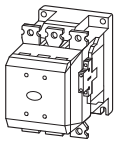
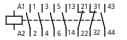
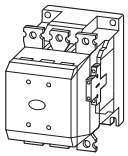
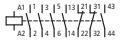
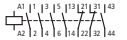
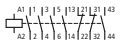
	Rated operational current	Max. motor rating for three-phase motors 50 - 60 Hz						Conventional thermal current $I_{th} = I_e$ AC-1 at 40 °C	Circuit symbol	For use with
	AC-3	AC-3			AC-4			Open		
	380 V **400 V**	220 V 230 V	**380 V** **400 V**	660 V 690 V	220 V 230 V	**380 V** **400 V**	660 V 690 V	$I_{th} = I_e$		
	I_e	P	**P**	P	P	**P**	P	A		
	A	kW	**kW**	kW	kW	**kW**	kW			
Standard device for currents greater than 150 A										
DILM complete device										
	**250**	75	**132**	240	62	**110**	189	400		DILM820-XHI...
	300	90	**160**	195	75	**132**	160	430		DILM820-XHI...
	**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...

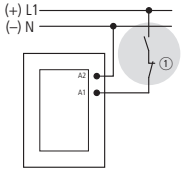
Part no. Article no.	**Price** See price list	Std. pack	**Information relevant for export to North America**	
DILM250-S/22(220-240V50/60HZ) 274190		1 off	Product Standards UL File No. UL CCN CSA File No. CSA Class No. NA Certification	IEC/EN 60947-4-1; UL 508; CSA-C22.2 No. 14-05; CE marking E29096 NLDX 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 5/86
DILM500-S/22(220-240V50/60HZ) 274199				
DILM570-S/22(220-240V50/60HZ) 110744				

Notes

[1] Availability from August 2010.
Previous DILM300/22, see Online Catalog at http://ecat.moeller.net

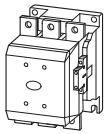
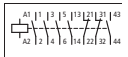
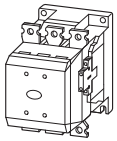
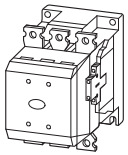
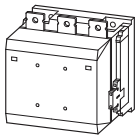
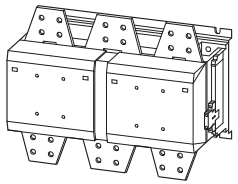
For all contactors the following applies:
- 660 V, 690 V or 1000 V: do not reverse directly
- Integrated suppressor circuit in actuating electronics.

DILM...-S contactors are actuated conventionally



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

Accessories	**Page**
Auxiliary contact modules	→ 5/40
Enclosures totally insulated	
Further actuating voltages	→ 5/81

	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://ecat.moeller.net

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

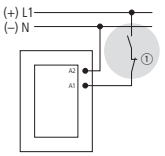
RAW250 ≙ 230 V - 250 V AC/DC

Accessories	**Page**
Auxiliary contact modules	→ 5/40
Suppressor circuits on load side	→ 5/65
Enclosures totally insulated	
Further actuating voltages	→ 5/76

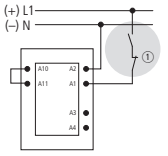
Part no.	**Price** See price list	Std. pack	Notes
DILM185A/22(RAC240)[1] 139537		1 off	
DILM225A/22(RAC240)[1] 139547			
DILM250/22(RA250)[2] 208201			
DILM300A/22(RA250)[1] [2] 139556			
DILM400/22(RA250)[3] 208209			
DILM500/22(RA250)[3] 208213			
DILM580/22(RA250)[3] 208216			
DILM650/22(RA250)[3] 208219			
DILM750/22(RA250)[3] 208222			
DILM820/22(RA250)[3] 208225			
DILM1000/22(RA250)[3] 267214			
DILM1600/22(RAW250)[3] 106727			

Conventional
A1/A2 are attached to power supply as normal

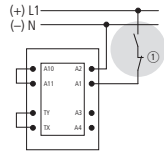
DILM 185 A, DILM 225 A



DILM250 to DILM1000, DILH1400

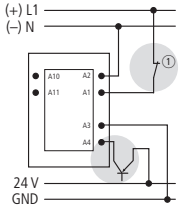


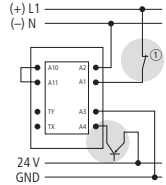
DILM1600 to DILH 2600



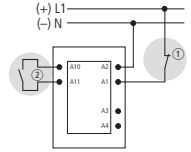
Directly from the PLC
A 24 V output from the PLC can be directly connected to the terminals A4/A24.

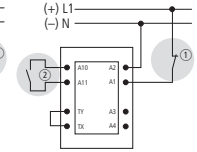






From a low-power command device
Low-power actuating devices such as PCB relays, pilot devices or position switches can be directly connected to A10/A11.





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]

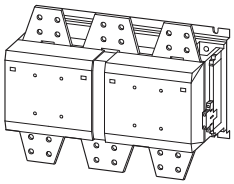
NA Certification	Request filed for UL and CSA

[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 5/86

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

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

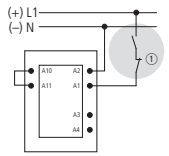
Accessories	**Page**
Auxiliary contact modules	→ 5/40
Suppressor circuits on load side	→ 5/65
Enclosures totally insulated	

Notes

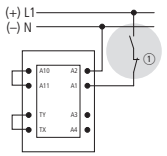
Conventional

A1/A2 are attached to power supply as normal

DILH1400



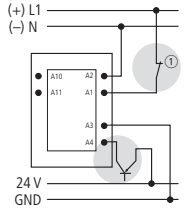
DILM1600 to DILH 2600

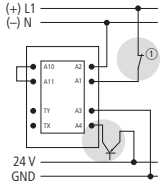


Directly from the PLC

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

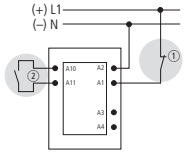


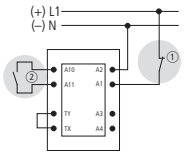




From a low-power command device

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

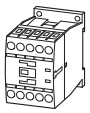
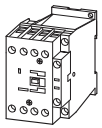
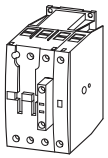
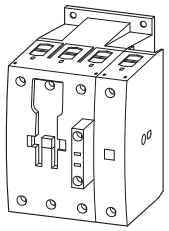
1)

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

HPL05036EN

	Rated operational current open AC-1 40 °C A	55 °C A	70 °C A	Conventional thermal current $I_{th} = I_e$ AC-1 at 50 °C Open $I_{th} = I_e$ A	Circuit symbol	For use with
Contactors up to 200 A						
4 pole						
	22	21	20	20		DILM32-XHI(C)… DILA-XHI(V)(C)…
	32	30	28	32		DILM32-XHI(C)… DILA-XHI(V)(C)…
	32	30	28	32		
	45	41	39	45		
	45	41	39	45		
	63	60	54	63		DILM150-XHI(A)(V)… or DILM1000-XHI11-SA[1] or DILM1000-XHI(V)11-SI[1]
	80	76	69	80		
	125	116	108	125		DILM150-XHI(A)(V)… DILM1000-XHI(V)…[1]
	160	150	138	160		
	200	188	172	200		

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.

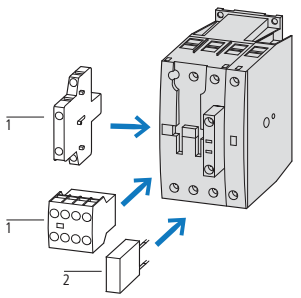
For DC operated contactors DILMP32 - DILMP200 the following applies:
- Integrated suppressor circuit in actuating electronics.

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.

HPL05037EN

AC operation Part no. Article no.	Price See price list	Std. pack	**DC operation** Part no. Article no.	Price See price list	Std. pack	Notes
DILMP20(230V50HZ,240V60HZ) 276970		1 off	**DILMP20(24VDC)** 276985		1 off	
DILMP32-01(230V50HZ,240V60HZ) 118911			**DILMP32-01(RDC24)** 118913			
DILMP32-10(230V50HZ,240V60HZ) 109797			**DILMP32-10(RDC24)** 109811			
DILMP45-01(230V50HZ,240V60HZ) 118914			**DILMP45-10(RDC24)** 109840			
DILMP45-10(230V50HZ,240V60HZ) 109826						
DILMP63(230V50HZ,240V60HZ) 109855			**DILMP63(RDC24)** 109869			
DILMP80(230V50HZ,240V60HZ) 109884			**DILMP80(RDC24)** 109898			
DILMP125(RAC240) 109905			**DILMP125(RDC24)** 109910			
DILMP160(RAC240) 109915			**DILMP160(RDC24)** 109920			
DILMP200(RAC240) 109925			**DILMP200(RDC24)** 109930			



Accessories	**Page**
1 Auxiliary contact module	→ 5/38
2 Suppressor	→ 5/54
Further actuating voltages	→ 5/78
Accessories	→ 5/56

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 5/85

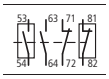
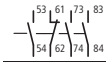
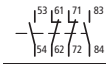
	Terminal type	Pole	Conventional thermal current $I_{th} = I_e$ AC-1 at 60 °C Open $I_{th} = I_e$ A	Contact configuration N/O = normally open contact S_F = N/O early-make NC = normally closed contact $Ö_S$ = NC late-break		Circuit symbol	For use with	**Part no.**	**Price** See price list	Std. pack
Auxiliary contact modules										
With interlocked opposing contacts, except ...XHI(C)V										
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 NC			**DILM32-XHI02** 277375		
		4 pole		2 N/O	2 NC			**DILM32-XHI22** 277377		
				3 N/O	1 NC			**DILM32-XHI31** 106112		
	Spring-loaded terminals	2 pole	16	1 N/O	1 NC			**DILM32-XHIC11** 277751		
				–	2 NC			**DILM32-XHIC02** 277750		
		4 pole		2 N/O	2 NC			**DILM32-XHIC22** 277752		
	Screw 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-XHI20** 276422		
				1 N/O	1 NC			**DILA-XHI11** 276421		
				–	2 NC			**DILA-XHI02** 276420		
				1 S_F	1 $Ö_S$			**DILA-XHIV11** 276423		
		4 pole	16	4 N/O	–			**DILA-XHI40** 276428		
				3 N/O	1 NC			**DILA-XHI31** 276427		
				2 N/O	2 NC			**DILA-XHI22** 276426		
				1 N/O	3 NC			**DILA-XHI13** 276425		
				–	4 NC			**DILA-XHI04** 276424		
				1 N/O 1 S_F	1 NC 1 $Ö_S$			**DILA-XHIV22** 276429		

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

	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
Auxiliary contact modules										
With interlocked opposing contacts, except ...XHI(C)V										
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
				1 N/O	1 NC			**DILA-XHIC11** 276527		
				–	2 NC			**DILA-XHIC02** 276526		
				1 S_F	1 $Ö_S$			**DILA-XHICV11** 276529		
	Screw terminals	2 pole	16	2 N/O	2 NC			**DILA-XHIR22**[1] 139580		
			16	1 N/O	1 NC			**DILA-XHIR11** 110140		
	Spring-loaded terminals	4 pole	16	4 N/O	–		DILM(C)7… DILM(C)9… DILM(C)12… DILM(C)15… DILM(C)17… DILM(C)25… DILM(C)32…	**DILA-XHIC40** 276534		
				3 N/O	1 NC			**DILA-XHIC31** 276533		
				2 N/O	2 NC			**DILA-XHIC22** 276532		
				1 N/O	3 NC			**DILA-XHIC13** 276531		
				–	4 NC			**DILA-XHIC04** 276530		
				1 N/O 1 S_F	1 NC 1 $Ö_S$			**DILA-XHICV22** 276535		

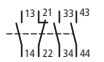
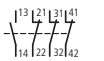
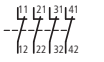
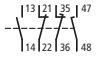
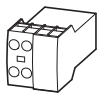
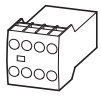
Notes

- 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

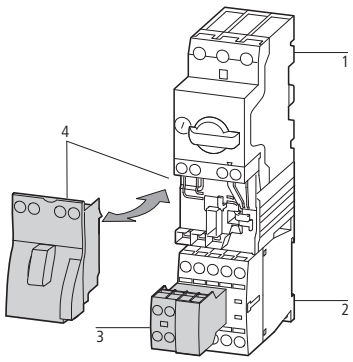
Information relevant for export to North America

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

	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
Auxiliary contact modules											
With interlocked opposing contacts											
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
				1 N/O	1 NC			**DILM150-XHI11** 277946			
				1 N/O	1 NC			**DILM150-XHIA11** 283463			
				–	2 NC			**DILM150-XHI02** 277947			
	Screw terminals	4 pole	16	4 N/O	–			**DILM150-XHI40** 277948			
				3 N/O	1 NC			**DILM150-XHI31** 277949			
				2 N/O	2 NC			**DILM150-XHI22** 277950			
				2 N/O	2 NC			**DILM150-XHIA22** 283464			
				1 N/O	3 NC			**DILM150-XHI13** 277951			
				–	4 NC			**DILM150-XHI04** 277952			
				1 N/O 1 S_F	1 NC 1 $Ö_S$			**DILM150-XHIV22** 277953			–
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
				1 N/O	1 NC			**DILA-XHIT11** 101043			
				–	2 NC			**DILA-XHIT02** 101041			
		4 pole		2 N/O	2 NC			**DILA-XHIT22** 101044			

Notes

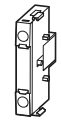
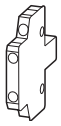
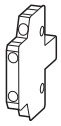
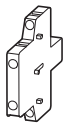
[1] Suitable for the combination with electrical wiringlinks in tool-less plug connection usable with:
DILM12-XSL
DILM12-XRL
DILM12-XS1
PKZM0-XDM12
PKZM0-XRM12
PKZM0-XSM12



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

	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 NC			**DILA-XHI01-S** 115949			
	Spring-loaded terminals	1 pole		1 N/O	–			**DILA-XHIC10-S** 115950			
				–	1 NC			**DILA-XHIC01-S** 115951			
	Screw terminals	2 pole		1 N/O	1 NC		DILM17… DILM25… DILM32… DILM38…	**DILM32-XHI11-S** 101371			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]
			10	1 N/O	1 NC			**DILM820-XHI11-SA** 208282			
			10	1 S_F	1 $Ö_S$			**DILM820-XHI11V-SI** 208283			
			10	1 N/O	1 NC		DILM40 - DILM225A DILMP63 - DILMP200	**DILM1000-XHI11-SI** 278425			
			10	1 S_F	1 $Ö_S$			**DILM1000-XHIV11-SI** 278426			
			10	1 N/O	1 NC			**DILM1000-XHI11-SA** 278427			

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

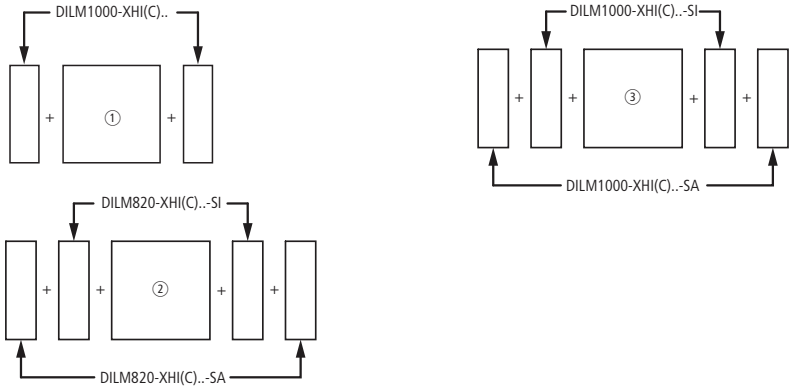
[2]

Product StandardsIEC/EN 60947-4-1;
UL 508; CSA-C22.2 No. 14-05;
CE marking
UL File No.E29184
UL CCNNKCR
CSA File No.012528
CSA Class No.3211-03, 3211-04
NA CertificationUL Listed,
CSA certified

Engineering

	 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	2 x	–	–	–	–	–	1 x	–
...	–	–	2 x	–	1 x	–	–	–
DILM72	1 x	–	–	–	–	–	–	1 x
	–	–	1 x	–	–	1 x	–	–
DILM80	2 x	–	2 x	–	–	–	–	–
...	2 x	–	–	–	–	–	–	1 x
DILM170	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	–	–	–	–

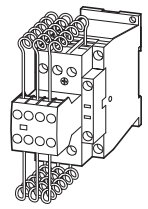
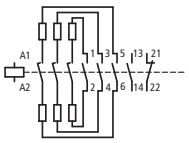
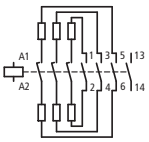
Notes **Side mounting auxiliary contacts**



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

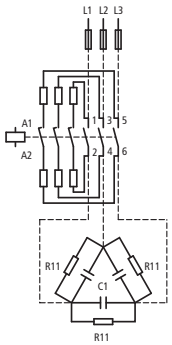
- Interlocked opposing contacts according to IEC/EN 60947-5-1 Annex L, inside the auxiliary contact module (not N/O early close and N/C late open)
- Auxiliary contacts can be used as mirror contacts according to IEC/EN 60947-4-1, Annex F (not N/C late open)
- No auxiliary contact is possible between 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

	Three-phase capacitors 50 – 60 Hz Open 230 V kvar	400 V kvar	525 V kvar	690 V kvar	Circuit symbol	Part no. Article no.	Price See price list	Std. pack
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		
	15	25	33.3	40		**DILK25-11(230V50HZ,240V60HZ)** 294032		
	20	33.3	40	55		**DILK33-10(230V50HZ,240V60HZ)** 294054		
	25	50	65	85		**DILK50-10(230V50HZ,240V60HZ)** 294076		

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 5/35.

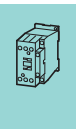


Accessories	Page
Enclosures totally insulated	
Accessories	→ 5/56
Further actuating voltages	→ 5/80

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 5/70

Engineering



Part no.	Ordering data Page	Switching power 230 V kvar	400 V 420 V 440 V kvar	525 V kvar	690 V kvar
		Individual compensation, open version			
DILM7-…(…)	→ 5/18	1.5	3	3.5	5
DILM9-…(…)	→ 5/18	2	4	4.5	6
DILM12-…(…)	→ 5/18	2.5	4.5	5.5	7
DILM15-…(…)	→ 5/18	2.5	4.5	5.5	7
DILM17-…(…)	→ 5/18	6.5	12	14.5	19
DILM25-…(…)	→ 5/18	7	13.5	16	21
DILM32-…(…)	→ 5/18	7.5	14.5	17	22.5
DILM40(…)	→ 5/20	11	20.5	24.5	32
DILM50(…)	→ 5/20	11.5	22	26	34.5
DILM65(…)	→ 5/20	12.5	23.5	28	37
DILM80(…)	→ 5/20	16	30.5	36.5	48
DILM95(…)	→ 5/20	18	34	41	54
DILM115(…)	→ 5/20	24	46	54.5	72
DILM150(…)	→ 5/20	28	53	63.5	83.5
DILM185A(…)	→ 5/32	87	150	190	150
DILM300A(…)	→ 5/32	115	200	265	200
DILM580(…)	→ 5/32	175	300	400	300
		Group compensation, with choke, open version			
DILM7-…(…)	→ 5/18	4	7	7.5	12
DILM9-…(…)	→ 5/18	5	8	10	14
DILM12-…(…)	→ 5/18	5.5	10	12	16
DILM15-…(…)	→ 5/18	5.5	10	12	16
DILM17-…(…)	→ 5/18	7.5	18	20	28
DILM25-…(…)	→ 5/18	10	20	23	30
DILM32-…(…)	→ 5/18	12.5	25	25	32
DILM40(…)	→ 5/20	15	30	30	40
DILM50(…)	→ 5/20	20	40	40	48
DILM65(…)	→ 5/20	25	50	50	57
DILM80(…)	→ 5/20	30	60	70	90
DILM95(…)	→ 5/20	35	70	80	104
DILM115(…)	→ 5/20	50	95	100	125
DILM150(…)	→ 5/20	55	115	115	152
DILM185A(…)	→ 5/32	80	150	200	260
DILM225A(…)	→ 5/32	100	175	230	300
DILM250(…)	→ 5/32	110	190	260	340
DILM300A(…)	→ 5/32	130	225	290	390
DILM400(…)	→ 5/32	160	280	370	480
DILM500(…)	→ 5/32	220	390	500	680
		Group compensation, without choke, open version			
DILK12-…(…)	→ 5/43	7.5	12.5	16.7	20
DILK20-…(…)	→ 5/43	11	20	25	33.3
DILK25-…(…)	→ 5/43	15	25	33.3	40
DILK33-…(…)	→ 5/43	20	33.3	40	55
DILK50-…(…)	→ 5/43	25	50	65	85
DILM185A(…)	→ 5/32	66	115	145	115
DILM300A(…)	→ 5/32	85	150	195	150
DILM580(…)	→ 5/32	145	250	333	250

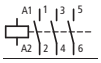
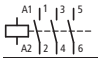
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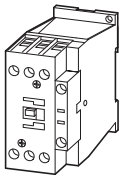
Use of the contactors DILM without series resistor for group compensation
When using the contactors for group compensation in a system without chokes each capacitor must have a minimum induction of approx. 6 µH to limit the peak inrush current. This corresponds to an air-cored coil with 5 windings and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

HPL05045EN

DILL

Ordering

Rated operational current				Conventional thermal current $I_{th} = I_e$ AC-1 at 60 °C	Circuit symbol	**Part no.** Article no.	**Price** See price list	Std. pack
AC-5a operation		AC-5b operation		Open				
230 V	400 V	230 V	400 V	$I_{th} = I_e$				
I_e	I_e	I_e	I_e	A				
A	A	A	A					
Illumination contactors DILL								
12	12	14	14	24		**DILL12(230V50HZ,240V60HZ)** 104402		1 Off
12	12	14	14	24		**DILL12(24V50HZ)** 104401		
12	12	14	14	24		**DILL12(400V50HZ,440V60HZ)** 104403		
18	18	21	21	35		**DILL18(230V50HZ,240V60HZ)** 104405		
18	18	21	21	35		**DILL18(24V50HZ)** 104404		
18	18	21	21	35		**DILL18(400V50HZ,440V60HZ)** 104406		
20	20	27	27	40		**DILL20(230V50HZ,240V60HZ)** 104408		
20	20	27	27	40		**DILL20(24V50HZ)** 104407		
20	20	27	27	40		**DILL20(400V50HZ,440V60HZ)** 104409		



Notes

DILL do not have an integrated auxiliary contact.
They can be combined with DILM32-XHI… and DILA-XHI… auxiliary contacts.
Switchgear for illumination systems → page 5/46

Information relevant for export to North America

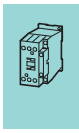
Product Standards	IEC/EN 60947-4-1; UL 508; CSA-C22.2 No. 14-05; CE marking
UL File No.	E29096
UL CCN	NLDX
CSA File No.	012528
CSA Class No.	3211-04
NA Certification	UL Listed, CSA certified

Engineering

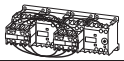
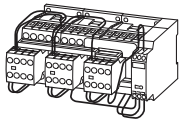
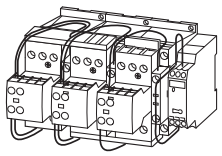
	DIL	L12	L18	L20	M7	M9	M12	M17	M25	M32	M40	M50
Permissible compensation capacitance	C_{max} [mF]	470	470	470	47	80	100	220	330	470	470	500
Filament bulbs	I_e [A]	14	21	27	6	7.5	10	14	21	27	33	42
Mercury blended lamps	I_e [A]	12	16	23	5	6.5	8.5	12	16	23	30	38
Fluorescent lamps, conventional reactor – starter – connection	I_e [A]	20	26	35	9	10	15	20	26	35	41	45
Fluorescent lamps, duo circuit (series compensated)	I_e [A]	20	26	35	5.5	8	13	15	22.5	29	36	47
Electronic upstream devices	I_e [A]	12	18	20	5	6.5	8.5	12	17.5	22.5	28	35
High-pressure mercury vapour lamps	I_e [A]	12	18	20	3.5	6	10	12	17.5	20	25	30
Metal-halide lamps	I_e [A]	12	18	20	3.5	6	10	12	17.5	20	25	30
High-pressure sodium lamps	I_e [A]	12	18	20	3.5	6	10	12	17.5	20	25	30
Low-pressure sodium lamps	I_e [A]	7.5	10	12	3	4	6	7.5	10	12	15	22

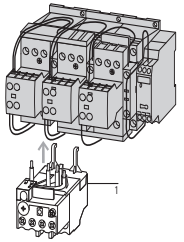
	DIL	M65	M80	M95	M115	M150	M185A	M225A	M250	M300A	M400	M500
Permissible compensation capacitance	C_{max} [mF]	500	550	620	830	970	2055	2300	2600	3000	3250	3500
Filament bulbs	I_e [A]	55	67	79	95	125	153	187	208	249	332	415
Mercury blended lamps	I_e [A]	45	65	67	80	110	123	150	167	200	266	332
Fluorescent lamps, conventional reactor – starter – connection	I_e [A]	55	95	100	125	145	207	237	263	300	375	525
Fluorescent lamps, duo circuit (series compensated)	I_e [A]	59	71	95	100	138	186	213	236	270	338	473
Electronic upstream devices	I_e [A]	45.5	56	66.5	80.5	105	130	158	175	210	280	350
High-pressure mercury vapour lamps	I_e [A]	36	55	60	80	95	138	158	175	200	250	350
Metal-halide lamps	I_e [A]	36	55	60	80	95	138	158	175	200	250	350
High-pressure sodium lamps	I_e [A]	36	55	60	80	95	138	158	175	200	250	350
Low-pressure sodium lamps	I_e [A]	25	35	40	50	70	100	111	123	140	175	245

In compensated lamps, the sum of the capacitances must not exceed the contactors' max. permissible capacitor load (C_{max})!
The values in the table are for each individual contactor contact.



Ordering

	Rated operational current AC-3	Max. rated operational power for three-phase motors, 50 - 60 Hz AC-3				Max. change-over time	**Part no.** Article no.	**Price** See price list	Std. pack
	400 V I_e A	230 V P kW	400 V P kW	500 V P kW	690 V P kW	s			
Star-delta combinations SDAINL									
Operating frequency: maximum 30 starts per hour									
	12	4	5.5	5.5	–	< 30	**SDAINLEM(230V50HZ)** 051840		1 Off
	12	3	5.5	5.5	5.5	< 20	**SDAINLM12(230V50HZ)** 278286		
	12	3	5.5	5.5	5.5	< 20	**SDAINLM12(400V50HZ)** 101380		
	12	3	5.5	5.5	5.5	< 20	**SDAINLM12(24VDC)** 100416		
	16	4	7.5	7.5	7.5	< 20	**SDAINLM16(230V50HZ)** 278311		
	16	4	7.5	7.5	7.5	< 20	**SDAINLM16(400V50HZ)** 101381		
	16	4	7.5	7.5	7.5	< 20	**SDAINLM16(24VDC)** 100417		
	22	5.5	11	11	11	< 20	**SDAINLM22(230V50HZ)** 278336		
	22	5.5	11	11	11	< 20	**SDAINLM22(400V50HZ)** 101382		
	22	5.5	11	11	11	< 20	**SDAINLM22(24VDC)** 100418		
	30	7.5	15	18.5	18.5	< 20	**SDAINLM30(230V50HZ)** 278361		
	30	7.5	15	18.5	18.5	< 20	**SDAINLM30(400V50HZ)** 101383		
	30	7.5	15	18.5	18.5	< 20	**SDAINLM30(RDC24)** 100419		
	45	11	22	30	22	< 20	**SDAINLM45(230V50HZ)** 278386		
	45	11	22	30	22	< 20	**SDAINLM45(400V50HZ)** 101384		
	45	11	22	30	22	< 20	**SDAINLM45(RDC24)** 100420		
	55	15	30	37	30	< 20	**SDAINLM55(230V50HZ)** 278411		
	55	15	30	37	30	< 20	**SDAINLM55(400V50HZ)** 101385		
	55	15	30	37	30	< 20	**SDAINLM55(RDC24)** 100421		
	70	18.5	37	45	37	< 20	**SDAINLM70(230V50HZ)** 239895		
	70	18.5	37	45	37	< 20	**SDAINLM70(400V50HZ)** 101386		
	90	22	45	55	45	< 20	**SDAINLM90(230V50HZ)** 239937		
	115	30	55	75	55	< 20	**SDAINLM115(230V50HZ)** 239963		
	140	37	75	90	90	< 20	**SDAINLM140(230V50HZ)** 240009		
	165	45	90	110	132	< 20	**SDAINLM165(230V50HZ)** 240035		
	200	55	110	132	160	< 20	**SDAINLM200(230V50HZ)** 101010		
	260	75	132	160	160	< 20	**SDAINLM260(230V50HZ)** 101031		

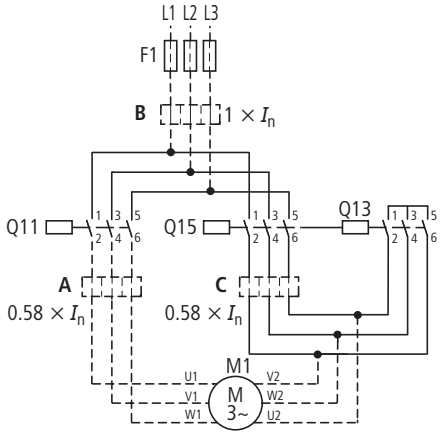
Individual components of the combination				Spare auxiliary contacts			**Notes**
Mains contactor Q11	Delta contactor Q15	Star contactor Q13	Timing relays K1	Q11	Q13	Q15	
Part no.	Part no.	Part no.	Part no.				
DILEM-10 + 22DILEM	DILEM-01	DILEM-10 + 02DILEM	DILET	21 31 53 / 22 32 54	–	–	Main circuit: 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.
DILM7-10 + DILA-XHI20	DILM7-01 + DILA-XHI20	DILM7-01 + DILA-XHI20	ETR4-51	63 / 64	63 / 64	63 / 64	The following applies for SDAINLM 140 – SDAINLM 260: • On the mounting plate.
DILM7-10 + DILA-XHI20	DILM7-01 + DILA-XHI20	DILM7-01 + DILA-XHI20	ETR4-51	63 / 64	63 / 64	63 / 64	Circuit diagrams, Star-delta combinations → page 5/50
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	–	–	

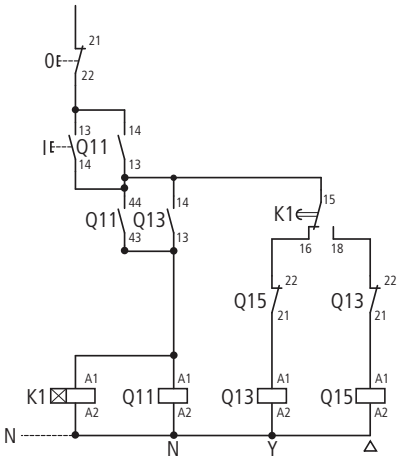
Accessories **Page**
1 Overload relay → 6/8
Accessories → 5/56

Engineering

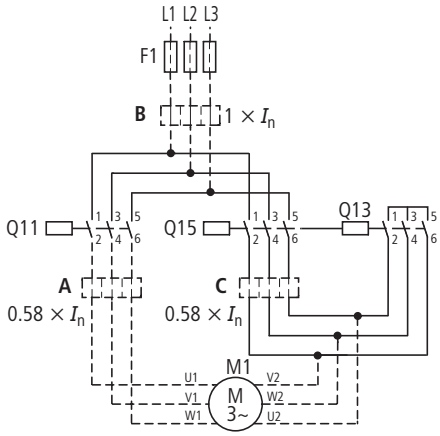
Circuit diagrams, Star-delta combinations

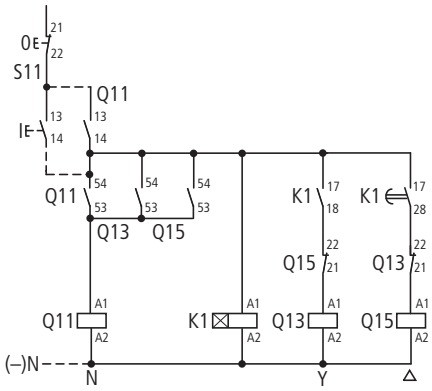
SDAINLEM



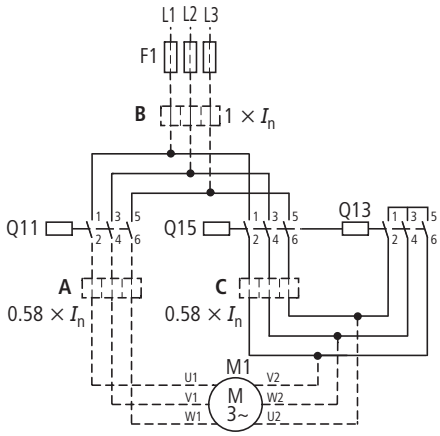


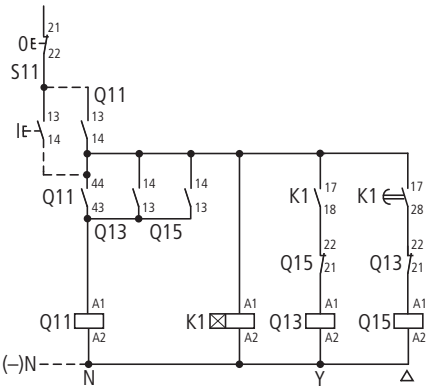
SDAINLM12…SDAINLM55





SDAINLM70…SDAINLM260





Overload relay settings	Starting
A: I_N x 0.58 Motor protected in Y and △- positions	F 15 s
B: I_N x 1 Only partial motor protection in Y position	15 – 40 s
C: I_N x 0.58 Motor not protected in Y position	> 40 s

Timing relay set to approx. 10 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.