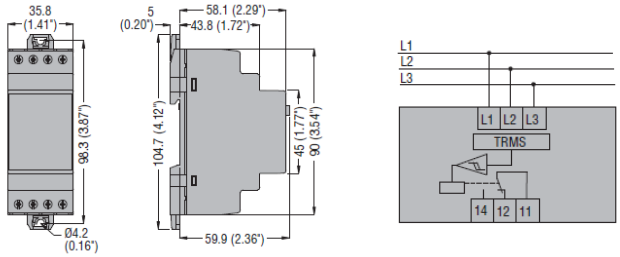
Lovato electric

ENERGY AND AUTOMATION

Order code	Rated voltage to control Ue (phase-to-phase)	Qty per pkg	Wt
	[V] 50/60Hz	n°	[kg]
Three-phase system, without neutral. Minimum and maximum AC voltage. Delayed trip. Phase loss and incorrect phase sequence. Instantaneous trip.			
PMV50 A240	208-240VAC	1	0.130
PMV50 A575	380-575VAC	1	0.130
PMV50 A600	600VAC	1	0.130



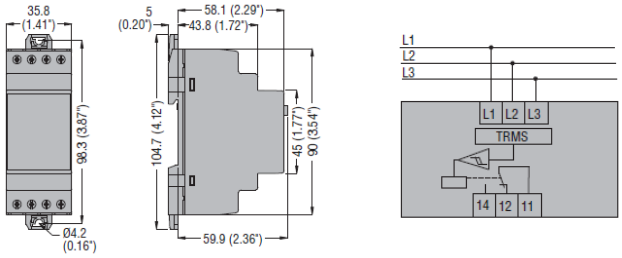
General characteristics

- Voltage monitoring relay, self powered, for minimum and maximum voltage, phase loss and incorrect phase sequence
- Configurable rated voltage (Ue):
  - PMV50 A240: 208-220-230-240VAC
  - PMV50 A575: 380-400-415-440-460-480-525-575VAC
- High tripping accuracy
- TRMS measurements (True Root Mean Square)
- Control of phase-to-phase voltages
- Phase loss detection if one of the voltages is <70% rated value
- Phase loss tripping time: 60ms
- 1 relay output with 1 changeover contact (SPDT)
- Modular DIN 43880 housing, 2 module
- IEC protection degree: IP40 on front (only when placed in IP40 enclosure or control board); IP20 on terminals.

ADJUSTMENTS

"V max"	Maximum voltage tripping threshold 105-115% Ue
"V min"	Minimum voltage tripping threshold 80-95% Ue
"Delay" for each	Tripping time 0.1-20s
"Reset delay"	Resetting time 0.1-20s.

Order code	Rated voltage to control Ue (phase-to-phase)	Qty per pkg	Wt
	[V] 50/60Hz	n°	[kg]
Three-phase system, without neutral. Minimum AC voltage and asymmetry. Delayed trip. Phase loss and incorrect phase sequence. Instantaneous trip.			
PMV60 A240	208-240VAC	1	0.130
PMV60 A575	380-575VAC	1	0.130
PMV60 A600	600VAC	1	0.130



General characteristics

- Voltage monitoring relay, self powered, for minimum voltage, phase loss and incorrect phase sequence
- Configurable rated voltage (Ue):
  - PMV60 A240: 208-220-230-240VAC
  - PMV60 A575: 380-400-415-440-460-480-525-575VAC
- Excellent tripping accuracy
- TRMS measurements (True Root Mean Square)
- Control of phase-to-phase voltages
- Phase loss detection if one of the voltages is <70% rated value
- Phase loss tripping time: 60ms
- 1 relay output with 1 changeover contact (SPDT)
- Modular DIN 43880 housing, 2 module
- IEC protection degree: IP40 on front (only when placed in IP40 enclosure or control board); IP20 on terminals.

ADJUSTMENTS

"V min"	Minimum voltage tripping threshold 80-95% Ue
"Asymmetry"	High voltage asymmetry tripping threshold 5-15% Ue
"Delay"	Tripping time 0.1-20s
"Reset delay"	Resetting time 0.1-20s

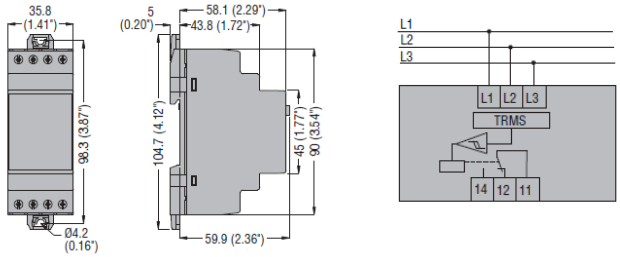
Certifications and compliance

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

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ENERGY AND AUTOMATION

Order code	Rated voltage to control Ue (phase to phase)	Qty per pkg	Wt
	[V] 50/60Hz	n°	[kg]
Three-phase system, without neutral. Minimum and maximum AC voltage and asymmetry. Delayed trip. Phase loss and incorrect phase sequence. Instantaneous trip.			
PMV70 A240	208-240VAC	1	0.130
PMV70 A575	380-575VAC	1	0.130
PMV70 A600	600VAC	1	0.130



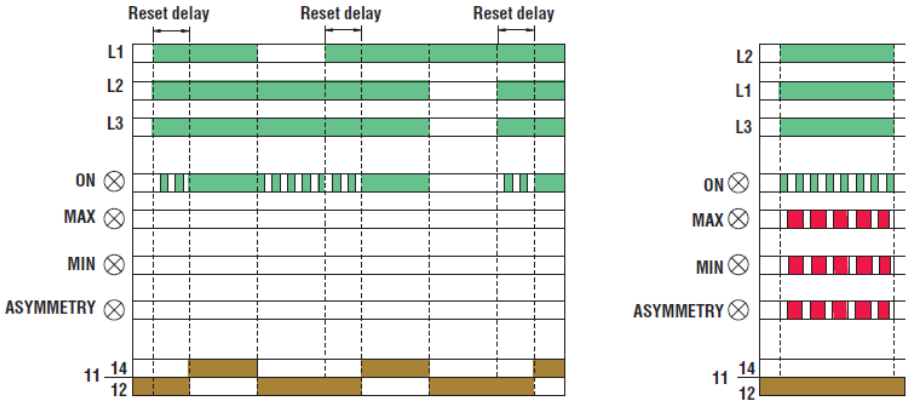
General characteristics

- Voltage monitoring relay, self powered, for minimum and maximum voltage, phase loss, incorrect phase sequence and asymmetry
- Configurable rated voltage (Ue):
  - PMV70 A240: 208-220-230-240VAC
  - PMV70 A575: 380-400-415-440-460-480-525-575VAC
- Excellent tripping accuracy
- TRMS measurements (True Root Mean Square)
- Control of phase-to-phase voltages
- Phase loss detection if one of the voltages is <70% rated value
- Phase loss tripping time: 60ms
- 1 relay output with 1 changeover contact (SPDT)
- Modular DIN 43880 housing, 2 module
- IEC protection degree: IP40 on front (only when placed in IP40 enclosure or control board); IP20 at terminals.

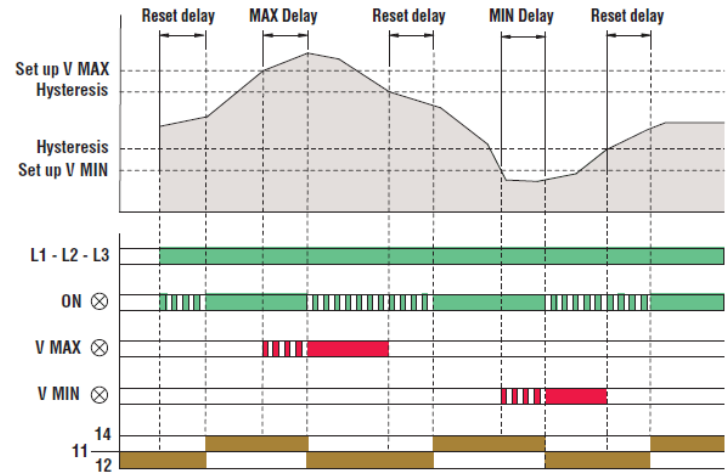
ADJUSTMENTS

"V max"	Maximum voltage tripping threshold 105-115% Ue
"V min"	Minimum voltage tripping threshold 80-95% Ue
"Delay" for each	Tripping delay 0.1-20s
"Asymmetry"	High voltage asymmetry tripping threshold 5-15% Ue.

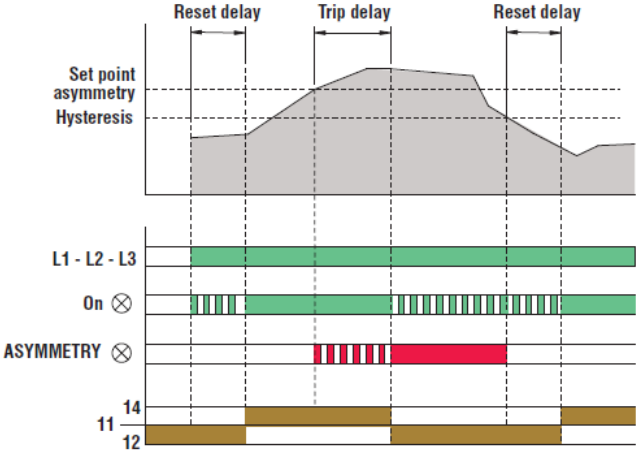
Phase loss and incorrect phase sequence (PMV10-PMV20-PMV30-PMV40-PMV50-PMV60- MV70)



Maximum and minimum voltage (PMV30 - PMV50 - PMV60 - PMV70)



Asymmetry (PMV40 - PMV60 - PMV70)



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ENERGY AND AUTOMATION

RS

TYPE	Single phase	—	—	—	—	—	—
	Three phase	**PMV50**	**PMV60**	**PMV70**	—	—	—
	Three phase with/without neutral	—	—	—	**PMV50 N**	**PMV70 N**	**PMV80 N**
DESCRIPTION							
		Minimum and maximum AC voltage, phase loss and incorrect phase sequence	Minimum AC voltage, phase loss, incorrect phase sequence and asymmetry	Minimum and maximum AC voltage, phase loss, incorrect phase sequence and asymmetry	Minimum and maximum AC voltage, phase loss, neutral loss and incorrect phase sequence	Minimum and maximum AC voltage, phase loss, neutral loss, incorrect phase sequence and asymmetry	Minimum and maximum AC voltage and frequency, phase loss, neutral loss and incorrect phase sequence
CONTROL CIRCUIT							
Rated voltage to control (Ue)		208-240VAC	208-240VAC	208-240VAC	208-240VAC	208-240VAC	208-240VAC
		380-575VAC	380-575VAC	380-575VAC	380-440VAC	380-440VAC	380-440VAC
		600VAC	600VAC	600VAC	480-600VAC	480-600VAC	480-600VAC
Maximum voltage set-point		105-15% Ue	—	105-115% Ue	105-115% Ue	105-115% Ue	105-115% Ue
Minimum voltage set-point		80-95% Ue	80-95% Ue	80-95% Ue	80-95% Ue	80-95% Ue	80-95% Ue
Asymmetry set-point		—	5-15% Ue	5-15% Ue	—	5-15% Ue	—
Minimum and maximum frequency set-point		—	—	—	—	—	1-10% rated frequency
Tripping time		0.1-20s					0.1-20s / 0.1-5s frequency
Resetting time		0.1-20s (0.5s at power up)	0,1-20s (0.5s at power up)	0.5s	0.1-20s	0.5s	0.5s
Resetting hysteresis		3%	3%	3%	3%	3%	3% / 0.5% frequency
Instantaneous tripping for Ue		<70% Ue configured					
Repeat accuracy		< ±0.1%					
POWER SUPPLY							
Auxiliary voltage (Us)		Self powered					
Operating range		0.7-1.2Ue					
Frequency		50/60Hz ±5%					
Power consumption (maximum)		11VA (208-240VAC)❶ 30VA (380-575VAC)❶ 19VA (600VAC)❶			27VA max		
Power dissipation (maximum)		2.5W			1.9W max		
RELAY OUTPUTS							
Number of relays		1			2		
Relay state		Normally energised De-energises at tripping					
Contact arrangement		1 changeover SPDT			2 changeover SPDT		
Rated operational voltage		250VAC					
Maximum switching voltage		400VAC					
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 and tripping 2 red LEDs for tripping		1 green LED for power on and tripping 3 red LEDs for tripping	1 green LED for power on and tripping 2 red LEDs for tripping		
CONNECTIONS							
Terminal tightening torque (maximum)		0.8Nm (7lbin; 7-9lbin per UL/CSA - PMV...N excluded)					
Conductor section min-max		0.2-4.0mm² (24-12AWG; 18-12 AWG per UL/CSA - PMV...N excluded)					
INSULTION (input-output)							
IEC rated insulation voltage Ui		600VAC					
IEC rated impulse withstand voltage Uimp		6kV					
IEC power frequency withstand voltage		4kV					
AMBIENT CONDITIONS							
Operating temperature		–20...+60°C					
Storage temperature		–30...+80°C					
HOUSING							
Material		Self-extinguishing polyamide					

❶ Power consumption (maximum) at 50Hz.