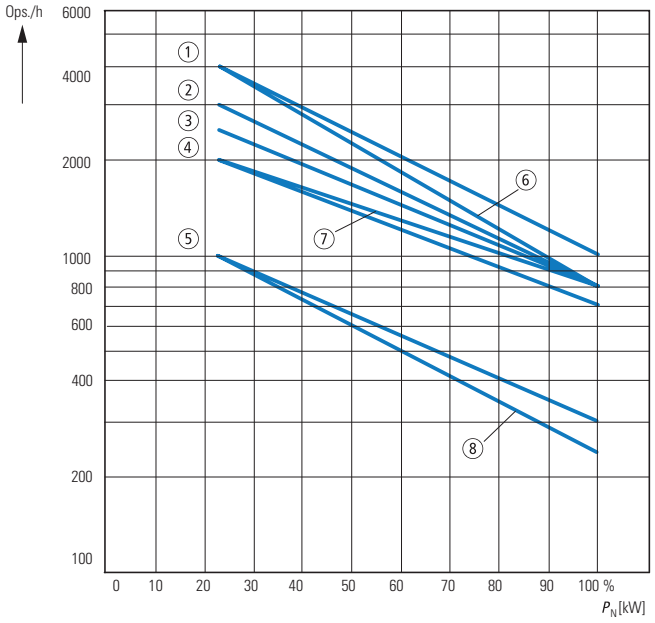




Determination of the maximum operating frequency dependent on the rating and utilization category (recommended values) for 400 V

P_N = max. rated motor output (kW) of respective contactor according to → Page 29 and → Page 15

S/h = max. operation per hour



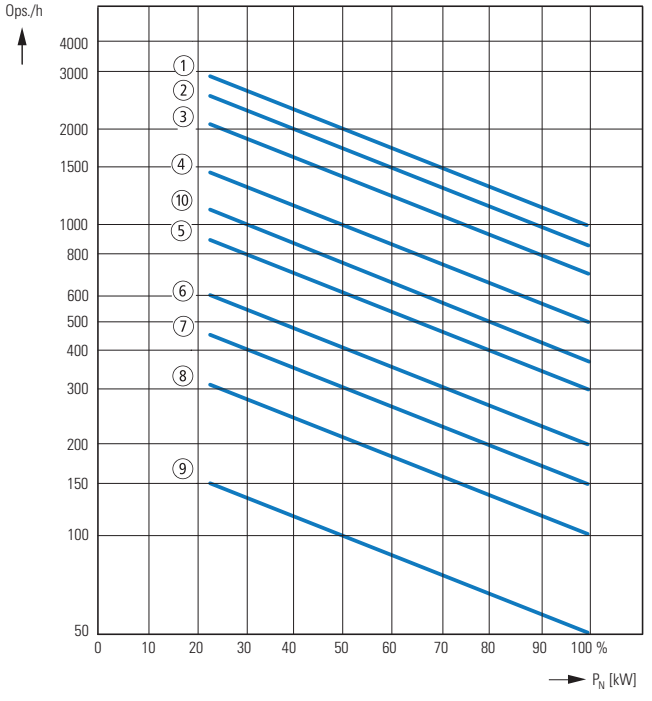
DILEM, DILM, DILH

Part no.	Characteristic AC-1	AC-3	AC-2 AC-4
DILE(E)M(-12)	7	6	8
DILM7, 9, 12, 15	3	1	5
DILM17, 25, 32, 38	3	2	5
DILM40, 50, 65, 72	3	2	5
DILM80, 95, 115, 150, 170	3	4	5

Determination of the maximum operating frequency dependent on the rating and utilization category (recommended values)

P_N = max. rated motor output (kW) of respective contactor according to → Page 39 and → Page 43

S/h = max. operation per hour

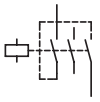
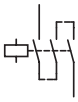
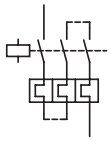
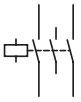
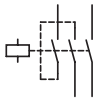
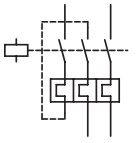
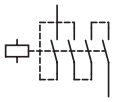
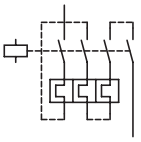
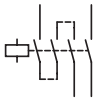
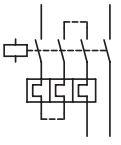


DILEM, DILM, DILH

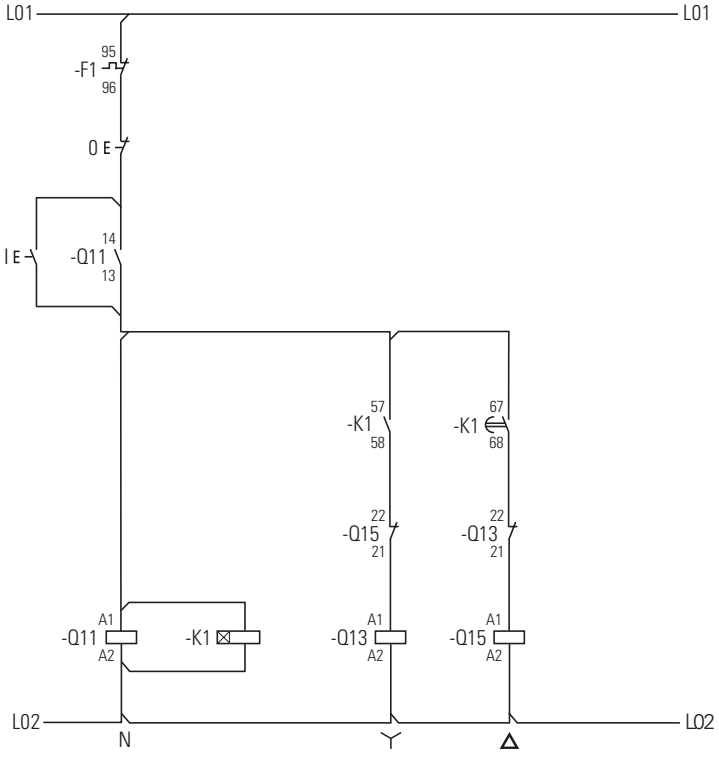
Part no.	Characteristic AC-1	AC-3	AC-4
DILM185A	2	1	8
DILM225A	2	1	8
DILM250	2	1	8
DILM300A	3	2	9
DILM400	3	2	9
DILM500	3	2	9
DILM580	3	4	7
DILM650	3	4	7
DILM750	3	4	7
DILM820	3	4	7
DILM1000	3	4	7
DILM1600	10	10	7
DILH1400	10	–	–
DILH2000	10	–	–
DILH2200	10	–	–
DILH2600	10	–	–

DC current switching

– – – – – when necessary conductor to be supplied by customer

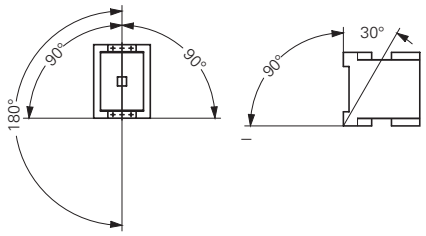
	Without overload relay ≤ 60 V DC	> 60 V DC	With overload relay > 60 V DC
DILEEM ... DILM700			
1 pole			
2 pole			
DILEM4 DILMP...			
1 pole			
2 pole			

Wiring, star-delta combination with DILM32-XTEY20



Technical data

DILER, DILA

			DILA	DILA…XHI	DILER	DILE…
General						
Standards			IEC/EN 60947, VDE 0660, UL, CSA			
Lifespan, mechanical						
AC operated	Operations	x 10^6	20	10	10	10
DC operated	Operations	x 10^6	20	10	20	20
Maximum operating frequency						
Maximum operating frequency	Operations/h		9000	9000	9000	9000
Climatic proofing			Damp heat, constant, to IEC 60068-2-78; Damp heat, cyclic, to IEC 60068-2-30			
Ambient temperature						
Open		°C	-25…60	-25…60	-25…50	-25…50
Enclosed		°C	-25…40	-25…40	-25…40	-25…40
Ambient temperature for storage		°C	-40 - 80	-40 - 80		
Mounting position					Any, except vertically with terminals A1/A2 below	
Mechanical shock resistance (IEC/EN 60068-2-27)						
Half-sinusoidal shock 10 ms						
Basic devices with auxiliary contact module						
N/O		g	7	7	10	10
NC		g	5	5	8	8
Protection type			IP20	IP20	IP20	IP20
Protection against direct contact when actuated from front (EN 50274)			Finger- and back-of-hand proof			
Weight						
AC operated		kg	0.23	0.05	0.17	–
DC operated		kg	0.28	0.05	0.2	–
Terminal capacity						
Screw terminals						
Solid		mm^2	1 x (0.75 - 4) 2 x (0.75 - 2.5)	1 x (0.75 - 4) 2 x (0.75 - 2.5)	1 x (0.75 - 2.5) 2 x (0.75 - 2.5)	1 x (0.75 - 2.5) 2 x (0.75 - 2.5)
Flexible with ferrule		mm^2	1 x (0.75 - 2.5) 2 x (0.75 - 2.5)	1 x (0.75 - 2.5) 2 x (0.75 - 2.5)	1 x (0.75 - 1.5) 2 x (0.75 - 1.5)	1 x (0.75 - 1.5) 2 x (0.75 - 1.5)
Solid or stranded		AWG	18 - 14	18 - 14	18 - 14	18 - 14
Terminal screw			M3.5	M3.5	M3.5	M3.5
Pozidriv screwdriver		Size	2	2	2	2
Flat-blade screwdriver		mm	0.8 x 5.5 1 x 6	0.8 x 5.5 1 x 6	0.8 x 5.5 1 x 6	0.8 x 5.5 1 x 6
Max. tightening torque		Nm	1.2	1.2	1.2	1.2
Spring-loaded terminals						
Solid		mm^2	1 x (0.75 - 2.5) 2 x (0.75 - 2.5)	1 x (0.75 - 2.5) 2 x (0.75 - 2.5)	1 x (1 - 2.5) 2 x (1 - 2.5)	1 x (1 - 2.5) 2 x (1 - 2.5)
Flexible with ferrule		mm^2	1 x (0.75 - 1.5) 2 x (0.75 - 1.5)	1 x (0.75 - 1.5) 2 x (0.75 - 1.5)	1 x (1 - 2.5) 2 x (1 - 2.5)	1 x (1 - 2.5) 2 x (1 - 2.5)
Flexible without ferrule DIN 46228		mm^2	1 x (0.75 - 2.5) 2 x (0.75 - 2.5)	1 x (0.75 - 1.5) 2 x (0.75 - 1.5)	–	–
Solid or stranded		AWG	18 - 14	18 - 14	1 x (16 - 14) 2 x (16 - 14)	1 x (16 - 14) 2 x (16 - 14)
Flat-blade screwdriver		mm	0.6 x 3.5	0.6 x 3.5	0.6 x 3.5	0.6 x 3.5

DILER, DILA

			DILA	DILA…XHI	DILER	DILE…
Contacts						
Interlocked opposing contacts to EN 60947-4-1, Annex L, including auxiliary contact module			Yes	Yes	Yes	Yes
Rated impulse withstand voltage	U_{imp}	V AC	6000	6000	6000	6000
Overvoltage category/degree of pollution			III/3	III/3	III/3	III/3
Rated insulation voltage	U_i	V AC	690	690	690	690
Rated operating voltage	U_e	V AC	690	500	600	600
Safe isolation according to EN 61140						
Between coil and auxiliary contacts		V AC	400	400	300	300
Between the auxiliary contacts		V AC	400	400	300	300
Rated operational current						
AC-15						
220/240 V	I_e	A	4	4	6	4
380/415 V	I_e	A	4	4	3	2
500 V	I_e	A	1.5	1.5	1.5	1.5
DC[1]						
L/R ≦15 ms						
Contacts in series:						
1	24 V	A	10	10	2.5	2.5
1	60 V	A	6	6	–	–
2	60 V	A	10	10	2.5	2.5
1	110 V	A	3	3	–	–
3	110 V	A	6	6	1.5	1.5
1	220 V	A	1	1	–	–
3	220 V	A	5	5	0.5	0.5
L/R ≦50 ms						
Contacts in series:						
3	24 V	A	4	2.5	–	–
3	60 V	A	4	1	–	–
3	110 V	A	2	0.5	–	–
3	220 V	A	1	0.25	–	–
DC-13 (6xP)						
Contacts in series:						
3	24 V	A	2.5	2.5	–	–
3	60 V	A	1	1	–	–
3	110 V	A	0.5	0.5	–	–
3	220 V	A	0.25	0.25	–	–
Control circuit reliability (at U_e = 24 V DC, U_{min} = 17 V, I_{min} = 5.4 mA)	Fault probability	λ	$<10^{-8}$, < one failure in 100 million operations			
Conventional thermal current	I_{th}	A	16	16	10	10
Short-circuit strength without welding						
Maximum overcurrent protection device						
220/240 V		PKZM0	4	–	4	4
380/415 V		PKZM0	4	–	4	4
Short-circuit protection rating maximum fuse[2]						
500 V		A gG/gL	10	10	6	6
500 V		A fast	–	–	10	10
Current heat loss at load of I_{th}						
AC operated		W	0.3	0.3	0.2	0.2
DC operated		W	0.3	0.3	0.3	0.3

Notes

[1] Switch-on and switch-off conditions based on DC-13, time constant as specified

[2] See characteristic curve "Fuses" for time/current characteristics (please enquire)

DILER, DILA

			DILA	DILA…XHI	DILER	DILE…
Magnet systems						
Voltage tolerance						
AC operated						
Single-voltage coil 50 Hz and dual-voltage coil 50 Hz, 60 Hz	Pick-up	x U_c	0.8…1.1	–	0.8…1.1	–
Dual-frequency coil 50/60 Hz	Pick-up	x U_c	0.8…1.1	–	0.85…1.1	–
DC operated [1]						
Starting voltage	Pick-up	x U_c	0.8…1.1	–	0.85…1.3	–
At 24 V: without auxiliary contact module (40 °C)	Pick-up	x U_c	0.7 - 1.3	–	0.7 - 1.3	–
Power consumption						
50 Hz	Pick-up	VA	24	–	25	–
50 Hz	Sealing	VA	3.4	–	4.6	–
50 Hz	Sealing	W	1.2	–	1.3	–
60 Hz	Pick-up	VA	30	–	25	–
60 Hz	Sealing	VA	4.4	–	4.6	–
60 Hz	Sealing	W	1.4	–	1.3	–
50/60 Hz	Pick-up	VA	27 25	–	30 29	–
50/60 Hz	Sealing	VA	4.2 3.3	–	5.4 3.9	–
50/60 Hz	Sealing	W	1.4 1.2	–	1.6 1.1	–
DC operated	Pick-up = sealing	W	3	–	2.6	–
Duty factor		% DF	100	–	100	–
Changeover times at 100 % U_c (recommended values)						
AC operated closing delay		ms	15 - 21	–	14 - 21	–
AC operated normally open contact opening delay		ms	9 - 18	–	8 - 18	–
AC operated with auxiliary contact module, max. closing delay		ms	–	–	45	45
DC operated closing delay		ms	31	–	26 - 35	–
DC operated normally open contact opening delay		ms	12	–	15 - 25	–
DC operated with auxiliary contact module, max. closing delay		ms	–	–	70	70

Notes

[1] Smoothed DC, three-phase bridge rectifier or smoothed two-phase bridge rectifier

ETS-VS3, DILM, CMD

			ETS4-VS3	DILM32-XTE	CMD(24VDC) CMD(220-240VAC)
General					
Standards			IEC/EN 60947, VDE 0660, UL, CSA	DIN EN 61812, IEC/EN 60947, VDE 0660, UL, CSA	IEC/EN 60947 UL CSA
Lifespan, mechanical					
AC operated	c (contacts)	x 10^6	–	3	10
DC operated	c (contacts)	x 10^6	30	3	3
Maximum operating frequency					
DC operated	c (contacts)	x 10^6	72000	–	9000
Climatic proofing			Damp heat, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30		
Ambient temperature					
Storage		°C	–	-40 - 80	-40 - 80
Open		°C	-25 - 60	-25 - 60	-25 - 50
Enclosed		°C	-25 - 45	-25 - 40	–
Mounting position			Any	As required, except suspended	Any
Mechanical shock resistance (IEC/EN 60068-2-27)					
Half-sinusoidal shock 20 ms					
N/O		g	10	–	–
Half-sinusoidal shock 10 ms					
N/O		g	–	6	4
NC		g	–	6	4
Protection type			IP20	IP20	IP20
Protection against direct contact when actuated from front (EN 50274)			Finger- and back-of-hand proof		
Weight		kg	0.09	0.08	0.1
Terminal capacity					
Solid		mm^2	1 x (0.75 - 2.5) 2 x (0.75 - 2.5) [1]	1 x (0.75 - 2.5) 2 x (0.75 - 1.5)	1 x (0.75…2.5) 2 x (0.75…1.5)
Flexible with ferrule		mm^2	1 x (0.75 - 2.5) 2 x (0.75 - 1.5) [1]	1 x (0.75 - 1.5) 2 x (0.75 - 1.5)	1 x (0.75…1.5) 2 x (0.75…1.5)
Solid or stranded		AWG	16 - 14	18 - 14	18…14
Terminal screw			M3.5	M3.5	M3.5
Pozidriv screwdriver		Size	2	2	2
Flat-blade screwdriver		mm	0.8 x 5.5 1 x 6	0.8 x 5.5 1 x 6	0.8 x 5.5 1 x 6
Max. tightening torque		Nm	1.2	1.2	1.2

Notes [1] Use equal cross-sections only

ETS-VS3, DILM, CMD

			ETS4-VS3	DILM32-XTE	CMD(24VDC)	CMD(220-240VAC)
Contacts						
Rated impulse withstand voltage	U_{imp}	V AC	6000	6000	8000	4000
Overvoltage category/degree of pollution			III/2	III/3	III/3	III/3
Rated insulation voltage	U_i	V AC	440	600	100	250
Rated operating voltage	U_e	V	440 AC	400 AC	24 DC	250 AC
Rated operational current						
AC-15						
220/240 V	I_e	A	2	3	–	–
380/415 V	I_e	A	2	–	–	–
DC-13 [1]						
DC-13 L/R ≦15 ms						
Contacts in series:						
1	24 V	A	2.6	1	–	–
1	60 V	A	1	0.2	–	–
1	110 V	A	0.6	0.2	–	–
1	220 V	A	0.2	0.1	–	–
DC-13 L/R ≦50 ms						
Contacts in series:						
1	24 V	A	2	1	–	–
1	60 V	A	0.6	0.2	–	–
1	110 V	A	0.08	0.2	–	–
1	220 V	A	0.08	0.1	–	–
DC-13 L/R ≦300 ms						
Contacts in series:						
1	24 V	A	0.6	1	–	–
1	60 V	A	0.2	0.2	–	–
1	110 V	A	0.08	0.2	–	–
1	220 V	A	0.03	0.1	–	–
Safe isolation according to EN 61140						
Between coil and auxiliary contacts		V AC	–	250	–	–
Between the auxiliary contacts		V AC	–	250	–	–
Control circuit reliability (at U_e = 24 V DC, U_{min} = 17 V, I_{min} = 5.4 mA)	Fault probability	λ	$<10^{-8}$, < one failure in 100 million operations	–	–	–
Conventional thermal current	I_{th}	A	6	4	–	–
Component lifespan						
AC-15						
230 V, I_e = 0.1 A	Switch operations	x 10^6	7	–	–	–
230 V, I_e = 1.2 A	Switch operations	x 10^6	1	–	–	–
Short-circuit rating without welding						
Short-circuit protection rating maximum fuse [2]						
500 V		A gG/gL	–	4	2	2
500 V		A fast	4	–	–	–

Notes

[1] Switch-on and switch-off conditions based on DC-13, time constant as specified
[2] See transparent overlay "Fuses" for time/current characteristics (please enquire)

ETS-VS3, DILM, CMD

			ETS4-VS3	DILM32-XTE	CMD(24VDC) CMD(220-240VAC)
Magnet systems					
Voltage tolerance					
Starting voltage					
AC operated					
	Pick-up	x U_c	–	0.85 - 1.1	0.85 - 1.1
DC operated[1)]					
	Pick-up	x U_c	0.85 - 1.2	0.7 - 1.2	0.85 - 1.1
Power consumption					
AC operated	Sealing	VA	–	2	4
AC operated	Sealing	W	–	1.8	4
DC operated	Pick-up = sealing	W	0.6	–	4
Duty factor		% DF	100	100	100
Changeover times at 100 % U_c (recommended values)					
DC operated closing delay		ms	7	–	–
DC operated opening delay		ms	3	–	–
Maximum operating frequency					
Max. operating frequency		Ops/h	–	3600	–
6 A/250 V		Ops/h	–	360	–
Minimum on duration					
On-delayed		ms	–	< 50	–
Off-delayed		ms	–	< 200	–
Repetition accuracy (with constant parameters)	Deviation	%	–	< 5	–
Recovery time (after 100% time delay)		ms	–	70	–
Contact changeover time					
DILM32-XTEE11/DILM32-XTED11	t_u	ms	–	10	–
DILM32-XTEY20	t_u	ms	–	50	–
CMD	t_u	ms	–	–	100 ± 20%

Notes

[1)] Smoothed DC, three-phase bridge rectifier or smoothed two-phase bridge rectifier

DILEEM, DILEM

			DILEEM DILEM DILEM12	DILEEM-G DILEM-G DILEM12-G	DILEM4	DILEM4-G
General						
Standards			IEC/EN 60947, VDE 0660, CSA, UL			
Lifespan, mechanical; Coil 50/60 Hz	at 50 Hz		7	–	7	–
Lifespan, mechanical	c (contacts)	x 10^6	10	20	20	–
Maximum operating frequency						
Mechanical		Ops/h	9000			
Electrical (Contactor without overload relay)			→ Characteristic curves Page 102			
Climatic proofing			Damp heat, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30			
Ambient temperature						
Open		°C	-25 - 50			
Enclosed		°C	-25 - 40			
Mounting position			Any, except for vertically with terminals A1/A2 below			
Mechanical shock resistance (IEC/EN 60068-2-27)						
Half-sinusoidal shock 10 ms						
Basic device without auxiliary contact module						
Main circuit normally open contact		g	10			
Auxiliary contacts NC/Normally open contact		g	10/8	10/8	–	–
Basic devices with auxiliary contact module						
Main circuit normally open contact		g	10			
Auxiliary contacts Normally open contact/NC		g	20/20			
Protection type			IP20			
Protection against direct contact when actuated from front (EN 50274)			Finger- and back-of-hand proof			
Weight		kg	0.2	0.17	0.2	0.17
Terminal capacity: main and auxiliary contacts						
Solid		mm^2	1 x (0.75 - 2.5) 2 x (0.75 - 2.5)			
Flexible with ferrule		mm^2	1 x (0.75 - 1.5) 2 x (0.75 - 1.5)			
Solid or stranded		AWG	18 - 14			
Terminal screw			M3.5			
Pozidriv screwdriver		Size	2			
Flat-blade screwdriver		mm	0.8 x 5.5 1 x 6			
Max. tightening torque		Nm	1.2			
Terminal capacity springloaded terminals main and control circuits						
Solid		mm^2	1 x (1 - 2.5) 2 x (1 - 2.5)			
Flexible with ferrule		mm^2	1 x (1 - 2.5) 2 x (1 - 2.5)			
Flat-blade screwdriver		mm	0.6 x 3.5			

DILEEM, DILEM

					DILEEM DILEEM-G	DILEM DILEM-G	DILEM4	DILEM4-G	DILEM12 DILEM12-G
Main contacts									
Rated impulse withstand voltage			U_{imp}	V AC	6000	6000	6000	6000	6000
Overvoltage category/pollution degree					III/3	III/3	III/3	III/3	III/3
Rated insulation voltage			U_i	V AC	690	690	690	690	690
Rated operating voltage			U_e	V AC	690	690	690	690	690
Safe isolation according to EN 61140									
Between coil and contacts				V AC	300	300	300	300	300
Between the contacts				V AC	300	300	300	300	300
Making capacity of up to 440 V (cos φ as specified in IEC/EN 60947)				A	110	110	110	110	120
Breaking capacity	220/230 V			A	90	90	90	90	96
	380/400 V			A	90	90	90	90	96
	500 V			A	64	64	64	64	72
	660/690 V			A	42	42	42	42	42
Devices lifespan	AC-1				→ Engineering Page 99				
	AC-3				→ Engineering Page 98				
	AC-4				→ Engineering Page 98				
Short-circuit protection rating maximum fuse									
	Type "2" coordination 500 V		gL/gG	A	10	10	10	10	20
	Type "1" coordination 500 V		gL/gG	A	20	20	20	20	35
AC voltage									
AC-1 operation									
Conventional thermal current 3 pole 50 - 60 Hz									
	Open	at 40 °C	I_{th}	A	22	22	22	22	22
		at 50 °C	I_{th}	A	20	20	20	20	20
		at 55 °C	I_{th}	A	19	19	19	19	19
	Enclosed [1]		I_{th}	A	16	16	16	16	16
Conventional thermal current, 1-pole									
	Open [1]		I_{th}	A	50	50	60	60	50
	Enclosed [1]		I_{th}	A	40	40	50	50	40
AC-3 operation									
Rated operational current AC-3 open, 50 - 60 Hz, 3-pole1)	220/230 V		I_e	A	6.6	9	9	9	12
	240 V		I_e	A	6.6	9	9	9	12
	380/400 V		I_e	A	6.6	9	9	9	12
	415 V		I_e	A	6.6	9	9	9	12
	440 V		I_e	A	6.6	9	9	9	10.5
	500 V		I_e	A	5	6.4	6.4	6.4	9
	660/690 V		I_e	A	3.5	4.8	4.8	4.8	5.2
Motor rating	220/230 V		P	kW	1.5	2.2	2.2	2.2	3.5
	240 V		P	kW	1.8	2.5	2.5	2.5	3
	380/400 V		P	kW	3	4	4	4	5.5
	415 V		P	kW	3.1	4.3	4.3	4.3	5.5
	440 V		P	kW	3.3	4.6	4.6	4.6	5.5
	500 V		P	kW	3	4	4	4	5.5
	660/690 V		P	kW	3	4	4	4	4
AC-4 operation									
Rated operational current AC-4 open, 50 - 60 Hz, 3-pole1)	220/230 V		I_e	A	5	6.6	6.6	6.6	6.6
	240 V		I_e	A	5	6.6	6.6	6.6	6.6
	380/400 V		I_e	A	5	6.6	6.6	6.6	6.6
	415 V		I_e	A	5	6.6	6.6	6.6	6.6
	440 V		I_e	A	5	6.6	6.6	6.6	6.6
	500 V		I_e	A	3.7	5	5	5	5
	660/690 V		I_e	A	2.9	3.4	3.4	3.4	3.4
Rated operational power	220/230 V		P	kW	1.1	1.5	1.5	1.5	1.5
	240 V		P	kW	1.3	1.8	1.8	1.8	1.8
	380/400 V		P	kW	2.2	3	3	3	3
	415 V		P	kW	2.3	3.1	3.1	3.1	3.1
	440 V		P	kW	2.4	3.3	3.3	3.3	3.3
	500 V		P	kW	2.2	3	3	3	2.2
	660/690 V		P	kW	2.2	3	3	3	2.2

Notes

[1] At maximum permissible ambient air temperature

DILEEM, DILEM

					DILEEM	DILEEM-G	DILEM	DILEM-G	DILEM4	DILEM4-G	DILEM12	DILEM12-G
DC voltage												
Operations					→ Engineering Page 103							
Rated operational current open												
DC-1	12 V	I_e	A		20	20	20	20	20	20	20	20
	24 V	I_e	A		20	20	20	20	20	20	20	20
	60 V	I_e	A		20	20	20	20	20	20	20	20
	110 V	I_e	A		20	20	20	20	20	20	20	20
	220 V	I_e	A		20	20	20	20	20	20	20	20
DC-3	12 V	I_e	A		6	6	8	8	8	8	8	8
	24 V	I_e	A		6	6	8	8	8	8	6	8
	60 V	I_e	A		3	3	4	4	4	4	4	4
	110 V	I_e	A		2	2	3	3	3	3	3	3
	220 V	I_e	A		–	–	–	–	1	1	–	–
DC-5	12 V	I_e	A		1.8	1.8	2.5	2.5	2.5	2.5	2.5	2.5
	24 V	I_e	A		1.8	1.8	2.5	2.5	2.5	2.5	2.5	2.5
	60 V	I_e	A		1.8	1.8	2.5	2.5	2.5	2.5	2.5	2.5
	110 V	I_e	A		1.8	1.8	1.5	1.5	2.5	2.5	1.5	1.5
	220 V	I_e	A		0.2	0.2	0.3	0.3	1	1	0.3	0.3
Current heat loss (3-pole or 4-pole)												
At I_{th}			W		2	3.5	2	3.5	2.7	4.7	2	3.5
At I_e to AC-3/400 V			W		0.5	0.7	0.5	0.7	–	–	0.5	0.7
Magnet systems												
Voltage tolerance												
Single-voltage coil 50 Hz and dual-voltage coil 50 Hz, 60 Hz		Pick-up	x U_c		0.8 - 1.1	–	0.8 - 1.1	–	0.8 - 1.1	–	0.8 - 1.1	–
Dual-frequency coil 50/60 Hz		Pick-up	x U_c		0.8 - 1.1	–	0.85 - 1.1	–	0.85 - 1.1	–	0.8 - 1.1	–
DC operated		Pick-up	x U_c		–	0.8 - 1.1	–	0.8 - 1.1	–	0.85 - 1.1	–	0.8 - 1.1
Power consumption												
AC operation	Single-voltage coil, 50 Hz, and dual-voltage coil, 50 Hz, 60 Hz	Pick-up	VA		25	–	25	–	25	–	25	–
		Pick-up	W		22	–	22	–	22	–	22	–
		Sealing	VA		4.6	–	4.6	–	4.6	–	4.6	–
		Sealing	W		1.3	–	1.3	–	1.3	–	1.3	–
	Dual-frequency coil 50/60 Hz at 50 Hz	Pick-up	VA		30	–	30	–	30	–	30	–
		Pick-up	W		26	–	26	–	26	–	26	–
		Sealing	VA		5.4	–	5.4	–	5.4	–	5.4	–
		Sealing	W		1.6	–	1.6	–	1.6	–	1.6	–
	Dual-frequency coil 50/60 Hz at 60 Hz	Pick-up	VA		29	–	29	–	29	–	29	–
		Pick-up	W		24	–	24	–	24	–	24	–
		Sealing	VA		3.9	–	3.9	–	3.9	–	3.9	–
		Sealing	W		1.1	–	1.1	–	1.1	–	1.1	–
	Single-voltage coil, 50 Hz, and dual-voltage coil, 50 Hz, 60 Hz	Pick-up	VA		25	–	25	–	25	–	25	–
	Dual-frequency coil 50/60 Hz at 50 Hz	Pick-up	VA		30	–	30	–	30	–	30	–
	Dual-frequency coil 50/60 Hz at 60 Hz	Pick-up	VA		29	–	29	–	29	–	29	–
DC operation[1]	Power consumption pick-up = sealing		VA/W		–	2.6	–	2.6	–	2.6	–	2.6
Duty factor			% DF		100	100	100	100	100	100	100	100
Switching times at 100 % U_c												
N/O	Closing delay min.		ms		14	26	14	26	14	26	14	26
	Closing delay max.		ms		21	35	21	35	21	35	21	35
	Opening delay min.		ms		8	15	8	15	8	15	8	15
	Opening delay max.		ms		18	25	18	25	18	25	18	25
	Closing delay with top mounting auxiliary contact		ms		Max. 45	Max. 70	Max. 45	Max. 70	Max. 45	Max. 70	Max. 45	Max. 70
Reversing con-	Changeover time at 110 % U_c tactors											
	Changeover time min.		ms		16	40	16	40	16	40	16	40
	Changeover time maX.		ms		21	50	21	50	21	50	21	50
	Arcing time at 690 V AC		ms		Max. 12	Max. 12	Max. 12	Max. 12	Max. 12	Max. 12	Max. 12	Max. 12
Coil	Lifespan, mechanical; Coil 50/60 Hz	c (contacts)	x 10^6		7	–	7	–	7	–	7	–

Notes

[1] Smoothed DC or three-phase bridge rectifier

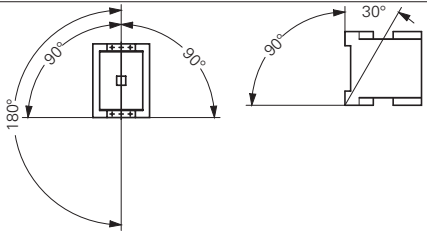
DILEEM, DILEM

			DILE(E)M(-12)...	...DILEM
Auxiliary contact				
Interlocked opposing contacts to EN 60947-5-1 Annex L, including auxiliary contact module			Yes	Yes
Rated impulse withstand voltage	U_{imp}	V AC	6000	6000
Overvoltage category/pollution degree			III/3	III/3
Rated insulation voltage	U_i	V AC	690	690
Rated operating voltage	U_e	V AC	600	600
Safe isolation according to EN 61140				
Between coil and auxiliary contacts		V AC	300	300
Between the auxiliary contacts		V AC	300	300
Rated operational current				
AC-15				
220/240 V	I_e	A	6	4
380/415 V	I_e	A	3	2
500 V	I_e	A	1.5	1.5
DC L/R ≦ 15 ms				
Contacts in series:				
1	24 V	A	2.5	2.5
2	60 V	A	2.5	2.5
3	100 V	A	1.5	1.5
3	220 V	A	0.5	0.5
Conventional thermal current	I_{th}	A	10	10
Control circuit reliability (at U_e = 24 V DC, U_{min} = 17 V, I_{min} = 5.4 mA)	Fault probability	λ	$<10^{-8}$, < one failure in 100 million operations	
Component lifespan at U_e = 240 V				
AC-15	c (contacts)	x 10^6	0.2	0.2
DC [1]				
L/R = 50 ms: 2 contacts in series at I_e = 0.5 A	c (contacts)	x 10^6	0.15	0.15
Short-circuit rating without welding				
Maximum overcurrent protective device			PKZM0-4	PKZM0-4
Short-circuit protection rating maximum fuse				
500 V		A gG/gL	6	6
500 V		A fast	10	10
Current heat loss at load of I_{th}				
Per contact		W	0.2	0.2

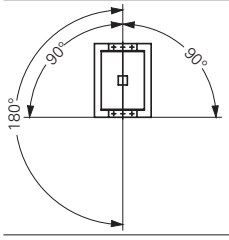
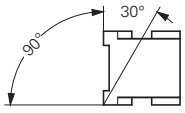
Notes

[1] Switch-on and switch-off conditions based on DC-13, time constant as specified

DILM7 ... DILM170

			DILM7	DILM9	DILM12	DILM15	DILM17	DILM25
General								
Standards			IEC/EN 60947, VDE 0660, UL, CSA					
Lifespan, mechanical								
AC operated	c (contacts)	x 10^6	10	10	10	10	10	10
DC operated	c (contacts)	x 10^6	10	10	10	10	10	10
Operating frequency, mechanical								
Mechanical, AC operated	Operations/h		9000	9000	9000	5000	5000	5000
DC operated	Operations/h		9000	9000	9000	5000	5000	5000
Maximum operating frequency								
Electrical (Contactor without overload relay)			→ Characteristic curves Page 85					
Climatic proofing			Damp heat, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30					
Ambient temperature								
Open		°C	-25…60	-25…60	-25…60	-25…60	-25…60	-25…60
Enclosed		°C	-25…40	-25…40	-25…40	-25…40	-25…40	-25…40
Storage		°C	-40 - 80	-40 - 80	-40 - 80	-40 - 80	-40 - 80	-40 - 80
Mounting position AC- and DC operated								
Mechanical shock resistance (IEC/EN 60068-2-27)								
Half-sinusoidal shock 10 ms								
Main contacts								
N/O		g	10	10	10	10	10	10
Auxiliary contacts								
N/O		g	7	7	7	7	7	7
NC		g	5	5	5	5	5	5
Mechanical shock resistance (IEC/EN 60068-2-27) with table mounting								
Half-sinusoidal shock 10 ms								
Main contacts								
N/O		g	5.7	5.7	5.7	5.7	6.9	6.9
Auxiliary contacts								
N/O		g	3.4	3.4	3.4	3.4	5.3	5.3
NC		g	3.4	3.4	3.4	3.4	3.5	3.5
Protection type			IP20	IP20	IP20	IP20	IP00	IP00
Protection against direct contact when actuated from front (EN 50274)			Finger- and back-of-hand proof					
Weight								
AC operated		kg	0.23	0.23	0.23	0.23	0.42	0.42
DC operated		kg	0.28	0.28	0.28	0.28	0.48	0.48
Terminal type, screw connection								
Terminal capacity of main cable								
Solid		mm^2	1 x (0.75 - 4) 2 x (0.75 - 2.5)				1 x (0.75 - 16) 2 x (0.75 - 10)	
Flexible with ferrule		mm^2	1 x (0.75 - 2.5) 2 x (0.75 - 2.5) [1]				1 x (0.75 - 16) 2 x (0.75 - 10)	
Stranded		mm^2	–	–	–	–	1 x 16	1 x 16
Solid or stranded		AWG	18 - 10	18 - 10	18 - 10	18 - 10	18 - 6	18 - 6
Flat conductor	Number of layers x width x thickness	mm	–	–	–	–	–	–
Terminal capacity of control circuit cable								
Solid		mm^2	1 x (0.75 - 4) 2 x (0.75 - 2.5)				1 x (0.75 - 4) 2 x (0.75 - 4)	
Flexible with ferrule		mm^2	1 x (0.75 - 2.5) 2 x (0.75 - 2.5)			1 x (0.75 - 2.5) 2 x (0.75 - 2.5)	1 x (0.75 - 2.5) 2 x (0.75 - 2.5)	
Solid or stranded		AWG	18 - 10	18 - 10	18 - 10	18 - 10	18 - 14	18 - 14

Notes [1] Also without ferrule.

DILM32	DILM38	DILM40	DILM50	DILM65	DILM72	DILM80	DILM95	DILM115	DILM150	DILM170
IEC/EN 60947, VDE 0660, UL, CSA										
10	10	10	10	10	10	10	10	10	10	10
10	10	10	10	10	10	10	10	10	10	10
5000	5000	5000	5000	5000	5000	3600	3600	3600	3600	3000
5000	5000	5000	5000	5000	5000	3600	3600	3600	3600	3000
→ Characteristic curves Page 85										
Damp heat, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30										
-25…60	-25…60	-25…60	-25…60	-25…60	-25…60	-25…60	-25…60	-25…60	-25…60	-25…60
-25…40	-25…40	-25…40	-25…40	-25…40	-25…40	-25…40	-25…40	-25…40	-25…40	-25…40
-40 - 80	-40 - 80	-40 - 80	-40 - 80	-40 - 80	-40 - 80	-40 - 80	-40 - 80	-40 - 80	-40 - 80	-40 - 80
										
10	10	10	10	10	10	10	10	10	10	10
7	7	7	7	7	7	7	7	7	7	7
5	5	5	5	5	5	5	5	5	5	5
6.9	6.9	10	10	10	10	10	10	10	10	10
5.3	5.3	7	7	7	7	7	7	7	7	7
3.5	3.5	5	5	5	5	5	5	5	5	5
IP00	IP00	IP00	IP00	IP00	IP00	IP00	IP00	IP00	IP00	IP00
Finger- and back-of-hand proof										
0.42	0.42	0.9	0.9	0.9	0.9	2	2	2	2	2
0.48	0.48	1.1	1.1	1.1	1.1	2.1	2.1	2.1	2.1	2.1
1 x (0.75 - 16) 2 x (0.75 - 10)		1 x (0.75 - 16) 2 x (0.75 - 16)				–	–	–	–	–
1 x (0.75 - 16) 2 x (0.75 - 10)		1 x (0.75 - 35) 2 x (0.75 - 25)				1 x (10 - 95) 2 x (10 - 70)				
1 x 16	1 x 16	1 x (16 - 50) 2 x (16 - 35)				1 x (16 - 95) 2 x (16 - 70)				
18 - 6	18 - 6	12 - 2	12 - 2	12 - 2	12 - 2	8…3/0	8…3/0	8…3/0	8…3/0	8…3/0
–	–	2 x (6 x 9 x 0.8)				2 x (6 x 16 x 0.8)				
1 x (0.75 - 4) 2 x (0.75 - 4)										
1 x (0.75 - 2.5) 2 x (0.75 - 2.5)										
18 - 14	18 - 14	18 - 14	18 - 14	18 - 14	18 - 14	18 - 14	18 - 14	18 - 14	18 - 14	18 - 14

DILM7 ... DILM170

				DILM7	DILM9	DILM12	DILM15	DILM17	DILM25
General									
Main cable connection screw/bolt				M3.5	M3.5	M3.5	M3.5	M5	M5
Tightening torque			Nm	1.2	1.2	1.2	1.2	3.2	3.2
Control circuit cable connection screw/bolt				M3.5	M3.5	M3.5	M3.5	M3.5	M3.5
Tightening torque			Nm	1.2	1.2	1.2	1.2	1.2	1.2
Tools									
Main conductors									
Pozidriv screwdriver			Size	2	2	2	2	2	2
Internal hexagon	SW		mm	–	–	–	–	–	–
Flat-blade screwdriver			mm	0.8 x 5.5 1 x 6	0.8 x 5.5 1 x 6	0.8 x 5.5 1 x 6	0.8 x 5.5 1 x 6	0.8 x 5.5 1 x 6	0.8 x 5.5 1 x 6
Auxiliary conductors									
Pozidriv screwdriver			Size	2	2	2	2	2	2
Flat-blade screwdriver			mm	0.8 x 5.5 1 x 6	0.8 x 5.5 1 x 6	0.8 x 5.5 1 x 6	0.8 x 5.5 1 x 6	0.8 x 5.5 1 x 6	0.8 x 5.5 1 x 6
Terminal type spring-cage terminal									
Terminal capacity of main cable									
Solid			mm^2	1 x (0.75 - 2.5) 2 x (0.75 - 2.5)				–	–
Flexible			mm^2	1 x (0.75 - 2.5) 2 x (0.75 - 2.5)				–	–
Flexible with ferrule			mm^2	1 x (0.75 - 1.5) 2 x (0.75 - 1.5)				–	–
Flexible without ferrule			mm^2	1 x (0.75 - 2.5) 2 x (0.75 - 2.5)				–	–
Solid or stranded			AWG	18 - 14	18 - 14	18 - 14	18 - 14	–	–
Terminal capacity of control circuit cable									
Solid			mm^2	1 x (0.75 - 2.5) 2 x (0.75 - 2.5)					
Flexible			mm^2	1 x (0.75 - 2.5) 2 x (0.75 - 2.5)					
Flexible with ferrule			mm^2	1 x (0.75 - 1.5) 2 x (0.75 - 1.5)					
Flexible without ferrule			mm^2	1 x (0.75 - 2.5) 2 x (0.75 - 2.5)				–	–
Solid or stranded			AWG	18 - 14	18 - 14	18 - 14	18 - 14	18 - 14	18 - 14
Tools									
Strip length			mm	10	10	10	10	10	10
Screwdriver blade width			mm	3.5	3.5	3.5	3.5	3.5	3.5
Main contacts									
Rated impulse withstand voltage	U_{imp}		V AC	8000	8000	8000	8000	8000	8000
Overvoltage category/pollution degree				III/3	III/3	III/3	III/3	III/3	III/3
Rated insulation voltage	U_i		V AC	690	690	690	690	690	690
Rated operating voltage	U_e		V AC	690	690	690	690	690	690
Safe isolation according to EN 61140									
Between coil and contacts			V AC	400	400	400	400	440	440
Between the contacts			V AC	400	400	400	400	440	440
Making capacity (cos φ to IEC/EN 60947)	To 690 V		A	112	112	144	155	238	350
Breaking capacity									
230 V			A	70	90	120	124	170	250
380/400 V			A	70	90	120	124	170	250
500 V			A	50	70	100	100	170	250
660/690 V			A	40	50	70	70	120	150
Short-circuit rating									
Short-circuit protection rating maximum fuse									
Type "2" coordination									
400 V	gG/gL 500 V		A	20	20	20	20	35	35
690 V	gG/gL 690 V		A	16	16	20	20	35	35
Type "1" coordination									
400 V	gG/gL 500 V		A	35	35	35	63	63	100
690 V	gG/gL 690 V		A	20	20	25	50	50	50

DILM32	DILM38	DILM40	DILM50	DILM65	DILM72	DILM80	DILM95	DILM115	DILM150	DILM170
M5	M5	M6	M6	M6	M6	M10	M10	M10	M10	M10
3.2	3.2	3.3	3.3	3.3	3.3	14	14	14	14	14
M3.5	M3.5	M3.5	M3.5	M3.5	M3.5	M3.5	M3.5	M3.5	M3.5	M3.5
1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
2	2	2	2	2	2	–	–	–	–	–
–	–	–	–	–	–	5	5	5	5	5
0.8 x 5.5 1 x 6	0.8 x 5.5 1 x 6	0.8 x 5.5 1 x 6	0.8 x 5.5 1 x 6	0.8 x 5.5 1 x 6	0.8 x 5.5 1 x 6	–	–	–	–	–
2	2	2	2	2	2	2	2	2	2	2
0.8 x 5.5 1 x 6	0.8 x 5.5 1 x 6	0.8 x 5.5 1 x 6	0.8 x 5.5 1 x 6	0.8 x 5.5 1 x 6	0.8 x 5.5 1 x 6	0.8 x 5.5 1 x 6	0.8 x 5.5 1 x 6	0.8 x 5.5 1 x 6	0.8 x 5.5 1 x 6	0.8 x 5.5 1 x 6
–	–	–	–	–	–	–	–	–	–	–
–	–	–	–	–	–	–	–	–	–	–
–	–	–	–	–	–	–	–	–	–	–
–	–	–	–	–	–	–	–	–	–	–
–	–	–	–	–	–	–	–	–	–	–
1 x (0.75 - 2.5) 2 x (0.75 - 2.5)										
1 x (0.75 - 2.5) 2 x (0.75 - 2.5)										
1 x (0.75 - 1.5) 2 x (0.75 - 1.5)										
–	–	–	–	–	–	–	–	–	–	–
18 - 14	18 - 14	18 - 14	18 - 14	18 - 14	18 - 14	18 - 14	18 - 14	18 - 14	18 - 14	18 - 14
10	10	10	10	10	10	10	10	10	10	10
3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000
III/3	III/3	III/3	III/3	III/3	III/3	III/3	III/3	III/3	III/3	III/3
690	690	690	690	690	690	690	690	690	690	690
690	690	690	690	690	690	690	690	690	690	690
440	440	440	440	440	440	690	690	690	690	690
440	440	440	440	440	440	690	690	690	690	690
384	384	560	700	910	910	1120	1330	1610	2100	2100
320	320	400	500	650	650	800	950	1150	1500	1500
320	320	400	500	650	650	800	950	1150	1500	1500
320	320	400	500	650	650	800	950	1150	1500	1500
180	180	250	320	370	370	650	800	1100	1200	1320
63	63	63	80	125	125	160	160	250	250	250
35	35	50	63	80	80	160	160	250	250	250
125	125	125	160	250	250	250	250	250	250	250
63	63	80	80	100	100	200	200	250	250	250

DILM7 ... DILM170

					DILM7	DILM9	DILM12	DILM15	DILM17	DILM25
AC voltage										
AC-1 operation										
Conventional free air thermal current 3 pole 50 - 60 Hz	Open	at 50 °C	I_{th}	A	22	22	22	22	40	45
		at 50 °C	I_{th}	A	21	21	21	21	38	43
		at 55 °C	I_{th}	A	21	21	21	21	37	42
		at 60 °C	I_{th}	A	20	20	20	20	35	40
	Enclosed		I_{th}	A	18	18	18	18	32	36
Conventional free air thermal current 1 pole	Open		I_{th}	A	50	50	50	50	88	100
	Enclosed		I_{th}	A	45	45	45	45	80	90
AC-3 operation										
Rated operational current AC -3 open, 50 – 60 Hz, 3 pole	220/230 V		I_e	A	7	9	12	15.5	18	25
	240 V		I_e	A	7	9	12	15.5	18	25
	380/400 V		I_e	A	7	9	12	15.5	18	25
	415 V		I_e	A	7	9	12	15.5	18	25
	440 V		I_e	A	7	9	12	15.5	18	25
	500 V		I_e	A	5	7	10	12.5	18	25
	660/690 V		I_e	A	4	5	7	9	12	15
Rated operational power	220/230 V		P	kW	2.2	2.5	3.5	4	5	7.5
	240 V		P	kW	2.2	3	4	4.6	5.5	8.5
	380/400 V		P	kW	3	4	5.5	7.5	7.5	11
	415 V		P	kW	4	5.5	7	8	10	14.5
	440 V		P	kW	4.5	5.5	7.5	8.4	10.5	15.5
	500 V		P	kW	3.5	4.5	7	7.5	12	17.5
	660/690 V		P	kW	3.5	4.5	6.5	7	11	14
AC-4 operation										
Rated operational current AC-4 open, 50 - 60 Hz, 3 pole	220/230 V		I_e	A	5	6	7	7	10	13
	240 V		I_e	A	5	6	7	7	10	13
	380/400 V		I_e	A	5	6	7	7	10	13
	415 V		I_e	A	5	6	7	7	10	13
	440 V		I_e	A	5	6	7	7	10	13
	500 V		I_e	A	4.5	5	6	6	10	13
	660/690 V		I_e	A	4	4.5	5	5	8	10
Rated operational powe	220/230 V		P	kW	1	1.5	2	2	2.5	3.5
	240 V		P	kW	1.5	1.6	2.2	2.2	3	4
	380/400 V		P	kW	2.2	2.5	3	3	4.5	6
	415 V		P	kW	2.3	2.8	3.4	3.4	5	6.5
	440 V		P	kW	2.4	3	3.6	3.6	5.5	7
	500 V		P	kW	2.5	2.8	3.5	3.5	6	8
	660/690 V		P	kW	2.9	3.6	4.4	4.4	6.5	8.5
DC voltage										
Operations					→ Switching of DC current Page 103					
Rated operational current I_e open										
DC-1 operation	60 V		I_e	A	20	20	20	20	35	40
	110 V		I_e	A	20	20	20	20	35	40
	220 V		I_e	A	15	15	15	15	35	40
	440 V		I_e	A	1	1.3	1.3	1.3	2.9	2.9
DC-3 operation	60 V		I_e	A	20	20	20	20	35	35
	110 V		I_e	A	20	20	20	20	35	35
	220 V		I_e	A	1.5	1.5	1.5	1.5	10	10
	440 V		I_e	A	0.2	0.2	0.2	0.2	0.6	0.6
DC-5 operation	60 V		I_e	A	20	20	20	20	35	35
	110 V		I_e	A	20	20	20	20	35	35
	220 V		I_e	A	1.5	1.5	1.5	1.5	10	10
	440 V		I_e	A	0.2	0.2	0.2	0.2	0.6	0.6

DILM32	DILM38	DILM40	DILM50	DILM65	DILM72	DILM80	DILM95	DILM115	DILM150	DILM170
45	45	60	80	98	98	110	130	160	190	225
43	43	57	71	88	88	98	125	142	180	200
42	42	55	68	83	83	94	115	135	170	190
40	40	50	65	80	80	90	110	130	160	185
36	36	45	58	72	72	80	100	115	144	166
100	100	125	162	200	200	225	275	325	400	460
90	90	112	145	180	180	200	250	285	360	415
32	38	40	50	65	72	80	95	115	150	170
32	38	40	50	65	72	80	95	115	150	170
32	38	40	50	65	72	80	95	115	150	170
32	38	40	50	65	72	80	95	115	150	170
32	38	40	50	65	72	80	95	115	150	170
32	38	40	50	65	72	80	95	115	150	170
18	22.5	25	32	37	37	65	80	93	100	150
10	11	12.5	15.5	20	22	25	30	37	48	52
11	12	13.5	17	22	25	27.5	32	40	52	57
15	18.5	18.5	22	30	37	37	45	55	75	90
19	20	24	30	39	41	48	57	70	91	100
20	21	25	32	41	44	51	60	75	95	105
23	24	28	36	47	50	58	70	85	110	120
17	21	23	30	35	35	63	75	90	96	140
15	15	18	21	25	25	40	50	55	65	65
15	15	18	21	25	25	40	50	55	65	65
15	15	18	21	25	25	40	50	55	65	65
15	15	18	21	25	25	40	50	55	65	65
15	15	18	21	25	25	40	50	55	65	65
15	15	18	21	25	25	40	50	55	65	65
12	12	14	17	20	20	27	37	45	50	50
4	4	5	6	7	7	12	16	17	20	20
4.5	4.5	5.5	6.5	7.5	7.5	13	17	19	22	22
7	7	9	10	12	12	20	26	28	33	33
7.5	7.5	9.5	11	13	13	24	30	33	39	39
8	8	10	12	14	14	25	32	35	41	41
9	9	11	13	16	16	29	36	40	47	47
10	10	12	14	17	17	26	35	43	48	48
40	40	50	60	72	72	110	110	160	160	160
40	40	50	50	72	72	110	110	160	160	160
40	40	45	45	65	65	70	70	90	90	90
2.9	2.9	2.9	2.9	2.9	2.9	4.5	4.5	4.5	4.5	4.5
40	40	50	60	72	72	110	110	160	160	160
40	40	50	50	72	72	110	110	160	160	160
25	25	25	25	35	35	35	35	40	40	40
0.6	0.6	0.6	0.6	0.6	0.6	1	1	1	1	1
40	40	50	60	72	72	110	110	160	160	160
40	40	50	50	72	72	110	110	160	160	160
10	10	25	25	35	35	35	35	40	40	40
0.6	0.6	0.6	0.6	0.6	0.6	1	1	1	1	1

DILM7 ... DILM170

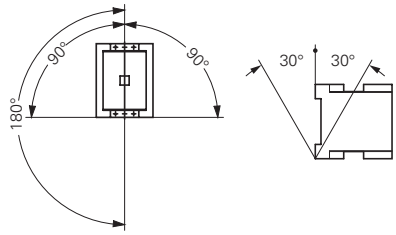
				DILM7	DILM9	DILM12	DILM15	DILM17	DILM25
Current heat loss (3 pole)									
Current heat loss at I_{th}			W	3	3	3	3	7.3	9.6
Current heat loss at I_e to AC-3/400 V			W	0.37	0.6	1.1	1.8	1.9	3.8
Impedance per pole			m Ω	2.5	2.5	2.5	2.5	2	2
Magnet systems									
Voltage tolerance									
AC operated		Pick-up	x U_c	0.8 - 1.1	0.8 - 1.1	0.8 - 1.1	0.8 - 1.1	0.8 - 1.1	0.8 - 1.1
AC operated		Drop-out	x U_c	0.3 - 0.6	0.3 - 0.6	0.3 - 0.6	0.3 - 0.6	0.3 - 0.6	0.3 - 0.6
DC operated [3]		Pick-up	x U_c	0.8 - 1.1	0.8 - 1.1 [1]	0.8 - 1.1 [1]	0.8 - 1.1 [1]	0.7 - 1.2 [2]	0.7 - 1.2 [2]
DC operated [3]		Drop-out	x U_c	0.15 - 0.6	0.15 - 0.6	0.15 - 0.6	0.15 - 0.6	0.15 - 0.6	0.15 - 0.6
Power consumption of the coil in a cold state and 1.0 x U_c									
50 Hz		Pick-up	VA	24	24	24	24	52	52
50 Hz		Sealing	VA	3.4	3.4	3.4	3.4	7.1	7.1
50 Hz		Sealing	W	1.2	1.2	1.2	1.2	2.1	2.1
60 Hz		Pick-up	VA	30	30	30	30	67	67
60 Hz		Sealing	VA	4.4	4.4	4.4	4.4	8.7	8.7
60 Hz		Sealing	W	1.4	1.4	1.4	1.4	2.6	2.6
50/60 Hz		Pick-up	VA	27 25	27 25	27 25	27 25	62 58	62 58
50/60 Hz		Sealing	VA	4.2 3.3	4.2 3.3	4.2 3.3	4.2 3.3	9.1 6.5	9.1 6.5
50/60 Hz		Sealing	W	1.4 1.2	1.4 1.2	1.4 1.2	1.4 1.2	2.5 2	2.5 2
DC operated		Pick-up	W	3	3	4.5	4.5	12	12
DC operated		Sealing	W	3	3	4.5	4.5	0.5	0.5
Duty factor			% DF	100	100	100	100	100	100
Changeover times at 100 % U_c (recommended values)									
Main contacts									
AC operated	Closing delay		ms	15…21	15…21	15…21	15…21	16…22	16…22
	Opening delay		ms	9…18	9…18	9…18	9…18	8…14	8…14
DC operated	Closing delay		ms	31	31	31	31	47	47
	Opening delay		ms	12	12	12	12	30	30
Arcing time			ms	10	10	10	10	10	10
Permissible residual current when A1 - A2 are actuated from the electronic system (with 0 signal)			mA	–	–	–	–	–	–
Lifespan, mechanical; Coil 50/60 Hz		At 50 Hz		Mechanical lifespan at 50 Hz approx. 30% lower than under → Technical data general					
Electromagnetic compatibility (EMC)									
Emitted interference				To EN 60947-1					
Interference immunity				To EN 60947-1					

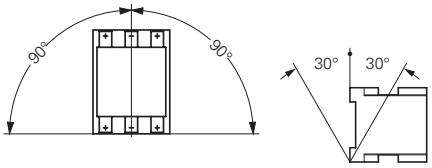
Notes

[1] At 24 V DC: 0.7 – 1.3 without auxiliary contact module and at ambient temperature + 40 °C
[2] RDC 24 (Umin 24 V DC/Umax 27 V DC)
RDC 60 (Umin 48 V DC/Umax 60 V DC)
RDC 130 (Umin 110 V DC/Umax 130 V DC)
RDC 240 (Umin 200 V DC/Umax 240 V DC)
Example: Uc = 0.7 x Umin - 1.2 x Umax / Uc = 0.7 x 24 V - 1.2 x 27 V DC
[3] At least: smoothed two-phase bridge rectifier or three-phase rectifier

DILM32	DILM38	DILM40	DILM50	DILM65	DILM72	DILM80	DILM95	DILM115	DILM150	DILM170
12.1	12.1	11.3	19	28.8	28.8	12.2	18.2	20.3	30.7	41.1
6.1	6.1	7.2	11.3	19	23	9.6	13.5	15.9	27	34.7
2	2	1.5	1.5	1.5	1.5	0.5	0.5	0.4	0.4	0.4
0.8 - 1.1	0.8 - 1.1	0.8 - 1.1	0.8 - 1.1	0.8 - 1.1	0.8 - 1.1	0.8 - 1.1	0.8 - 1.1	0.8 - 1.15	0.8 - 1.15	0.8 - 1.15
0.3 - 0.6	0.3 - 0.6	0.3 - 0.6	0.3 - 0.6	0.3 - 0.6	0.3 - 0.6	0.3 - 0.6	0.3 - 0.6	0.25 - 0.6	0.25 - 0.6	0.25 - 0.6
0.7 - 1.2[2)]	0.7 - 1.2[2)]	0.7 - 1.2[2)]	0.7 - 1.2[2)]	0.7 - 1.2[2)]	0.7 - 1.2[2)]	0.7 - 1.2[2)]	0.7 - 1.2[2)]	0.7 - 1.2[2)]	0.7 - 1.2[2)]	0.7 - 1.2[2)]
0.15 - 0.6	0.15 - 0.6	0.15 - 0.6	0.15 - 0.6	0.15 - 0.6	0.15 - 0.6	0.15 - 0.6	0.15 - 0.6	0.15 - 0.6	0.15 - 0.6	0.15 - 0.6
52	52	149	149	149	149	310	310	180	180	180
7.1	7.1	16	16	16	16	26	26	3.1	3.1	3.1
2.1	2.1	4.3	4.3	4.3	4.3	5.8	5.8	2.1	2.1	2.1
67	67	178	178	178	178	345	345	170	170	170
8.7	8.7	19	19	19	19	30	30	3.1	3.1	3.1
2.6	2.6	5.3	5.3	5.3	5.3	7.1	7.1	2.1	2.1	2.1
62 58	62 58	168 154	168 154	168 154	168 154	372 328	372 328	170 170	170 170	170 170
9.1 6.5	9.1 6.5	22 14	22 14	22 14	22 14	37.1 22.6	37.1 22.6	3.1 3.1	3.1 3.1	3.1 3.1
2.5 2	2.5 2	5.3 4.3	5.3 4.3	5.3 4.3	5.3 4.3	7.5 6.1	7.5 6.1	2.1 2.1	2.1 2.1	2.1 2.1
12	12	24	24	24	24	90	90	149	149	149
0.5	0.5	0.5	0.5	0.5	0.5	1.3	1.3	2.1	2.1	2.1
100	100	100	100	100	100	100	100	100	100	100
16…22	16…22	12…18	12…18	12…18	12…18	14…20	14…20	28…33	28…33	28…33
8…14	8…14	8…13	8…13	8…13	8…13	9…14	9…14	35…41	35…41	35…41
47	47	54	54	54	54	45	45	35	35	35
30	30	24	24	24	24	34	34	30	30	30
10	10	10	10	10	10	15	15	15	15	15
–	–	–	–	–	–	≦1	≦1	≦1	≦1	≦1
Mechanical lifespan at 50 Hz approx. 30% lower than under → Technical data general										
To EN 60947-1										
To EN 60947-1										

DILM185...DILM1600, DILH

			Contactors						
			DILM185A	DILM225A	DILM250	DILM300A	DILM400	DILM500	DILM570
General									
Standards			IEC/EN 60947, VDE 0660, UL, CSA						
Lifespan, mechanical									
AC operated	c (contacts)	x 10^6	10	10	10	10	7	7	7
DC operated	c (contacts)	x 10^6	10	10	10	10	7	7	7
Operating frequency, mechanical									
AC operated	Operations/h		3000	3000	3000	3000	2000	2000	2000
DC operated	Operations/h		3000	3000	3000	3000	2000	2000	2000
Maximum operating frequency									
Electrical (Contactor without overload relay)			→ Engineering Page 102						
Climatic proofing			Damp heat, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30						
Ambient temperature									
Open		°C	-25…60	-25…60	-25…60	-25…60	-25…60	-25…60	-25…60
Enclosed		°C	-25…40	-25…40	-25…40	-25…40	-25…40	-25…40	-25…40
Storage		°C	-40 - 80	-40 - 80	-40 - 80	-40 - 80	-40 - 80	-40 - 80	-40 - 80
Mounting position: AC and DC-actuated									
Mechanical shock resistance (IEC/EN 60068-2-27)									
Half-sinusoidal shock 10 ms									
Main contacts									
N/O		g	10	10	10	10	10	10	10
Auxiliary contacts									
N/O		g	10	10	10	10	10	10	10
NC		g	8	8	8	8	8	8	8
Protection type			IP00	IP00	IP00	IP00	IP00	IP00	IP00
Protection against direct contact when actuated from front (EN 90274)			Finger- and back-of-hand proof with cover or terminal block						
Weight									
Weight		kg	3.2	3.2	6.5	6.5	8	8	8
Terminal capacity of main cable									
Flexible with cable lug		mm^2	50 - 185	50 - 185	50 - 240	50 - 240	50 - 240	50 - 240	50 - 240
Stranded with cable lug		mm^2	50 - 185	70 - 185	70 - 240	70 - 240	70 - 240	70 - 240	70 - 240
Solid or stranded		AWG	1/0 - 350 MCM	2/0 - 250 MCM	2/0 - 500 MCM	2/0 - 500 MCM	2/0 - 500 MCM	2/0 - 500 MCM	2/0 - 500 MCM
Busbar	Width	mm	32	32	25	25	25	30	30
Main cable connection screw/bolt			M10	M10	M10	M10	M10	M10	M10
Tightening torque		Nm	24	24	24	24	24	24	24
Terminal capacity of control circuit cable									
Solid		mm^2	1 x (0.75 - 2.5) 2 x (0.75 - 2.5)						
Flexible with ferrule		mm^2	1 x (0.75 - 2.5) 2 x (0.75 - 2.5)						
Solid or stranded		AWG	2 x (18 - 12)	2 x (18 - 12)	2 x (18 - 12)	2 x (18 - 12)	2 x (18 - 12)	2 x (18 - 12)	2 x (18 - 12)
Control circuit cable connection screw/bolt			M3.5	M3.5	M3.5	M3.5	M3.5	M3.5	M3.5
Tightening torque		Nm	1.2	1.2	1.2	1.2	1.2	1.2	1.2
Tools									
Main conductors									
Wrench		mm	16	16	16	16	16	16	16
Auxiliary conductors									
Pozidriv screwdriver		Size	2	2	2	2	2	2	2

DILM580	DILM650	DILM750	DILM820	DILM1000	DILM1600	DILH1400	DILH2000	DILH2200	DILH2600
IEC/EN 60947, VDE 0660, UL, CSA									
5	5	5	5	5	5	5	5	5	5
5	5	5	5	5	5	5	5	5	5
1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
→ Engineering Page 102									
Damp heat, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30									
-25…60	-25…60	-25…60	-25…60	-25…60	-25…60	-25…60	-25…60	-25…60	-25…60
-25…40	-25…40	-25…40	-25…40	-25…40	-25…40	-25…40	-25…40	-25…40	-25…40
-40 - 80	-40 - 80	-40 - 80	-40 - 80	-40 - 80	-40 - 80	-40 - 80	-40 - 80	-40 - 80	-40 - 80
									
10	10	10	10	10	10	10	10	10	10
10	10	10	10	10	10	10	10	10	10
8	8	8	8	8	8	8	8	8	8
IP00	IP00	IP00	IP00	IP00	IP00	IP00	IP00	IP00	IP00
Finger- and back-of-hand proof with cover or terminal block									
15	15	15	15	15	32	15	32	32	32
50 - 240	50 - 240	50 - 240	50 - 240	50 - 240	–	–	–	–	–
70 - 240	70 - 240	70 - 240	70 - 240	70 - 240	–	–	–	–	–
2/0 - 500 MCM	2/0 - 500 MCM	2/0 - 500 MCM	2/0 - 500 MCM	2/0 - 500 MCM	–	–	–	–	–
50	50	60	60	60	100	80	100	100	100
M10	M10	M12	M12	M12	M12	M12	M12	M12	M12
24	24	35	35	35	35	35	35	35	35
1 x (0.75 - 2.5) 2 x (0.75 - 2.5)									
1 x (0.75 - 2.5) 2 x (0.75 - 2.5)									
2 x (18 - 12)	2 x (18 - 12)	2 x (18 - 12)	2 x (18 - 12)	2 x (18 - 12)	2 x (18…12)	2 x (18 - 12)	2 x (18 - 12)	2 x (18 - 12)	2 x (18 - 12)
M3.5	M3.5	M3.5	M3.5	M3.5	M3.5	M3.5	M3.5	M3.5	M3.5
1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
16	16	18	18	18	18	18	18	18	18
2	2	2	2	2	2	2	2	2	2

DILM185...DILM1600, DILH

			Contactors						
			DILM185A	DILM225A	DILM250	DILM300A	DILM400	DILM500	DILM570
Main contacts									
Rated impulse withstand voltage	U_{imp}	V AC	8000	8000	8000	8000	8000	8000	8000
Overvoltage category/pollution degree			III/3	III/3	III/3	III/3	III/3	III/3	III/3
Rated insulation voltage	U_i	V AC	1000	1000	1000	1000	1000	1000	1000
Rated operating voltage	U_e	V AC	1000	1000	1000	1000	1000	1000	1000
Safe isolation according to EN 61140									
Between coil and contacts		V AC	500	500	500	500	500	500	500
Between the contacts		V AC	500	500	500	500	500	500	500
Making capacity (cos φ to IEC/EN 60947)		A	2700	2700	3000	3600	5500	5500	6000
Breaking capacity									
220/230 V		A	2250	2250	2500	3000	5000	5000	5800
380/400 V		A	2250	2250	2500	3000	5000	5000	5800
500 V		A	2250	2250	2500	3000	5000	5000	5800
660/690 V		A	2250	2250	2500	3000	5000	5000	5800
1000 V		A	760	760	760	950	950	950	950
Component lifespan			→ Page 98						
Short-circuit rating									
Short-circuit protection rating maximum fuse									
Type “2” coordination									
400 V	gG/gL 500 V	A	250	250	315	315	500	500	500
690 V	gG/gL 690 V	A	250	250	315	315	500	500	500
1000 V	gG/gL 1000 V	A	160	160	160	160	200	200	200
Type “1” coordination									
400 V	gG/gL 500 V	A	400	400	400	400	630	630	800
690 V	gG/gL 690 V	A	315	315	400	400	630	630	630
1000 V	gG/gL 1000 V	A	200	200	200	200	250	250	250
AC voltage									
AC-1 operation									
Conventional thermal current 3 pole 50 - 60 Hz									
Open									
at 40 °C	I_{th}	A	337	356	400	430	612	857	920
at 50 °C	I_{th}	A	301	310	360	385	548	767	821
at 55 °C	I_{th}	A	287	295	340	365	522	731	783
at 60 °C	I_{th}	A	275	285	330	350	500	700	750
Enclosed[1)]	I_{th}	A	245	275	300	315	450	650	–
Conventional thermal current, 1-pole									
Open[1)]	I_{th}	A	685	707	825	875	1250	1750	1875
Enclosed[1)]	I_{th}	A	625	636	742	785	1125	1600	–
AC-3 operation									
Rated operational current AC -3 open, 50 – 60 Hz, 3 pole									
220/230 V	I_e	A	185	225	250	300	400	500	580
240 V	I_e	A	185	225	250	300	400	500	580
380/400 V	I_e	A	185	225	250	300	400	500	580
415 V	I_e	A	185	225	250	300	400	500	580
440 V	I_e	A	185	225	250	300	400	500	580
500 V	I_e	A	185	225	250	300	400	500	500
660/690 V	I_e	A	150	160	250	210	360	360	360
1000 V	I_e	A	76	76	76	95	95	95	95
Rated operational power									
220/230 V	P	kW	55	70	75	90	125	155	185
240 V	P	kW	62	75	85	100	132	170	200
380/400 V	P	kW	90	110	132	160	200	250	315
415 V	P	kW	110	132	148	180	240	300	348
440 V	P	kW	115	138	132	185	200	250	370
500 V	P	kW	132	160	180	215	290	360	360
660/690 V	P	kW	140	150	240	195	344	344	344
1000 V	P	kW	108	108	108	132	132	132	132

Notes

[1)] At maximum permissible ambient air temperature
[2)] To 690 V

DILM580	DILM650	DILM750	DILM820	DILM1000	DILM1600	DILH1400	DILH2000	DILH2200	DILH2600
8000	8000	8000	8000	8000	8000	8000	8000	8000	8000
III/3	III/3	III/3	III/3	III/3	III/3	III/3	III/3	III/3	III/3
1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
500	500	500	500	500	500	500	500	500	500
500	500	500	500	500	500	500	500	500	500
7800	7800	9840	9840	9840	19000	9840	9840	9840	9840
6500	6500	8200	8200	8200	16000	8200	8200	8200	8200
6500	6500	8200	8200	8200	16000	8200	8200	8200	8200
6500	6500	8200	8200	8200	16000	8200	8200	8200	8200
6500	6500	8200	8200	8200	16000	8200	8200	8200	8200
4350	4350	5800	5800	5800	5800	5800	5800	5800	5800
→ Page 98									
630	630	630	630	630	–	–	–	–	–
630	630	630	630	630	–	–	–	–	–
500	500	630	630	630	–	–	–	–	–
1000	1000	1200	1200	1200	–	–	–	–	–
1000	1000	1200	1200	1200	–	–	–	–	–
630	630	800	800	800	–	–	–	–	–
980	1041	1102	1225	1225	2200 [2]	1714 [2]	2450 [2]	2700 [2]	3185 [2]
876	931	986	1095	1095	1970 [2]	1533 [2]	2190 [2]	2400 [2]	2847 [2]
836	888	940	1044	1044	1880 [2]	1462 [2]	2089 [2]	2300 [2]	2716 [2]
800	850	900	1000	1000	1800 [2]	1400 [2]	2000 [2]	2200 [2]	2600 [2]
–	–	–	–	–	–	–	–	–	–
2000	2125	2250	2500	2500	4500	3500	5000	5500	6500 [2]
–	–	–	–	–	–	–	–	–	–
580	650	750	820	1000	1600	–	–	–	–
580	650	750	820	1000	1600	–	–	–	–
580	650	750	820	1000	1600	–	–	–	–
580	650	750	820	1000	1600	–	–	–	–
580	650	750	820	1000	1600	–	–	–	–
580	650	750	820	1000	1600	–	–	–	–
580	650	750	820	1000	1600	–	–	–	–
435	435	580	580	750	1200	–	–	–	–
185	205	240	260	315	500	–	–	–	–
200	225	260	285	340	550	–	–	–	–
315	355	400	450	560	900	–	–	–	–
348	390	455	500	610	930	–	–	–	–
370	420	480	450	650	1000	–	–	–	–
420	470	550	600	730	1180	–	–	–	–
560	630	720	750	1000	1600	–	–	–	–
600	600	800	800	1100	1770	–	–	–	–

DILM185...DILM1600, DILH

			Contactors						
			DILM185A	DILM225A	DILM250	DILM300A	DILM400	DILM500	DILM570
AC voltage									
AC-4 operation									
Rated operational current AC -4 open, 50 – 60 Hz, 3 pole									
220/230 V	I_e	A	136	164	200	240	296	360	360
240 V	I_e	A	136	164	200	240	296	360	360
380/400 V	I_e	A	136	164	200	240	296	360	360
415 V	I_e	A	136	164	200	240	296	360	360
440 V	I_e	A	136	164	200	240	296	360	360
500 V	I_e	A	136	164	200	240	296	360	360
660/690 V	I_e	A	110	120	200	170	296	296	296
1000 V	I_e	A	55	55	76	76	95	95	95
Rated operational power									
220/230 V	P	kW	41	51	62	75	92	112	112
240 V	P	kW	45	54	68	82	101	122	122
380/400 V	P	kW	75	90	110	132	160	200	200
415 V	P	kW	80	96	117	142	176	216	216
440 V	P	kW	85	102	125	150	186	229	229
500 V	P	kW	96	116	143	172	214	260	260
660/690 V	P	kW	102	110	189	160	283	344	344
1000 V	P	kW	77	77	108	109	132	132	132
Capacitor operation									
Individual compensation rated operational current I_e of alternating current capacitor									
Open									
To 525 V		A	220	220	220	307	307	307	307
690 V		A	133	133	133	177	177	177	177
Max. peak inrush current		x I_e	30	30	30	30	30	30	30
Component lifespan	c (contacts)	x 10^6	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Max. operating frequency		Ops/h	200	200	200	200	200	200	200
DC voltage									
Operations			→ Engineering Page 103						
Rated operational current I_e open									
DC-1 operation									
60 V	I_e	A	300	300	300	400	400	400	400
110 V	I_e	A	300	300	300	400	400	400	400
220 V	I_e	A	300	300	300	400	400	400	400
440 V	I_e	A	11	11	11	11	11	11	11
DC-3 operation									
60 V	I_e	A	300	300	300	400	400	400	400
110 V	I_e	A	300	300	300	400	400	400	400
220 V	I_e	A	300	300	300	400	400	400	400
DC-5 operation									
60 V	I_e	A	300	300	300	400	400	400	400
110 V	I_e	A	300	300	300	400	400	400	400
220 V	I_e	A	300	300	300	400	400	400	400
Current heat loss (3 pole)									
Current heat loss at I_{th}		W	34	45	55	37	58	113	130
Current heat loss at I_e to AC-3/400 V		W	16	23	28	21	37	58	78

DILM580	DILM650	DILM750	DILM820	DILM1000	DILM1600	DILH1400	DILH2000	DILH2200	DILH2600
456	512	576	656	800	1280	–	–	–	–
456	512	576	656	800	1280	–	–	–	–
456	512	576	656	800	1280	–	–	–	–
456	512	576	656	800	1280	–	–	–	–
456	512	576	656	800	1280	–	–	–	–
456	512	576	656	800	1280	–	–	–	–
456	512	576	656	800	1280	–	–	–	–
348	348	464	464	700	1120	–	–	–	–
143	161	181	209	260	430	–	–	–	–
156	176	200	228	280	450	–	–	–	–
250	280	315	355	450	750	–	–	–	–
274	307	346	394	490	770	–	–	–	–
290	326	367	418	520	830	–	–	–	–
330	370	417	474	590	940	–	–	–	–
440	494	556	633	780	1300	–	–	–	–
509	509	678	678	1000	1650	–	–	–	–
463	463	463	463	463	–	–	–	–	–
265	265	265	265	265	–	–	–	–	–
30	30	30	30	30	–	–	–	–	–
0.1	0.1	0.1	0.1	0.1	–	–	–	–	–
200	200	200	200	200	–	–	–	–	–
–									
–	–	–	–	–	–	–	–	–	–
–	–	–	–	–	–	–	–	–	–
–	–	–	–	–	–	–	–	–	–
–	–	–	–	–	–	–	–	–	–
–	–	–	–	–	–	–	–	–	–
–	–	–	–	–	–	–	–	–	–
–	–	–	–	–	–	–	–	–	–
–	–	–	–	–	–	–	–	–	–
–	–	–	–	–	–	–	–	–	–
–	–	–	–	–	–	–	–	–	–
61	69	78	96	96	155	188	192	232	250
32	41	54	65	96	123	–	–	–	–

DILM185...DILM1600, DILH

				Contactors						
				DILM185A	DILM225A	DILM250	DILM300A	DILM400	DILM500	DILM570
Magnet systems										
Voltage tolerance[1]	AC operated	Pick-up	x U_c	0.8 - 1.15	0.8 - 1.15					
	AC operated	Drop-out	x U_c	0.25 - 0.6	0.25 - 0.6					
	DC operated	Pick-up	x U_c	0.7 - 1.2	0.7 - 1.2					
	DC operated	Drop-out	x U_c	0.15 - 0.6	0.15 - 0.6					
Power consumption of the coil in a cold state and 1.0 x U_c	50/60 Hz	Pick-up	VA	210	210	–	–	–	–	–
	50/60 Hz	Sealing	VA	2.6	2.6	–	–	–	–	–
	50/60 Hz	Sealing	W	2.6	2.6	–	–	–	–	–
	DC operated	Pick-up	W	180	180	–	–	–	–	–
	DC operated	Sealing	W	2.1	2.1	–	–	–	–	–
Voltage tolerance	Comfort series DILM…	Pick-up	x U_c	–	–	0.7 x $U_{c\,min}$ - 1.15 x $U_{c\,max}$				
	Standard range DILM…-S	Pick-up	x U_c	–	–	0.85 x $U_{c\,min}$ - 1.1 x $U_{c\,max}$				
	Comfort series DILM…	Drop-out	x U_c	–	–	0.2 x $U_{c\,min}$ - 0.6 x $U_{c\,min}$				
	Standard range DILM…-S	Drop-out	x U_c	–	–	0.2 x $U_{c\,min}$ - 0.4 x $U_{c\,min}$				
Power consumption of the coil in a cold state and 1.0 x U_c	Comfort series DILM…	Pick-up	VA	–	–	380[2]	380[2]	450[2]	450[2]	450[2]
	Comfort series DILM…	Pick-up	W	–	–	250	250	350	350	350
	Comfort series DILM…	Sealing	VA	–	–	4.3	4.3	4.3	4.3	4.3
	Comfort series DILM…	Sealing	W	–	–	3.3	3.3	3.3	3.3	3.3
	Standard range DILM…-S	Pick-up	VA	–	–	360[4]	360[4]	715[4]	715[4]	715[4]
	Standard range DILM…-S	Pick-up	W	–	–	325	625	645	645	645
	Standard range DILM…-S	Sealing	VA	–	–	4.3	4.3	4.3	4.3	4.3
	Standard range DILM…-S	Sealing	W	–	–	3.3	3.3	3.3	3.3	3.3
Duty factor			% DF	–	–	100	100	100	100	100
Changeover time at 100 % U_c (recommended values), main circuit										
Comfort series DILM…	Closing delay		ms	–	–	< 100	< 80	< 80	< 80	< 80
	Opening delay		ms	–	–	< 110	< 110	< 110	< 110	< 110
Standard range DILM…-S	Closing delay		ms	< 60	< 60	< 55	< 55	< 55	< 55	< 55
	Opening delay		ms	< 40	< 40	< 40	< 40	< 50	< 50	< 50
Behavior in limit range and transition area, hold state										
Voltage interruption	(0 - 0.2 x $U_{c\,min}$) ≦ 10 ms			–	–	Targeted bridging during this time				
	(0 - 0.2 x $U_{c\,min}$) > 10 ms					Drop-out of the contactor				
Voltage drops	(0 - 0.2 x $U_{c\,min}$) ≦ 12 ms					Targeted bridging during this time				
	(0.2 - 0.6 x $U_{c\,min}$) > 12 ms					Drop-out of the contactor				
	(0.6 - 0.7 x $U_{c\,min}$)					Contactor remains switched on				
Excess voltage	(1.15 - 1.3 x $U_{c\,max}$)					Contactor remains switched on				
	(> 1.3 x $U_{c\,max}$) ≦ 3 s					Contactor remains switched on				
	(> 1.3 x $U_{c\,max}$) > 3 s					Drop-out of the contactor				
Pick-up phase	(0.7 x $U_{c\,min}$)					Contactor does not switch on				
	(0.7 x $U_{c\,min}$ - 1.15 x $U_{c\,max}$)					Contactor switches on safely				
	(> 1.15 x $U_{c\,max}$)					Contactor switches on safely				
Permissible transitional contact resistance (of external control unit when A11 is actuated)			mΩ	–	–	≦ 500	≦ 500	≦ 500	≦ 500	–
Permissible residual current (when A11 is actuated from the electronic system in the event of a 0 signal)			mA	–	–	≦ 1	≦ 1	≦ 1	≦ 1	–
PLC signal level (A3 - A4) to IEC/EN 61131-2 (part no. 2)										
High			V	15	15	15	15	15	15	–
Low			V	5	5	5	5	5	5	–
Electromagnetic compatibility (EMC)										
Electromagnetic compatibility				This product is designed for operation in industrial environments (environment 2). The use in residential environments (environment 1) could cause electrical interference so that addition suppression must be planned.						

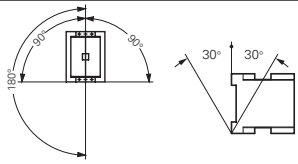
Notes

[1] U_c min, U_c max,
[2] Control transformer with u_k ≦ 0.6
[3] Control transformer with u_k ≦ 0.7
[4] u_k ≦ 10 %

DILM580	DILM650	DILM750	DILM820	DILM1000	DILM1600	DILH1400	DILH2000	DILH2200	DILH2600
–	–	–	–	–	–	–	–	–	–
–	–	–	–	–	–	–	–	–	–
–	–	–	–	–	–	–	–	–	–
–	–	–	–	–	–	–	–	–	–
–	–	–	–	–	–	–	–	–	–
0.7 x $U_{c\,min}$ - 1.15 x $U_{c\,max}$									
0.85 x $U_{c\,min}$ - 1.1 x $U_{c\,max}$									
0.2 x $U_{c\,min}$ - 0.6 x $U_{c\,min}$									
0.2 x $U_{c\,min}$ - 0.4 x $U_{c\,min}$									
800[3)]	800[3)]	800[3)]	800[3)]	800[3)]	1600[3)]	800[3)]	1600[3)]	1600[3)]	–
700	700	700	700	700	1400	700	1400	1400	–
7.5	7.5	7.5	7.5	7.5	15	7.5	15	15	–
6.5	6.5	6.5	6.5	6.5	13	6.5	13	13	–
–	–	–	–	–	–	–	–	–	–
–	–	–	–	–	–	–	–	–	–
–	–	–	–	–	–	–	–	–	–
–	–	–	–	–	–	–	–	–	–
100	100	100	100	100	100	100	100	100	100
< 70	< 70	< 70	< 70	< 70	< 70	< 70	< 70	< 70	–
< 110	< 110	< 110	< 110	< 110	< 40	< 40	< 40	< 40	–
–	–	–	–	–	–	–	–	–	–
–	–	–	–	–	–	–	–	–	–
Targeted bridging during this time									
Drop-out of the contactor									
Targeted bridging during this time									
Drop-out of the contactor									
Contactor remains switched on									
Contactor remains switched on									
Contactor remains switched on									
Drop-out of the contactor									
Contactor does not switch on									
Contactor switches on safely									
Contactor switches on safely									
≦ 500	≦ 500	≦ 500	≦ 500	≦ 500	≦ 500	≦ 500	≦ 500	≦ 500	≦ 500
≦ 1	≦ 1	≦ 1	≦ 1	≦ 1	≦ 1	≦ 1	≦ 1	≦ 1	≦ 1
15	15	15	15	15	15	15	15	15	15
5	5	5	5	5	5	5	5	5	5

This product is designed for operation in industrial environments (environment 2). The use in residential environments (environment 1) could cause electrical interference so that addition suppression must be planned.

DILMP20 ... DILMP200

			DILMP20	DILMP32 DILMP45	DILMP63 DILMP80	DILMP125 DILMP160 DILMP200
General						
Standards			IEC/EN 60947, VDE 0660, UL, CSA			
Lifespan, mechanical						
AC operated	c (contacts)	x 10^6	10			
DC operated	c (contacts)	x 10^6	10			
Operating frequency, mechanical						
Mechanical, AC operated	Operations/h		5000			3600
DC operated	Operations/h		5000			3600
Maximum operating frequency						
Electrical (Contactor without overload relay)			600			
Climatic proofing			Damp heat, constant, to IEC 60068-2-3 Damp heat, cyclic, to IEC 60068-2-30			
Ambient temperature						
Open		°C	-25…60			
Enclosed		°C	-25…40			
Storage		°C	-40 - 80			
Mounting position AC- and DC operated						
Mechanical shock resistance (IEC/EN 60068-2-27)						
Half-sinusoidal shock 10 ms						
Main contacts						
N/O		g	10			
Auxiliary contacts						
N/O		g	7			
NC		g	5			
Protection type			IP20	IP00		
With accessories			–	IP20		
Protection against direct contact when actuated from front (EN 50274)			Finger- and back-of-hand proof			
Terminal type, screw connection						
Terminal capacity of main cable						
Solid		mm^2	1 x (0.75 - 4) 2 x (0.75 - 2.5)	1 x (0.75 - 16) 2 x (0.75 - 10)	1 x (2.5 - 16) 2 x (2.5 - 16)	–
Flexible with ferrule		mm^2	1 x (0.75 - 2.5) 2 x (0.75 - 2.5)	1 x (0.75 - 16) 2 x (0.75 - 10)	1 x (2.5 - 35) 2 x (2.5 - 25)	1 x (10 - 95) 2 x (10 - 70)
Stranded		mm^2	–	1 x 16	1 x (16 - 50) 2 x (16 - 35)	1 x (16 - 120) 2 x (16 - 95)
Solid or stranded		AWG	18 - 14	18 - 6	12 - 2	8 - 250MCM
Flat conductor	Number of layers x width x thickness	mm	–	–	2 x (6 x 9 x 0.8)	2 x (6 x 16 x 0.8)
Terminal capacity of control circuit cable						
Solid		mm^2	1 x (0.75 - 4) 2 x (0.75 - 2.5)	1 x (0.75 - 4) 2 x (0.75 - 2.5)	1 x (0.75 - 4) 2 x (0.75 - 4)	1 x (0.75 - 4) 2 x (0.75 - 4)
Flexible with ferrule		mm^2	1 x (0.75 - 2.5) 2 x (0.75 - 2.5)	1 x (0.75 - 2.5) 2 x (0.75 - 2.5)	1 x (0.75 - 2.5) 2 x (0.75 - 2.5)	1 x (0.75 - 2.5) 2 x (0.75 - 2.5)
Solid or stranded		AWG	18 - 14	18 - 14	18 - 14	18 - 14
Main cable connection screw/bolt			M3.5	M5	M6	M10
Tightening torque		Nm	1.2	3	3.3	14
Control circuit cable connection screw/bolt			M3.5	M3.5	M3.5	M3.5
Tightening torque		Nm	1.2	1.2	1.2	1.2
Tools						
Main conductors						
Pozidriv screwdriver		Size	2	2	2	–
Internal hexagon	SW	mm	–	–	–	5
Flat-blade screwdriver		mm	0.8 x 5.5 1 x 6	0.8 x 5.5 1 x 6	0.8 x 5.5 1 x 6	–
Auxiliary conductors						
Pozidriv screwdriver		Size	2	2	2	2
Flat-blade screwdriver		mm	0.8 x 5.5 1 x 6	0.8 x 5.5 1 x 6	0.8 x 5.5 1 x 6	0.8 x 5.5 1 x 6

DILMP20 ... DILMP200

				DILMP20	DILMP32 DILMP45		DILMP63 DILMP80		DILMP125 DILMP160		DILMP200
Main contacts											
Rated impulse withstand voltage	U_{imp}	V AC	8000								
Overvoltage category/pollution degree			III/3								
Rated insulation voltage	U_i	V AC	690								
Rated operating voltage	U_e	V AC	690								
Safe isolation according to EN 61140											
Between coil and contacts		V AC	400	440							
Between the contacts		V AC	400	440							
Making capacity (cos φ to IEC/EN 60947)	To 690 V	A	144	238	350	560	700	1120	1330	1800	
Breaking capacity											
220/230 V		A	120	180	250	400	500	800	950	1150	
380/400 V		A	120	180	250	400	500	800	950	1150	
500 V		A	100	180	250	400	500	800	950	1150	
660/690 V		A	70	120	144	250	296	650	750	800	
Short-circuit rating											
Short-circuit protection rating maximum fuse											
Type "2" coordination											
400 V	gG/gL 500 V	A	20	35	35	63	80	160	160	250	
690 V	gG/gL 690 V	A	20	35	35	50	63	160	160	200	
Type "1" coordination											
400 V	gG/gL 500 V	A	35	63	100	125	160	250	250	250	
690 V	gG/gL 690 V	A	25	50	50	80	80	200	200	200	
AC voltage											
AC-1 operation											
Conventional thermal current 3 pole 50 - 60 Hz											
Open at 40 °C	I_{th}	A	22	32	45	63	80	125	160	200	
Open at 50 °C	I_{th}	A	21	30	41	60	76	116	150	188	
Open at 60 °C	I_{th}	A	20	28	39	54	69	108	138	172	
Enclosed	I_{th}	A	18	27	36	50	64	100	128	160	
Conventional thermal current, 1 pole											
Open	I_{th}	A	60	84	117	162	207	325	415	516	
Enclosed	I_{th}	A	54	76	105	146	186	292	373	464	
Rated operational power											
220/230 V	P	kW	8	12	16	23	29	45	58	72	
240 V	P	kW	9	13	18	25	32	49	63	79	
380/400 V	P	kW	14	20	28	39	50	78	100	125	
415 V	P	kW	15	22	31	43	55	85	109	137	
440 V	P	kW	16	23	33	46	58	90	116	145	
500 V	P	kW	18	26	37	52	66	103	132	165	
690 V	P	kW	24	35	49	68	87	136	174	217	
AC-3 operation											
Rated operational current AC -3 open, 50 – 60 Hz, 3 pole											
220/230 V	I_e	A	12	18	25	40	50	80	95	115	
240 V	I_e	A	12	18	25	40	50	80	95	115	
380/400 V	I_e	A	12	18	25	40	50	80	95	115	
415 V	I_e	A	12	18	25	40	50	80	95	115	
440 V	I_e	A	12	18	25	40	50	80	95	115	
500 V	I_e	A	10	18	25	40	50	80	95	115	
660/690 V	I_e	A	7	12	15	25	32	65	80	93	
Rated operational power											
220/230 V	P	kW	3.5	5	7.5	12.5	15.5	25	30	37	
240 V	P	kW	4	5.5	8.5	13.5	17	27.5	33	40	
380/400 V	P	kW	5.5	7.5	11	18.5	22	37	45	55	
415 V	P	kW	7	10	14.5	24	30	48	57	70	
440 V	P	kW	7.5	10.5	15.5	25	32	51	60	75	
500 V	P	kW	7	12	17.5	28	36	58	70	85	
660/690 V	P	kW	6.5	11	14	23	30	63	75	90	

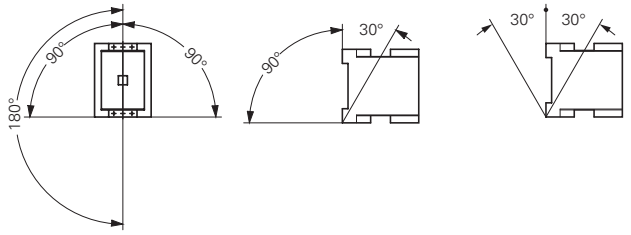
DILMP20 ... DILMP200

			DILMP20	DILMP32	DILMP45	DILMP63	DILMP80	DILMP125	DILMP160	DILMP200
DC voltage										
Rated operational current I_e open										
DC-1 operation										
60 V	I_e	A	22	32	45	63	80	125	160	200
110 V	I_e	A	22	32	45	63	80	125	160	200
220 V	I_e	A	6	32	45	63	80	125	160	200
440 V	I_e	A	1.3	3	3	5	5	10	10	10
DC-3 operation										
60 V	I_e	A	20	32	45	63	80	125	160	200
110 V	I_e	A	20	32	45	63	80	125	160	200
220 V	I_e	A	1.5	32	45	63	80	125	160	200
440 V	I_e	A	0.2	6	6	8	8	9	9	9
DC-5 operation										
60 V	I_e	A	20	32	45	63	80	125	160	200
110 V	I_e	A	20	25	32	50	80	125	160	200
220 V	I_e	A	1.5	15	22	38	70	100	125	150
440 V	I_e	A	0.2	4	4	8	8	8	8	8
Current heat loss (3 pole)										
Current heat loss at I_{th}		W	4.7	8.2	12	16	23	29	46	60
Impedance per pole		mΩ	2.5	2	1.5	1	0.7	0.6	0.6	0.5
Magnet systems										
Voltage tolerance										
AC operated 50 Hz	Pick-up	x U_c	0.8 - 1.1	0.8 - 1.1		0.8 - 1.1		0.8 - 1.1		
AC operated 50/60 Hz		x U_c	0.8 - 1.1	0.85 - 1.1		0.85 - 1.1		0.8 - 1.1		
AC operated	Drop-out	x U_c	0.4 - 0.6	0.4 - 0.6		0.4 - 0.6		0.4 - 0.6		
DC operated [1]	Pick-up	x U_c	0.8 - 1.1	0.7 - 1.2		0.7 - 1.2		0.7 - 1.2		
DC operated [1]	Drop-out	x U_c	0.2 - 0.6	0.2 - 0.6		0.2 - 0.6		0.2 - 0.6		
Power consumption of the coil in a cold state and 1.0 x U_c										
AC operated 50/60 Hz	Pick-up	VA	24	50		150		180		
AC operated 50/60 Hz	Pick-up	W	19	40		95		150		
AC operated 50/60 Hz	Sealing	VA	4	8		16		3.1		
AC operated 50/60 Hz	Sealing	W	1.2	2.4		4		2.1		
DC operated [1]	Pick-up	W	4.5	12		24		149		
DC operated [1]	Sealing	W	4.5	0.5		0.5		2.1		
Duty factor		% DF	100	100		100		100		
Changeover times at 100 % U_c (recommended values)										
Main contacts										
AC operated										
Closing delay		ms	15…21	16…22		12…18		28…33		
Opening delay		ms	9…18	8…14		8…13		35…41		
DC operated [1]										
Closing delay		ms	31	47		54		35		
Opening delay		ms	12	30		24		30		
Arcing time		ms	10	10		10		15		
Permissible residual current when A1 - A2 are actuated from the electronic system (with 0 signal)		mA	≦1	≦1		≦1		≦1		

Notes

[1] At least double-pulse bridge rectifier

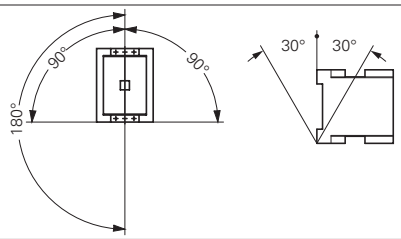
DILK

			DILK12	DILK20	DILK25	DILK33	DILK50
General							
Standards			IEC/EN 60947, VDE 0660				
Ambient temperature							
Open		°C	-25…60	-25…60	-25…60	-25…60	-25…60
Enclosed		°C	-25…40	-25…40	-25…40	-25…40	-25…40
Mounting position							
Protection type			IP00	IP00	IP00	IP00	IP00
Protection against direct contact when actuated from front (EN 50274)			Finger- and back-of-hand proof				
Weight basic device							
AC operated		kg	0.55	0.55	0.55	1	1
Terminal capacity of main cable							
Solid		mm^2	1 x (0.75 - 16)	1 x (0.75 - 16)	1 x (0.75 - 16)	1 x (2.5 - 16)	1 x (2.5 - 16)
Flexible with ferrule		mm^2	1 x (0.75 - 16)	1 x (0.75 - 16)	1 x (0.75 - 16)	1 x (2.5 - 35)	1 x (2.5 - 35)
Stranded		mm^2	1 x 16	1 x 16	1 x 16	1 x (16 - 50)	1 x (16 - 50)
Solid or stranded		AWG	18 - 16	18 - 6	18 - 6	12 - 2	12 - 2
Flat conductor	Number of layers x width x thickness	mm	-	-	-	1 x (6 x 9 x 0.8)	1 x (6 x 9 x 0.8)
Group compensation							
60 Hz							
230 V		kvar	7.5	11	15	20	25
400 V		kvar	12.5	20	25	33.3	50
525 V		kvar	16.7	25	33.3	40	65
690 V		kvar	20	33.3	40	55	85
50/60 Hz							
Open							
230 V	I_e	A	18	29	38	50	72
400 V	I_e	A	18	29	38	50	72
525 V	I_e	A	18	29	38	50	72
690 V	I_e	A	18	29	38	50	72
Enclosed							
230 V	I_e	A	16	26	34	45	65
400 V	I_e	A	16	26	34	45	65
525 V	I_e	A	16	26	34	45	65
690 V	I_e	A	16	26	34	45	65
Making capacity (i-peak value) without damping		x I_e	180	180	180	180	180
Component lifespan	c (contacts)	x 10^6	0.15	0.15	0.15	0.15	0.15
Maximum operating frequency		Ops/h	120	120	120	120	120

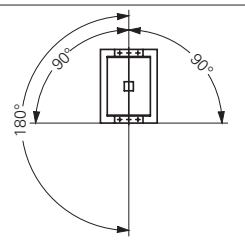
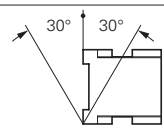
DILK

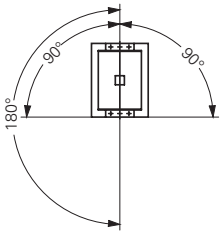
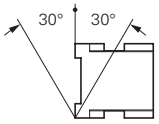
			DILK12	DILK20	DILK25	DILK33	DILK50
Magnet systems							
Voltage tolerance							
AC operated	Pick-up	x U_c	0.8 - 1.1	0.8 - 1.1	0.8 - 1.1	0.8 - 1.15	0.8 - 1.15
AC operated	Drop-out	x U_c	0.3 - 0.6	0.3 - 0.6	0.3 - 0.6	0.3 - 0.6	0.3 - 0.6
Power consumption of the coil in a cold state and 1.0 x U_c							
50 Hz	Pick-up	VA	58	58	58	45	45
50 Hz	Sealing	VA	7.6	7.6	7.6	1.5	1.5
50 Hz	Sealing	W	2.3	2.3	2.3	1.5	1.5
60 Hz	Pick-up	VA	71	71	71	45	45
60 Hz	Sealing	VA	9.3	9.3	9.3	1.5	1.5
60 Hz	Sealing	W	2.8	2.8	2.8	1.5	1.5
50/60 Hz	Pick-up	VA	65 59	65 59	65 59	45 45	45 45
50/60 Hz	Sealing	VA	9.6 7	9.6 7	9.6 7	1.5 1.5	1.5 1.5
50/60 Hz	Sealing	W	2.7 2.2	2.7 2.2	2.7 2.2	1.5 1.5	1.5 1.5
Duty factor		% DF	100	100	100	100	100
Changeover times at 100 % U_c (recommended values)							
Main contacts							
AC operated							
Closing delay		ms	16…22	16…22	16…22	50	50
Opening delay		ms	8…14	8…14	8…14	40	40
Arcing time		ms	10	10	10	10	10
Electromagnetic compatibility (EMC)							
Emitted interference			To EN 60947-1	To EN 60947-1	To EN 60947-1	To EN 60947-1	To EN 60947-1
Interference immunity			To EN 60947-1	To EN 60947-1	To EN 60947-1	To EN 60947-1	To EN 60947-1
Further technical data							
As per contactor	DIL		M17	M25	M32	M50	M65

DILL

				DILL12	DILL18	DILL20
General						
Standards				IEC/EN 60947, VDE 0660, UL, CSA		
Lifespan, mechanical						
AC operated		c (contacts)	x 10^6	1	1	1
Operating frequency, mechanical						
Mechanical, AC operated		Operations/h		60	60	60
Maximum operating frequency						
Electrical		Operations/h		60	60	60
Climatic proofing				Damp heat, constant, to IEC 60068-2-78; Damp heat, cyclic, to IEC 60068-2-30		
Ambient temperature	Open		°C	-25…60	-25…60	-25…60
	Enclosed		°C	-25…40	-25…40	-25…40
	Storage		°C	-40 - 80	-40 - 80	-40 - 80
Mounting position						
Mechanical shock resistance (IEC/EN 60068-2-27)						
Half-sinusoidal shock 10 ms				6.9	6.9	6.9
Protection type				IP00	IP00	IP00
Weight						
AC operated			kg	0.42	0.42	0.42
Main contacts						
Rated impulse withstand voltage		U_{imp}	V AC	8000	8000	8000
Overvoltage category/pollution degree				III/3	III/3	III/3
Rated insulation voltage		U_i	V AC	690	690	690
Rated operating voltage		U_e	V AC	690	690	690
Making capacity			A	238	350	550
Breaking capacity		380/400 V	A	170	250	320
Lifespan, electrical		c (contacts)		10000	10000	10000
Short-circuit protection rating maximum fuse						
400 V		gG/gL 500 V	A	63	100	125
AC voltage						
AC-1 operation						
Conventional thermal current						
at 40 °C		I_{th}	A	27	40	45
at 60 °C		I_{th}	A	24	35	40
230 V		I_e	A	12	18	20
400 V		I_e	A	12	18	20
AC-1 operation						
220/230 V		I_e	A	14	21	27
400 V		I_e	A	14	21	27
Electric lamps						
Filament bulbs			A	14	21	27
Mercury blended lamps			A	12	16	23
Fluorescent lamp load						
	Conventional reactor starter connection		A	20	26	35
	Duo circuit		A	20	26	35
Electronic upstream devices			A	12	18	20
High-pressure mercury vapour lamps			A	12	18	20
Metal-halide lamps			A	12	18	20
High-pressure sodium lamps			A	12	18	20
Low-pressure sodium lamps			A	7.5	10	12
Maximum permissible compensation capacitance			µF	470	470	470
Further technical data						
As per contactor		DIL		M17	M25	M32

DILMF

					DILMF8	DILMF11	DILMF14	DILMF17
General								
Mounting position								
AC voltage								
AC-3 operation								
Rated operational current AC -3 open, 50 – 60 Hz, 3 pole	220/230 V	I_e	A		7	9	12	18
	240 VI	I_e	A		7	9	12	18
	380/400 V	I_e	A		7	9	12	18
	415 V	I_e	A		7	9	12	18
	440 V	I_e	A		7	9	12	18
	500 V	I_e	A		5	7	10	18
	660/690 V	I_e	A		4	5	7	12
Rated operational power	220/230 V	P	kW		2.2	2.5	3.5	5
	240 V	P	kW		2.2	3	4	5.5
	380/400 V	P	kW		3	4	5.5	7.5
	415 V	P	kW		4	5.5	7	10
	440 V	P	kW		4.5	5.5	7.5	10.5
	500 V	P	kW		3.5	4.5	7	12
	660/690 V	P	kW		3.5	4.5	6.5	11
AC-4 operation								
Rated operational current AC-4 open, 50 - 60 Hz, 3 pole	220/230 VI	I_e	A		5	6	7	10
	240 V	I_e	A		5	6	7	10
	380/400 V	I_e	A		5	6	7	10
	415 V	I_e	A		5	6	7	10
	440 V	I_e	A		5	6	7	10
	500 V	I_e	A		4.5	5	6	10
	660/690 V	I_e	A		4	4.5	5	8
Rated operational power	220/230 V	P	kW		1	1.5	2	2.5
	240 V	P	kW		1.5	1.6	2.2	3
	380/400 V	P	kW		2.2	2.5	3	4.5
	415 V	P	kW		2.3	2.8	3.4	5
	440 V	P	kW		2.4	3	3.6	5.5
	500 V	P	kW		2.5	2.8	3.5	6
	660/690 V	P	kW		2.9	3.6	4.4	6.5
Current heat loss (3 pole)								
Current heat loss at I_{th}				W	2.4	2.4	2.4	7.3
Current heat loss at I_e to AC-3/400 V				W	0.3	0.6	1	1.9
Magnet systems								
Voltage tolerance	AC operated	Pick-up		x U_c	0.8 - 1.15	0.8 - 1.15	0.8 - 1.15	0.8 - 1.15
	AC operated	Drop-out		x U_c	0.2 - 0.5	0.2 - 0.5	0.2 - 0.5	0.2 - 0.5
Power consumption of the coil in a cold state and 1.0 x U_c	Electronic actuation	Pick-up		VA	14	14	14	14
	Electronic actuation	Sealing		VA	0.7	0.7	0.7	0.7
	Electronic actuation	Sealing		W	0.7	0.7	0.7	0.7
Duty factor				% DF	100	100	100	100
Switching times	Closing delay			ms	40	40	40	40
	Opening delay			ms	45	45	45	45
suitable according to					SEMI F47	SEMI F47	SEMI F47	SEMI F47
Electromagnetic compatibility (EMC)								
Emitted interference					To EN 60947-1			
Interference immunity					To EN 60947-1			
Further technical data								
As per contactor		DIL			M7	M9	M12	M17
Terminal type								
As per contactor		DIL			M17	M17	M17	M17

DILMF25	DILMF32	DILMF40	DILMF50	DILMF65	DILMF80	DILMF95	DILMF115	DILMF150
								
25	32	40	50	65	80	95	115	150
25	32	40	50	65	80	95	115	150
25	32	40	50	65	80	95	115	150
25	32	40	50	65	80	95	115	150
25	32	40	50	65	80	95	115	150
25	32	40	50	65	80	95	115	150
15	18	25	32	37	65	80	93	100
7.5	10	12.5	15.5	20	25	30	37	48
8.5	11	13.5	17	22	27.5	4	40	52
11	15	18.5	22	30	37	45	55	75
14.5	19	24	30	39	48	57	70	91
15.5	20	25	32	41	51	60	75	95
17.5	23	28	36	47	58	70	85	110
14	17	23	30	35	63	75	90	96
13	15	18	21	25	40	50	55	65
13	15	18	21	25	40	50	55	65
13	15	18	21	25	40	50	55	65
13	15	18	21	25	40	50	55	65
13	15	18	21	25	40	50	55	65
13	15	18	21	25	40	50	55	65
10	12	14	17	20	27	37	45	50
3.5	4	5	6	7	12	16	17	20
4	4.5	5.5	6.5	7.5	13	17	19	22
6	7	9	10	12	20	26	28	33
6.5	7.5	9.5	11	13	24	30	33	39
7	8	10	12	14	25	32	35	41
8	9	11	13	16	29	36	40	47
8.5	10	12	14	17	26	35	43	48
9.6	12.1	11.3	19	28.8	14.6	21.8	30.4	46.1
3.8	6.1	7.2	11.3	19	11.5	16.2	23.8	40.5
0.8 - 1.15	0.8 - 1.15	0.8 - 1.15	0.8 - 1.15	0.8 - 1.15	0.8 - 1.15	0.8 - 1.15	0.8 - 1.15	0.8 - 1.15
0.2 - 0.5	0.2 - 0.5	0.2 - 0.5	0.2 - 0.5	0.2 - 0.5	0.2 - 0.5	0.2 - 0.5	0.2 - 0.5	0.2 - 0.5
14	14	45	45	45	75	75	180	180
0.7	0.7	1.5	1.5	1.5	2	2	3.1	3.1
0.7	0.7	1.5	1.5	1.5	2	2	2.1	2.1
100	100	100	100	100	100	100	100	100
40	40	50	50	50	55	55	40	40
45	45	45	45	45	40	40	40	40
SEMI F47	SEMI F47	SEMI F47	SEMI F47	SEMI F47	SEMI F47	SEMI F47	SEMI F47	SEMI F47
To EN 60947-1								
To EN 60947-1								
M25	M32	M40	M50	M65	M80	M95	M115	M150
M25	M32	M40	M50	M65	M80	M95	M115	M150

DILM..., DILA...

			DILM7-... - DILM38-...	DILA-XHI(C)...(-S)	DILM32-XHI(C)...(-S)	DILM150-XHI...	DILM1000-XHI... DILM820-XHI...
Auxiliary contact							
Interlocked opposing contacts within an auxiliary contact module (to IEC 60947-5-1 Annex L) [1]			-	Yes	Yes	Yes	Yes
Normally closed (not late-normally closed) suitable as a mirror contact (to IEC/EN 60947-4-1, Annex F)			DILM7 - DILM38	DILM7 - DILM38	DILM7 - DILM38	DILM40 - DILM170	DILM40 - DILM225A DILM250 - DILM1000
Rated impulse withstand voltage	U_{imp}	V AC	6000	6000	6000	6000	6000
Overvoltage category/pollution degree			III/3	III/3	III/3	III/3	III/3
Rated insulation voltage	U_i	V AC	690	690	690	690	690
Rated operating voltage	U_e	V AC	500	500	500	500	500
Safe isolation according to EN 61140							
Between coil and auxiliary contacts		V AC	400	400	400	440	440
Between the auxiliary contacts		V AC	400	400	400	440	440
Rated operational current							
AC-15							
230 V	I_e	A	4	4	4	4	4
380/415 V	I_e	A	4	4	4	4	4
500 V	I_e	A	1.5	–	1.5	1.5	1.5
DC L/R ≦ 15 ms [2]							
24 V	I_e	A	10	10	10	10	10
60 V	I_e	A	6	6	6	6	6
110 V	I_e	A	3	3	3	3	3
220 V	I_e	A	1	1	1	1	1
DC-13 (6xP)							
Contacts in series:							
3	24 V	A	2.5	2.5	2.5	–	–
3	60 V	A	1	1	1	–	–
3	110 V	A	0.5	0.5	0.5	–	–
3	220 V	A	0.25	0.25	0.25	–	–
Conventional thermal current	I_{th}	A	10	16	16	16	10
Control circuit reliability (at U_e = 24 V DC, U_{min} = 17 V, I_{min} = 5.4 mA)	Fault probability	λ	< 10^{-8}, < 1 one failure in 100 million operations				
Component lifespan							
at U_e = 230 V, AC-15, 3 A	c (contacts)	x 10^6	1.3	1.3	1.3	1.3	1.3
Short-circuit rating without welding							
Max. fuse		A gG/gL	10	10	10	16	16

Notes

[1] Not with DIL...-XHIV and DIL...-XHICV.
[2] Switch-on and switch-off conditions based on DC-13, time constant as specified.

P1SIL...M, DILM...-XP1

			P1DILEM DILM12-XP1	DILM32-XP1	DILM65-XP1	DILM150-XP1	DILM185-XP1
Parallel connector							
Terminal capacity							
Solid		mm^2	1 - 16	16	16	–	–
Flexible with ferrule		mm^2	1 x (0.5 - 25) 2 x (0.5 - 16)	1 x (16 - 35)	1 x (16 - 120)	–	–
Stranded		mm^2	1 x (0.5 - 25) 2 x (0.5 - 16)	1 x (16 - 50)	1 x (16 - 120)	1 x (35 - 300) 2 x (35 - 120)	–
Flat conductor	Number of layers x width x thickness	mm	6 x 9 x 0.8	–	–	2 x (11 x 21 x 1)	1 x (6 x 16 x 0.8) 2 x (20 x 32 x 0.5) 2 x (11 x 21 x 1)
Tightening torque		Nm	4	4	14	14	6
Terminal capacity of control circuit cable							
Solid		mm^2	–	–	–	–	1 x (0.75 - 4) 2 x (0.75 - 4)
Flexible with ferrule		mm^2	–	–	–	–	1 x (0.75 - 2.5) 2 x (0.75 - 2.5)
Tools							
Pozidriv screwdriver		Size	2	2	–	–	–
Internal hexagon	SW	mm	–	–	5	6	5
Conventional thermal current							
3 pole	I_{th}	A	50	100	180	400	700
4 pole	I_{th}	A	60	–	–	–	–

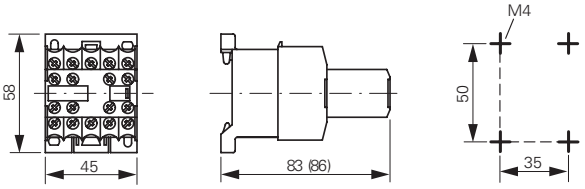
Dimensions

1

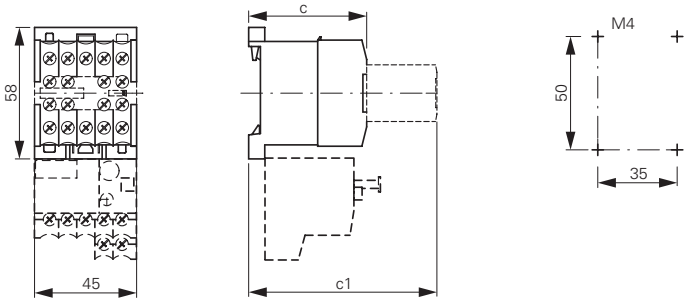
Mini contactor relays

DILER-...(-C)
DILER-...-G(-C)

DILER-...(-C) + ...DILE(-C)
DILER-...-G(-C) + ...DILE(-C)

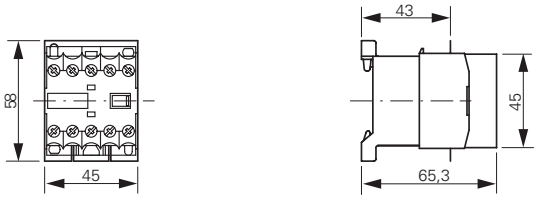


DILEEM-..., DILEM-...(-C), DILEM-12-...
DILEEM-...-G, DILEM-...-G(-C), DILEM-12-...-G



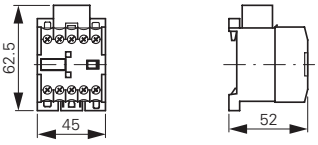
Part no.	c	c1
DILE(E)M-...(-G)	52	83
DILE(E)M-...-G(-C)	54	86

DILER-... + HDILE
DILER-...-...G + HDILE

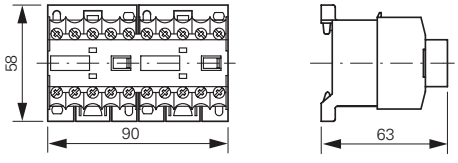


Suppressor circuit

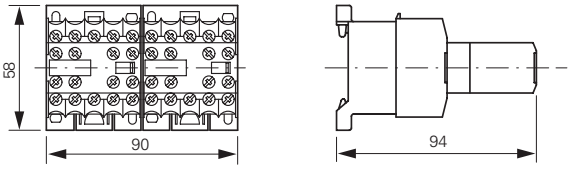
RCDILE...
VGDILE



2DILE-... + MVDILE
2DILE-...-G + MVDILE

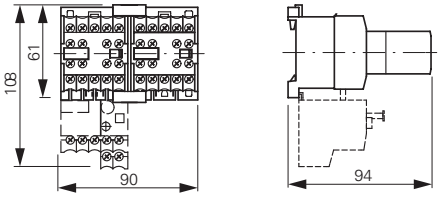


2DILE-... + MVDILE + ...DILE
2DILE-...-G + MVDILE + ...DILE



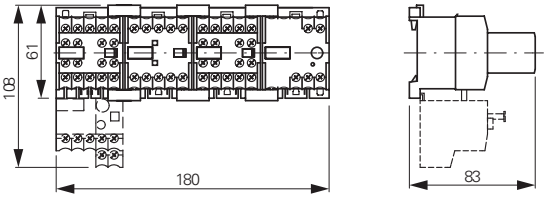
Rsrotcatnocgnisreve

DIULEM

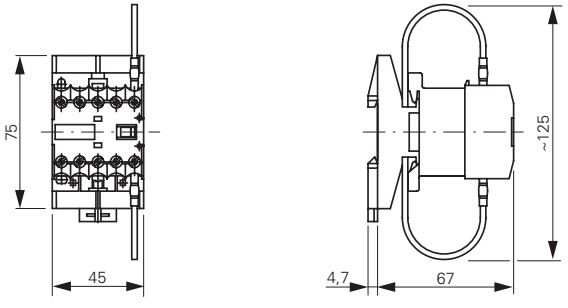


Star-delta contactors

SDAINLEM

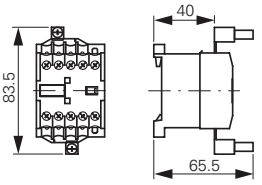


DILER-... + TDDILE24



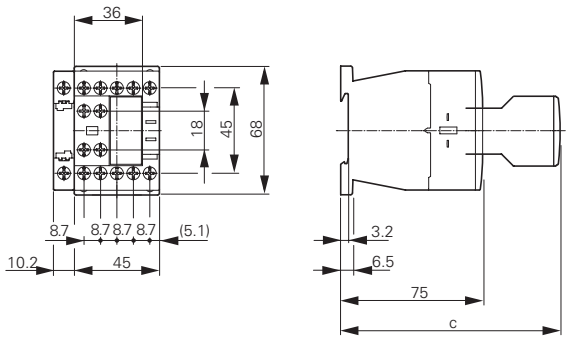
Parallel connector

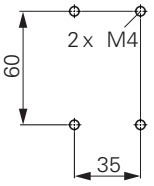
P1DILEM



Contactor with auxiliary contact module

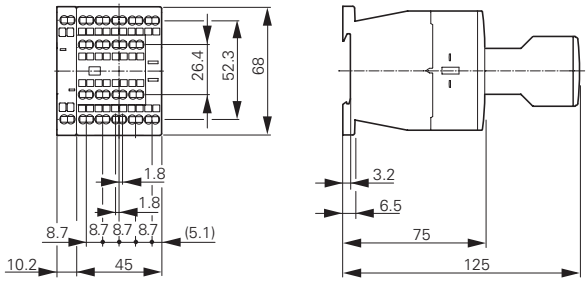
DILM7...DILM15
DILA...

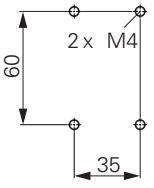




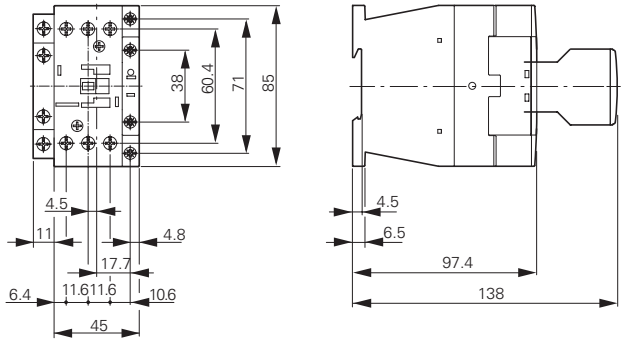
Part no.	c
DILM32-XHI	117
DILA-XHI	117
DILA-XHI...T	125

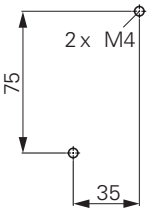
DILMC7...DILMC15
DILAC...
DILA-XHIC...





DILM17...DILM38
DILMC17...DILMC32
DILMF8...DILMF32

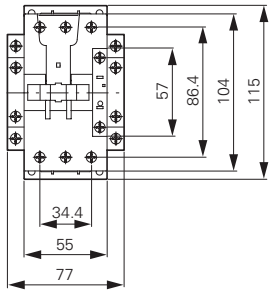


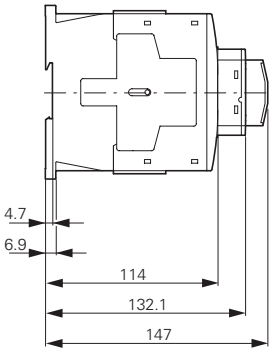


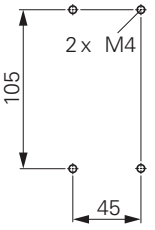
Clearance at side to grounded parts: 6 mm

Contactors

DILM40...DILM72
DILMC40...DILMC65
DILMF40...DILMF65

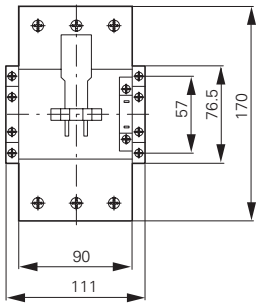


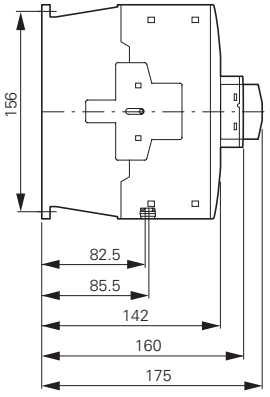


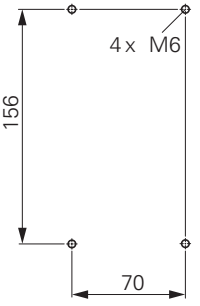


Clearance at side to grounded parts: 6 mm

DILM80...DILM170
DILMC80...DILMC150
DILMF80...DILMF150



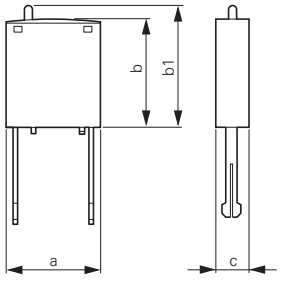




Clearance at side to grounded parts: 10 mm

Suppressor circuits

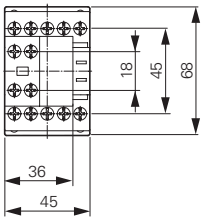
DILM...XSP...

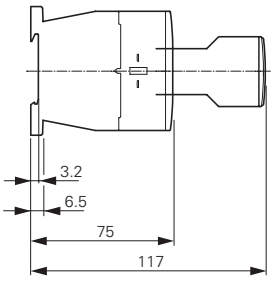


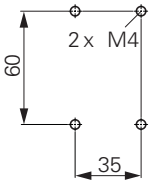
Part no.	a	b	b1	c
DILM12-XSP...	25	28	≈32	9
DILM32-XSP...	25	28	≈32	9
DILM95-XSP...	25	28	≈32	9

Contactor with auxiliary contact module

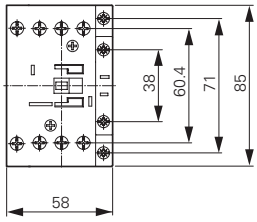
DILMP20

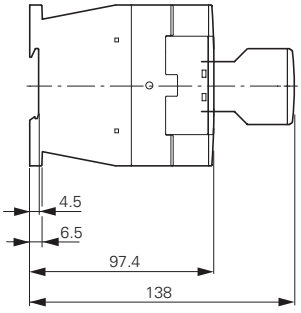


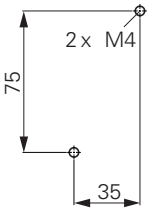




DILMP32 DILMP45



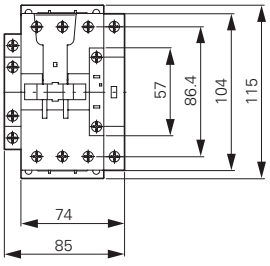


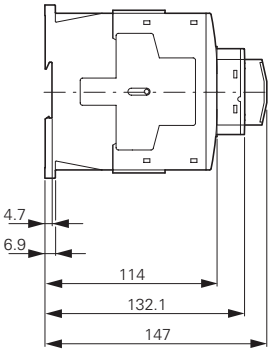


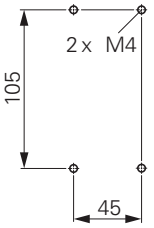
Distance at side to grounded parts: 6 mm

Contactors

DILMP63 DILMP80

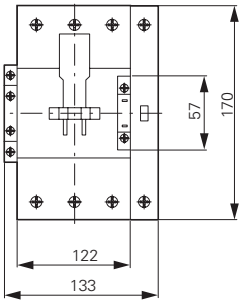


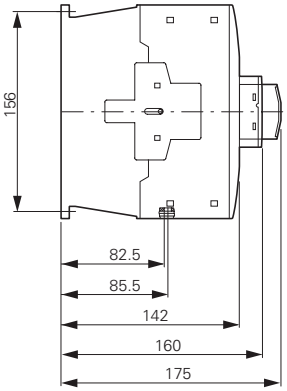


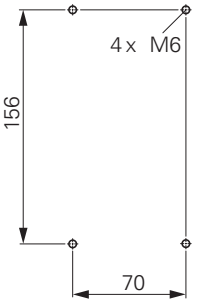


Distance at side to grounded parts: 6 mm

DILMP125 DILMP160 DILMP200



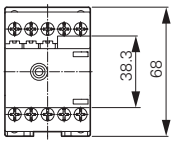


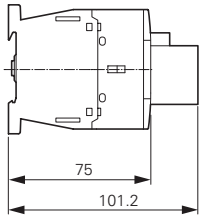


Clearance at side to earthed parts: 10 mm

Motor suppressor module

DILM12-XMSM

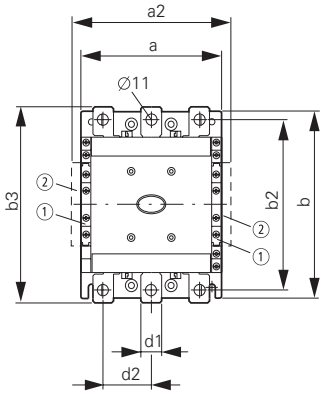


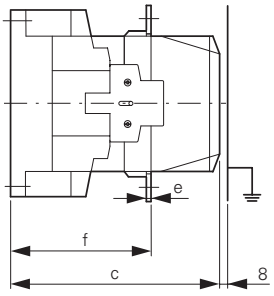


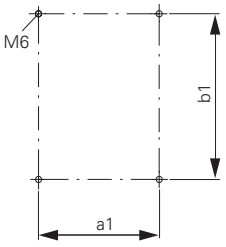
1

Complete units

DILM185A...DILM500
DILM250-S...DILM570-S



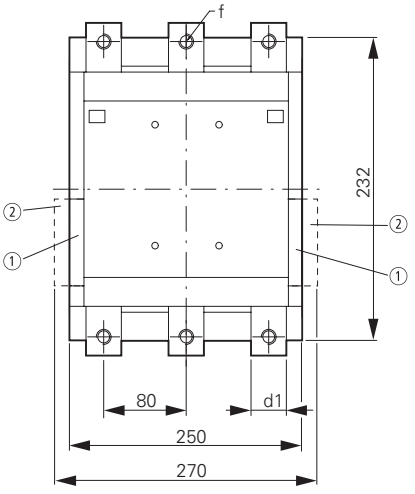


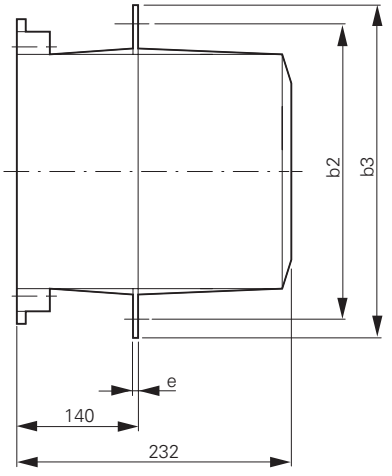


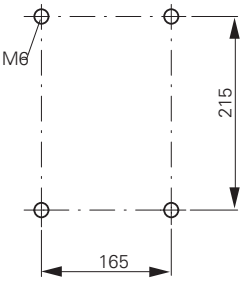
① DILM1000-XHI...-SI
② DILM1000-XHI11-SA

Part no.	a	a1	a2	b	b1	b2	b3	d1	d2	e	c	f
DILM185A	140	120	160	180	160	165	190	20	41	5	158	83
DILM225A	140	120	160	180	160	165	190	20	41	5	158	83
DILM250	140	120	160	180	160	164	189	25	48	5	208	140
DILM300A	140	120	160	180	160	164	189	25	48	5	208	140
DILM400	160	130	180	200	180	184	209	25	48	6	216	140
DILM500	160	130	180	200	180	189	219	38	57	6	216	140
DILM570	160	130	180	200	180	189	219	38	57	6	216	140

DILM580...DILM1000





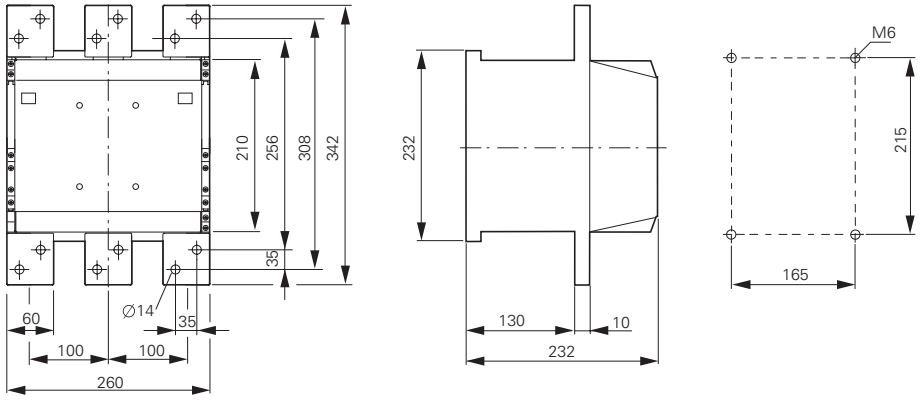


① DILM820-XHI...-SI
② DILM820-XHI11-SA

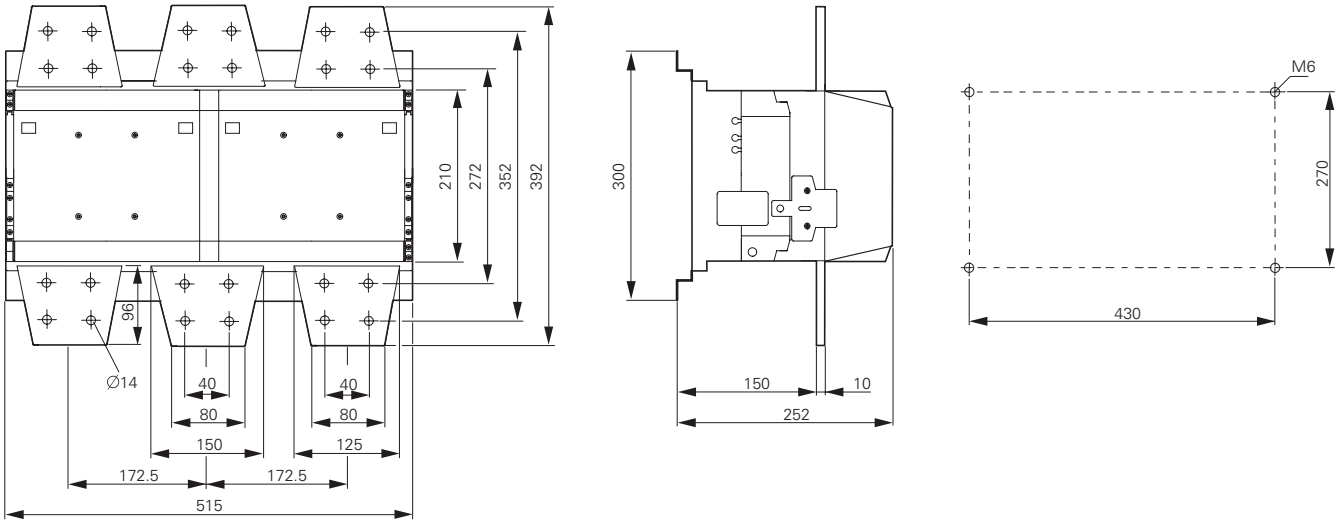
Part no.	b2	b3	d1	e	f
DILM580	256	296	45	6	13.5
DILM650	256	296	45	6	13.5
DILM750	256	296	45	6	13.5
DILM820	256	296	45	6	13.5
DILM1000	256	296	45	10	13.5

AC -1 contactors greater than 1000 A

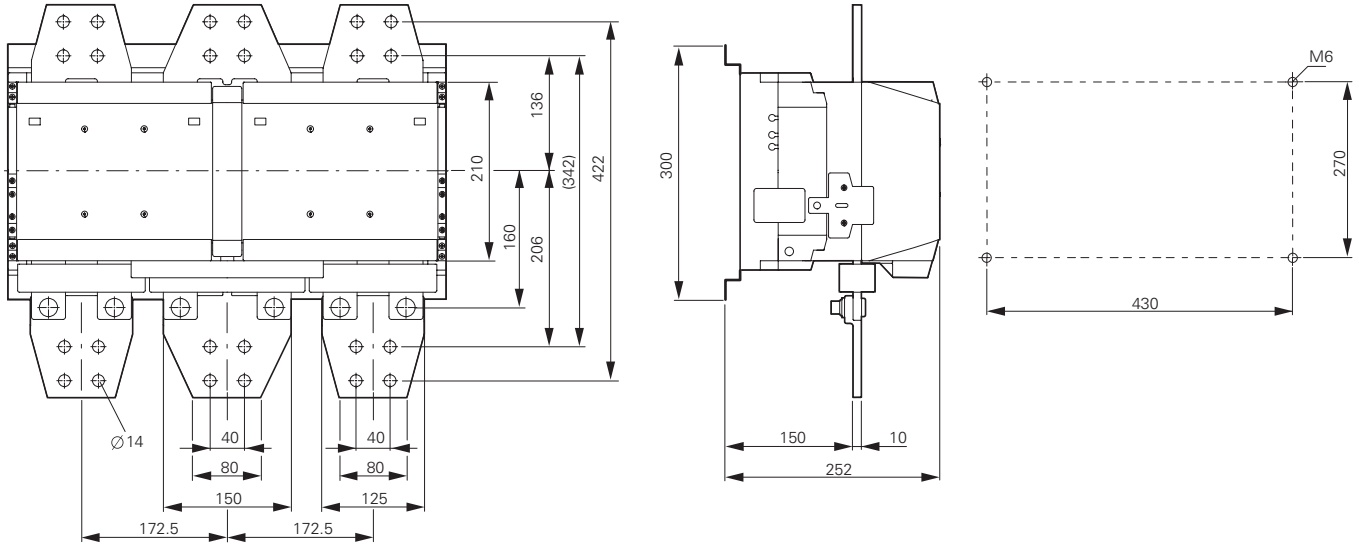
DILH1400



DILM1600
DILH2000
DILH2200

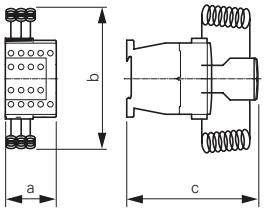


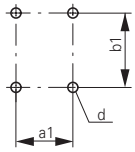
DILH2600



Contactor for capacitors

DILK…

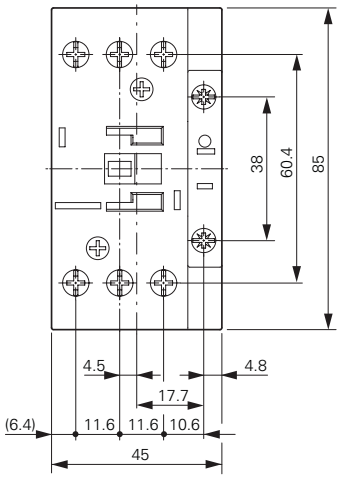


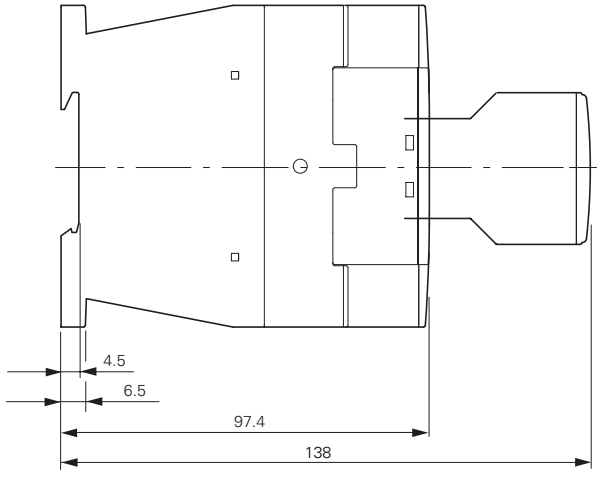


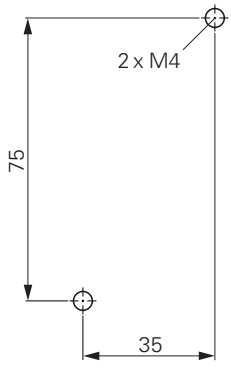
Part no.	a	b	c	a1	b1	d
DILK12	45	135	138	35	75	2 x M4
DILK20	45	135	138	35	75	2 x M4
DILK25	45	135	138	35	75	2 x M4
DILK33	55	190	147	45	105	2 x M4
DILK50	55	190	147	45	105	2 x M4

Illumination contactors

DILL…



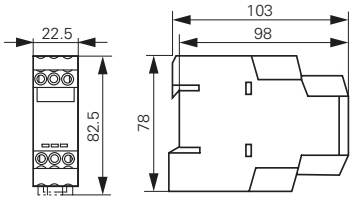




Clearance at side to grounded parts: 6 mm

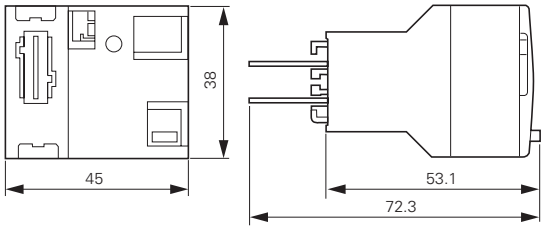
Contactor monitoring devices

CMD(...)



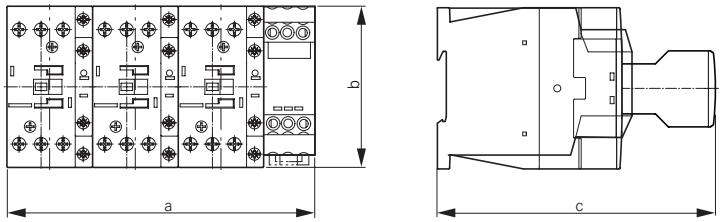
SWD contactor modules

DIL-SWD-32-...



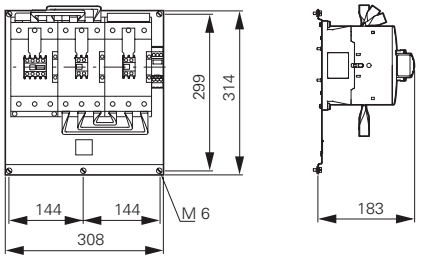
Star-delta contactors

SDAINLM12...SDAINLM115



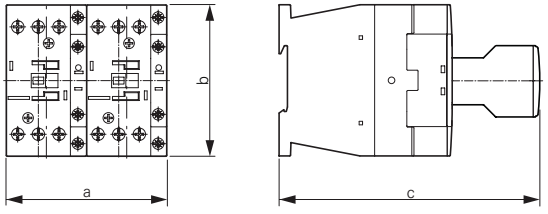
Part no.	a	b	c
SDAINLM12...22	158	68	117
SDAINLM30...55	158	85	138
SDAINLM70...115	188	115	147

SDAINLM140...SDAINLM260



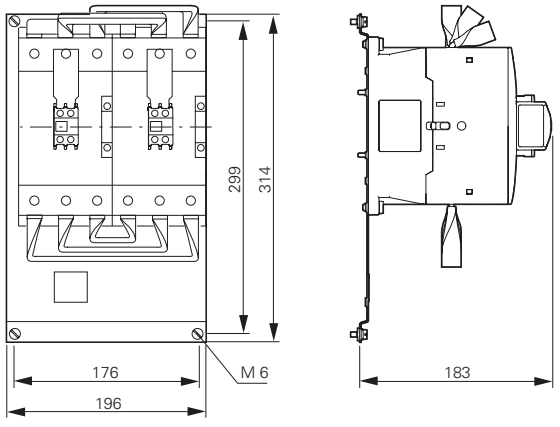
Reversing contactors

DIULM7...DIULM65



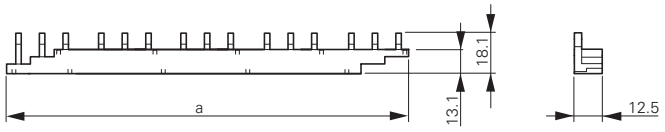
Part no.	a	b	c
DIULM7/21...12/21	90	68	117
DIULM17/21...32/21	90	85	138
DIULM40/11...65/11	110	115	147

DIULM80...DIULM150



Three-phase commoning links

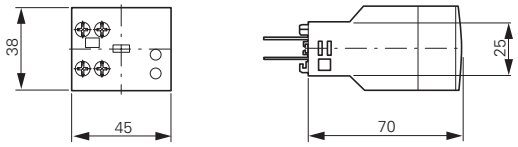
DILM12-XDSB...



Part no.	a
DILM12-XDSB0/3	112
DILM12-XDSB0/4	157
DILM12-XDSB0/5	202

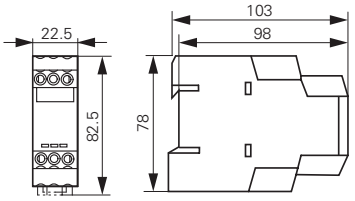
Electronic timer modules

DILM...XTE



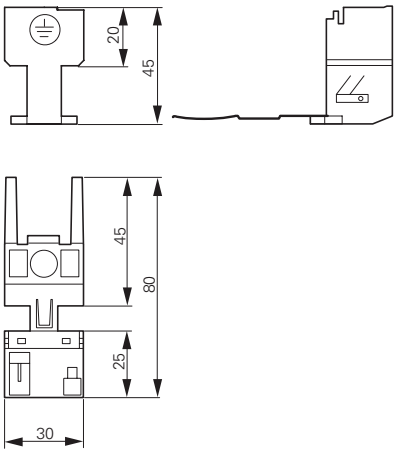
Amplifier module

ETS4-VS3

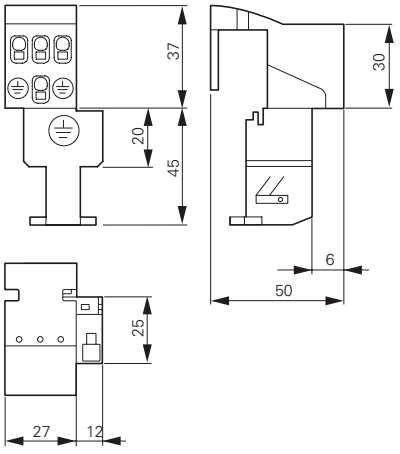


Wiring set for motor feeder plug

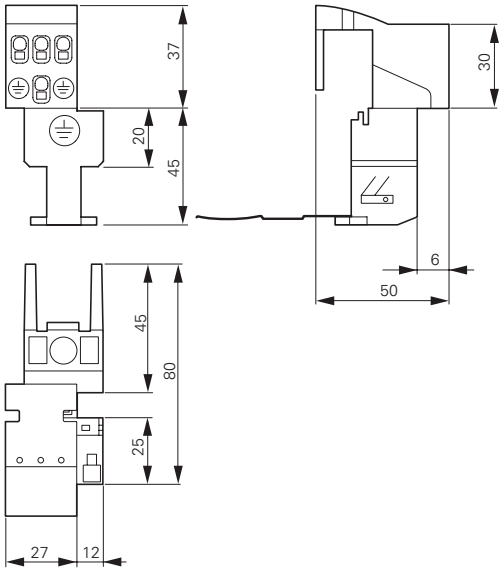
DILM12-XMCE



DILM12-XMCP/T

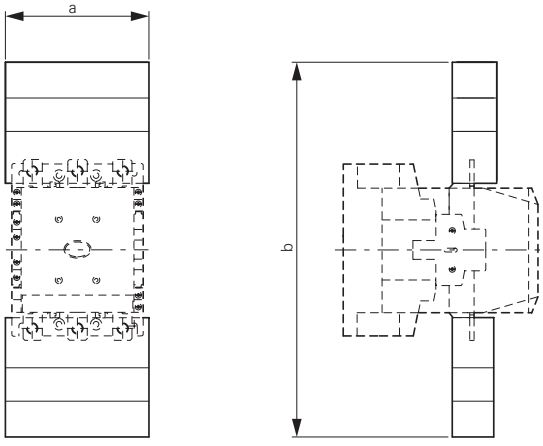


DILM12-XMCP/E



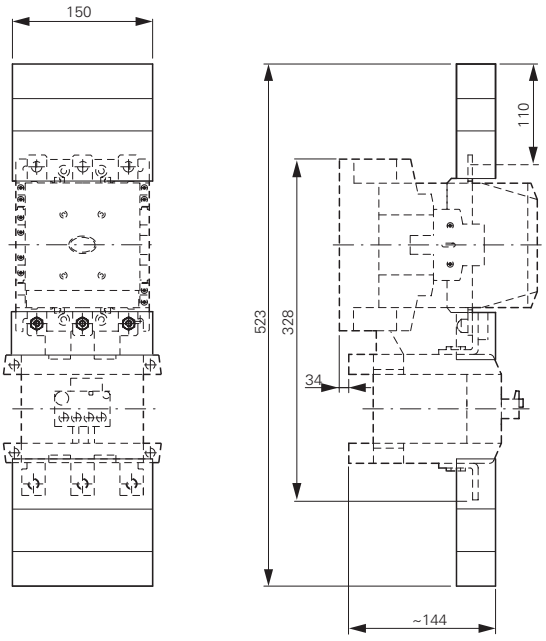
Contactors with terminal shrouds

DILM250...DILM1000 + DILM...-XHB

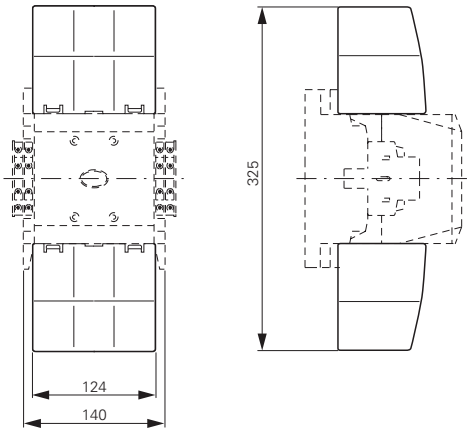


for part no.	a	b
DILM250, DILM300A	150	384
DILM400	150	404
DILM500	174	426
DILM580...1000	236	506

DILM250 + Z5-.../FF250

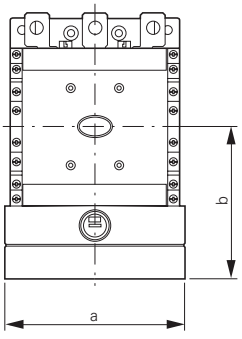


DILM185A...DILM225A + DILM225A-XHB



Contactor with star-point bridge and terminal shroud

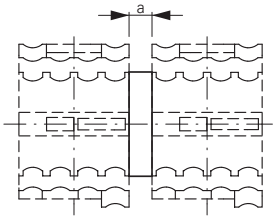
DILM...XS1



for part no.	a	b
DILM185...250	150	127
DILM300...400	150	137
DILM500	176	146

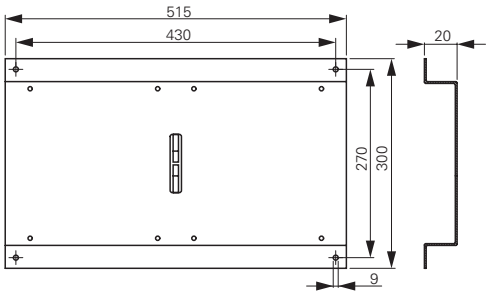
Mechanical interlock

DILM500-XMV



for part no.	a
DILM185...500	15

DILM820-XMV



1.3 Contactor relays DILA..C

System overview

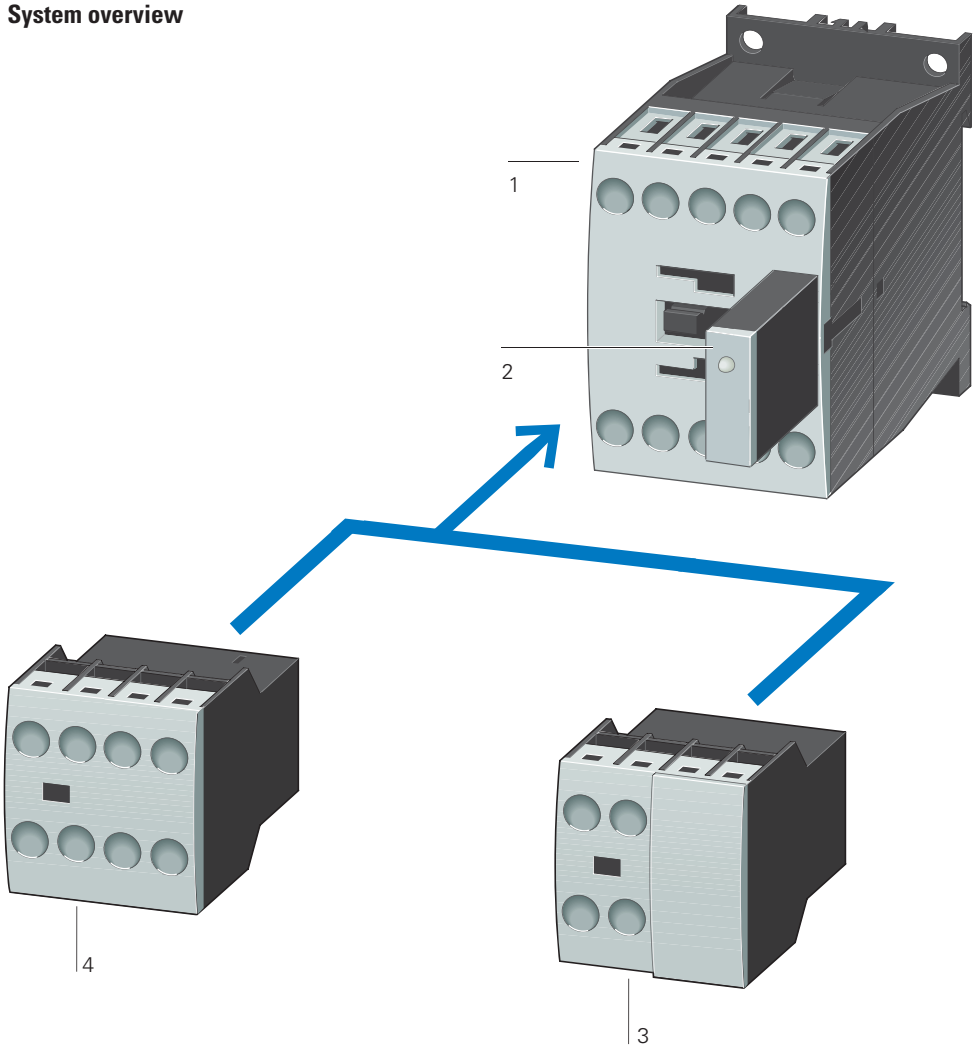
1

Contactor relays DILA..C

- Varied 4-pole contact configurations
- Conventional thermal current (Ith): 16A
- Identical construction sizes for AC- and DC-operated contactor relays
- Integrated surge suppressors for DC-operated contactor relays

Contents

System overview



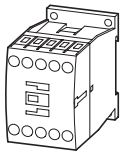
System overview

Basic devices	1
AC or DC operated	
Magnet system	
AC 24 – 400V, 50, 60, 50/60 Hz	
0.8 – 1.1 × U_c	
24 VA/3.4 VA	
DC 24 – 220 VDC	
0.8 – 1.1 × U_c	
At 24 V:	
0.7 – 1.3 × U_c without auxiliary contact modules	
Ambient temperature +40°C	
3W/3W	

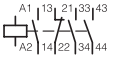
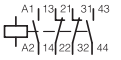
Basic devices	1
Up to 8 sets of normally open or normally closed contacts	
Interlocked opposing contacts	
Modular system	
Screw connection and plug-in connection	
Finger-proof protection	
Screw terminals	
From page 153	
Suppressor circuits	2
DC operated contactors (all DC operated contactors have an integrated suppressor)	
AC operated contactors	
From page 180	
Auxiliary contact modules	3, 4
2 or 4 poles	
Interlocked opposing contacts	
From page 155	

1

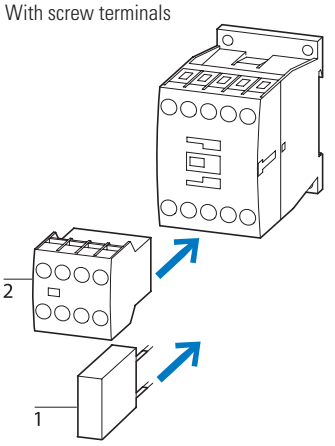
Screw terminals



Basic devices with interlocked opposing contacts

Contact		Rated operational current		Conventional thermal current at 60 °C	Distinctive number	Circuit symbol
N/O = Normally opened contact N/C = Normally closed contact		AC – 15 220 V 230 V 240 V I_e A	380 V 400 V 415 V I_e A	I_{th} A		
4 N/O	–	4	4	16	40E	
3 N/O	1 N/C	4	4	16	31E	
2 N/O	2 N/C	4	4	16	22E	

Auxiliary contact module to use with	AC operation **Part no.** Article no.	DC operation **Part no.** Article no.	Std. pack	**Notes**
	Operating voltage 220-230V50Hz	**Operating voltage 24VDC**		
DILAC-XHI(V)...	**DILA-40C(220-230V50Hz)** 114842	**DILA-40C(24VDC)** 114847	1 Off	With screw terminals
DILAC-XHI(V)...	**DILA-31C(220-230V50Hz)** 114852	**DILA-31C(24VDC)** 114857	1 Off	
DILAC-XHI(V)...	**DILA-22C(220-230V50Hz)** 114862	**DILA-22C(24VDC)** 114867	1 Off	



Accessories **Page**

1 Suppressor → 180
2 Auxiliary contact module → 155
Operating voltage → 159

Contact numbers to EN 50011
Coil terminal marking as specified in EN 50005

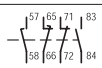
DC operated contactor relays have an integrated suppressor

DILA..C auxiliary contact modules

With interlocked opposing contacts (except ...XHI(C)V)

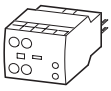
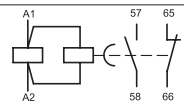
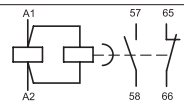
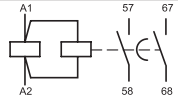
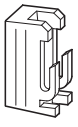
2 pole
Screw terminals

4 pole
Screw terminals

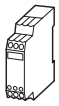
Contact		Rated operational current AC – 15		Conventional thermal current at 60 °C	Circuit symbol
N/O = Normally open contact N/O_E = N/O, early-make N/C = Normally closed contact N/C_L = N/C, late-break		220 V 230 V 240 V	380 V 400 V 415 V		
		I_e A	I_e A	I_{th} A	
–	2 N/C	4	4	16	
1 N/O	1 N/C	4	4	16	
2 N/O	–	4	4	16	
1 N/O_E	1 N/C_L	4	4	16	
–	4 N/C	4	4	16	
1 N/O	3 N/C	4	4	16	
2 N/O	2 N/C	4	4	16	
3 N/O	1 N/C	4	4	16	
4 N/O	–	4	4	16	
1 N/O, 1 N/O_E	1 N/C, 1 N/C_L	4	4	16	

Can be combined with contactor			Part no. Article no.	Std. pack	Notes
DILA-40C	DILA-31C	DILA-22C			
42E	33	24	**DILAC-XHI02 (Auxiliary)** 114872	5 Off	Type E combinations comply with EN 50011 and are to be given preference. Other types comply with EN50005 DC operated contactor DILA-22C must be combined with 2 pole auxiliary contacts.
51E	42	33	**DILAC-XHI11** 114871	5 Off	
60E	51	42	**DILAC-XHI20** 114870	5 Off	
51	42	33	**DILAC-XHIV11** 276423	5 Off	
44E	35	26	**DILAC-XHI04** 114877	5 Off	
53E	44	35	**DILAC-XHI13** 114876	5 Off	
62E	53	44	**DILAC-XHI22** 114875	5 Off	
71E	62	53	**DILAC-XHI31** 114874	5 Off	
80E	71	62	**DILAC-XHI40** 114873	5 Off	
62	53	44	**DILA-XHIV22** 276429	5 Off	

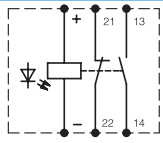
Accessories

	Operating voltage	For use with	Circuit Symbol	Part no. Article no.	Std. pack	Notes	
Electronic timer modules 	On-delayed						
	24 V AC/DC	DILM7..C - DILM32..C DILMP20C DILA..C		**DILM32-XTEE11(RA24)** 101440	1 Off	Time range 0.05 s...1 s 0.5 s...10 s 5 s...100 s	Cannot be combined with • DILAC-XHI... • DILM32C-XHI... • DILM12-XSP... • DILM32-XSP...
	100...130 V AC			**DILM32-XTEE11(RAC130)** 101441	1 Off		
	200...240 V AC			**DILM32-XTEE11(RAC240)** 101442	1 Off		
	Off-delayed						
	24 V AC/DC	DILM7..C - DILM32..C DILMP20C DILA..C		**DILM32-XTED11-1(RA24)** 105210	1 Off	Time range 0.05 s...1 s	Cannot be combined with • DILAC-XHI... • DILM32C-XHI... • DILM12-XSP... • DILM32-XSP...
	24 V AC/DC			**DILM32-XTED11-10(RA24)** 104943	1 Off	Time range 0.5 s...10 s	
	24 V AC/DC			**DILM32-XTED11-100(RA24)** 104946	1 Off	Time range 5 s...100 s	
	100...130 V AC			**DILM32-XTED11-1(RAC130)** 105211	1 Off	Time range 0.05 s...1 s	
	100...130 V AC			**DILM32-XTED11-10(RAC130)** 104944	1 Off	Time range 0.5 s...10 s	
	100...130 V AC			**DILM32-XTED11-100(RAC130)** 104947	1 Off	Time range 5 s...100 s	
	200...240 V AC			**DILM32-XTED11-1(RAC240)** 105212	1 Off	Time range 0.05 s...1 s	
	200...240 V AC			**DILM32-XTED11-10(RAC240)** 104945	1 Off	Time range 0.5 s...10 s	
	200...240 V AC			**DILM32-XTED11-100(RAC240)** 104948	1 Off	Time range 5 s...100 s	
	For star-delta applications						
	24 V AC/DC	DILM7..C - DILM32..C DILMP20C DILA..C		**DILM32-XTEY20(RA24)** 101446	1 Off	Changeover time: 1 s...30 s Changeover delay: 50 ms	Cannot be combined with • DILAC-XHI... • DILM32C-XHI... • DILM12-XSP... • DILM32-XSP...
	100...130 V AC			**DILM32-XTEY20(RAC130)** 101447	1 Off		
	200...240 V AC			**DILM32-XTEY20(RAC240)** 101448	1 Off		
Sealable shrouds Transparent 	-	DILM32-XTE...	-	**DILM32-XTEPLH** 101449	1 Off	-	
Contact connectors 	-	DILM7..C - DILM..72C DILA..C	-	**DILM32-XVB** 281227	50 Off	For mechanically linking contactors in combinations 0 mm distance between contactors.	
Mechanical interlocks incl. contactor connector. 	-	DILM7..C - DILM..15C DILMP20C DILA..C	-	**DILM12-XMV** 281196	1 Off	For two contactors with AC or DC operation arranged vertically or horizontally. Distance between contactors 0 mm. Mechanical lifespan 2.5×10^6 operations.	

Input with integrated suppressor circuit for overvoltage limitation

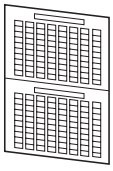


Amplifier module for separate mounting[2)]

Rated operational current AC – 15 240 V I_e A	Rated operational current AC – 15 415 V I_e A	Rated operational current DC[1)] 220 V I_e A	Actuating voltage U_s VDC	Actuating current I mA	Circuit symbol	For use with	**Part no.** Article no.	Std. pack
2	2	0.03	24	25		Any	**ETS4-VS3** 083094	1 Off

Notes
1) Making and breaking conditions DC-13, time L/R 300ms
2) Contactor coils with rated operational current > 2A must be actuated via the DILA contactor relay.

Self-adhesive label sheet



Label sheet

For use with	**Part no.** Article no.	Std. pack	**Notes**
Labelling with laser printer, plotter, film plotter, copier	**XGKE-GE** 207517	25 Off	1 off = 1 sheet 240 labels per sheet 1 sheet = DIN A4 Can be split into two DIN A5

AC

	DILA-40C(...) Article no.[1]	DILA-31C(...) Article no.[1]	DILA-22C(...) Article no.[1]
Standard voltage			
24V 50Hz	114840	114850	114860
110V 50Hz	114841	114851	114861
220V-230V 50Hz	114842	114852	114862
380-400V 50Hz	114843	114853	114863
24V 50/60Hz	114844	114854	114864
110V 50/60Hz	114845	114855	114865
220V 50/60Hz	114846	114856	114866

DC

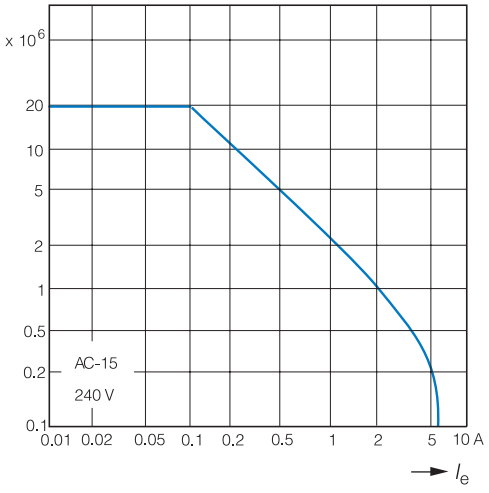
	DILA-40C(...) Article no.[1]	DILA-31C(...) Article no.[1]	DILA-22C(...) Article no.[1]
Standard voltage			
24V DC	114847	114857	114867
110V DC	114848	114858	114868
220V DC	114849	114859	114869

Notes 1) The article number is a combination of part no. and operating voltage.

Characteristic curves

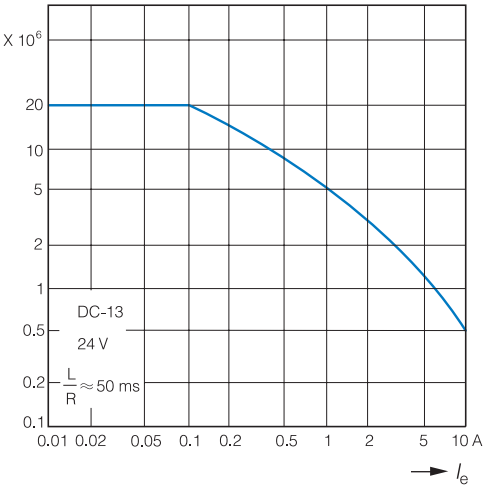
DILA...C(AC-15)

Component lifespan (operations)
I_e = Rated operational current



DILA...C(DC-13[1])

Component lifespan (operations)
I_e = Rated operational current

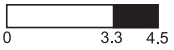


Contact travel diagrams

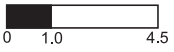
The diagrams show the closing and opening travel of the contacts at no load.

DILAC-...AC

N/O Contact

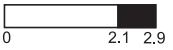


N/C Contact

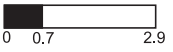


DILAC-...DC

N/O Contact

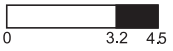


N/C Contact

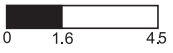


DILAC-XHI(C)...AC

N/O Contact

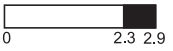


N/C Contact

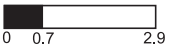


DILAC-XHI(C)...DC

N/O Contact



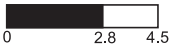
N/C Contact



DILAC-XHI(C)V...AC

N/O N/O early-make

N/C late-break N/C contact



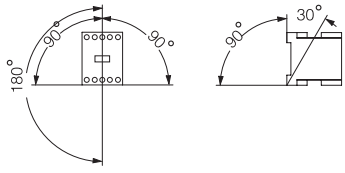
DILAC-XHI(C)V...DC

N/O N/O early-make

N/C late-break N/C contact

Notes 1) Switch-on and switch-off conditions based on DC-13, time constant as specified

1 Technical data

			DILA..C	DILAC..XHI
General				
Standard			IEC/EN 60947, VDE 0660, GB 14048	
Lifespan, mechanical				
AC operated	Operations	× 10^6	20	10
DC operated	Operations	× 10^6	20	10
Maximum operating frequency				
Maximum operating frequency	Operations/h		9000	9000
Climatic proofing			Damp heat, constant, to IEC 60068-2-78; Damp heat, cyclic, to IEC 60068-2-30	
Ambient temperature				
Open		°C	-25...60	-25...60
Enclosed		°C	-25...40	-25...40
For storage		°C	-40...80	-40...80
Mounting position				
Mounting position				
Mechanical shock resistance (IEC/EN 60068-2-27)				
Half-sinusoidal shock 10 ms				
Basic devices with auxiliary contact module				
N/O		g	7	7
N/C		g	5	5
Protection type			IP20	IP20
Protection against direct contact when actuated from front (EN 50274)			Finger- and back-of-hand proof	
Weight				
AC operated		kg	0.23	0.05
DC operated		kg	0.28	0.05
Terminal capacity				
Screw terminals				
Solid		mm^2	1 × (0.75 – 4) 2 × (0.75 – 2.5)	1 × (0.75 – 4) 2 × (0.75 – 2.5)
Flexible with ferrule		mm^2	1 × (0.75 – 2.5) 2 × (0.75 – 2.5)	1 × (0.75 – 2.5) 2 × (0.75 – 2.5)
Solid or stranded		AWG	18 – 14	18 – 14
Terminal screw			M3.5	M3.5
Pozidriv screwdriver		Size	2	2
Flat-blade screwdriver		mm	0.8 × 5.5 1 × 6	0.8 × 5.5 1 × 6
Max. tightening torque		Nm	1.2	1.2
Spring-loaded terminals				
Solid		mm^2	1 × (0.75 – 2.5) 2 × (0.75 – 2.5)	1 × (0.75 – 2.5) 2 × (0.75 – 2.5)
Flexible with/without ferrule DIN 46228		mm^2	1 × (0.75 – 1.5) 2 × (0.75 – 1.5)	1 × (0.75 – 1.5) 2 × (0.75 – 1.5)
Solid or stranded		AWG	18 – 14	18 – 14
Flat-blade screwdriver		mm	0.6 × 3.5	0.6 × 3.5

Technical data

			DILA..C	DILAC..XHI
Contacts				
Interlocked opposing contacts to EN 60947-4-1, Annex L, including auxiliary contact module			Yes	Yes
Rated impulse withstand voltage	U_{imp}	V AC	6000	6000
Over-voltage category/degree of pollution			III/3	III/3
Rated insulation voltage	U_i	V AC	690	690
Rated operating voltage	U_e	V AC	690	500
Safe isolation according to EN 61140				
Between coil and auxiliary contacts		V AC	400	400
Between the auxiliary contacts		V AC	400	400
Rated operational current				
AC-15				
220/240 V	I_e	A	4	4
380/415 V	I_e	A	4	4
500 V	I_e	A	1.5	1.5
DC-13[1)]				
DC-13 L/R ≤ 15 ms				
Contacts in series:				
1	24 V	A	10	10
1	60 V	A	6	6
2	60 V	A	10	10
1	110 V	A	3	3
3	110 V	A	6	6
1	220 V	A	1	1
3	220 V	A	5	5
DC-13 L/R ≤ 50 ms				
Contacts in series:				
3	24 V	A	4	–
3	60 V	A	4	–
3	110 V	A	2	–
3	220 V	A	1	–
Control circuit reliability (at U_e = 24 V DC, U_{min} = 17 V, I_{min} = 5.4 mA)	Fault probability	λ	< one failure in 100 million operations	
Conventional thermal current	I_{th}	A	16	16
Short-circuit strength without welding				
Maximum over-current protection device				
220/240 V		PKZM0	4	–
380/415 V		PKZM0	4	–
Short-circuit protection rating maximum fuse[2)]				
500 V		A gG/gL	10	10
Current heat loss at load of I_{th}				
AC operated		W	0.3	0.3
DC operated		W	0.3	0.3

Notes 1) Switch-on and switch-off conditions based on DC-13, time constant as specified
2) See characteristic curve "Fuses" for time/current characteristics (please enquire)

1 Technical data

			DILA..C	DILAC..XHI
Magnet system				
Voltage tolerance				
AC operated	Pick-up	× U_c	0.8 – 1.1	–
DC operated[1)]	Pick-up	× U_c	0.8 – 1.1	–
	Pick-up	× U_c	0.7 – 1.3	–
Power consumption without auxiliary contact module (40 °C)				
50 Hz	Pick-up	VA	24	–
50 Hz	Sealing	VA	3.4	–
50 Hz	Sealing	W	1.2	–
60 Hz	Pick-up	VA	30	–
60 Hz	Sealing	VA	4.4	–
60 Hz	Sealing	W	1.4	–
50/60 Hz	Pick-up	VA	27 25	–
50/60 Hz	Sealing	VA	4.2 3.3	–
50/60 Hz	Sealing	W	1.4 1.2	–
DC operated[1)]	Pick-up=Sealing	W	3	–
Duty factor		% DF	100	–
Changeover times at 100 % U_c (recommended values)				
Main contact				
AC operated				
closing delay		ms	15 – 21	–
opening delay		ms	9 – 18	–
DC operated				
closing delay		ms	31	–
opening delay		ms	12	–

Notes 1) Smoothed DC, three-phase bridge rectifier or smoothed two-phase bridge rectifier

Amplifier modules, electronic timer module

			ETS4-VS3	DILM32-XTE
General				
Standard			IEC/EN 60947, VDE 0660, UL, CSA	DIN EN 61812, IEC/EN 60947, VDE 0660, UL, CSA
Lifespan, mechanical				
AC operated	Contact	× 10^6	–	3
DC operated	Contact	× 10^6	30	3
Maximum operating frequency				
220 V 230 V	Contact	× 10^6	72000	–
Climatic proofing			Damp heat, constant, to IEC 60068-2-78; Damp heat, cyclic, to IEC 60068-2-30	
Ambient temperature				
For storage		°C	–	-40...80
Open		°C	-25...60	-25...60
Enclosed		°C	-25...45	-25...40
Mounting position			Any	As required, except suspended
Mechanical shock resistance (IEC/EN 60068-2-27)				
Half-sinusoidal shock 20 ms				
N/O		g	10	–
Half-sinusoidal shock 10 ms				
N/O		g	10	10
N/C		g	8	8
Protection type			IP20	IP20
Protection against direct contact when actuated from front (EN 50274)			Finger- and back-of-hand proof	
Weight		kg	0.09	0.09
Terminal capacity				
Solid		mm^2	1 × (0.75 – 2.5) 2 × (0.75 – 2.5)[1)]	1 × (0.75 – 2.5) 2 × (0.75 – 1.5)
Flexible with ferrule		mm^2	1 × (0.75 – 2.5) 2 × (0.75 – 1.5)[1)]	1 × (0.75 – 1.5) 2 × (0.75 – 1.5)
Solid or stranded		AWG	16 – 14	16 – 14
Screw terminals			M3.5	M3.5
Pozidriv screwdriver		Size	2	2
Flat-blade screwdriver		mm	0.8 × 5.5 1 × 6	0.8 × 5.5 1 × 6
Max. tightening torque		Nm	1.2	1.2

Notes 1) Use equal cross-sections only

1

Amplifier modules, electronic timer module

			ETS4-VS3	DILM32-XTE
Contacts				
Rated impulse withstand voltage	U_{imp}	V AC	6000	6000
Over-voltage category/degree of pollution			III/2	III/3
Rated insulation voltage	U_i	V AC	440	600
Rated operating voltage	U_e	V AC	440	400
Rated operational current				
AC-15				
220/240 V	I_e	A	2	Please enquire
380/415 V	I_e	A	2	Please enquire
DC-13[1)]				
DC-13 L/R ≤ 15 ms				
Contacts in series:				
1	24 V	A	2.6	–
1	60 V	A	1	–
1	110 V	A	0.6	–
1	220 V	A	0.2	–
DC-13 L/R ≤ 50 ms				
Contacts in series:				
1	24 V	A	2	–
1	60 V	A	0.6	–
1	110 V	A	0.08	–
1	220 V	A	0.08	–
DC-13 L/R ≤ 300 ms				
Contacts in series:				
1	24 V	A	0.6	–
1	60 V	A	0.2	–
1	110 V	A	0.08	–
1	220 V	A	0.03	–
Safe isolation according to EN 61140				
Between coil and auxiliary contacts		V AC	–	250
Between the auxiliary contacts		V AC	–	250
Control circuit reliability (at U_e = 24 V DC, U_{min} = 17 V, I_{min} = 5.4 mA)	Fault probability	λ	< one failure in 100 million operations	
Conventional thermal current	I_{th}	A	6	6
Lifespan, mechanical				
AC-15				
230 V, I_e = 0.1 A	Operations	× 10^6	7	–
230 V, I_e = 1.2 A	Operations	× 10^6	1	–
Short-circuit strength without welding				
Maximum over-current protection device[2)]				
500 V		A gG/gL	–	6
500 V		A fast	4	–

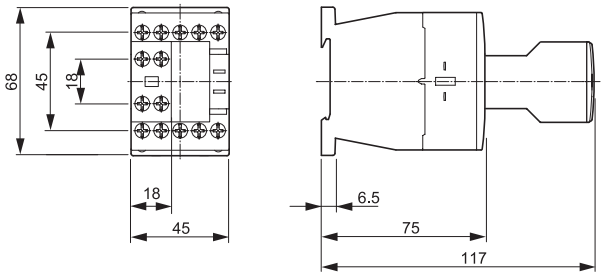
Notes 1) Switch-on and switch-off conditions based on DC-13, time constant as specified
2) See transparent overlay "Fuses" for time/current characteristics (please enquire)

Amplifier modules, electronic timer module

			ETS4-VS3	DILM32-XTE
Magnet system				
Voltage tolerance				
Voltage tolerance				
AC operated				
	Pick-up	× U_c	–	0.85 – 1.1
AC operated				
	Pick-up	× U_c	0.85 – 1.2	0.7 – 1.2
Power consumption				
AC	Sealing	VA	–	2
DC[1)]	Sealing	W	–	1.8
DC operated[1)]	Pick-up=Sealing	W	0.6	–
Duty factor		% DF	100	100
Changeover times at 100 % U_c (recommended values)				
DC operated, closing delay		ms	7	–
DC operated, opening delay		ms	3	–
Maximum operating frequency				
Maximum operating frequency		Ops/h	–	3600
6 A/250 V		Ops. /h	9000	360
Minimum on duration				
On-delayed		ms	< –	< 50
Off-delayed		ms	< –	< 200
Repetition accuracy (with constant parameters)	Deviation	%	< –	< 5
Recovery time (after 100% time delay)		ms	–	70
Contact changeover time				
DILM32-XTEE11/DILM32-XTED11	t_u	ms	–	10
DILM32-XTEY20	t_u	ms	–	50

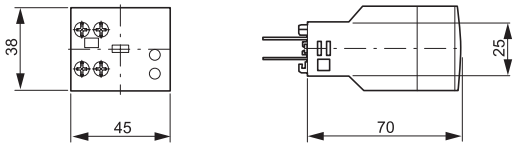
Notes: 1) Smoothed DC, three-phase bridge rectifier or smoothed two-phase bridge rectifier

1 Basic devices with DILAC-...-XHI auxiliary contact modules

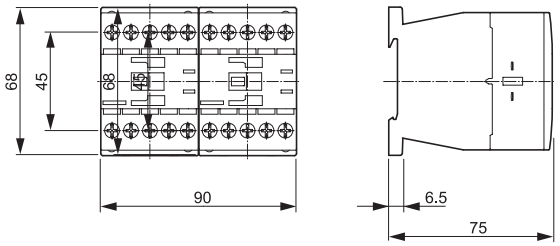


Electronic timer modules

DILM32-XTE

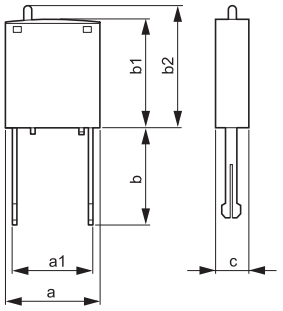


Basic devices with DILM...XMV mechanical interlock



Suppressor circuits

DILM12-XSP...



	DILM12-XSPR... DILM12-XSPV... DILM12-XSPI...
a	25
a1	9.2
b	25.9
b1	28
b2	≈32
c	9

Contactor DILM..C

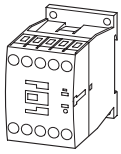
- Easier engineering through identical construction sizes for AC- and DC-operated contactors
- Cost and energy savings for control panel ventilation due to reduced heat dissipation
- Less amount of coupler relays due to direct actuation from the PLC for contactors up to 32A
- Easy engineering through integrated suppressor circuits for DC/AC operated contactors rated 115A, 150A, 170A

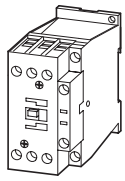
Contents

1

Contactor DILM..C

3 pole

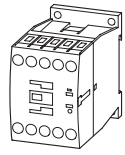




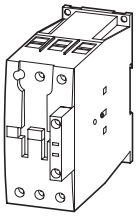
	DIL Basic devices Page	M7..C Page 174	M9..C Page 174	M12..C Page 174	M15..C Page 174	M17..C Page 174	M25..C Page 174	M32..C Page 174
Rated-operational voltage		kW	kW	kW	kW	kW	kW	kW
AC-3 Rated operational power for 3-phase motors 50 – 60 Hz								
220 V – 230 V		2.2	2.5	3.5	4	5	7.5	10
380 V – 400 V		3	4	5.5	7.5	7.5	11	15
660 V/690 V		3.5	4.5	6.5	7	11	14	17
AC-4 Rated operational power for 3-phase motors 50 – 60 Hz								
220 V – 230 V		1	1.5	2	2	2.5	3.5	4
380 V – 400 V		2.2	2.5	3	3	4.5	6	7
660 V/690 V		2.9	3.6	4.4	4.4	6.5	8.5	10
AC-1 Rated operational power under resistive load, 40 °C								
220 V – 230 V		8	8	8	8	15	17	17
380 V – 400 V		14	14	14	14	26	29	29
660 V/690 V		25	25	25	25	45	51	51
Conventional thermal current $I_{th} = I_e$, open at 40 °C		A	A	A	A	A	A	A
40°C		22	22	22	22	40	45	45
60°C		20	20	20	20	35	40	40

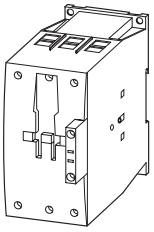
Contactor DILM..C

4 pole



	DIL Page	MP20C Page 174
Rated-operational voltage		
AC-1 Conventional thermal current $I_{th} = I_e$, open at 40 °C		A
40°C		22
60°C		20

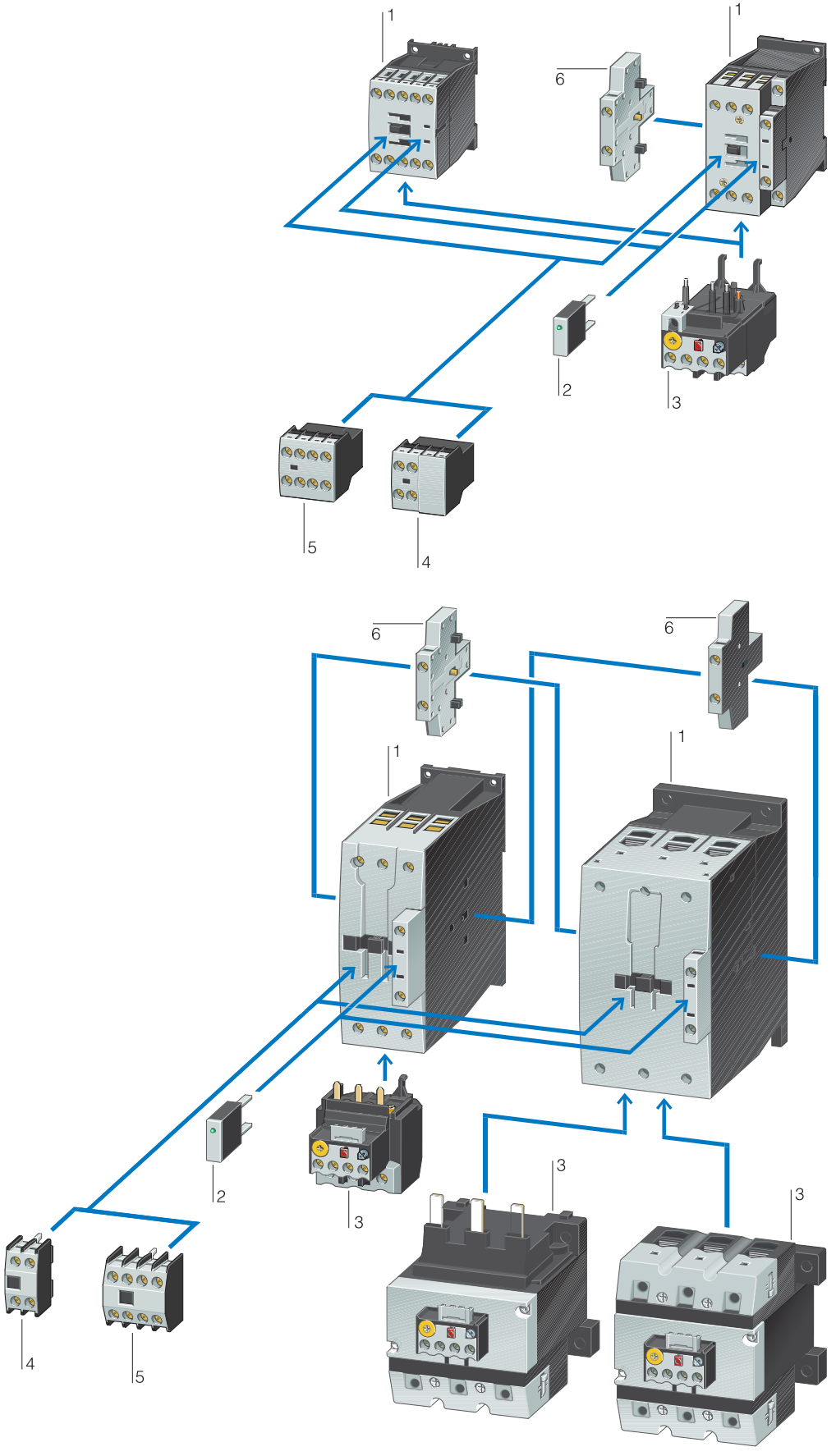




M38..C Page 174	M40C Page 174	M50C Page 174	M65C Page 174	M72C Page 174	M80C Page 174	M95C Page 174	M115C Page 174	M150C Page 174	M170C Page 174
kW	kW	kW	kW	kW	kW	kW	kW	kW	kW
11	12.5	15.5	20	20	25	30	37	48	52
18.5	18.5	22	30	37	37	45	55	75	90
22	23	30	35	35	63	75	90	96	140
4	5	6	7	7	12	16	17	20	20
7	9	10	12	12	20	26	28	33	33
10	12	14	17	17	26	35	43	48	48
17	22	30	37	37	42	49	61	72	85
29	39	53	65	65	72	85	105	125	150
51	68	91	111	111	125	148	182	216	268
A	A	A	A	A	A	A	A	A	A
45	60	80	98	98	110	130	160	190	203
40	50	65	80	80	90	110	130	160	185

1.3 Contactor DILM..C

System overview



System overview

Contactors up to 90 kW (AC-3/400V) 1

Magnet system
AC: 24 – 440 V, 50, 60, 50/60 Hz
0.8 – 1.1 × U_c

DC: 24 – 240 V
DILM7...C – DILM15...C: 0.8 – 1.1 × U_c
DILM17...C – DILM170C: 0.7 – 1.2 × U_c
at 24 V: 0.7 – 1.3 × U_c
Without auxiliary contact modules Ambient temperature: +40°C

→ 173

Suppressor circuits 2

RC suppressors
Varistor suppressors
Diode suppressors

→ 178

Overload relays 3

Direct mounting
Separate mounting

→ See Overload relays Catalog

Auxiliary contact modules 4

2 pole, screw terminals

→ 175

Auxiliary contact modules 5

4 pole, screw terminals

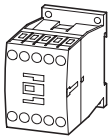
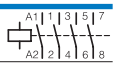
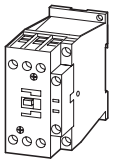
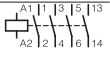
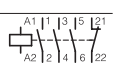
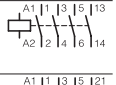
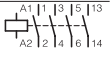
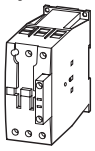
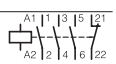
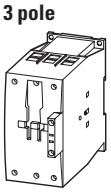
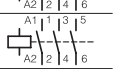
→ 175

Auxiliary contact modules 6

2 pole, side mounting

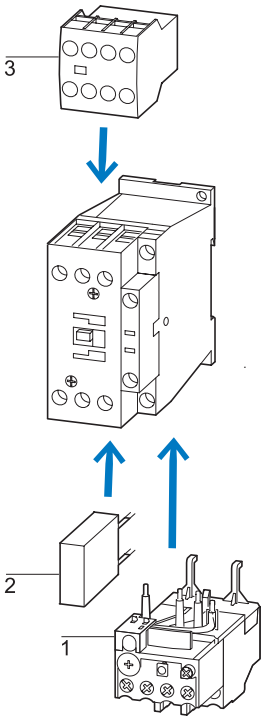
→ 175

Basic devices

Rated operational current	Max. motor rating for three-phase motors 50 - 60 Hz						Conventional thermal current $I_{th} = I_e$ AC-1 at 40°C		Contact		Circuit symbol
AC-3	**AC-3**			**AC-4**					N/O = Normally opened contact		
380 V	220 V	**380 V**	660 V	220 V	**380 V**	660 V			N/C = Normally closed contact		
400 V	230 V	**400 V**	690 V	230 V	**400 V**	690 V	A				
I_e	P	**P**	P	P	**P**	P	Open	Close			
A	kW	**kW**	kW	kW	**kW**	kW					
Screw terminals 4 pole, 3 pole 											
12	3.5	**5.5**	6.5	2	**3**	4.4	22	20	–	–	
7	2.2	**3**	3.5	1	**2.2**	2.9	22	20	1 N/O	–	
7	22	**3**	3.5	1	**2.2**	2.9	22	20	–	1 N/C	
9	25	**4**	4.5	1.5	**2.5**	3.6	22	20	1 N/O	–	
9	25	**4**	4.5	1.5	**2.5**	3.6	22	20	–	1 N/C	
12	3.5	**5.5**	6.5	2	**3**	4.4	22	20	1 N/O	–	
12	3.5	**5.5**	6.5	2	**3**	4.4	22	20	–	1 N/C	
15.5	4	**7.5**	7	2	**3**	4.4	22	20	1 N/O	–	
15.5	4	**7.5**	7	2	**3**	4.4	22	20	–	1 N/C	
Screw terminals 3 pole 											
18	5	**7.5**	11	2.5	**4.5**	6.5	40	36	1 N/O	–	
18	5	**7.5**	11	2.5	**4.5**	6.5	40	36	–	1 N/C	
25	7.5	**11**	14	3.5	**6**	8.5	45	40	1 N/O	–	
25	7.5	**11**	14	3.5	**6**	8.5	45	40	–	1 N/C	
32	10	**15**	17	4	**7**	10	45	40	1 N/O	–	
32	10	**15**	17	4	**7**	10	45	40	–	1 N/C	
38	11	**18.5**	22	4	**7**	10	45	40	1 N/O	–	
38	11	**18.5**	22	4	**7**	10	45	40	–	1 N/C	
Screw terminals 3 pole 											
40	12.5	**18.5**	23	5	**9**	12	60	54	–	–	
50	15.5	**22**	30	6	**10**	14	80	72	–	–	
65	20	**30**	35	7	**12**	17	98	90	–	–	
72	25	**37**	35	7	**12**	17	98	90	–	–	
Screw terminals 3 pole 											
80	25	**37**	63	12	**20**	26	110	100	–	–	
95	30	**45**	75	16	**26**	35	130	115	–	–	
115	37	**55**	90	17	**28**	43	160	145	–	–	
150	48	**75**	96	20	**33**	48	190	170	–	–	
170	52	**90**	140	20	**33**	48	203	190	–	–	

Notes Integrated suppressor circuits applied to DC operated contactors. Integrated DIL..C - DILM15..C have integrated varistor suppressor circuits.
Mirror contacts applied to DILM7-01C - DILM32-01C.
Contacts comply to EN50012

Auxiliary contact module to use with	AC operation Part no. Article no.	DC operation Part no. Article no.	Std. pack	Notes
	Operating voltage 220-230V50Hz	**Operating voltage 24VDC**		
DILM32C-XHI.. DILAC-XHI..	**DILMP20C(220-230V50Hz)** 114880	**DILMP20C(24VDC)** 114885	1 Off	
DILM32C-XHI.. DILAC-XHI..	**DILM7-10C(220-230V50Hz)** 114890	**DILM7-10C(24VDC)** 114895	1 Off	
DILAC-XHI..	**DILM7-01C(220-230V50Hz)** 114900	**DILM7-01C(24VDC)** 114905	1 Off	
DILM32C-XHI.. DILAC-XHI..	**DILM9-10C(220-230V50Hz)** 114910	**DILM9-10C(24VDC)** 114915	1 Off	
DILAC-XHI..	**DILM9-01C(220-230V50Hz)** 114920	**DILM9-01C(24VDC)** 114925	1 Off	
DILM32C-XHI.. DILAC-XHI..	**DILM12-10C(220-230V50Hz)** 114930	**DILM12-10C(24VDC)** 114935	1 Off	
DILAC-XHI..	**DILM12-01C(220-230V50Hz)** 114940	**DILM12-01C(24VDC)** 114945	1 Off	
DILM32C-XHI.. DILAC-XHI..	**DILM15-10C(220-230V50Hz)** 114950	**DILM15-10C(24VDC)** 114955	1 Off	
DILAC-XHI..	**DILM15-01C(220-230V50Hz)** 114960	**DILM15-01C(24VDC)** 114965	1 Off	
DILM32C-XHI.. DILAC-XHI.. DILM32C-XHI11-S	**DILM17-10C(220-230V50Hz)** 114970	**DILM17-10C(RDC24)** 114975	1 Off	
DILAC-XHI.. DILM32C-XHI11-S	**DILM17-01C(220-230V50Hz)** 114980	**DILM17-01C(RDC24)** 114985	1 Off	
DILM32C-XHI.. DILAC-XHI.. DILM32C-XHI11-S	**DILM25-10C(220-230V50Hz)** 114990	**DILM25-10C(RDC24)** 114995	1 Off	
DILAC-XHI.. DILM32C-XHI11-S	**DILM25-01C(220-230V50Hz)** 115000	**DILM25-01C(RDC24)** 115005	1 Off	
DILM32C-XHI.. DILAC-XHI.. DILM32C-XHI11-S	**DILM32-10C(220-230V50Hz)** 115010	**DILM32-10C(RDC24)** 115015	1 Off	
DILAC-XHI.. DILM32C-XHI11-S	**DILM32-01C(220-230V50Hz)** 115020	**DILM32-01C(RDC24)** 115025	1 Off	
DILM32C-XHI.. DILAC-XHI.. DILM32C-XHI11-S	**DILM38-10C(220-230V50Hz)** 115030	**DILM38-10C(RDC24)** 115035	1 Off	
DILAC-XHI.. DILM32C-XHI11-S	**DILM38-01C(220-230V50Hz)** 115040	**DILM38-01C(RDC24)** 115040	1 Off	
DILM150C-XHI.. DILM1000C-XHI..	**DILM40C(220-230V50Hz)** 115550	**DILM40C(RDC24)** 115552	1 Off	
DILM150C-XHI.. DILM1000C-XHI..	**DILM50C(220-230V50Hz)** 115564	**DILM50C(RDC24)** 115566	1 Off	
DILM150C-XHI.. DILM1000C-XHI..	**DILM65C(220-230V50Hz)** 115578	**DILM65C(RDC24)** 115580	1 Off	
DILM150C-XHI.. DILM1000C-XHI..	**DILM72C(220-230V50Hz)** 112353	**DILM72C(RDC24)** 112095	1 Off	
DILM150C-XHI.. DILM1000C-XHI..	**DILM80C(220-230V50Hz)** 115592	**DILM80C(RDC24)** 115594	1 Off	
DILM150C-XHI.. DILM1000C-XHI..	**DILM95C(220-230V50Hz)** 115606	**DILM95C(RDC24)** 115608	1 Off	
DILM150C-XHI.. DILM1000C-XHI..	**DILM115C(RAC240)** 115620	**DILM115C(RDC24)** 115621	1 Off	
DILM150C-XHI.. DILM1000C-XHI..	**DILM150C(RAC240)** 115632	**DILM150C(RDC24)** 115633	1 Off	
DILM150C-XHI.. DILM1000C-XHI..	**DILM170C(RAC240)** 112073	**DILM170C(RDC24)** 112076	1 Off	

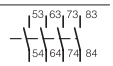
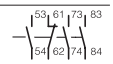
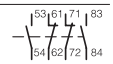
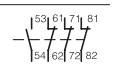
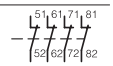
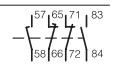


Accessories

1 Overload relay → See Catalog
2 Suppressor → 178
3 Auxiliary contact module → 175
Operating voltage → 182
Accessories → 178

Auxiliary contact modules

With interlocked opposing contacts (except XHIV and XHICV)

	Conventional thermal current $I_{th} = I_e$ AC-1 at 60°C Open A	Contact N/O = Normally open contact N/O_E = N/O, early-make N/C = Normally closed contact N/C_L = N/C, late-break		Circuit symbol	For use with	**Part no.** Article no.	Std. pack
2 pole Screw terminals Top mounting auxiliary contacts[1] 	16	1 N/O	1 N/C		DILM7-10C... DILM9-10C... DILM12-10C... DILM15-10C... DILM17-10C... DILM25-10C... DILM32-10C... DILM38-10C...	**DILM32C-XHI11** 115048	5 Off
	16	–	2 N/C			**DILM32C-XHI02** 115049	5 Off
4 pole Screw terminals Top mounting auxiliary contacts[1] 	16	2 N/O	2 N/C			**DILM32C-XHI22** 115050	5 Off
	16	3 N/O	1 N/C			**DILM32C-XHI31** 115051	5 Off
2 pole Screw terminals Top mounting auxiliary contacts[1] 	16	2 N/O	–		DILM7...C... DILM9...C... DILM12...C... DILM15...C... DILM17...C... DILM25...C... DILM32...C... DILM38...C...	**DILAC-XHI20** 114870	5 Off
	16	1 N/O	1 N/C			**DILAC-XHI11** 114871	5 Off
	16	–	2 N/C			**DILAC-XHI02** 114872	5 Off
	16	$1 N/O_E$	$1 N/C_L$			**DILA-XHIV11** 276423	5 Off
4 pole Screw terminals Top mounting auxiliary contacts[1] 	16	4 N/O	–			**DILAC-XHI40** 114873	5 Off
	16	3 N/O	1 N/C			**DILAC-XHI31** 114874	5 Off
	16	2 N/O	2 N/C			**DILAC-XHI22** 114875	5 Off
	16	1 N/O	3 N/C			**DILAC-XHI13** 114876	5 Off
	16	–	4 N/C			**DILAC-XHI04** 114877	5 Off
	16	1 N/O, $1 N/O_E$	1 N/C, $1 N/C_L$			**DILA-XHIV22** 276427	5 Off
2 pole Screw terminals Side-mounting auxiliary contacts[2] 	10	1 N/O	1 N/C		DILM17...C... DILM25...C... DILM32...C... DILM38...C...	**DILM32C-XHI11-S** 115052	1 Off

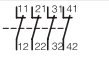
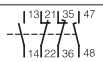
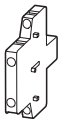
Notes

1) Top mounting auxiliary contacts have the following characters:
- Interlocked opposing contacts according to IEC/EN 60947-5-1 Annex L, inside the auxiliary contact modules, also for the integrated auxiliary contacts of the DILM 7C - DILM38C (except N/O early-make and N/C late-break)
- N/C Auxiliary contacts can be used as mirror contacts according to IEC/EN 60947-4-1, Annex F (except N/C late-breaks)

2) Can only be left on the contactor. Cannot be combined with mechanical interlock and top mounting auxiliary contacts.

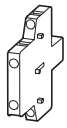
Auxiliary contact modules

With interlocked opposing contacts (except XHIV and XHICV)

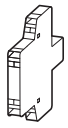
	Conventional thermal current $I_{th} = I_e$ AC-1 at 60°C Open A	Contact N/O = Normally open contact N/O_E = N/O, early-make N/C = Normally closed contact N/C_L = N/C, late-break		Circuit symbol	For use with	**Part no.** Article no.	Std. pack
2 pole Screw terminals Top mounting auxiliary contacts 	10	2 N/O	–		DILM40C... DILM50C... DILM65C... DILM72C... DILM80C... DILM95C... DILM115C... DILM150C... DILM170C...	**DILM150C-XHI20** 105686	5 Off
	10	1 N/O	1 N/C			**DILM150C-XHI11** 105687	5 Off
	10	1 N/O	1 N/C			**DILM150-XHIA11** 283463	5 Off
	10	–	2 N/C			**DILM150C-XHI02** 105688	5 Off
4 pole Screw terminals Top mounting auxiliary contacts 	10	4 N/O	–			**DILM150C-XHI40** 105689	5 Off
	10	3 N/O	1 N/C			**DILM150C-XHI31** 105690	5 Off
	10	2 N/O	2 N/C			**DILM150C-XHI22** 105691	5 Off
	10	2 N/O	2 N/C			**DILM150-XHIA22** 283464	5 Off
	10	1 N/O	3 N/C			**DILM150C-XHI13** 105692	5 Off
	10	–	4 N/C			**DILM150C-XHI04** 105693	5 Off
	10	1 N/O, 1 N/O_E	1 N/C, 1 N/C_L			**DILM150-XHIV22** 277953	5 Off
2 pole Screw terminals Side-mounting auxiliary contacts 	10	1 N/O	1 N/C		DILM40C... DILM170C	**DILM1000C-XHI11-SI** 105694	1 Off
	10	1 N/O_E	1 N/C_L		DILM40C... DILM170C	**DILM1000-XHIV11-SI** 278426	1 Off
	10	1 N/O	1 N/C		DILM80C... DILM170C	**DILM1000C-XHI11-SA** 105695	1 Off

1

Auxiliary contact modules



DILM1000C-XHI11-SI
DILM1000-XHIV11-SI



DILM1000C-XHI11-SA

DILM150C-XHI20
DILM150C-XHI11
DILM150C-XHI 02

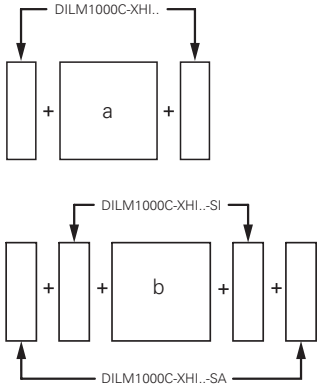
DILM150C-XHI40
DILM150C-XHI31
DILM150C-XHI22
DILM150C-XHI13
DILM150C-XHI04
DILM150-XHIV22

DILM150-XHIA11

DILM150-XHIA22

DILM40C ... DILM72C	2 ×	–	–	–	1 ×	–
	–	2 ×	1 ×	–	–	–
	1 ×	–	–	–	–	1 ×
	–	1 ×	–	1 ×	–	–
DILM80C ... DILM170C	2 ×	2 ×	–	–	–	–
	2 ×	–	–	–	–	1 ×
	2 ×	–	–	–	1 ×	–
	–	2 ×	–	1 ×	–	–
	–	2 ×	1 ×	–	–	–

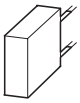
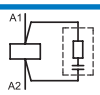
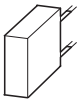
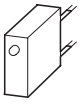
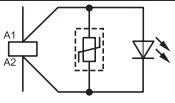
Notes **side-mounting auxiliary contacts**

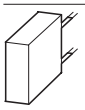


a DILM40C – DILM72C
b DILM80C – DILM170C

- Interlocked opposing contacts according to IEC/EN 60947-5-1 Annex L, inside the auxiliary contact module (except N/O early close and N/C late open)
- Auxiliary contacts can be used as mirror contacts according to IEC/EN 60947-4-1, Annex F (except N/C late open)
- No auxiliary contact is possible between two contactors with mechanical interlock.

Suppressor circuits

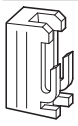
	Voltage	For use with	Circuit symbol	Part no. Article no.	Std. pack	Notes
	V					
RC suppressors 	24 – 48 AC	DILM7..C-DILM15..C DILMP20..C DILA..C		**DILM12-XSPR48** 281199	10 Off	For AC operated contactors 50-60Hz. Ac operated DILM 115C, DILM 150C, DILM 170C and all DC operated contactors have an integrated suppressor. Note drop-out delay.
	110 – 240 AC			**DILM12-XSPR240** 281200	10 Off	
	240 – 500 AC			**DILM12-XSPR500** 281201	10 Off	
	24 – 48 AC	DILM17..C-DILM38..C		**DILM32-XSPR48** 281202	10 Off	
	110 – 240 AC			**DILM32-XSPR240** 281203	10 Off	
	240 – 500 AC			**DILM32-XSPR500** 281204	10 Off	
	24 – 48 AC	DILM40C-DILM95C		**DILM95-XSPR48** 281205	10 Off	
	110 – 240 AC			**DILM95-XSPR240** 281206	10 Off	
	240 – 500 AC			**DILM95-XSPR500** 281207	10 Off	
Varistor suppressors 	24 – 48 AC	DILM7..C-DILM15..C DILMP20..C DILA..C		**DILM12-XSPV48** 281208	10 Off	For AC operated contactors 50-60Hz. Ac operated DILM 115C, DILM 150C, DILM 170C and all DC operated contactors have an integrated suppressor. Note drop-out delay.
	48 – 130 AC			**DILM12-XSPV130** 281209	10 Off	
	130 – 240 AC			**DILM12-XSPV240** 281210	10 Off	
	240 – 500 AC			**DI LM 12-XSPV 500** 281211	10 Off	
	24 – 48 AC	DILM17..C-DILM38..C		**DILM32-XSPV48** 281212	10 Off	
	48 – 130 AC			**DILM32-XSPV130** 281213	10 Off	
	130 – 240 AC			**DILM32-XSPV240** 281214	10 Off	
	240 – 500 AC			**DILM32-XSPV500** 281215	10 Off	
	24 – 48 AC	DILM40C-DILM95C		**DILM95-XSPV48** 281216	10 Off	
	48 – 130 AC			**DILM95-XSPV130** 281217	10 Off	
	130 – 240 AC			**DILM95-XSPV240** 281218	10 Off	
	240 – 500 AC			**DILM95-XSPV500** 281219	10 Off	
Varistor suppressors with integrated LED 	24 – 48 AC	DILM7..C-DILM15..C DILMP20..C DILA..C		**DILM12-XSPVL48** 281220	10 Off	For AC operated contactors 50-60Hz. Ac operated DILM 115C, DILM 150C, DILM 170C and all DC operated contactors have an integrated suppressor. Note drop-out delay.
	130 – 240 AC			**DILM12-XSPVL240** 281221	10 Off	
	24 – 48 AC	DILM17..C-DILM38..C		**DILM32-XSPVL48** 281222	10 Off	
	130 – 240 AC			**DILM32-XSPVL240** 281223	10 Off	
	24 – 48 AC	DILM40C-DILM95C		**DILM95-XSPVL48** 281224	10 Off	
	130 – 240 AC			**DILM95-XSPVL240** 281225	10 Off	

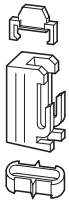


Diode suppressors

Voltage	For use with	Circuit symbol	**Part no.** Article no.	Std. pack	**Notes**
V					
12 – 250 DC	DILM7..C-DILM15..C DILMP20..C DILA..C		**DILM12-XSPD** 101672	10 Off	DC operated contactors. Prevention of negative switch-off voltage when the contactor is used together with a safety PLC.

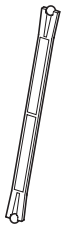
Contactor connector





For use with	**Part no.** Article no.	Std. pack	**Notes**
DILM7..C-DILM72C DILA..C	**DILM32-XVB** 281227	50 Off	For mechanically linking contactors in combinations 0 mm distance between contactors.
DILM80C-DILM170C	**DILM150-XVB** 281226	10 Off	For mechanically linking contactors in combinations 0 mm distance between contactors.

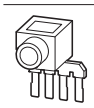
Mechanical interlocks, incl. contactor connector

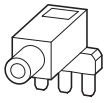


For use with	**Part no.** Article no.	Std. pack	**Notes**
DILM7..C-DILM15..C DILMP20...C DILA...C	**DILM12-XMV** 281196	1 Off	For two contactors with AC or DC operation arranged vertically or horizontally. Distance between contactors 0 mm, including contactor connector. Mechanical lifespan 2.5 x 10^6 operations. Additional auxiliary contact modules possible.
DILM17..C-DILM38..C	**DILM32-XMV** 281197	1 Off	
DILM40C-DILM72C	**DILM65-XMV** 281198	1 Off	
DILM80C-DILM170C	**DILM150-XMV** 240081	1 Off	

Paralleling links for main contacts

Consisting of 2 paralleling links

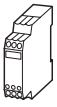




For use with	Part no. Article no.	Std. pack	Notes
DILM7..C-DILM15..C	**DILM12-XP1** 281193	5 Off	4th pole can be broken off AC-1 current carrying capacity of the open contactor increases by a factor of 2.5. Protected against accidental contact in accordance with IEC536 Connection cross section for DILM…XP1 Technical Data → "Technical Data"
DILM17..C-DILM38..C	**DILM32-XP1** 281194	5 Off	
DILM40C-DILM72C	**DILM65-XP1** 281195	5 Off	
DILM80C-DILM170C	**DILM150-XP1** 284769	5 Off	

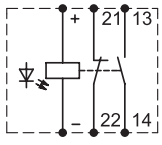
Star-point bridges

For use with	Part no. Article no.	Std. pack	Notes
DILM7..C-DILM15..C	**DILM12-XS1** 281190	20 Off	Designed as tool-less plug connection
DILM17..C-DILM38..C	**DILM32-XS1** 281191	20 Off	–
DILM40C-DILM72C	**DILM65-XS1** 281192	20 Off	–
DILM80C-DILM170C	**DILM150-XS1** 284768	20 Off	–



Amplifier module for separate mounting

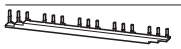
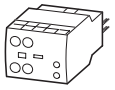
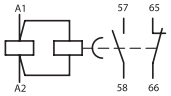
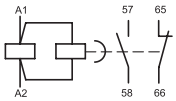
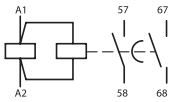
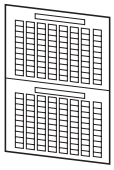
Amplifier module for separate mounting.
Input with integrated suppressor circuit for over-voltage limitation

Rated operational current AC-15 240 V I_e A	AC-15 415 V I_e A	DC 220 V I_e A	Actuating voltages U_s V DC	Actuating current I mA	Circuit symbol	For use with	Part no. Article no.	Std. pack
2	2	0.03	24	25		As required	**ETS4-VS3** 083094	1 Off

Notes

- Contactor coils with rated operational current > 2A must be actuated via the DILA...C contactor relay.
- Rated operational current DC: making and breaking conditions DC-13, time L/R 300ms

Accessories

	For use with	Circuit symbol	Part no. Article no.	Std. pack	Notes	
Three-phase commoning links						
Protected against accidental contact, short-circuit proof U_e = 690 V, I_u = 35 A						
	DILM7..C DILM9..C DILM12..C DILM15..C	–	**DILM12-XDSB0/3** 240084	5 Off	Suitable for 3 contactors. Length 135 mm	
		–	**DILM12-XDSB0/4** 240085	5 Off	Suitable for 4 contactors. Length 180 mm	
		–	**DILM12-XDSB0/5** 240086	5 Off	Suitable for 5 contactors. Length 225 mm	
Electronic timer modules						
						
On-delayed						
24 V AC/DC	DILM7..C-DILM32..C DILMP20C DILA..C		**DILM32-XTEE11(RA24)** 101440	1 Off	Time range 0.05 s...1 s 0.5 s...10 s 5 s...100 s	Cannot be combined with • DILM32C-XHI... • DILM12-XSP... • DILM32-XSP...
100 ... 130 V AC			**DILM32-XTEE11(RAC130)** 101441	1 Off		
200 ... 240 V AC			**DILM32-XTEE11(RAC240)** 101442	1 Off		
Off-delayed						
24 V AC/DC	DILM7..C-DILM32..C DILMP20C DILA..C		**DILM32-XTED11-1(RA24)** 105210	1 Off	Time range 0.05 s...1 s	Cannot be combined with • DILM32C-XHI... • DILM12-XSP... • DILM32-XSP...
24 V AC/DC			**DILM32-XTED11-10(RA24)** 104943	1 Off	Time range 0.5 s...10 s	
24 V AC/DC			**DILM32-XTED11-100(RA24)** 104946	1 Off	Time range 5 s...100 s	
100 ... 130 V AC			**DILM32-XTED11-1(RAC130)** 105211	1 Off	Time range 0.05 s...1 s	
100 ... 130 V AC			**DILM32-XTED11-10(RAC130)** 104944	1 Off	Time range 0.5 s...10 s	
100 ... 130 V AC			**DILM32-XTED11-100(RAC130)** 104947	1 Off	Time range 5 s...100 s	
200 ... 240 V AC			**DILM32-XTED11-1(RAC240)** 105212	1 Off	Time range 0.05 s...1 s	
200 ... 240 V AC			**DILM32-XTED11-10(RAC240)** 104945	1 Off	Time range 0.5 s...10 s	
200 ... 240 V AC			**DILM32-XTED11-100(RAC240)** 104948	1 Off	Time range 5 s...100 s	
For star-delta applications						
24 V AC/DC	DILM7..C-DILM32..C DILMP20C DILA..C		**DILM32-XTEY20(RA24)** 101446	1 Off	Changeover time: 1 s...30 s Changeover delay: 50 ms	Cannot be combined with • DILM32C-XHI... • DILM12-XSP... • DILM32-XSP...
100 ... 130 V AC			**DILM32-XTEY20(RAC130)** 101447	1 Off		
200 ... 240 V AC			**DILM32-XTEY20(RAC240)** 101448	1 Off		
Sealable shrouds						
Transparent						
	DILM32-XTE...	–	**DILM32-XTEPLH** 101449	1 Off		–
label sheet						
Self-adhesive label sheet						
	Labelling with laser printer, plotter, film plotter, copier	–	**XGKE-GE** 207517	25 Off		1 off = 1 sheet 240 labels per sheet 1 sheet = DIN A4 Can be split into two DIN A5

AC

	DILMP20C (...)	DILM7-10C (...)	DILM7-01C (...)	DILM9-10C (...)	DILM9-01C (...)	DILM12-10C (...)	DILM12-01C (...)	DILM15-10C (...)	DILM15-01C (...)
	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]
Standard voltage									
24V 50Hz	114878	114888	114898	114908	114918	114928	114938	114948	114958
110V 50Hz	114879	114889	114899	114909	114919	114929	114939	114949	114959
220V-230V 50Hz	114880	114890	114900	114910	114920	114930	114940	114950	114960
380-400V 50Hz	114881	114891	114901	114911	114921	114931	114941	114951	114961
24V 50/60Hz	114882	114892	114902	114912	114922	114932	114942	114952	114962
110V 50/60Hz	114883	114893	114903	114913	114923	114933	114943	114953	114963
220V 50/60Hz	114884	114894	114904	114914	114924	114934	114944	114954	114964

DC

	DILMP20C (...)	DILM7-10C (...)	DILM7-01C (...)	DILM9-10C (...)	DILM9-01C (...)	DILM12-10C (...)	DILM12-01C (...)	DILM15-10C (...)	DILM15-01C (...)
	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]
Standard voltage									
24VDC	114885	114895	114905	114915	114925	114935	114945	114955	114965
110VDC	114886	114896	114906	114916	114926	114936	114946	114956	114966
220VDC	114887	114897	114907	114917	114927	114937	114947	114957	114967

Notes 1) The article number is a combination of part no. and operating voltage.

AC

	DILM17-10C (...)	DILM17-01C (...)	DILM25-10C (...)	DILM25-01C (...)	DILM32-10C (...)	DILM32-01C (...)	DILM38-10C (...)	DILM38-010C (...)
	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]
Standard voltage								
24V 50Hz	114968	114978	114988	114998	115008	115018	115028	115038
110V 50Hz	114969	114979	114989	114999	115009	115019	115029	115039
220V-230V 50Hz	114970	114980	114990	115000	115010	115020	115030	115040
380-400V 50Hz	114971	114981	114991	115001	115011	115021	115031	115041
24V 50/60Hz	114972	114982	114992	115002	115012	115022	115032	115042
110V 50/60Hz	114973	114983	114993	115003	115013	115023	115033	115043
220V 50/60Hz	114974	114984	114994	115004	115014	115024	115034	115044

DC

	DILM17-10C (...)	DILM17-01C (...)	DILM25-10C (...)	DILM25-01C (...)	DILM32-10C (...)	DILM32-01C (...)	DILM38-10C (...)	DILM38-010C (...)
	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]
Standard voltage								
RDC 24[2]	114975	114985	114995	115005	115015	115025	115035	115045
RDC 130[3]	114976	114986	114996	115006	115016	115026	115036	115046
RDC 240[4]	114977	114987	114997	115007	115017	115027	115037	115047

Notes
1) The article number is a combination of part no. and operating voltage.
2) 24-27V DC
3) 110-130V DC
4) 200-240V DC

AC

	DILM40C (...)	DILM50C (...)	DILM65C (...)	DILM72C (...)	DILM80C (...)	DILM95C (...)
	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]
Standard voltage						
24V 50Hz	105198	105562	105576	102091	105590	105604
110V 50Hz	105199	105563	105577	112352	105591	105605
220V-230V 50Hz	105550	105564	105578	112353	105592	105606
380-400V 50Hz	105551	105565	105579	112354	105593	105607
24V 50/60Hz	112080	112083	112086	112090	112099	112102
110V 50/60Hz	112078	112081	112084	112087	112097	112100
220V 50/60Hz	112079	112082	112085	112088	112098	112101

DC

	DILM40C (...)	DILM50C (...)	DILM65C (...)	DILM72C (...)	DILM80C (...)	DILM95C (...)
	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]	Article no.[1]
Standard voltage						
RDC 24[2]	105552	105566	105580	112095	105594	105608
RDC 130[3]	105553	105567	105581	112094	105595	105609
RDC 240[4]	105554	105568	105582	112096	105596	105610

Notes
1) The article number is a combination of part no. and operating voltage.
2) 24-27V DC
3) 110-130V DC
4) 200-240V DC

AC

	DILM115C (...)	DILM150C (...)	DILM170C (...)
	Article no.[1]	Article no.[1]	Article no.[1]
Standard voltage			
RDC 24[2]	105618	105630	112072
RDC 120[3]	105619	105631	112071
RDC 240[4]	105620	105632	112073
RDC 440[5]	111474	111475	112074

DC

	DILM115C (...)	DILM150C (...)	DILM170C (...)
	Article no.[1]	Article no.[1]	Article no.[1]
Standard voltage			
RDC 24[6]	105621	105633	112076
RDC 130[7]	105622	105634	112075
RDC 240[8]	105623	105635	112077

Notes
1) The article number is a combination of part no. and operating voltage.
2) 24 V 50/60Hz
3) 100-120 V 50/60Hz
4) 190-240 V 50/60Hz
5) 380-440 V 50/60Hz
6) 24-27V DC
7) 110-130V DC
8) 200-240V DC

AC

	DILM65C-XSP (...)	DILM95C-XSP (...)	DILM150C-XSP (...)
	Article no.[1]	Article no.[1]	Article no.[1]
Standard voltage			
24V 50Hz	115053	115063	
110V 50Hz	115054	115064	
220V-230V 50Hz	115055	115065	
380-400V 50Hz	115056	115066	
24V 50/60Hz	115057	115067	
110V 50/60Hz	115058	115068	
220V 50/60Hz	115059	115069	
RAC 24[2]			115073
RAC 120[3]			115074
RAC 240[4]			115075
RAC 440[5]			115076

DC

	DILM65C-XSP (...)	DILM95C-XSP (...)	DILM150C-XSP (...)
	Article no.[1]	Article no.[1]	Article no.[1]
Standard voltage			
24VDC			
110VDC			
220VDC			
RDC 24[6]	115060	115070	115077
RDC 130[7]	115061	115071	115078
RDC 240[8]	115062	115072	115079

Notes

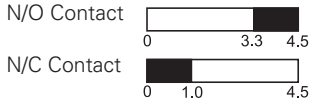
1) The article number is a combination of part no. and operating voltage.
2) 24 V 50/60Hz
3) 100-120 V 50/60Hz
4) 190-240 V 50/60Hz
5) 380-440 V 50/60Hz
6) 24-27V DC
7) 110-130V DC
8) 200-240V DC

1

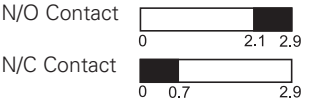
Contactor contact travel diagrams

The diagrams show the closing and opening travel of the contacts at no load.

DILM7...C/9...C/12...C/15...C/P20-...AC

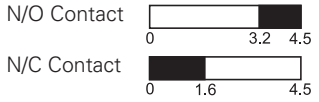


DILM7...C/9...C-...DC

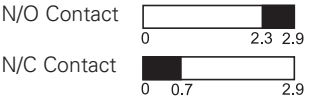


DILM12...C/15...C/P20-...DC

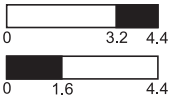
DILM32C-XHI(C)...



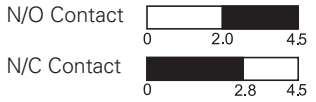
DILM32C-XHI(C)...



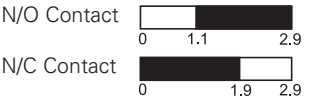
DILM32C-XHI(C)...



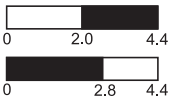
DILAC-XHI(C)V...



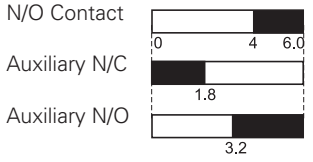
DILAC-XHI(C)V...



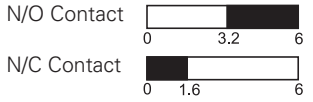
DILAC-XHI(C)V...



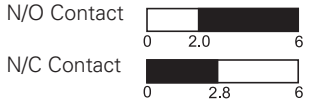
DILM17...C/25...C/32...C/38...C



DILM32C-XHI(C)..., DILA-XHI(C)...

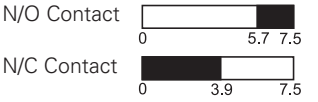


DILAC-XHI(C)V...

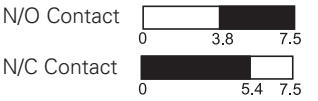


DILM40C/50C/65C/72...C

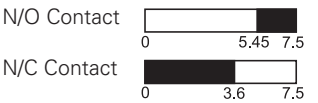
DILM150C-XHI(C)...



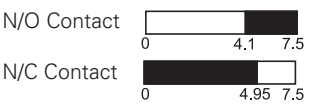
DILM150C-XHI(C)V...



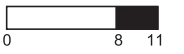
DILM1000C-XHI(C)...



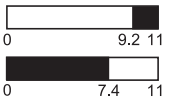
DILM1000C-XHI(C)V...



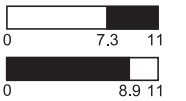
DILM80C/95C/115C/150C/170C



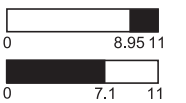
DILM150C-XHI(C)...



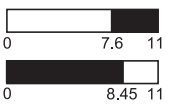
DILM150C-XHI(C)V...



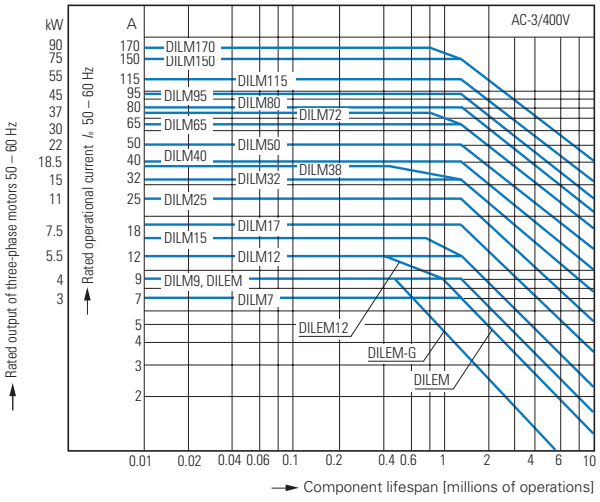
DILM1000C-XHI(C)...



DILM1000C-XHI(C)V...



Normal switching duty



Squirrel-cage motor

Operating characteristics:
- Switch on: From standstill
- Switch off: While running

Electrical Characteristic:
- Switch on: Up to 6 x motor rated current
- Switch off: 1 x motor rated current

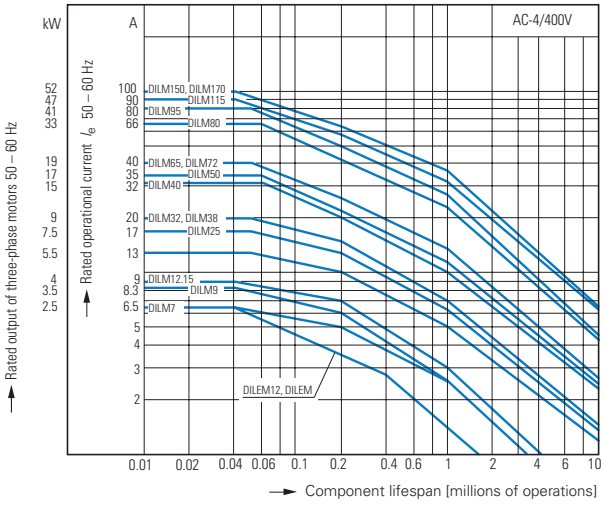
Utilization category:
- 100 % AC-3

Typical applications:

Compressors	Lifts	Mixers
Pumps	Escalators	Agitators
Fans	Conveyor belts	Centrifuges
Hinged flaps	Bucket-elevator	Air-conditioning system

General drives for manufacturing and processing machines

Extreme switching duty



Squirrel-cage motor

Operating characteristics:
- Inching, DC braking, reversing

Electrical characteristic:
- Switch on: 6 x motor rated current
- Switch off: 6 x motor rated current

Utilization category:
- 100 % AC-4

Typical applications:

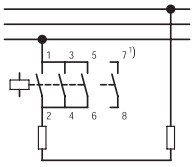
Printing machines	Wire-drawing	Centrifuges

Special drives for machining centers and machine tools

1

Rating data

Single-phase rating AC-1



Voltage: V			Rated operational current $I_e = I_{th}$ or I_{the}			Required accessories: Paralleling links	Notes
220 230	380 400	660 690					
kW	kW	kW	A	**Part no.**	Page	**Part no.**	
Open							
8	14	25	22	**DILM7..C**	Page 174	**DILM12-XP1**	
8	14	25	22	**DILM9..C**	Page 174	**DILM12-XP1**	
8	14	25	22	**DILM12..C**	Page 174	**DILM12-XP1**	
8	14	25	22	**DILM15..C**	Page 174	**DILM12-XP1**	
15	26	45	40	**DILM17..C**	Page 174	**DILM32-XP1**	
17	29	51	45	**DILM25..C**	Page 174	**DILM32-XP1**	
17	29	51	45	**DILM32..C**	Page 174	**DILM32-XP1**	
17	29	51	45	**DILM38..C**	Page 174	**DILM32-XP1**	
22	39	68	60	**DILM40C**	Page 174	**DILM65-XP1**	
30	53	91	80	**DILM50C**	Page 174	**DILM65-XP1**	
37	65	111	98	**DILM65C**	Page 174	**DILM65-XP1**	
37	65	111	98	**DILM72C**	Page 174	**DILM65-XP1**	
42	72	125	110	**DILM80C**	Page 174	**DILM150-XP1**	
49	85	148	130	**DILM95C**	Page 174	**DILM150-XP1**	
61	105	182	160	**DILM115C**	Page 174	**DILM150-XP1**	
72	125	216	190	**DILM150C**	Page 174	**DILM150-XP1**	
85	150	268	225	**DILM170C**	Page 174	**DILM150-XP1**	

Notes 1) Contact 7 – 8 only with DILMP20C

Accessories **Page**

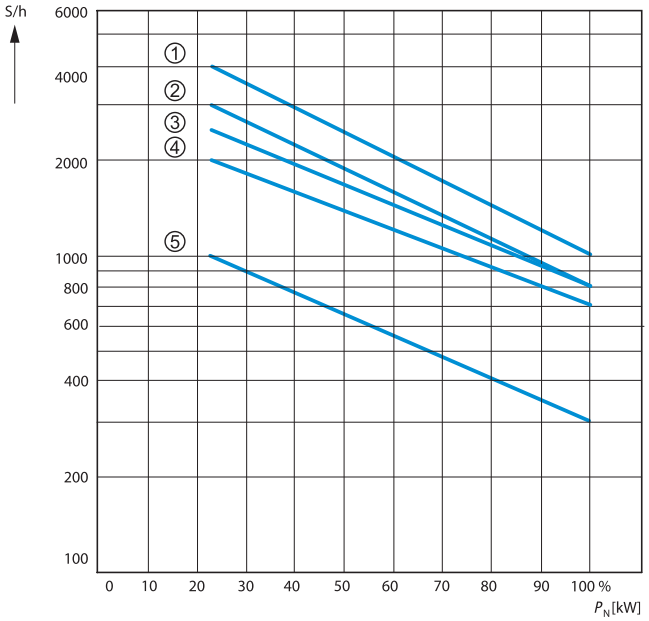
Paralleling links → 180
Accessories → 178
Auxiliary contact modules → 175

Enclosures

Contactors	Contactor selection			
Part no.	With top mounting auxiliary contacts	With side-mounting auxiliary contacts	With overload relay	**Insulated enclosures**
DILM7..C-DILM15..C	●	–	–	CI-K2-145-TS
DILM7..C-DILM15..C	●	–	●	CI-K3-160-TS
DILM17..C-DILM38..C	–	–	–	CI-K2-145-TS
DILM17..C-DILM38..C	●	–	●	CI23E-150
DILM40C-DILM72C	–	●	–	CI-K3-160-TS
DILM40C-DILM72C	●	●	●	CI43E-150
DILM80C-DILM170C	●	●	–	CI43E-200
DILM80C-DILM170C	●	●	●	CI44E-200

Determination of the maximum operating frequency dependent on the rating and utilization category (recommended values for 400 V)

P_N = max. rated motor output (kW) of respective contactor according to Page 23
S/h = max. operation per hour

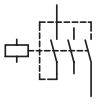
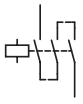
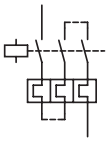
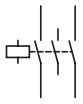
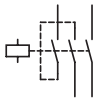
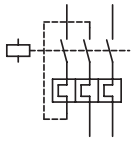


Part no.	Characteristic AC-1	AC-3	AC-2 AC-4
DILM7..C-DILM15..C	3	1	5
DILM17..C-DILM38..C	3	2	5
DILM40C-DILM72C	3	2	5
DILM80C-DILM170C	3	4	5

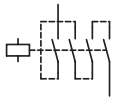
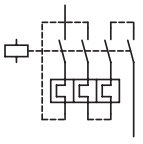
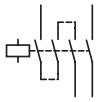
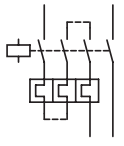
DC current switching

– – – – – when necessary conductor to be supplied by customer

DILM7...C-DILM170C

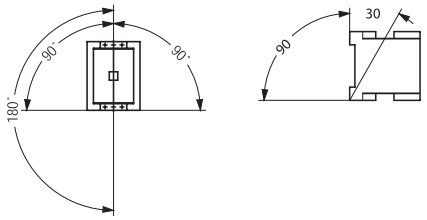
	Without overload relay ≦ 60 V DC	> 60 V DC	With overload relay > 60 V DC
1 pole			
2 pole			

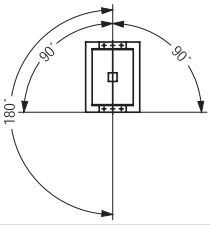
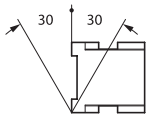
DILMP20C

1 pole			
2 pole			

1

Technical data

			DILM7...C	DILM9...C	DILM12...C DILMP20C	DILM15...C	DILM17...C	DILM25...C	DILM32...C DILM38...C
General									
Standard			IEC/EN 60947, VDE 0660, GB 14048						
Lifespan, mechanical									
AC operated	Operations	× 10^6	10	10	10	10	10	10	10
DC operated	Operations	× 10^6	10	10	10	10	10	10	10
Mechanical operating frequency									
AC operated	Operations/h		9000	9000	9000	5000	5000	5000	5000
DC operated	Operations/h		9000	9000	9000	5000	5000	5000	5000
Maximum operating frequency									
Electrical (contactors without overload relays)			See characteristic curves on page 42						
Climatic proofing			Damp heat, constant, to IEC 60068-2-78; Damp heat, cyclic, to IEC 60068-2-30						
Ambient temperature									
Open		°C	-25...60	-25...60	-25...60	-25...60	-25...60	-25...60	-25...60
Enclosed		°C	-25...40	-25...40	-25...40	-25...40	-25...40	-25...40	-25...40
For storage		°C	-40...80	-40...80	-40...80	-40...80	-40...80	-40...80	-40...80
Mounting position, AC/DC operated									
Mechanical shock resistance (IEC/EN 60068-2-27)									
Half-sinusoidal shock 10 ms									
Main contacts									
N/O		g	10	10	10	10	10	10	10
Auxiliary contacts									
N/O		g	7	7	7	7	7	7	7
N/O		g	5	5	5	5	5	5	5
Mechanical shock resistance (IEC/EN 60068-2-27)									
Half-sinusoidal shock 10 ms									
Main contacts									
N/O		g	5.7	5.7	5.7	5.7	6.9	6.9	6.9
Auxiliary contacts									
N/O		g	3.4	3.4	3.4	3.4	5.3	5.3	5.3
N/C		g	3.4	3.4	3.4	3.4	3.5	3.5	3.5
Protection type			IP20	IP20	IP20	IP20	IP00	IP00	IP00
Protection against direct contact when actuated from front (EN 50274)			Finger- and back-of-hand proof						
Weight									
AC operated		kg	0.23	0.23	0.23	0.23	0.42	0.42	0.42
DC operated		kg	0.28	0.28	0.28	0.28	0.48	0.48	0.48
Terminal capacity									
Main circuit cross-section									
Solid		mm²	1 × (0.75 – 4) 2 × (0.75 – 2.5)				1 × (0.75 – 16) 2 × (0.75 – 10)		
Flexible with ferrule		mm²	1 × (0.75 – 2.5) 2 × (0.75 – 2.5)				1 × (0.75 – 16) 2 × (0.75 – 10)		
Stranded		mm²	–	–	–	–	1 × 16	1 × 16	1 × 16
Solid or stranded		AWG	18 – 10	18 – 10	18 – 10	18 – 10	16 – 8	16 – 8	16 – 8
Control circuit cross-section									
Solid		mm²	1 × (0.75 – 4) 2 × (0.75 – 2.5)				1 × (0.75 – 4) 2 × (0.75 – 2.5)		
Flexible with ferrule		mm²	1 × (0.75 – 2.5) 2 × (0.75 – 2.5)				1 × (0.75 – 2.5) 2 × (0.75 – 2.5)		
Solid or stranded		AWG	18 – 10	18 – 10	18 – 10	18 – 10	18 – 14	18 – 14	18 – 14

DILM40C	DILM50C	DILM65C DILM72C	DILM80C	DILM95C	DILM115C	DILM150C DILM170C
IEC/EN 60947, VDE 0660, GB 14048						
10	10	10	10	10	10	10
10	10	10	10	10	10	10
5000	5000	5000	3600	3600	3600	3600 3000
5000	5000	5000	3600	3600	3600	3600 3000
See characteristic curves on page 42						
Damp heat, constant, to IEC 60068-2-78; Damp heat, cyclic, to IEC 60068-2-30						
-25...60	-25...60	-25...60	-25...60	-25...60	-25...60	-25...60
-25...40	-25...40	-25...40	-25...40	-25...40	-25...40	-25...40
-40...80	-40...80	-40...80	-40...80	-40...80	-40...80	-40...80
						
10	10	10	10	10	10	10
7	7	7	7	7	7	7
5	5	5	5	5	5	5
–	–	–	–	–	–	–
–	–	–	–	–	–	–
–	–	–	–	–	–	–
IP00	IP00	IP00	IP00	IP00	IP00	IP00
Finger- and back-of-hand proof						
0.9	0.9	0.9	2	2	2	2
1.1	1.1	1.1	2.1	2.1	2.1	2.1
1 × (0.75 – 16) 2 × (0.75 – 10)			–			
1 × (0.75 – 35) 2 × (0.75 – 25)			1 × (10 – 95) 2 × (10 – 70)			
1 × (0.75 – 50) 2 × (0.75 – 35)			1 × (16 – 95) 2 × (16 – 70)			
12 – 2	12 – 2	12 – 2	8 – 3/0	8 – 3/0	8 – 3/0	8 – 3/0
1 × (0.75 – 4) 2 × (0.75 – 4)			1 × (0.75 – 4) 2 × (0.75 – 4)			
1 × (0.75 – 2.5) 2 × (0.75 – 2.5)			1 × (0.75 – 2.5) 2 × (0.75 – 2.5)			
18 – 14	18 – 14	18 – 14	18 – 14	18 – 14	18 – 14	18 – 14

1

Technical data

				DILM7..C	DILM9..C	DILM12..C DILMP20C	DILM15..C	DILM17..C	DILM25..C
General									
Main cable connection screw/bolt				M3.5	M3.5	M3.5	M5	M5	M5
Tightening torque			Nm	1.2	1.2	1.2	1.2	3	3
Control circuit cable connection screw/bolt				M3.5	M3.5	M3.5	M3.5	M3.5	M3.5
Tightening torque			Nm	1.2	1.2	1.2	1.2	1.2	1.2
Tools									
Main circuits									
Pozidriv screwdriver			Size	2	2	2	2	2	2
Flat-blade screwdriver			mm	0.8 × 5.5 1 × 6	0.8 × 5.5 1 × 6	0.8 × 5.5 1 × 6	0.8 × 5.5 1 × 6	0.8 × 5.5 1 × 6	0.8 × 5.5 1 × 6
Control circuits									
Pozidriv screwdriver			Size	2	2	2	2	2	2
Flat-blade screwdriver			mm	0.8 × 5.5 1 × 6	0.8 × 5.5 1 × 6	0.8 × 5.5 1 × 6	0.8 × 5.5 1 × 6	0.8 × 5.5 1 × 6	0.8 × 5.5 1 × 6
Main contacts									
Rated impulse withstand voltage		U_{imp}	V AC	8000	8000	8000	8000	8000	8000
Over-voltage category/degree of pollution				III/3	III/3	III/3	III/3	III/3	III/3
Rated insulation voltage		U_i	V AC	690	690	690	690	690	690
Rated operational voltage		U_e	V AC	690	690	690	690	690	690
Safe isolation according to EN 61140									
Between coil and contacts			V AC	440	440	440	440	440	440
Between the contacts			V AC	440	440	440	440	440	440
Making capacity of up to 440 V (cos as specified in IEC/EN 60947)		To 690 V	A	112	112	144	155	238	350
Breaking capacity cos as specified in IEC/EN 60947	220/230 V		A	70	90	120	124	170	250
	380-400 V		A	70	90	120	124	170	250
	500 V		A	50	50	100	100	170	250
	660/690 V		A	40	40	70	70	120	150
Devices lifespan	I_e AC-1 400 V	× 10^6	Op.	0.6	0.6	0.6	0.6	0.6	0.6
	I_e AC-3 400 V	× 10^6	Op.	2	2	2	1	2	2
	I_e AC-4 400 V	× 10^6	Op.	0.2	0.2	0.2	0.2	0.2	0.2
Max. operating frequency	I_e AC-1 400 V		Op./h	800	800	800	800	800	800
	I_e AC-3 400 V		Op./h	800	800	800	800	800	800
	I_e AC-4 400 V		Op./h	250	250	250	250	250	250
Short-circuit rating									
Short-circuit protection rating maximum fuse									
Type "2" coordination	400 V	gL 500 V	A	20	20	20	20	35	35
	690 V	gL 690 V	A	16	16	20	20	35	35
Type "1" coordination	400 V	gL 500 V	A	35	35	35	63	63	100
	690 V	gL 690 V	A	20	20	25	50	50	50

DILM32..C DILM38..C	DILM40C	DILM50C	DILM65C DILM72C	DILM80C	DILM95C	DILM115C	DILM150C	DILM170C
M5	M6	M6	M6	M10	M10	M10	M10	M10
3	3	3	3	14	14	14	14	14
M3.5	M3.5	M3.5	M3.5	M3.5	M3.5	M3.5	M3.5	M3.5
1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
2	2	2	2	–	–	–	–	–
0.8 × 5.5 1 × 6	0.8 × 5.5 1 × 6	0.8 × 5.5 1 × 6	0.8 × 5.5 1 × 6	–	–	–	–	–
2	2	2	2	2	2	2	2	2
0.8 × 5.5 1 × 6	0.8 × 5.5 1 × 6	0.8 × 5.5 1 × 6	0.8 × 5.5 1 × 6	0.8 × 5.5 1 × 6	0.8 × 5.5 1 × 6	0.8 × 5.5 1 × 6	0.8 × 5.5 1 × 6	0.8 × 5.5 1 × 6
8000	8000	8000	8000	8000	8000	8000	8000	8000
III/3	III/3	III/3	III/3	III/3	III/3	III/3	III/3	III/3
690	690	690	690	690	690	690	690	690
690	690	690	690	690	690	690	690	690
440	440	440	440	440	440	440	440	440
440	440	440	440	440	440	440	440	440
384	560	700	910	1120	1330	1610	2100	2100
320	400	500	650	800	950	1150	1500	1500
320	400	500	650	800	950	1150	1500	1500
320	400	500	650	800	950	1150	1500	1500
180	250	320	370	650	800	1100	1200	1320
0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
2 1	2	2	2 1	2	2	2	2	1
0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
800	800	800	800	800	800	800	800	800
800	800	800	800	800	800	800	800	800
250	250	250	250	250	250	250	250	250
63	63	80	125	160	160	250	250	400
35	50	63	80	160	160	250	250	250
125	125	160	250	250	250	250	250	400
63	80	80	100	200	200	250	250	250

1

Technical data

					DILM7..C	DILM9..C	DILM12..C DILMP20C	DILM15..C	DILM17..C	DILM25..C	DILM32..C
AC voltage											
AC-1 operation											
Conventional thermal current 3 pole 50 - 60 Hz	Open	**at 40 °C**	**I_{th}**	**A**	**22**	**22**	**22**	**22**	**40**	**45**	**45**
		at 50 °C	I_{th}	A	21	21	21	21	38	43	43
		at 60 °C	I_{th}	A	20	20	20	20	35	40	40
	Enclosed[1]		I_{th}	A	18	18	18	18	32	36	36
Conventional thermal current 1 pole	Open[1]		I_{th}	A	50	50	50	50	85	85	100
	Enclosed[1]		I_{th}	A	45	45	45	45	80	80	90
AC-3 operation											
Rated operational current[1] 3 pole 50 - 60 Hz		220/230 V	I_e	A	7	9	12	15.5	18	25	32
		240 V	I_e	A	7	9	12	15.5	18	25	32
		380/400 V	**I_e**	**A**	**7**	**9**	**12**	**15.5**	**18**	**25**	**32**
		415 V	I_e	A	7	9	12	15.5	18	25	32
		440 V	I_e	A	7	9	12	15.5	18	25	32
		500 V	I_e	A	5	7	10	12.5	18	25	32
		660/690 V	I_e	A	4	5	7	9	12	15	18
		1000 V	I_e	A	–	–	–	–	–	–	–
Rated operational power		220/230 V	P	kW	2.2	2.5	3.5	4	5	7.5	10
		240 V	P	kW	2.2	3	4	4.6	5.5	8.5	11
		380/400 V	**P**	**kW**	**3**	**4**	**5.5**	**7.5**	**7.5**	**11**	**15**
		415 V	P	kW	4	5.5	7	8	10	14.5	19
		440 V	P	kW	4.5	5.5	7.5	8.4	10.5	15.5	20
		500 V	P	kW	3.5	4.5	7	7.5	12	17.5	23
		660/690 V	P	kW	3.5	4.5	6.5	7	11	14	17
		1000 V	P	kW	–	–	–	–	–	–	–
AC-4 operation											
Rated operational current[1] 3 pole 50 - 60 Hz		220/230 V	I_e	A	5	6	7	7	10	13	15
		240 V	I_e	A	5	6	7	7	10	13	15
		380/400 V	**I_e**	**A**	**5**	**6**	**7**	**7**	**10**	**13**	**15**
		415 V	I_e	A	5	6	7	7	10	13	15
		440 V	I_e	A	5	6	7	7	10	13	15
		500 V	I_e	A	4.5	5	6	6	10	13	15
		660/690 V	I_e	A	4	4.5	5	5	8	10	12
		1000 V	I_e	A	–	–	–	–	–	–	–
Rated operational power		220/230	P	kW	1	1.5	2	2	2.5	3.5	4
		240 V	P	kW	1.5	1.6	2.2	2.2	3	4	4.5
		380/400 V	**P**	**kW**	**2.2**	**2.5**	**3**	**3**	**4.5**	**6**	**7**
		415 V	P	kW	2.3	2.8	3.4	3.4	5	6.5	7.5
		440 V	P	kW	2.4	3	3.6	3.6	5.5	7	8
		500 V	P	kW	2.5	2.8	3.5	3.5	6	8	9
		660/690	P	kW	2.9	3.6	4.4	4.4	6.5	8.5	10
		1000 V	P	kW	–	–	–	–	–	–	–
DC voltage											
3 phase, open											
DC-1 operation		60 V	I_e	A	20	20	20	20	35	40	40
		110 V	I_e	A	20	20	20	20	35	40	40
		220 V	I_e	A	15	15	15	15	35	40	40
		440 V	I_e	A	1	1.3	1.3	1.3	2.9	2.9	2.9
DC-3 operation		60 V	I_e	A	20	20	20	20	35	35	40
		110 V	I_e	A	20	20	20	20	35	35	40
		220 V	I_e	A	1.5	1.5	1.5	1.5	10	10	25
		440 V	I_e	A	0.2	0.2	0.2	0.2	0.6	0.6	0.6
DC-5 operation		60 V	I_e	A	20	20	20	20	35	35	40
		110 V	I_e	A	20	20	20	20	35	35	40
		220 V	I_e	A	1.5	1.5	1.5	1.5	10	10	10
		440 V	I_e	A	0.2	0.2	0.2	0.2	0.6	0.6	0.6

Notes 1) At maximum permissible ambient air temperature

DILM38..C	DILM40C	DILM50C	DILM65C	DILM72C	DILM80C	DILM95C	DILM115C	DILM150C	DILM170C
45	**60**	**80**	**98**	**98**	**110**	**130**	**160**	**190**	**203**
43	57	71	88	88	98	125	142	180	194
40	50	65	80	80	90	110	130	160	185
36	45	58	72	72	80	100	115	144	166
100	125	162	200	200	225	275	325	400	460
90	112	145	180	180	200	250	285	360	415
38	40	50	65	72	80	95	115	150	170
38	40	50	65	72	80	95	115	150	170
38	**40**	**50**	**65**	**72**	**80**	**95**	**115**	**150**	**170**
38	40	50	65	72	80	95	115	150	170
38	40	50	65	72	80	95	115	150	170
38	40	50	65	72	80	95	115	150	170
25	25	32	37	37	65	80	93	100	150
–	–	–	–	–	–	–	–	–	–
11	12.5	15.5	20	22	25	30	37	48	52
11.5	13.5	17	22	25	27.5	33	40	52	57
18.5	**18.5**	**22**	**30**	**37**	**37**	**45**	**55**	**75**	**90**
20	24	30	39	41	48	57	70	91	100
21	25	32	41	44	51	60	75	95	105
24	28	36	47	50	58	70	85	110	120
22	23	30	35	35	63	75	90	96	140
–	–	–	–	–	–	–	–	–	–
15	18	21	25	25	40	50	55	65	65
15	18	21	25	25	40	50	50	65	65
15	**18**	**21**	**25**	**25**	**40**	**50**	**55**	**65**	**65**
15	18	21	25	25	40	50	55	65	65
15	18	21	25	25	40	50	55	65	65
15	18	21	25	25	40	50	55	65	65
12	14	17	20	20	27	37	45	50	50
–	–	–	–	–	–	–	–	–	–
4	5	6	7	7	12	16	17	20	20
4.5	5.5	6.5	7.5	7.5	13	17	19	22	22
7	**9**	**10**	**12**	**12**	**20**	**26**	**28**	**33**	**33**
7.5	9.5	11	13	13	24	30	33	39	39
8	10	12	14	14	25	32	35	41	41
9	11	13	16	16	29	36	40	47	47
10	12	14	17	17	26	35	43	48	48
–	–	–	–	–	–	–	–	–	–
40	50	60	72	72	110	110	160	160	160
40	50	50	72	72	110	110	160	160	160
40	45	45	65	65	70	70	90	90	90
2.9	2.9	2.9	2.9	2.9	4.5	4.5	4.5	4.5	4.5
40	50	60	72	72	110	110	160	160	160
40	50	50	72	72	110	110	160	160	160
25	25	25	35	35	35	35	40	40	40
0.6	0.6	0.6	0.6	0.6	1	1	1	1	1
40	50	60	72	72	110	110	160	160	160
40	50	50	72	72	110	110	160	160	160
10	25	25	35	35	35	35	40	40	40
0.6	0.6	0.6	0.6	0.6	1	1	1	1	1

1

Technical data

			DILM7..C	DILM9..C	DILM12..C DILMP20C	DILM15..C	DILM17..C	DILM25..C
Current heat loss (3 pole)								
Current heat loss at I_{th}		W	3	3	3	3	7.3	9.6
Current heat loss at I_e to AC-3/400 V		W	0.37	0.6	1.1	1.8	1.9	3.8
Impedance per pole		mΩ	2.5	2.5	2.5	2.5	2	2
Magnet systems								
Voltage tolerance								
AC operated	Pick-up	× U_c	0.8 – 1.1	0.8 – 1.1	0.8 – 1.1	0.8 – 1.1	0.8 – 1.1	0.8 – 1.1
AC operated	Drop-out	× U_c	0.3 – 0.6	0.3 – 0.6	0.3 – 0.6	0.3 – 0.6	0.3 – 0.6	0.3 – 0.6
DC operated[3]	Pick-up	× U_c	0.8 – 1.1[1]	0.8 – 1.1[1]	0.8 – 1.1[1]	0.8 – 1.1[1]	0.7 – 1.2[2]	0.7 – 1.2[2]
DC operated[3]	Drop-out	× U_c	0.15 – 0.6	0.15 – 0.6	0.15 – 0.6	0.15 – 0.6	0.15 – 0.6	0.15 – 0.6
Power consumption of the coil in a cold state and 1.0 × U_c								
50 Hz	Pick-up	VA	24	24	24	24	52	52
50 Hz	Sealing	VA	3.4	3.4	3.4	3.4	7.1	7.1
50 Hz	Sealing	W	1.2	1.2	1.2	1.2	2.1	2.1
60 Hz	Pick-up	VA	30	30	30	30	67	67
60 Hz	Sealing	VA	4.4	4.4	4.4	4.4	8.7	8.7
60 Hz	Sealing	W	1.4	1.4	1.4	1.4	2.6	2.6
50/60 Hz	Pick-up	VA	27 25	27 25	27 25	27 25	62 58	62 58
50/60 Hz	Sealing	VA	4.2 3.3	4.2 3.3	4.2 3.3	4.2 3.3	9.1 6.5	9.1 6.5
50/60 Hz	Sealing	W	1.4 1.2	1.4 1.2	1.4 1.2	1.4 1.2	2.5 2	2.5 2
DC operated[3]	Pick-up	W	3	3	4.5	4.5	12	12
DC operated[3]	Sealing	W	3	3	4.5	4.5	0.5	0.5
Duty factor		% DF	100	100	100	100	100	100
Changeover times at 100 % U_c (recommended values)								
Main contacts								
AC operated								
Closing delay		ms	15 – 21	15 – 21	15 – 21	15 – 21	16 – 22	16 – 22
Opening delay		ms	9 – 18	9 – 18	9 – 18	9 – 18	8 – 14	8 – 14
DC operated[3]								
Closing delay		ms	31	31	31	31	47	47
Opening delay		ms	12	12	12	12	30	30
Arc ing time		ms	10	10	10	10	10	10
Permissible residual current when A1 - A2 are actuated from the electronic system (with 0 signal)	mA		–	–	–	–	–	–
Electromagnetic compatibility (EMC)								
Emitted interference			According to EN 60947-1					
Interference immunity			According to EN 60947-1					

Notes
1) At 24 V DC: 0.7 – 1.3 without auxiliary contact module and at ambient temperature + 40 °C
2) RDC 24 (U_{min} 24 V DC/U_{max} 27 V DC)
RDC 60 (U_{min} 48 V DC/U_{max} 60 V DC)
RDC 130 (U_{min} 110 V DC/U_{max} 130 V DC)
RDC 240 (U_{min} 200 V DC/U_{max} 240 V DC)
Example: U_c=0.7 × U_{min}...1.2 × U_{max}
3) Smoothed DC, three-phase bridge rectifier or smoothed two-phase bridge rectifier

DILM32..C DILM38..C	DILM40C	DILM50C	DILM65C DILM72C	DILM80C	DILM95C	DILM115C	DILM150C DILM170C
12.1	11.3	19	28.8	14.6	21.8	30.4	46.1
6.1	7.2	11.3	19	11.5	16.2	23.8	40.5
2	1.5.	1.5	1.5	0.6	0.6	0.6	0.6
0.8 – 1.1	0.8 – 1.1	0.8 – 1.1	0.8 – 1.1	0.8 – 1.1	0.8 – 1.1	0.8 – 1.1	0.8 – 1.1
0.3 – 0.6	0.3 – 0.6	0.3 – 0.6	0.3 – 0.6	0.3 – 0.6	0.3 – 0.6	0.25 – 0.6	0.25 – 0.6
0.7 – 1.2[2)]	0.7 – 1.2[2)]	0.7 – 1.2[2)]	0.7 – 1.2[2)]	0.7 – 1.2[2)]	0.7 – 1.2[2)]	0.7 – 1.2[2)]	0.7 – 1.2[2)]
0.15 – 0.6	0.15 – 0.6	0.15 – 0.6	0.15 – 0.6	0.15 – 0.6	0.15 – 0.6	0.15 – 0.6	0.15 – 0.6
52	149	149	149	310	310	180	180
7.1	16	16	16	26	26	3.1	3.1
2.1	4.3	4.3	4.3	5.8	5.8	2.1	2.1
67	178	178	178	345	345	170	170
8.7	19	19	19	30	30	3.1	3.1
2.6	5.3	5.3	5.3	7.1	7.1	2.1	2.1
62	168	168	168	372	372	170	170
58	154	154	154	328	328	170	170
9.1	22	22	22	37.1	37.1	3.1	3.1
6.5	14	14	14	22.6	22.6	3.1	3.1
2.5	5.3	5.3	5.3	7.5	7.5	2.1	2.1
2	4.3	4.3	4.3	6.1	6.1	2.1	2.1
12	24	24	24	90	90	149	149
0.5	0.5	0.5	0.5	1.3	1.3	2.1	2.1
100	100	100	100	100	100	100	100
16 – 22	12 – 18	12 – 18	12 – 18	14 – 20	14 – 20	28 – 33	28 – 33
8 – 14	8 – 13	8 – 13	8 – 13	9 – 14	9 – 14	35 – 41	35 – 41
47	54	54	54	45	45	35	35
30	24	24	24	34	34	30	30
10	10	10	10	15	15	15	15
–	–	–	–	≤ 1	≤ 1	≤ 1	≤ 1
According to EN 60947-1							
According to EN 60947-1							

1

Technical data

			DILAC-XHI...	DILM32C-XHI...	DILM150C-XHI...	DILM1000C-XHI...
Auxiliary contacts						
Interlocked opposing contacts within an auxiliary contact module (to IEC 60947-5-1 Annex L)			Yes	Yes	Yes	Yes
N/C (not late-normally closed) suitable as a mirror contact (to IEC/EN 60947-4-1, Annex F)			DILA..C DILM7..C-DILM38..C	DILM7..C-DILM38..C	DILM40C-DILM170C	DILM40C-DILM170C
Rated impulse withstand voltage	U_{imp}	V AC	6000	6000	6000	6000
Over-voltage category/degree of pollution			III/3	III/3	III/3	III/3
Rated insulation voltage	U_i	V AC	690	690	690	690
Rated operational voltage	U_e	V AC	500	500	500	500
Safe isolation according to EN 61140						
Between coil and auxiliary contacts		V AC	440	440	440	440
Between the auxiliary contacts		V AC	440	440	440	440
Rated operational current						
AC-15						
220/240 V	I_e	A	4	4	6	6
380/415 V	I_e	A	4	4	4	4
500 V	I_e	A	1.5	1.5	1.5	1.5
DC-13 L/R ≤ 15 ms[1)]						
24 V	I_e	A	10	10	10	10
60 V	I_e	A	6	6	6	6
110 V	I_e	A	3	3	3	3
220 V	I_e	A	1	1	1	1
Conventional thermal current	I_{th}	A	16	16	16	10
Control circuit reliability (at U_e = 24 V DC, U_{min} = 17 V, I_{min} = 5.4 mA)	Fault possibly	λ	< one failure in 100 million operations			
Component lifespan						
at U_e = 230 V, AC-15, 3 A	Contact	× 10^6	1.3	1.3	1.3	1.3
Short-circuit rating without welding						
Max. fuse		A gL	10	10	16	16

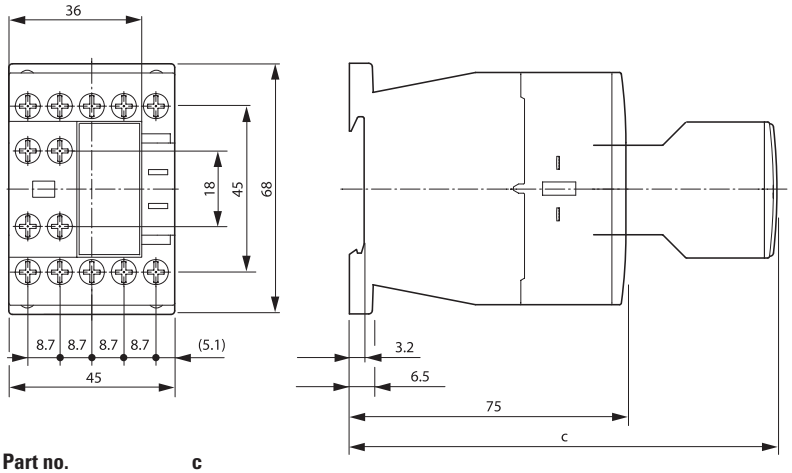
Notes 1) Switch-on and switch-off conditions based on DC-13, time constant as specified.

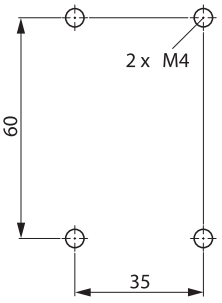
Technical data

			DILM12C-XP1	DILM32C-XP1	DILM65C-XP1	DILM150C-XP1
Parallel connector						
Terminal capacity						
Solid		mm²	1 – 16	16	16	–
Flexible with ferrule		mm²	1 × (0.5 – 25) 2 × (0.5 – 16)	1 × (16 – 35)	1 × (16 – 120)	–
Stranded		mm²	1 × (0.5 – 25) 2 × (0.5 – 16)	1 × (16 – 50)	1 × (16 – 120)	1 × (35 – 300) 2 × (35 – 120)
Flat conductor	Number of layers × width × thickness	mm	6 × 9 × 0.8	–	–	2 × (11 × 21 × 1)
Tightening torque		Nm	4	4	14	–
Tools						
Pozidriv screwdriver		Size	2	2	–	–
Internal hexagon	SW	mm	–	–	5	6
Conventional thermal current						
3 pole	I_{th}	A	50	100	180	400
4 pole	I_{th}	A	60	–	–	–

Contactor with auxiliary contact module

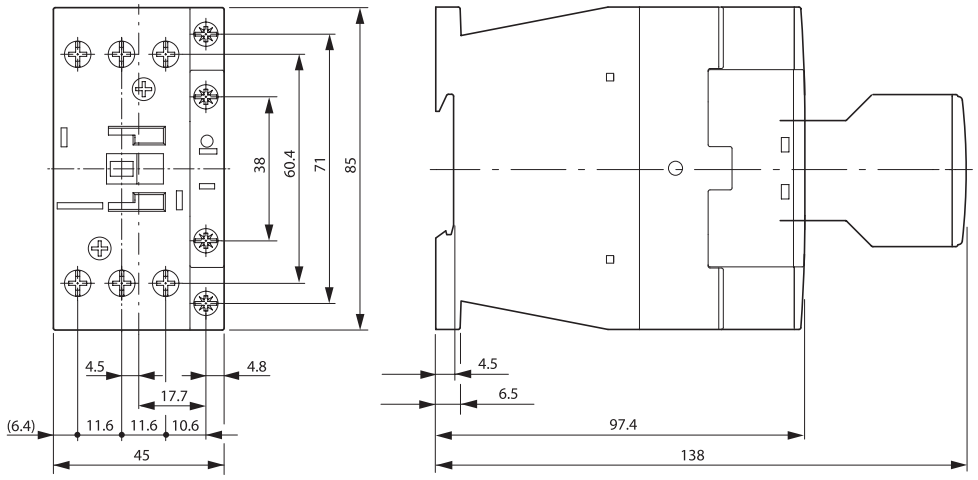
DILM7..C
DILM9..C
DILM12..C
DILM15..C

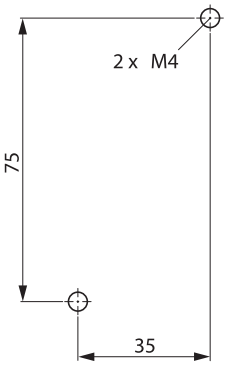




Part no.	c
DILM32C-XHI	117
DILAC-XHI	117

DILM17..C
DILM25..C
DILM32..C
DILM38..C





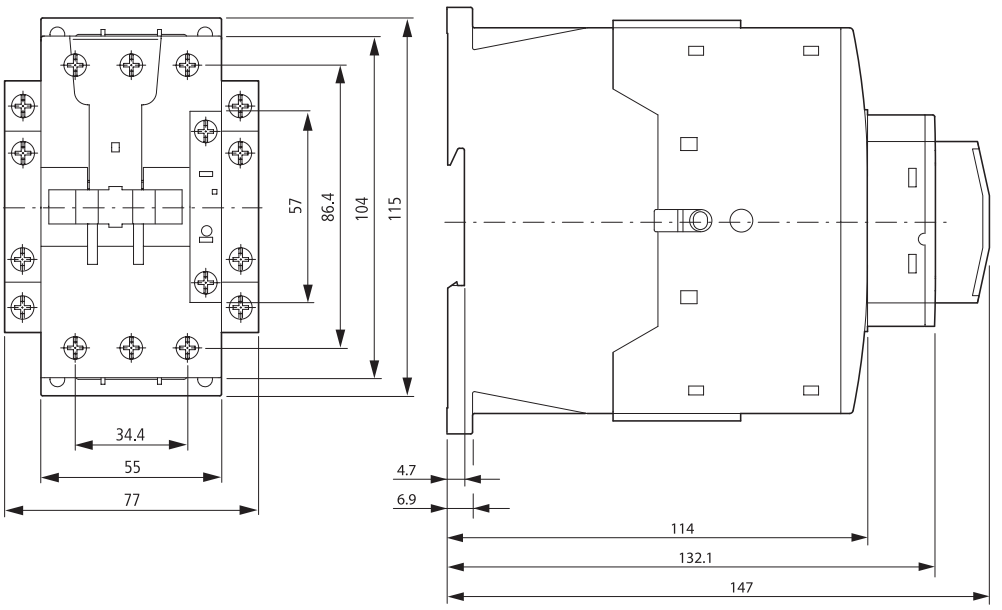
Clearance at side to grounded parts: 6 mm

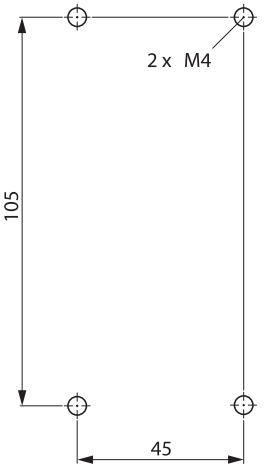
1.3 Contactor DILM..C

Dimensions

1

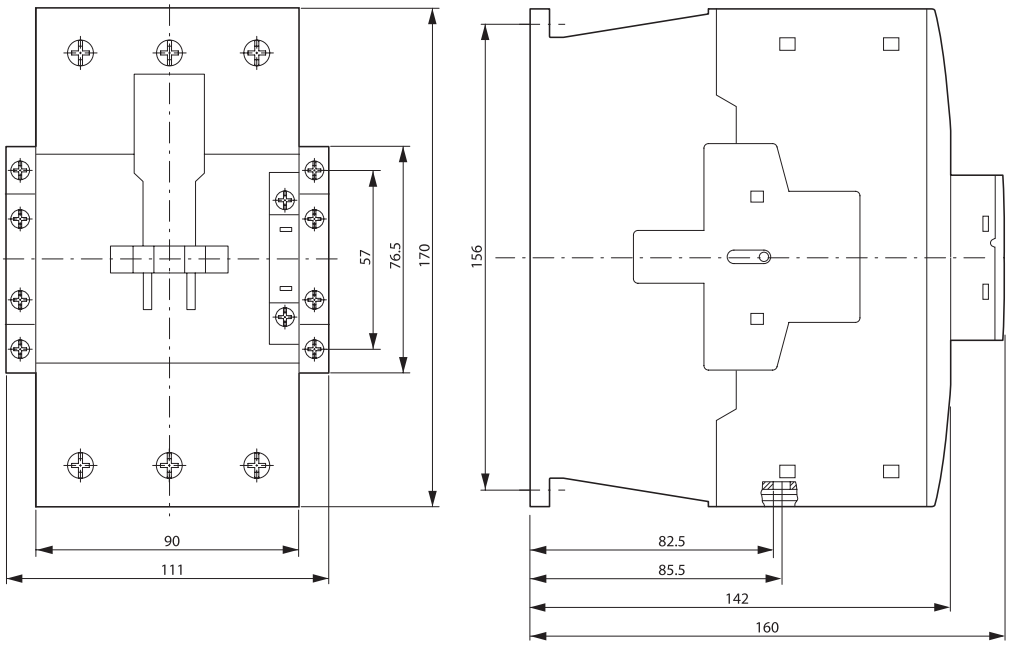
DILM40C
DILM50C
DILM65C
DILM72C

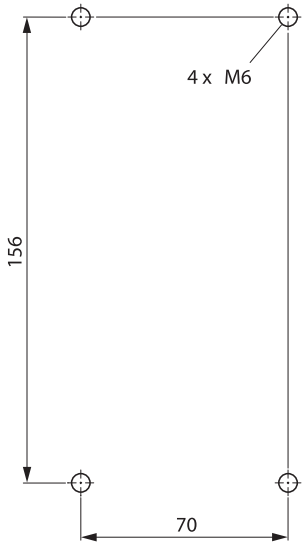




Distance at side to grounded parts: 6 mm

DILM80C
DILM95C
DILM115C
DILM150C
DILM170C

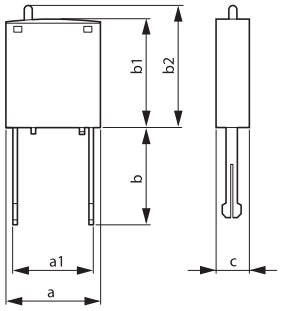




Distance at side to grounded parts: 6 mm

Suppressor circuits

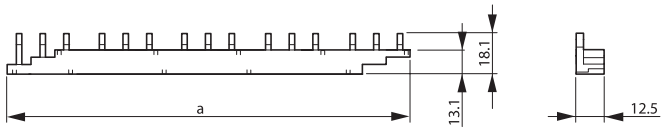
DILM...XSP...



	DILM12-XSP...	DILM12-XSP...	DILM12-XSP...
a	25	25	25
a1	9.2	9.2	9.2
b	25.9	16	18.5
b1	28	28	28
b2	≈32	≈32	≈32
c	9	9	9

Three-phase commoning links

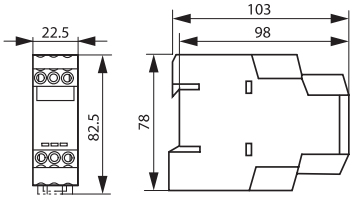
DILM12C-XDSB0/3
DILM12C-XDSB0/4
DILM12C-XDSB0/5



	DILM12-XDSB0/3	DILM12-XDSB0/4	DILM12-XDSB0/5
a	112	157	202

Amplifier module

ETS4-VS3



1.4 Control relays XTRD

Contents, system overview

1

Control relays XTRD

Contents

Control relays XTRD

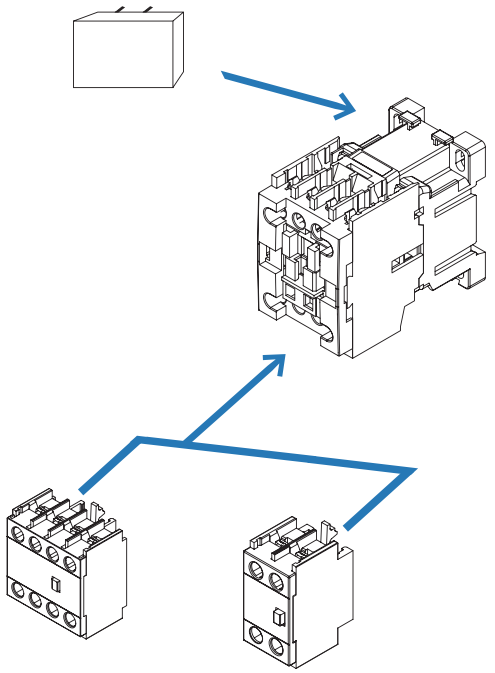
Product Description

- Varied 4-pole contact configurations
- Conventional thermal current (Ith) of 10A
- DIN-rail or panel mount

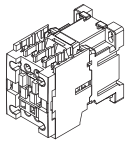
Standards and Certifications

- IEC/EN 60947
- CE
- UL/CSA (pending for availability)

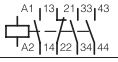
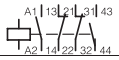
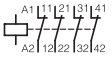
System overview



XTRD

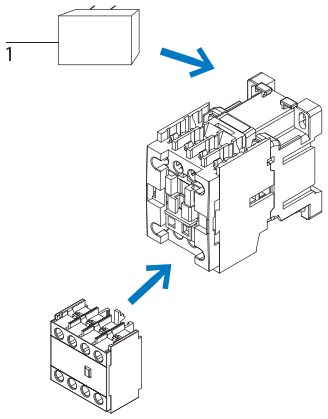


Control relays

Connection type	Contact N/O=Normally open N/C=Normally closed		Rated operational current AC-15 I_e (A) 220V 230V 240V	380 V 400 V 415 V	Conventional thermal current, open,55°C I_{th} (A)	Circuit symbol	Can be combined with auxiliary contact module	AC operation Part no. Article no. Actuating voltage 220V 50/60HZ	Standard package
Screw terminals	4 N/O	-	3	1.9	10		XTCDXSAG11 XTCDXFAG..	**XTRD10B40AO** 152304	1 piece
Screw terminals	3 N/O	1 N/C	3	1.9	10		XTCDXSAG11 XTCDXFAG..	**XTRD10B31AO** 152297	1 piece
Screw terminals	2 N/O	2 N/C	3	1.9	10		XTCDXSAG11 XTCDXFAG..	**XTRD10B22AO** 152290	1 piece
Screw terminals	1 N/O	3 N/C	3	1.9	10		XTCDXSAG11 XTCDXFAG..	**XTRD10B13AO** 152283	1 piece
Screw terminals	-	4 N/C	3	1.9	10		XTCDXSAG11 XTCDXFAG..	**XTRD10B04AO** 152736	1 piece

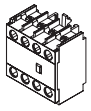
Notes

With screw terminals



Accessories	Page
1 Suppressor	→ 213
2 Auxiliary contact module	→ 204
Actuating voltages	→ 204

Auxiliary contact modules

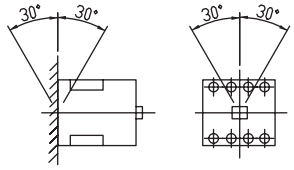
	Connection type		Conventional thermal current open, 55°C $I_{th} = I_e$ AC-1 A	Contact N/O=Normally open N/C=Normal closed		Circuit symbol	Can be combined with control relay	Part no. Article no.	Standard package
Auxiliary contact, top mounting	Screw terminals	2 pole	10	2 N/O	-		XTRD10B..	**XTCDXFAG20** 152430	1 piece
	Screw terminals	2 pole	10	1 N/O	1 N/C		XTRD10B..	**XTCDXFAG11** 152431	1 piece
	Screw terminals	2 pole	10	-	2 N/C		XTRD10B..	**XTCDXFAG02** 152432	1 piece
	Screw terminals	4 pole	10	4 N/O	-		XTRD10B..	**XTCDXFAG40** 152433	1 piece
	Screw terminals	4 pole	10	3 N/O	1 N/C		XTRD10B..	**XTCDXFAG31** 152434	1 piece
	Screw terminals	4 pole	10	2 N/O	2 N/C		XTRD10B..	**XTCDXFAG22** 152435	1 piece
	Screw terminals	4 pole	10	1 N/O	3 N/C		XTRD10B..	**XTCDXFAG13** 152436	1 piece
	Screw terminals	4 pole	10	-	4 N/C		XTRD10B..	**XTCDXFAG04** 152437	1 piece
Auxiliary contact, side mounting	Screw terminals	2 pole	10	1 N/O	1 N/C		XTRD10B..	**XTCDXSAG11** 152438	1 piece
									

Actuating voltages AC

Standard coil 50/60Hz	Coil Suffix	XTRD10B40.. Article no.[1]	XTRD10B31.. Article no.[1]	XTRD10B22.. Article no.[1]	XTRD10B13.. Article no.[1]	XTRD10B04.. Article no.[1]
24V	**B2**	152306	152299	152292	152285	151738
48V	**C2**	152307	152300	152293	152286	151739
110V	**E2**	152309	152302	152295	152288	152281
220V	**A0**	152304	152297	152290	152283	151736
240V	**H2**	152310	152303	152296	152289	152282
380V	**AR**	152305	152298	152291	152291	151737
440V	**DQ**	152308	152301	152294	152287	152280

[1] The full part no. consists of basic type and coil suffix .

General

			XTRD	XTCDXFAG	XTCDXSAG
Standards			IEC/EN 60947, GB 14048		
Mechanical lifespan					
AC operated	Operations	x 10^6	5	5	5
Maximum operating frequency					
Maximum operating frequency	Operations/h		1200	1200	1200
Climatic proofing			Damp heat, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30		
Ambient temperature					
Operation		°C	-20~55	-20~55	-20~55
Storage		°C	-40~80	-40~80	-40~80
Mounting position			Have the angle of ±30° with normal vertical installation plane		
					
Protection type			IP20	IP20	IP20
Weight Approximate weight		kg	0.3	0.3	0.3
Terminal capacity					
Solid		mm^2	1 x (1-6) 2 x (1-6)	1 x (1-6) 2 x (1-6)	1 x (1-6) 2 x (1-6)
Flexible with ferrule		mm^2	1 x (1-4) 2 x (1-4)	1 x (1-4) 2 x (1-4)	1 x (1-4) 2 x (1-4)
Solid or stranded		AWG			
Terminal screw			M3.5	M3.5	M3.5
Max tightening torque		Nm	0.8	0.8	0.8

Contacts

			XTRD	XTCDXFAG	XTCDXSAG
Rated impulse withstand voltage	U_{imp}	VAC	6000	6000	6000
Overvoltage category/degree of pollution			III/3	III/3	III/3
Rated insulation voltage	U_i	VAC	1000	690	690
Rated operational voltage	U_e	VAC	690	600	600
Rated operational current					
AC-15					
120V	I_e	A	6	6	6
220/240V	I_e	A	3	3	3
380V	I_e	A	1.9	1.9	1.9
480V	I_e	A	1.5	1.5	1.5
500V	I_e	A	1.4	1.4	1.4
600V	I_e	A	1.2	1.2	1.2
DC-13					
125V	I_e	A	0.55	0.55	0.55
250V	I_e	A	0.27	0.27	0.27
Conventional thermal current	I_{th}	A	10	10	10
Electrical lifespan					
at Ue=230V, AC-15, 3A	Operations	x 10^6	1	1	1

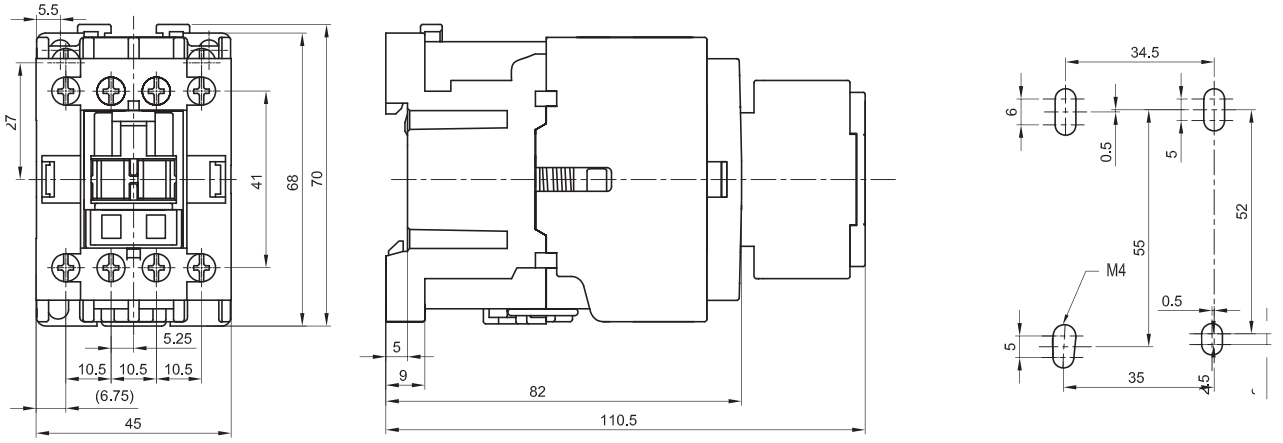
1

Magnet system

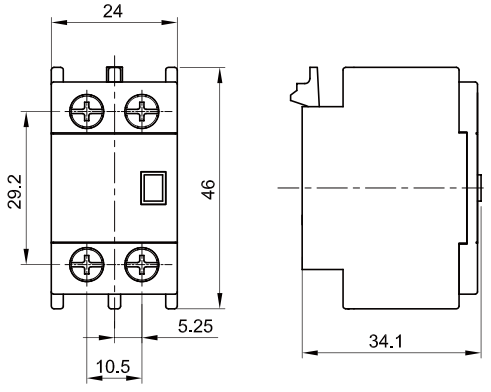
			XTRD	XTCDXFAG	XTCDXSAG
Voltage tolerance					
AC operated	Pick-up	x U_c	0.75-1.1	0.75-1.1	0.75-1.1
Power consumption	Pick-up	VA	70	70	70
	Sealing	VA	12	12	12
	Sealing	W	3.5	3.5	3.5
Duty factor		% DF	40	40	40

Dimensions

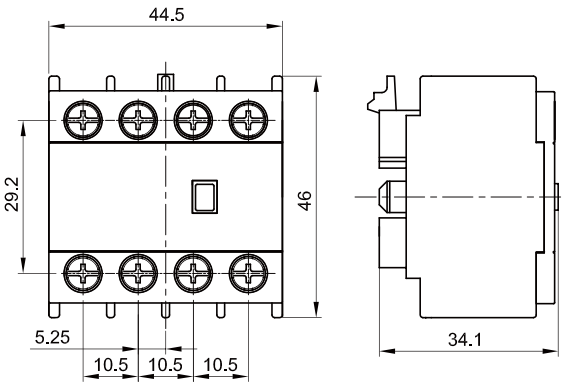
Control relay (with XTCDXFAG)
XTRD10B



Auxiliary contact module, top mouning
XTCDXFAG(2P)



Auxiliary contact module, top mouning
XTCDXFAG(4P)



Contactors XTCD

Contents

Contactors XTCD

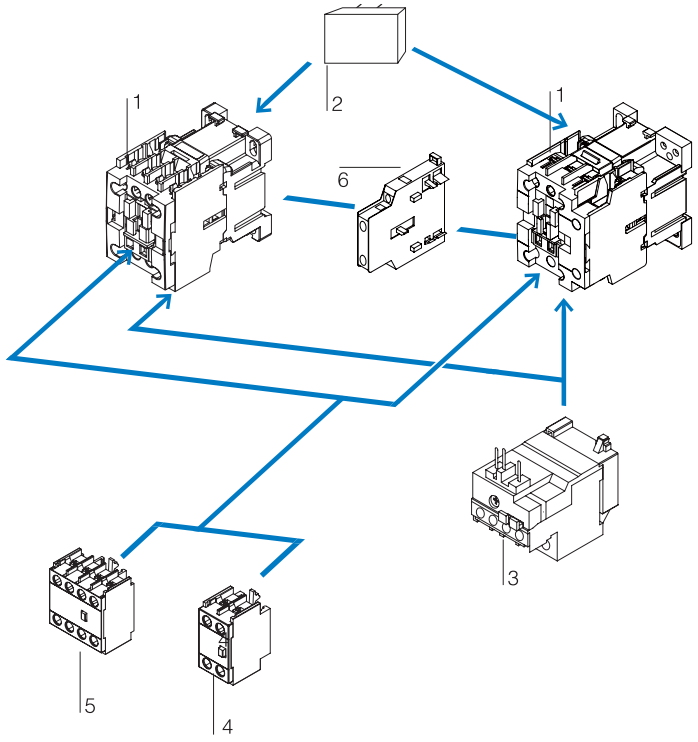
Product Description

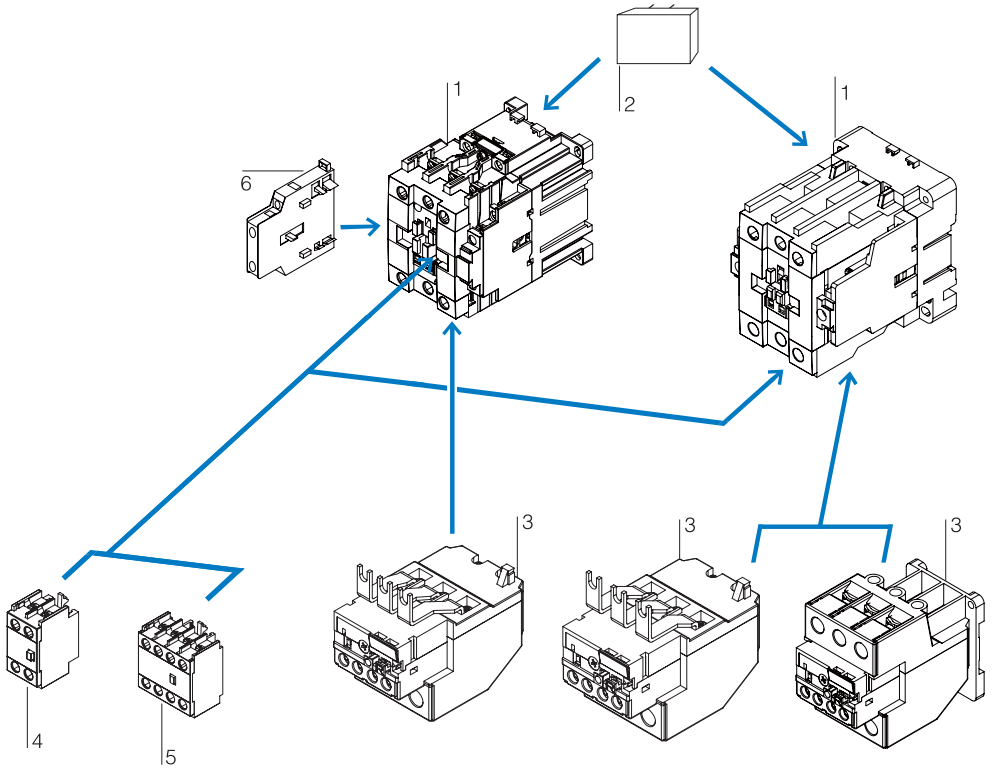
- 6 frame sizes with current ranges from 7-85A@ AC-3,400V
- Built-in auxiliary contacts on all frames
- Add-on auxiliary contacts for all frames
- Wide range of control voltages from 24-440V in dual frequency 50/60Hz
- Wide selection of accessories for all frames

Standards and Certifications

- IEC/EN 60947
- CE
- UL/CSA (pending for availability)

1 System overview





System overview

Contactor,to 45kW (AC-3/400V)	1	**Thermal overload relay**	3	**Auxiliary contact module**	5
Magnet system： AC: 24V, 48V, 110V, 220V, 240V, 380V, 440V		Direct mounting Separate mounting → See Overload relay Catalog		4 pole, top mounting → 211	
→ 209					

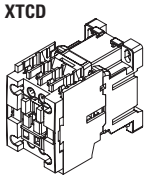
Surge suppressor	2	**Auxiliary contact module**	4	**Auxiliary contact module**	6
RC suppressor		2 pole, top mounting		2 pole, side mounting	
Variastor suppressor					
		→ 211		→ 211	
→ 213					

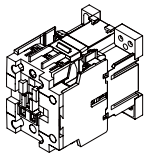
1

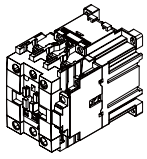
3-pole contactors

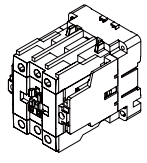
Can be combined with auxiliary contact module	Connection type	Rated operational current AC-3 I_e (A) 380V 400V	Max motor rating for 3-phase motors, 50-60Hz AC-3 P kW 220V 230V	380V 400V	660V 690V	Conventional thermal current, open, 55 °C $I_{th} = I_e$ AC-1(A)	Contact N/O=Normally open N/C=Normal closed		Circuit symbol	AC operation Part no. Article no. Actuating voltage 220V 50/60Hz
XTCDXFAG20 XTCDXFAG11 XTCDXFAG02 XTCDXFAG40 XTCDXFAG31 XTCDXFAG22 XTCDXFAG13 XTCDXFAG04 XTCDXSAG11	Screw terminals	7	2.2	3	3.5	25	1 N/O	-		**XTCD007B10AO** 152318
	Screw terminals	7	2.2	3	3.5	25		1 N/C		**XTCD007B01AO** 152311
	Screw terminals	9	2.5	4	4.5	25	1 N/O	-		**XTCD009B10AO** 152332
	Screw terminals	9	2.5	4	4.5	25		1 N/C		**XTCD009B01AO** 152325
	Screw terminals	12	3	5.5	5.5	25	1 N/O	-		**XTCD012B10AO** 152346
	Screw terminals	12	3	5.5	5.5	25		1 N/C		**XTCD012B01AO** 152339
	Screw terminals	16	4	7.5	7.5	25	1 N/O	-		**XTCD016B10AO** 152360
	Screw terminals	16	4	7.5	7.5	25		1 N/C		**XTCD016B01AO** 152353
	Screw terminals	22	5.5	11	11	32	1 N/O	1 N/C		**XTCD022C11AO** 152367
	Screw terminals	26	7.5	11	11	35	1 N/O	1 N/C		**XTCD026C11AO** 152374
	Screw terminals	32	7.5	15	18.5	50	1 N/O	1 N/C		**XTCD032D11AO** 152381
	Screw terminals	38	11	18.5	22	60	1 N/O	1 N/C		**XTCD038E11AO** 152388
	Screw terminals	40	11	20	22	60	1 N/O	1 N/C		**XTCD040F11AO** 152395
	Screw terminals	55	15	25	30	70	2 N/O	2 N/C		**XTCD055G22AO** 152402
	Screw terminals	64	18.5	30	37	80	2 N/O	2 N/C		**XTCD065G22AO** 152409
	Screw terminals	72	22	37	45	100	2 N/O	2 N/C		**XTCD072G22AO** 152416
	Screw terminals	85	25	45	45	135	2 N/O	2 N/C		**XTCD085G22AO** 152423

XTCD



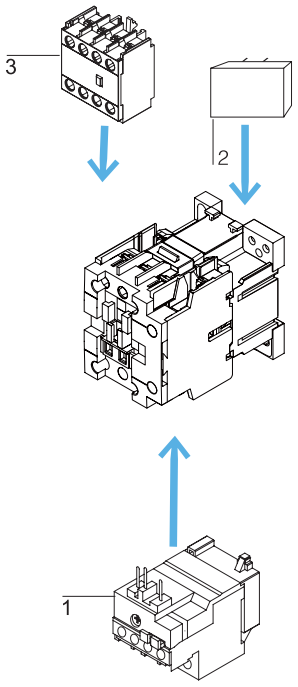






Standard package: 1piece

Notes

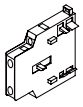


Accessories	Page
1 Overload relay	→ See Overload relay Catalog
2 Suppressor	→ 213
3 Auxiliary contact module	→ 211
Actuating voltages	→ 214
Other accessories	→ 213

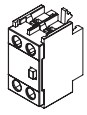
Auxiliary contact modules

Can be combined with control relay	Connection type		Conventional thermal current, open, 55 °C $I_{th} = I_e$ AC-1(A)	Contact N/O=Normally open N/C=Normal closed		Circuit symbol	Part no. Article no.	Standard package
Auxiliary contact, top mounting								
XTCD007 XTCD009	Screw terminals	2 pole	10	2 N/O	-		**XTCDXFAG20** 152430	1 piece
XTCD012 XTCD016	Screw terminals	2 pole	10	1 N/O	1 N/C		**XTCDXFAG11** 152431	1 piece
XTCD022 XTCD026	Screw terminals	2 pole	10	-	2 N/C		**XTCDXFAG02** 152432	1 piece
XTCD032 XTCD038	Screw terminals	4 pole	10	4 N/O	-		**XTCDXFAG40** 152433	1 piece
XTCD040 XTCD055	Screw terminals	4 pole	10	3 N/O	1 N/C		**XTCDXFAG31** 152434	1 piece
XTCD065 XTCD072	Screw terminals	4 pole	10	2 N/O	2 N/C		**XTCDXFAG22** 152435	1 piece
XTCD085	Screw terminals	4 pole	10	1 N/O	3 N/C		**XTCDXFAG13** 152436	1 piece
	Screw terminals	4 pole	10	-	4 N/C		**XTCDXFAG04** 152437	1 piece
Auxiliary contact, side mounting								
XTCD007 XTCD009 XTCD012 XTCD016 XTCD022 XTCD026 XTCD032 XTCD038 XTCD040	Screw terminals	2 pole	10	1 N/O	1 N/C		**XTCDXSAG11** 152438	1 piece

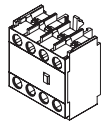
Auxiliary contact modules



XTCDXSAG11



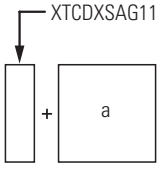
XTCDXFAG20
XTCDXFAG11
XTCDXFAG02



XTCDXFAG40
XTCDXFAG31
XTCDXFAG22
XTCDXFAG13
XTCDXFAG04

XTCD007	1x	-	-
XTCD009	-	1x	-
XTCD012	-	-	1x
XTCD016			
XTCD022			
XTCD026			
XTCD032			
XTCD038			
XTCD040			
XTCD055	-	1x	-
XTCD065	-	-	1x
XTCD072			
XTCD085			

Auxiliary contact, side mounting



a XTCD007 - XTCD040

Surge suppressors

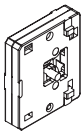
RC suppressors

For use with	Voltage V	Circuit symbol	Part no. Article no.	Standard package	Note
XTCD007 XTCD009 XTCD012 XTCD016 XTCD022 XTCD026 XTCD032 XTCD038 XTCD040 XTCD055 XTCD065 XTCD072 XTCD085	24		**XTCDXRSGB2** 152441	1 piece	Note release delay
	48		**XTCDXRSGC2** 152442	1 piece	Note release delay
	110		**XTCDXRSGE2** 152443	1 piece	Note release delay
	220-240		**XTCDXRSGH2** 152444	1 piece	Note release delay
	440		**XTCDXRSGDQ** 152445	1 piece	Note release delay

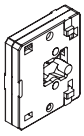
Varistor suppressors

For use with	Voltage V	Circuit symbol	Part no. Article no.	Standard package	Note
XTCD007 XTCD009 XTCD012 XTCD016 XTCD022 XTCD026 XTCD032 XTCD038 XTCD040 XTCD055 XTCD065 XTCD072 XTCD085	24		**XTCDXVSGB2** 152446	1 piece	Note release delay
	48		**XTCDXVSGC2** 152447	1 piece	Note release delay
	110		**XTCDXVSGE2** 152448	1 piece	Note release delay
	220-240		**XTCDXVSGH2** 152449	1 piece	Note release delay
	440		**XTCDXVSGDQ** 152450	1 piece	Note release delay

Mechanical interlocks



For use with	Part no. Article no.	Standard package
XTCD007 XTCD009 XTCD012 XTCD016 XTCD022 XTCD026 XTCD032	**XTCDXMLD** 152439	1 piece



For use with	Part no. Article no.	Standard package
XTCD038 XTCD040 XTCD055 XTCD065 XTCD072 XTCD085	**XTCDXMLG** 152440	1 piece

Spare coils

For use with	Part no. Article no. Actuating voltage 220V 50/60Hz	Standard package
XTCD007 XTCD009 XTCD012 XTCD016 XTCD022 XTCD026 XTCD032	**XTCDRENCOILDAO** 152451	1 piece
XTCD038	**XTCDRENCOILEAO** 152458	1 piece
XTCD040	**XTCDRENCOILFAO** 152465	1 piece
XTCD055 XTCD065 XTCD072 XTCD085	**XTCDRENCOILGAO** 152472	1 piece

Actuating voltages AC

Standard coil 50/60Hz	Coil Suffix	XTCD007B10.. Article no.[1]	XTCD007B01.. Article no.[1]	XTCD009B10.. Article no.[1]	XTCD009B01.. Article no.[1]	XTCD012B10.. Article no.[1]	XTCD012B01.. Article no.[1]	XTCD016B10.. Article no.[1]
24V	**B2**	152320	152313	152334	152327	152348	152341	152362
48V	**C2**	152321	152314	152335	152328	152349	152342	152363
110V	**E2**	152323	152316	152337	152330	152351	152344	152365
220V	**AO**	152318	152311	152332	152325	152346	152339	152360
240V	**H2**	152324	152317	152338	152331	152352	152345	152366
380V	**AR**	152319	152312	152333	152326	152347	152340	152361
440V	**DQ**	152322	152315	152336	152329	152350	152343	152364

Standard coil 50/60Hz	Coil Suffix	XTCD016B01.. Article no.[1]	XTCD022C11.. Article no.[1]	XTCD026C11.. Article no.[1]	XTCD032D11.. Article no.[1]	XTCD038E11.. Article no.[1]	XTCD040F11.. Article no.[1]	XTCD052G22.. Article no.[1]
24V	**B2**	152355	152369	152376	152383	152390	152397	152404
48V	**C2**	152356	152370	152377	152384	152391	152398	152405
110V	**E2**	152358	152372	152379	152386	152393	152400	152407
220V	**AO**	152353	152367	152374	152381	152388	152395	152402
240V	**H2**	152359	152373	152380	152387	152394	152401	152408
380V	**AR**	152354	152368	152375	152382	152389	152396	152403
440V	**DQ**	152357	152371	152378	152385	152392	152399	152406

Standard coil 50/60Hz	Coil Suffix	XTCD065G22.. Article no.[1]	XTCD072G22.. Article no.[1]	XTCD085G22.. Article no.[1]
24V	**B2**	152411	152418	152425
48V	**C2**	152412	152419	152426
110V	**E2**	152414	152421	152428
220V	**AO**	152409	152416	152423
240V	**H2**	152415	152422	152429
380V	**AR**	152410	152417	152424
440V	**DQ**	152413	152420	152427

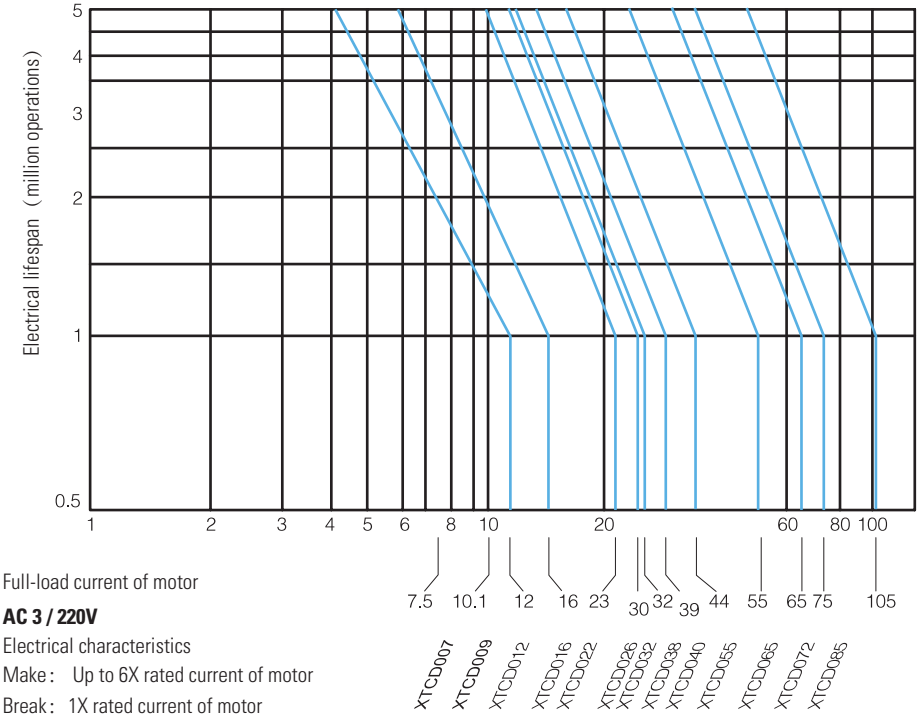
[1] The full part no. consists of basic type and coil suffix.

Spare coils AC

Standard coil 50/60Hz	Coil Suffix	XTCDRENCOILD.. Article no.[1]	XTCDRENCOILE.. Article no.[1]	XTCDRENCOILF.. Article no.[1]	XTCDRENCOILG.. Article no.[1]
24V	**B2**	152453	152460	152467	152474
48V	**C2**	152454	152461	152468	152475
110V	**E2**	152456	152463	152470	152477
220V	**AO**	152451	152458	152465	152472
240V	**H2**	152457	152464	152471	152478
380V	**AR**	152452	152459	152466	152473
440V	**DQ**	152455	152462	152469	152476

[1] The full part no. consists of basic type and coil suffix.

Normal switching duty



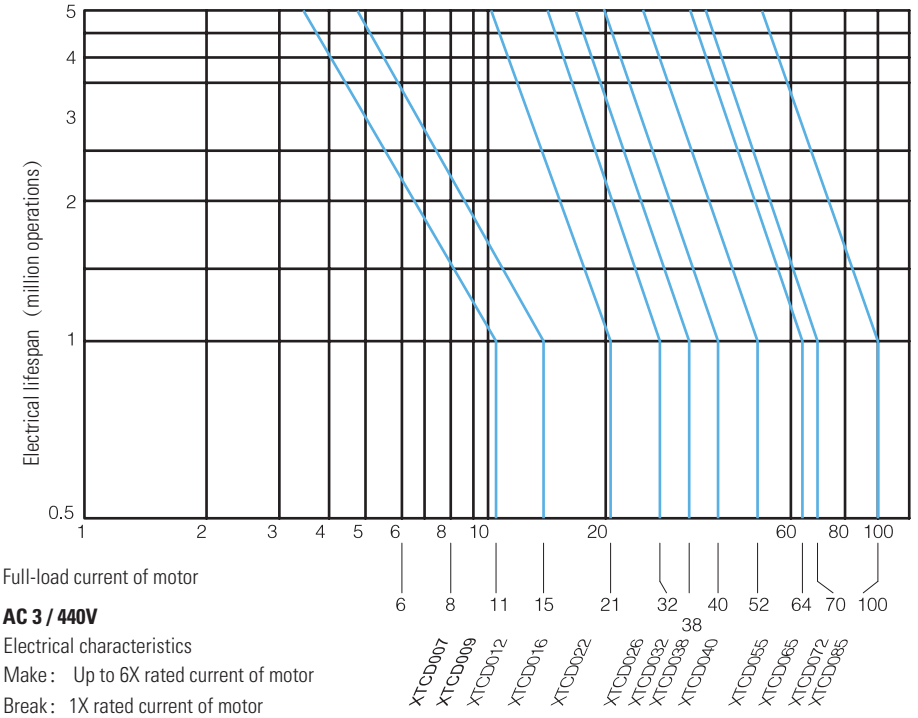
Full-load current of motor

AC 3 / 220V

Electrical characteristics

Make: Up to 6X rated current of motor

Break: 1X rated current of motor



Full-load current of motor

AC 3 / 440V

Electrical characteristics

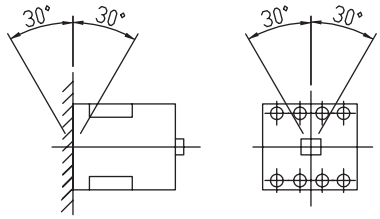
Make: Up to 6X rated current of motor

Break: 1X rated current of motor

1

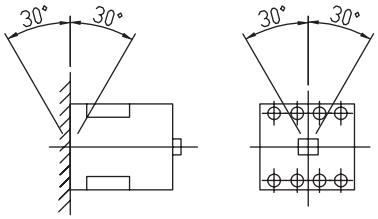
General

XT Basic device			CD007	CD009	CD012	CD016	CD022
Standards			IEC/EN 60947, GB 14048				
Lifespan, mechanical							
AC operated	Operations	x 10^6	5	5	5	5	5
Operating frequency, mechanical							
AC operated	Operations/h		1200	1200	1200	1200	1200
Climatic Proofing			Damp heat,constant,to IEC60068-2-78 Damp heat,cyclic,to IEC60068-2-30				
Ambient temperature							
Operation		°C	-20~55	-20~55	-20~55	-20~55	-20~55
Storage		°C	-40~80	-40~80	-40~80	-40~80	-40~80
Mounting position			Have the angle of ± 30° with normal vertical installation plane				



Protection type			IP20	IP20	IP20	IP20	IP20
Weight		kg	0.3	0.3	0.3	0.3	0.4
Terminal capacity of main cable							
Solid		mm^2	1 x (1.5-6) 2 x (1.5-6)	1 x (1.5-6) 2 x (1.5-6)	1 x (1.5-6) 2 x (1.5-6)	1 x (1.5-6) 2 x (1.5-6)	1 x (2.5-10) 2 x (2.5-10)
Flexible with ferrule		mm^2	1 x (1.5-4) 2 x (1.5-4)	1 x (1.5-4) 2 x (1.5-4)	1 x (1.5-4) 2 x (1.5-4)	1 x (1.5-4) 2 x (1.5-4)	1 x (2.5-6) 2 x (2.5-6)
Solid/stranded		AWG					
Terminal capacity of control circuit cable		mm^2	1	1	1	1	1
Main cable connection screws / bolts			M3.5	M3.5	M3.5	M3.5	M4
Tightening torque		Nm	0.8	0.8	0.8	0.8	1.2
Control circuit cable connection screws / bolts			M3.5	M3.5	M3.5	M3.5	M3.5
Tightening torque		Nm	0.8	0.8	0.8	0.8	0.8
Main contacts							
Rated impulse withstand voltage	U_{imp}	V AC	6000	6000	6000	6000	6000
Overvoltage category / pollution degree			I/3	III/3	III/3	III/3	III/3
Rated insulation voltage	U_i		1000	1000	1000	1000	1000
Rated operational voltage	U_e		690	690	690	690	690
Making capacity (cosφ to IEC/EN60947)	A	to 690 V	60	60	70	100	140
Breaking capacity (cos ϕ to IEC/EN60947)	220V/230V	A	92	92	96	128	184
	380V/400V	A	88	88	96	128	176
	500V	A	64	64	72	104	152
	660V/690V	A	48	48	56	80	112
Electrical lifespan							
	I_e AC-3 400V	x 10^6 Op.	1	1	1	1	1
Maximum operating frequency							
	I_e AC-3 400V	Op./h	1200	1200	1200	1200	1200

CD026	CD032	CD038	CD040	CD055	CD065	CD072	CD085
IEC/EN 60947, GB 14048							
5	5	5	5	5	5	5	5
1200	1200	1200	1200	1200	1200	1200	1200
Damp heat,constant,to IEC60068-2-78 Damp heat,cyclic,to IEC60068-2-30							
-20~55	-20~55	-20~55	-20~55	-20~55	-20~55	-20~55	-20~55
-40~80	-40~80	-40~80	-40~80	-40~80	-40~80	-40~80	-40~80



IP20	IP20	IP20	IP20	IP20	IP20	IP00	IP00
0.4	0.7	0.7	0.9	1.3	1.3	1.3	1.3
1 x (2.5-10) 2 x (2.5-10)	1 x (2.5-16) 2 x (2.5-16)	1 x (2.5-16) 2 x (2.5-16)	1 x (4-16) 2 x (4-16)	1 x (10-50) 2 x (10-50)	1 x (10-50) 2 x (10-50)	1 x (10-50) 2 x (10-50)	1 x (10-50) 2 x (10-50)
1 x (2.5-6) 2 x (2.5-6)	1 x (2.5-10) 2 x (2.5-10)	1 x (2.5-10) 2 x (2.5-10)	1 x (2.5-10) 2 x (2.5-10)	1 x (6-35) 2 x (6-35)	1 x (6-35) 2 x (6-35)	1 x (6-35) 2 x (6-35)	1 x (6-35) 2 x (6-35)
1	1	1	1	1	1	1	1
M4	M5	M5	M5	M6	M6	M6	M6
1.2	2.0	2.0	2.0	3.0	3.0	3.0	3.0
M3.5	M3.5	M3.5	M3.5	M3.5	M3.5	M3.5	M.5
0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
6000	6000	6000	6000	6000	6000	6000	6000
III/3	III/3	I/3	III/3	III/3	III/3	III/3	III/3
1000	1000	1000	1000	1000	1000	1000	1000
690	690	690	690	690	690	690	690
140	220	242	260	350	450	600	650
216	280	312	352	440	520	600	680
208	256	304	320	440	512	576	680
152	240	264	280	360	440	520	640
112	176	176	208	280	360	480	520
1	1	1	1	1	1	1	1
1200	1200	1200	1200	1200	1200	1200	1200

1

AC voltage

	XT Basic device			CD007	CD009	CD012	CD016	CD022
AC-1 operation								
Conventional thermal current, open, 50-60 Hz, 3 pole	at 40 °C	I_{th}	A	25	25	25	25	35
	at 50 °C	I_{th}	A	25	25	25	25	32
	at 55 °C	I_{th}	**A**	**25**	**25**	**25**	**25**	**32**
AC-3 operation								
Rated operational current, open, 50-60 Hz, 3 pole	220/230V	I_e	A	7	9	12	16	23
	380/400V	I_e	**A**	**7**	**9**	**12**	**16**	**22**
	415V	I_e	A	7	9	11	15	21
	440V	I_e	A	7	9	11	15	21
	500V	I_e	A	7	8	9	13	19
	660/690V	I_e	A	4	5	7	10	14
Rated operational power	220/230V	P	kW	2.2	2.5	3	4	5.5
	380/400V	**P**	**kW**	**3**	**4**	**5.5**	**7.5**	**11**
	415V	P	kW	3	4	5.5	7.5	11
	440V	P	kW	3	4	5.5	7.5	11
	500V	P	kW	3	4	5.5	7.5	11
	660/690V	P	kW	3.5	4.5	5.5	7.5	11
Magnet systems								
Voltage tolerance								
AC operated	Pick-up		x U_c	0.75-1.1	0.75-1.1	0.75-1.1	0.75-1.1	0.75-1.1
Power consumption of coil in a cold state and 1.0 xU_c	Pick-up		VA	70	70	70	70	70
	Sealing		VA	12	12	12	12	12
	Sealing		W	3.5	3.5	3.5	3.5	3.5
Duty factor			%DF	40	40	40	40	40

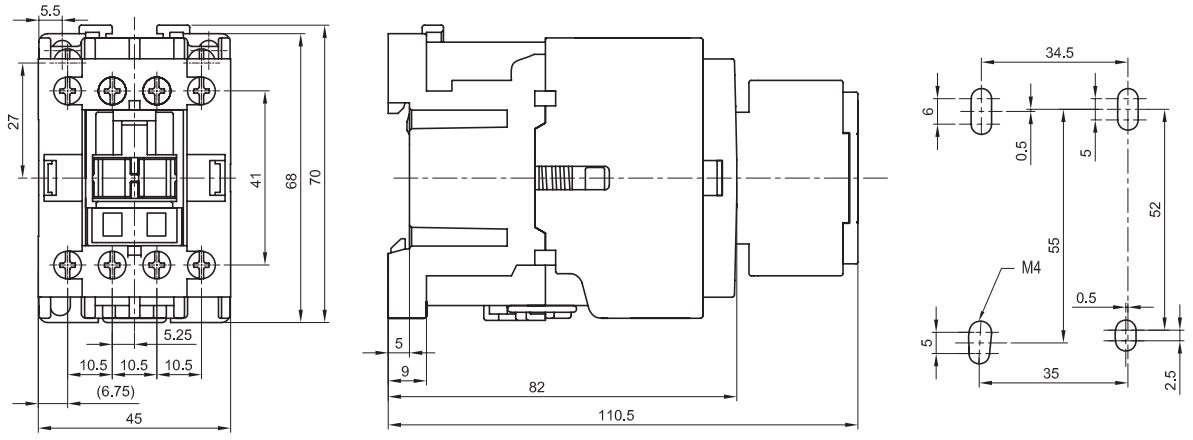
CD026	CD032	CD038	CD03840	CD055	CD065	CD072	CD085
40	60	60	60	70	80	100	135
35	50	60	60	70	80	100	135
35	**50**	**60**	**60**	**70**	**80**	**100**	**135**
27	32	39	42	55	65	75	85
26	**32**	**38**	**40**	**55**	**64**	**72**	**85**
21	32	38	40	52	64	72	85
21	32	38	40	52	64	70	85
19	30	33	35	45	55	65	80
14	22	24	26	35	45	60	65
7.5	7.5	11	11	15	18.5	22	25
11	**15**	**18.5**	**20**	**25**	**30**	**37**	**45**
11	15	22	22	25	33	40	45
11	15	22	22	30	37	40	51
11	18.5	22	22	30	37	45	55
11	18.5	22	22	30	37	45	55
0.75-1.1	0.75-1.1	0.75-1.1	0.75-1.1	0.75-1.1	0.75-1.1	0.75-1.1	0.75-1.1
70	70	215	215	280	280	280	280
12	12	27	27	32	32	32	32
3.5	3.5	6	6	6	6	6	6
40	40	40	40	40	40	40	40

Auxiliary contact

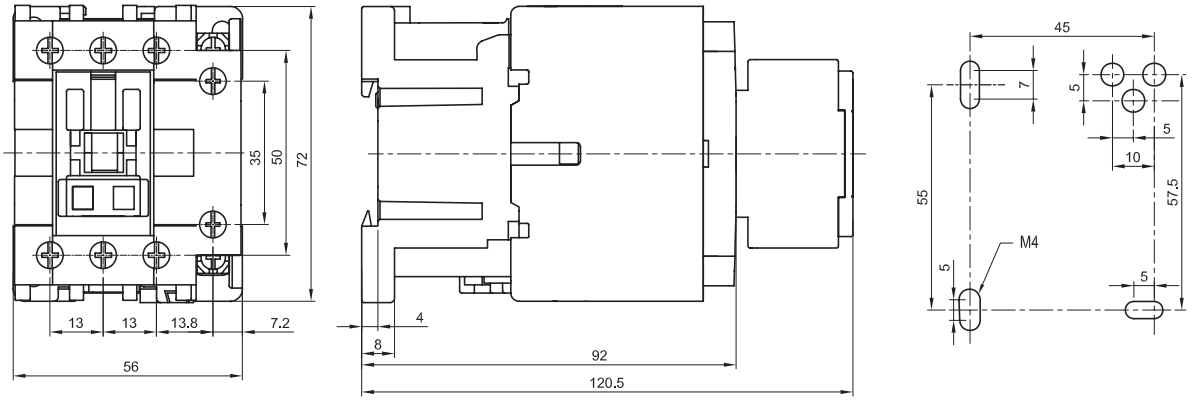
			XTCDXFAG	XTCDXSAG
Rated impulse withstand voltage	U_{imp}	VAC	6000	6000
Overvoltage category/degree of pollution			III/3	III/3
Rated insulation voltage	U_i	VAC	690	690
Rated operational voltage	U_e	VAC	600	600
Rated operational current				
AC-15				
120V	I_e	A	6	6
220/240V	I_e	A	3	3
380V	I_e	A	1.9	1.9
480V	I_e	A	1.5	1.5
500V	I_e	A	1.4	1.4
600V	I_e	A	1.2	1.2
DC-13				
125V	I_e	A	0.55	0.55
250V	I_e	A	0.27	0.27
Conventional thermal current	I_{th}	A	10	10
Electrical lifespan				
at Ue=230V, AC-15, 3A	Operations	x 10^6	1	1

Dimensions

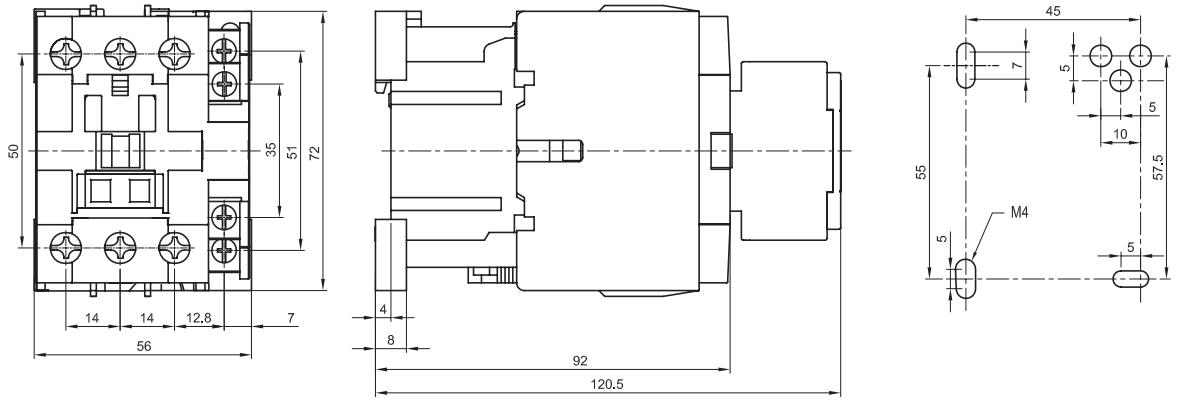
Contactor (with XTCDXFAG)
XTCD007B
XTCD009B
XTCD012B
XTCD016B



XTCD022C
XTCD026C



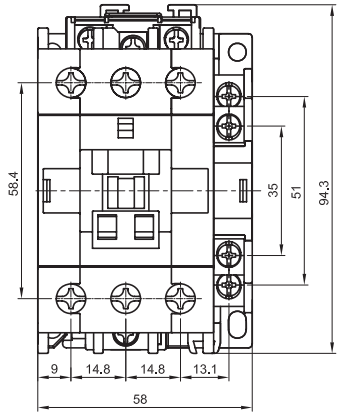
XTCD032D

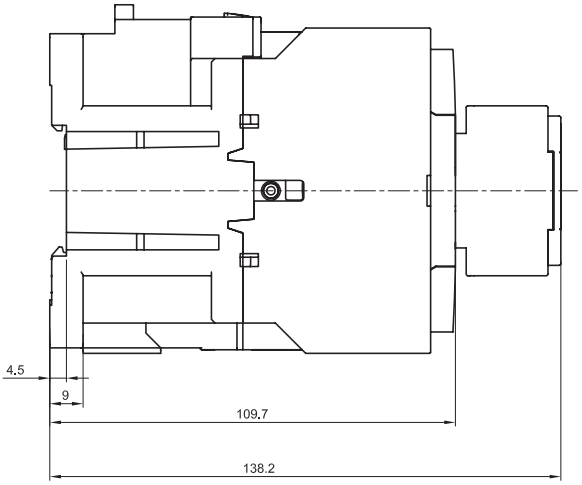


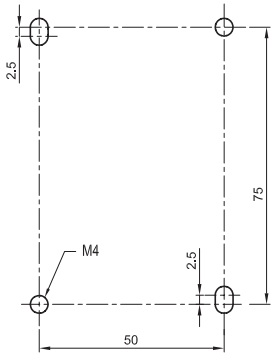
1

Dimensions

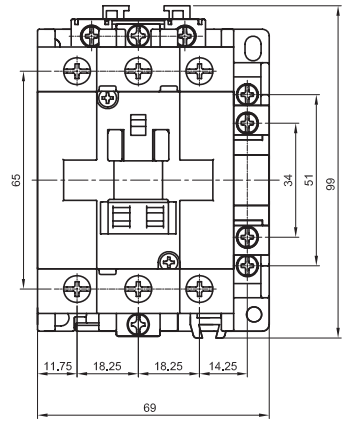
XTCD038E

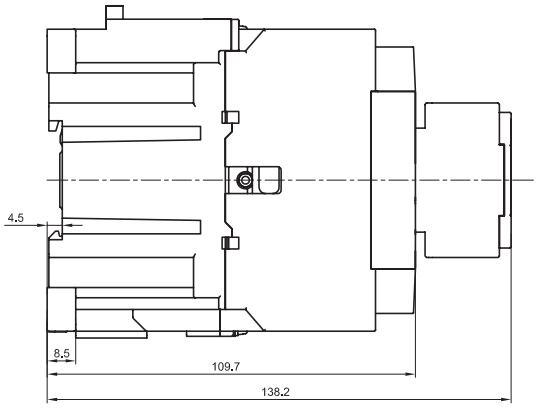


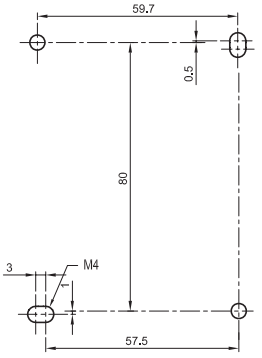




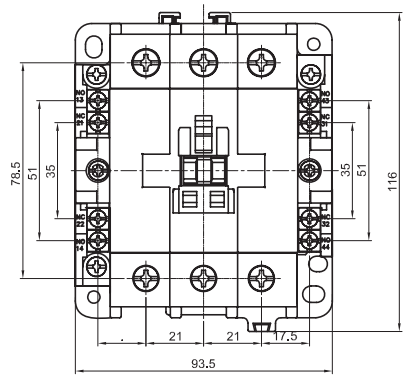
XTCD040F

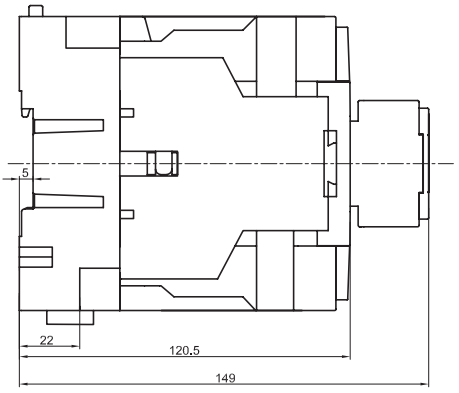


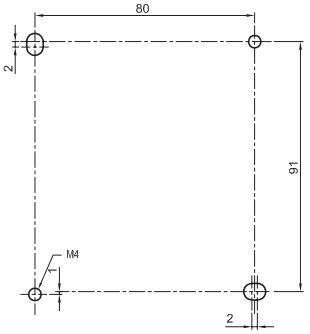




XTCD055G
XTCD065G

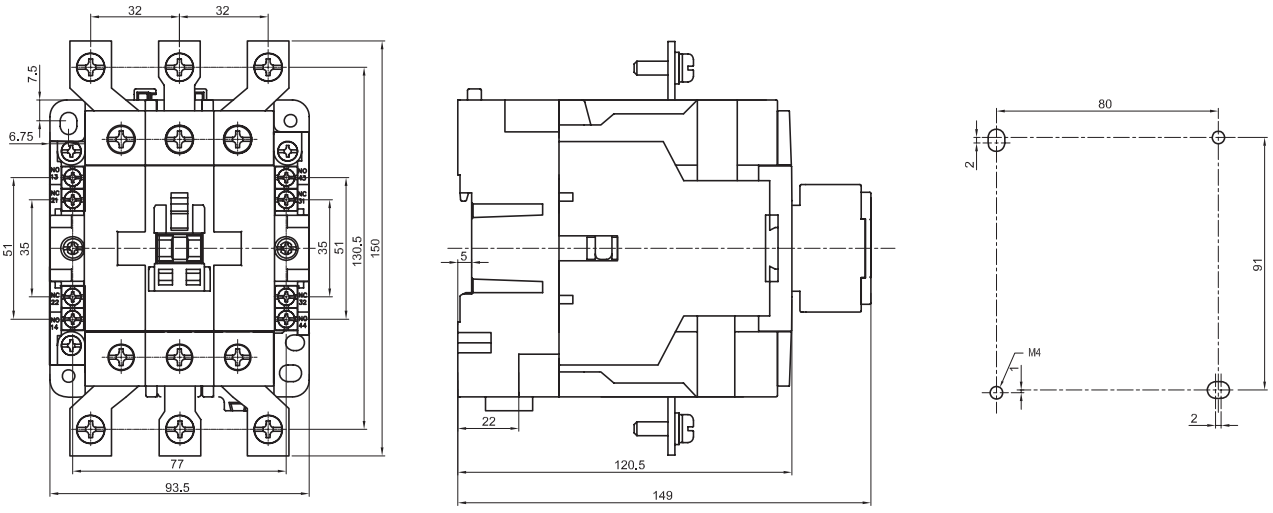




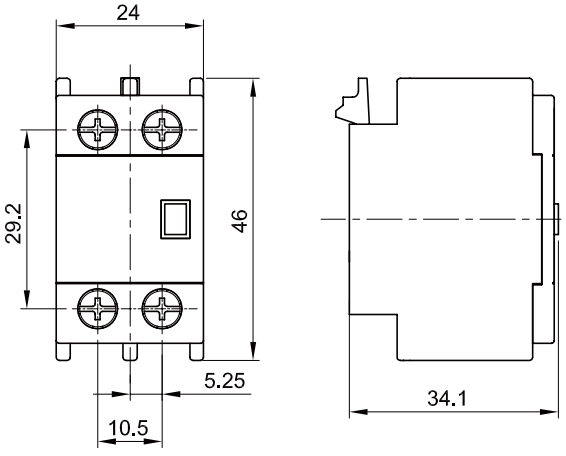


Dimensions

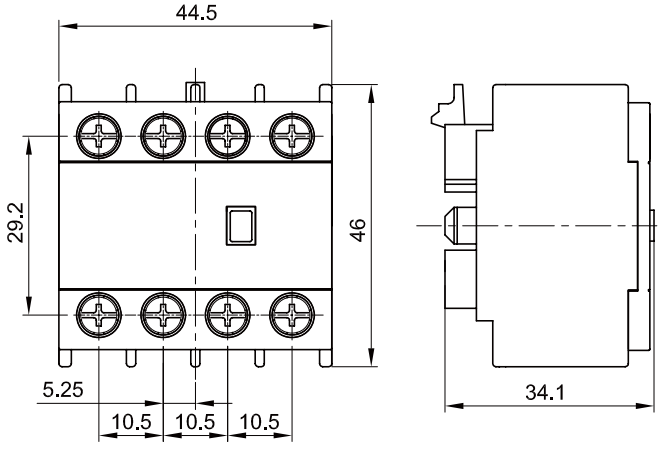
XTCD072G
XTCD085G



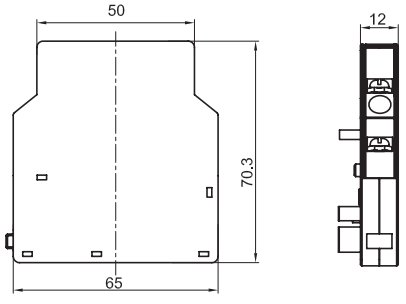
Auxiliary contact module , top mounting
XTCDXFAG(2P)



Auxiliary contact module , top mounting
XTCDXFAG(4P)



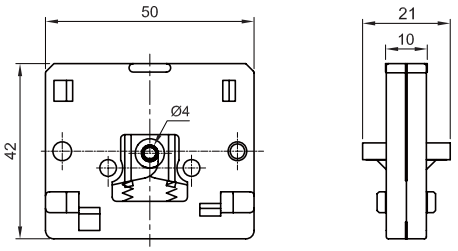
Auxiliary contact module, side mounting
XTCDXSAG



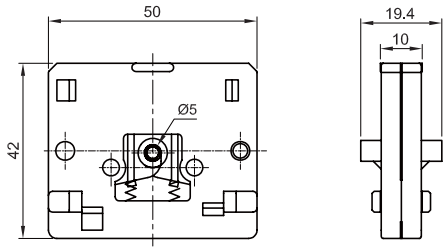
1

Dimensions

Mechanical interlock
XTCDXMLD



Mechanical interlock
XTCDXMLG



Suppressor
XTCDXVSG
XTCDXVRG