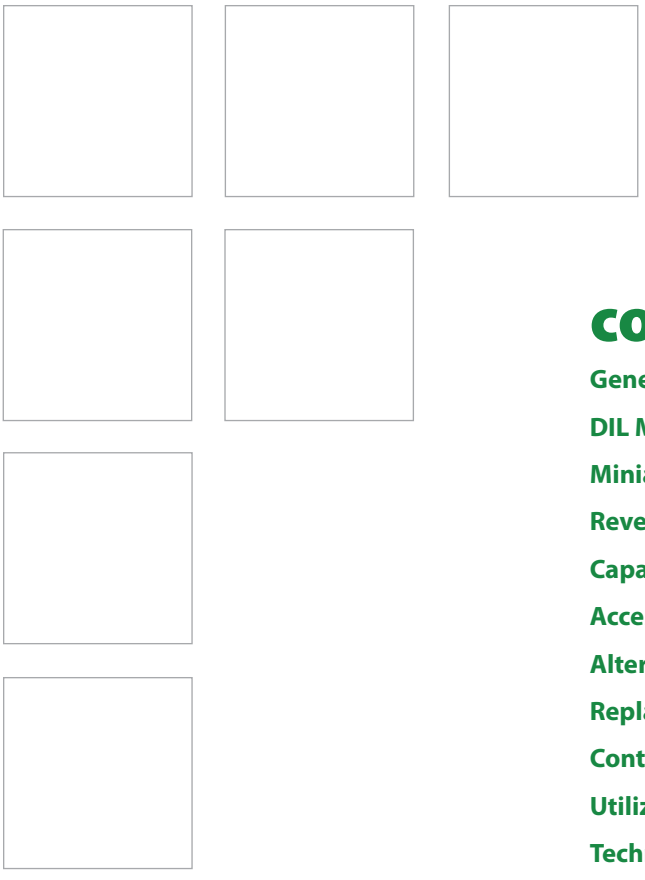
MOELLER

contactors
motor protection

Think future. Switch to green.







contactors

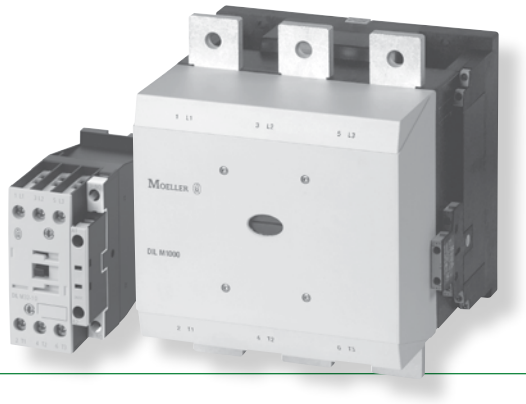
motor protection

A numerical and alphabetical index can be found in the pricing guide at the end of this catalog.

MOELLER

series DIL M contactors

Reliable switching for applications up to 1000A



Moeller's DILM contactor line packs all the control you need into a smart, compact design. Our modern IEC contactors can handle up to 1000A in virtually any application worldwide. Their compliance with IEC standards ensures the most accurate match to your motor size – you'll never buy more control than you need.

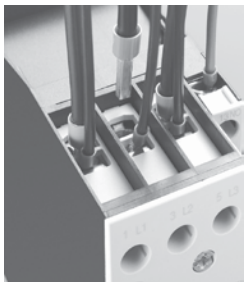
- > 24 contactors
- > 7 frame sizes
- > Switches motors up to 1000HP
- > Same compact dimensions for AC and DC units

For a broad range of applications

Twenty-four contactors in seven frame sizes cover all applications from fractional to 1000HP (@ 575V). This extensive range allows you to select exactly the right size for your application, whether it be resistive AC-1 environments; common starting and stopping AC-3 applications; or even extreme AC-4 situations involving inching and plugging of motors.

Easy installation by design

The DILM contactor series features dual power terminals on units up to 400A. The clamping chambers are cleverly designed to apply sufficient holding pressure to cables of varying sizes. Conventional designs are often limited by the size of the largest cable in the chamber.



The line also features ingenious mechanical interlocks (rocker and ball style) that allow fast and easy assembly of contactor combinations without requiring additional space. Many contactors can be interlocked both horizontally and vertically.

Accessories extend flexibility

Several ranges within the DILM series share common auxiliary contacts and other components. This lowers inventories even when accommodating a complete range of control solutions. Voltage indicators, reversing kits, and many other optional accessories are also available.

Safety

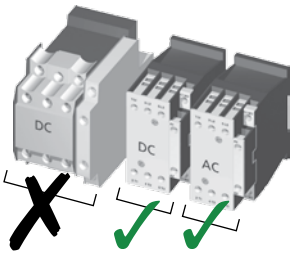
All DILM series contactors provide isolation and protection from direct hand contact. Even the largest contactors accept terminal shields.

NEW

DIL M Low Range

Moeller's DIL M contactor series includes a completely NEW offering in the lower 7 to 150A range. Consisting of four frame sizes, this range is the newest and most modern of any control manufacturer!

Compact design for BOTH currents



Conventional contactors designed for DC control applications can be up to 30% larger than their AC counterparts. Not anymore! Unique to Moeller's DIL M contactors, AC and DC units are the same frame size throughout the entire range. The reduced size means smaller DC panels than ever before. This also means you can now design one panel for either AC or DC control, without having to plan for a larger DC contactor.

Easy to assemble

Coil terminals are located on the front of the new contactors to simplify wiring. Both two and four-pole auxiliary contacts snap on without tools. Units 40A and above accept both side and top mount auxiliaries for increased flexibility. In addition, devices up to 32A include built-in auxiliary contacts for increased economy with no additional space requirement.

Positively driven contacts for additional safety

Auxiliary contact blocks for new DIL M contactors are available with positively driven contacts for added safety in control circuit schemes. Positively driven auxiliary contacts insure that, throughout the life of the contactor, N.O. & N.C. auxiliary contacts will never be closed simultaneously.

Special advantages of going DC

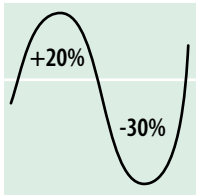
In addition to sharing the same frame size as AC contactors, DC units of 17A and above also feature electronic drives that dramatically reduce pick-up and sealing consumption. These drives produce several benefits:

- less heat is generated, eliminating the need for a fan
- smaller control transformers are required
- contactors up to DIL M32 can be directly actuated from PLCs, eliminating the need for a coupling relay

These benefits lower your cost by consuming less power, eliminating additional components, and permitting higher packing density in the panel.

DC units to 150A also carry a built-in high-speed suppressor circuit, eliminating the need for purchasing and installing a separate external suppressor. Again, lower total cost and smaller panel space result.

For additional safety and convenience, Moeller's DIL M DC contactors feature an expanded voltage tolerance, beyond that specified by IEC/EN 60947. This accommodates a range of -30% to +20% for DIL M contactors 17A and above. It is one of the largest voltage tolerance ranges of any control manufacturer.



DIL M High Range

For heavy-duty applications, Moeller's contactor line continues with the DIL M185 to DIL M1000. This range includes 11 contactors in three frame sizes. All applications and worldwide voltages, both AC and DC, can be accommodated with only four coils.

On-board electronics for efficient operation

All DIL M185 to 1000 contactors utilize electronically-controlled magnet systems. This feature provides flexible actuation, and contributes to lower panel temperature, smaller control transformer requirements and greater control voltage tolerance. Direct actuation from a PLC or other low level source is easily accomplished. In addition, a built-in suppressor circuit for control protection is standard. All of this adds up to fewer external components and smaller panel space.

Vacuum contactors designed for small size, long life

DIL M580 to DIL M1000 are vacuum contactors. This feature reduces contact damage caused by electrical arcing, leading to longer life of the contactor. It also permits tighter packing density in the panel because there are no open arcs or escaping gases that would typically require additional space for dissipation.

DIL EM Miniature Contactors

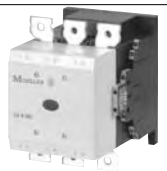
Moeller also offers a miniature contactor, the DIL EM. Designed for small loads, it is available in units up to 20A, and provides reliable performance for motors up to 5HP (@575V). AC and DC units are available.

The DIL EM miniature contactor features a large ambient temperature range, and its low power consumption permits direct actuation from a PLC. The DC version of the DIL EM also includes an integrated suppressor to protect from voltage peaks that may occur when the coil is disconnected. Top-mount auxiliary contacts are available in both 2- and 4-pole configurations.

Standards and Approvals

Moeller's DIL M and DIL EM contactors carry UL, CSA, IEC/EN 60947 and VDE 0660 approvals. They are manufactured to ISO 9001 quality standards.

Moeller Contactor Family and Equivalent NEMA Sizes

Frame Size	Moeller Contactor	Maximum Horsepower (UL/CSA)						
		Single Phase		Three Phase				
		115 Volt	230 Volt	200 Volt	230 Volt	460 Volt	575 Volt	
	DIL M7	¼	1	1½	2	3	5	
		1/3	1	1½	1½	2	2	NEMA Size 00
	DIL M9	½	1½	3	3	5	7½	
		1	2	3	3	5	5	NEMA Size 0
	DIL M12	1	2	3	3	10	10	
	DIL M17	2	3	5	5	10	15	
		2	3	7½	7½	10	10	NEMA Size 1
	DIL M25	2	5	7½	7½	15	20	
	DIL M32	3	5	10	10	20	25	
		3	7½	10	15	25	25	NEMA Size 2
	DIL M40	3	7½	10	15	30	40	
	DIL M50	3	10	15	20	40	50	
	DIL M65	5	15	20	25	50	60	
		7½	15	25	30	50	50	NEMA Size 3
	DIL M80 ❶	7½	15	25	30	60	75	
	DIL M95 ❶	7½	15	25	40	75	100	
		–	–	40	50	100	100	NEMA Size 4
	DIL M115 ❶	10	25	40	50	100	125	
	DIL M150 ❶	15	30	40	60	125	150	
	DIL M185	–	–	50	60	125	150	
	DIL M225	–	–	60	75	150	200	
		–	–	75	100	200	200	NEMA Size 5
	DIL M250	–	–	75	100	200	250	
	DIL M300	–	–	100	125	250	300	
	DIL M400	–	–	150	150	300	400	
		–	–	150	200	400	400	NEMA Size 6
	DIL M500	–	–	150	200	400	500	
	DIL M580	–	–	200	200	400	600	
	DIL M650	–	–	200	250	500	600	
		–	–	–	300	600	600	NEMA Size 7
	DIL M750	–	–	250	300	600	700	
	DIL M820	–	–	290	350	700	860	
		–	–	–	450	900	900	NEMA Size 8
	DIL M1000	–	–	–	400	800	1000	

Compare Moeller's 24 contactor sizes to just 10 equivalent NEMA sizes

❶ Final ratings in preparation. Contact your Moeller representative.

- Four compact frame sizes cover applications to 150A
- Space-saving design reduces panel space and cost
- Dual box terminals make wiring safer and easier for cables with uneven cross-sections
- New Kombi (combination) plug-in technology provides tooless connection with other starting components up to DIL M12

Three Pole Contactors with 120V AC Coil *(to 150 Amps)* ❶❷❺

I_e [A]		Maximum Ratings for Single and Three Phase Motors										Auxiliary Contacts		Type	Article Number	Price
		kW			UL / CSA HP											
		AC-3			Single Phase			Three Phase								
AC-3 (@400V)	AC-1	220 V 230 V	380 V 400 V	660 V 690 V	115 V	200 V	230 V	200 V	230 V	460 V	575 V	NO	NC			
7	20	2.2	3	3.5	1/4	3/4	1	1½	2	3	5	1	0	DILM7-10(120V60HZ) ❸	276547	See green pages
												0	1	DILM7-01(120V60HZ) ❸	276582	
9	20	2.5	4	4.5	1/2	1	1½	3	3	5	7½	1	0	DILM9-10(120V60HZ) ❸	276687	
												0	1	DILM9-01(120V60HZ) ❸	276722	
12	20	3.5	5.5	6.5	1	2	2	3	3	10	10	1	0	DILM12-10(120V60HZ) ❸	276827	
												0	1	DILM12-01(120V60HZ) ❸	276862	
18	35	5	7.5	11	2	2	3	5	5	10	15	1	0	DILM17-10(120V60HZ)	277001	
												0	1	DILM17-01(120V60HZ)	277033	
25	40	7.5	11	14	2	3	5	7½	7½	15	20	1	0	DILM25-10(120V60HZ)	277129	
												0	1	DILM25-01(120V60HZ)	277161	
32	40	10	15	17	3	5	5	10	10	20	25	1	0	DILM32-10(120V60HZ)	277257	
												0	1	DILM32-01(120V60HZ)	277289	
40	50	12.5	18.5	23	3	5	7½	10	15	30	40	0	0	DILM40(120V60HZ) ❹	277763	
50	60	12.5	22	30	3	7½	10	15	20	40	50	0	0	DILM50(120V60HZ) ❹	277827	
65	72	20	30	35	5	10	15	20	25	50	60	0	0	DILM65(120V60HZ) ❹	277891	
80	110	25	37	48	7½	15	15	25	30	60	75	0	0	DILM80(120V60HZ)	239399	
95	110	30	45	57	7½	15	15	25	40	75	100	0	0	DILM95(120V60HZ)	239477	
115	160	37	55	70	10	25	25	40	50	100	125	0	0	DILM115(RAC120)	239547	
150	160	48	75	91	15	25	30	40	60	125	150	0	0	DILM150(RAC120)	239587	
UL/CSA pending for DILM80 – DILM150. Product available in Fall 2005. Contact your Moeller representative.																

Ordering Instructions

1 Locate the desired contactor → **2** Order using the Type & Article Number → **3** See page 23 for a different coil voltage → **4** See pages 15 - 22 for auxiliaries & accessories

❶ Positively-driven contacts with DILM7 to DILM32 between integrated auxiliary contact and auxiliary contact module, as well as within the auxiliary contact modules. Mirror contact with with DILM7-01 to DILM32-01, as well as in combination with auxiliary contact modules.

❷ Contact elements of the contactor to EN 50012.

❸ Coils not replaceable.

❹ Positively-driven contacts within the auxiliary contact module. Mirror contact in combination with auxiliary contact module. Combination of side-mounted and front auxiliary contact modules up to six auxiliary contacts possible.

❺ Standard coil is rated for 120V AC - 60Hz and 110V AC - 50Hz. See page 23 for alternative coil voltages.

- Same compact size as Moeller's AC contactors, saving panel space
- Electronically controlled magnet system (from DILM17) provides many advantages:
  - Significantly less heat dissipation due to reduced sealing consumption
  - Smaller control transformers because of lower pick-up consumption
  - Direct actuation from the PLC without coupling contactors (to DILM32)
- Integrated surge suppressor

Three Pole Contactors with 24V DC Coil *(to 150 Amps)* ❶❷❺

I_e [A]		Maximum Ratings for Single and Three Phase Motors										Auxiliary Contacts		Type	Article Number	Price
		kW			UL / CSA HP											
		AC-3			Single Phase			Three Phase								
AC-3 (@400V)	AC-1	220 V 230 V	380 V 400 V	660 V 690 V	115 V	200 V	230 V	200 V	230 V	460 V	575 V	NO	NC			
7	20	2.2	3	3.5	1/4	3/4	1	1½	2	3	5	1	0	DILM7-10(24VDC) ❸	276565	See green pages
												0	1	DILM7-01(24VDC) ❸	276600	
9	20	2.5	4	4.5	1/2	1	1½	3	3	5	7½	1	0	DILM9-10(24VDC) ❸	276705	
												0	1	DILM9-01(24VDC) ❸	276740	
12	20	3.5	5.5	6.5	1	2	2	3	3	10	10	1	0	DILM12-10(24VDC) ❸	276845	
												0	1	DILM12-01(24VDC) ❸	276880	
18	35	5	7.5	11	2	2	3	5	5	10	15	1	0	DILM17-10(RDC24)	277018	
												0	1	DILM17-01(RDC24)	277050	
25	40	7.5	11	14	2	3	5	7½	7½	15	20	1	0	DILM25-10(RDC24)	277146	
												0	1	DILM25-01(RDC24)	277178	
32	40	10	15	17	3	5	5	10	10	20	25	1	0	DILM32-10(RDC24)	277274	
												0	1	DILM32-01(RDC24)	277306	
40	50	12.5	18.5	23	3	5	7½	10	15	30	40	0	0	DILM40(RDC24) ❹	277780	
50	60	12.5	22	30	3	7½	10	15	20	40	50	0	0	DILM50(RDC24) ❹	277844	
65	72	20	30	35	5	10	15	20	25	50	60	0	0	DILM65(RDC24) ❹	277908	
80	110	25	37	48	7½	15	15	25	30	60	75	0	0	DILM80(RDC24)	239416	
95	110	30	45	57	7½	15	15	25	40	75	100	0	0	DILM95(RDC24)	239510	
115	160	37	55	70	10	25	25	40	50	100	125	0	0	DILM115(RDC24)	239555	
150	160	48	75	91	15	25	30	40	60	125	150	0	0	DILM150(RDC24)	239591	

UL/CSA pending for DILM80 – DILM150. Product available in Fall 2005. Contact your Moeller representative.

Ordering Instructions

1. Locate the desired contactor
2. Order using the Type & Article Number
3. See page 25 for a different coil voltage
4. See pages 15 - 22 for auxiliaries & accessories

❶ Positively-driven contacts with DILM7 to DILM32 between integrated auxiliary contact and auxiliary contact module, as well as within the auxiliary contact modules. Mirror contact with with DILM7-01 to DILM32-01, as well as in combination with auxiliary contact modules.

❷ Contact elements of the contactor to EN 50012.

❸ Coils not replaceable.

❹ Positively-driven contacts within the auxiliary contact module. Mirror contact in combination with auxiliary contact module. Combination of side-mounted and front auxiliary contact modules up to six auxiliary contacts possible.

❺ DC-operated contactors have an integrated surge suppressor.

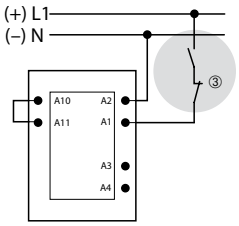
- Heavy duty contactors for demanding applications
- All contactors in this range feature electronically controlled magnet systems that dramatically reduces pick-up & seal-in, while increasing control voltage tolerance
- Direct connection to PLCs and low level input devices
- Large HP devices (from DILM580) are vacuum contactors, which increase electrical lifespan and decrease space requirements
- Built-in suppressor circuit for control protection

Three-pole Contactors with 110 to 250V AC or DC Electronic Coil *(185 to 1000 Amps)* ❶

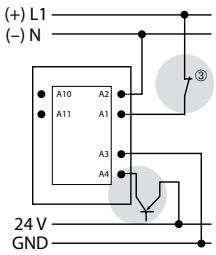
I_e [A]		Maximum Ratings for Three Phase Motors								Auxiliary Contacts		Type	Article Number	Price
		kW				UL / CSA HP								
		AC-3				Three Phase								
AC-3 (@400V)	AC-1	220 V 230 V	380 V 400 V	660 V 690 V	1000V	200 V	230 V	460 V	575 V	NO	NC			
185	275	55	90	175	108	50	60	125	150	2	2	**DILM185/22(RA250)**	**208193**	See green pages
225	315	70	110	215	108	60	75	150	200	2	2	**DILM225/22(RA250)**	**208197**	
250	350	75	132	240	108	75	100	200	250	2	2	**DILM250/22(RA250)**	**208201**	
300	400	90	160	286	132	100	125	250	300	2	2	**DILM300/22(RA250)**	**208205**	
400	500	125	200	344	132	125	150	300	400	2	2	**DILM400/22(RA250)**	**208209**	
500	700	155	250	344	132	150	200	400	500	2	2	**DILM500/22(RA250)**	**208213**	
580	800	185	315	560	600	200	200	400	600	2	2	**DILM580/22(RA250)** ❷	**208216**	
650	850	205	355	630	600	200	250	500	600	2	2	**DILM650/22(RA250)** ❷	**208219**	
750	900	240	400	720	800	250	300	600	700	2	2	**DILM750/22(RA250)** ❷	**208222**	
820	1000	260	450	750	800	290	350	700	860	2	2	**DILM820/22(RA250)** ❷	**208225**	
1000	1000	315	560	1000	1000	–	400	800	1000	2	2	**DILM1000/22(RA250)** ❷	**267214**	

Application Notes

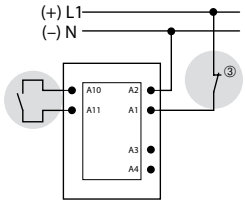
Conventional
A1/A2 are applied to voltage in the usual manner.



Direct from the PLC
A 24 V output from the PLC can be connected directly to connections A3/A4.



From low-consumption command devices
Command devices which can only be subject to minimal loads such as circuit board relays, control circuit devices or position switches can be connected directly to A10/A11.



Ordering Instructions

1 Locate the desired contactor

2 Order using the Type & Article Number

3 See page 24 for a different coil voltage

4 See pages 15 - 22 for auxiliaries & accessories

❶ Wide range coil: 110 – 250 V; 40-60Hz AC / DC.
660V, 690V or 1000V.
Do not reverse directly.

❷ When operating with frequency inverters or when performing a high-voltage test, the suppressor on the load side must be removed.

❸ Standstill in an emergency (Emergency Stop)

- Space-saving four-pole design reduces panel space and cost
- Dual box terminals make wiring safer and easier for cables with uneven cross-sections
- DC operated contactors have an integrated surge suppressor

Four Pole Contactors with 120V AC Coil ❶❷

I_e [A]		Maximum Ratings for Single and Three Phase Motors										Auxiliary Contacts		Type	Article Number	Price
		kW			UL / CSA HP											
		AC-3			Single Phase			Three Phase								
AC-3 (@400V)	AC-1	220 V 230 V	380 V 400V	660V 690V	115 V	200 V	230 V	200 V	230 V	460 V	575 V	NO	NC			
12	20	3.5	5.5	6.5	1/2	1	1½	3	3	5	7½	0	0	DILMP20(120V60HZ)	276970	See green pages
UL/CSA pending. Product available in Fall 2005. Contact your Moeller representative.																

Four Pole Contactors with 24V DC Coil ❶

I_e [A]		Maximum Ratings for Single and Three Phase Motors										Auxiliary Contacts		Type	Article Number	Price
		kW			UL / CSA HP											
		AC-3			Single Phase			Three Phase								
AC-3 (@400V)	AC-1	220 V 230 V	380 V 400V	660V 690V	115 V	200 V	230 V	200 V	230 V	460 V	575 V	NO	NC			
12	20	3.5	5.5	6.5	1/2	1	1½	3	3	5	7½	0	0	DILMP20(24VDC)	276985	See green pages
UL/CSA pending. Product available in Fall 2005. Contact your Moeller representative.																

Ordering Instructions

1. Locate the desired contactor
2. Order using the Type & Article Number
3. See pages 23 & 25 for different coil voltages
4. See pages 15 - 22 for auxiliaries & accessories

❶ Coil not replaceable.
❷ Standard coil is rated for 120V AC - 60Hz and 110V AC - 50Hz. See pages 23 & 25 for alternative coil voltages.

> Miniature, economical contactors for small motors and loads
> Approved for worldwide use
> High degree of climatic approvals and large ambient temperature range
> AC and DC operated versions available

Miniature Three Pole Contactors with 120V AC Coil ❶❷

I_e [A]		Maximum Ratings for Single and Three Phase Motors										Auxiliary Contacts		Type	Article Number	Price
		kW			UL / CSA HP											
		AC-3			Single Phase			Three Phase								
AC-3 (@400V)	AC-1	220 V 230 V	380 V 400 V	660 V 690 V	115 V	200 V	230 V	200 V	230 V	460 V	575 V	NO	NC			
9	20	2.2	4	4	1/2	1	1½	2	3	5	5	1	0	DILEM-10(120V60HZ)	051783	See green pages
9	20	2.2	4	4	1/2	1	1½	2	3	5	5	0	1	DILEM-01(120V60HZ)	051792	

Miniature Three Pole Contactors with 24V DC Coil ❶

I_e [A]		Maximum Ratings for Single and Three Phase Motors										Auxiliary Contacts		Type	Article Number	Price
		kW			UL / CSA HP											
		AC-3			Single Phase			Three Phase								
AC-3 (@400V)	AC-1	220 V 230 V	380 V 400 V	660 V 690 V	115 V	200 V	230 V	200 V	230 V	460 V	575 V	NO	NC			
9	20	2.2	4	4	1/2	1	1½	2	3	5	5	1	0	DILEM-10-G(24VDC)	010213	See green pages
9	20	2.2	4	4	1/2	1	1½	2	3	5	5	0	1	DILEM-01-G(24VDC)	010343	

Ordering Instructions

1. Locate the desired contactor
2. Order using the Type & Article Number
3. See page 26 for a different coil voltage
4. See pages 15 - 22 for auxiliaries & accessories

❶ Coil not replaceable.
❷ Standard coil is rated for 120V AC - 60Hz and 110V AC - 50Hz. See page 26 for alternative coil voltages.

- Miniature, economical four-pole contactors
- Approved for worldwide use
- High degree of climatic approvals and large ambient temperature range
- AC and DC versions available

Miniature Four Pole Contactors with 120V AC Coil ❶❷

I_e [A]		Maximum Ratings for Single and Three Phase Motors										Auxiliary Contacts		Type	Article Number	Price
		kW			UL / CSA HP											
		AC-3			Single Phase			Three Phase								
AC-3 (@400V)	AC-1	220 V 230 V	380 V 400V	660V 690V	115 V	200 V	230 V	200 V	230 V	460 V	575 V	NO	NC			
12	20	2.2	4	4	1/2	1	1½	2	3	5	5	0	0	DILEM4(120V60HZ)	051801	See green pages

Miniature Four Pole Contactors with 24V DC Coil ❶

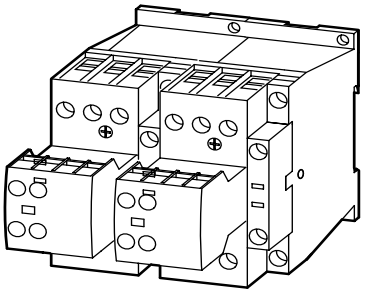
I_e [A]		Maximum Ratings for Single and Three Phase Motors										Auxiliary Contacts		Type	Article Number	Price
		kW			UL / CSA HP											
		AC-3			Single Phase			Three Phase								
AC-3 (@400V)	AC-1	220 V 230 V	380 V 400V	660V 690V	115 V	200 V	230 V	200 V	230 V	460 V	575 V	NO	NC			
12	20	2.2	4	4	1/2	1	1½	2	3	5	5	0	0	DILEM4-G(24VDC)	012701	See green pages

Ordering Instructions

1. Locate the desired contactor
2. Order using the Type & Article Number
3. See page 26 for a different coil voltage
4. See pages 15 - 22 for auxiliaries & accessories

❶ Coil not replaceable.
❷ Standard coil is rated for 120V AC - 60Hz and 110V AC - 50Hz. See page 26 for alternative coil voltages.

- Space-saving design reduces panel space and cost
- Units are pre-assembled with electrical and mechanical interlocks
- Ingenious mechanical interlock adds no additional space
- Dual box terminals make wiring safer and easier for cables with uneven cross-sections



Reversing Contactor Combinations with120V AC Coil ❶❷❺

I_e [A]	Maximum Ratings for Three Phase Motors							Auxiliary Contacts		Type	Article Number	Price
	kW											
	AC-3			Three Phase								
AC-3 (@400V)	220 V 230 V	380 V 400 V	660 V 690 V	200 V	230 V	460 V	575 V	NO	NC			
7	2.2	3	3.5	1½	2	3	5	2	1	DILM7/21(120V60HZ) ❸	278058	See green pages
9	2.5	4	4.5	3	3	5	7½	2	1	DILM9/21(120V60HZ) ❸	278083	
12	3.5	5.5	6.5	3	3	10	10	2	1	DILM12/21(120V60HZ) ❸	278108	
18	5	7.5	11	5	5	10	15	2	1	DILM17/21(120V60HZ) ❸	278133	
25	7.5	11	14	7½	7½	15	20	2	1	DILM25/21(120V60HZ)	278158	
32	10	15	17	10	10	20	25	2	1	DILM32/21(120V60HZ)	278183	
40	12.5	18.5	23	10	15	30	40	1	1	DILM40/11(120V60HZ) ❹	278208	
50	15.5	22	30	15	20	40	50	1	1	DILM50/11(120V60HZ) ❹	278233	
65	20	30	35	20	25	50	60	1	1	DILM65/11(120V60HZ) ❹	278258	

Note: Larger sizes available. Contact your Moeller representative.

Ordering Instructions

1. Locate the desired contactor
2. Order using the Type & Article Number
3. See page 28 for a different coil voltage
4. See pages 15 - 22 for auxiliaries & accessories

❶ Positively-driven contacts with DILM7 to DILM32 between integrated auxiliary contact and auxiliary contact module, as well as within the auxiliary contact modules. Mirror contact with with DILM7-01 to DILM32-01, as well as in combination with auxiliary contact modules.

❷ Contact elements of the contactor to EN 50012.

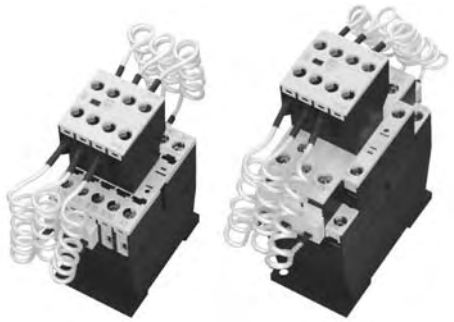
❸ Coils not replaceable.

❹ Positively-driven contacts within the auxiliary contact module. Mirror contact in combination with auxiliary contact module. Combination of side-mounted and front auxiliary contact modules up to six auxiliary contacts possible.

❺ Standard coil is rated for 120V AC - 60Hz and 110V AC - 50Hz. See page 28 for alternative coil voltages.

> Economical solution for both individual and group power factor correction applications

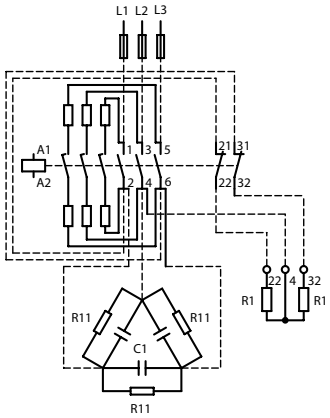
> Special weld resistant contact material ensures longer life



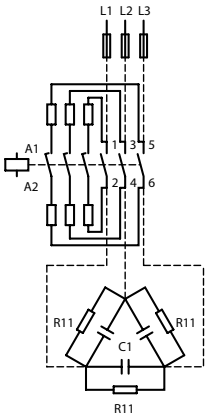
With Series Resistors

Three-Phase Capacitors 50 – 60 Hz			Auxiliary Contacts		Type	Article Number	Price
240 V kvar	480 V kvar	600 V kvar	NO	NC			
6	12	15	1	1	DIL00MK-11(120V60HZ)	047020	See green pages
6	12	15	0	2	DIL00MK-02(120V60HZ)	047031	
10	20	25	1	0	DIL0MK-10(120V60HZ)	047042	
15	25	36	1	0	DIL1MK-10(120V60HZ)	047052	
25	45	60	1	0	DIL2MK-10(120V60HZ)	047062	

Circuit With Quick Discharge Resistor



Circuit Without Quick Discharge Resistor



Application Note

In the case of group compensation, multi-stage capacitor banks are connected to the main supply as required. In the process, transient currents of up to 180 x I_e can 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 uninterrupted current.

Moeller's Capacitor Switching Contactors are weld-resistant with inrush current peaks up to 180 x I_e due to their special contact material.

Through the use of quick-discharge resistors, the danger of complete polarity reversal in the event of rapidly recurring closure can be excluded. The resultant discharge times are 0.2 s. The resistor is switched by means of two auxiliary contacts of the contactor.

Ordering Instructions

1 Locate the desired contactor

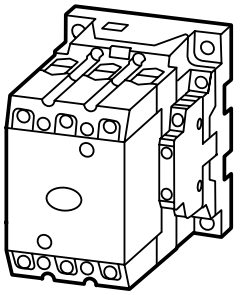
2 Order using the Type & Article Number

3 See page 27 for a different coil voltage

4 See pages 15 - 22 for auxiliaries & accessories

> Economical solution for both individual and group power factor correction applications

> Special weld resistant contact material ensures longer life



Without Series Resistors

Three-Phase Capacitors 50 – 60 Hz			Auxiliary Contacts		Type	Article Number	Price
240 V kvar	480 V kvar	600 V kvar	NO	NC			
30	60	75	2	2	DIL3MK72/22(120V60HZ)	209974	See green pages

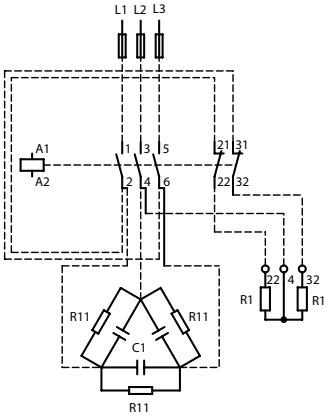
Application Note

In the case of group compensation multi-stage capacitor banks are connected to the main supply, as required. In the process, transient currents of up to 180 x I_e can flow between the capacitors.

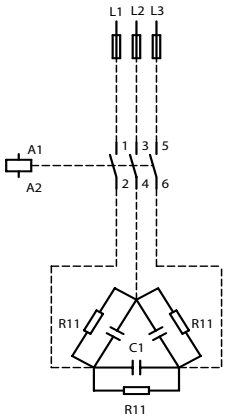
The contactors for capacitor are weld-resistant with inrush current peaks up to 180 x I_e due to their special contacts.

Through the use of quick-discharge resistors, the danger of complete polarity reversal in the event of rapidly recurring closure can be excluded. The resultant discharge times are 0.2 s. The resistor is switched by means of two auxiliary contacts of the contactor.

Circuit With Quick Discharge Resistor



Circuit Without Quick Discharge Resistor



Ordering Instructions

1. Locate the desired contactor
2. Order using the Type & Article Number
3. See page 27 for a different coil voltage
4. See pages 15 - 22 for auxiliaries & accessories

Auxiliary Contact Modules *(for DILM7 to DILM32 Contactors)* ❶❷

Auxiliary	NO	NC	Contact Sequence	For use with...	Type	Article Number	Price
Top Mount - Standard Terminal Markings							
	1	1		DILM7-10... to DILM32-10... ❸	DILM32-XHI11	277376	See green pages
	0	2			DILM32-XHI02	277375	
	2	2			DILM32-XHI22	277377	
Top Mount - Alternative Terminal Markings							
	2	0		DILM7... to DILM32...	DILA-XHI20	276422	See green pages
	1	1			DILA-XHI11	276421	
	0	2			DILA-XHI02	276420	
	1EM ❹	1LB ❹			DILA-XHIV11	276423	
	4	0			DILA-XHI40	276428	
	3	1			DILA-XHI31	276427	
	2	2			DILA-XHI22	276426	
	1	3			DILA-XHI13	276425	
	0	4			DILA-XHI04	276424	
	1 + 1EM ❹	1 + 1LB ❹			DILA-XHIV22	276429	

❶ All auxiliary contacts are positively driven except . . . XHIV. . . .

❷ DILM-7 to DILM-32 contactors include a built-in one pole auxiliary contact. Additional auxiliaries are top-mount only.

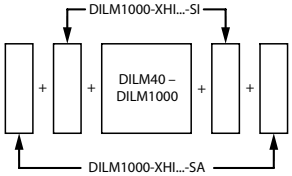
❸ The 2 and 4 pole DILM32-XHI... auxiliary contact modules cannot be combined with DILM...-01 contactors.

❹ EM = Early Make
LB = Late Break

Auxiliary Contact Modules *(for DILM40 to DILM1000 Contactors)* ❶

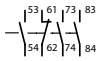
Auxiliary	NO	NC	Contact Sequence	For use with...	Type	Article Number	Price
Top Mount - Standard Terminal Markings							
	2	0		DILM40... to DILM150...	DILM150-XHI20	277945	See green pages
	1	1			DILM150-XHIA11	283463	
	1	1			DILM150-XHI11	277946	
	0	2			DILM150-XHI02	277947	
	4	0			DILM150-XHI40	277948	
	3	1			DILM150-XHI31	277949	
	2	2			DILM150-XHI22	277950	
	2	2			DILM150-XHIA22	283464	
	1	3			DILM150-XHI13	277951	
	0	4			DILM150-XHI04	277952	
	1 + 1EM ❸	1 + 1LB ❸			DILM150-XHIV22	277953	
Side Mount - Standard Terminal Markings							
	1	1		DILM40... to DILM1000...	DILM1000-XHI11-SI ❷	278425	See green pages
	1EM ❸	1LB ❸			DILM1000-XHIV11-SI ❷	278426	
Side Mount - Alternative Terminal Markings							
	1	1		DILM80... to DILM1000...	DILM1000-XHI11-SA ❷	278427	See green pages

Auxiliary contact module fitting options



❶ All auxiliary contacts are positively driven except . . . XHIV. . . .
❷ Replaces DILM820-XHI11-...
❸ EM = Early Make
LB = Late Break

Auxiliary Contact Modules *(for DILEM Miniature Contactors)* ❶❷

Auxiliary	NO	NC	Contact Sequence	For use with...	Type	Article Number	Price
Top Mount - Standard Terminal Markings							
	0	2		DILEM-10(-G)... DILEM-4(-G)...	02DILEM	010064	See green pages
	1	1			11DILEM	010080	
	2	2			22DILEM	010112	
Top Mount - Alternative Terminal Markings							
	0	2		DILEM-10(-G)... DILEM-01(-G)... DILEM-4(-G)...	02DILE	010240	See green pages
	1	1			11DILE	010224	
	2	0			20DILE	010208	
	1EM ❸	1LB ❸			11DDILE	049824	
	0	4			04DILE	010256	
	1	3			13DILE	002397	
	2	2			22DILE	010288	
	3	1			31DILE	048912	
	4	0			40DILE	010304	
	1 + 1EM ❸	1 + 1LB ❸			22DDILE	049823	

❶ DILE Terminal Markings comply with European Standards EN 50005 while DILEM Terminal Markings comply with EN 50005 and EN 50012.

❷ Auxiliary Contact Modules have interlocked opposing contacts (does not apply to early-make or late-break contacts).

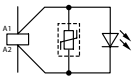
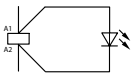
❸ EM = Early Make
LB = Late Break

Suppressors and Voltage Indicator ❶

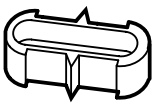
Suppressor / Voltage Indicator	Notes	Voltage	Schematic	For use with...	Type	Article Number	Price
RC Suppressors ❶							
	For AC operated contactors (50-60 Hz). Please be aware that RC Suppressors can cause a drop-out delay.	24 – 48		DILEM	**RCDILE48**	**044264**	See green pages
		110 – 250			**RCDILE250**	**046320**	
	For AC operated contactors (50-60 Hz). DC operated Contactors have an integrated suppressor. Please be aware that Suppressors can cause a drop-out delay.	24 – 48		DILM7 – DILM12 DILMP20	**DILM12-XSPR48**	**281199**	
		110 – 240			**DILM12-XSPR240**	**281200**	
		240 – 500			**DILM12-XSPR500**	**281201**	
		24 – 48		DILM17 – DILM32	**DILM32-XSPR48**	**281202**	
		110 – 240			**DILM32-XSPR240**	**281203**	
		240 – 500			**DILM32-XSPR500**	**281204**	
		24 – 48		DILM40 – DILM95	**DILM95-XSPR48**	**281205**	
		110 – 240			**DILM95-XSPR240**	**281206**	
		240 – 500			**DILM95-XSPR500**	**281207**	
Varistor Suppressors ❶							
	For AC operated Contactors (50-60 Hz). DC operated Contactors have an integrated suppressor.	24 – 48		DILEM	**VGDILE48**	**010320**	See green pages
		110 – 250			**VGDILE250**	**010336**	
		380 – 415			**VGDILE415**	**010463**	
	For AC operated Contactors (50-60 Hz). DC operated Contactors have an integrated suppressor.	24 – 48		DILM7 – DILM12 DILMP20	**DILM12-XSPV48**	**281208**	
		48 – 130			**DILM12-XSPV130**	**281209**	
		130 – 240			**DILM12-XSPV240**	**281210**	
		240 – 500			**DILM12-XSPV500**	**281211**	
		24 – 48		DILM17 – DILM32	**DILM32-XSPV48**	**281212**	
		48 – 130			**DILM32-XSPV130**	**281213**	
		130 – 240			**DILM32-XSPV240**	**281214**	
		240 – 500			**DILM32-XSPV500**	**281215**	
		24 – 48		DILM40 – DILM95	**DILM95-XSPV48**	**281216**	
		48 – 130			**DILM95-XSPV130**	**281217**	
		130 – 240			**DILM95-XSPV240**	**281218**	
		240 – 500			**DILM95-XSPV500**	**281219**	

❶ RC Suppressor and Varistor Suppressor cannot be used at the same time.

Suppressors and Voltage Indicator *(continued)* ❶

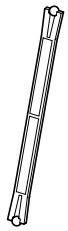
Suppressor / Voltage Indicator	Notes	Voltage	Schematic	For use with...	Type	Article Number	Price
Varistor Suppressor with Integrated LED ❶							
	For AC operated Contactors (50-60 Hz). DC operated Contactors have an integrated suppressor.	24 – 48		DILM7 – DILM12 DILMP20	**DILM12-XSPVL48**	**281220**	See green pages
		130 – 240			**DILM12-XSPVL240**	**281221**	
		24 – 48		DILM17 – DILM32	**DILM32-XSPVL48**	**281222**	
		130 – 240			**DILM32-XSPVL240**	**281223**	
		24 – 48		DILM40 – DILM95	**DILM95-XSPVL48**	**281224**	
		130 – 240			**DILM95-XSPVL240**	**281225**	
Voltage Indicator							
	Indicates presence of control voltage. For AC operated Contactors (50-60 Hz).	24 – 48		DILM7 – DILM12 DILMP20	**DILM12-XSPI48**	**285251**	See green pages
		48 – 130			**DILM12-XSPI130**	**285252**	
		130 – 250			**DILM12-XSPI250**	**285253**	
		24 – 48		DILM17 – DILM32	**DILM32-XSPI48**	**285254**	
		48 – 130			**DILM32-XSPI130**	**285255**	
		130 – 250			**DILM32-XSPI250**	**285256**	
		24 – 48		DILM40 – DILM150	**DILM150-XSPI48**	**285257**	
		48 – 130			**DILM150-XSPI130**	**285258**	
		130 – 250			**DILM150-XSPI250**	**285259**	

Connectors

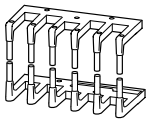
Connector	Notes	For use with...	Type	Article Number	Price
	Provides a mechanical link when coupling two contactors together. Distance between Contactors = 0 mm	DILEM	**VODILE**	**026634**	See green pages
		DILM7 – DILM65	**DILM32-XVB**	**281227**	
		DILM80 – DILM150	**DILM150-XVB**	**281226**	

❶ RC Suppressor and Varistor Suppressor cannot be used at the same time.

Mechanical Interlocks

Mechanical Interlocks	Notes	For use with...	Type	Article Number	Price
	For two contactors with AC or DC operated magnet systems. Distance between Contactors = 0 mm. Mechanical Lifespan = 2.5 x 10^6 operations. Additional auxiliary contact modules can be fitted.	DILEM	**MVDILE**	**010113**	See green pages
	For two contactors with AC or DC operated magnet systems. Distance between Contactors = 0 mm. Mechanical Lifespan = 2.5 x 10^6 operations. Additional auxiliary contact modules can be fitted.	DILM7 – DILM12 DILMP20	**DILM12-XMV**	**281196**	
		DILM17 –DILM32	**DILM32-XMV**	**281197**	
		DILM40 – DILM65	**DILM65-XMV**	**281198**	
		DILM80 – DILM150	**DILM150-XMV**	**240081**	
	For two contactors with the same or different magnetic systems. Mechanical lifespan 5 x 10^6 operations. No auxiliary contact is possible between the mechnical interlock and contactor. Combination with same frame size only. Distance between contactors: 15 mm	DILM185 – DILM500	**DILM500-XMV**	**208289**	
	For two contactors with the same or different magnetic systems. Mechanical lifespan 5 x 10^6 operations. No auxiliary contact is possible between the mechnical interlock and contactor. DILM820-XMV consists of interlock element and mounting support plate.	DILM580 – DILM1000	**DILM820-XMV**	**208288**	

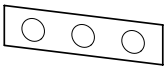
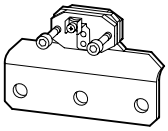
Reversing Kits

Reversing Kits	Notes	For use with...	Type	Article Number	Price
	Consisting of one 3-pole paralleling link with control bridge and reversing link with A2 bridge.	DILEM (+MVDILEM)	**MVS-WB-EM**	**220209**	See green pages
	In addition to the electrical interlock, the following control connections are integrated: • K1M: A1 – K2M: 21 • K1M: 21 – K2M: A1 • K1M: A2 – K2M: A1	DILM7/9/12 mains DILM7/9/12 delta DILM7/9/12 star	**DILM12-XRL**	**283108**	See green pages
		DILM17/25/32 mains DILM17/25/32 delta DILM17/25/32 star	**DILM32-XRL**	**283109**	

Star-Delta Wiring Kits

Star-Delta Wiring Kit	Notes	For use with...	Type	Article Number	Price
	The following control cables are integrated in addition to electrical interlock: • K3M: A1 – K5M: 21 • K3M: 21 – K5M: A1 • K3M: A2 – K5M: A1	DILM7/9/12 mains DILM7/9/12 delta DILM7/9/12 star	**DILM12-XSL**	**283130**	See green pages
		DILM17/25/32 mains DILM17/25/32 delta DILM17/25/32 star	**DILM32-XSL**	**283131**	

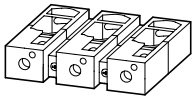
Bridges

Bridges	Notes	For use with...	Type	Article Number	Price
Star-Point Bridges					
	Finger-safe (in accordance with IEC 536).	DILEM	**S1DILEM**	**220218**	See green pages
		DILM7 – DILM12	**DILM12-XS1**	**281190**	
		DILM17 – DILM32	**DILM32-XS1**	**281191**	
		DILM40 – DILM65	**DILM65-XS1**	**281192**	
	A cover is included for protection against accidental contact.	DILM185 – DILM400	**DILM400-XS1**	**208291**	
		DILM500	**DILM500-XS1**	**208290**	
Paralleling Bridges ***(Consisting of two paralleling links)***					
	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 IEC 536).	DILEM	**P1DILEM**	**019095**	See green pages
	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 IEC 536). *Terminal capacity can be found in the Technical Data section.*	DILM7 – DILM12	**DILM12-XP1**	**281193**	
		DILM17 – DILM32	**DILM32-XP1**	**281194**	
		DILM40 – DILM65	**DILM65-XP1**	**281195**	
	3-pole AC-1 current carrying capacity of the open Contactor increases by a factor of 2.5. A cover is included for protection against accidental contact.	DILM185	**DILM185-XP1**	**208292**	

Connection Tabs

For Fast-On Connectors	Notes	For use with...	Type	Article Number	Price
	1 x 6.3 x 0.8 or 2 x 2.8 x 0.8 mm For auxiliary contact and coil connections. Use connectors with insulated sleeves. Standard quantity: 100 *Must be ordered in standard quantity.*	DILEM DILM185 – DILM1000	**BT483**	**059904**	See green pages
		DILM185 – DILM1000	**BT2571**	**062276**	

Terminal Blocks and Kits

Terminal Blocks & Kits	Notes	For use with...	Type	Article Number	Price
Cable Terminal Blocks					
	For cable connection. Single or double cables may be connected. *See Technical Data for terminal capacity.*	DILM185 DILM225	**DILM225-XKU-S**	**208294**	See green pages
		DILM250 – DILM400	**DILM400-XKU-S**	**208293**	
	Consists of three individual terminals (Cu, Al), with integrated control circuit terminal. Terminal cover included. Terminal capacity: 2 X (AWG4 to MCM500)	DILM500/22	**DILM500-XK-CNA**	**232192**	
	Consists of three individual terminals (Cu, Al), with integrated control circuit terminal. Terminal cover included. Terminal capacity: 2 X (AWG2 to MCM500)	DILM580/22 DILM650/22	**DILM650-XK-CNA**	**232193**	
	Consists of three individual terminals (Cu, Al). Terminal capacity: 4 X (AWG2 to MCM500)	DILM750/22 DILM820/22	**DILM820-XK-CNA**	**232194**	
Flat Strip Conductor Terminal Kit (with Control Circuit Terminal consisting of 3 Flat Strip Conductor Terminals)					
	For bus and flexibus connection. *See Technical Data for terminal capacity.*	DILM500 – DILM650	**DILM650-XKB-S**	**208296**	See green pages
		DILM750 DILM820	**DILM820-XKB-S**	**208295**	

Covers

Covers	Notes	For use with...	Type	Article Number	Price
Sealable Shrouds					
	Cover snap-mounts onto the device and can be sealed to prevent tampering.	DILEM	**HDILE**	**010482**	See green pages
Terminal Cover					
	Protection against shock hazards and accidental contact.	DILM185 – DILM400	**DILM400-XHB**	**208287**	See green pages
		DILM500	**DILM500-XHB**	**208286**	
		DILM580 – DILM650	**DILM650-XHB**	**208285**	
		DILM750 – DILM1000	**DILM820-XHB**	**208284**	

DILM7 – DILM150 Contactors

Type	Standard AC Coil Voltages							Special Order Voltages	Price
	24V 60HZ	42V 50HZ 48V 60HZ	110V 50HZ 120V 60HZ	208V 60HZ	230V 50HZ 240V 60HZ	415V 50HZ 480V 60HZ	600V 60HZ	12 – 600V 50 - 60 Hz	
	Complete the Type Number by adding the following voltage suffix								
	…(24V 60HZ)	…(48V 60HZ)	…(120V 60HZ)	…(208V 60HZ)	…(240V 60HZ)	…(480V 60HZ)	…(600V 60HZ)		
DILM7-01…	276576	276581	276582	276579	276585	276588	276580	Any coil voltage between 12 and 600V available by special order. Contact your Moeller representative for information.	See green pages
DILM7-10…	276541	276546	276547	276544	276550	276553	276545		
DILM9-01…	276716	276721	276722	276719	276725	276728	276720		
DILM9-10…	276681	276686	276687	276684	276690	276693	276685		
DILM12-01…	276856	276861	276862	276859	276865	276868	276860		
DILM12-10…	276821	276826	276827	276824	276830	276833	276825		
DILMP20…	276961	276966	276967	276964	276970	276973	276965		
DILM17-01…	277027	277032	277033	277030	277036	277039	277031		
DILM17-10..	276995	277000	277001	276998	277004	277007	276999		
DILM25-01…	277155	277160	277161	277158	277164	277167	277159		
DILM25-10…	277123	277128	277129	277126	277132	277135	277127		
DILM32-01…	277283	277288	277289	277286	277292	277295	277287		
DILM32-10…	277251	277256	277257	277254	277260	277263	277255		
DILM40…	277757	277762	277763	277760	277766	277769	277761		
DILM50…	277821	277826	277827	277824	277830	277833	277825		
DILM65…	277885	277890	277891	277888	277894	277897	277889		
DILM80…	239377	239394	239399	239384	239402	239405	239389		
DILM95…	239471	239476	239477	239474	239480	239483	239475		

Type	Standard AC Voltages						Price
	24V 50/60HZ	42 – 48V 50 – 60HZ	110 – 120V 50 – 60HZ	190 – 240V 50 – 60HZ	380 – 440V 50 – 60HZ	480 – 500V 50 – 60HZ	
	Complete the Type Number by adding the following voltage suffix						
	…(RAC 24)	…(RAC 48)	…(RAC 120)	…(RAC 240)	…(RAC 440)	…(RAC 500)	
DILM115…	239545	239546	239547	239548	239549	239550	See green pages
DILM150…	239585	239586	239587	239588	239589	239590	

Note: Other standard coil voltages available. Contact your Moeller representative.

Ordering Instructions

All Moeller AC contactors are cataloged with a standard 120V, 60Hz coil. To order a contactor with an alternative coil voltage:

- ★ *Select a properly sized contactor from pages 6 & 9.*
- ★ *Return to this page and locate the contactor in the tables above. Example: DILM7-01…*
- ★ *Select the desired alternative coil voltage along the top of the chart and complete the "Type" Number. Example: DILM7-01(24V 60Hz).*
- ★ *Note the Article Number for the completed contactor: DILM7-01(24V 60Hz) = 276576*
- ★ *Order using both the Type Number and the Article Number.*

DILM185 – DILM1000 Contactors

Type	Standard Coil Voltages				Price
	24 - 48V DC	48 – 110V AC; 40-60Hz 48 - 110V DC	110 – 250V AC; 40-60Hz 110 - 250V DC	250 – 500V AC: 40-60Hz	
	Complete the Type Number by adding the following voltage suffix				
	…(RDC48)	…(RA110)	…(RA250)	…(RAC500)	
DILM185/22…	208191	208192	208193	208194	See green pages
DILM225/22…	208195	208196	208197	208198	
DILM250/22…	208199	208200	208201	208202	
DILM300/22…	208203	208204	208205	208206	
DILM400/22…	208207	208208	208209	208210	
DILM500/22…	208211	208212	208213	208214	
DILM580/22…	–	208215	208216	208217	
DILM650/22…	–	208218	208219	208220	
DILM750/22…	–	208221	208222	208223	
DILM820/22…	–	208224	208225	208226	
DILM1000/22…	–	267213	267214	271990	

Ordering Instructions

All large horsepower contactors are cataloged with a standard wide range electronic coil, good for both AC and DC applications. To order a contactor with an alternative coil voltage:

- ★ *Select a properly sized contactor from page 8.*
- ★ *Return to this page and locate the contactor in the tables above. Example: DILM185/22…*
- ★ *Select the desired alternative coil voltage along the top of the chart and complete the "Type" Number. Example: DILM185/22(RDC 48).*
- ★ *Note the Article Number for the completed contactor: DILM185/22(RDC48) = 208191*
- ★ *Order using both the Type Number and the Article Number.*

DILM7 – DILM150 Contactors

Type	Standard DC Coil Voltages						Special Order Voltages	Price
	24V DC	48V DC	24 - 27V DC	48 - 60V DC	110 - 130V DC	200 - 240V DC	12 – 250V DC	
	Complete the Type Number by adding the following voltage suffix							
	…(24VDC)	…(48VDC)	…(RDC24)	…(RDC60)	…(RDC130)	…(RDC240)		
DILM7-01…	276600	276601	–	–	–	–	Any coil voltage between 12 and 250V available by special order. Contact your Moeller representative for information.	See green pages
DILM7-10…	276565	276566	–	–	–	–		
DILM9-01…	276740	276741	–	–	–	–		
DILM9-10…	276705	276706	–	–	–	–		
DILM12-01…	276880	276881	–	–	–	–		
DILM12-10…	276845	276846	–	–	–	–		
DILMP20…	276985	276986	–	–	–	–		
DILM17-01…	–	–	277050	277051	277052	277053	–	
DILM17-10..	–	–	277018	277019	277020	277021	–	
DILM25-01…	–	–	277178	277179	277180	277181	–	
DILM25-10…	–	–	277146	277147	277148	277149	–	
DILM32-01…	–	–	277306	277307	277308	277309	–	
DILM32-10…	–	–	277274	277275	277276	277277	–	
DILM40…	–	–	277780	277781	277782	277783	–	
DILM50…	–	–	277844	277845	277846	277847	–	
DILM65…	–	–	277908	277909	277910	277911	–	
DILM80…	–	–	239416	239417	239418	239419	–	
DILM95…	–	–	239510	239511	239512	239513	–	
DILM115…	–	–	239555	239560	239567	239572	–	
DILM150…	–	–	239591	239592	239593	239594	–	

Note: Other standard coil voltages available. Contact your Moeller representative.

Ordering Instructions

All Moeller DC contactors are cataloged with a standard 24V coil. To order a contactor with an alternative coil voltage:

- ★ *Select a properly sized contactor from pages 7 & 9.*
- ★ *Return to this page and locate the contactor in the tables above. Example: DILM7-01…*
- ★ *Select the desired alternative coil voltage along the top of the chart and complete the "Type" Number. Example: DILM7-01(48V DC).*
- ★ *Note the Article Number for the completed contactor: DILM7-01(24V 60Hz) = 276600*
- ★ *Order using both the Type Number and the Article Number.*

DILEM Miniature Contactors

Type	Standard AC Coil Voltages							Price
	24V 60HZ	42V 50HZ 48V 60HZ	110V 50HZ 120V 60HZ	208V 60HZ	230V 50HZ 240V 60HZ	415V 50HZ 480V 60HZ	600V 60HZ	
	Complete the Type Number by adding the following voltage suffix.							
	…(24V 60HZ)	…(48V 60HZ)	…(120V 60HZ)	…(208V 60HZ)	…(240V 60HZ)	…(480V 60HZ)	…(600V 60HZ)	
DILEM-10...	010006	051782	051783	210256	051786	051789	010197	See green pages
DILEM-01...	010134	051791	051792	227914	051795	051798	010327	
DILEM4...	014776	051800	051801	–	051804	051807	–	

Note: Other standard coil voltages available. Contact your Moeller representative.

Type	Standard DC Coil Voltages						Price
	12V DC	24V DC	48V DC	60V DC	110V DC	220V DC	
	Complete the Type Number by adding the following voltage suffix						
	…(12VDC)	…(24VDC)	…(48VDC)	…(60VDC)	…(110VDC)	…(220VDC)	
DILEM-10-G...	079594	010213	010245	010293	010309	010325	See green pages
DILEM-01-G...	079642	010343	010496	010040	010136	010168	
DILEM4-G...	079680	012701	012811	012844	013166	013194	

Note: Other standard coil voltages available. Contact your Moeller representative.

Ordering Instructions

All Moeller AC contactors are cataloged with a standard 120V 60Hz coil. All DC contactors are cataloged with a standard 24V coil. To order a contactor with an alternative coil voltage:

- ★ *Select a properly sized contactor from page 10.*
- ★ *Return to this page and locate the contactor in the tables above. Example: DILEM-10…*
- ★ *Select the desired alternative coil voltage along the top of the chart and complete the "Type" Number. Example: DILEM-10(24V 60Hz).*
- ★ *Note the Article Number for the completed contactor: DILEM-10(24V 60Hz) = 010006*
- ★ *Order using both the Type Number and the Article Number.*

Contactors for Three-Phase Capacitors

Type	Standard AC Coil Voltages					Price
	24V 60HZ	42V 50HZ 48V 60HZ	110V 50HZ 120V 60HZ	230V 50HZ 240V 60HZ	415V 50HZ 480V 60HZ	
	Complete the Type Number by adding the following voltage suffix					
	…(24V 60HZ)	…(48V 60HZ)	…(120V 60HZ)	…(240V 60HZ)	…(480V 60HZ)	
DIL00MK-11...	059794	047019	047020	047023	047026	See green pages
DIL00MK-02...	076733	047030	047031	047034	047037	
DIL0MK-10...	017083	047041	047042	047045	047048	
DIL1MK-10...	081154	047051	047052	047055	047058	
DIL2MK-10...	040814	047061	047062	047065	047068	
DIL3MK72/22...	209971	209973	209974	209977	209980	

Note: Other standard coil voltages available. Contact your Moeller representative.

Ordering Instructions

All Moeller AC contactors are cataloged with a standard 120V 60Hz coil. To order a contactor with an alternative coil voltage:

- ★ *Select a properly sized contactor from pages 13 & 14.*
- ★ *Return to this page and locate the contactor in the tables above. Example: DIL00MK-11…*
- ★ *Select the desired alternative coil voltage along the top of the chart and complete the "Type" Number. Example: DIL00MK-11(24V 60Hz).*
- ★ *Note the Article Number for the completed contactor: DIL00MK-11(24V 60Hz) = 059794*
- ★ *Order using both the Type Number and the Article Number.*

Reversing Contactor Combinations

Type	Standard AC Coil Voltages						Special Order Voltages	Price
	24V 60HZ	42V 50HZ 48V 60HZ	110V 50HZ 120V 60HZ	208V 60HZ	230V 50HZ 240V 60HZ	415V 50HZ 480V 60HZ	12 – 600V 50 - 60 Hz	
	Complete the Type Number by adding the following voltage suffix							
	…(24V 60HZ)	…(48V 60HZ)	…(120V 60HZ)	…(208V 60HZ)	…(240V 60HZ)	…(480V 60HZ)		
DIULM7/21…	278054	278057	278058	283351	278061	278064	Any coil voltage between 12 and 600V available by special order. Contact your Moeller representative for information.	See green pages
DIULM9/21…	278079	278082	278083	283353	278086	278089		
DIULM12/21…	278104	278107	278108	283355	278111	278114		
DIULM17/21…	278129	278132	278133	283357	278136	278139		
DIULM25/21…	278154	278157	278158	283359	278161	278164		
DIULM32/21…	278179	278182	278183	283361	278186	278189		
DIULM40/11…	278204	278207	278208	283362	278211	278214		
DIULM50/11…	278229	278232	278233	283363	278236	278239		
DIULM65/11…	278254	278257	278258	283364	278261	278264		

Note: Other standard coil voltages available. Contact your Moeller representative.

Ordering Instructions

All Moeller AC contactors are cataloged with a standard 120V 60Hz coil. To order a contactor with an alternative coil voltage:

- ★ *Select a properly sized contactor from page 12.*
- ★ *Return to this page and locate the contactor in the tables above. Example: DIULM7/21…*
- ★ *Select the desired alternative coil voltage along the top of the chart and complete the "Type" Number. Example: DIULM7/21(24V 60Hz).*
- ★ *Note the Article Number for the completed contactor: DIULM7/21(24V 60Hz) = 278054*
- ★ *Order using both the Type Number and the Article Number.*

DILM Individual Coils

AC Coil Voltage Suffix (Numbers in bold indicate standard coil voltages)	For Use With Contactor…			
	DILEM…	–	–	–
	DILM7 – 12	DILM17 – 32	DILM40 – 65	DILM80 – 150
	DIULM7 – 12	DIULM17 – 32	DIULM40 – 65	–
	DILMP20	–	–	–
	Complete the Type Number below by adding the voltage suffix			
	–	**DILM32-XSP…**	**DILM65-XSP…**	**DILM150-XSP…**
…(24V 50HZ)	Cannot replace coil	281130	281160	Product available Fall 2005. Contact your Moeller representative.
…(48V 50HZ)		281131	281161	
…(240V 50HZ)		281132	281162	
…(500V 50HZ)		281133	281163	
…(24V 60HZ)		281134	281164	
…(110V 60HZ)		281135	281165	
…(115V 60HZ)		281136	281166	
…(208V 60HZ)		283377	283379	
…(600V 60HZ)		283378	283380	
…(42V 50HZ, 48V 60HZ)		281137	281167	
…(110V 50HZ, 120V 60HZ)		281138	281168	
…(190V 50HZ, 220V 60HZ)		281139	281169	
…(220V 50HZ, 240V 60HZ)		281140	281170	
…(230V 50HZ, 240V 60HZ)		281141	281171	
…(380V 50HZ, 440V 60HZ)		281142	281172	
…(400V 50HZ, 440V 60HZ)		281143	281173	
…(415V 50HZ, 480V 60HZ)		281144	281174	
…(24V 50/60HZ)		281145	281175	
…(42V 50/60HZ)		281146	281176	
…(110V 50/60HZ)		281147	281177	
…(220V 50/60HZ)		281148	281178	
…(230V 50/60HZ)		281149	281179	
…(380V 50/60HZ)		281150	281180	
Price	See green pages			

DILM185 to 1000 Contactors *(Electronic Modules including coil)*

AC & DC Coil Voltages	Voltage Suffix	For Use With Contactor…			
		DILM185 – 250	DILM300 – 500	DILM580 – 820	DILM1000
		Complete the Type Number below by adding the voltage suffix			
		DILM250-XSP/E…	**DILM500-XSP/E…**	**DILM820-XSP/E…**	**DILM1000-XSP/E…**
24V – 48V DC	**…RDC 48**	208250	208254	–	–
48 – 110V AC; 40-60HZ 48 – 110V DC	**…RA 110**	208251	208255	208258	289146
110 – 250V AC; 40-60HZ 110 – 250V DC	**…RA 250**	208252	208256	208259	289145
250 – 500V AC; 40-60HZ	**…RAC 500**	208253	208257	208260	289147
Price		See green pages			

DILM Individual Coils

DC Coil Voltags	Voltage Suffix	For Use With Contactor…			
		DILEM…-G	–	–	–
		DILM7 – 12	DILM17 – 32	DILM40 – 65	DILM80 – 150
		DILMP20	–	–	–
		Complete the Type Number below by adding the voltage suffix			
		–	DILM32-XSP…	DILM65-XSP…	DILM150-XSP…
24 – 27V DC	**…(RDC24)**	Cannot replace coil	281155	281185	Product available Fall 2005. Contact your Moeller representative.
48 – 60V DC	**…(RDC60)**		281156	281186	
110 – 130V DC	**…(RDC130)**		281157	281187	
200 – 240V DC	**…(RDC240)**		281158	281188	
Price		See green pages			

Travel Diagrams for Contactors

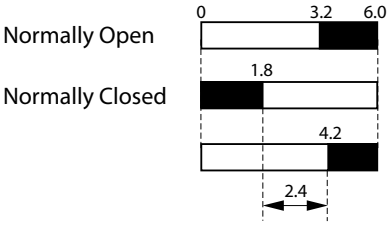
The diagrams show the closing and opening of the auxiliary contacts of contactors and modules at no-load. Tolerances are not taken into consideration.

DILM7/9/12...AC

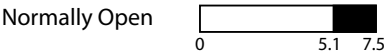
DILM7/9...DC

DILM(P)(20)12-...DC

DILM17/25/32

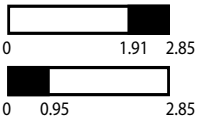


DILM40/50/65

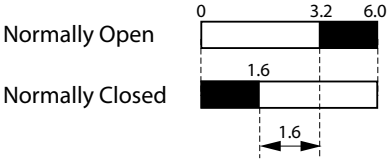


DILEM...AC

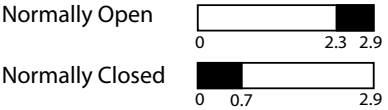
DILEM...DC



DILM32-XHI...



DILA-XHI... with DILM7.../DILM9...DC



DILA-XHI... with DILMP20.../

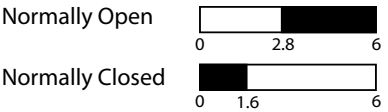
DILA-XHI... with DILM7/9/12-...AC

DILA-XHIV... with DILM7.../DILM9...DC

DILA-XHIV... with DILMP20.../DILM12...DC

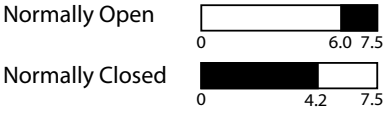
DILA-XHIV... with DILM7/9/12-...AC

DILA-XHI... with DILM17...to DILM32...AC/DC

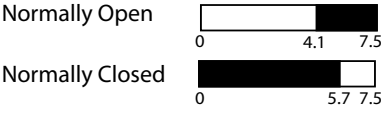


DILA-XHIV... with DILM17 to DILM32...AC/DC

DILM150-XHI...



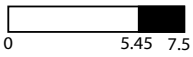
DILM150-XHIV...



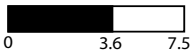
Travel Diagrams for Contactors *(continued)*

DILM1000-XHI...

Normally Open

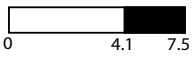


Normally Closed



DILM1000-XHIV...

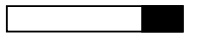
Normally Open



Normally Closed

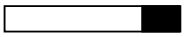
DILM185/225/250

Normally Open



DILM185/225/250 + DILM1000-XHI11

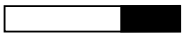
Normally Open



Normally Closed

DILM185/225/250 + DILM1000-XHI11V-SI

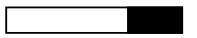
Normally Open



Normally Closed

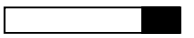
DILM300/400/500

Normally Open



DILM300/400/500 + DILM1000-XHI11

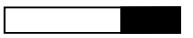
Normally Open



Normally Closed

DILM300/400/500 + DILM1000-XHI11V-SI

Normally Open



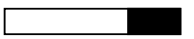
Normally Closed

DILM580/650

Normally Open

DILM580/650 + DILM1000-XHI11

Normally Open



Normally Closed

DILM580/650 + DILM1000-XHI11V-SI

Normally Open

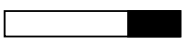
Normally Closed

DILM750/820/1000

Normally Open

DILM750/820/1000 + DILM1000-XHI11

Normally Open



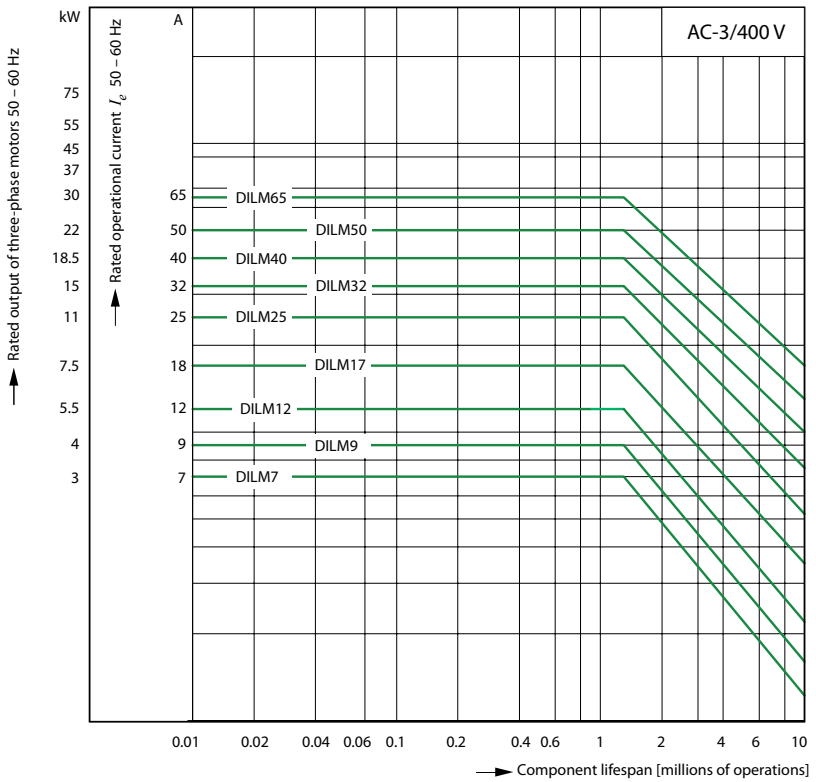
Normally Closed

DILM750/820/1000 + DILM1000-XHI11V-SI

Normally Open

Normally Closed

AC-3 Normal Switching Duty *(DILM7 to DILM65)*



Squirrel-Cage Motors

Operating Characteristics:
Starting: from rest
Stopping: after attaining full running speed

Electrical Characteristics:
Make: up to 6 x rated motor current
Break: up to 1 x rated motor current

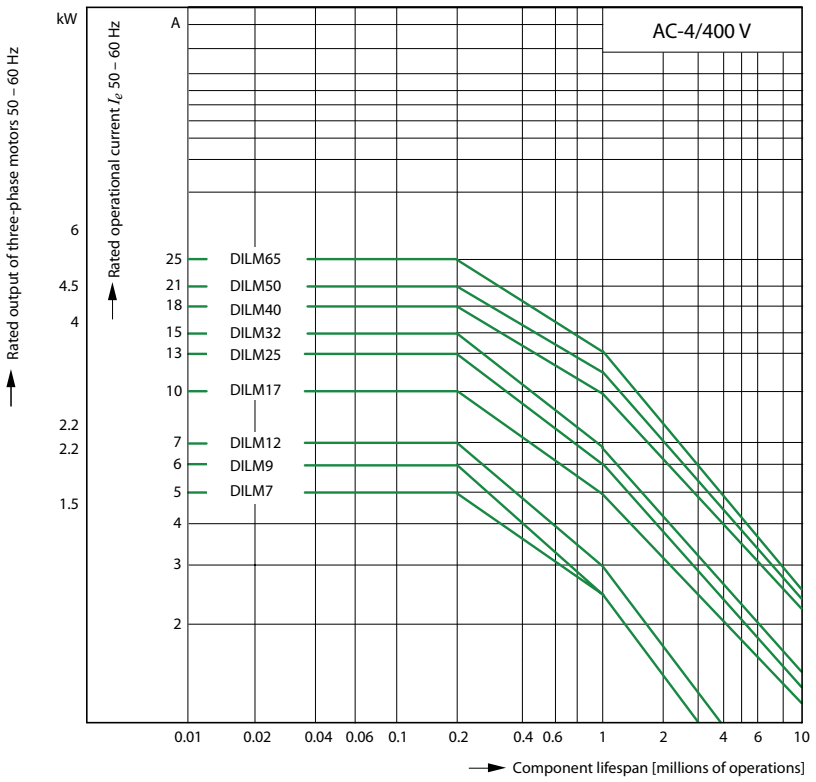
Utilization Category:
100% AC-3

Typical Applications:

Compressors	Elevators
Pumps	Escalators
Fans	Conveyor Belts
Hinged Flaps/Valves	Bucket-elevators
Mixers	Agitators
Centrifuges	Air-conditioning Systems

General drives in manufacturing and processing machines

AC-4 Extreme Switching Duty *(DILM7 to DILM65)*



Squirrel-Cage Motors

Operating Characteristics:
Jogging, plugging, reversing

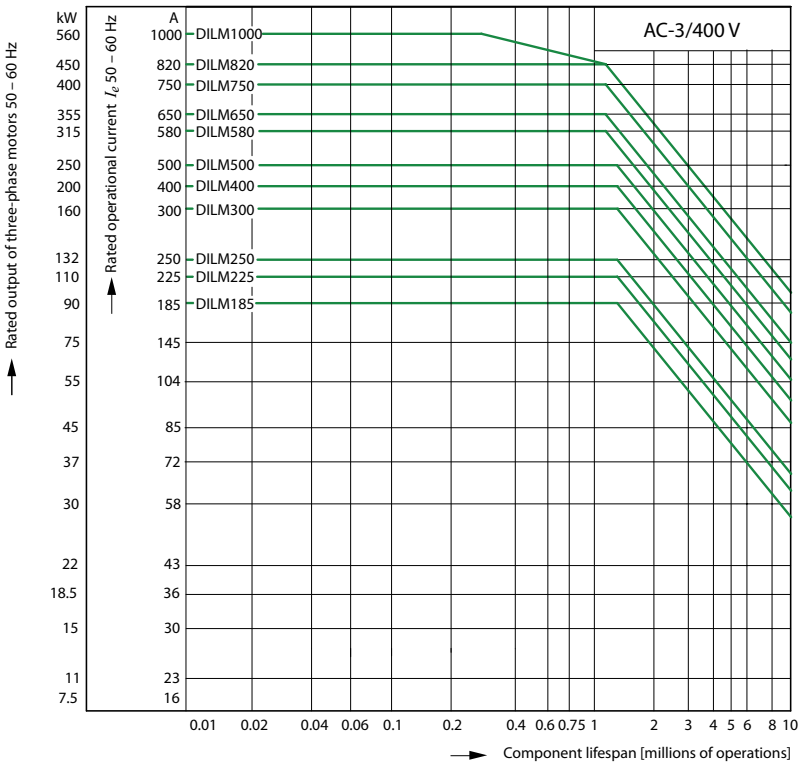
Electrical Characteristics:
Make: up to 6 x rated motor current
Break: up to 6 x rated motor current

Utilization Category:
100% AC-4

Typical Applications:
Printing Presses
Wire Drawing Machines
Centrifuges
Special drives for manufacturing and processing machines

NOTE: *Data for DILM80-DILM150 is pending. Contact your Moeller representative for details.*

AC-3 Normal Switching Duty *(DILM185 to DILM1000)*



Squirrel-Cage Motors

Operating Characteristics:
Starting: from rest
Stopping: after attaining full running speed

Electrical Characteristics:
Make: up to 6 x rated motor current
Break: up to 1 x rated motor current

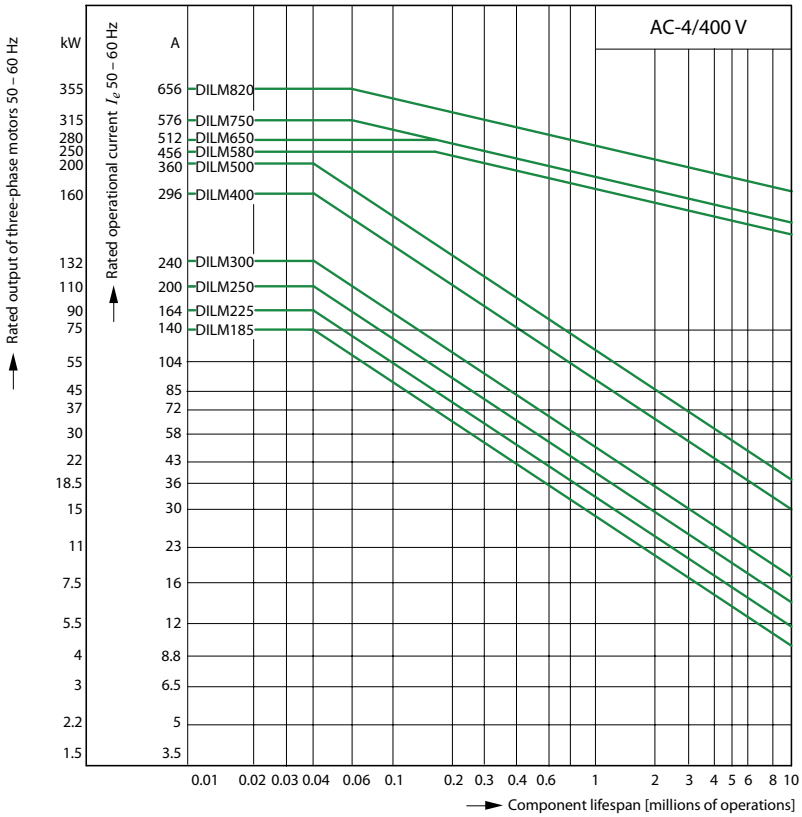
Utilization Category:
100% AC-3

Typical Applications:

Compressors	Elevators
Pumps	Escalators
Fans	Conveyor Belts
Hinged Flaps	Bucket Elevators
Air-conditioning S	ystems Mixers
Agitators	Centrifuges

General drives in manufacturing and processing machines

AC-4 Extreme Switching Duty *(DILM185 to DILM820)*



Squirrel-Cage Motors

Operating Characteristics:
Jogging, plugging, reversing

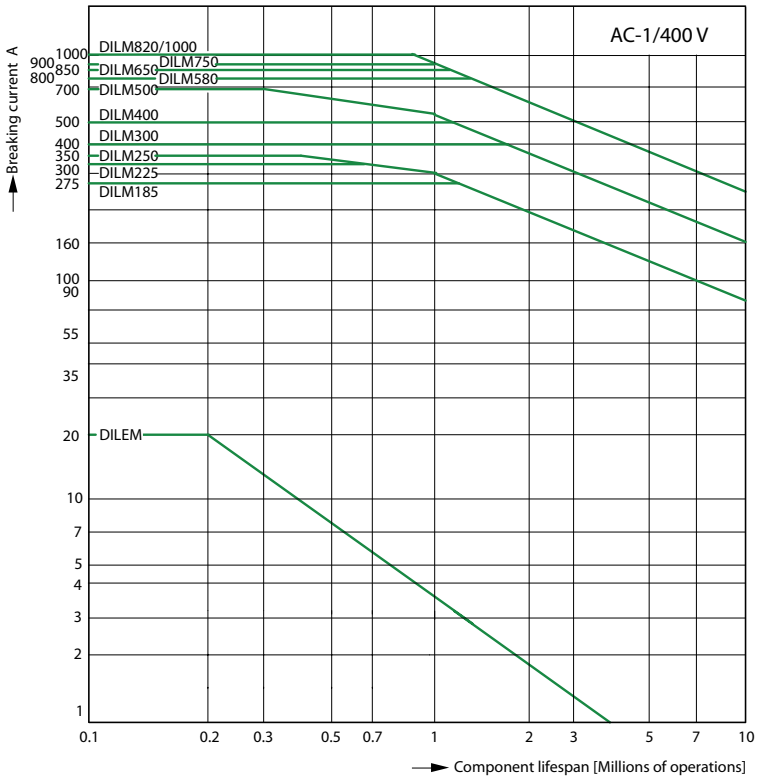
Electrical Characteristics:
Make: up to 6 x rated motor current
Break: up to 6 x rated motor current

Utilitzation Category:
100% AC-4

Typical Applications:
Printing Presses Wire Drawing
Centrifuges

Special drives for manufacturing and processing machines

AC-1 Switching Duty for Non-Motor Loads *(DILEM to DILM1000)*



3-pole, 4-pole

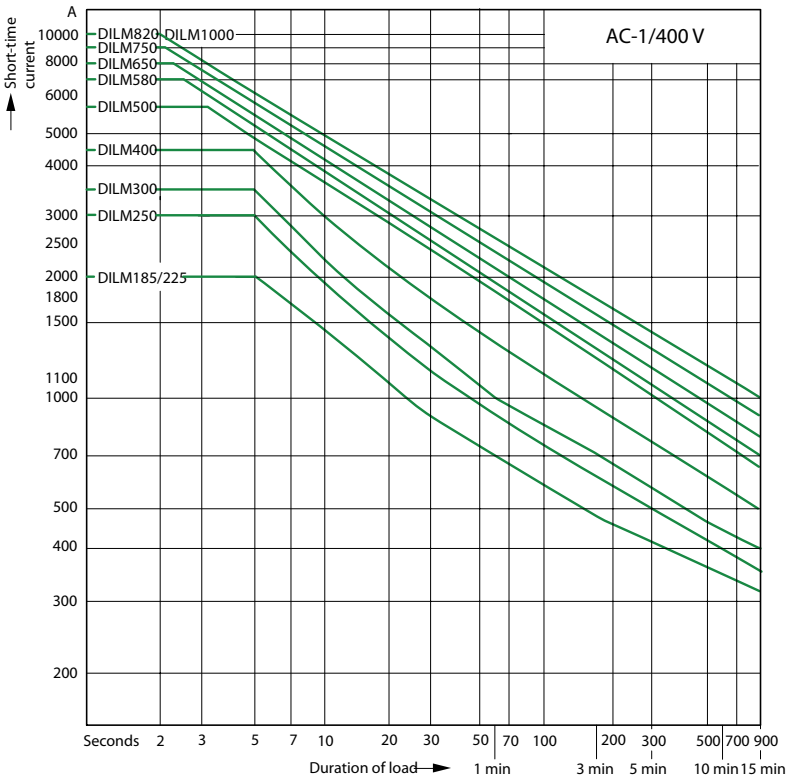
Operating Characteristics:
Non-inductive or slightly inductive loads

Electrical Characteristics:
Make: 1 x rated current
Break: 1 x rated current

Utilization Category:
100% AC-1

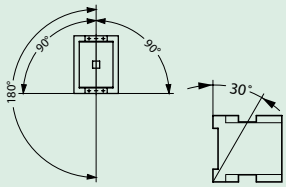
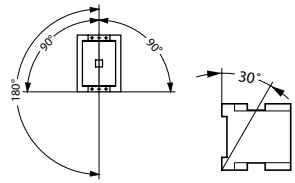
Typical Applications:
Electrical heaters

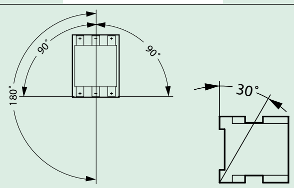
Short-Time Loading *(DILM185 to DILM1000)*



3-pole

Time interval between two loading cycles: 15 minutes

			DILM7	DILM9	DILM12	DILM17	DILM25	DILM32
General								
Standards								
UL, CSA, IEC/EN 60947, VDE 0660								
Lifespan, mechanical								
AC operated	Ops	[x 10^6]	10	10	10	10	10	10
DC operated	Ops	[x 10^6]	10	10	10	10	10	10
Operating frequency, mechanical								
AC operated	Ops/h		9000	9000	9000	5000	5000	5000
DC operated	Ops/h		9000	9000	9000	5000	5000	5000
Climatic proofing								
Damp heat, constant, to IEC 60068-2-78								
Damp heat, cyclic, to IEC 60068-2-30								
Ambient temperature								
Open		[°C]	-25/60° C	-25/60° C	-25/60° C	-25/60° C	-25/60° C	-25/60° C
		[°F]	-13/140° F	-13/140° F	-13/140° F	-13/140° F	-13/140° F	-13/140° F
Enclosed		[°C]	-25/40° C	-25/40° C	-25/40° C	-25/40° C	-25/40° C	-25/40° C
		[°F]	-13/104° F	-13/104° F	-13/104° F	-13/104° F	-13/104° F	-13/104° F
Storage		[°C]	-40/80° C	-40/80° C	-40/80° C	-40/80° C	-40/80° C	-40/80° C
		[°F]	-40/176° F	-40/176° F	-40/176° F	-40/176° F	-40/176° F	-40/176° F
Mounting position AC and DC								
Mechanical shock resistance (IEC/EN 60068-2-27)								
Half-sinusoidal shock 10 ms								
Main	Make	[g]	10	10	10	10	10	10
Auxiliary	Make	[g]	7	7	7	7	7	7
	Break	[g]	5	5	5	5	5	5
Degree of protection			IP20	IP20	IP20	IP00	IP00	IP00
Protection against direct contact when actuated from front (IEC 536)								
Finger- and back-of-hand proof								
Weight								
AC		[kg]	0.23	0.23	0.23	0.42	0.42	0.42
DC		[kg]	0.28	0.28	0.28	0.48	0.48	0.48
Screw connector terminals								
1 or 2 conductors can be connected								
Main cable cross-section								
Solid		[mm^2]	1 x (0.75–4.0) 2 x (0.75–2.5)	1 x (0.75–4.0) 2 x (0.75–2.5)	1 x (0.75–4.0) 2 x (0.75–2.5)	1 x (0.75–16) 2 x (0.75–10)	1 x (0.75–16) 2 x (0.75–10)	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 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 (0.75–16) 2 x (0.75–10)	1 x (0.75–16) 2 x (0.75–10)	1 x (0.75–16) 2 x (0.75–10)
Stranded		[mm^2]	– –	– –	– –	1 x 16 –	1 x 16 –	1 x 16 –
Solid or stranded		[AWG]	18 – 14	18 – 14	18 – 14	18 – 6	18 – 6	18 – 6
Flat conductor		[mm]	–	–	–	–	–	–
Number of segments x width x thickness								

DILM40	DILM50	DILM65	DILM80	DILM95	DILM115	DILM150
10 10	10 10	10 10				
5000 5000	5000 5000	5000 5000				
-25/60° C *-13/140° F* -25/40° C *-13/104° F* -40/80° C *-40/176° F*	-25/60° C *-13/140° F* -25/40° C *-13/104° F* -40/80° C *-40/176° F*	-25/60° C *-13/140° F* -25/40° C *-13/104° F* -40/80° C *-40/176° F*				
			UL/CSA pending for DILM80 – DILM150. Product available in Fall 2005. Contact your Moeller representative.			
10 7 5	10 7 5	10 7 5				
IP00	IP00	IP00				
0.9 1.1	0.9 1.1	0.9 1.1				
1 x (2.5–16) 2 x (2.5–16) 1 x (2.5–35) 2 x (2.5–25) 1 x (16 – 50) 2 x (16 – 35) 12 – 2 12 x (6 x 9 x 0.8)	1 x (2.5–16) 2 x (2.5–16) 1 x (2.5–35) 2 x (2.5–25) 1 x (16 – 50) 2 x (16 – 35) 12 – 2 12 x (6 x 9 x 0.8)	1 x (2.5–16) 2 x (2.5–16) 1 x (2.5–35) 2 x (2.5–25) 1 x (16 – 50) 2 x (16 – 35) 12 – 2 12 x (6 x 9 x 0.8)				

				DILM7	DILM9	DILM12	DILM17	DILM25	DILM32
General									
Main cable connection screw/bolt				M3.5	M3.5	M3.5	M5	M5	M5
Tightening torque			[Nm]	1.2	1.2	1.2	3	3	3
Control circuit cable cross-sections									
Solid			[mm²]	1 x (0.75–4.0) 2 x (0.75–2.5)	1 x (0.75–4.0) 2 x (0.75–2.5)	1 x (0.75–4.0) 2 x (0.75–2.5)	1 x (0.75 – 4) 1 x (0.75 – 4)	1 x (0.75 – 4) 1 x (0.75 – 4)	1 x (0.75 – 4) 1 x (0.75 – 4)
Flexible with ferrule			[mm²]	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)	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	18 – 14	18 – 14
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 cable	Pozidriv screwdriver		[Size]	2	2	2	2	2	2
	Standard 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
Control circuit cable	Pozidriv screwdriver		[Size]	2	2	2	2	2	2
	Standard 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
Springloaded terminal connection (1 or 2 conductors can be connected)									
Main cable cross-section									
Solid			[mm²]	0.75 – 2.5	0.75 – 2.5	0.75 – 2.5	–	–	–
Flexible			[mm²]	0.75 – 2.5	0.75 – 2.5	0.75 – 2.5	–	–	–
Flexible with ferrule			[mm²]	0.75 – 2.5	0.75 – 2.5	0.75 – 2.5	–	–	–
Solid or stranded			[AWG]	18 – 14	18 – 14	18 – 14	–	–	–
Control circuit cable cross-sections									
Solid			[mm²]	0.75 – 2.5	0.75 – 2.5	0.75 – 2.5	0.75 – 2.5	0.75 – 2.5	0.75 – 2.5
Flexible			[mm²]	0.75 – 2.5	0.75 – 2.5	0.75 – 2.5	0.75 – 2.5	0.75 – 2.5	0.75 – 2.5
Flexible with ferrule			[mm²]	0.75 – 2.5	0.75 – 2.5	0.75 – 2.5	0.75 – 2.5	0.75 – 2.5	0.75 – 2.5
Solid or stranded			[AWG]	18 – 14	18 – 14	18 – 14	18 – 14	18 – 14	18 – 14
Tools									
Wire 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		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		U_i	[V AC]	690	690	690	690	690	690
Rated operational		U_e	[V AC]	690	690	690	690	690	690
Safe isolation to VDE 0106 Part 101 and Part 101/A1									
between coil and contacts			[V AC]	400	400	400	440	440	440
between the contacts			[V AC]	400	400	400	440	440	440
Making capacity cos φ to IEC/EN 60947 up to 609 V			[A]	112	112	144	238	350	384
Breaking capacity	220/230 V		[A]	70	90	120	170	250	320
	380/400 V		[A]	70	90	120	170	250	320
	500 V		[A]	50	70	100	170	250	320
	660/690 V		[A]	40	50	70	120	150	180
	1000 V		[A]	–	–	–	–	–	–
Component Lifespan	AC-1; 400 V	I_e	[x 10⁶]	1	1	1	1	1	1
Maximum operating frequency	AC-1; 400 V	I_e	[Ops/h]	800	800	800	800	800	800
	AC-3; 400 V	I_e	[Ops/h]	1000	1000	1000	800	800	800
	AC-4; 400 V	I_e	[Ops/h]	300	300	300	300	300	300
Short-circuit rating									
Short-circuit protection max. fuse Type "2"	400 V	500 V	[A]	20	20	20	25	35	63
	690 V	690 V	[A]	16	16	20	25	35	35
	1000 V	1000 V	[A]	–	–	–	–	–	–
Type "1"	400 V	500 V	[A]	35	35	35	63	100	125
	690 V	690 V	[A]	20	20	25	50	50	63
	1000 V	1000 V	[A]	–	–	–	–	–	–

DILM40	DILM50	DILM65	DILM80	DILM95	DILM115	DILM150
M6 3	M6 3	M6 3				
1 x (0.75 – 4) 1 x (0.75 – 4) 1 x (0.75–2.5) 2 x (0.75–2.5) 18 – 14	1 x (0.75 – 4) 1 x (0.75 – 4) 1 x (0.75–2.5) 2 x (0.75–2.5) 18 – 14	1 x (0.75 – 4) 1 x (0.75 – 4) 1 x (0.75–2.5) 2 x (0.75–2.5) 18 – 14				
M3.5 1.2	M3.5 1.2	M3.5 1.2				
2 0.8 x 5.5 1 x 6	2 0.8 x 5.5 1 x 6	2 0.8 x 5.5 1 x 6				
2 0.8 x 5.5 1 x 6	2 0.8 x 5.5 1 x 6	2 0.8 x 5.5 1 x 6				
– – – –	– – – –	– – – –				
0.75 – 2.5 0.75 – 2.5 0.75 – 2.5 18 – 14	0.75 – 2.5 0.75 – 2.5 0.75 – 2.5 18 – 14	0.75 – 2.5 0.75 – 2.5 0.75 – 2.5 18 – 14	UL/CSA pending for DILM80 – DILM150. Product available in Fall 2005. Contact your Moeller representative.			
10 3.5	10 3.5	10 3.5				
8000 III/3 690 690	8000 III/3 690 690	8000 III/3 690 690				
440 440	440 440	440 440				
560	700	910				
400 400 400 250 –	500 500 500 320 –	650 650 650 370 –				
1	1	1				
800 800 300	800 800 300	800 800 300				
63 50 – 125 80 –	80 63 – 160 80 –	125 80 – 250 100 –				

					DILM7	DILM9	DILM12	DILM17	DILM25	DILM32
AC										
AC-1 operation										
Conventional free air thermal current, 3-pole, 50 – 60 Hz	Open	40° C *104° F*	I_{th}	[A]	22	22	22	40	45	45
		50° C *122° F*	I_{th}	[A]	21	21	21	38	43	43
		55° C *131° F*	I_{th}	[A]	21	21	21	37	42	42
		60° C *140° F*	I_{th}	[A]	20	20	20	35	40	40
	Enclosed		I_{th}	[A]	18	18	18	32	36	36
Conventional free air thermal current, 1-pole	Open		I_{th}	[A]	50	50	50	85	85	85
	Enclosed		I_{th}	[A]	45	45	45	80	80	80
AC-3 operation										
Rated operational current open, 50 – 60 Hz		220/230 V	I_e	[A]	7	9	12	18	25	32
		240 V	I_e	[A]	7	9	12	18	25	32
		380/400 V	I_e	[A]	7	9	12	18	25	32
		415 V	I_e	[A]	7	9	12	18	25	32
		440 V	I_e	[A]	7	9	12	18	25	32
		500 V	I_e	[A]	5	7	10	18	25	32
		660/690 V	I_e	[A]	4	5	7	12	15	18
		1000 V	I_e	[A]	–	–	–	–	–	–
Rated power		220/230 V	P_n	[kW]	2.2	2.5	3.5	5	7.5	10
		240 V	P_n	[kW]	2.2	3	4	5.5	8.5	11
		380/400 V	P_n	[kW]	3	4	5.5	7.5	11	15
		415 V	P_n	[kW]	4	5.5	7	10	14.5	19
		440 V	P_n	[kW]	4.5	5.5	7.5	10.5	15.5	20
		500 V	P_n	[kW]	3.5	4.5	7	12	17.5	23
		660/690 V	P_n	[kW]	3.5	4.5	6.5	11	14	17
		1000 V	P_n	[kW]	–	–	–	–	–	–
AC-4 operation										
Rated operational current open, 50 – 60 Hz		220/230 V	I_e	[A]	5	6	7	10	13	15
		240 V	I_e	[A]	5	6	7	10	13	15
		380/400 V	I_e	[A]	5	6	7	10	13	15
		415 V	I_e	[A]	5	6	7	10	13	15
		440 V	I_e	[A]	5	6	7	10	13	15
		500 V	I_e	[A]	4.5	5	6	10	13	15
		660/690 V	I_e	[A]	4	4.5	5	8	10	12
		1000 V	I_e	[A]	–	–	–	–	–	–
Rated power		220/230 V	P_n	[kW]	1	1.5	2	2.5	3.5	4
		240 V	P_n	[kW]	1.5	1.6	2.2	3	4	4.5
		380/400 V	P_n	[kW]	2.2	2.5	3	4.5	6	7
		415 V	P_n	[kW]	2.3	2.8	3.4	5	6.5	7.5
		440 V	P_n	[kW]	2.4	3	3.6	5.5	7	8
		500 V	P_n	[kW]	2.5	2.8	3.5	6	8	9
		660/690 V	P_n	[kW]	2.9	3.6	4.4	6.5	8.5	10
		1000 V	P_n	[kW]	–	–	–	–	–	–
DC										
Rated operational current, open										
DC-1 operation		60 V	I_e	[A]	20	20	20	35	40	40
		110 V	I_e	[A]	20	20	20	35	40	40
		220 V	I_e	[A]	15	15	15	35	40	40
		440 V	I_e	[A]	1	1.3	1.3	2.9	2.9	2.9
DC-3 operation		60 V	I_e	[A]	20	20	20	35	35	40
		110 V	I_e	[A]	20	20	20	35	35	40
		220 V	I_e	[A]	1.5	1.5	1.5	10	10	25
		440 V	I_e	[A]	0.2	0.2	0.2	0.6	0.6	0.6
DC-5 operation		60 V	I_e	[A]	20	20	20	35	35	40
		110 V	I_e	[A]	20	20	20	35	35	40
		220 V	I_e	[A]	1.5	1.5	1.5	10	10	25
		440 V	I_e	[A]	0.2	0.2	0.2	0.6	0.6	0.6

DILM40	DILM50	DILM65	DILM80	DILM95	DILM115	DILM150
60	70	85				
57	65	80				
55	63	75				
50	60	72				
45	54	65				
125	150	180				
112	135	162				
40	50	65				
40	50	65				
40	50	65				
40	50	65				
40	50	65				
40	50	65				
25	32	37				
–	–	–				
12.5	15.5	20				
13.5	17	22				
18.5	22	30				
24	30	39	UL/CSA pending for DILM80 – DILM150. Product available in Fall 2005. Contact your Moeller representative.			
25	32	41				
28	36	47				
23	30	35				
–	–	–				
18	21	25				
18	21	25				
18	21	25				
18	21	25				
18	21	25				
18	21	25				
14	17	20				
–	–	–				
5	6	7				
5.5	6.5	7.5				
9	10	12				
9.5	11	13				
10	12	14				
11	13	16				
12	14	17				
–	–	–				
50	60	72				
50	50	72				
45	45	65				
2.9	2.9	2.9				
50	60	72				
50	50	72				
25	25	35				
0.6	0.6	0.6				
50	60	72				
50	50	72				
25	25	35				
0.6	0.6	0.6				

			DILM7	DILM9	DILM12	DILM17	DILM25	DILM32
Current Heat Loss (3-Pole)								
Current heat loss at I_{th}		[W]	4.7	4.7	4.7	7.3	9.6	12.1
Current heat loss at I_e to AC-3 / 400 V		[W]	0.37	0.6	1.1	1.7	3.8	6.1
Impedance per pole		[mΩ]	2.5	2.5	2.5	2	2	2
Magnet Systems								
Pick-up and drop-out values								
AC	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
	Drop-out	[x U_c]	0.3 – 0.6	0.2 – 0.6	0.3 – 0.6	0.3 – 0.6	0.3 – 0.6	0.3 – 0.6
DC	Pick-up	[x U_c]	0.8 – 1.1 ❶	0.8 – 1.1 ❶	0.8 – 1.1 ❶	0.7 – 1.2 ❷	0.7 – 1.2 ❷	0.7 – 1.2 ❷
	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 at cold state and 1.0 x U_c								
AC	Pick-up	[VA]	24	24	24	50	50	50
		[W]	19	19	19	40	40	40
Single-voltage coil 50 Hz	Sealing	[VA]	4	4	4	8	8	8
		[W]	1.2	1.2	1.2	2.4	2.4	2.4
60 Hz	Pick-up	[VA]	29	29	29	62	62	62
		[W]	23	23	23	50	50	50
60 Hz	Sealing	[VA]	4.4	4.4	4.4	9.1	9.1	9.1
		[W]	1.3	1.3	1.3	2.7	2.7	2.7
50/60 Hz	Pick-up	[VA]	28 26	28 26	28 26	60 54	60 54	60 54
		[W]	22 21	22 21	22 21	48 43	48 43	48 43
50/60 Hz	Sealing	[VA]	4.6 3.9	4.6 3.9	4.6 3.9	9.5 7.9	9.5 7.9	9.5 7.9
		[W]	1.4 1.2	1.4 1.2	1.4 1.2	2.8 2.4	2.8 2.4	2.8 2.4
DC operated	Pick-up	[W]	3	3	4.5	12 at 24 V	12 at 24 V	12 at 24 V
	Sealing	[W]	3	3	4.5	0.5 at 24 V	0.5 at 24 V	0.5 at 24 V
Duty factor		[% DF]	100	100	100	100	100	100
Switching times at 100 % U_c (approximate values)								
Main contacts AC	Closing delay	[ms]	< 20	< 20	< 20	< 25	< 25	< 25
	Opening delay	[ms]	< 15	< 15	< 15	< 20	< 20	< 20
DC	Closing delay	[ms]	< 35	< 35	< 35	< 55	< 55	< 55
	Opening delay	[ms]	< 15	< 15	< 15	< 15	< 15	< 15
Arcing time		[ms]	10	10	10	10	10	10
Electromagnetic Compatibility (EMC)								
Emitted interference			to EN 60947-1					
Noise immunity			to EN 60947-1					

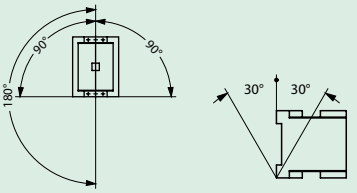
❶ At 24 V: 0.7 – 1.3 without additional auxiliary contact modules and ambient temperature + 40° C.

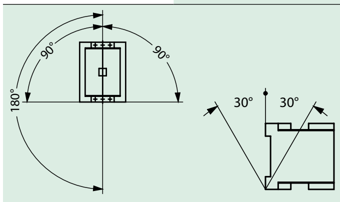
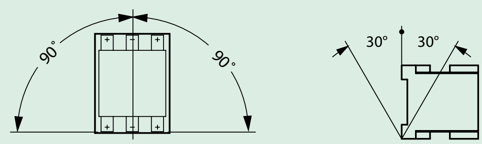
❷ RDC 24 (U_{min} 24 V DC/U_{max} 27 V DC)
RDC 60 (U_{min} 48 V DC/U_{max} 60 V DC)
RDC 130 (U_{min} 110 V DC/U_{max} 130 V DC)
RDC 240 (U_{min} 200 V DC/U_{max} 240 V DC)
Example:
Uc = 0.7 x U_{min} – 1.2 x U_{max}
Uc = 0.7 x 24 V – 1.2 x 27 V DC

DILM40	DILM50	DILM65	DILM80	DILM95	DILM115	DILM150
11.3	16.2	15.6				
7.2	11.3	12.7				
1.5	1.5	1.5				
0.8 – 1.1	0.8 – 1.1	0.8 – 1.1				
0.3 – 0.6	0.3 – 0.6	0.3 – 0.6				
0.7 – 1.2 ❷	0.7 – 1.2 ❷	0.7 – 1.2 ❷				
0.15 – 0.6	0.15 – 0.6	0.15 – 0.6				
130	130	130				
80	80	80				
14	14	14				
4	4	4				
62	62	62				
50	50	50	UL/CSA pending for DILM80 – DILM150. Product available in Fall 2005. Contact your Moeller representative.			
9.1	9.1	9.1				
2.7	2.7	2.7				
60	60	60				
54	54	54				
48	48	48				
43	43	43				
9.5	9.5	9.5				
7.9	7.9	7.9				
2.8	2.8	2.8				
2.4	2.4	2.4				
12 at 24 V	12 at 24 V	12 at 24 V				
0.5 at 24 V	0.5 at 24 V	0.5 at 24 V				
100	100	100				
< 25	< 25	< 25				
< 25	< 25	< 25				
< 60	< 60	< 60				
< 20	< 20	< 20				
10	10	10				
	to EN 60947-1					
	to EN 60947-1					

❶ At 24 V: 0.7 – 1.3 without additional auxiliary contact modules and ambient temperature + 40° C.

❷ 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:
$Uc = 0.7 \times U_{min} - 1.2 \times U_{max}$
$Uc = 0.7 \times 24\,V - 1.2 \times 27\,V\ DC$

					DILM185	DILM225	DILM250
General							
Standards							
UL, CSA, IEC/EN 60947, VDE 0660							
Lifespan, mechanical							
AC			Ops	[x 10^6]	10	10	10
DC			Ops	[x 10^6]	10	10	10
Operating frequency, mechanical							
AC			Ops/h		3000	3000	3000
DC			Ops/h		3000	3000	3000
Climatic proofing							
Damp heat, constant, to IEC 60068-2-78 – Damp heat, cyclic, to IEC 60068-2-30							
Ambient temperature							
Open				[°C / °F]	-25/60°C / -13/140°F	-25/60°C / -13/140°F	-25/60°C / -13/140°F
Enclosed				[°C / °F]	-25/40°C / -13/104°F	-25/40°C / -13/104°F	-25/40°C / -13/104°F
Storage				[°C / °F]	-40/80°C / -40/176°F	-40/80°C / -40/176°F	-40/80°C / -40/176°F
Mounting position							
Mechanical shock resistance (IEC/EN 60068-2-27)							
Half-sinusoidal shock 10 ms	Main	Make contact		[g]	10	10	10
	Auxiliary	Make contact		[g]	10	10	10
		Break contact		[g]	8	8	8
Degree of protection					IP00	IP00	IP00
Protection against direct contact when actuated from front (IEC 536)							
Finger- and back-of-hand proof with terminal shroud or terminal block							
Weight				[kg]	6.5	6.5	6.5
Main cable cross-section	Flexible with cable lug			[mm^2]	35 – 95	50 – 240	50 – 240
	Stranded with cable lug			[mm^2]	50 – 120	70 – 240	70 – 240
	Solid or stranded			[AWG]	1 / 0 – 250 MCM	2 / 0 – 500 MCM	2 / 0 – MCM
Flat conductor							
Fixing with flat cable terminal or cable terminal blocks. See terminal capacity for cable terminal blocks.				[mm]			
Busbar			Width	[mm]	20	20	25
Main cable connection screw/bolt					M10	M10	M10
Tightening torque				[Nm]	24	24	24
Control circuit cable cross-sections		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 (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 – 2.5) 2 x (0.75 – 2.5)
		Solid or stranded		[AWG]	2 x (18 – 12)	2 x (18 – 12)	2 x (18 – 12)
Control circuit cable connection screw/bolt					M3.5	M3.5	M3.5
Tightening torque				[Nm]	1.2	1.2	1.2
Tools	Main cable	Wrench		[mm]	16	16	16
	Control circuit cable	Pozidriv screwdriver		[Size]	2	2	2

DILM300	DILM400	DILM500	DILM580	DILM650	DILM750	DILM820	DILM1000
7 7	7 7	7 7	5 5	5 5	5 5	5 5	5 5
2000 2000	2000 2000	2000 2000	1000 1000	1000 1000	1000 1000	1000 1000	1000 1000
-25/60°C / -13/140°F -25/40°C / -13/104°F -40/80°C / -40/176°F	-25/60°C / -13/140°F -25/40°C / -13/104°F -40/80°C / -40/176°F	-25/60°C / -13/140°F -25/40°C / -13/104°F -40/80°C / -40/176°F	-25/60°C / -13/140°F -25/40°C / -13/104°F -40/80°C / -40/176°F	-25/60°C / -13/140°F -25/40°C / -13/104°F -40/80°C / -40/176°F	-25/60°C / -13/140°F -25/40°C / -13/104°F -40/80°C / -40/176°F	-25/60°C / -13/140°F -25/40°C / -13/104°F -40/80°C / -40/176°F	-25/60°C / -13/140°F -25/40°C / -13/104°F -40/80°C / -40/176°F
 		 					
10 10 8	10 10 8	10 10 8	10 10 8	10 10 8	10 10 8	10 10 8	10 10 8
IP00	IP00	IP00	IP00	IP00	IP00	IP00	IP00
8	8	8	15	15	15	15	15
50 – 240 70 – 240 2/0 – 500 MCM 25	50 – 240 70 – 240 2/0 – 500 MCM 25	50 – 240 70 – 240 2/0 – 500 MCM 30	50 – 240 70 – 240 2/0 – 500 MCM 50	50 – 240 70 – 240 2/0 – 500 MCM 50	50 – 240 70 – 240 2/0 – 500 MCM 60	50 – 240 70 – 240 2/0 – 500 MCM 60	50 – 240 70 – 240 2/0 – 500 MCM 60
M10 24	M10 24	M10 24	M10 24	M10 24	M12 35	M12 35	M12 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)	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)	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)	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)	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)	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)	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)	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)
M3.5 1.2 16 2	M3.5 1.2 16 2	M3.5 1.2 16 2	M3.5 1.2 16 2	M3.5 1.2 16 2	M3.5 1.2 18 2	M3.5 1.2 18 2	M3.5 1.2 18 2

					DILM185	DILM225	DILM250
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]	1000	1000	1000
Rated operational voltage			U_e	[V AC]	1000	1000	1000
Safe isolation to VDE 0106 Part 101 and Part 101/A1							
between coil and contacts				[V AC]	500	500	500
between the contacts				[V AC]	500	500	500
Making capacity cos φ to IEC/EN 60947 up to 690 V				[A]	3000	3000	3000
Breaking capacity		220/230 V		[A]	2500	2500	2500
		380/400 V		[A]	2500	2500	2500
		500 V		[A]	2500	2500	2500
		660/690 V		[A]	2500	2500	2500
		1000 V		[A]	760	760	760
Component lifespan		AC-3/AC-4; 400 V				see page 35	
Short-circuit rating							
Short-circuit protection rating max. fuse	Type "2"	400 V	gG/gL 500 V	[A]	315	315	315
		690 V	gG/gL 690 V	[A]	315	315	315
		1000 V	gG/gL 1000 V	[A]	160	160	160
	Type "1"	400 V	gG/gL 500 V	[A]	400	400	400
		690 V	gG/gL 690 V	[A]	400	400	400
		1000 V	gG/gL 1000 V	[A]	200	200	200

DILM300	DILM400	DILM500	DILM580	DILM650	DILM750	DILM820	DILM1000
8000	8000	8000	8000	8000	8000	8000	8000
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
500	500	500	500	500	500	500	500
500	500	500	500	500	500	500	500
5500	5500	5500	7800	7800	9840	9840	9840
5000	5000	5000	6500	6500	8200	8200	8200
5000	5000	5000	6500	6500	8200	8200	8200
5000	5000	5000	6500	6500	8200	8200	8200
5000	5000	5000	6500	6500	8200	8200	8200
950	950	950	4350	4350	5800	5800	5800
see page 35							
500	500	500	630	630	630	630	630
500	500	500	630	630	630	630	630
200	200	200	500	500	630	630	630
630	630	630	1000	1000	1200	1200	1200
630	630	630	1000	1000	1200	1200	1200
250	250	250	630	630	800	800	800

					DILM185	DILM225	DILM250
AC							
AC-1							
Conventional free air thermal current, 3-pole, 50 – 60 Hz	Open	40° C / 104° F		[A]	337	386	429
		50° C / 122° F		[A]	301	345	383
		55° C / 131° F		[A]	287	329	366
		60° C / 140° F		[A]	275	315	350
	Enclosed ❶			[A]	250	275	300
Conventional free air thermal current, 1-pole	Open ❶			[A]	685	785	875
	Enclosed ❶			[A]	625	685	750
AC-3							
Rated operational current open, 50 – 60 Hz ❶		220/230 V	I_e	[A]	185	225	250
		240 V	I_e	[A]	185	225	250
		380/400 V	I_e	[A]	185	225	250
		415 V	I_e	[A]	185	225	250
		440 V	I_e	[A]	185	225	250
		500 V	I_e	[A]	185	225	250
		660/690 V	I_e	[A]	185	225	250
		1000 V	I_e	[A]	76	76	76
Rated power		220/230 V	P	[kW]	55	70	75
		240 V	P	[kW]	62	75	85
		380/400 V	P	[kW]	90	110	132
		415 V	P	[kW]	110	132	148
		440 V	P	[kW]	115	142	157
		500 V	P	[kW]	132	160	180
		660/690 V	P	[kW]	175	215	240
		1000 V	P	[kW]	108	108	108
AC-4							
Rated operational current open, 50 – 60 Hz		220/230 V	I_e	[A]	136	164	200
		240 V	I_e	[A]	136	164	200
		380/400 V	I_e	[A]	136	164	200
		415 V	I_e	[A]	136	164	200
		440 V	I_e	[A]	136	164	200
		500 V	I_e	[A]	136	164	200
		660/690 V	I_e	[A]	136	164	200
		1000 V	I_e	[A]	76	76	76
Rated power		220/230 V	P	[kW]	41	51	62
		240 V	P	[kW]	45	54	68
		380/400 V	P	[kW]	75	90	110
		415 V	P	[kW]	80	96	117
		440 V	P	[kW]	85	102	125
		500 V	P	[kW]	96	116	143
		660/690 V	P	[kW]	127	155	189
		1000 V	P	[kW]	108	108	108
Capacitor Duty							
Individual compensation rated operational current I_e of three-phase capacitors	Open	up to 525 V	I_e	[A]	220	220	220
		690 V	I_e	[A]	133	133	133
Max. inrush current peak				[x I_e]	30	30	30
Component lifespan			Ops	[x 10^6]	0.1	0.1	0.1
Max. operating frequency			Ops/h		200	200	200

❶ At maximum permissible ambient temperature.

DILM300	DILM400	DILM500	DILM580	DILM650	DILM750	DILM820	DILM1000
490	612	857	980	1041	1102	1225	1225
438	548	767	876	931	986	1095	1095
418	522	731	836	888	940	1044	1044
400	500	700	800	850	900	1000	1000
350	450	650	–	–	–	–	–
1000	1250	1750	2000	2125	2250	2500	2500
875	1125	1600	–	–	–	–	–
300	400	500	580	650	750	820	1000
300	400	500	580	650	750	820	1000
300	400	500	580	650	750	820	1000
300	400	500	580	650	750	820	1000
300	400	500	580	650	750	820	1000
300	400	500	580	650	750	820	1000
300	360	360	580	650	750	820	1000
95	95	95	435	435	580	580	700
90	125	155	185	205	240	260	315
100	132	170	200	225	260	285	340
160	200	250	315	355	400	450	560
180	240	300	348	390	455	500	610
190	255	345	370	420	480	525	650
215	290	360	420	470	550	600	730
286	344	344	560	630	720	750	1000
132	132	132	600	600	800	800	1000
240	296	360	456	512	576	656	800
240	296	360	456	512	576	656	800
240	296	360	456	512	576	656	800
240	296	360	456	512	576	656	800
240	296	360	456	512	576	656	800
240	296	360	456	512	576	656	800
240	296	296	456	512	576	656	800
95	95	95	348	348	464	464	700
75	92	112	143	161	181	209	260
82	101	122	156	176	200	228	280
132	160	200	250	280	315	355	450
142	176	216	274	307	346	394	490
151	186	229	290	326	367	418	520
172	214	260	330	370	417	474	590
229	283	344	440	494	556	633	780
132	132	132	509	509	678	678	1000
307	307	307	463	463	463	463	463
177	177	177	265	265	265	265	265
30	30	30	30	30	30	30	30
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
200	200	200	200	200	200	200	200

					DILM185	DILM225	DILM250
DC							
Rated operational current, open	DC-1	60 V	I_e	[A]	300	300	300
		110 V	I_e	[A]	300	300	300
		220 V	I_e	[A]	300	300	300
		440 V	I_e	[A]	11	11	11
	DC-3	60 V	I_e	[A]	300	300	300
		110 V	I_e	[A]	300	300	300
		220 V	I_e	[A]	300	300	300
	DC-5	60 V	I_e	[A]	300	300	300
		110 V	I_e	[A]	300	300	300
		220 V	I_e	[A]	300	300	300
Current Heat Loss (3-pole)							
Current heat loss at I_{th}				[W]	79	108	95
Current heat loss at I_e to AC-3 / 400 V				[W]	36	55	48
Magnet Systems							
Voltage tolerance ❶	DILM... comfort series		Pick-up	[x U_c]	0.7 x $U_{c\,min}$ – 1.15 x $U_{c\,max}$		
	DILM... comfort series		Drop-out	[x U_c]	0.2 x $U_{c\,min}$ – 0.6 x $U_{c\,max}$		
Power consumption of the coil at cold state and 1.0 x U_c	DILM... comfort series		Pick-up	[VA]	250 ❷	250 ❷	250 ❷
				[W]	200	200	200
			Sealing	[VA]	4.3	4.3	4.3
				[W]	3.3	3.3	3.3
Duty factor				[% DF]	100	100	100
Switching times at 100 % U_c (approximate values)							
Main contacts	DILM... comfort series	Closing delay		[ms]	< 100	< 100	< 100
		Opening delay		[ms]	< 80	< 80	< 80
Reaction in marginal and transition range (Comfort series)	Voltage interruptions	(0 – 0.2 x $U_{c\,min}$) ≤ 10 ms			Time is bridged successfully		
		(0 – 0.2 x $U_{c\,min}$) ≥ 10 ms			Drop-out of the contactor		
	Voltage dips	(0.2 – 0.6 x $U_{c\,min}$) ≤ 12 ms			Time is bridged successfully		
		(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 – 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 with certainty		
		(1.15 x $U_{c\,max}$)			Contactor switches on with certainty		
Permissible contact resistance (of the external command device with actuation of A11)				[mΩ]	≤500	≤500	≤500
Permissible residual current (with actuation of A11 by the electronics with 0 signal)				[mA]	≤1	≤1	≤1
SPS signal level (A3 – A4) to IEC/EN 61131-2 (Type 2)		High		[V]	15	15	15
		Low		[V]	5	5	5
Electromagnetic Compatibility (EMC)					This product is designed for operation in industrial environments (Environment 2). Usage in domestic areas (Environment 1) can cause radio frequency interence (RFI) so that additional interference to noise suppression measures must be provided.		

❶ $U_{c\,min}$, $U_{c\,max}$ – please see page 29
❷ Control transformer with $U_k \leq 6\%$

DILM300	DILM400	DILM500	DILM580	DILM650	DILM750	DILM820	DILM1000
400	400	400	–	–	–	–	–
400	400	400	–	–	–	–	–
400	400	400	–	–	–	–	–
11	11	11	–	–	–	–	–
400	400	400	–	–	–	–	–
400	400	400	–	–	–	–	–
400	400	400	–	–	–	–	–
400	400	400	–	–	–	–	–
400	400	400	–	–	–	–	–
400	400	400	–	–	–	–	–
123	188	236	227	257	288	355	355
69	120	120	120	150	200	239	355
	$0.7 \times U_{c\,min} - 1.15 \times U_{c\,max}$ $0.2 \times U_{c\,min} - 0.6 \times U_{c\,max}$						
450 ❷	450 ❷	450 ❷	800 ❸	800 ❸	800 ❸	800 ❸	800 ❸
350	350	350	700	700	700	700	700
4.3	4.3	4.3	7.5	7.5	7.5	7.5	7.5
3.3	3.3	3.3	6.5	6.5	6.5	6.5	6.5
100	100	100	100	100	100	100	100
< 80	< 80	< 80	<70	<70	<70	<70	<70
< 80	< 80	< 80	<70	<70	<70	<70	<70
Time is bridged successfully Drop-out of the contactor							
Time is bridged successfully 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 with certainty Contactor switches on with certainty							
≤500	≤500	≤500	≤500	≤500	≤500	≤500	≤500
≤1	≤1	≤1	≤1	≤1	≤1	≤1	≤1
15	15	15	15	15	15	15	15
5	5	5	5	5	5	5	5
This product is designed for operation in industrial environments (Environment 2). Usage in domestic areas (Environment 1) can cause radio frequency interence (RFI) so that additional interference to noise suppression measures must be provided.							

❷ Control transformer with $U_k \leq 6\%$
❸ Control transformer with $U_k \leq 7\%$

				DILM7-... – DILM32-...	DILA-XHI...	DILM32-XHI...	DILM150-XHI...	DILM1000-XHI...
Auxiliary Contacts								
Interlocked opposing contacts within an auxiliary contact module (to IEC 60947-5-1 Annex L)				–	Yes	Yes	Yes	Yes
Break contact (not late-break contact) suitable as a mirror contact (to IEC/EC 60947-4-1 Annex F)				DILM7 – DILM32	DILM7 – DILM32	DILM7 – DILM32	DILM40 – DILM65	DILM40 – DILM65 DILM185 – 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 -AC		U_i	[V AC]	690	690	690	690	690
Rated operational voltage		U_e	[V AC]	500	500	500	500	500
Safe isolation to VDE 0106 Part 101 and Part 101/A1								
between coil and axiliary 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]	6	6	6	6	6
	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-13 L/R ≤ 15 ms ❶	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
Conventional thermal current		I_{th}	[A]	10	10	10	10	10
Control circuit reliability ❷		Failure Rate	[λ]			<10^8, <1 one failure at 100 million operations		
Component lifespan at U_e = 230 V, AC-15, 3A		Ops	[x 10^6]	1.3	1.3	1.3	1.3	1.3
Short-circuit rating without welding max. fuse ❸			[A gG/gL]	10	10	10	16	16

❶ Making and breaking conditions to DC-13, time L/R constant as stated
❷ At U_e = 24 V DC, U_{min} = 17 V, I_{min} = 5.4 mA
❸ See "Fuses" overlay for time/current characteristic (on request)

		DILEM	DILEM-G	DILEM4	DILEM4-G
General					
Standards			UL, CSA, IEC/EN 60 947, VDE 0660		
Mechanical Lifespan Operations x 10^6		10	20	20	–
Maximum Operating Frequency					
Mechanical	[Ops/h]	9000	9000	9000	9000
Electrical (Contactor without Overload Relay)			See characteristic curve		
Climatic Proofing			Damp heat, constant, to IEC 60 068-2-78 Damp heat, cyclic, to IEC 60 068-2-30		
Ambient Temperature					
Open	[°C / °F]	-25/50°C / *-13/122°F*	-25/50°C / *-13/122°F*	-25/50°C / *-13/122°F*	-25/50°C / *-13/122°F*
Enclosed	[°C / °F]	-25/40°C / *-13/104°F*	-25/40°C / *-13/104°F*	-25/40°C / *-13/104°F*	-25/40°C / *-13/104°F*
Mounting Position			As required except vertical with terminals A1/A2 at the bottom 		
Mechanical Shock Resistance					
Half-Sinusoidal Shock 10 ms					
Basic unit without auxiliary contact module					
Main contacts make contact	[g]	10	10	10	10
Main contacts make/break contact	[g]	10/8	10/8	–	–
Basic unit with auxiliary contact module					
Main contacts make contact	[g]	10	10	10	10
Main contacts make/break contact	[g]	20/20	20/20	20/20	20/20
Degree of protection		IP20	IP20	IP20	IP20
Protection against direct contact when actuated from front			Finger- and back-of-hand proof		
Weight	[kg]	0.2	0.17	0.2	0.17
Terminal capacity of main and auxiliary contacts					
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 (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 – 1.5) 2 x (0.75 – 1.5)	1 x (0.75 – 1.5) 2 x (0.75 – 1.5)	1 x (0.75 – 1.5) 2 x (0.75 – 1.5)	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
Standard 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
Terminal capacity of of springloaded main terminals					
Solid	[mm^2]	1 x (1 – 2.5) 2 x (1 – 2.5)	1 x (1 – 2.5) 2 x (1 – 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 (1 – 2.5) 2 x (1 – 2.5)	1 x (1 – 2.5) 2 x (1 – 2.5)	1 x (1 – 2.5) 2 x (1 – 2.5)	1 x (1 – 2.5) 2 x (1 – 2.5)
Standard screwdriver	[mm]	0.6 x 3.5	0.6 x 3.5	0.6 x 3.5	0.6 x 3.5

				DILEM	DILEM-G	DILEM4	DILEM4-G
Main Contacts							
Rated impulse withstand voltage		U_{imp}	[V AC]	6000	6000	6000	6000
Overvoltage category/pollution degree				III/3	III/3	III/3	III/3
Rated insulation voltage		U_i	[V AC]	690	690	690	690
Rated opererational voltage		U_e	[V AC]	690	690	690	690
Safe isoltation to VDE 0106 Part 101 and Part 101/A1							
between coil and contacts			[V AC]	300	300	300	300
between the contacts			[V AC]	300	300	300	300
Making capacity (cos φ to IEC/EN 60947)			[A]	110	110	110	110
Breaking capacity	220/230 V		[A]	90	90	90	90
	380/400 V		[A]	90	90	90	90
	500 V		[A]	64	64	64	64
	660/690 V		[A]	54	54	54	54
Component lifespan	AC-1			see page 36			
Short-circuit protection rating maximum fuse							
Type "2"		gL/gG	[A]	10	10	10	10
Type "1"		gL/gG	[A]	20	20	20	20
AC							
AC-1 Operation							
Conventional free air 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 ❶		I_{th}	[A]	16	16	16	16
Conventional free air thermal current, 1-pole							
Open ❶		I_{th}	[A]	50	50	60	60
Enclosed ❶		I_{th}	[A]	40	40	50	50
AC-3 Operation							
Rated operational current, open, 50 – 60 Hz ❶	220/230 V	I_e	[A]	9.0	9.0	9.0	9.0
	240 V	I_e	[A]	9.0	9.0	9.0	9.0
	380/400 V	I_e	[A]	9.0	9.0	9.0	9.0
	415 V	I_e	[A]	9.0	9.0	9.0	9.0
	440 V	I_e	[A]	9.0	9.0	9.0	9.0
	550 V	I_e	[A]	6.4	6.4	6.4	6.4
	660/690 V	I_e	[A]	4.8	4.8	4.8	4.8
Rated power	220/230 V	P	[kW]	2.2	2.2	2.2	2.2
	240 V	P	[kW]	2.5	2.5	2.5	2.5
	380/400 V	P	[kW]	4	4	4	4
	415 V	P	[kW]	4.3	4.3	4.3	4.3
	440 V	P	[kW]	4.6	4.6	4.6	4.6
	500 V	P	[kW]	4	4	4	4
	660/690 V	P	[kW]	4	4	4	4
AC-4 operation							
Rated operational current, open, 50 – 60 Hz ❶	220/230 V	I_e	[A]	6.6	6.6	6.6	6.6
	240 V	I_e	[A]	6.6	6.6	6.6	6.6
	380/400 V	I_e	[A]	6.6	6.6	6.6	6.6
	415 V	I_e	[A]	6.6	6.6	6.6	6.6
	440 V	I_e	[A]	6.6	6.6	6.6	6.6
	500 V	I_e	[A]	5	5	5	5
	660/690 V	I_e	[A]	3.4	3.4	3.4	3.4
Rated power	220/230 V	P	[kW]	1.5	1.5	1.5	1.5
	240 V	P	[kW]	1.8	1.8	1.8	1.8
	380/400 V	P	[kW]	3	3	3	3
	415 V	P	[kW]	3.1	3.1	3.1	3.1
	440 V	P	[kW]	3.3	3.3	3.3	3.3
	500 V	P	[kW]	3	3	3	3
	660/690 V	P	[kW]	3	3	3	3

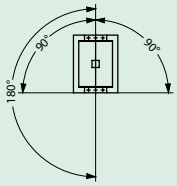
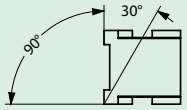
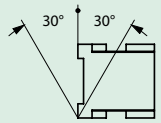
❶ At maximum permissible ambient temperature.

				DILEM	DILEM-G	DILEM4	DILEM4-G
DC							
Rated operational current, open ❶							
DC-1	12 V	I_e	[A]	20	20	–	–
	24 V	I_e	[A]	20	20	–	–
	60 V	I_e	[A]	20	20	–	–
	110 V	I_e	[A]	20	20	–	–
	220 V	I_e	[A]	20	20	–	–
DC-3	12 V	I_e	[A]	8	8	–	–
	24 V	I_e	[A]	8	8	–	–
	60 V	I_e	[A]	4	4	–	–
	110 V	I_e	[A]	3	3	–	–
	220 V	I_e	[A]	–	–	1	1
DC-5	12 V	I_e	[A]	2.5	2.5	–	–
	24 V	I_e	[A]	2.5	2.5	–	–
	60 V	I_e	[A]	2.5	2.5	–	–
	110 V	I_e	[A]	1.5	1.5	2.5	2.5
	220 V	I_e	[A]	0.3	0.3	1	1
Current heat loss (3 or 4 pole)							
at I_{th}			[W]	2	3.5	2.7	4.7
at I_e to AC-3 / 400 V			[W]	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	–
Dual-frequency coil 50/60 Hz		Pick-up	[x U_c]	0.85 – 1.1	–	0.85 – 1.1	–
DC operated ❷		Pick-up	[x U_c]	–	0.8 – 1.1	–	0.85 – 1.1
Power consumption							
AC operation							
Single-voltage coil 50 Hz and dual-voltage coil 50 Hz, 60 Hz		Pick-up	[VA]	25	–	25	–
		Pick-up	[W]	22	–	22	–
		Sealing	[VA]	4.6	–	4.6	–
		Sealing	[W]	1.3	–	1.3	–
Dual-frequency coil 50/60 Hz at 50 Hz		Pick-up	[VA]	30	–	30	–
		Pick-up	[W]	26	–	26	–
		Sealing	[VA]	5.4	–	5.4	–
		Sealing	[W]	1.6	–	1.6	–
Dual-frequency coil 50/60 Hz at 60 Hz		Pick-up	[VA]	29	–	29	–
		Pick-up	[W]	24	–	24	–
		Sealing	[VA]	3.9	–	3.9	–
		Sealing	[W]	1.1	–	1.1	–
DC operation ❷							
Power consumption pick-up = sealing			[VA / W]	–	2.6	–	2.6
Duty factor			[% DF]	100	100	100	100
Switching time @ 100 % U_c							
Make contact							
Closing delay	Min.		[ms]	14	26	14	26
	Max.		[ms]	21	35	21	35
Opening delay	Min.		[ms]	8	15	8	15
	Max.		[ms]	18	25	18	25
Closing delay with top mounting auxiliary contact			[ms]	max. 45	max. 70	max. 45	max. 70
Reversing contactors							
Changeover time @ 110 % U_c	Min.		[ms]	16	40	16	40
	Max.		[ms]	21	50	21	50
Arcing time at 690 V AC			[ms]	max. 12	max. 12	max. 12	max. 12

❶ At maximum permissible ambient temperature.
❷ Smoothed DC or three-phase bridge rectifier.

				DILEM	...DILEM
Auxiliary Contacts					
Interlocked opposing contacts to ZH 1 / 457, 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 operational voltage		U_e	[V AC]	600	600
Safe isolation to VDE 0106 Part 101 and Part 101/A1					
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-13	1	24 V	[A]	2.5	2.5
L/R ≤ 15 ms	2	60 V	[A]	2.5	2.5
Contacts in series:	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 (@ $U_e = 24$ V DC, $U_{min} = 17$ V, $I_{min} = 5.4$ mA)		Failure Rate	[ops.]	$<10^8$, <one failure @ 100 million	
Component lifespan @ $U_e = 240$ V					
AC-15		Operations	[x 10^6]	0.2	0.2
DC-13 ❶ L/R = 50ms: 2 contacts in series at $I_e = 0.5$ A		Operations	[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 conventional free air thermal current I_{th}					
Per contact			[W]	0.2	0.2

❶ Making and breaking conditions to DC-13, time L/R constant as stated.

			DIL00MK	DIL0MK	DIL1MK	DIL2MK	DIL3MK72
General							
Standards					UL, CSA, IEC/EN 60947, VDE 0660		
Ambient temperature							
Open		[°C]	-25/50° C	-25/50° C	-25/50° C	-25/50° C	-25/55° C
		[°F]	-13/122° F	-13/122° F	-13/122° F	-13/122° F	-13/131° F
Enclosed ❶		[°C]	-25/40° C	-25/40° C	-25/40° C	-25/40° C	-25/40° C
		[°F]	-13/104° F	-13/104° F	-13/104° F	-13/104° F	-13/104° F
Mounting position							
Degree of protection			IP20	IP00	IP00	IP00	IP00
Protection against direct contact from the front when actuated by a perpendicular test finger (IEC 536)					Finger- and back-of-hand proof		
Weight							
AC		[kg]	0.32	0.42	0.71	0.95	2
DC		[kg]	0.50	0.77	1.25	1.85	2
Terminal capacity (screw terminals; 1 or 2 conductors can be connected)							
Main cable ❷							
Solid		[mm²]	1 x (0.75–4)	1 x (1 – 6)	1 x (2.5 – 10)	1 x (2.5 – 16)	1 x (6 – 16)
			2 x (0.75–4)	2 x (1 – 6)	2 x (2.5 – 10)	2 x (2.5 – 16)	2 x (6 – 16)
Flexible with ferrule		[mm²]	1 x (0.75–4)	1 x (1 – 6)	1 x (2.5 – 16)	1 x (2.5 – 25)	1 x (4 – 50)
			2 x (0.75–4)	2 x (1 – 6)	2 x (2.5 – 10)	2 x (2.5 – 10)	2 x (4 – 50)
Stranded		[mm²]	–	–	1 x (10 – 25)	1 x (10 – 35)	16
			–	–	2 x 10	2 x 10	50
Solid or stranded		[AWG]	18	16	12	12	10
			10	10	4	2	2
Group Compensation							
Rated operational current I_e of three-phase capacitors							
Open ❶	230 V	[A]	18	23	40	53	77
	400 V	[A]	19	26	38	51	72
	525 V	[A]	15	23	39	51	66
	690 V	[A]	15	20	30	40	63
Enclosed ❶	230 V	[A]	13	22	32	46	71
	400 V	[A]	15	22	32	46	68
	525 V	[A]	12	22	32	44	66
	690 V	[A]	12	17	25	37	63
Making capacity (i-peak value) without damping			180 x I_e	180 x I_e	180 x I_e	180 x I_e	180 x I_e
Component lifespan	0ps	[x 10^6]	0.2	0.1	0.1	0.1	0.1
Maximum operating frequency		[0ps/h]	200	200	200	200	100

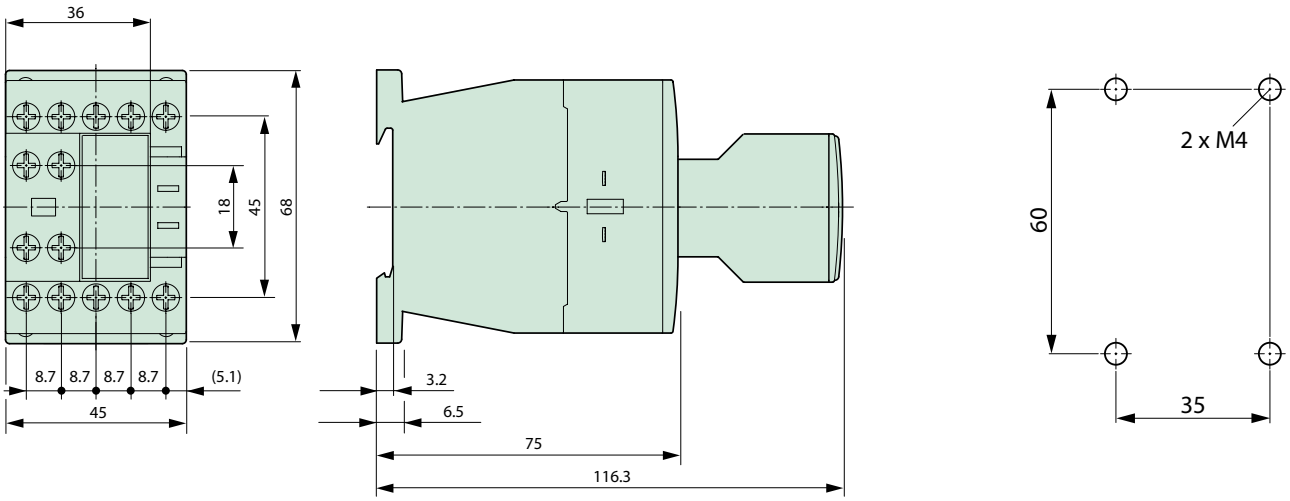
❶ At maximum admissible ambient temperature.
❷ Maximum of one size difference admissible when using 2 conductors.

				...SDILM
Auxiliary Contacts				
Rated impulse withstand voltage		U_{imp}	[V]	6000
Overvoltage category / pollution degree				III/3
Rated insulation voltage		U_i	[V AC]	690
Rated operational voltage		U_e	[V AC]	500
Safe isolation to IEC 536				
between coil and auxiliary contacts			[V AC]	440
between the auxiliary contacts			[V AC]	440
Rated operational current				
AC-15	220/240 V	I_e	[A]	6
	380/415 V	I_e	[A]	4
	500 V	I_e	[A]	1.5
DC-13 ❶ L/R ≤ 15 ms		24 V	[A]	10
L/R ≤ 15 ms		60 V	[A]	6
		100 V	[A]	3
		220 V	[A]	1
Conventional thermal current		I_{th}	[A]	16
Control circuit reliability (@ U_e = 24 V DC, U_{min} = 17 V, I_{min} = 5.4 mA)				
Fault probability H_r				< 10-8, < 1 fault in 100 million operations
Short-circuit rating without welding				
Maximum fuse ❷			[A gG/gL]	16
Max. overcurrent protective device	220/230 V			–
Pilot duty rating (UL/CSA)			[AC/DC]	A600/P300

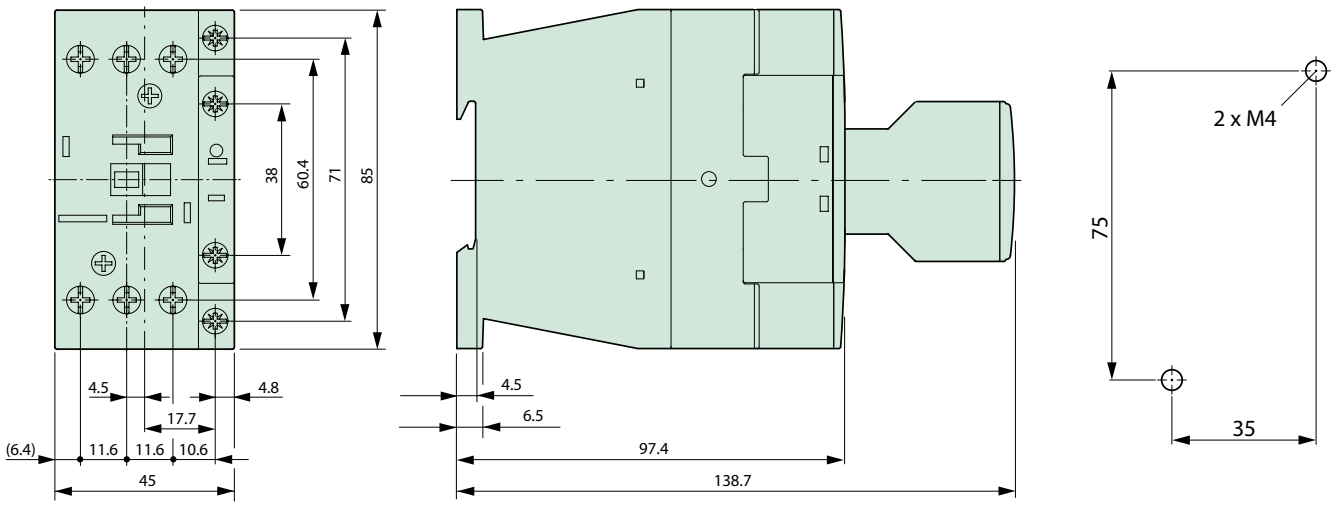
❶ Making and breaking contacts to DC-13, time constant as stated.
❷ See transparent overlay "Fuses" for time/current characteristics.

Contactors

DILM7
DILM9
DILM12



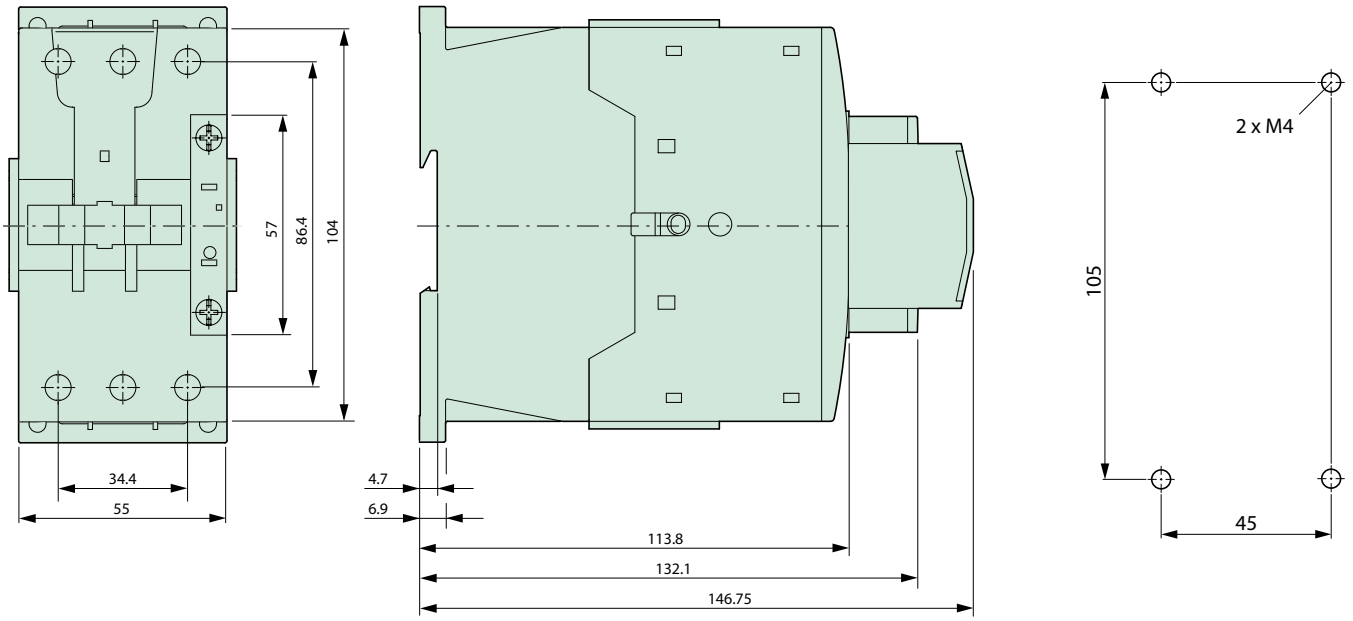
DILM17
DILM25
DILM32

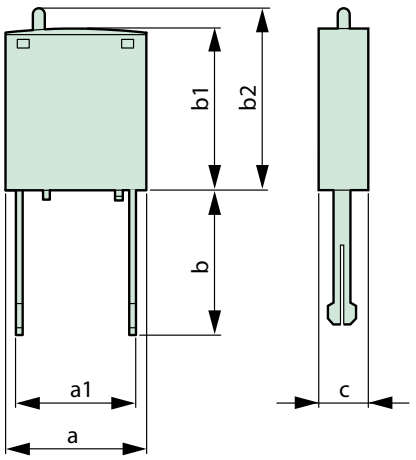


★ Dimensions are in millimeters.

Contactors

DILM40
DILM50
DILM65

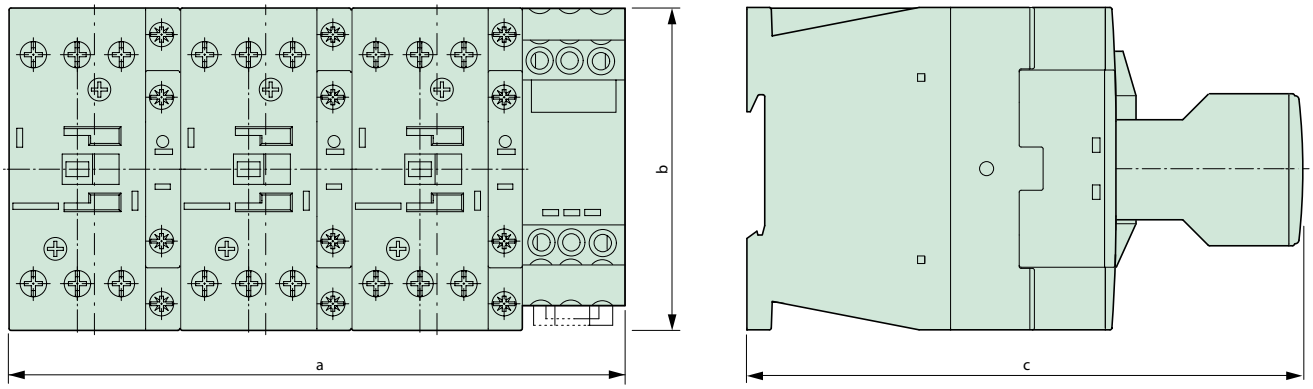




dimension	DILM12-XSPR... DILM12-XSPV...	DILM32-XSPR... DILM32-XSPV...	DILM95-XSPR... DILM95-XSPV...
a	25	25	25
a1	9.2	9.2	20
b	25.9	16	18.5
b1	28	28	28
b2	≈32	≈32	≈32
c	9	9	9

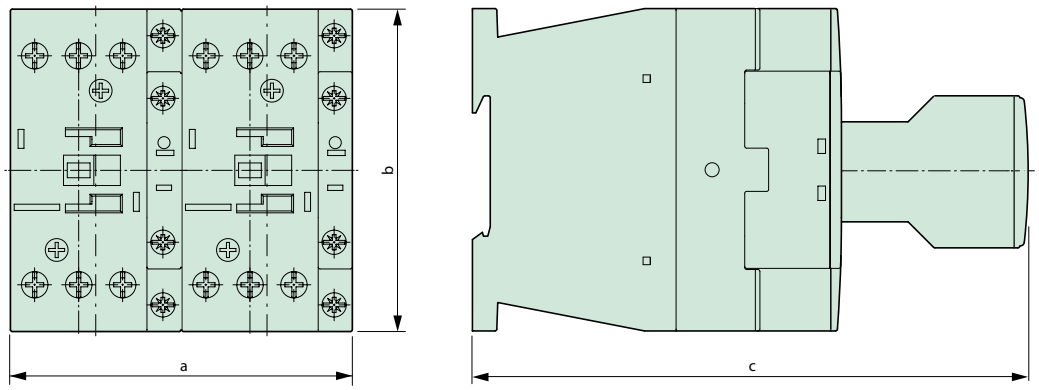
★ Dimensions are in millimeters.

Star-Delta Combination



dimension	SDAINLM12 – SDAINLM22	SDAINLM30 – SDAINLM55
a	158	158
b	68	85
c	125.2	147.3

Reversing Combination

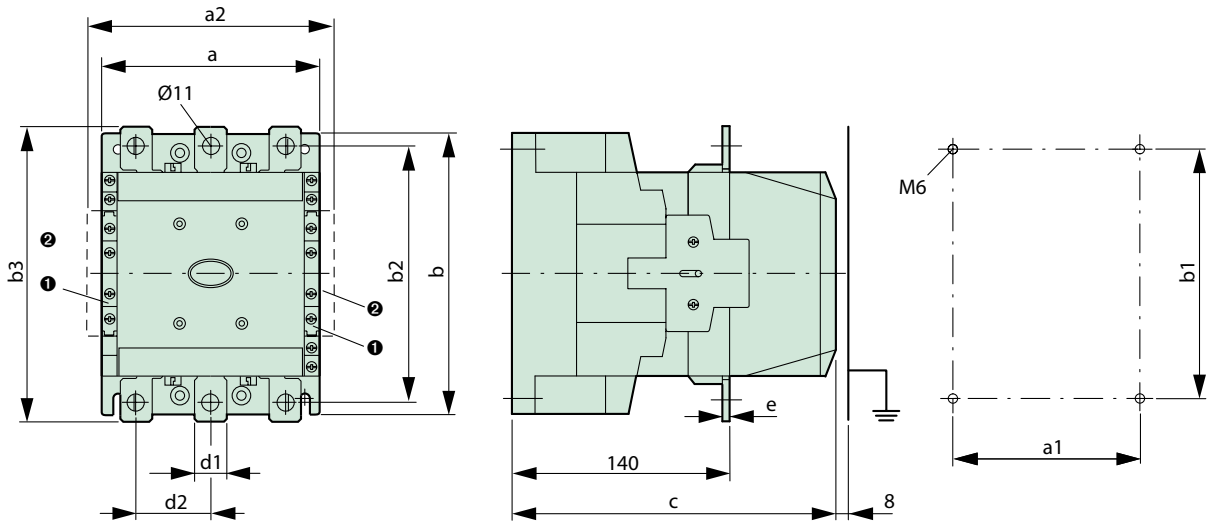


dimension	DIULM7/21 – DIULM12/21	DIULM17/21 – DIULM32/21	DIULM40/11 – DIULM50/11
a	90	90	110
b	68	85	115
c	125.2	147.3	146.75

★ Dimensions are in millimeters.

Contactors

DILM185 **DILM300**
DILM225 **DILM400**
DILM250 **DILM500**



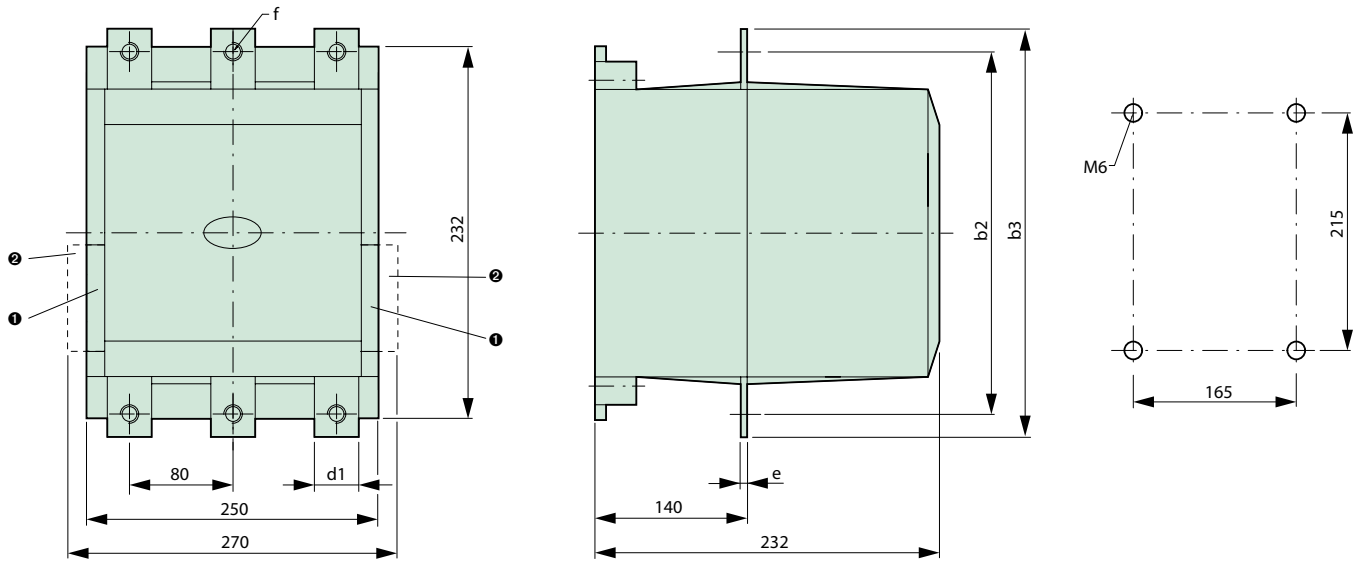
dimension	DILM185	DILM225	DILM250	DILM300	DILM400	DILM500
a	140	140	140	160	160	160
a1	120	120	120	130	130	130
a2	160	160	160	180	180	180
b	180	180	180	200	200	200
b1	160	160	160	180	180	180
b2	164	164	164	184	184	189
b3	189	189	189	209	209	219
d1	20	20	25	25	25	38
d2	48	48	48	48	48	57
e	5	5	5	6	6	6
c	208	208	208	216	216	216

★ Dimensions are in millimeters.

❶ DILM1000-XHI...-SI
❷ DILM1000-XHI11-SA

Contactors

DILM580
DILM650
DILM750
DILM820
DILM1000



dimension	DILM580	DILM650	DILM750	DILM820	DILM1000
b2	256	256	256	256	256
b3	286	286	296	296	296
d1	35	35	45	45	45
e	6	6	6	6	10
f	11	11	13.5	13.5	13.5

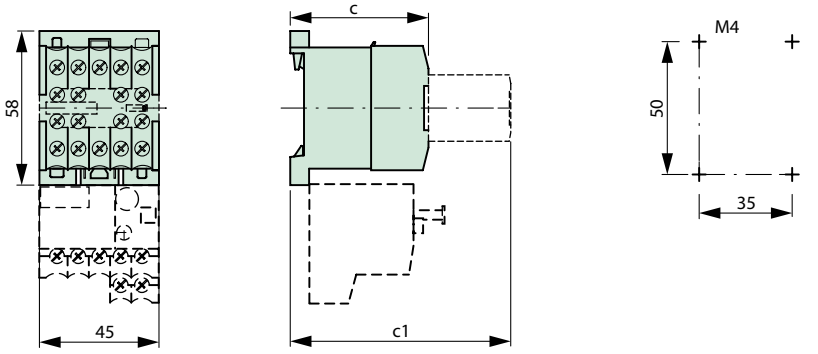
★ Dimensions are in millimeters.

❶ DILM1000-XHI...-SI
❷ DILM1000-XHI11-SA

Mini Contactor Relay

DILEM

DILEM-G

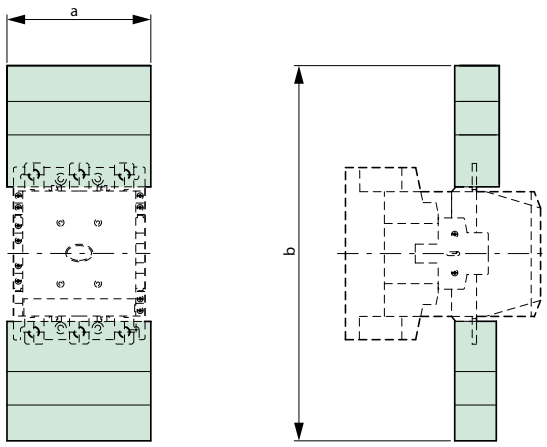


dimension	DILEM(-G)
c	52
c1	83

★ Dimensions are in millimeters.

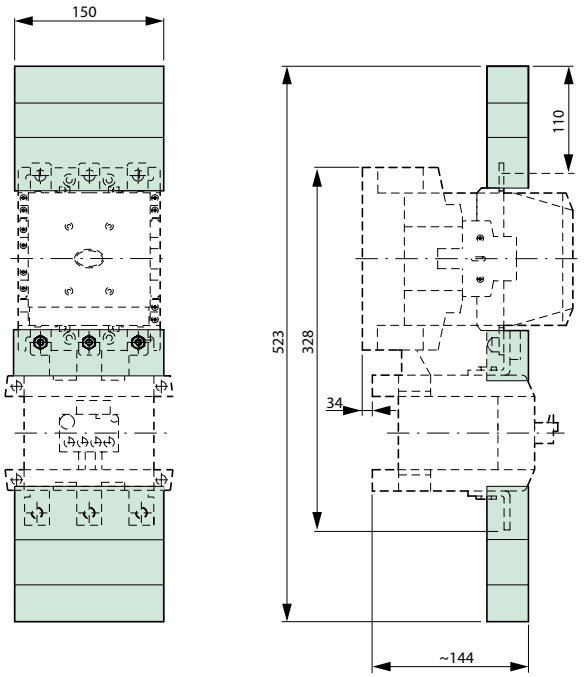
Contactor with Terminal Shroud

DILM185 to DILM1000 with DILM...-XHB



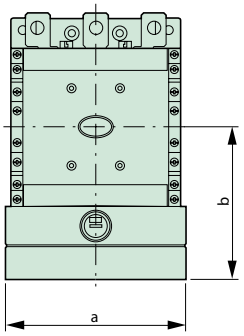
dimension	DILM185 DILM225 DILM250 DILM185-XP1	DILM300 DILM400	DILM500	DILM580 DILM650 DILM750 DILM820 DILM1000
a	150	150	174	236
b	384	404	426	506

DILM185 to DILM250 with Z5-.../FF250



Contactor with Start-Point Bridge + Terminal Shroud

DILM...-XS1

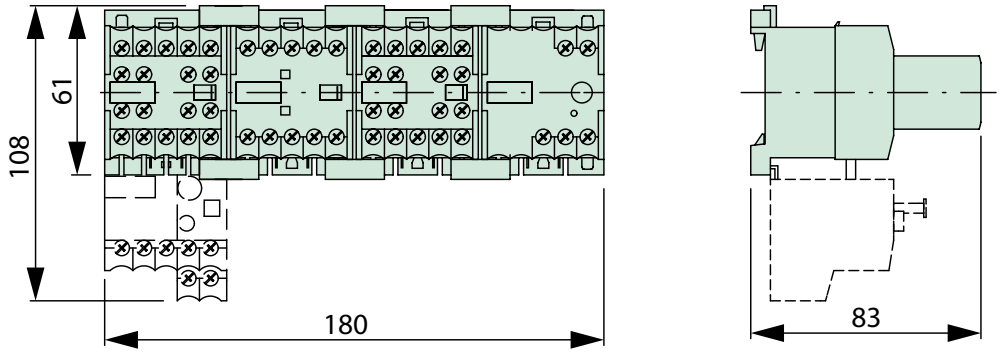


dimension	DILM185 – DILM250	DILM300 - DILM400	DILM500
a	150	150	176
b	127	137	146

★ Dimensions are in millimeters.

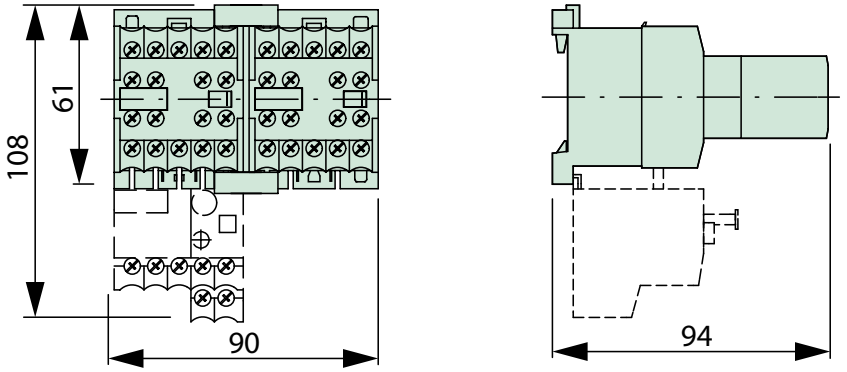
Star-Delta Starter Combinations

SDAINLEM



Reversing Combination

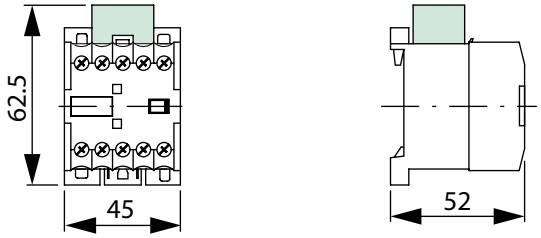
DIULEM



★ Dimensions are in millimeters.

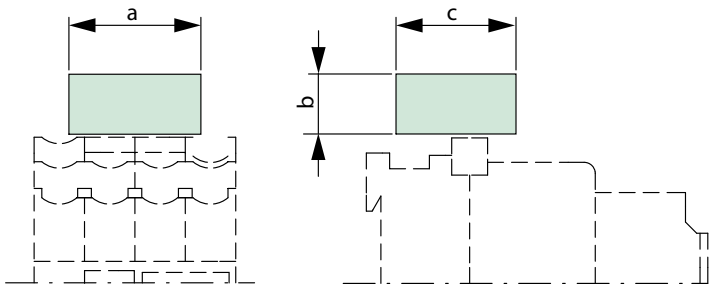
Suppressor

RCDILE
VGDILE



RCBDIL...
RCSDIL...
FDBDIL...

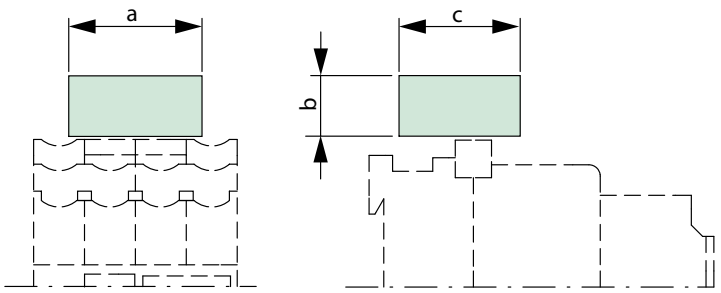
VGBDIL...
VGCDIL



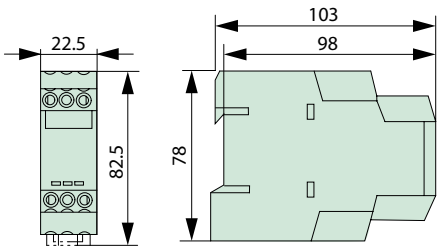
dimension	RCBDIL	RCSDIL	FDBDIL	VGBDIL	VGCDIL
a	33	33	33	33	38
b	15	15	15	15	8
c	30	30	30	30	33

Amplifier Modules

VS1DIL
VS2DIL



ETS4-VS3

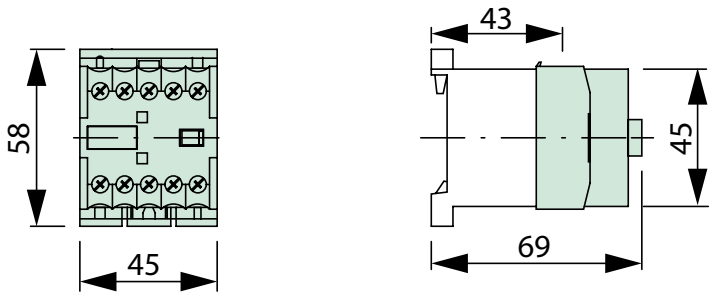


dimension	VS1DIL, VS2DIL
a	45
b	26
c	55

★ Dimensions are in millimeters.

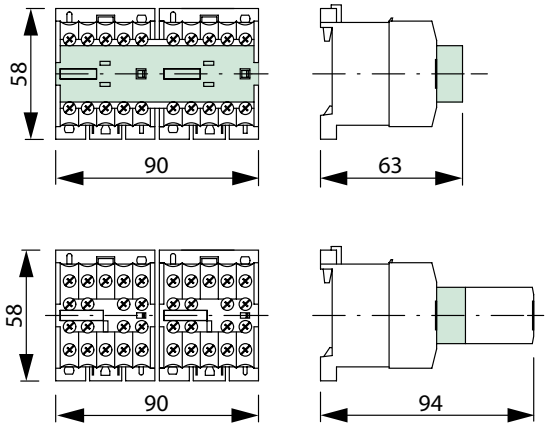
Sealable Shroud

HDILE

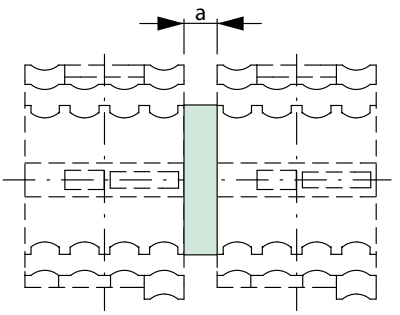


Mechanical Interlock

MVDILE



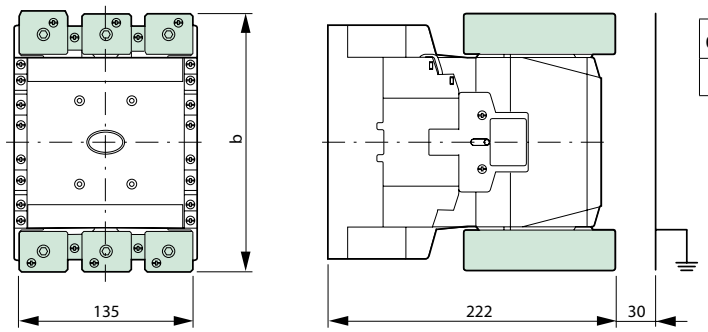
MVDILM
DILM500-XMV



dimension	DILM185 – DILM500
a	15

Cable Terminal Block

DILM...-XKU-S

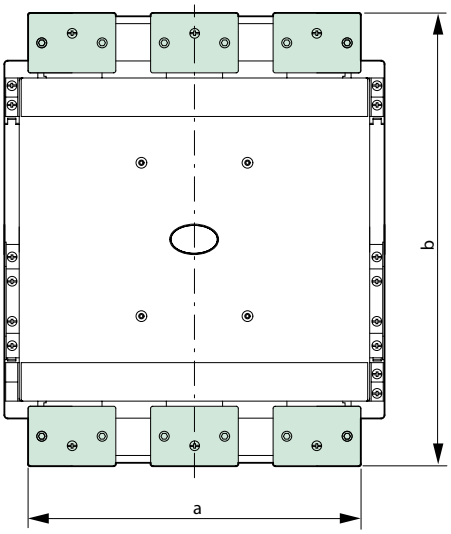


dimension	DILM185 – DILM225	DILM250	DILM300 – DILM400
b	198	198	218

★ Dimensions are in millimeters.

Flat Strip Conductor Terminals

DILM...-XKB-S

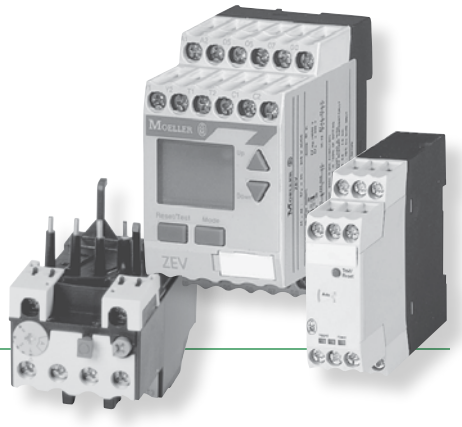


dimension	DILM500	DILM580-650	DILM750-820
a	171	218	231
b	295	295	310

★ Dimensions are in millimeters.

Motor protection from Moeller

Protection solutions to 820A



> Superior IEC designs

> Class 10 protection for modern motors

> Ambient temperature compensation

> Test / OFF button

> Automatic & manual reset

> Trip indication & trip-free release

> Integrated NO & NC contact

Moeller offers an array of motor protection solutions, from the modest "ZE" bi-metallic thermal overload relay, to our advanced ZEV electronic motor protector. We also offer relays specifically built for motors with PTC thermistors.

Better protection

Modern motors are built with less metal, which means they dissipate less heat. This calls for the modern protection offered by IEC-style Class 10 overload relays... they trip in 10 seconds under locked rotor conditions. Most motor manufacturers today recommend this type of "close" protection. If your application calls for longer run-up times, our ZW7 current transformer relay or ZEV programmable relay are an ideal choice.

Many standard features

All Moeller overload relays come with a host of standard features including phase-failure sensitivity, temperature compensation, test / reset buttons and a trip-free release. This safety feature prevents the relay from being held closed during an actual overload.

Worldwide approvals

With the benefit of all major approvals, motor protection from Moeller can be used in virtually every country on the planet.

Feature	ZE	ZB12 ZB32 ZB65	Z5	ZW7	ZEV	EMT *(with PTCs)*
Phase-failure sensitivity	✔	✔	✔		✔	✔
Temperature compensation	✔	✔	✔	✔	✔	N / A
Auxiliary switch 1 NO + 1 NC	✔	✔	✔	✔	✔	✔
Test / OFF button	✔	✔	✔	✔	✔	✔
Reset button manual / auto	✔	✔	✔	✔	✔	✔
Separate mounting		✔	✔	✔	✔	N / A
Protection for heavy starting duty				✔	✔	✔
Trip-free release	✔	✔	✔	✔	✔	N / A
LCD Display					✔	
LED Display						✔
Selectable trip time					✔	

✔ = standard features

Overload Protection Guide

Contactors

Locate contactor first, then scan down to determine appropriate overload relay

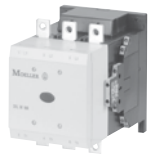
DILEM

DILM7
DILM9
DILM12

DILM17
DILM25
DILM32

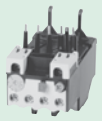
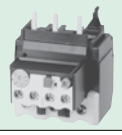
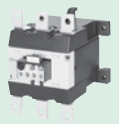
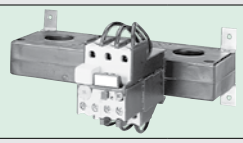
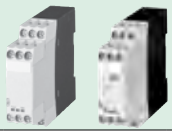
DILM40
DILM50
DILM65

DILM80
DILM95
DILM150



M185
M225
M250

M300 **M650**
M400 **M750**
M500 **M820**
M580 **M1000**

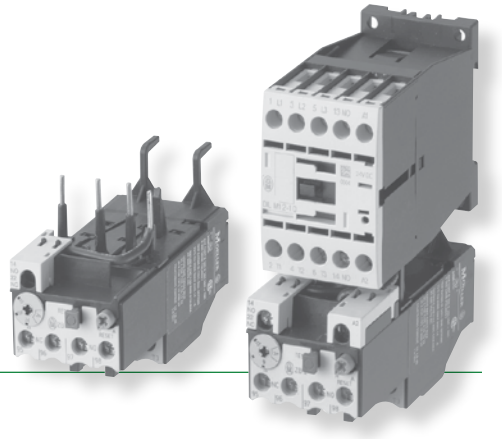
Thermal Overload Relays							
ZE - Direct Mount 0.1 – 12A setting range *See page 77*							
ZB12 - Direct Mount 0.1 – 16A setting range *See page 78*							
ZB32 - Direct Mount 0.1 – 32A setting range *See page 78*							
ZB65 - Direct Mount 6 – 65A setting range *See page 79*							
ZB150 - Direct Mount 25 – 142A setting range *See page 79*					Product available Fall 2005. Contact your Moeller representative.		
Z5-.../FF250 - Direct or Separate Mount 50 – 250A setting range *See page 80*							
Current Transformer-operated Overload Relay							
ZW7-... ❶ 42 – 540A setting range *See page 81*							
Electronic Motor-protective Relay							
ZEV ❷ 1 – 820A setting range *See page 90*							
Thermistor Protection Relays							
EMT6(DB)K *See page 98*							

❶ Can only be used up to DIL M580. ❷ Can only be used up to DIL M820.

NEW

thermal overload relays

Reliable, consistent motor protection



- > Superior IEC designs
- > Class 10 protection for modern motors
- > Ambient temperature compensation
- > Test / OFF button
- > Automatic & manual reset
- > Trip indication & trip-free release
- > Integrated NO & NC contact

Thermal overload motor protection has come a long way from the eutectic alloy solder-pots and replaceable "heaters" of yesterday. Today's IEC-style relays from Moeller feature bimetal technology that is very consistent, reliable and economical.

A great combination

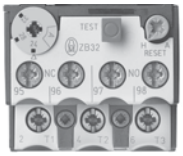
Most of our thermal relays are specifically designed to be close-coupled to a matching contactor. All ZE, ZB and Z5-series overloads, which cover the range from fractional to 250A, are direct mount designs. The resulting motor starters fit in an extremely compact footprint as narrow as 45mm. Protection for larger amp sizes is accomplished with Moeller's ZW7 overload relay with integrated current transformers.

Many standard features

Z-series overloads are the ideal choice In most industrial starting applications. Below 250A, all relays are Class 10, which means they trip within 10 seconds of a locked rotor condition. Many motor manufacturers agree that Class 10 devices offer superior protection against overloads, and also extend motor life by protecting winding insulation.

All of Moeller's thermal overload relays have ambient temperature compensation, automatic or manual reset and a test button. In addition, trip indication and a trip-free release are important safety features. Trip-free releases prevent the device from being held closed, even in the event of an overload.

Easy installation and operation



Once the overload is installed, a convenient dial adjustment is used to set the motor full load amps. Moeller's factory calibration assures that your motor investment is protected accurately.

- Class 10A overload; trip response from 2 to 10 seconds
- Ambient compensated, bi-metallic overload tripping mechanism
- Phase failure sensitive to IEC/EN 60947
- Manual / Automatic reset button
- Built-in NO and NC auxiliary contact

Direct Mount ZE Thermal Overload Relays for DILEM Miniature Contactors ❶

Overload Relay	Adjustable Setting Range	Auxiliary Contacts NO	Auxiliary Contacts NC	For use with...	Short-Circuit Protection (Max 600V AC) ❷ Fuses (A)	Short-Circuit Protection (Max 600V AC) ❷ Circuit Breaker (A) ❸	Type	Article Number	Price
	0.1 – 0.16	1	1	DILEM DIULEM	1	15	**ZE-0,16**	**014263**	See green pages
	0.16 – 0.24	1	1		1	15	**ZE-0,24**	**014285**	
	0.24 – 0.4	1	1		1	15	**ZE-0,4**	**014300**	
	0.4 – 0.6	1	1		1	15	**ZE-0,6**	**014333**	
	0.6 – 1	1	1		3	15	**ZE-1,0**	**014376**	
	1 – 1.6	1	1		6	15	**ZE-1,6**	**014432**	
	1.6 – 2.4	1	1		6	15	**ZE-2,4**	**014479**	
	2.4 – 4	1	1		15	15	**ZE-4**	**014518**	
	4 – 6	1	1		20	15	**ZE-6**	**014565**	
	6 – 9	1	1		35	15	**ZE-9**	**014708**	
	9 – 12	1	1		45	–	**ZE-12** ❹	**014752**	

❶ When using DILEM and ZE, a distance of at least 5mm should be maintained between overload relays mounted side-by-side.
❷ Observe the maximum permissible fuse of the contactor with direct device mounting.
❸ Max. 480V AC.
❹ UL/CSA only.

- Class 10A overload; trip response from 2 to 10 seconds
- Ambient compensated, bi-metallic overload tripping mechanism
- Phase failure sensitive to IEC/EN 60947
- Manual / Automatic reset button
- Built-in NO and NC auxiliary contact

Direct Mount ZB Thermal Overload Relays for DILM7 – DILM32 Contactors

Overload Relay	Adjustable Setting Range	Auxiliary Contacts NO	Auxiliary Contacts NC	For use with...	Short-Circuit Protection (Max 600V AC) ❶ Fuses (A)	Short-Circuit Protection (Max 600V AC) ❶ Circuit Breaker (A)	Type	Article Number	Price
	0.1 – 0.16	1	1	DILM7 – DILM12 DIULM7 – DIULM12	1	25	**ZB12-0,16**	**278431**	See green pages
	0.16 – 0.24	1	1		1	25	**ZB12-0,24**	**278432**	
	0.24 – 0.4	1	1		1	25	**ZB12-0,4**	**278433**	
	0.4 – 0.6	1	1		1	25	**ZB12-0,6**	**278434**	
	0.6 – 1	1	1		3	25	**ZB12-1**	**278435**	
	1 – 1.6	1	1		6	25	**ZB12-1,6**	**278436**	
	1.6 – 2.4	1	1		6	25	**ZB12-2,4**	**278437**	
	2.4 – 4	1	1		15	25	**ZB12-4**	**278438**	
	4 – 6	1	1		20	25	**ZB12-6**	**278439**	
	6 – 10	1	1		40	25	**ZB12-10**	**278440**	
	9 – 12	1	1		60	30	**ZB12-12**	**278441**	
	12 – 16	1	1		60	30	**ZB12-16**	**290168**	
	0.1 – 0.16	1	1	DILM17 – DILM32 DIULM17 – DIULM32	1	25	**ZB32-0,16**	**278442**	
	0.16 – 0.24	1	1		1	25	**ZB32-0,24**	**278443**	
	0.24 – 0.4	1	1		1	25	**ZB32-0,4**	**278444**	
	0.4 – 0.6	1	1		1	25	**ZB32-0,6**	**278445**	
	0.6 – 1	1	1		3	25	**ZB32-1**	**278446**	
	1 – 1.6	1	1		6	25	**ZB32-1,6**	**278447**	
	1.6 – 2.4	1	1		6	25	**ZB32-2,4**	**278448**	
	2.4 – 4	1	1		15	25	**ZB32-4**	**278449**	
	4 – 6	1	1		20	25	**ZB32-6**	**278450**	
	6 – 10	1	1		40	25	**ZB32-10**	**278451**	
	10 – 16	1	1		60	30	**ZB32-16**	**278452**	
	16 – 24	1	1		90	30	**ZB32-24**	**278453**	
	24 – 32	1	1		125	40	**ZB32-32**	**278454**	

❶ Observe the maximum permissible fuse of the contactor with direct device mounting.

- Class 10A overload; trip response from 2 to 10 seconds
- Ambient compensated, bi-metallic overload tripping mechanism
- Phase failure sensitive to IEC/EN 60947
- Manual / Automatic reset button
- Built-in NO and NC auxiliary contact

Direct Mount ZB Thermal Overload Relays for DILM40 – DILM150 Contactors

Overload Relay	Adjustable Setting Range	Auxiliary Contacts NO	Auxiliary Contacts NC	For use with...	Short-Circuit Protection (Max 600V AC) ❶ Fuses (A)	Short-Circuit Protection (Max 600V AC) ❶ Circuit Breaker (A)	Type	Article Number	Price
	6 – 10	1	1	DILM40 to DILM65 DIULM40 to DIULM65	40	40	**ZB65-10**	**278455**	See green pages
	10 – 16	1	1		60	60	**ZB65-16**	**278456**	
	16 – 24	1	1		90	90	**ZB65-24**	**278457**	
	24 – 40	1	1		125	125	**ZB65-40**	**278458**	
	40 – 57	1	1		200	150	**ZB65-57**	**278459**	
	50 – 65	1	1		200	150	**ZB65-65**	**278460**	
	25 – 35	1	1	DILM80 to DILM150 DIULM80 to DIULM150	125	125	**ZB150-35**	**278461**	
	35 – 50	1	1		225	200	**ZB150-50**	**278462**	
	50 – 70	1	1		250	250	**ZB150-70**	**278463**	
	70 – 100	1	1		600 Class J	400	**ZB150-100**	**278464**	
	95 – 125	1	1		500 Class J	500	**ZB150-125**	**278465**	
	120 – 142	1	1		400 Class J	600	**ZB150-150**	**278466**	

❶ Observe the maximum permissible fuse of the contactor with direct device mounting.

- Class 10A overload; trip response from 2 to 10 seconds
- Ambient compensated, bi-metallic overload tripping mechanism
- Phase failure sensitive to IEC/EN 60947
- Manual / Automatic reset button
- Built-in NO and NC auxiliary contact

Direct or Separate Mount Z5 Thermal Overload Relays for DILM185 – DILM250 Contactors

Overload Relay	Adjustable Setting Range	Auxiliary Contacts		For use with...	Short-Circuit Protection (Max 600V AC) ❶		Type	Article Number	Price
		NO	NC		Fuses (A)	Circuit Breaker (A)			
	50 – 70	1	1	DILM185 to DILM250 DIULM185 to DIULM250	250	250	**Z5-70/FF250**	**210070**	See green pages
	70 – 100	1	1		400 class J	400	**Z5-100/FF250**	**210071**	
	95 – 125	1	1		500 class J	500	**Z5-125/FF250**	**210072**	
	120 – 160	1	1		600 class J	600	**Z5-160/FF250**	**210073**	
	160 – 220	1	1		800 class L	800	**Z5-220/FF250**	**210074**	
	200 – 250	1	1		700 class L	600	**Z5-250/FF250**	**210075**	

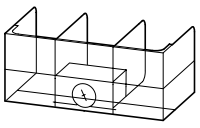
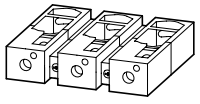
❶ Observe the maximum permissible fuse of the contactor with direct device mounting.

- Designed for heavy-duty starting applications having long accelerating times
- Tripping time in 20 to 30 seconds under locked rotor conditions
- Ambient compensated, bi-metallic overload tripping mechanism
- Manual / Automatic reset button
- Built-in NO and NC auxiliary contact

Separate Mount ZW7 Current Transformer-Operated Thermal Overload Relays [1]

Overload Relay	Adjustable Setting Range	Auxiliary Contacts		For use with...	Short-Circuit Protection		Type	Article Number	Price
		NO	NC		Fuses (A)	Circuit Breaker (A)			
	42 – 63	1	1	DILM50 to DILM580 DIULM50 to DIULM580	As required by associated contactor. Overload relay is self-protecting.		ZW7-63	000245	See green pages
	60 – 90	1	1				ZW7-90	002618	
	85 – 125	1	1				ZW7-125	004991	
	110 – 160	1	1				ZW7-160	007364	
	160 – 240	1	1				ZW7-240	009737	
	190 – 290	1	1				ZW7-290	052448	
	270 – 400	1	1				ZW7-400	045329	
	360 – 540	1	1				ZW7-540	047702	

[1] The specified primary rated current applies to one cable loop. For lower rated motor current, loop cable several times (e.g., ZW7-63 for 21 ... 31.5 A rated motor current: loop cable twice.

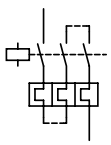
Accessories	Notes	For use with...	Type	Article Number	Price
Bases (for separate mounting)					
	For snap mounting on EN 50 022 DIN-rail or screw mounting.	ZB32	**ZB32-XEZ**	**278473**	See green pages
		ZB65	**ZB65-XEZ**	**278474**	
Pushbuttons (for enclosed overload relays – mounting diameter: 22.5mm)					
	External Reset Button with Rod – 4X; IP65 Blue button plate with "R" inscription	ZE...; Z5...; ZW7... ZB12 – ZB150...	**M22-DZ-B-X6**	**271640**	See green pages
	External Reset Button with Rod – 4X; IP65 Blue button plate with "RESET" inscription		**M22-DZ-B-GB14**	**254834**	
	External Reset Button with Rod – 4X; IP65 Without button plate; add button plate from selection below		**M22-DZ-X**	**254835**	
	Red button plate; blank	M22-DZ-X	**M22-XD-R**	**216423**	
	Red button plate with white circle inscription		**M22-XD-R-X0**	**218153**	
	Red button plate with "STOP" inscription		**M22-XD-R-GB0**	**218194**	
Terminal Covers					
	Overload relays for separate mounting Z5/FF250 -XHB Z5-.../FF250 Z5/FF250 -XHB	Z5-.../FF250	**Z5/FF250-XHB**	**215217**	See green pages
	Overload relay fitted directly to contactor DIL M400 -XHB DIL M185/ 225/250 Z5/FF250 -XHB-Z Z5-.../FF250 Z5/FF250 -XHB-Z	Direct mounting of Z5-.../FF250 to DILM185, DILM225, DILM250	**Z5/FF250-XHB-Z**	**215218**	
Set of box terminals					
	One set of three terminals. Wire size: #6 AWG - 350 MCM UL Recognized/CSA Approved.	Z5-...FF250	**Z5-FF250-XK-CNA**	**229314**	See green pages

EC prototype test certification number:

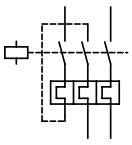
ZE	PTB 01 ATEX 3331
Z5	PTB 02 ATEX 3165

Protection of single-phase and DC current motors:

1-pole

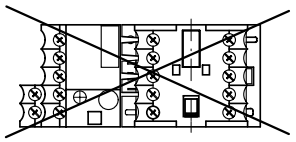


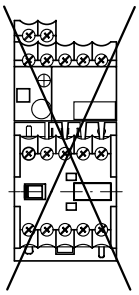
2-pole



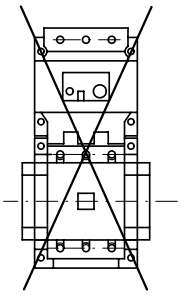
Mounting position:

ZE



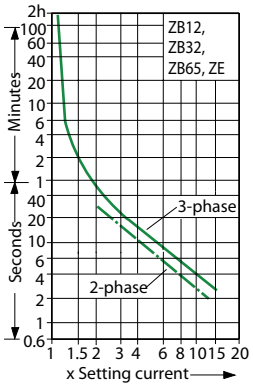


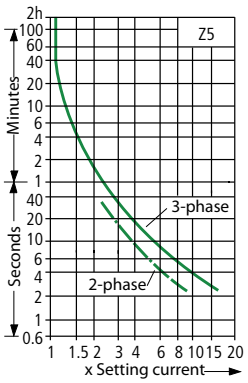
ZB12, ZB32, ZB65, Z5

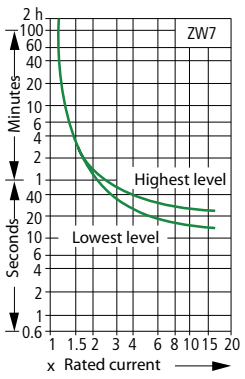


Tripping characteristics:

These tripping characteristics are mean values of the spread at 20°C ambient temperature in a cold state. Tripping time depends on response current. With devices at operating temperature, the tripping time of the overload relay reduces to approximately 25% of the read off value.







			OVERLOAD RELAYS				
			ZB12, ZB32	ZB65	ZE	Z5-.../.IFF250	ZW7
General							
Standards			IEC/EN 60947, VDE 0660, UL, CSA				
Climatic proofing			Damp heat, constant, to IEC 60068-2-78; Damp heat, cyclic, to IEC 60068-2-30				
Ambient temperature							
Open ❶		[°C] [°F]	-25/50 °C *-13/122 °F*	-25/50 °C *-13/122 °F*	-25/50 °C *-13/122 °F*	-25/50 °C *-13/122 °F*	-25/50 °C *-13/122 °F*
Enclosed ❶		[°C] [°F]	-25/40 °C *-13/104 °F*	-25/40 °C *-13/104 °F*	-25/40 °C *-13/104 °F*	-25/40 °C *-13/104 °F*	-25/40 °C *-13/104 °F*
Temperature compensation			Continuous				
Mounting position			See page 83				
Weight		[kg]	0.15	0.25	0.09	1.8	0.95
Mechanical shock resistance half-sinusoidal shock 10ms		[g]	10	10	10	10	10
Degree of protection			IP00	IP00	IP20	IP00	IP00
Protection against direct contact when actuated from front			Finger- and back-of-hand proof			With terminal cover	Finger- and back-of-hand proof
Main Contacts							
Rated impulse withstand voltage	U_{imp}	[V AC]	6000	6000	6000	8000	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	1000	690
Rated operational voltage	U_e	[V AC]	690	690	690	1000	690
Safe isolation to VDE 0106 Part 101 and Part 101/A1							
Between auxiliary contacts and main contacts		[V AC]	440	440	300	440	440
Between the main contacts		[V AC]	440	440	300	440	440
Overload relay setting range		[A]	0.1 – 32	6 – 75	0.1 – 9	50 – 250	40 – 540
Temperature compensation residual error > 20 °C		[% / K]	≤ 0.25	≤ 0.25	≤ 0.25	≤ 0.25	–
Short-circuit protection rating maximum fuse			See page 78	See page 79	See page 77	See page 80	❸
Current heat loss (3 conductors)							
Lower value of setting range		[W]	2.5	3	2.5	16	3
Upper value of setting range		[W]	6	7.5	6	28	10
Terminal capacity							
Solid		[mm²]	2 x (1 – 6)	2 x (1 – 6)	2 x (0.75 – 2.5)	–	–
Flexible without ferrules		[mm²]	–	–	–	–	–
Flexible with ferrule		[mm²]	2 x (1 – 4) 2 x (1 – 6) ❹	1 x 25 2 x (1 – 10) ❷	2 x (0.5 – 1.5)	–	–
Stranded		[mm²]	–	–	–		–
Flexible with cable lug		[mm²]	–	–	–	95	–
Stranded with cable lug		[mm²]	–	–	–	120	–
Solid or stranded		[AWG]	14 – 8	14 – 2	18 – 14	250 MCM	–
Flat conductor	Number of segments x width x thickness	[mm]	–	–	–	6 x 15 x 0.8 ❺	–
Busbar	Width	[mm]	–	–	–	20 x 3	–
Push-through opening	Ø	[mm]	–	–	–	–	27
Terminal screw			M4	M6	M3.5	M8 x 25	–
Tightening torque		[Nm]	1.8	3.5	1.2	24	–
Tools							
Pozidriv screwdriver		[Size]	2	2	2	–	–
Standard screwdriver		[mm]	1 x 6	1 x 6	0.8 x 5.5	–	–
Hexagon socket-head screw	SW	[mm]	–	–	–	13	–

❶ Ambient temperature: operating range to IEC/EN 60947, PTB: -5 °C to +50 °C (23 °F to 122 °F)

❷ Main contacts terminal capacity solid and stranded conductors with ferrules: When using 2 conductors, use identical cross-section.

❸ With overload relay in conjunction with a transformer as required for the contactor

❹ 6 mm2 flexible with ferrules to DIN 46228

❺ Fixing with box terminals

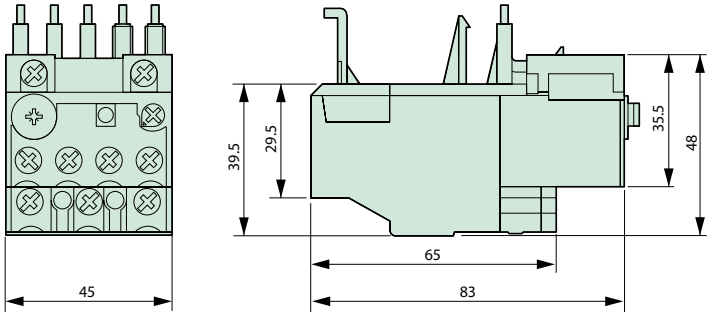
				OVERLOAD RELAYS				
				ZB12, ZB32	ZB65	ZE	Z5-.../.IFF250	ZW7
Auxiliary and control circuit connections								
Rated impulse withstand voltage		U_{imp}	[V]	6000	6000	6000	6000	6000
Overvoltage category / pollution degree				III/3	III/3	III/3	III/3	III/3
Terminal capacity								
Solid			[mm²]	2 x (0.75 – 4)	2 x (0.75 – 4)	2 x (0.75 – 2.5)	2 x (0.75 – 4)	2 x (0.75 – 4)
Flexible with ferrule			[mm²]	2 x (0.75 – 2.5)	2 x (0.75 – 2.5)	2 x (0.5 – 1.5)	2 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)
Terminal screw				M3.5	M3.5	M3.5	M3.5	M3.5
Tightening torque			[Nm]	0.8 – 1.2	0.8 – 1.2	0.8 – 1.2	0.8 – 1.2	0.8 – 1.2
Tools								
Pozidriv screwdriver			[Size]	2	2	2	2	2
Standard screwdriver			[mm]	1 x 6	1 x 6	0.8 x 5.5	1 x 6	1 x 6
Auxiliary circuit rated insulation voltage		U_i	[V AC]	500	500	690	500	500
Rated operational voltage		U_e	[V AC]	500	500	500	500	500
Safe isolation to VDE 0106 Part 101 and Part 101/A1								
Between the auxiliary contacts			[V AC]	240	240	300	240	240
Conventional thermal current		I_{th}	[A]	6	6	6	6	6
Rated operational current								
AC-15								
Make contact	120 V	I_e	[A]	1.5	1.5	1.5	1.5	1.5
	240 V	I_e	[A]	1.5	1.5	1.5	1.5	1.5
	415 V	I_e	[A]	0.5	0.5	0.5	0.5	0.5
	500 V	I_e	[A]	0.5	0.5	0.3	0.5	0.5
Break contact	120 V	I_e	[A]	1.5	1.5	1.5	1.5	1.5
	240 V	I_e	[A]	1.5	1.5	1.5	1.5	1.5
	415 V	I_e	[A]	0.9	0.9	0.7	0.9	0.9
	500 V	I_e	[A]	0.8	0.8	0.5	0.8	0.8
DC-13 L/R ≤ 15 ms ❶								
24 V		I_e	[A]	0.9	0.9	0.9	0.9	0.9
60 V		I_e	[A]	0.75	0.75	0.75	0.75	0.75
110 V		I_e	[A]	0.4	0.4	0.4	0.4	0.4
220 V		I_e	[A]	0.2	0.2	0.2	0.2	0.2
Short-circuit rating without welding								
Max. fuse			[A gG/gL]	6	6	4	6	6
UL / CSA Data								
Rated voltage			[V AC / DC]	600 / 300	600 / 300	300 / 300	600 / 300	600 / 300
Pilot duty rating			[AC]	B600 - same polarity; B300 - opp. polarity	B600 - same polarity; B300 - opp. polarity	D300 ❷	B600 - same polarity; B300 - opp. polarity	B600 - same polarity; B300 - opp. polarity
			[DC]	R300	R300	R300	R300	R300

❶ Rated operational current: Making and breaking conditions to DC-13, L/R constant as stated.

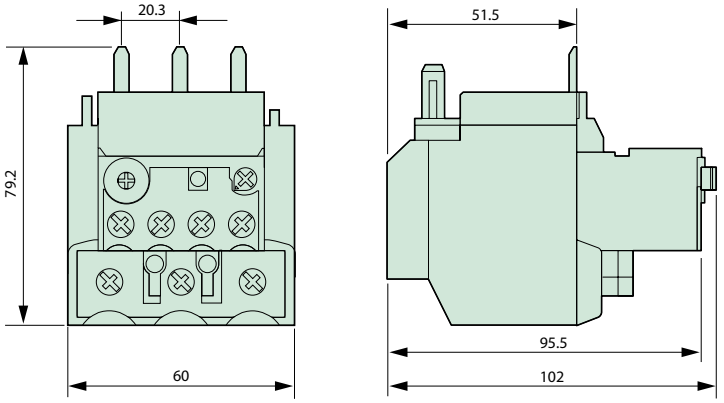
❷ Additional rating of .6A at 600V AC and 1.5A at 240V AC.

Overload Relays

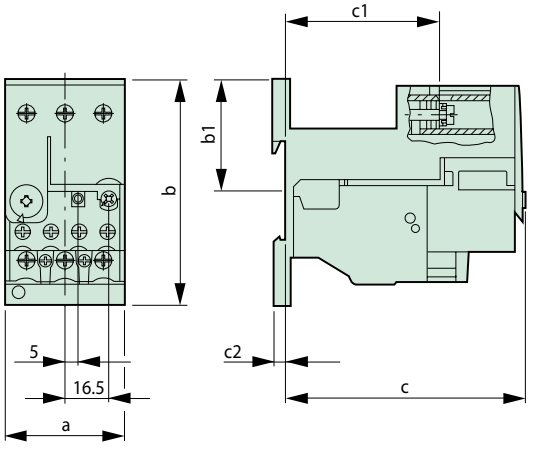
ZB12/ZB32



ZB65



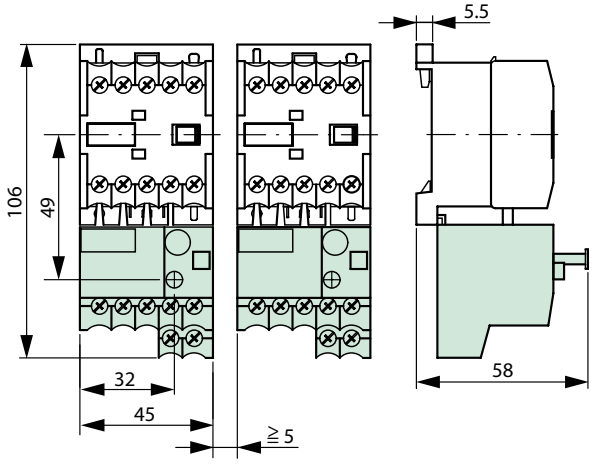
ZB32-XEZ
ZB65-XEZ



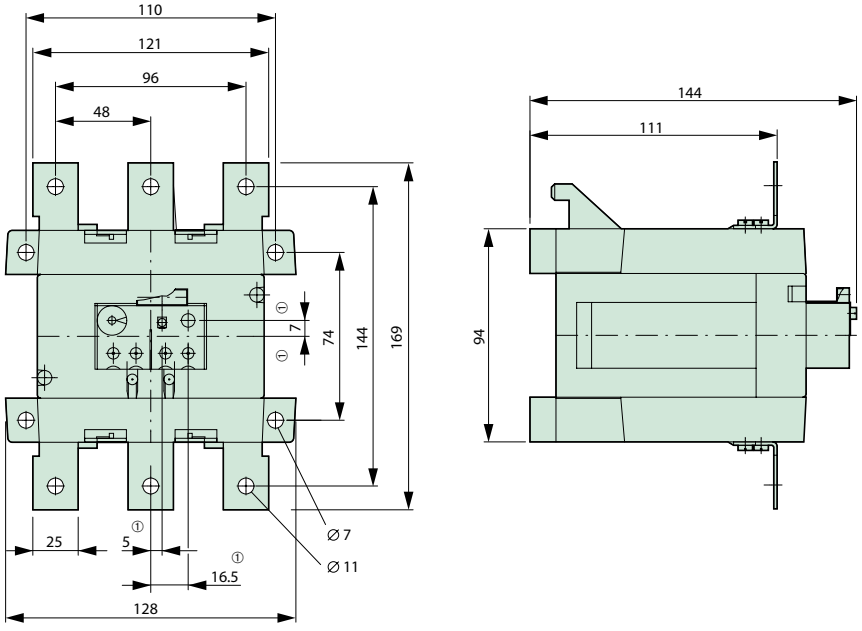
	ZB32	ZB65
a	45	60
b	85	86
b1	42.5	42.5
c	90.5	112
c1	58.3	80.5
c2	3.8	4.7

Overload Relays

ZE



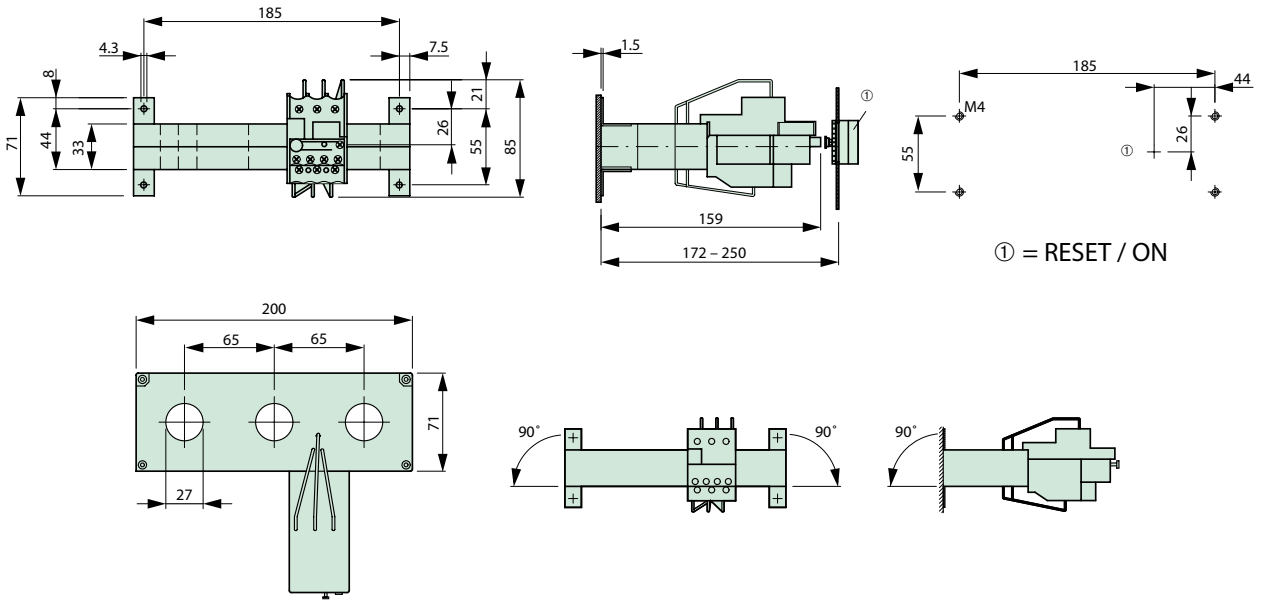
Z5-.../FF250



① = OFF
② = RESET / ON

Current Transformer-operated Overload Relay

ZW7-...



ZEV electronic overload relay

The ultimate motor protection for applications to 820A

Moeller's ZEV electronic overload relay offers the ultimate motor protection at an economical price. The base unit protects against overloads, phase failure and phase imbalance in motors from 1 to 820A. Thermistor connections and optional ground-fault protection make the ZEV a great choice for virtually all applications where sophisticated, yet economical motor protection is required.

The new standard in protection

Newly-developed sensor systems and tripping units make the ZEV electronic overload relay the "top-of-the-range" in motor protection. Enhanced tripping classes provide reliable protection for motors with run-up times as long as 40 seconds. Trip classes are selectable from 5 to 40 seconds, allowing precise protection for a range of applications.

Additional features and options

Optional core-balance transformers detect ground faults quickly, while an integrated thermistor connection makes it easy to upgrade to a full motor-protection system. Check out other great features of the ZEV relay listed on the left.

- > Early warning of an overload
- > Internal fault detection
- > Ambient temperature compensation
- > Test / OFF button
- > Automatic & manual reset
- > Trip indication & trip-free release
- > Integrated NO & NC contact

Easy to operate

A built-in LCD guides you through set-up and operation. In the event of a fault, the display indicates the origin – speeding the process of troubleshooting and repair. Configurable auxiliary contacts may be added for communication of ground faults, thermistor trips, internal faults or early warning of an overload.

Flexibility for multiple environments

The multi-voltage module automatically adapts to different voltages from 24-240V AC/ DC, providing a fast and flexible connection to all conventional control.

Compact design

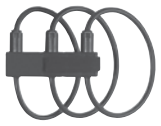
Ring-type current sensors make the ZEV a great choice for protection of even small motors. There's no need for main current wiring or back pan drilling. The sensor is installed quickly and easily with Velcro fasteners. Compared to conventional transformers, this design is up to 58 times smaller, saving valuable space in the control panel.

Safety and approvals

The ZEV electronic overload relay is touch safe to IP20 specifications. It meets approval standards of UL, CSA, IEC/EN 60 947 and VDE 0660.

> Electronic device protects against overloads, phase failure, phase imbalance, internal fault, thermistor tripping and optional ground-fault
> Eight tripping classes from Class 5 to Class 40 protection
> LCD display guides set-up and ensures straightforward operation during a fault condition
> DIN-rail or optional screw mounting

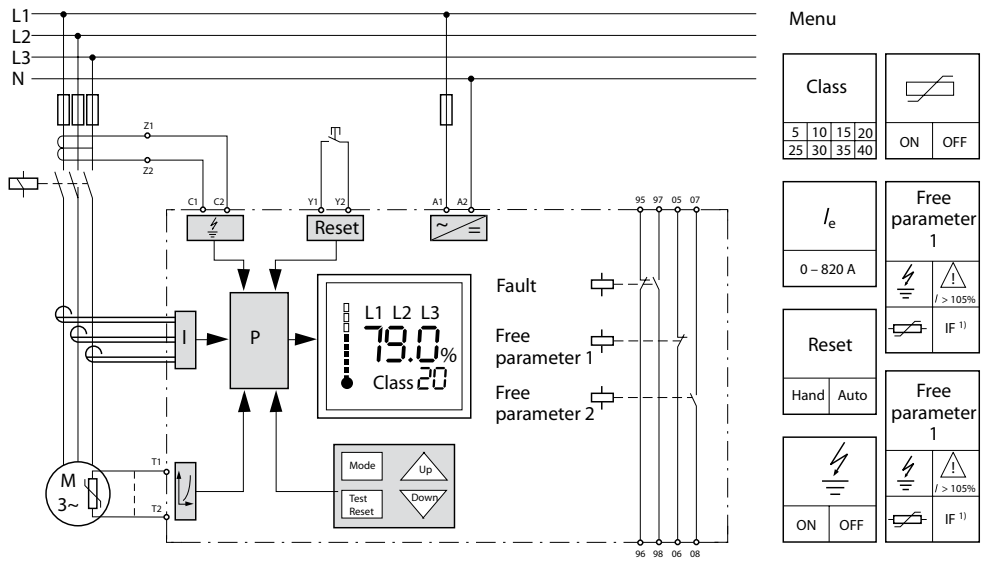
ZEV Electronic Motor-Protective Relays

Overload Relay	Adjustable Setting Range	Length mm	Diameter mm	For use with...	Fault Current	Type	Article Number	Price
ZEV Electronic Motor-Protective Relay								
	1 – 820	–	–	DILEM – DILM820	–	**ZEV**	**209634**	**See green pages**
Current Sensors								
	1 – 25	–	6	DILEM; DILM7 – DILM25	–	**ZEV-XSW-25**	**209635**	See green pages
	3 – 65	–	13	DILM32 – DILM50	–	**ZEV-XSW-65**	**209636**	
	10 – 145	–	21	DILM65 – DILM115	–	**ZEV-XSW-145**	**209637**	
	40 – 820	–	110	DILM185 – DILM820	–	**ZEV-XSW-820**	**209641**	
Connecting Cables								
–	–	200	–	ZEV-XSW-25 ZEV-XSW-65 ZEV-XSW-145 ZEV-XSW-820	–	**ZEV-XVK-20**	**209643**	See green pages
	–	400	–		–	**ZEV-XVK-40**	**209644**	
	–	800	–		–	**ZEV-XVK-80**	**209645**	
SSW Core-Balance Transformers (for ground-leakage monitoring)								
	–	–	40	–	0.3	**SSW40-0,3**	**028286**	See green pages
	–	–	40	–	0.5	**SSW40-0,5**	**028305**	
	–	–	40	–	1	**SSW40-1**	**028306**	
	–	–	65	–	0.5	**SSW65-0,5**	**028307**	
	–	–	65	–	1	**SSW65-1**	**028316**	
	–	–	120	–	0.5	**SSW120-0,5**	**028319**	
	–	–	120	–	1	**SSW120-1**	**028321**	
Mounting Adapter								
	Enables screw mounting of ZEV and Current Sensors to back pan			ZEV ZEV-XSW-25 ZEV-XSW-65 ZEV-XSW-145	–	**ZB4-101-GF1**	**061360**	See green pages

Ordering Instructions

★ *A complete ZEV Electronic Motor Protective Relay consists of:*
– *One ZEV base unit*
– *One Current Sensor*
– *One Connecting Cable*

★ *For optional ground-leakage protection, select one Core Balance Transformer*



1) IF: internal fault

Inputs		Outputs	
A 1 / A 2	Rated control voltage	95 / 96	NC contact for overload / thermistor
T 1 / T 2	Thermistor sensor	97 / 98	NO contact for overload / thermistor
C 1 / C 2	SSW core-balance transformers	05 / 06	NC contact freely assignable
Y 1 / Y 2	Remote reset	07 / 08	NO contact freely assignable

Switchgear and cable sizing corresponding to the respective starting inertia (CLASS)

The switchgear is designed for "CLASS 10" in normal and overload operation. To ensure that the switchgear (circuit-breaker and contactor) as well as the cables are not overloaded with extended tripping times, they must be over-dimensioned accordingly. The rated operational current I_e for switchgear and cables can be calculated with the following current factor while taking the tripping class into account:

Tripping Class	Class 5	Class 10	Class 15	Class 20	Class 25	Class 30	Class 35	Class 40
Current factor for rated operational current I_e	1.00	1.00	1.22	1.41	1.58	1.73	1.89	2.00

Relays with integrated sensor

With the ZEV-XSW-25 to ZEV-XSW-145 push-through sensors, the motor supply leads for each phase are pushed through the respective push-through openings. On motor currents which are less than 1 A, the motor supply leads with the ZEV-XSW-25 are inserted in loops. The number of loops depends on the rated motor current involved.

Number of loops n		4	3	2
Rated motor current I_N	A	0.31 – 0.4	0.41 – 0.62	0.63 – 1.24
Current settings on relay I_E between lowest and highest value	A	1.24 – 1.6	1.23 – 1.86	1.26 – 2.48

The current setting I_E of the device is calculated as: $I_E = n \times I_N$

Tripping times for ZEV electronic motor-protective relay

Tripping class, can be selected	Class	5	10	15	20	25	30	35	40
Tripping time in s (± 20 %)		With 3-pole symmetric loading from cold state							
Setting current I_E	x 3	11.3	22.6	34	45.3	56.6	67.9	79.2	90.5
	x 4	8	15.9	23.9	31.8	39.8	47.7	55.7	63.6
	x 5	6.1	12.3	18.4	24.6	30.7	36.8	43	49.1
	x 6	5	10	15	20	25	30	35	40
	x 7.2	4.1	8.2	12.3	16.4	20.5	24.5	28.6	32.7
	x 8	3.6	7.3	10.9	14.6	18.2	21.9	25.5	29.2
	x 10	2.9	5.7	8.6	11.5	14.4	17.2	20.1	23

Recovery time after overload trip

Overview of the recovery time in minutes	Class	5	10	15	20	25	30	35	40
	t recovery (min)	5	6	7	8	9	10	11	12

With unbalance > 50% and with phase failure, the trip occurs in 2.5s.

Thermistor tripping

Rated trip resistance R = 3200 Ω ± 15%

Recovery resistance R = 1500 Ω + 10%

Total PTC thermistor resistance $\sum R_K \leq 1500\ \Omega$
at $R_K \leq 250\ \Omega$ per sensor: 6 sensors
at $R_K \leq 100\ \Omega$ per sensor: 9 sensors

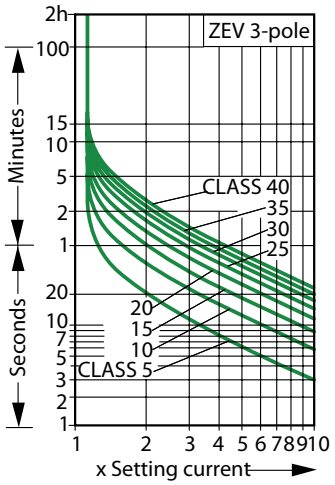
Ready to respond after trip at 5 K under response temperature

Test button tripping time: 5s

EC prototype test certification number: PTB 01 ATEX 3233
For protection of motors in EEx e area, also order AWB2300-1433G "ZEV motor-protective system, Overload monitoring of motors in EEX e areas".

Tripping characteristics:

These tripping characteristics are mean values of the spread at 20°C ambient temperature in a cold state. Tripping time depends on response current. With devices at operating temperature, the tripping time of the overload relay reduces to approximately 25% of the read off value.



With a phase failure or unbalance > 50%, the ZEV will trip within 2.5 seconds.

			ELECTRONIC ZEV
General			
Standards			IEC/EN 60947, VDE 0660, UL, CSA
Climatic proofing			Damp heat, constant, to IEC 60068-2-78; Damp heat, cyclic, to IEC 60068-2-30
Ambient temperature			
Open ❶		[°C] [°F]	-25/60 °C *-13/140 °F*
Enclosed ❶		[°C] [°F]	-25/40 °C *-13/104 °F*
Storage		[°C] [°F]	40 – 80 °C *104 – 176 °F*
Temperature compensation			Continuous
Mounting position			As required
Weight		[kg]	See page 0.20
Mechanical shock resistance half-sinusoidal shock 10ms		[g]	15
Degree of protection			IP20
Protection against direct contact when actuated from front			Finger- and back-of-hand proof
Main Contacts			
Overload relay setting range		[A]	1 – 820 ❼
Short-circuit protection rating maximum fuse			With overload relay in conjunction with a transformer as required for the contactor
Terminal screw			M3.5
Tightening torque		[Nm]	0.8
Tools			
Pozidriv screwdriver		[Size]	1
Standard screwdriver		[mm]	0.8 x 5.5
Auxiliary and control circuit connections			
Rated impulse withstand voltage	U_{imp}	[V]	4000
Overvoltage category / pollution degree			III/3
Terminal capacity			
Solid		[mm²]	1 x (0.5 – 2.5) 2 x (0.5 – 1.5) ❹
Flexible with ferrule		[mm²]	1 x (0.5 – 2.5) 2 x (0.5 – 1.5) ❹
Solid or stranded		[AWG]	1 x (18 – 14)
Terminal screw			M3.5
Tightening torque		[Nm]	0.8
Tools			
Pozidriv screwdriver		[Size]	1
Standard screwdriver		[mm]	0.8 x 5.5

				ELECTRONIC ZEV
Auxiliary and control circuit connections *(continued)*				
Auxiliary circuit rated insulation voltage		U_i	[V AC]	250
Rated operational voltage		U_e	[V AC]	240
Safe isolation to VDE 0106 Part 101 and Part 101/A1				
Between the auxiliary contacts			[V AC]	240 ❺
Conventional thermal current		I_{th}	[A]	6
Rated operational current				
AC-15				
Make contact	120 V	I_e	[A]	3 ❻
	240 V	I_e	[A]	3 ❻
	415 V	I_e	[A]	–
	500 V	I_e	[A]	–
Break contact	120 V	I_e	[A]	3
	240 V	I_e	[A]	3
	415 V	I_e	[A]	–
	500 V	I_e	[A]	–
DC-13 L/R ≤ 15 ms ❷				
24 V		I_e	[A]	1
60 V		I_e	[A]	–
110 V		I_e	[A]	–
220 V		I_e	[A]	–
Power consumption		$P_{max.}$	[W]	2.5
Short-circuit rating without welding				
Max. fuse ❸			[A gG/gL]	6
Pick-up and drop-out values				
AC operated			[x U_c]	0.85 – 1.1
DC operated			[x U_c]	0.85 – 1.1
UL / CSA				
Rated Voltage			[V AC/DC]	600 / 300
Pilot Duty			[AC]	B600 Same polarity B300 Opposite polarity
			[DC]	R300
Thermistor Protection				
Total resistance (cold)			[Ω]	1500
Response value			[Ω]	2720 – 3680
Reset range			[Ω]	1500 – 1650
Recovery time				
Overload				See page 92
Thermistor tripping				5 K under response temperature
Ground-fault protection				Immediate

❶ Ambient temperature: operating range to IEC/EN 60947, PTB: -5 °C to +50 °C (23 °F to 122 °F)

❷ Rated operational current: Making and breaking conditions to DC-13, L/R constant as stated.

❸ See overlay "Fuses" for short-circuit rating time/current characteristic

❹ Terminal capacities, auxiliary and control circuits, solid, flexible with ferrules: With connection of conductors only the following combinations are permissible: 0.5 and 0.75mm² , 0.75 and 1 mm² , 1 and 1.5 mm²

❺ Safe isolation: Up to 240 V depending on contact assignment between mains and outputs no potential isolation to thermistor and summation current transformer input and current sensor (neighboring contacts: Us = 127 V)

❻ Rated operational current AC-15: contacts 95/96 and 97/98 3 A (contactor control), contacts 05/06 and 07/08 1.5 A (auxiliary contacts)

❼ Overload relay main contact setting range: setting range dependant on current sensor

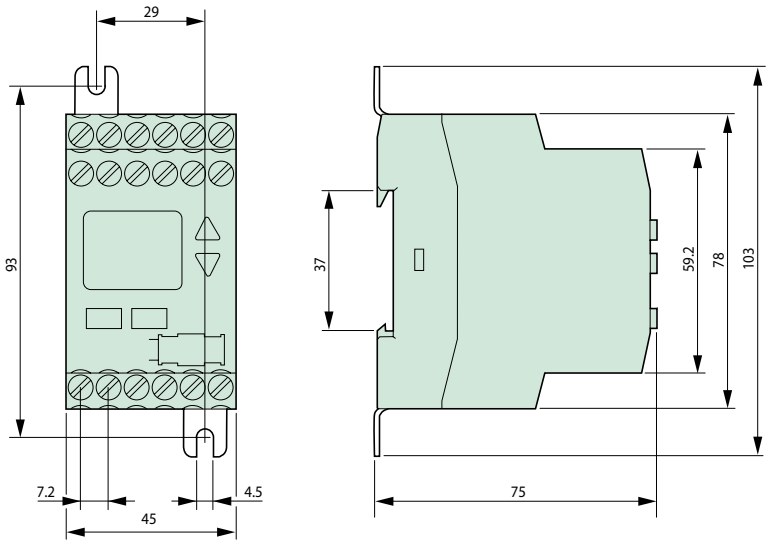
❽ Ambient temperature open and enclosed: limited readability of the LDC display at < -15 °C (5 °F)

			CURRENT SENSORS			
			ZEV-XSW-25	ZEV-XSW-65	ZEV-XSW-145	ZEV-XSW-820
General						
Standards			IEC/EN 60947, VDE 0660, UL, CSA			
Climatic proofing			Damp heat, constant, to IEC 60068-2-78; Damp heat, cyclic, to IEC 60068-2-30			
Ambient temperature						
Open		[°C] [°F]	-25 / 60 °C -13 / 140 °F	-25 / 60 °C -13 / 140 °F	-25 / 60 °C -13 / 140 °F	-25 / 60 °C -13 / 140 °F
Enclosed		[°C] [°F]	-25 / 40 °C -13 / 104 °F	-25 / 40 °C -13 / 104 °F	-25 / 40 °C -13 / 104 °F	-25 / 40 °C -13 / 104 °F
Storage ❶		[°C] [°F]	-40 / 80 °C -40 / 176 °F	-40 / 80 °C -40 / 176 °F	-40 / 80 °C -40 / 176 °F	-40 / 80 °C -40 / 176 °F
Temperature compensation			Continuous			
Mounting position			As required			
Weight		[kg]	0.21	0.37	0.45	0.30
Mechanical shock resistance half-sinusoidal shock 10ms		[g]	15	15	15	15
Degree of protection			IP20	IP20	IP20	IP20
Protection against direct contact when actuated from front			Finger- and back-of-hand proof			
Main Contacts						
Rated impulse withstand voltage	U_{imp}	[V AC]	❷	❷	❷	8000
Overvoltage category / pollution degree			❷	❷	❷	III/3
Rated insulation voltage	U_i	[V AC]	❷	❷	❷	1000
Rated operational voltage	U_e	[V AC]	❷	❷	❷	1000
Safe isolation to VDE 0106 Part 101 and Part 101/A1						
Between busbar and sensor		[V AC]	–	–	–	500
Overload relay setting range		[A]	1 – 25	3 – 65	10 – 145	40 – 820
Short-circuit protection rating maximum fuse			With overload relay in conjunction with a transformer as required for the contactor			
Push-through opening	Ø	[mm]	6	13	21	110

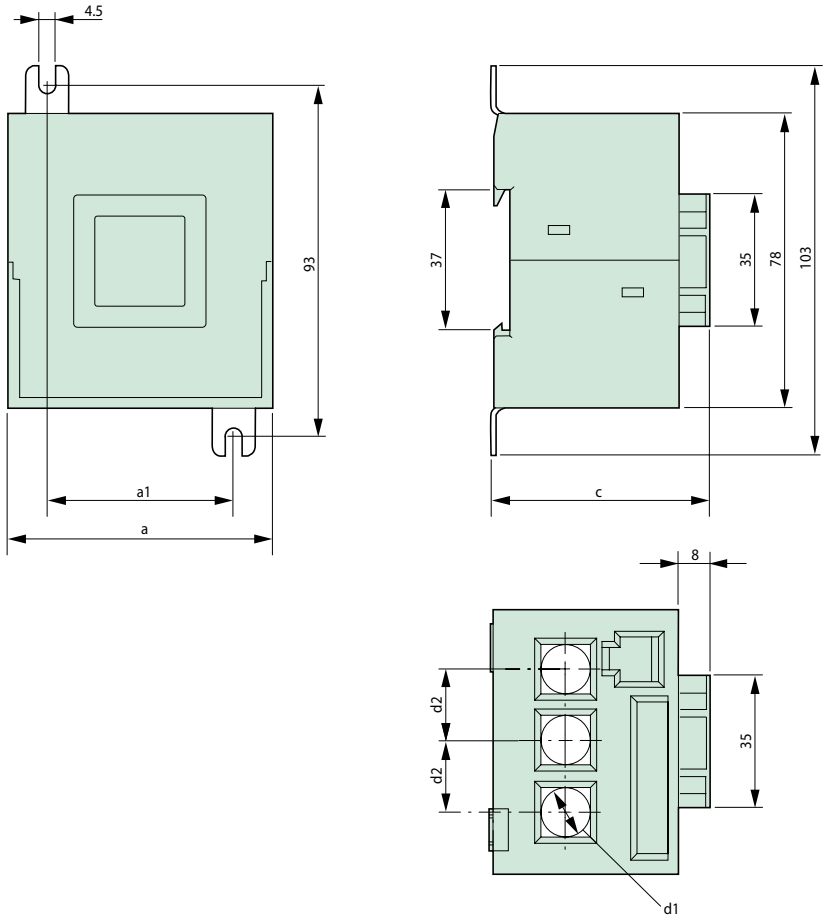
❶ Ambient temperature: operating range to IEC/EN 60947, PTB: -5 °C to +50 °C (23 °F to 122 °F)

❷ The main current parameters are defined by the main current wiring which is used.

Overload Relays
ZEV



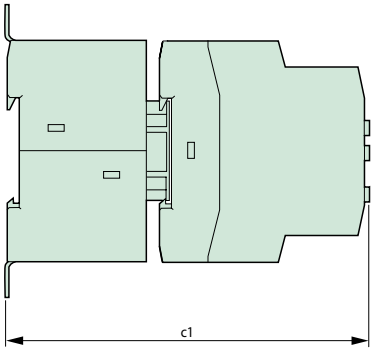
Current Sensors
ZEV-XSW-...



ZEV-XSW-...	25	65	145
a	45	70	90
a1	24	49	68
c	50	58	65
d1	6	13	21
d2	11.2	19	26

Overload Relays

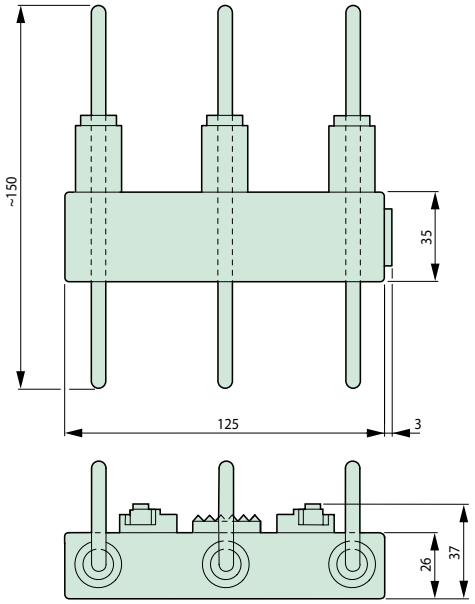
ZEV + ZEV-XSW-...



ZEV + ZEV-XSW-...	25	65	145
c1	120	128	134

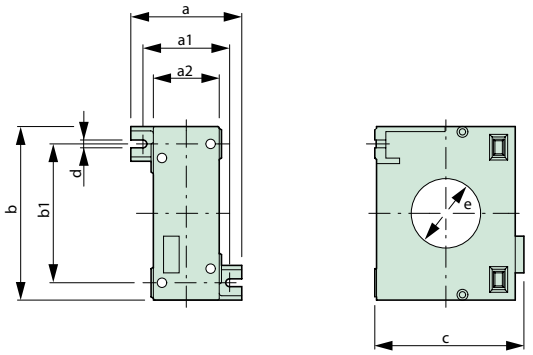
Current Sensor

ZEV-XSW-820



Core-balance Transformer

SSW40-...
SSW65-...
SSW120-...



SSW...	40-...	65-...	120-...
a	64	75	86.5
a1	50	60	70
a2	38	43	54.5
b	100	124	200
b1	80	100	170
c	86	112	205
d	4.5	4.5	4.5
e	40	65	120

EMT thermistor protection relays

For motors with imbedded P.T.C. thermistors

Moeller's EMT Thermistor Protection Relays are specifically designed to monitor positive temperature coefficient (PTC) thermistors embedded in the motor windings. Typically used in "mission critical" applications, PTC thermistors, coupled with EMT Thermistor Protection Relays provide extremely precise thermal feedback and increased motor protection.

> Extremely accurate overload protection

> Universal supply voltage

> Choose from basic to advanced protection

Three designs to choose

All EMT relays feature automatic reset with Power-ON and fault-indicating LED. Depending on the model chosen, the following additional features are also available:

- Selectable manual or automatic reset
- Remote reset
- Short circuit recognition in the sensor circuit
- Reliable fault signaling even under supply voltage failure (zero voltage safety)
- Short circuit recognition and zero-voltage safety can be switched off
- Test button

Universal input voltage

Moeller EMT Thermistor Protection relays accept voltage inputs of 24 – 240V AC 50-60Hz; and 24 – 240V DC making them ideal for the majority of normal control circuit applications.

Zero-voltage safety

The EMT6-DBK includes fault signaling even with a loss of supply voltage. This important safety feature stores the condition of the relay prior to the loss of power. When power is restored, the relay's output and LED fault indication retain state and act accordingly.

Feature Comparison	EMT-6	EMT6-DB	EMT6-DBK
LED power-ON and fault indication	✔	✔	✔
Thermal overload protection (from PTC sensors)	✔	✔	✔
Automatic reset	✔	✔	✔
Universal control voltage	✔	✔	✔
Short circuit recognition in the sensor circuit	✔ (option)	✔ (option)	✔
Manual or automatic reset		✔	✔
Remote or local reset		✔	✔
Test button		✔	✔
Fault signaling with loss of supply voltage (zero-voltage safety)			✔
Short circuit recognition and zero voltage safety can be turned off			✔

- For protection of motors with P.T.C. thermistors embedded in their windings
- LED display of operational status
- Manual / Automatic reset or remote reset available

Thermistor Protection Relays

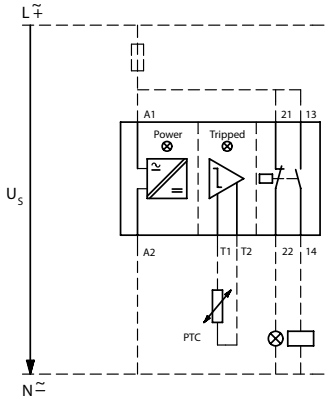
Protection Relay	Description	IEC Rated Operating Current AC-15 220–240 V	IEC Rated Operating Current AC-14 380–400 V	UL/CSA Pilot Duty Rating	Rated Operational Voltage Range	Type	Article Number	Price
Automatic Reset								
	• Automatic RESET • Power ON and fault indicating LED display	3	3	B 300	24 – 240 V 50/60 Hz, 24 – 240 V DC	**EMT6**	**066166**	See green pages
	• Automatic RESET • Power ON and fault indicating LED display • Short-circuit recognition in the sensor circuit	3	3	B 300	24 – 240 V 50/60 Hz, 24 – 240 V DC	**EMT6-K**	**269470**	
	• Automatic RESET • Power ON and fault indicating LED display	3	3	B 300	230 V 50/60 Hz	**EMT6(230V)**	**066400**	
Manual + Automatic Reset								
	• Manual or automatic RESET • For manual or remote resetting • Test button • Power ON and fault indicating LED display	3	3	B 300	24 – 240 V 50/60 Hz, 24 – 240 V DC	**EMT6-DB**	**066167**	See green pages
	• Manual or automatic RESET • For manual or remote resetting • Test button • Power ON and fault indicating LED display • Short-circuit recognition in the sensor circuit	3	3	B 300	24 – 240 V 50/60 Hz, 24 – 240 V DC	**EMT6-KDB**	**269471**	
	• Manual or automatic RESET • For manual or remote resetting • Test button • Power ON and fault indicating LED display	3	3	B 300	230 V 50/60 Hz	**EMT6-DB(230V)**	**066401**	
Manual + Automatic Reset / Multi-function Device								
	• Manual or automatic reset / Multi-fucntion device • Short-circuit recognition in the sensor circuit • Reliable fault signalling even under supply voltage failure (zero-voltage safety) • For manual or remote resetting • Test button • Short-circuit recognition and zero-voltage safety can be switched off • Power ON and fault indicating LED display	3	3	B 300	24 – 240 V 50/60 Hz, 24 – 240 V DC	**EMT6-DBK**	**066168**	See green pages

LED display	Flow diagrams	Notes
green		Supply voltage is applied
red		Device has tripped
red		Device has tripped/short circuit in the sensor circuit

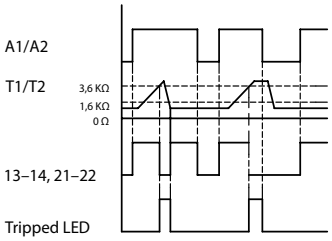
Accessories

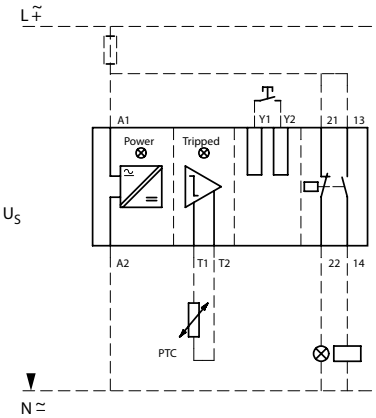
Accessories	Notes	For use with...	Type	Article Number	Price
Screw Adapter					
	Without the adaptor the EMT 6 is suitable for 35mm DIN-rail mounting only. The adapter enables the relay to become a panel mounted device using conventional screws.	EMT6	**CS-TE**	**095853**	See green pages

Application Notes

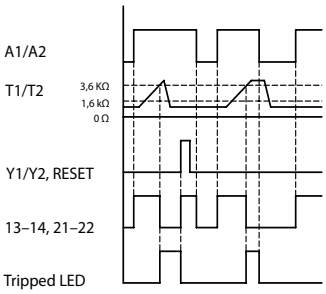


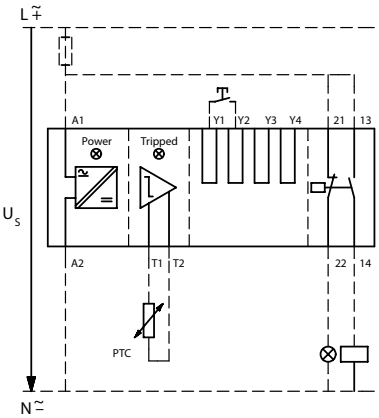
EMT6-K, EMT6-(K)DB, EMT6-DBK Auto



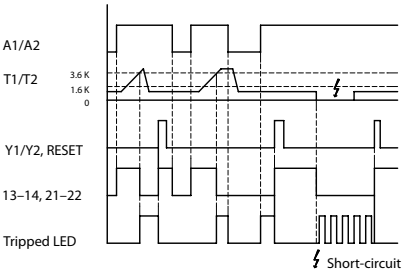


EMT6-(K)DB, EMT6-DBK Manual





EMT6-DBK Zero-voltage safe operation



With the EMT6, EMT6(230V), EMT6-DB and EMT6-DB(230V) an additional short-circuit protection in the sensor circuit with current monitor is to be provided.

Can be snap-mounted on an EN 50 022 35mm DIN rail.

At $R_k \leq 250\ \Omega$ per sensor: 6 sensors,

At $R_k \leq 100\ \Omega$ per sensor: 9 sensors in the winding (provided by user)

Maximum length of thermistor cable 250 m (un-screened);

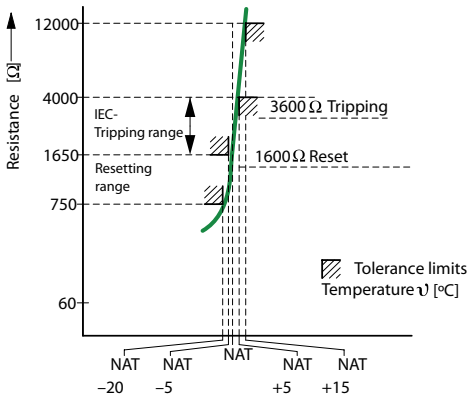
Total PTC thermistor resistance $\Sigma R_k \leq 1500\ \Omega$

Sensor characteristic values at U_s and +20 °C

	EMT6...	
T1, T2 short-circuited	–	1.9
4 k Ω	3	0.8
T1-T2 open	5.1	–

Functions that can be disconnected on EMT6-DBK:

Function	Disconnection via jumper
Short-circuit recognition	$Y_1 - Y_3$
Zero-voltage safety	$Y_1 - Y_4$

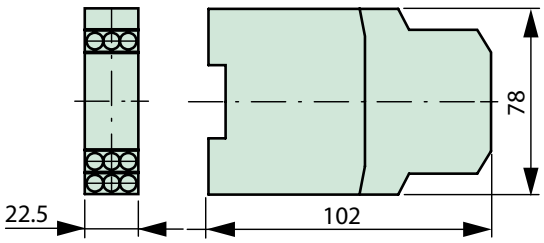


					THERMISTOR OVERLOAD RELAY EMT6
General					
Standards					IEC/EN 60947, VDE 0660, UL, CSA
EC Prototype test certification number					PTB 02 ATEX 3162
Climatic proofing					Damp heat, constant, to IEC 60068-2-78; Damp heat, cyclic, to IEC 60068-2-30
Ambient temperature					
Open				[°C / °F]	-25/60 °C / -13/140 °F
Enclosed				[°C / °F]	-25/45 °C / -13/113 °F
Storage				[°C / °F]	-45/60 °C / -49/140 °F
Mounting position					As required
Weight				[kg]	0.13
Mechanical shock resistance half-sinusoidal shock 10ms				[g]	10
Degree of protection					IP20
Protection against direct contact when actuated from front					Finger- and back-of-hand proof
Safe isolation to VDE 0106 Part 101 and Part 101/A1					
Between the contacts				[V AC]	250
Between contacts and supply voltage				[V AC]	250
Auxiliary and Control Circuit Connections					
Rated impulse withstand voltage			U_{imp}	[V AC]	6000
Overvoltage category / pollution degree					III/3
Auxiliary and control circuit terminal capacity					
Solid				[mm²]	1 x 2.5; 2 x (0.5 – 1.5)
Flexible with ferrule				[mm²]	1 x 2.5; 2 x (0.5 – 1.5)
Solid or stranded				[AWG]	20 – 14
Terminal screw					M3.5
Tightening torque				[Nm]	1.2
Tools					
Pozidriv screwdriver				[Size]	2
Standard screwdriver				[mm]	1 x 6
Auxiliary Circuit					
Rated insulation voltage			U_i	[V]	400
Rated operational current					
AC-14	Make contact	415 V	I_e	[A]	3
	Break contact	415V	I_e	[A]	3
AC-15	Make contact	240 V	I_e	[A]	3
		415V	I_e	[A]	1
	Break contact	240 V	I_e	[A]	3
		415 V	I_e	[A]	1
Max. short-circuit protective device					
Fuse			gG/gL	[A]	6
Control Circuit					
Rated insulation voltage			U_i	[V]	240
Rated operational voltage			U_e	[V]	240 ❶
Pick-up and drop-out values				[x U_e]	0.85 – 1.1
Power consumption					
AC				[VA]	3.5
DC				[W]	2
Trip at approx.				[Ω]	≥ 3600
Recovery at approx.				[Ω]	≥ 1600

❶ EMT6(-DB)230 V; $U_e = 230$ V

Thermistor Protection Relays

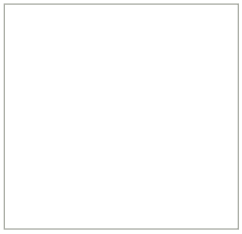
EMT6-(-DB)
EMT6-DBK

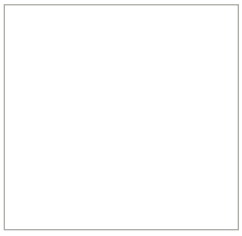


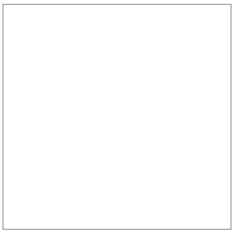
MOELLER

price list

Use only with Publication DILM-CAT-USA
(Article No: 695001)







Article No.	Type	Page	List Price	Discount Schedule
000245	ZW7-63	81	530	A20
002397	13DILE	17	32	A20
002618	ZW7-90	81	530	A20
004991	ZW7-125	81	600	A20
007364	ZW7-160	81	600	A20
009737	ZW7-240	81	725	A20
010006	DILEM-10(24V60HZ)	26	72	A20
010040	DILEM-01-G(60VDC)	26	90	A20
010064	02DILEM	17	20	A20
010080	11DILEM	17	20	A20
010112	22DILEM	17	32	A20
010113	MVDILE	20	20	A20
010134	DILEM-01(24V60HZ)	26	72	A20
010136	DILEM-01-G(110VDC)	26	90	A20
010168	DILEM-01-G(220VDC)	26	90	A20
010197	DILEM-10(600V60HZ)	26	72	A20
010208	20DILE	17	32	A20
010213	DILEM-10-G(24VDC)	10	90	A20
010213	DILEM-10-G(24VDC)	26	90	A20
010224	11DILE	17	20	A20
010240	02DILE	17	20	A20
010245	DILEM-10-G(48VDC)	26	90	A20
010256	04DILE	17	32	A20
010288	22DILE	17	32	A20
010293	DILEM-10-G(60VDC)	26	90	A20
010304	40DILE	17	32	A20
010309	DILEM-10-G(110VDC)	26	90	A20
010320	VGDILE48	18	28	A20
010325	DILEM-10-G(220VDC)	26	90	A20
010327	DILEM-01(600V60HZ)	26	72	A20
010336	VGDILE250	18	28	A20
010343	DILEM-01-G(24VDC)	10	90	A20
010343	DILEM-01-G(24VDC)	26	90	A20
010463	VGDILE415	18	28	A20
010482	HDILE	22	6	A20
010496	DILEM-01-G(48VDC)	26	90	A20
012701	DILEM4-G(24VDC)	26	90	A20
012701	DILEM4-G(24VDC)	11	90	A20
012811	DILEM4-G(48VDC)	26	90	A20
012844	DILEM4-G(60VDC)	26	90	A20
013166	DILEM4-G(110VDC)	26	90	A20
013194	DILEM4-G(220VDC)	26	90	A20
014263	ZE-0,16	77	72	A20
014285	ZE-0,24	77	72	A20
014300	ZE-0,4	77	72	A20
014333	ZE-0,6	77	72	A20
014376	ZE-1,0	77	72	A20
014432	ZE-1,6	77	72	A20
014479	ZE-2,4	77	72	A20
014518	ZE-4	77	72	A20
014565	ZE-6	77	72	A20
014708	ZE-9	77	72	A20
014752	ZE-12	77	72	A20
014776	DILEM4(24V60HZ)	26	72	A20
017083	DIL0MK-10(24V60HZ)	27	159	A
019095	P1DILEM	21	25	A20
026634	V0DILE	19	0.60	A20
028286	SSW40-0,3	90	335	A20
028305	SSW40-0,5	90	335	A20
028306	SSW40-1	90	335	A20
028307	SSW65-0,5	90	445	A20
028316	SSW65-1	90	445	A20
028319	SSW120-0,5	90	1172	A20

Article No.	Type	Page	List Price	Discount Schedule
028321	SSW120-1	90	1172	A20
040814	DIL2MK-10(24V60HZ)	27	345	A
044264	RCDILE48	18	34	A20
045329	ZW7-400	81	725	A20
046320	RCDILE250	18	34	A20
047019	DIL00MK-11(48V60HZ)	27	145	A
047020	DIL00MK-11(120V60HZ)	13	145	A
047020	DIL00MK-11(120V60HZ)	27	145	A
047023	DIL00MK-11(240V6HZ)	27	145	A
047026	DIL00MK-11(480V60HZ)	27	145	A
047030	DIL00MK-02(48V60HZ)	27	145	A
047031	DIL00MK-02(120V60HZ)	13	145	A
047031	DIL00MK-02(120V60HZ)	27	145	A
047034	DIL00MK-02(240V6HZ)	27	145	A
047037	DIL00MK-02(480V60HZ)	27	145	A
047041	DIL0MK-10(48V60HZ)	27	159	A
047042	DIL0MK-10(120V60HZ)	13	159	A
047042	DIL0MK-10(120V60HZ)	27	159	A
047045	DIL0MK-10(240V6HZ)	27	159	A
047048	DIL0MK-10(480V60HZ)	27	159	A
047051	DIL1MK-10(48V60HZ)	27	246	A
047052	DIL1MK-10(120V60HZ)	13	246	A
047052	DIL1MK-10(120V60HZ)	27	246	A
047055	DIL1MK-10(240V6HZ)	27	246	A
047058	DIL1MK-10(480V60HZ)	27	246	A
047061	DIL2MK-10(48V60HZ)	27	345	A
047062	DIL2MK-10(120V60HZ)	13	345	A
047062	DIL2MK-10(120V60HZ)	27	345	A
047065	DIL2MK-10(240V6HZ)	27	345	A
047068	DIL2MK-10(480V60HZ)	27	345	A
047702	ZW7-540	81	775	A20
048912	31DILE	17	32	A20
049823	22DDILE	17	60	A20
049824	11DDILE	17	40	A20
051782	DILEM-10(48V60HZ)	26	72	A20
051783	DILEM-10(120V60HZ)	10	72	A20
051783	DILEM-10(120V60HZ)	26	72	A20
051786	DILEM-10(240V60HZ)	26	72	A20
051789	DILEM-10(480V60HZ)	26	72	A20
051791	DILEM-01(48V60HZ)	26	72	A20
051792	DILEM-01(120V60HZ)	10	72	A20
051792	DILEM-01(120V60HZ)	26	72	A20
051795	DILEM-01(240V60HZ)	26	72	A20
051798	DILEM-01(480V60HZ)	26	72	A20
051800	DILEM4(48V60HZ)	26	72	A20
051801	DILEM4(120V60HZ)	26	72	A20
051801	DILEM4(120V60HZ)	11	72	A20
051804	DILEM4(240V60HZ)	26	72	A20
051807	DILEM4(480V60HZ)	26	72	A20
052448	ZW7-290	81	725	A20
059794	DIL00MK-11(24V60HZ)	27	145	A
059904	BT483	22	0.80	A20
061360	ZB4-101-GF1	90	2	E1
062276	BT2571	22	0.80	A20
066166	EMT6	98	315	A20
066167	EMT6-DB	98	465	A20
066168	EMT6-DBK	98	540	A20
066400	EMT6(230V)	98	315	A20
066401	EMT6-DB(230V)	98	465	A20
076733	DIL00MK-02(24V60HZ)	27	145	A
079594	DILEM-10-G(12VDC)	26	90	A20
079642	DILEM-01-G(12VDC)	26	90	A20
079680	DILEM4-G(12VDC)	26	90	A20

Article No.	Type	Page	List Price	Discount Schedule
081154	DIL1MK-10(24V60HZ)	27	246	A
095853	CS-TE	99	9	A20
208191	DILM185/22(RDC48)	24	1800	A20
208192	DILM185/22(RA110)	24	1800	A20
208193	DILM185/22(RA250)	24	1800	A20
208193	DILM185/22(RA250)	8	1800	A20
208194	DILM185/22(RAC500)	24	1800	A20
208195	DILM225/22(RDC48)	24	2200	A20
208196	DILM225/22(RA110)	24	2200	A20
208197	DILM225/22(RA250)	24	2200	A20
208197	DILM225/22(RA250)	8	2200	A20
208198	DILM225/22(RAC500)	24	2200	A20
208199	DILM250/22(RDC48)	24	2800	A20
208200	DILM250/22(RA110)	24	2800	A20
208201	DILM250/22(RA250)	24	2800	A20
208201	DILM250/22(RA250)	8	2800	A20
208202	DILM250/22(RAC500)	24	2800	A20
208203	DILM300/22(RDC48)	24	3100	A20
208204	DILM300/22(RA110)	24	3100	A20
208205	DILM300/22(RA250)	24	3100	A20
208205	DILM300/22(RA250)	8	3100	A20
208206	DILM300/22(RAC500)	24	3100	A20
208207	DILM400/22(RDC48)	24	3900	A20
208208	DILM400/22(RA110)	24	3900	A20
208209	DILM400/22(RA250)	24	3900	A20
208209	DILM400/22(RA250)	8	3900	A20
208210	DILM400/22(RAC500)	24	3900	A20
208211	DILM500/22(RDC48)	24	5800	A20
208212	DILM500/22(RA110)	24	5800	A20
208213	DILM500/22(RA250)	24	5800	A20
208213	DILM500/22(RA250)	8	5800	A20
208214	DILM500/22(RAC500)	24	5800	A20
208215	DILM580/22(RA110)	24	7400	A20
208216	DILM580/22(RA250)	24	7400	A20
208216	DILM580/22(RA250)	8	7400	A20
208217	DILM580/22(RAC500)	24	7400	A20
208218	DILM650/22(RA110)	24	7900	A20
208219	DILM650/22(RA250)	24	7900	A20
208219	DILM650/22(RA250)	8	7900	A20
208220	DILM650/22(RAC500)	24	7900	A20
208221	DILM750/22(RA110)	24	9100	A20
208222	DILM750/22(RA250)	24	9100	A20
208222	DILM750/22(RA250)	8	9100	A20
208223	DILM750/22(RAC500)	24	9100	A20
208224	DILM820/22(RA110)	24	10100	A20
208225	DILM820/22(RA250)	24	10100	A20
208225	DILM820/22(RA250)	8	10100	A20
208226	DILM820/22(RAC500)	24	10100	A20
208250	DILM250-XSP/E(RDC48)	29	600	A20
208251	DILM250-XSP/E(RA110)	29	600	A20
208252	DILM250-XSP/E(RA250)	29	600	A20
208253	DILM250-XSP/E(RAC500)	29	600	A20
208254	DILM500-XSP/E(RDC48)	29	910	A20
208255	DILM500-XSP/E(RA110)	29	910	A20
208256	DILM500-XSP/E(RA250)	29	910	A20
208257	DILM500-XSP/E(RAC500)	29	910	A20
208258	DILM820-XSP/E(RA110)	29	1475	A20
208259	DILM820-XSP/E(RA250)	29	1475	A20
208260	DILM820-XSP/E(RAC500)	29	1475	A20
208284	DILM820-XHB	22	85	A20
208285	DILM650-XHB	22	74	A20
208286	DILM500-XHB	22	34	A20
208287	DILM400-XHB	22	30	A20
208288	DILM820-XMV	20	550	A20
208289	DILM500-XMV	20	62	A20
208290	DILM500-XS1	21	180	A20
208291	DILM400-XS1	21	140	A20
208292	DILM185-XP1	21	268	A20
208293	DILM400-XKU-S	22	125	A20
208294	DILM225-XKU-S	22	120	A20
208295	DILM820-XKB-S	22	115	A20
208296	DILM650-XKB-S	22	110	A20
209634	ZEV	90	248	A20
209635	ZEV-XSW-25	90	160	A20
209636	ZEV-XSW-65	90	160	A20
209637	ZEV-XSW-145	90	390	A20
209641	ZEV-XSW-820	90	480	A20
209643	ZEV-XVK-20	90	12	A20
209644	ZEV-XVK-40	90	14	A20
209645	ZEV-XVK-80	90	16	A20
209971	DIL3MK72/22(24V60HZ)	27	639	A
209973	DIL3MK72/22(48V60HZ)	27	639	A
209974	DIL3MK72/22(120V60HZ)	14	639	A
209974	DIL3MK72/22(120V60HZ)	27	639	A
209977	DIL3MK72/22(240V6HZ)	27	639	A
209980	DIL3MK72/22(480V60HZ)	27	639	A
210070	Z5-70/FF250	80	380	A20
210071	Z5-100/FF250	80	395	A20
210072	Z5-125/FF250	80	395	A20
210073	Z5-160/FF250	80	410	A20
210074	Z5-220/FF250	80	430	A20
210075	Z5-250/FF250	80	430	A20
210256	DILEM-10(208V60HZ)	26	72	A20
215217	Z5/FF250-XHB	82	60	A20
215218	Z5/FF250-XHB-Z	82	40	A20
216423	M22-XD-R	82	3.10	A
218153	M22-XD-R-X0	82	4.30	A
218194	M22-XD-R-GB0	82	4.30	A
220209	MVS-WB-EM	20	25	A20
220218	S1DILEM	21	20	A20
227914	DILEM-01(208V60HZ)	26	72	A20
229314	Z5-FF250-XK-CNA	82	125	A20
232192	DILM500-XK-CNA	22	140	A20
232193	DILM650-XK-CNA	22	250	A20
232194	DILM820-XK-CNA	22	530	A20
239377	DILM80(24V60HZ)	23	480	A20
239384	DILM80(208V60HZ)	23	480	A20
239389	DILM80(600V60HZ)	23	480	A20
239394	DILM80(48V60HZ)	23	480	A20
239399	DILM80(120V60HZ)	23	480	A20
239399	DILM80(120V60HZ)	6	480	A20
239402	DILM80(240V60HZ)	23	480	A20
239405	DILM80(480V60HZ)	23	480	A20
239416	DILM80(RDC24)	25	650	A20
239416	DILM80(RDC24)	7	650	A20
239417	DILM80(RDC60)	25	650	A20
239418	DILM80(RDC130)	25	650	A20
239419	DILM80(RDC240)	25	650	A20
239471	DILM95(24V60HZ)	23	595	A20
239474	DILM95(208V60HZ)	23	595	A20
239475	DILM95(600V60HZ)	23	595	A20
239476	DILM95(48V60HZ)	23	595	A20
239477	DILM95(120V60HZ)	23	595	A20
239477	DILM95(120V60HZ)	6	595	A20
239480	DILM95(240V60HZ)	23	595	A20
239483	DILM95(480V60HZ)	23	595	A20

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239511	DILM95(RDC60)	25	775	A20
239512	DILM95(RDC130)	25	775	A20
239513	DILM95(RDC240)	25	775	A20
239545	DILM115(RAC24)	23	820	A20
239546	DILM115(RAC48)	23	820	A20
239547	DILM115(RAC120)	23	820	A20
239547	DILM115(RAC120)	6	820	A20
239548	DILM115(RAC240)	23	820	A20
239549	DILM115(RAC440)	23	820	A20
239550	DILM115(RAC500)	23	820	A20
239555	DILM115(RDC24)	25	925	A20
239555	DILM115(RDC24)	7	925	A20
239560	DILM115(RDC60)	25	925	A20
239567	DILM115(RDC130)	25	925	A20
239572	DILM115(RDC240)	25	925	A20
239585	DILM150(RAC24)	23	1010	A20
239586	DILM150(RAC48)	23	1010	A20
239587	DILM150(RAC120)	23	1010	A20
239587	DILM150(RAC120)	6	1010	A20
239588	DILM150(RAC240)	23	1010	A20
239589	DILM150(RAC440)	23	1010	A20
239590	DILM150(RAC500)	23	1010	A20
239591	DILM150(RDC24)	25	1196	A20
239591	DILM150(RDC24)	7	1196	A20
239592	DILM150(RDC60)	25	1196	A20
239593	DILM150(RDC130)	25	1196	A20
239594	DILM150(RDC240)	25	1196	A20
240081	DILM150-XMV	20	24	A20
254834	M22-DZ-B-GB14	82	18	A20
254835	M22-DZ-X	82	14	A20
267213	DILM1000/22(RA110)	24	11700	A20
267214	DILM1000/22(RA250)	24	11700	A20
267214	DILM1000/22(RA250)	8	11700	A20
269470	EMT6-K	98	255	A20
269471	EMT6-KDB	98	440	A20
271640	M22-DZ-B-X6	82	18	A20
271990	DILM1000/22(RAC500)	24	11700	A20
276420	DILA-XHI02	15	26	A20
276421	DILA-XHI11	15	26	A20
276422	DILA-XHI20	15	26	A20
276423	DILA-XHIV11	15	50	A20
276424	DILA-XHI04	15	46	A20
276425	DILA-XHI13	15	46	A20
276426	DILA-XHI22	15	46	A20
276427	DILA-XHI31	15	46	A20
276428	DILA-XHI40	15	46	A20
276429	DILA-XHIV22	15	72	A20
276541	DILM7-10(24V60HZ)	23	88	A20
276544	DILM7-10(208V60HZ)	23	88	A20
276545	DILM7-10(600V60HZ)	23	88	A20
276546	DILM7-10(48V60HZ)	23	88	A20
276547	DILM7-10(120V60HZ)	23	88	A20
276547	DILM7-10(120V60HZ)	6	88	A20
276550	DILM7-10(240V60HZ)	23	88	A20
276553	DILM7-10(480V60HZ)	23	88	A20
276565	DILM7-10(24VDC)	25	110	A20
276565	DILM7-10(24VDC)	7	110	A20
276566	DILM7-10(48VDC)	25	110	A20
276576	DILM7-01(24V60HZ)	23	88	A20
276579	DILM7-01(208V60HZ)	23	88	A20
276580	DILM7-01(600V60HZ)	23	88	A20

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276582	DILM7-01(120V60HZ)	23	88	A20
276582	DILM7-01(120V60HZ)	6	88	A20
276585	DILM7-01(240V60HZ)	23	88	A20
276588	DILM7-01(480V60HZ)	23	88	A20
276600	DILM7-01(24VDC)	25	110	A20
276600	DILM7-01(24VDC)	7	110	A20
276601	DILM7-01(48VDC)	25	110	A20
276681	DILM9-10(24V60HZ)	23	100	A20
276684	DILM9-10(208V60HZ)	23	100	A20
276685	DILM9-10(600V60HZ)	23	100	A20
276686	DILM9-10(48V60HZ)	23	100	A20
276687	DILM9-10(120V60HZ)	23	100	A20
276687	DILM9-10(120V60HZ)	6	100	A20
276690	DILM9-10(240V60HZ)	23	100	A20
276693	DILM9-10(480V60HZ)	23	100	A20
276705	DILM9-10(24VDC)	25	120	A20
276705	DILM9-10(24VDC)	7	120	A20
276706	DILM9-10(48VDC)	25	120	A20
276716	DILM9-01(24V60HZ)	23	100	A20
276719	DILM9-01(208V60HZ)	23	100	A20
276720	DILM9-01(600V60HZ)	23	100	A20
276721	DILM9-01(48V60HZ)	23	100	A20
276722	DILM9-01(120V60HZ)	23	100	A20
276722	DILM9-01(120V60HZ)	6	100	A20
276725	DILM9-01(240V60HZ)	23	100	A20
276728	DILM9-01(480V60HZ)	23	100	A20
276740	DILM9-01(24VDC)	25	120	A20
276740	DILM9-01(24VDC)	7	120	A20
276741	DILM9-01(48VDC)	25	120	A20
276821	DILM12-10(24V60HZ)	23	124	A20
276824	DILM12-10(208V60HZ)	23	124	A20
276825	DILM12-10(600V60HZ)	23	124	A20
276826	DILM12-10(48V60HZ)	23	124	A20
276827	DILM12-10(120V60HZ)	23	124	A20
276827	DILM12-10(120V60HZ)	6	124	A20
276830	DILM12-10(240V60HZ)	23	124	A20
276833	DILM12-10(480V60HZ)	23	124	A20
276845	DILM12-10(24VDC)	25	158	A20
276845	DILM12-10(24VDC)	7	158	A20
276846	DILM12-10(48VDC)	25	158	A20
276856	DILM12-01(24V60HZ)	23	124	A20
276859	DILM12-01(208V60HZ)	23	124	A20
276860	DILM12-01(600V60HZ)	23	124	A20
276861	DILM12-01(48V60HZ)	23	124	A20
276862	DILM12-01(120V60HZ)	23	124	A20
276862	DILM12-01(120V60HZ)	6	124	A20
276865	DILM12-01(240V60HZ)	23	124	A20
276868	DILM12-01(480V60HZ)	23	124	A20
276880	DILM12-01(24VDC)	25	158	A20
276880	DILM12-01(24VDC)	7	158	A20
276881	DILM12-01(48VDC)	25	158	A20
276961	DILMP20(24V60HZ)	23	130	A20
276964	DILMP20(208V60HZ)	23	130	A20
276965	DILMP20(600V60HZ)	23	130	A20
276966	DILMP20(48V60HZ)	23	130	A20
276967	DILMP20(120V60HZ)	23	130	A20
276970	DILMP20(240V60HZ)	23	130	A20
276970	DILMP20(120V60HZ)	9	130	A20
276973	DILMP20(480V60HZ)	23	130	A20
276985	DILMP20(24VDC)	25	160	A20
276985	DILMP20(24VDC)	9	160	A20
276986	DILMP20(48VDC)	25	160	A20

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276998	DILM17-10(208V60HZ)	23	130	A20
276999	DILM17-10(600V60HZ)	23	130	A20
277000	DILM17-10(48V60HZ)	23	130	A20
277001	DILM17-10(120V60HZ)	23	130	A20
277001	DILM17-10(120V60HZ)	6	130	A20
277004	DILM17-10(240V60HZ)	23	130	A20
277007	DILM17-10(480V60HZ)	23	130	A20
277018	DILM17-10(RDC24)	25	185	A20
277018	DILM17-10(RDC24)	7	185	A20
277019	DILM17-10(RDC60)	25	185	A20
277020	DILM17-10(RDC130)	25	185	A20
277021	DILM17-10(RDC240)	25	185	A20
277027	DILM17-01(24V60HZ)	23	130	A20
277030	DILM17-01(208V60HZ)	23	130	A20
277031	DILM17-01(600V60HZ)	23	130	A20
277032	DILM17-01(48V60HZ)	23	130	A20
277033	DILM17-01(120V60HZ)	23	130	A20
277033	DILM17-01(120V60HZ)	6	130	A20
277036	DILM17-01(240V60HZ)	23	130	A20
277039	DILM17-01(480V60HZ)	23	130	A20
277050	DILM17-01(RDC24)	25	185	A20
277050	DILM17-01(RDC24)	7	185	A20
277051	DILM17-01(RDC60)	25	185	A20
277052	DILM17-01(RDC130)	25	185	A20
277053	DILM17-01(RDC240)	25	185	A20
277123	DILM25-10(24V60HZ)	23	175	A20
277126	DILM25-10(208V60HZ)	23	175	A20
277127	DILM25-10(600V60HZ)	23	175	A20
277128	DILM25-10(48V60HZ)	23	175	A20
277129	DILM25-10(120V60HZ)	23	175	A20
277129	DILM25-10(120V60HZ)	6	175	A20
277132	DILM25-10(240V60HZ)	23	175	A20
277135	DILM25-10(480V60HZ)	23	175	A20
277146	DILM25-10(RDC24)	25	225	A20
277146	DILM25-10(RDC24)	7	225	A20
277147	DILM25-10(RDC60)	25	225	A20
277148	DILM25-10(RDC130)	25	225	A20
277149	DILM25-10(RDC240)	25	225	A20
277155	DILM25-01(24V60HZ)	23	175	A20
277158	DILM25-01(208V60HZ)	23	175	A20
277159	DILM25-01(600V60HZ)	23	175	A20
277160	DILM25-01(48V60HZ)	23	175	A20
277161	DILM25-01(120V60HZ)	23	175	A20
277161	DILM25-01(120V60HZ)	6	175	A20
277164	DILM25-01(240V60HZ)	23	175	A20
277167	DILM25-01(480V60HZ)	23	175	A20
277178	DILM25-01(RDC24)	25	225	A20
277178	DILM25-01(RDC24)	7	225	A20
277179	DILM25-01(RDC60)	25	225	A20
277180	DILM25-01(RDC130)	25	225	A20
277181	DILM25-01(RDC240)	25	225	A20
277251	DILM32-10(24V60HZ)	23	220	A20
277254	DILM32-10(208V60HZ)	23	220	A20
277255	DILM32-10(600V60HZ)	23	220	A20
277256	DILM32-10(48V60HZ)	23	220	A20
277257	DILM32-10(120V60HZ)	23	220	A20
277257	DILM32-10(120V60HZ)	6	220	A20
277260	DILM32-10(240V60HZ)	23	220	A20
277263	DILM32-10(480V60HZ)	23	220	A20
277274	DILM32-10(RDC24)	25	310	A20
277274	DILM32-10(RDC24)	7	310	A20
277275	DILM32-10(RDC60)	25	310	A20

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277277	DILM32-10(RDC240)	25	310	A20
277283	DILM32-01(24V60HZ)	23	220	A20
277286	DILM32-01(208V60HZ)	23	220	A20
277287	DILM32-01(600V60HZ)	23	220	A20
277288	DILM32-01(48V60HZ)	23	220	A20
277289	DILM32-01(120V60HZ)	23	220	A20
277289	DILM32-01(120V60HZ)	6	220	A20
277292	DILM32-01(240V60HZ)	23	220	A20
277295	DILM32-01(480V60HZ)	23	220	A20
277306	DILM32-01(RDC24)	25	310	A20
277306	DILM32-01(RDC24)	7	310	A20
277307	DILM32-01(RDC60)	25	310	A20
277308	DILM32-01(RDC130)	25	310	A20
277309	DILM32-01(RDC240)	25	310	A20
277375	DILM32-XHI02	15	26	A20
277376	DILM32-XHI11	15	26	A20
277377	DILM32-XHI22	15	46	A20
277757	DILM40(24V60HZ)	23	250	A20
277760	DILM40(208V60HZ)	23	250	A20
277761	DILM40(600V60HZ)	23	250	A20
277762	DILM40(48V60HZ)	23	250	A20
277763	DILM40(120V60HZ)	23	250	A20
277763	DILM40(120V60HZ)	6	250	A20
277766	DILM40(240V60HZ)	23	250	A20
277769	DILM40(480V60HZ)	23	250	A20
277780	DILM40(RDC24)	25	325	A20
277780	DILM40(RDC24)	7	325	A20
277781	DILM40(RDC60)	25	325	A20
277782	DILM40(RDC130)	25	325	A20
277783	DILM40(RDC240)	25	325	A20
277821	DILM50(24V60HZ)	23	290	A20
277824	DILM50(208V60HZ)	23	290	A20
277825	DILM50(600V60HZ)	23	290	A20
277826	DILM50(48V60HZ)	23	290	A20
277827	DILM50(120V60HZ)	23	290	A20
277827	DILM50(120V60HZ)	6	290	A20
277830	DILM50(240V60HZ)	23	290	A20
277833	DILM50(480V60HZ)	23	290	A20
277844	DILM50(RDC24)	25	460	A20
277844	DILM50(RDC24)	7	460	A20
277845	DILM50(RDC60)	25	460	A20
277846	DILM50(RDC130)	25	460	A20
277847	DILM50(RDC240)	25	460	A20
277885	DILM65(24V60HZ)	23	390	A20
277888	DILM65(208V60HZ)	23	390	A20
277889	DILM65(600V60HZ)	23	390	A20
277890	DILM65(48V60HZ)	23	390	A20
277891	DILM65(120V60HZ)	23	390	A20
277891	DILM65(120V60HZ)	6	390	A20
277894	DILM65(240V60HZ)	23	390	A20
277897	DILM65(480V60HZ)	23	390	A20
277908	DILM65(RDC24)	25	585	A20
277908	DILM65(RDC24)	7	585	A20
277909	DILM65(RDC60)	25	585	A20
277910	DILM65(RDC130)	25	585	A20
277911	DILM65(RDC240)	25	585	A20
277945	DILM150-XHI20	16	26	A20
277946	DILM150-XHI11	16	26	A20
277947	DILM150-XHI02	16	26	A20
277948	DILM150-XHI40	16	46	A20
277949	DILM150-XHI31	16	46	A20
277950	DILM150-XHI22	16	46	A20

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277952	DILM150-XHI04	16	46	A20
277953	DILM150-XHIV22	16	72	A20
278054	DIULM7/21(24V60HZ)	28	365	A20
278057	DIULM7/21(48V60HZ)	28	365	A20
278058	DIULM7/21(120V60HZ)	12	365	A20
278058	DIULM7/21(120V60HZ)	28	365	A20
278061	DIULM7/21(240V60HZ)	28	365	A20
278064	DIULM7/21(480V60HZ)	28	365	A20
278079	DIULM9/21(24V60HZ)	28	380	A20
278082	DIULM9/21(48V60HZ)	28	380	A20
278083	DIULM9/21(120V60HZ)	12	380	A20
278083	DIULM9/21(120V60HZ)	28	380	A20
278086	DIULM9/21(240V60HZ)	28	380	A20
278089	DIULM9/21(480V60HZ)	28	380	A20
278104	DIULM12/21(24V60HZ)	28	400	A20
278107	DIULM12/21(48V60HZ)	28	400	A20
278108	DIULM12/21(120V60HZ)	12	400	A20
278108	DIULM12/21(120V60HZ)	28	400	A20
278111	DIULM12/21(240V60HZ)	28	400	A20
278114	DIULM12/21(480V60HZ)	28	400	A20
278129	DIULM17/21(24V60HZ)	28	500	A20
278132	DIULM17/21(48V60HZ)	28	500	A20
278133	DIULM17/21(120V60HZ)	12	500	A20
278133	DIULM17/21(120V60HZ)	28	500	A20
278136	DIULM17/21(240V60HZ)	28	500	A20
278139	DIULM17/21(480V60HZ)	28	500	A20
278154	DIULM25/21(24V60HZ)	28	575	A20
278157	DIULM25/21(48V60HZ)	28	575	A20
278158	DIULM25/21(120V60HZ)	12	575	A20
278158	DIULM25/21(120V60HZ)	28	575	A20
278161	DIULM25/21(240V60HZ)	28	575	A20
278164	DIULM25/21(480V60HZ)	28	575	A20
278179	DIULM32/21(24V60HZ)	28	670	A20
278182	DIULM32/21(48V60HZ)	28	670	A20
278183	DIULM32/21(120V60HZ)	12	670	A20
278183	DIULM32/21(120V60HZ)	28	670	A20
278186	DIULM32/21(240V60HZ)	28	670	A20
278189	DIULM32/21(480V60HZ)	28	670	A20
278204	DIULM40/11(24V60HZ)	28	810	A20
278207	DIULM40/11(48V60HZ)	28	810	A20
278208	DIULM40/11(120V60HZ)	12	810	A20
278208	DIULM40/11(120V60HZ)	28	810	A20
278211	DIULM40/11(240V60HZ)	28	810	A20
278214	DIULM40/11(480V60HZ)	28	810	A20
278229	DIULM50/11(24V60HZ)	28	860	A20
278232	DIULM50/11(48V60HZ)	28	860	A20
278233	DIULM50/11(120V60HZ)	12	860	A20
278233	DIULM50/11(120V60HZ)	28	860	A20
278236	DIULM50/11(240V60HZ)	28	860	A20
278239	DIULM50/11(480V60HZ)	28	860	A20
278254	DIULM65/11(24V60HZ)	28	980	A20
278257	DIULM65/11(48V60HZ)	28	980	A20
278258	DIULM65/11(120V60HZ)	12	980	A20
278258	DIULM65/11(120V60HZ)	28	980	A20
278261	DIULM65/11(240V60HZ)	28	980	A20
278264	DIULM65/11(480V60HZ)	28	980	A20
278425	DILM1000-XHI11-SI	16	46	A20
278426	DILM1000-XHIV11-SI	16	46	A20
278427	DILM1000-XHI11-SA	16	46	A20
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278438	ZB12-4	78	72	A20
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278440	ZB12-10	78	72	A20
278441	ZB12-12	78	72	A20
278442	ZB32-0,16	78	76	A20
278443	ZB32-0,24	78	76	A20
278444	ZB32-0,4	78	76	A20
278445	ZB32-0,6	78	76	A20
278446	ZB32-1	78	76	A20
278447	ZB32-1,6	78	76	A20
278448	ZB32-2,4	78	76	A20
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281131	DILM32-XSP(48V50HZ)	29	72	A20
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281133	DILM32-XSP(500V50HZ)	29	72	A20
281134	DILM32-XSP(24V60HZ)	29	72	A20
281135	DILM32-XSP(110V60HZ)	29	72	A20
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281137	DILM32-XSP(42V50HZ,48V60HZ)	29	72	A20
281138	DILM32-XSP(110V50HZ,120V60HZ)	29	72	A20
281139	DILM32-XSP(190V50HZ,220V60HZ)	29	72	A20
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281142	DILM32-XSP(380V50HZ,440V60HZ)	29	72	A20
281143	DILM32-XSP(400V50HZ,440V60HZ)	29	72	A20
281144	DILM32-XSP(415V50HZ,480V60HZ)	29	72	A20
281145	DILM32-XSP(24V50/60HZ)	29	72	A20
281146	DILM32-XSP(42V50/60HZ)	29	72	A20
281147	DILM32-XSP(110V50/60HZ)	29	72	A20
281148	DILM32-XSP(220V50/60HZ)	29	72	A20
281149	DILM32-XSP(230V50/60HZ)	29	72	A20
281150	DILM32-XSP(380V50/60HZ)	29	72	A20
281155	DILM32-XSP(RDC24)	30	190	A20
281156	DILM32-XSP(RDC60)	30	190	A20
281157	DILM32-XSP(RDC130)	30	190	A20
281158	DILM32-XSP(RDC240)	30	190	A20
281160	DILM65-XSP(24V50HZ)	29	90	A20
281161	DILM65-XSP(48V50HZ)	29	90	A20
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281166	DILM65-XSP(115V60HZ)	29	90	A20
281167	DILM65-XSP(42V50HZ,48V60HZ)	29	90	A20
281168	DILM65-XSP(110V50HZ,120V60HZ)	29	90	A20
281169	DILM65-XSP(190V50HZ,220V60HZ)	29	90	A20
281170	DILM65-XSP(220V50HZ,240V60HZ)	29	90	A20
281171	DILM65-XSP(230V50HZ,240V60HZ)	29	90	A20
281172	DILM65-XSP(380V50HZ,440V60HZ)	29	90	A20
281173	DILM65-XSP(400V50HZ,440V60HZ)	29	90	A20
281174	DILM65-XSP(415V50HZ,480V60HZ)	29	90	A20
281175	DILM65-XSP(24V50/60HZ)	29	90	A20
281176	DILM65-XSP(42V50/60HZ)	29	90	A20
281177	DILM65-XSP(110V50/60HZ)	29	90	A20
281178	DILM65-XSP(220V50/60HZ)	29	90	A20
281179	DILM65-XSP(230V50/60HZ)	29	90	A20
281180	DILM65-XSP(380V50/60HZ)	29	90	A20
281185	DILM65-XSP(RDC24)	30	250	A20
281186	DILM65-XSP(RDC60)	30	250	A20
281187	DILM65-XSP(RDC130)	30	250	A20
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281191	DILM32-XS1	21	20	A20
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281222	DILM32-XSPVL48	19	55	A20
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283357	DIULM17/21(208V60HZ)	28	500	A20
283359	DIULM25/21(208V60HZ)	28	575	A20
283361	DIULM32/21(208V60HZ)	28	670	A20
283362	DIULM40/11(208V60HZ)	28	810	A20
283363	DIULM50/11(208V60HZ)	28	860	A20
283364	DIULM65/11(208V60HZ)	28	980	A20
283377	DILM32-XSP(208V60HZ)	29	72	A20
283378	DILM32-XSP(600V60HZ)	29	72	A20
283379	DILM65-XSP(208V60HZ)	29	90	A20
283380	DILM65-XSP(600V60HZ)	29	90	A20
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285256	DILM32-XSPI250	19	40	A20
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285258	DILM150-XSPI130	19	45	A20
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289145	DILM1000-XSP/E(RA250)	29	1480	A20
289146	DILM1000-XSP/E(RA110)	29	1480	A20
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DIL00MK-02(240V6HZ)	047034	27	145	A
DIL00MK-02(24V60HZ)	076733	27	145	A
DIL00MK-02(480V60HZ)	047037	27	145	A
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DIL00MK-11(120V60HZ)	047020	13	145	A
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DIL00MK-11(240V6HZ)	047023	27	145	A
DIL00MK-11(24V60HZ)	059794	27	145	A
DIL00MK-11(480V60HZ)	047026	27	145	A
DIL00MK-11(48V60HZ)	047019	27	145	A
DIL0MK-10(120V60HZ)	047042	13	159	A
DIL0MK-10(120V60HZ)	047042	27	159	A
DIL0MK-10(240V6HZ)	047045	27	159	A
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DIL1MK-10(120V60HZ)	047052	13	246	A
DIL1MK-10(120V60HZ)	047052	27	246	A
DIL1MK-10(240V6HZ)	047055	27	246	A
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DIL2MK-10(480V60HZ)	047068	27	345	A
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DIL3MK72/22(120V60HZ)	209974	14	639	A
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DIL3MK72/22(240V6HZ)	209977	27	639	A
DIL3MK72/22(24V60HZ)	209971	27	639	A
DIL3MK72/22(480V60HZ)	209980	27	639	A
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DILEM-01(48V60HZ)	051791	26	72	A20
DILEM-01(600V60HZ)	010327	26	72	A20
DILEM-01-G(110VDC)	010136	26	90	A20
DILEM-01-G(12VDC)	079642	26	90	A20
DILEM-01-G(220VDC)	010168	26	90	A20
DILEM-01-G(24VDC)	010343	10	90	A20
DILEM-01-G(24VDC)	010343	26	90	A20
DILEM-01-G(48VDC)	010496	26	90	A20
DILEM-01-G(60VDC)	010040	26	90	A20
DILEM-10(120V60HZ)	051783	10	72	A20
DILEM-10(120V60HZ)	051783	26	72	A20
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DILEM-10(240V60HZ)	051786	26	72	A20
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DILEM-10(480V60HZ)	051789	26	72	A20
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DILEM-10(600V60HZ)	010197	26	72	A20
DILEM-10-G(110VDC)	010309	26	90	A20
DILEM-10-G(12VDC)	079594	26	90	A20
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DILEM4-G(110VDC)	013166	26	90	A20
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DILEM4-G(24VDC)	012701	11	90	A20
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DILM115(RAC120)	239547	6	820	A20
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DILM115(RDC130)	239567	25	925	A20
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DILM12-01(24VDC)	276880	25	158	A20
DILM12-01(24VDC)	276880	7	158	A20
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DILM12-10(120V60HZ)	276827	23	124	A20
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DILM12-10(240V60HZ)	276830	23	124	A20
DILM12-10(24V60HZ)	276821	23	124	A20
DILM12-10(24VDC)	276845	25	158	A20
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DILM12-XRL	283108	20	30	A20
DILM12-XS1	281190	21	20	A20
DILM12-XSL	283130	21	45	A20
DILM12-XSPI130	285252	19	35	A20
DILM12-XSPI250	285253	19	35	A20
DILM12-XSPI48	285251	19	35	A20
DILM12-XSPR240	281200	18	45	A20
DILM12-XSPR48	281199	18	45	A20
DILM12-XSPR500	281201	18	45	A20
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DILM12-XSPV500	281211	18	45	A20
DILM12-XSPVL240	281221	19	50	A20
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DILM150(RAC120)	239587	23	1010	A20
DILM150(RAC120)	239587	6	1010	A20
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DILM150-XMV	240081	20	24	A20
DILM150-XSPI130	285258	19	45	A20
DILM150-XSPI250	285259	19	45	A20
DILM150-XSPI48	285257	19	45	A20
DILM150-XVB	281226	19	1	A20
DILM17-01(120V60HZ)	277033	23	130	A20
DILM17-01(120V60HZ)	277033	6	130	A20
DILM17-01(208V60HZ)	277030	23	130	A20
DILM17-01(240V60HZ)	277036	23	130	A20
DILM17-01(24V60HZ)	277027	23	130	A20
DILM17-01(480V60HZ)	277039	23	130	A20
DILM17-01(48V60HZ)	277032	23	130	A20
DILM17-01(600V60HZ)	277031	23	130	A20
DILM17-01(RDC130)	277052	25	185	A20
DILM17-01(RDC24)	277050	25	185	A20
DILM17-01(RDC24)	277050	7	185	A20
DILM17-01(RDC240)	277053	25	185	A20
DILM17-01(RDC60)	277051	25	185	A20
DILM17-10(120V60HZ)	277001	23	130	A20
DILM17-10(120V60HZ)	277001	6	130	A20
DILM17-10(208V60HZ)	276998	23	130	A20
DILM17-10(240V60HZ)	277004	23	130	A20
DILM17-10(24V60HZ)	276995	23	130	A20
DILM17-10(480V60HZ)	277007	23	130	A20
DILM17-10(48V60HZ)	277000	23	130	A20
DILM17-10(600V60HZ)	276999	23	130	A20
DILM17-10(RDC130)	277020	25	185	A20
DILM17-10(RDC24)	277018	25	185	A20
DILM17-10(RDC24)	277018	7	185	A20
DILM17-10(RDC240)	277021	25	185	A20
DILM17-10(RDC60)	277019	25	185	A20
DILM185/22(RA110)	208192	24	1800	A20
DILM185/22(RA250)	208193	24	1800	A20
DILM185/22(RA250)	208193	8	1800	A20
DILM185/22(RAC500)	208194	24	1800	A20
DILM185/22(RDC48)	208191	24	1800	A20
DILM185-XP1	208292	21	268	A20
DILM225/22(RA110)	208196	24	2200	A20
DILM225/22(RA250)	208197	24	2200	A20
DILM225/22(RA250)	208197	8	2200	A20
DILM225/22(RAC500)	208198	24	2200	A20
DILM225/22(RDC48)	208195	24	2200	A20
DILM225-XKU-S	208294	22	120	A20
DILM250/22(RA110)	208200	24	2800	A20
DILM250/22(RA250)	208201	24	2800	A20
DILM250/22(RA250)	208201	8	2800	A20
DILM250/22(RAC500)	208202	24	2800	A20
DILM250/22(RDC48)	208199	24	2800	A20
DILM25-01(120V60HZ)	277161	23	175	A20
DILM25-01(120V60HZ)	277161	6	175	A20
DILM25-01(208V60HZ)	277158	23	175	A20
DILM25-01(240V60HZ)	277164	23	175	A20
DILM25-01(24V60HZ)	277155	23	175	A20
DILM25-01(480V60HZ)	277167	23	175	A20
DILM25-01(48V60HZ)	277160	23	175	A20
DILM25-01(600V60HZ)	277159	23	175	A20
DILM25-01(RDC130)	277180	25	225	A20
DILM25-01(RDC24)	277178	25	225	A20
DILM25-01(RDC24)	277178	7	225	A20
DILM25-01(RDC240)	277181	25	225	A20
DILM25-01(RDC60)	277179	25	225	A20
DILM250-XSP/E(RA110)	208251	29	600	A20
DILM250-XSP/E(RA250)	208252	29	600	A20

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DILM250-XSP/E(RAC500)	208253	29	600	A20
DILM250-XSP/E(RDC48)	208250	29	600	A20
DILM25-10(120V60HZ)	277129	23	175	A20
DILM25-10(120V60HZ)	277129	6	175	A20
DILM25-10(208V60HZ)	277126	23	175	A20
DILM25-10(240V60HZ)	277132	23	175	A20
DILM25-10(24V60HZ)	277123	23	175	A20
DILM25-10(480V60HZ)	277135	23	175	A20
DILM25-10(48V60HZ)	277128	23	175	A20
DILM25-10(600V60HZ)	277127	23	175	A20
DILM25-10(RDC130)	277148	25	225	A20
DILM25-10(RDC24)	277146	25	225	A20
DILM25-10(RDC24)	277146	7	225	A20
DILM25-10(RDC240)	277149	25	225	A20
DILM25-10(RDC60)	277147	25	225	A20
DILM300/22(RA110)	208204	24	3100	A20
DILM300/22(RA250)	208205	24	3100	A20
DILM300/22(RA250)	208205	8	3100	A20
DILM300/22(RAC500)	208206	24	3100	A20
DILM300/22(RDC48)	208203	24	3100	A20
DILM32-01(120V60HZ)	277289	23	220	A20
DILM32-01(120V60HZ)	277289	6	220	A20
DILM32-01(208V60HZ)	277286	23	220	A20
DILM32-01(240V60HZ)	277292	23	220	A20
DILM32-01(24V60HZ)	277283	23	220	A20
DILM32-01(480V60HZ)	277295	23	220	A20
DILM32-01(48V60HZ)	277288	23	220	A20
DILM32-01(600V60HZ)	277287	23	220	A20
DILM32-01(RDC130)	277308	25	310	A20
DILM32-01(RDC24)	277306	25	310	A20
DILM32-01(RDC24)	277306	7	310	A20
DILM32-01(RDC240)	277309	25	310	A20
DILM32-01(RDC60)	277307	25	310	A20
DILM32-10(120V60HZ)	277257	23	220	A20
DILM32-10(120V60HZ)	277257	6	220	A20
DILM32-10(208V60HZ)	277254	23	220	A20
DILM32-10(240V60HZ)	277260	23	220	A20
DILM32-10(24V60HZ)	277251	23	220	A20
DILM32-10(480V60HZ)	277263	23	220	A20
DILM32-10(48V60HZ)	277256	23	220	A20
DILM32-10(600V60HZ)	277255	23	220	A20
DILM32-10(RDC130)	277276	25	310	A20
DILM32-10(RDC24)	277274	25	310	A20
DILM32-10(RDC24)	277274	7	310	A20
DILM32-10(RDC240)	277277	25	310	A20
DILM32-10(RDC60)	277275	25	310	A20
DILM32-XHI02	277375	15	26	A20
DILM32-XHI11	277376	15	26	A20
DILM32-XHI22	277377	15	46	A20
DILM32-XMV	281197	20	18	A20
DILM32-XP1	281194	21	30	A20
DILM32-XRL	283109	20	50	A20
DILM32-XS1	281191	21	20	A20
DILM32-XSL	283131	21	65	A20
DILM32-XSP(110V50/60HZ)	281147	29	72	A20
DILM32-XSP(110V50HZ,120V60HZ)	281138	29	72	A20
DILM32-XSP(110V60HZ)	281135	29	72	A20
DILM32-XSP(115V60HZ)	281136	29	72	A20
DILM32-XSP(190V50HZ,220V60HZ)	281139	29	72	A20
DILM32-XSP(208V60HZ)	283377	29	72	A20
DILM32-XSP(220V50/60HZ)	281148	29	72	A20
DILM32-XSP(220V50HZ,240V60HZ)	281140	29	72	A20
DILM32-XSP(230V50/60HZ)	281149	29	72	A20

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DILM32-XSP(230V50HZ,240V60HZ)	281141	29	72	A20
DILM32-XSP(240V50HZ)	281132	29	72	A20
DILM32-XSP(24V50/60HZ)	281145	29	72	A20
DILM32-XSP(24V50HZ)	281130	29	72	A20
DILM32-XSP(24V60HZ)	281134	29	72	A20
DILM32-XSP(380V50/60HZ)	281150	29	72	A20
DILM32-XSP(380V50HZ,440V60HZ)	281142	29	72	A20
DILM32-XSP(400V50HZ,440V60HZ)	281143	29	72	A20
DILM32-XSP(415V50HZ,480V60HZ)	281144	29	72	A20
DILM32-XSP(42V50/60HZ)	281146	29	72	A20
DILM32-XSP(42V50HZ,48V60HZ)	281137	29	72	A20
DILM32-XSP(48V50HZ)	281131	29	72	A20
DILM32-XSP(500V50HZ)	281133	29	72	A20
DILM32-XSP(600V60HZ)	283378	29	72	A20
DILM32-XSP(RDC130)	281157	30	190	A20
DILM32-XSP(RDC24)	281155	30	190	A20
DILM32-XSP(RDC240)	281158	30	190	A20
DILM32-XSP(RDC60)	281156	30	190	A20
DILM32-XSPI130	285255	19	40	A20
DILM32-XSPI250	285256	19	40	A20
DILM32-XSPI48	285254	19	40	A20
DILM32-XSPR240	281203	18	50	A20
DILM32-XSPR48	281202	18	50	A20
DILM32-XSPR500	281204	18	50	A20
DILM32-XSPV130	281213	18	50	A20
DILM32-XSPV240	281214	18	50	A20
DILM32-XSPV48	281212	18	50	A20
DILM32-XSPV500	281215	18	50	A20
DILM32-XSPVL240	281223	19	55	A20
DILM32-XSPVL48	281222	19	55	A20
DILM32-XVB	281227	19	1	A20
DILM40(120V60HZ)	277763	23	250	A20
DILM40(120V60HZ)	277763	6	250	A20
DILM40(208V60HZ)	277760	23	250	A20
DILM40(240V60HZ)	277766	23	250	A20
DILM40(24V60HZ)	277757	23	250	A20
DILM40(480V60HZ)	277769	23	250	A20
DILM40(48V60HZ)	277762	23	250	A20
DILM40(600V60HZ)	277761	23	250	A20
DILM40(RDC130)	277782	25	325	A20
DILM40(RDC24)	277780	25	325	A20
DILM40(RDC24)	277780	7	325	A20
DILM40(RDC240)	277783	25	325	A20
DILM40(RDC60)	277781	25	325	A20
DILM400/22(RA110)	208208	24	3900	A20
DILM400/22(RA250)	208209	24	3900	A20
DILM400/22(RA250)	208209	8	3900	A20
DILM400/22(RAC500)	208210	24	3900	A20
DILM400/22(RDC48)	208207	24	3900	A20
DILM400-XHB	208287	22	30	A20
DILM400-XKU-S	208293	22	125	A20
DILM400-XS1	208291	21	140	A20
DILM50(120V60HZ)	277827	23	290	A20
DILM50(120V60HZ)	277827	6	290	A20
DILM50(208V60HZ)	277824	23	290	A20
DILM50(240V60HZ)	277830	23	290	A20
DILM50(24V60HZ)	277821	23	290	A20
DILM50(480V60HZ)	277833	23	290	A20
DILM50(48V60HZ)	277826	23	290	A20
DILM50(600V60HZ)	277825	23	290	A20
DILM50(RDC130)	277846	25	460	A20
DILM50(RDC24)	277844	25	460	A20
DILM50(RDC24)	277844	7	460	A20

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DILM50(RDC240)	277847	25	460	A20
DILM50(RDC60)	277845	25	460	A20
DILM500/22(RA110)	208212	24	5800	A20
DILM500/22(RA250)	208213	24	5800	A20
DILM500/22(RA250)	208213	8	5800	A20
DILM500/22(RAC500)	208214	24	5800	A20
DILM500/22(RDC48)	208211	24	5800	A20
DILM500-XHB	208286	22	34	A20
DILM500-XK-CNA	232192	22	140	A20
DILM500-XMV	208289	20	62	A20
DILM500-XS1	208290	21	180	A20
DILM500-XSP/E(RA110)	208255	29	910	A20
DILM500-XSP/E(RA250)	208256	29	910	A20
DILM500-XSP/E(RAC500)	208257	29	910	A20
DILM500-XSP/E(RDC48)	208254	29	910	A20
DILM580/22(RA110)	208215	24	7400	A20
DILM580/22(RA250)	208216	24	7400	A20
DILM580/22(RA250)	208216	8	7400	A20
DILM580/22(RAC500)	208217	24	7400	A20
DILM65(120V60HZ)	277891	23	390	A20
DILM65(120V60HZ)	277891	6	390	A20
DILM65(208V60HZ)	277888	23	390	A20
DILM65(240V60HZ)	277894	23	390	A20
DILM65(24V60HZ)	277885	23	390	A20
DILM65(480V60HZ)	277897	23	390	A20
DILM65(48V60HZ)	277890	23	390	A20
DILM65(600V60HZ)	277889	23	390	A20
DILM65(RDC130)	277910	25	585	A20
DILM65(RDC24)	277908	25	585	A20
DILM65(RDC24)	277908	7	585	A20
DILM65(RDC240)	277911	25	585	A20
DILM65(RDC60)	277909	25	585	A20
DILM650/22(RA110)	208218	24	7900	A20
DILM650/22(RA250)	208219	24	7900	A20
DILM650/22(RA250)	208219	8	7900	A20
DILM650/22(RAC500)	208220	24	7900	A20
DILM650-XHB	208285	22	74	A20
DILM650-XKB-S	208296	22	110	A20
DILM650-XK-CNA	232193	22	250	A20
DILM65-XMV	281198	20	24	A20
DILM65-XP1	281195	21	40	A20
DILM65-XS1	281192	21	28	A20
DILM65-XSP(110V50/60HZ)	281177	29	90	A20
DILM65-XSP(110V50HZ,120V60HZ)	281168	29	90	A20
DILM65-XSP(110V60HZ)	281165	29	90	A20
DILM65-XSP(115V60HZ)	281166	29	90	A20
DILM65-XSP(190V50HZ,220V60HZ)	281169	29	90	A20
DILM65-XSP(208V60HZ)	283379	29	90	A20
DILM65-XSP(220V50/60HZ)	281178	29	90	A20
DILM65-XSP(220V50HZ,240V60HZ)	281170	29	90	A20
DILM65-XSP(230V50/60HZ)	281179	29	90	A20
DILM65-XSP(230V50HZ,240V60HZ)	281171	29	90	A20
DILM65-XSP(240V50HZ)	281162	29	90	A20
DILM65-XSP(24V50/60HZ)	281175	29	90	A20
DILM65-XSP(24V50HZ)	281160	29	90	A20
DILM65-XSP(24V60HZ)	281164	29	90	A20
DILM65-XSP(380V50/60HZ)	281180	29	90	A20
DILM65-XSP(380V50HZ,440V60HZ)	281172	29	90	A20
DILM65-XSP(400V50HZ,440V60HZ)	281173	29	90	A20
DILM65-XSP(415V50HZ,480V60HZ)	281174	29	90	A20
DILM65-XSP(42V50/60HZ)	281176	29	90	A20
DILM65-XSP(42V50HZ,48V60HZ)	281167	29	90	A20
DILM65-XSP(48V50HZ)	281161	29	90	A20

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DILM65-XSP(500V50HZ)	281163	29	90	A20
DILM65-XSP(600V60HZ)	283380	29	90	A20
DILM65-XSP(RDC130)	281187	30	250	A20
DILM65-XSP(RDC24)	281185	30	250	A20
DILM65-XSP(RDC240)	281188	30	250	A20
DILM65-XSP(RDC60)	281186	30	250	A20
DILM7-01(120V60HZ)	276582	23	88	A20
DILM7-01(120V60HZ)	276582	6	88	A20
DILM7-01(208V60HZ)	276579	23	88	A20
DILM7-01(240V60HZ)	276585	23	88	A20
DILM7-01(24V60HZ)	276576	23	88	A20
DILM7-01(24VDC)	276600	25	110	A20
DILM7-01(24VDC)	276600	7	110	A20
DILM7-01(480V60HZ)	276588	23	88	A20
DILM7-01(48V60HZ)	276581	23	88	A20
DILM7-01(48VDC)	276601	25	110	A20
DILM7-01(600V60HZ)	276580	23	88	A20
DILM7-10(120V60HZ)	276547	23	88	A20
DILM7-10(120V60HZ)	276547	6	88	A20
DILM7-10(208V60HZ)	276544	23	88	A20
DILM7-10(240V60HZ)	276550	23	88	A20
DILM7-10(24V60HZ)	276541	23	88	A20
DILM7-10(24VDC)	276565	25	110	A20
DILM7-10(24VDC)	276565	7	110	A20
DILM7-10(480V60HZ)	276553	23	88	A20
DILM7-10(48V60HZ)	276546	23	88	A20
DILM7-10(48VDC)	276566	25	110	A20
DILM7-10(600V60HZ)	276545	23	88	A20
DILM750/22(RA110)	208221	24	9100	A20
DILM750/22(RA250)	208222	24	9100	A20
DILM750/22(RA250)	208222	8	9100	A20
DILM750/22(RAC500)	208223	24	9100	A20
DILM80(120V60HZ)	239399	23	480	A20
DILM80(120V60HZ)	239399	6	480	A20
DILM80(208V60HZ)	239384	23	480	A20
DILM80(240V60HZ)	239402	23	480	A20
DILM80(24V60HZ)	239377	23	480	A20
DILM80(480V60HZ)	239405	23	480	A20
DILM80(48V60HZ)	239394	23	480	A20
DILM80(600V60HZ)	239389	23	480	A20
DILM80(RDC130)	239418	25	650	A20
DILM80(RDC24)	239416	25	650	A20
DILM80(RDC24)	239416	7	650	A20
DILM80(RDC240)	239419	25	650	A20
DILM80(RDC60)	239417	25	650	A20
DILM820/22(RA110)	208224	24	10100	A20
DILM820/22(RA250)	208225	24	10100	A20
DILM820/22(RA250)	208225	8	10100	A20
DILM820/22(RAC500)	208226	24	10100	A20
DILM820-XHB	208284	22	85	A20
DILM820-XKB-S	208295	22	115	A20
DILM820-XK-CNA	232194	22	530	A20
DILM820-XMV	208288	20	550	A20
DILM820-XSP/E(RA110)	208258	29	1475	A20
DILM820-XSP/E(RA250)	208259	29	1475	A20
DILM820-XSP/E(RAC500)	208260	29	1475	A20
DILM9-01(120V60HZ)	276722	23	100	A20
DILM9-01(120V60HZ)	276722	6	100	A20
DILM9-01(208V60HZ)	276719	23	100	A20
DILM9-01(240V60HZ)	276725	23	100	A20
DILM9-01(24V60HZ)	276716	23	100	A20
DILM9-01(24VDC)	276740	25	120	A20
DILM9-01(24VDC)	276740	7	120	A20

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DILM9-01(480V60HZ)	276728	23	100	A20
DILM9-01(48V60HZ)	276721	23	100	A20
DILM9-01(48VDC)	276741	25	120	A20
DILM9-01(600V60HZ)	276720	23	100	A20
DILM9-10(120V60HZ)	276687	23	100	A20
DILM9-10(120V60HZ)	276687	6	100	A20
DILM9-10(208V60HZ)	276684	23	100	A20
DILM9-10(240V60HZ)	276690	23	100	A20
DILM9-10(24V60HZ)	276681	23	100	A20
DILM9-10(24VDC)	276705	25	120	A20
DILM9-10(24VDC)	276705	7	120	A20
DILM9-10(480V60HZ)	276693	23	100	A20
DILM9-10(48V60HZ)	276686	23	100	A20
DILM9-10(48VDC)	276706	25	120	A20
DILM9-10(600V60HZ)	276685	23	100	A20
DILM95(120V60HZ)	239477	23	595	A20
DILM95(120V60HZ)	239477	6	595	A20
DILM95(208V60HZ)	239474	23	595	A20
DILM95(240V60HZ)	239480	23	595	A20
DILM95(24V60HZ)	239471	23	595	A20
DILM95(480V60HZ)	239483	23	595	A20
DILM95(48V60HZ)	239476	23	595	A20
DILM95(600V60HZ)	239475	23	595	A20
DILM95(RDC130)	239512	25	775	A20
DILM95(RDC24)	239510	25	775	A20
DILM95(RDC24)	239510	7	775	A20
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DILM95-XSPR240	281206	18	64	A20
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DILM95-XSPR500	281207	18	64	A20
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DILM95-XSPVL240	281225	19	68	A20
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DILMP20(120V60HZ)	276970	9	130	A20
DILMP20(208V60HZ)	276964	23	130	A20
DILMP20(240V60HZ)	276970	23	130	A20
DILMP20(24V60HZ)	276961	23	130	A20
DILMP20(24VDC)	276985	25	160	A20
DILMP20(24VDC)	276985	9	160	A20
DILMP20(480V60HZ)	276973	23	130	A20
DILMP20(48V60HZ)	276966	23	130	A20
DILMP20(48VDC)	276986	25	160	A20
DILMP20(600V60HZ)	276965	23	130	A20
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DIULM12/21(120V60HZ)	278108	28	400	A20
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DIULM12/21(240V60HZ)	278111	28	400	A20
DIULM12/21(24V60HZ)	278104	28	400	A20
DIULM12/21(480V60HZ)	278114	28	400	A20
DIULM12/21(48V60HZ)	278107	28	400	A20
DIULM17/21(120V60HZ)	278133	12	500	A20
DIULM17/21(120V60HZ)	278133	28	500	A20
DIULM17/21(208V60HZ)	283357	28	500	A20
DIULM17/21(240V60HZ)	278136	28	500	A20
DIULM17/21(24V60HZ)	278129	28	500	A20
DIULM17/21(480V60HZ)	278139	28	500	A20
DIULM17/21(48V60HZ)	278132	28	500	A20
DIULM25/21(120V60HZ)	278158	12	575	A20
DIULM25/21(120V60HZ)	278158	28	575	A20

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DIULM25/21(480V60HZ)	278164	28	575	A20
DIULM25/21(48V60HZ)	278157	28	575	A20
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DIULM32/21(240V60HZ)	278186	28	670	A20
DIULM32/21(24V60HZ)	278179	28	670	A20
DIULM32/21(480V60HZ)	278189	28	670	A20
DIULM32/21(48V60HZ)	278182	28	670	A20
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DIULM40/11(120V60HZ)	278208	28	810	A20
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DIULM50/11(120V60HZ)	278233	28	860	A20
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DIULM50/11(240V60HZ)	278236	28	860	A20
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DIULM65/11(480V60HZ)	278264	28	980	A20
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