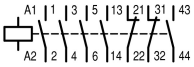
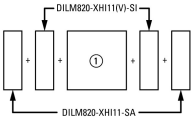
Contactor; 3-pole + 2 N/O + 2 N/C; 1400 A/AC1

Part no. DILH1400/22(RA110)
Article no. 179529
Catalog No. XTCEC14P22Y

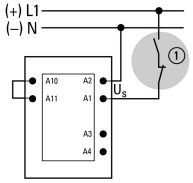
Powering Business Worldwide

Delivery program

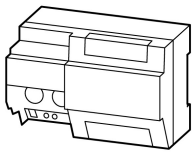
Product range			Contactors
Application			Mains contactors for resistive loads from 1000 A
Subrange			AC -1 contactors greater than 1000 A
Utilization category			AC-1: Non-inductive or slightly inductive loads, resistance furnaces
Connection technique			Screw connection
Rated operational current			
AC-1			
Conventional free air thermal current, 3 pole, 50 - 60 Hz			
Open			
at 40 °C	$I_{th} = I_e$	A	1714
Conventional free air thermal current, 1 pole			
open	I_{th}	A	3500
Contact sequence			
For use with			DILM820-XHI…
Actuating voltage			RA 110: 48 - 110 V 40 - 60 Hz/48 - 110 V DC
Voltage AC/DC			AC and DC operation
Auxiliary contacts			
possible variants at auxiliary contact module fitting options			on the side: 2 x DILM820-XHI11(V)-SI; 2 x DILM820-XHI11-SA
Side mounting auxiliary contacts			
Instructions			integrated suppressor circuit in actuating electronics 660 V, 690 V or 1000 V: not directly reversing

Note concerning the product
Classical
A1/A2 are attached to power as normal

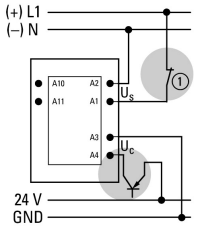
DILM250 to DILM1000, DILH1400



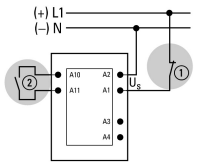
Direct from the PLC



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



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

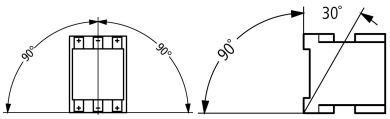


① Stopping in case of emergency (Emergenca-stop)

② max. capacity 6 nF

Technical data

General

Standards			IEC/EN 60947, VDE 0660, UL, CSA, CCC
Lifespan, mechanical			
AC operated	Operations	x 10^6	5
Operating frequency, mechanical			
DC operated	Operations/h		1000
Climatic proofing			Damp heat, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30
Ambient temperature			
Open		°C	-40 - +60
Enclosed		°C	
Ambient temperature enclosed max.		°C	+ 40
Storage		°C	- 40 - + 80
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	10
N/C contact		g	8
Degree of Protection			IP00
Weight		kg	14.4
Terminal capacity main cable			
Busbar	Breite	mm	80
Main cable connection screw/bolt			M12
Tightening torque		Nm	35
Terminal capacity control circuit cables			
Solid		mm^2	1 x (0.75 - 2.5) 2 x (0.75 - 2.5)
Flexible with ferrule		mm^2	1 x (0.75 - 2.5) 2 x (0.75 - 2.5)
Solid or stranded		AWG	2 x (18 - 12)
Tightening torque		Nm	1.2
Tool			
Control circuit cables			
Pozidriv screwdriver		Size	2

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	1000
Rated operational voltage	U_e	V AC	0
Safe isolation to EN 61140			
between coil and contacts		V AC	500
Making capacity (p.f. to IEC/EN 60947)		A	9840
Breaking capacity			
220 V 230 V		A	8200
380 V 400 V		A	8200
500 V		A	8200
Component lifespan			
			AC1: See → Engineering, characteristic curves

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	1714
at 50 °C	$I_{th} = I_e$	A	1533
at 55 °C	$I_{th} = I_e$	A	1462
at 60 °C	$I_{th} = I_e$	A	1400
Conventional free air thermal current, 1 pole			
Note			at maximum permissible ambient air temperature
open	I_{th}	A	3500

Current heat loss

3-pole at I_{th}		W	188

Magnet systems

Voltage tolerance			
U_S			48 - 110 V 40-60 Hz 48 - 110 V DC
AC operated	Pick-up	x U_S	0.7 x $U_{S\ min}$ - 1.15 x $U_{S\ max}$
DC operated	Pick-up	x U_S	0.7 x $U_{S\ min}$ - 1.15 x $U_{S\ max}$
AC operated	Drop-out	x U_S	0.2 x $U_{S\ max}$ - 0.6 x $U_{S\ min}$
DC operated	Drop-out	x U_S	0.2 x $U_{S\ max}$ - 0.6 x $U_{S\ min}$
Power consumption of the coil in a cold state and 1.0 x U_c			
Note on power consumption			Control transformer with $u_k \geq$ 0.7
Pull-in power	Pick-up	W	700
Sealing power	Sealing	CO	6.5
Sealing power	Sealing	VA	7.5
Sealing power	Sealing	W	6.5
Duty factor		% DF	100
Changeover time at 100 % U_C (recommended value)			
Main contacts			
Opening delay		ms	110
Behaviour in marginal and transitional conditions			
Sealing			
Voltage interruptions			
(0 … 0.2 x $U_{c\ min}$) ≦ 10 ms			Drop-out of the contactors
(0 … 0.2 x $U_{c\ min}$) > 10 ms			Drop-out of the contactors
Voltage drops			
(0.2 … 0.6 x $U_{c\ min}$) ≦ 12 ms			Targeted bridging during this time
(0.2 … 0.6 x $U_{c\ min}$) > 12 ms			Drop-out of the contactors
(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
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 safely
Admissible transitional contact resistance (of the external control circuit device when actuating A11)		mΩ	≦ 500
PLC signal level (A3 - A4) to IEC/EN 61131-2 (type 2)			
High		V	15
Low		V	5

Electromagnetic compatibility (EMC)

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

Design verification as per IEC/EN 61439

Technical data for design verification		
Operating ambient temperature min.	°C	-40
Operating ambient temperature max.	°C	60

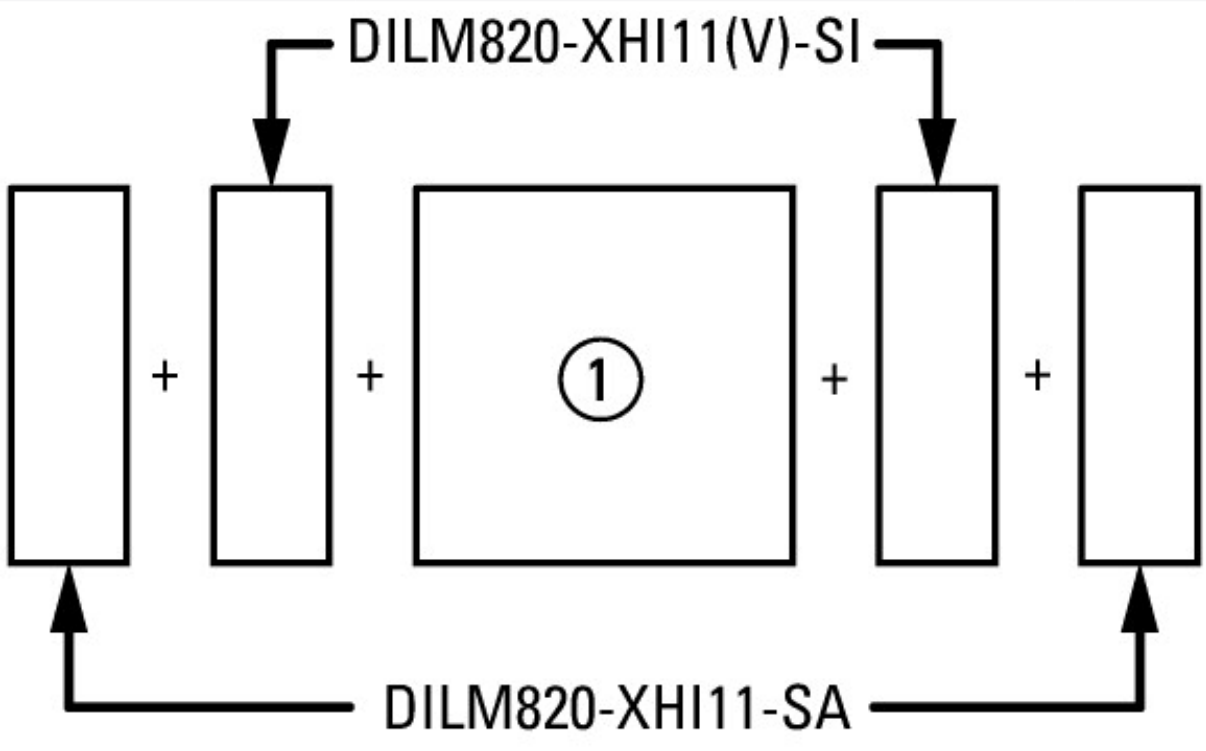
Technical data ETIM 6.0

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@ss8.1-27-37-10-03 [AAB718012])		
Rated control supply voltage Us at AC 50HZ	V	110 - 110
Rated control supply voltage Us at AC 60HZ	V	110 - 110
Rated control supply voltage Us at DC	V	110 - 110
Voltage type for actuating		AC/DC
Rated operation current Ie at AC-1, 400 V	A	1714
Rated operation current Ie at AC-3, 400 V	A	0
Rated operation power at AC-3, 400 V	kW	0
Rated operation current Ie at AC-4, 400 V	A	0
Rated operation power Ie at AC-4, 400 V	kW	0
Modular version		No
Number of auxiliary contacts as normally open contact		2
Number of auxiliary contacts as normally closed contact		2
Type of electrical connection of main circuit		Rail connection
Number of normally closed contacts as main contact		0
Number of main contacts as normally open contact		3

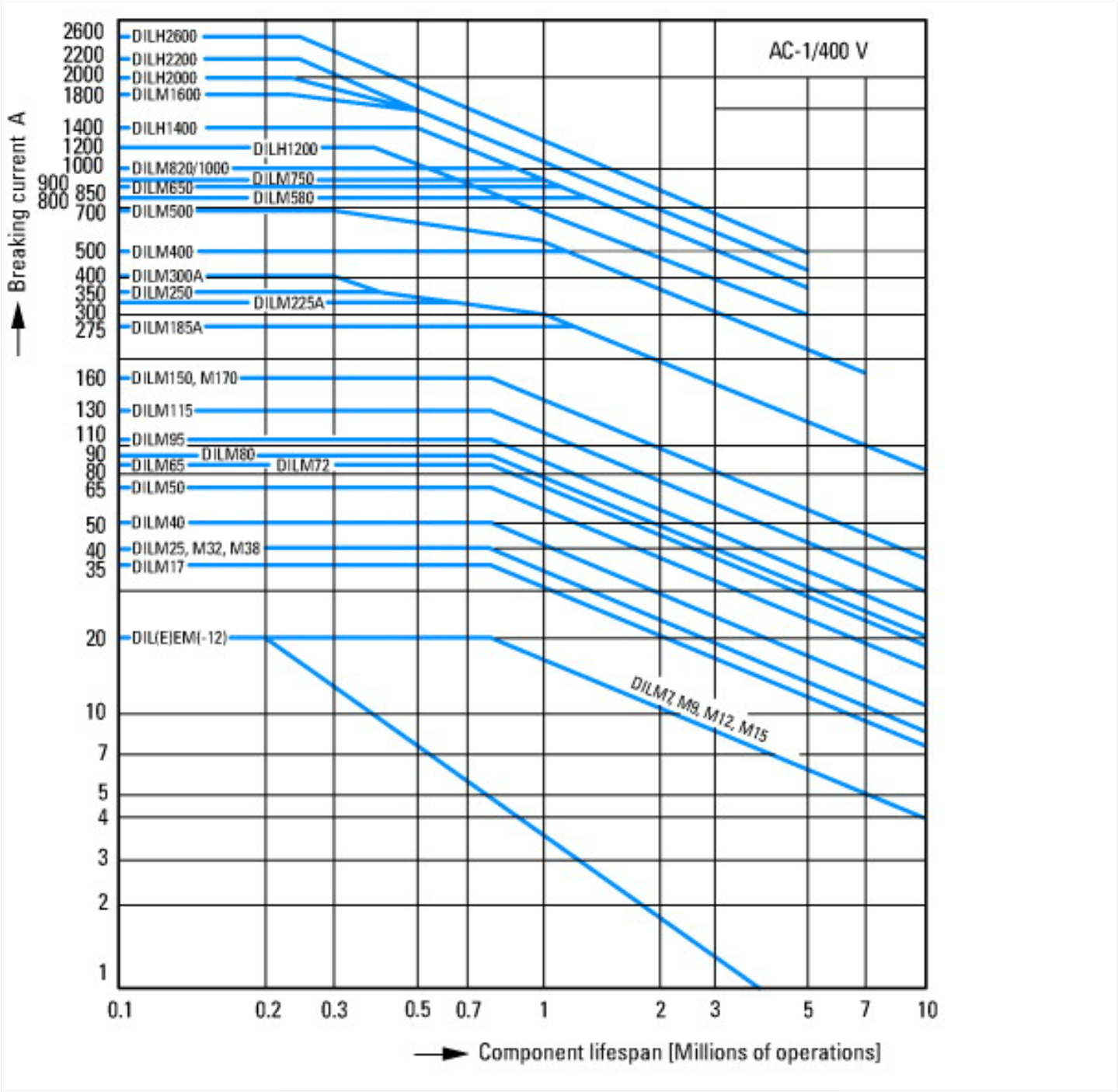
Approvals

Product Standards		IEC/EN 60947-4-1; UL 508; CSA-C22.2 No. 14-05; CE marking
UL File No.		E29096
UL Category Control No.		NLDX
Specially designed for North America		No

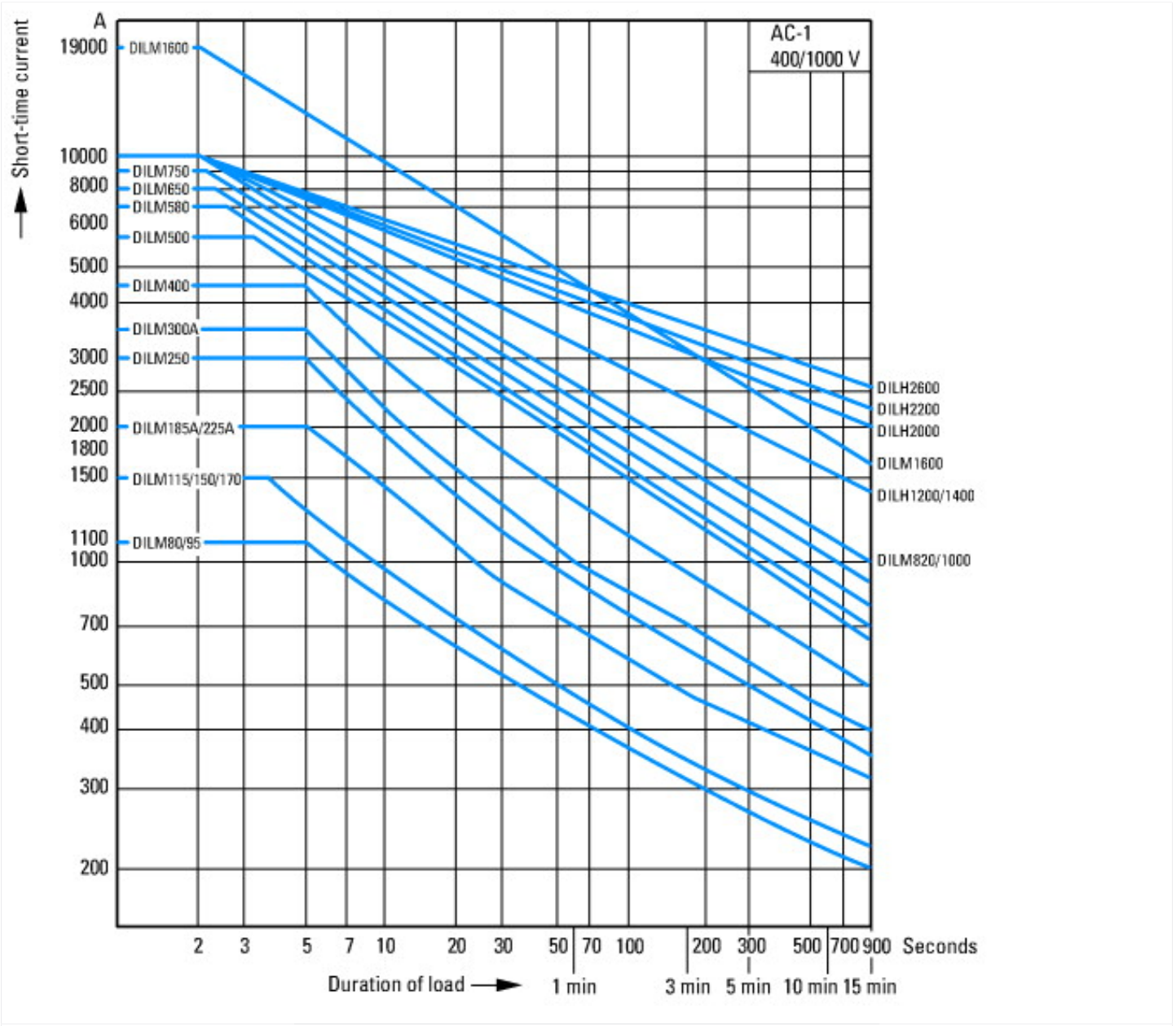
Characteristics



on the side: 2 x DILM820-XHI11(V)-SI; 2 x DILM820-XHI11-SA

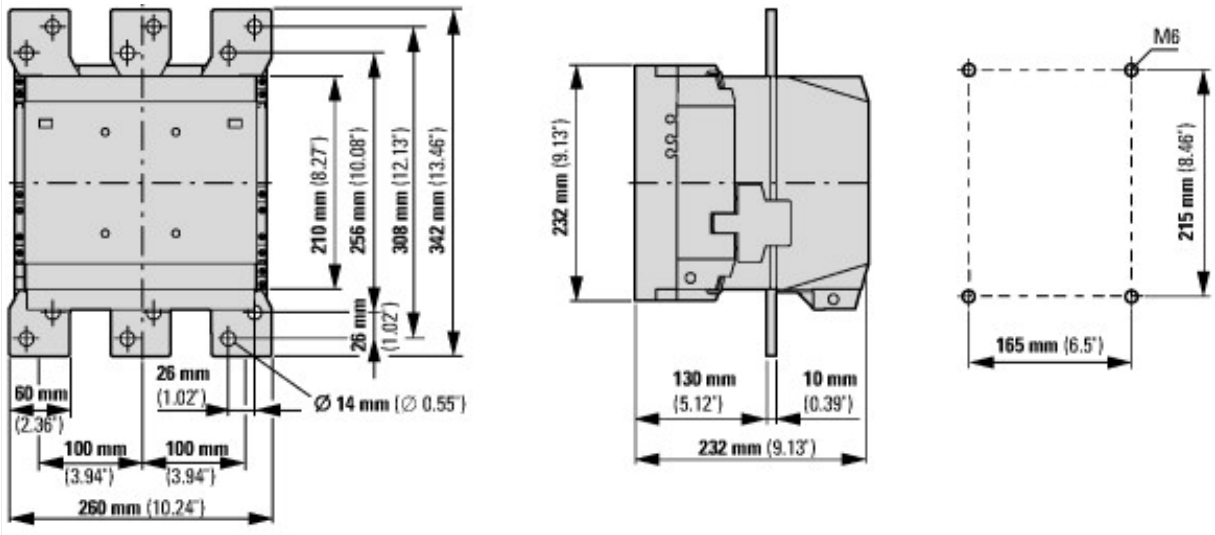


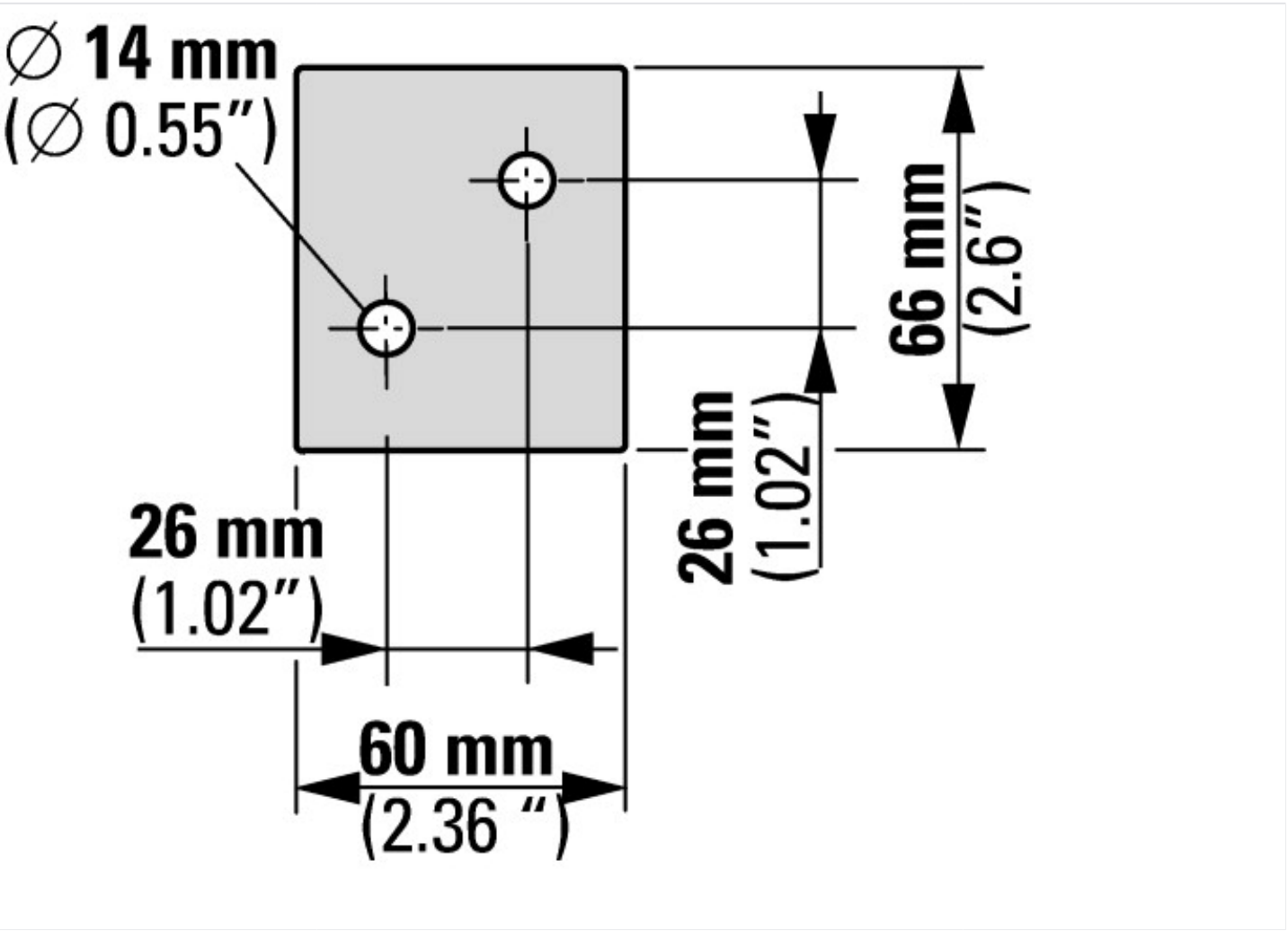
Switching conditions for 3 pole, non-motor loads
Operating characteristics
Non inductive and slightly inductive loads
Electrical characteristics
Switch on: 1 x rated operational current
Switch off: 1 x rated operational current
Utilization category
100 % AC-1
Typical examples of application
Electric heat



Short-time loading, 3-pole
Time interval between two loading cycles: 15 minutes

Dimensions





Additional product information (links)

IL03406004Z (AWA2100-2109) Contactors >170 A	
IL03406004Z (AWA2100-2109) Contactors >170 A	ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL03406004Z2016_11.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
Motor starters and "Special Purpose Ratings" for the North American market	http://www.moeller.net/binary/ver_techpapers/ver953en.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
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