

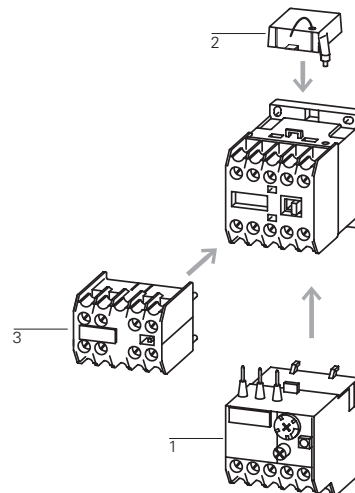


AC operation		DC operation		Std. pack	Notes
Part no. Article no.	Price See price list	Part no. Article no.	Price See price list		

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:

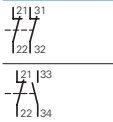


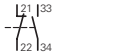


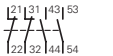





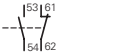








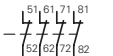


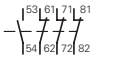


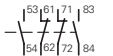








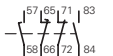




Accessories

- 1 Overload relay
- 2 Suppressor
- 3 Auxiliary contact module
- Enclosures totally insulated
- Further actuating voltages
- Accessories

Page

- Chapter 1.2
- 8
- 6
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- 8

Circuit symbol	Can be combined with contactor	Part no. Article no.	Price See price list	Std. pack	Notes	
		02DILEM 010064	5 off	 	With interlocked opposing contacts	<p>The following applies to ...DILEM auxiliary contacts:</p> <ul style="list-style-type: none"> • Contacts to EN 50012 <p>The following applies to ...DILE auxiliary contacts:</p> <ul style="list-style-type: none"> • Contacts to EN 50005 <p>Contacts according to EN50012 are to be preferred. Type E combinations comply with EN 50011 and are to be given preference.</p> <p>No interlocked opposing contacts in NO early-makes and NC late-breaks.</p>
		11DILEM 010080	5 off	 	With interlocked opposing contacts	
		22DILEM 010112	5 off	 	With interlocked opposing contacts	
		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	 	–	

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(...)	DILEM12-01-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.

1.1

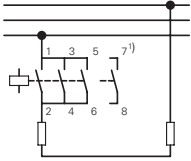
Contactors

Contactors for resistive load

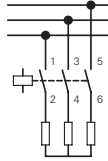
1 DILM, DILEM

Rating data

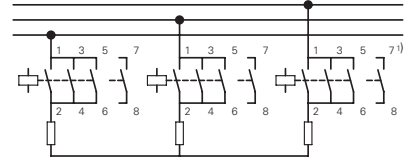
Single-phase rating AC-1



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}
220	380	660		
230	400	690		
240	440			
kW			A	A

Voltage in V			Max. upstream fuse gG/gL	Rated operational current $I_e = I_{th}$ or I_{the}
220	380	660		
230	400	690		
240	440			
kW			A	A

Voltage in V			Max. upstream fuse gG/gL	Rated operational current $I_e = I_{th}$ or I_{the}
220	380	660		
230	400	690		
240	440			
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...

DILM, DILEM

Part no.	Ordering data	Required accessories:	Notes
		Paralleling links	

AC operated	Page	Part no.	Accessories	Page
DILEM-10(...)	→ 4	P1DILEM		
DILEM-01(...)	→ 4	P1DILEM		
DILEM4(...)	→ 4	P1DILEM		
DILM7-...(...)	→ 18	DILM12-XP1	Auxiliary contact modules	→ 6
DILMP20(...)	→ 34	DILM12-XP1	Set of paralleling links	→ 36
DILM17-...(...)	→ 18	DILM32-XP1	Enclosure	→ 53
DILM25-...(...)	→ 18	DILM32-XP1	Accessories	→ 63
DILM40(...)	→ 20	DILM65-XP1		→ 52
DILM50(...)	→ 20	DILM65-XP1		
DILM65(...)	→ 20	DILM65-XP1		
DILM80(...)	→ 20	DILM150-XP1		
DILM95(...)	→ 20	DILM150-XP1		
DILM115(...)	→ 20	DILM150-XP1		
DILM150(...)	→ 20	DILM150-XP1		
DILM170(...)	→ 20	DILM150-KP1		
DILM185A(...)	→ 30	DILM185-XP1		
DILM225A(...)	→ 30	DILM185-XP1		
DILM250(...)	→ 30	-		
DILM300A(...)	→ 30	-		
DILM400(...)	→ 30	-		
DILM500(...)	→ 30	-		
DILM580(...)	→ 30	-		
DILM650(...)	→ 30	-		
DILM750(...)	→ 30	-		
DILM820(...)	→ 30	-		
DILH1400(...)	→ 32	-		
DILH2000(...)	→ 32	-		
DILH2200(...)	→ 32	-		
DILH2600(...)	→ 32	-		

1.1

Contactors

Switching of DC current

1 DC current switching

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

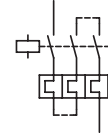
DILEEM ... DILM700

Without overload relay
≤ 60 V DC

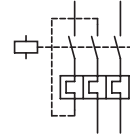
> 60 V DC

With overload relay
> 60 V DC

1 pole

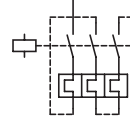
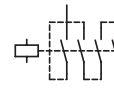


2 pole

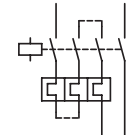


DILEM4 DILMP...

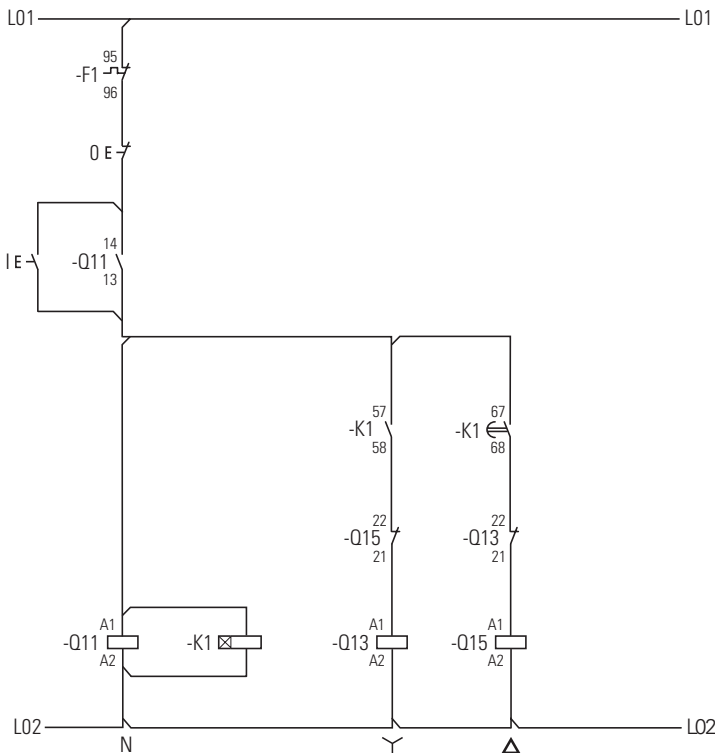
1 pole




2 pole



Wiring, star-delta combination with DILM32-XTEY20



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 91			
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			

1.1

Mini contactor relays

DILEEM, DILEM

1

				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	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 88					
	AC-3			→ Engineering Page 87					
	AC-4			→ Engineering Page 87					
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	
		at 50 °C	I_{th}	A	20	20	20	20	
		at 55 °C	I_{th}	A	19	19	19	19	
Enclosed ¹⁾		I_{th}	A	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	
Motor rating	660/690 V	I_e	A	3.5	4.8	4.8	4.8	5.2	
	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	
AC-4 operation	500 V	P	kW	3	4	4	4	5.5	
	660/690 V	P	kW	3	4	4	4	4	
	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
		280/400 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	
Rated operational power	660/690 V	I_e	A	2.9	3.4	3.4	3.4	3.4	
	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 92											
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	–
		Pick-up	VA	30	–	30	–	30	–	30	–
Pick-up		VA	29	–	29	–	29	–	29	–	
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 fac tor			% 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 factors										
	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	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