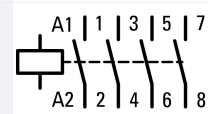




Contactor, 4 pole, 80 A, RDC 60: 48 - 60 V DC, DC operation

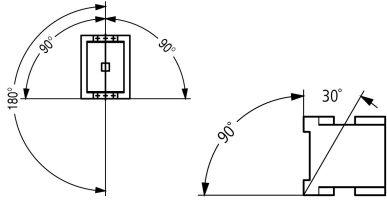
Part no. DILMP80(RDC60)
Catalog No. 109900
Alternate Catalog No. XTCF080D00WD

Delivery program

Product range			Contactors
Application			Contactors for 4 pole electric consumers
Subrange			Contactors up to 200 A, 4 pole
Utilization category			AC-1: Non-inductive or slightly inductive loads, resistance furnaces AC-3/AC-3e: Normal AC induction motors: Starting, switching off while running
Connection technique			Screw terminals
Number of poles			4 pole
Rated operational current			
AC-1			
Conventional free air thermal current, 3 pole, 50 - 60 Hz			
at 40 °C	$I_{th} = I_e$	A	80
at 50 °C	$I_{th} = I_e$	A	76
at 55 °C	$I_{th} = I_e$	A	73
at 60 °C	$I_{th} = I_e$	A	69
Contact sequence			
For use with			DILM150-XHI(A)(V)... or DILM1000-XHI11-SA or DILM1000-XHI(V)11-SI
Actuating voltage			RDC 60: 48 - 60 V DC
Voltage AC/DC			DC operation
Connection to SmartWire-DT			no
Instructions			Contacts to EN 50 012. integrated suppressor circuit in actuating electronics

Technical data

General			
Standards			IEC/EN 60947, VDE 0660, UL, CSA
Lifespan, mechanical			
DC operated	Operations	$\times 10^6$	10
Operating frequency, mechanical			
AC operated	Operations/h		5000
DC operated	Operations/h		5000
Climatic proofing			Damp heat, constant, to IEC 60068-2-3 Damp heat, cyclic, to IEC 60068-2-30
Ambient temperature			
Open		°C	-25 - +60
Enclosed		°C	- 25 - 40
Storage		°C	- 40 - 80
Mounting position			

Mounting position			
Mechanical shock resistance (IEC/EN 60068-2-27)			
Half-sinusoidal shock, 10 ms			
Main contacts			
N/O contact	g		10
Auxiliary contacts			
N/O contact	g		7
N/C contact	g		5
Degree of Protection			IP00
Altitude	m		Max. 2000
Protection against direct contact when actuated from front (EN 50274)			Finger and back-of-hand proof
Stripping length	mm		10
Terminal capacity main cable			
Solid	mm ²		1 x (2.5 - 16) 2 x (2.5 - 16)
Flexible with ferrule	mm ²		1 x (2.5 - 35) 2 x (2.5 - 25)
Stranded	mm ²		1 x (16 - 50) 2 x (16 - 35)
Solid or stranded	AWG		12 - 2
Flat conductor	Lamellenzahl x Breite x Dicke	mm	2 x (6 x 9 x 0.8)
Terminal screw			M6
Tightening torque	Nm		3.3
Stripping length	mm		10
Push-in terminals			
Solid	mm ²		1 x (0.75 - 2.5) 2 x (0.75 - 2.5)
flexible	mm ²		1 x (0.75 - 2.5) 2 x (0.75 - 2.5)
flexible with ferrules	mm ²		1 x (0.75 - 1.5) 2 x (0.75 - 1.5)
Solid or stranded	AWG		18 - 14
Terminal capacity control circuit cables			
Solid	mm ²		1 x (0.75 - 4) 2 x (0.75 - 4)
Flexible with ferrule	mm ²		1 x (0.75 - 2.5) 2 x (0.75 - 2.5)
Solid or stranded	AWG		18 - 14
Stripping length	mm		10
Terminal screw			M3.5
Tightening torque	Nm		1.2
Push-in terminals			
Solid	mm ²		1 x (0.75 - 2.5) 2 x (0.75 - 2.5)
Flexible	mm ²		1 x (0.75 - 2.5) 2 x (0.75 - 2.5)
Flexible with ferrule	mm ²		1 x (0.75 - 1.5) 2 x (0.75 - 1.5)
Solid or stranded	AWG		18 - 14
Tool			
Main cable			
Pozidriv screwdriver	Size		2
Standard screwdriver	mm		0.8 x 5.5 1 x 6

Control circuit cables			
Pozidriv screwdriver	Size		2
Standard screwdriver	mm		0.8 x 5.5 1 x 6

Main conducting paths

Rated impulse withstand voltage	U_{imp}	V AC	8000
Overvoltage category/pollution degree			III/3
Rated insulation voltage	U_i	V AC	690
Rated operational voltage	U_e	V AC	690
Safe isolation to EN 61140			
between coil and contacts		V AC	440
between the contacts		V AC	440
Making capacity (cos ϕ)	U_p to 690 V	A	700 According to IEC/EN 60947
Breaking capacity			
220 V 230 V		A	500
380 V 400 V		A	500
500 V		A	500
660 V 690 V		A	296
Short-circuit rating			
Short-circuit protection maximum fuse			
Type "2" coordination			
400 V	gG/gL 500 V	A	80
690 V	gG/gL 690 V	A	63
Type "1" coordination			
400 V	gG/gL 500 V	A	160
690 V	gG/gL 690 V	A	80

AC

AC-1			
Rated operational current			
Conventional free air thermal current, 3 pole, 50 - 60 Hz			
Open			
at 40 °C	$I_{th} = I_e$	A	80
at 50 °C	$I_{th} = I_e$	A	76
at 55 °C	$I_{th} = I_e$	A	73
at 60 °C	$I_{th} = I_e$	A	69
enclosed	I_{th}	A	64
Conventional free air thermal current, 1 pole			
open	I_{th}	A	207
enclosed	I_{th}	A	186
Motor rating	P	kWh	
220/230 V	P	kW	29
240 V	P	kW	32
380/400 V	P	kW	50
415 V	P	kW	55
440 V	P	kW	58
500 V	P	kW	66
690 V	P	kW	87
AC-3			
Rated operational current			
Open, 3-pole: 50 – 60 Hz			
Notes			At maximum permissible ambient temperature (open.) Also tested according to AC-3e.
220 V 230 V	I_e	A	50
240 V	I_e	A	50
380 V 400 V	I_e	A	50

415 V	I _e	A	50
440V	I _e	A	50
500 V	I _e	A	50
660 V 690 V	I _e	A	32
Motor rating	P	kWh	
220 V 230 V	P	kW	15.5
240V	P	kW	17
380 V 400 V	P	kW	22
415 V	P	kW	30
440 V	P	kW	32
500 V	P	kW	36
660 V 690 V	P	kW	30

DC

Rated operational current, open			
DC-1			
60 V	I _e	A	80
110 V	I _e	A	80
220 V	I _e	A	80

Current heat loss

3 pole, at I _{th} (60°)		W	25.8
Impedance per pole		mΩ	1.9

Magnet systems

Voltage tolerance			
AC operated 50/60 Hz		x U _c	0.85 - 1.1
DC operated	Pick-up	x U _c	At least double-pulse bridge rectifier - 0.7 - 1.2
DC operated	Drop-out	x U _c	At least double-pulse bridge rectifier - 0.2 - 0.6
Power consumption of the coil in a cold state and 1.0 x U _S			
Notes on DC actuation			At least double-pulse bridge rectifier
DC operated	Pick-up	W	24
DC operated	Sealing	W	1
Duty factor		% DF	100
Changeover time at 100 % U _S (recommended value)			
Main contacts			
DC operated		ms	
Notes on DC actuation			At least double-pulse bridge rectifier
Closing delay		ms	54
Opening delay		ms	24
Arcing time		ms	10
Permissible residual current with actuation of A1 - A2 by the electronics (with 0 signal).		mA	≤ 1

Rating data for approved types

Switching capacity			
Maximum motor rating			
Three-phase			
200 V 208 V		HP	15
230 V 240 V		HP	20
460 V 480 V		HP	40
575 V 600 V		HP	50
Single-phase			
115 V 120 V		HP	3
230 V 240 V		HP	10
General use		A	80

Short Circuit Current Rating	SCCR		
Basic Rating			
SCCR	kA		10
max. Fuse	A		250
max. CB	A		250
480 V High Fault			
SCCR (fuse)	kA		30/100
max. Fuse	A		250/150 Class J
SCCR (CB)	kA		65
max. CB	A		100
600 V High Fault			
SCCR (fuse)	kA		30/100
max. Fuse	A		250/150 Class J
SCCR (CB)	kA		30
max. CB	A		250
Special Purpose Ratings			
Electrical Discharge Lamps (Ballast)			
480V 60Hz 3phase, 277V 60Hz 1phase	A		79
600V 60Hz 3phase, 347V 60Hz 1phase	A		79
Incandescent Lamps (Tungsten)			
480V 60Hz 3phase, 277V 60Hz 1phase	A		74
600V 60Hz 3phase, 347V 60Hz 1phase	A		74
Resistance Air Heating			
480V 60Hz 3phase, 277V 60Hz 1phase	A		79
600V 60Hz 3phase, 347V 60Hz 1phase	A		79
Elevator Control			
200V 60Hz 3phase	HP		10
200V 60Hz 3phase	A		32.2
240V 60Hz 3phase	HP		15
240V 60Hz 3phase	A		42
480V 60Hz 3phase	HP		30
480V 60Hz 3phase	A		40
600V 60Hz 3phase	HP		40
600V 60Hz 3phase	A		41

Design verification as per IEC/EN 61439

Technical data for design verification			
Rated operational current for specified heat dissipation	I_n	A	80
Heat dissipation per pole, current-dependent	P_{vid}	W	8.6
Equipment heat dissipation, current-dependent	P_{vid}	W	25.8
Static heat dissipation, non-current-dependent	P_{vs}	W	1
Heat dissipation capacity	P_{diss}	W	0
Operating ambient temperature min.		°C	-25
Operating ambient temperature max.		°C	60
IEC/EN 61439 design verification			
10.2 Strength of materials and parts			
10.2.2 Corrosion resistance			Meets the product standard's requirements.
10.2.3.1 Verification of thermal stability of enclosures			Meets the product standard's requirements.
10.2.3.2 Verification of resistance of insulating materials to normal heat			Meets the product standard's requirements.
10.2.3.3 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric effects			Meets the product standard's requirements.
10.2.4 Resistance to ultra-violet (UV) radiation			Meets the product standard's requirements.
10.2.5 Lifting			Does not apply, since the entire switchgear needs to be evaluated.
10.2.6 Mechanical impact			Does not apply, since the entire switchgear needs to be evaluated.
10.2.7 Inscriptions			Meets the product standard's requirements.

10.3 Degree of protection of ASSEMBLIES		Does not apply, since the entire switchgear needs to be evaluated.
10.4 Clearances and creepage distances		Meets the product standard's requirements.
10.5 Protection against electric shock		Does not apply, since the entire switchgear needs to be evaluated.
10.6 Incorporation of switching devices and components		Does not apply, since the entire switchgear needs to be evaluated.
10.7 Internal electrical circuits and connections		Is the panel builder's responsibility.
10.8 Connections for external conductors		Is the panel builder's responsibility.
10.9 Insulation properties		
10.9.2 Power-frequency electric strength		Is the panel builder's responsibility.
10.9.3 Impulse withstand voltage		Is the panel builder's responsibility.
10.9.4 Testing of enclosures made of insulating material		Is the panel builder's responsibility.
10.10 Temperature rise		The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices.
10.11 Short-circuit rating		Is the panel builder's responsibility. The specifications for the switchgear must be observed.
10.12 Electromagnetic compatibility		Is the panel builder's responsibility. The specifications for the switchgear must be observed.
10.13 Mechanical function		The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.

Technical data ETIM 7.0

Low-voltage industrial components (EG000017) / Power contactor, AC switching (EC000066)		
Electric engineering, automation, process control engineering / Low-voltage switch technology / Contactor (LV) / Power contactor, AC switching (ecl@ss10.0.1-27-37-10-03 [AAB718015])		
Rated control supply voltage U_s at AC 50HZ	V	0 - 0
Rated control supply voltage U_s at AC 60HZ	V	0 - 0
Rated control supply voltage U_s at DC	V	60 - 60
Voltage type for actuating		DC
Rated operation current I_e at AC-1, 400 V	A	80
Rated operation current I_e at AC-3, 400 V	A	50
Rated operation power at AC-3, 400 V	kW	22
Rated operation current I_e at AC-4, 400 V	A	40
Rated operation power at AC-4, 400 V	kW	20
Rated operation power NEMA	kW	29.8
Modular version		No
Number of auxiliary contacts as normally open contact		0
Number of auxiliary contacts as normally closed contact		0
Type of electrical connection of main circuit		Screw connection
Number of normally closed contacts as main contact		0
Number of main contacts as normally open contact		4

Approvals

Product Standards		IEC/EN 60947-4-1; UL 60947-4-1; CSA - C22.2 No. 60947-4-1-14; CE marking
UL File No.		E29096
UL Category Control No.		NLDX
CSA File No.		012528
CSA Class No.		2411-03, 3211-04
North America Certification		UL listed, CSA certified
Specially designed for North America		No

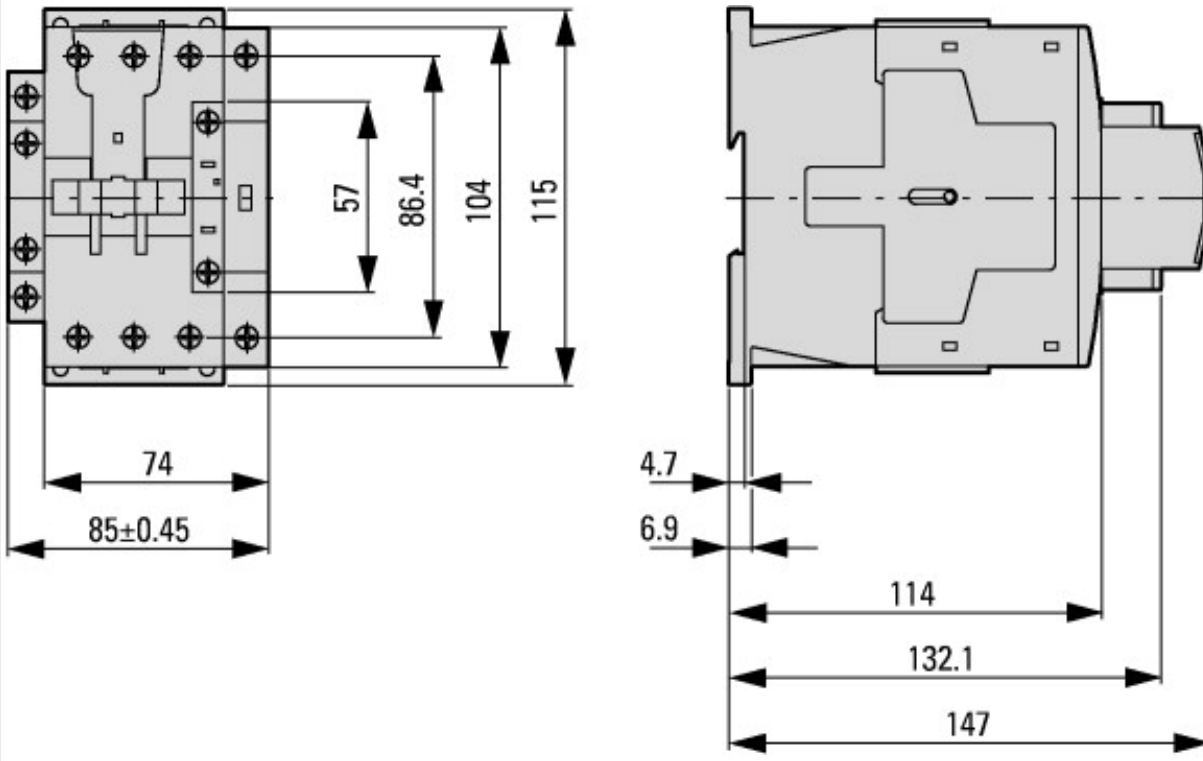
Characteristics





Switching conditions for 4 pole, non-motor loads
 Operating characteristics
 Non inductive and slightly inductive loads
 Electrical characteristics
 Switch on: 1 x rated operational current
 Switch off: 1 x rated operational current
 Utilization category
 100 % AC-1
 Typical examples of application
 Electric heat

Dimensions



Contactors



distance at side to earthed parts: 6 mm

DILMP63
DILMP80

Additional product information (links)

Motor starters and "Special Purpose Ratings" for the North American market	http://www.eaton.eu/ecm/groups/public/@pub/@europe/@electrical/documents/content/pct_3258146.pdf
Switchgear of Power Factor Correction Systems	http://www.moeller.net/binary/ver_techpapers/ver934en.pdf
X-Start - Modern Switching Installations Efficiently Fitted and Wired Securely	http://www.moeller.net/binary/ver_techpapers/ver938en.pdf
Mirror Contacts for Highly-Reliable Information Relating to Safety-Related Control Functions	http://www.moeller.net/binary/ver_techpapers/ver944en.pdf
Effect of the Cabel Capacitance of Long Control Cables on the Actuation of Contactors	http://www.moeller.net/binary/ver_techpapers/ver949en.pdf
Switchgear for Luminaires	http://www.moeller.net/binary/ver_techpapers/ver955en.pdf
Standard Compliant and Functionally Safe Engineering Design with Mechanical Auxiliary Contacts	http://www.moeller.net/binary/ver_techpapers/ver956en.pdf
The Interaction of Contactors with PLCs	http://www.moeller.net/binary/ver_techpapers/ver957en.pdf

