



Product designation

Pump protection relays

Product type designation

PMA50

**General characteristics**

Description

Pump protection relay (motor under-load and over-current control) monitoring for max AC current, min cosφ, phase loss and incorrect phase sequence

Type of system

Single-phase and three-phase

**Power supply**

Auxiliary supply voltage  $U_s$

380...415VAC

Operating voltage range

0.85...1.1  $U_s$

Rated frequency

Hz 50/60 ±5%

Power consumption Max

VA 4.5

Power dissipation Max

W 2.3

**Control circuit**

Rated current ( $I_e$ )

A 5 or 16

Overload capacity

5 $I_e$  for 1s - 160A for 10ms - Constant 16A

Connection

Direct or by current transformer

Current set-point (%  $I_e$ )

Max % 10...100

Minimum  $\cos\phi$  set-point

0.1...0.99

Tripping delay

s 0.1...10

Automatic resetting delay

min OFF...100

Resetting hysteresis

% 3% for overcurrent, 0.03 for  $\cos\phi$

Inhibition time

s 1...60

Type of reset

Automatic or manual

External input

Consent input for running/resetting

Repeat accuracy

% ±1 (with constant parameters)

Tripping time for phase loss

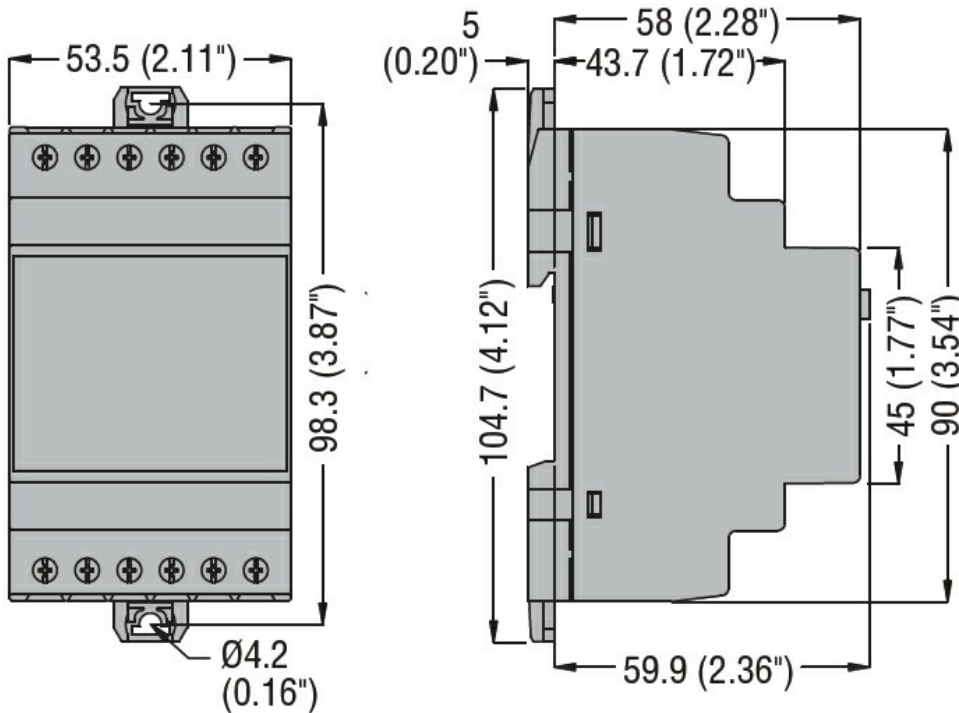
ms 60

**Voltage inputs**

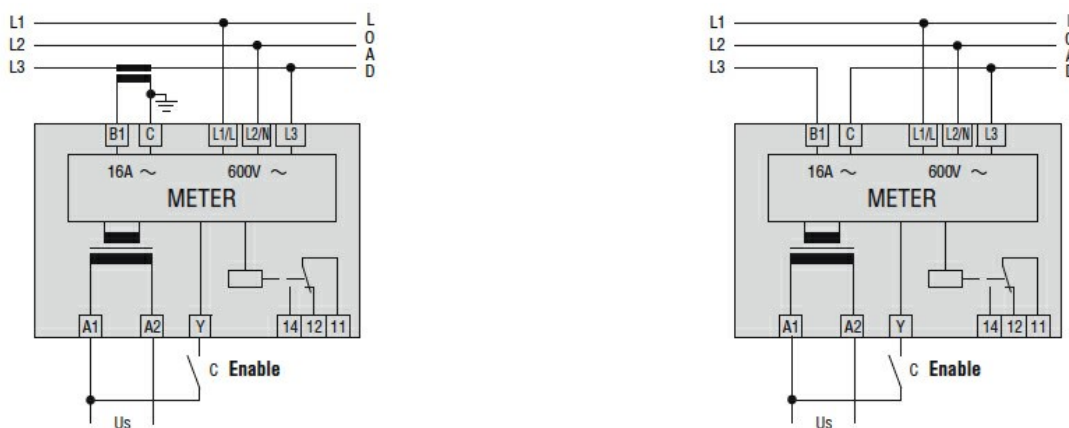
Measurement range	V	80...660VAC
Frequency range	Hz	50/60 $\pm$ 5%
<b>Relay outputs</b>		
Number of relays	Nr.	1
Relay state		Normally energised De-energises at tripping
Contact arrangement		1 changeover SPDT each
Rated operational voltage AC (IEC)	VAC	250
Maximum switching voltage	VAC	400
IEC Conventional free air thermal current I <sub>th</sub>	A	8
UL/CSA and IEC/EN 60947-5-1 designation		B300
Electrical life (with rated load)	cycles	100000
Mechanical life	cycles	30000000
<b>Functions</b>		
Modular version		3U
Maximum AC current		Yes
Minimum cos $\phi$ for dry running pump protection		Yes
Phase loss		Yes
Incorrect phase sequence		Yes
<b>Indications</b>		
Indication		1 green LED for power on / Inhibition and 2 red LEDs for tripping
<b>Connections</b>		
Tightening torque for terminals	max Nm	0.8
	max I <sub>bin</sub>	7
Conductor cross section		
AWG/Kcmil	min AWG	24
	Max AWG	12
IEC	min mm <sup>2</sup>	0.2
	Max mm <sup>2</sup>	4
<b>Insulations</b>		
Rated insulation voltage U <sub>i</sub>	V	600
Rated impulse withstand voltage U <sub>imp</sub>	kV	6
Operating frequency withstand voltage	kV	2.5
<b>Ambient conditions</b>		
Temperature		
Operating temperature	min °C	-20
	max °C	+60
Storage temperature	min °C	-30
	max °C	+80
<b>Housing</b>		
Execution (n° of modules)		3

Material	Self-extinguishing polyamide	
Mounting	Modular DIN 43880 housing	
IEC degree of protection	IP40 on front; IP20 at terminals	
Dimensions (W x H x D)	mm	53.5 x 104.7 x 64.9
Weight	g	251

**Dimensions**



**Wiring diagrams**



**Certifications and compliance**

**Compliance**

- CSA C22.2 n° 14
- IEC/EN 60255-5
- IEC/EN 61000-6-2
- IEC/EN 61000-6-3
- UL 508

**Certificates**

cULus  
EAC

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ETIM classification

ETIM 8.0

EC001440 -  
Current  
monitoring relay