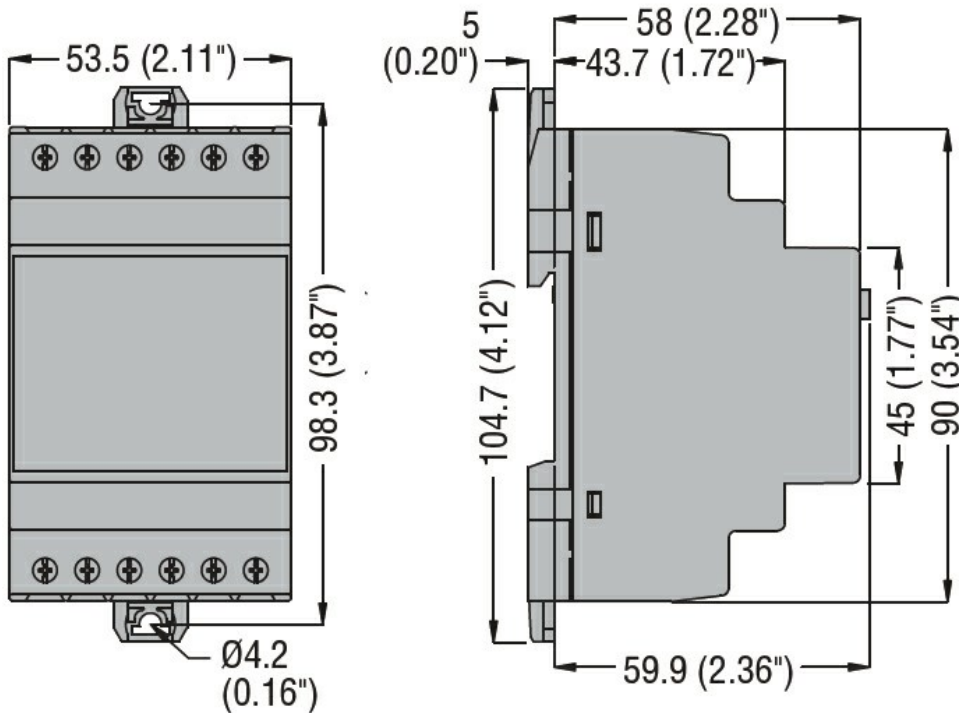




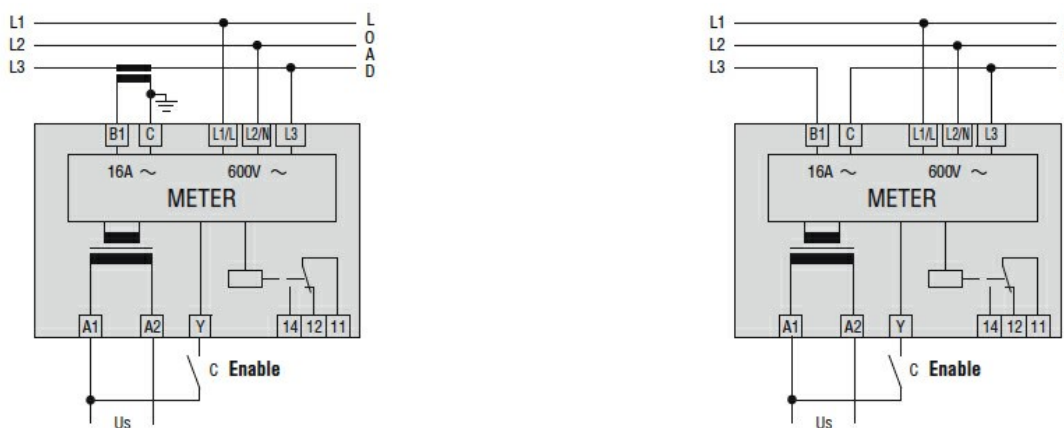
Product designation	Pump protection relays		
Product type designation	PMA50		
General characteristics			
Description	Pump protection relay (motor under-load and over-current control) monitoring for max AC current, min cosφ, phase loss and incorrect phase sequence		
Type of system	Single-phase and three-phase		
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%
Relay outputs		
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 _{th}	A	8
UL/CSA and IEC/EN 60947-5-1 designation		B300
Electrical life (with rated load)	cycles	100000
Mechanical life	cycles	30000000
Functions		
Modular version		3U
Maximum AC current		Yes
Minimum cos ϕ for dry running pump protection		Yes
Phase loss		Yes
Incorrect phase sequence		Yes
Indications		
Indication		1 green LED for power on / Inhibition and 2 red LEDs for tripping
Connections		
Tightening torque for terminals	max Nm	0.8
	max I _{bin}	7
Conductor cross section		
AWG/Kcmil	min AWG	24
	Max AWG	12
IEC	min mm ²	0.2
	Max mm ²	4
Insulations		
Rated insulation voltage U _i	V	600
Rated impulse withstand voltage U _{imp}	kV	6
Operating frequency withstand voltage	kV	2.5
Ambient conditions		
Temperature		
Operating temperature	min °C	-20
	max °C	+60
Storage temperature	min °C	-30
	max °C	+80
Housing		
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 [mm (in)]		



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

ETIM classification

ETIM 8.0

EC001440 -
Current
monitoring relay