Lovato electric

ENERGY AND AUTOMATION

Order code	Rated current Ie	Auxiliary supply voltage	Qty per pkg	Wt
	[A]	[V]	n°	[kg]
Single-phase system. AC/DC minimum and maximum current control. Delayed trip. Auxiliary AC/DC power supply. Automatic or manual reset.				
PMA40 240	0.02-0.05-0.25-1-5-16A	24-240V AC/DC	1	0.166

General characteristics

- Current monioring relay for AC/DC minimum and maximum current control, AC/DC multivoltage auxiliary power supply
- Direct connection up to 16A max or by current transformer (CT)
- Excellent tripping accuracy
- TRMS current measurements (True Root Mean Square)
- Automatic or manual resetting (manual resetting by power removal)
- 2 relay outputs (Min and Max), configurable, each with 1 changeover contact (SPDT)
- Modular DIN 43880 housing, 3 module
- IEC protection degree: IP40 on front (only when placed in iP40 enclosure or control board); IP20 at terminals.

ADJUSTMENTS

"Imax"	Maximum current tripping threshold 5-100% Ie
"Imin"	Minimum current tripping threshold 5-100% Ie
"Trip delay"	Minimum and maximum current tripping time 0.1-30s
"Inhibition time"	Tripping time at power up 1-60s
"Ie"	Current scale selection: 20mA, 50mA, 250mA, 1A, 5A or 16A
"Mode"	• Separate or common relay outputs • Relay output normally energised or de-energised • Tripping memory (Latch) On or Off.

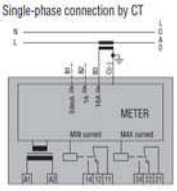
Certifications and compliance

Certifications obtained: EAC; UL Listed, for USA and Canada (cULus - File E93601), as Auxiliary Devices - Modular ampere monitoring relays.
Compliant with standards: IEC/EN 60255-5, IEC/EN 61000-6-2, IEC/EN 61000-6-3, UL 508, CSA C22.2 n° 14.

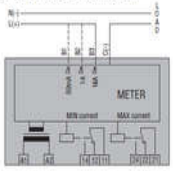
Current monitoring relay for 1-phase systems

PMA40

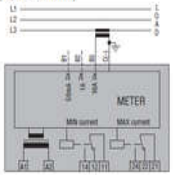
Single-phase connection by CT



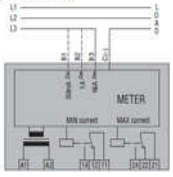
Single-phase direct connection



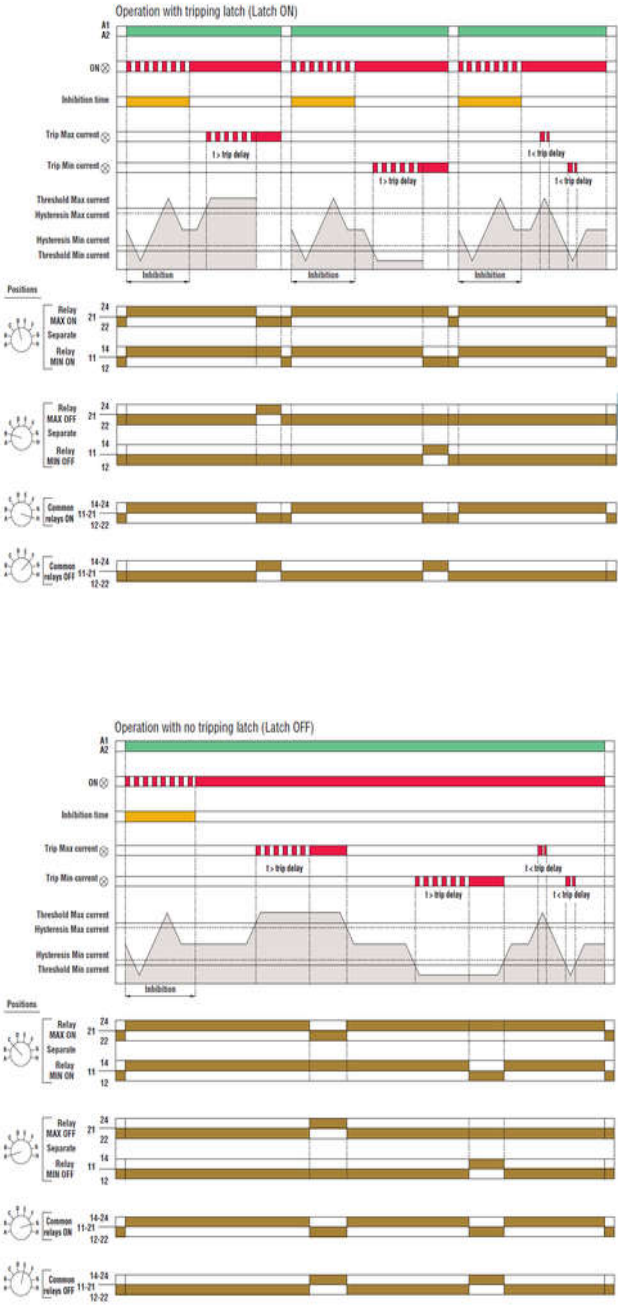
Three-phase connection by CT (1 phase control)



Three-phase direct connection (1 phase control)

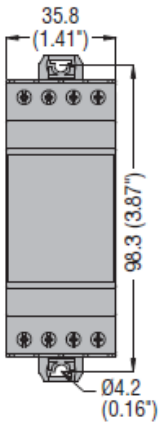


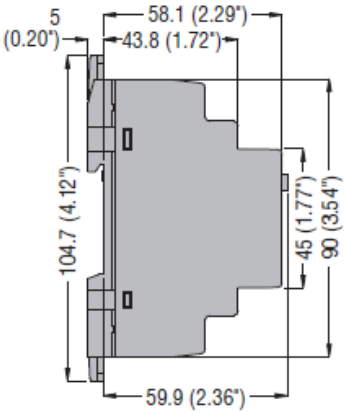
Operation with tripping latch (Latch ON)



Operation with no tripping latch (Latch OFF)

Operation			
Mode	Operation	Relay output	Latch
A	Separate relays	OFF	OFF
B			ON
C		ON	OFF
D			ON
E	Common relays	OFF	OFF
F			ON
G		ON	OFF
H			ON





Lovato electric

ENERGY AND AUTOMATION

TYPE		PMA20	PMA30	PMA40	
DESCRIPTION					
		Single-phase maximum current monitoring AC/DC multiscale	Single-phase minimum or maximum current monitoring AC/DC multiscale	Single-phase minimum and maximum current monitoring AC/DC multiscale	
CONTROL CIRCUIT					
Rated current to be monitored Ie		5 or 16A		0.02 - 0.05 - 0.25 - 1 - 5 - 16A	
Rated frequency		50/60Hz ±5%			
Overload capacity		5 Ie for 1s 160A for 10ms Constant 16A		50mA - 1A inputs: 5 Ie for 1s 10Ie for 10ms Constant 2Ie	16A input: 5 Ie for 1s 160A for 10ms Constant 16A
Connection		Direct or by current transformer			
Adjustment	Tripping values	5-100% f.s.			
	Tripping time	0.1-30s			
	Inhibition time	1-60s			
	Resetting hysteresis	1-50%		3% fixed	
Resetting		Automatic / Manual			
External input		Resetting / Inhibition		—	
Repeat accuracy		±1% with constant parameters			
AUXILIARY SUPPLY					
Auxiliary supply voltage Us		24-240VAC/DC			
Operating range		0.85-1.1 Us			
Rated frequency		50/60Hz ±5%			
Power consumption (maximum)		3.2VA		7VA	
Power dissipation (maximum)		1.6W		1.7W	
RELAY OUTPUTS					
Number of relays		1		2	
Relay state		Normally energised / de-energised (selectable)			
Contact arrangement		1 changeover contact SPDT each			
Rated operational voltage		250VAC			
Maximum switching voltage		400VAC			
IEC conventional free air thermal current Ith		8A			
UL/CSA and IEC/EN 60947-5-1 designation		B300			
Electrical life (with rated load)		10^5 cycles			
Mechanical life		$30x10^6$ cycles			
Indications		1 green LED for power on/inhibition 1 red LED for tripping		1 green LED for power on/inhibition 2 red LEDs for max/min tripping	
CONNECTIONS					
Tightening torque maximum		0.8Nm (7lbin; 7-9lbin per UL/CSA)			
Conductor section min-max		0.2-4.0mm^2 (24-12AWG; 18-12 AWG per UL/CSA)			
INSULATION (input-output)					
IEC rated insulation voltage Ui		415V			
IEC rated impulse withstand voltage Uimp		4kV			
IEC power frequency withstand voltage		2.5kV			
AMBIENT CONDITIONS					
Operating temperature		–20...+60°C			
Storage temperature		–30...+80°C			
HOUSING					
Material		Self-extinguishing polyamide			