

LOAD PHASE MONITORING RELAY

Introduction

Using modern technology and microprocessor system, load phase monitoring relay is designed and manufactured for accurate control of disordering caused by current asymmetry and under current in all industrial centers with no CT usage in two models (1-60A),(0.5-1.5A).



MODEL : LPF-15A
 LPF-60A
 CODE:13F5
 WEIGHT : 180 gr
 (63x57x95) mm
 IP 30



①

- 10 indicators
 - OL: Over current (1-60A) , (0.5-15 A)
 - UL: Under current (adjustable till 1A less than OL)*
 - %A: current asymmetry (7 – 100%)
 - OV: over voltage (400 – 480V)
 - UV: under voltage (310 – 380V)
 - %V: voltage asymmetry (7 – 25%)
 - OFF: off delay for OL and A% faults (0 – 10 Sec)
 - Normal: relay condition (flashing: ready to Reset)
 - On Delay: on delay or reset delay (0 – 240 Sec)
 - Delay Start: startup time (0 – 120 Sec)*²

(All indicators are ON during setting and flashing during fault occurrence)

*1: 1 unit in 15A model is 0.1A and in 60A model is 1A. In case of setting zero for UL, under current is disabled.

*2: Delay start is the time after relay connection and passing current that Over current and under voltage are not considered. ②

Buttons and display operation in normal mode (relay is on) table ①

button	Description/display
←	Device setting (table 2)
← (2Sec)	Autorecloser and relay condition setting
↑	Device active time (passing current) as hour
↓	Count of connection and disconnection of current
← + ↓	Display voltage for 10 Sec
↓ + ↑	Reset after fault fixing and after elapsing On delay
—	Displaying current I > 0, displaying voltage I = 0

*device displays current value by passing current through CTs and by disconnecting current, the device displays voltage. ③

SHIVA AMVAJ LOAD PHASE MONITORING RELAY

- 3phase devices protection using microprocessor system
- Current control based on I²t curve
- Current measuring without CT using and by passing maximum 25mm² cable through the hole
- Displaying current, set values and error messages
- Protection
 - Over, under and current asymmetry
 - Over, under and unbalance voltage, phase loss or phase sequence
- Displaying
 - Voltage
 - Device active time (passing current)
 - count of connection and disconnection of current
- Automatic reset can be enabled or disabled ④

Technical specification

- Supply voltage: 180 – 250 VAC / R – N / 50-60 Hz
- Input voltage: 300 – 500 VAC / 3PH / 50-60 Hz
- Accuracy
 - LPF – 15A: 0.1A
 - LPF – 60A: 1A -
- Operating Condition
 - 20°C . . . +65°C
 - Humidity : 70%
- Output: 5A relay

Device operation:

Tables (1 – 2 – 4) are used for device adjustment. Error messages are according to table ③

⑤

Device setting table ②

Entering setting stage	Flashing indicator	Description/display	Setting range by ↓ ↑
←	OL	Max current	0.5-15A / 1-60A
←	UL	Min current	zero to 1 unit less than OL
←	%A	Current asymmetry	7- 100%
←	OV	Max voltage	400 -480 V
←	UV	Min voltage	310 -380 V
←	%V	Voltage asymmetry	7-25%
←	OFF	Off delay	0 -10 sec
←	On Delay	On delay or delay for reset	0 -240 sec
←	Delay Start	Delay start	0 -120 sec
←	Save all applied changes		

Note: it's necessary to apply all setting for saving applied changes. In case of releasing ← button for 5 second, the programming mode is quitted and the changes will not be saved. ⑥

Error messages table ③

Flashing indicator	Detail	Display	Relay off delay
OL	Over current	Lod+ voltage	I ² t
UL	Under current	UnC+ voltage	Off Delay
%A	Current asymmetry	UbC+ voltage	Off Delay
OV	Over voltage	ovr+ voltage	Off Delay
UN	Under voltage	Und+ voltage	Off Delay
%V	Voltage asymmetry	Ubu	Off Delay
—	Phase loss	S-t	0 Sec
—	Phase sequence	rotational + SE9	0 Sec
All indicators	2phase supply	EEE/2PH	0 Sec
Reset = ▾ + ⬆		After error fixing and elapsing On Delay until device resetting, NORMAL indicator flashes and error message is displayed.	

⑦

Auto recloser and relay condition setting table ④

Entering setting relay status stage by pressing ⬅ for 2 seconds			
	Device display variable by ▾ and ⬆	Relay on conditions (automatically)	Relay on time
⬅	A-R	After fixing current fault	On Delay+ 60 Sec
	A-n	Relay disconnection until manual reset	0 Sec
⬅	r-o	Relay is on during normal condition	
	r-C	Relay is on during fault condition	
⬅	Save all adjusted changes		
Displaying the delay time to relay activation is as countdown.			

Note1: after 3 time Auto-reclosing, devise stays in fault mode until manual reset or disconnection of device power.

Note2: in auto recloser term, the possibility of manual reset is available as well.

⑧

Example:
If the current at working is 10A and stating current is 30A, it last for 5 sec , the adjusted values are as below.

OL: 12A

UL: 8A 0-8 A according to the usage

%A :%40

DELAY START: 6Sec

ON DELAY: 5 Sec

OFF DELAY: 5 Sec

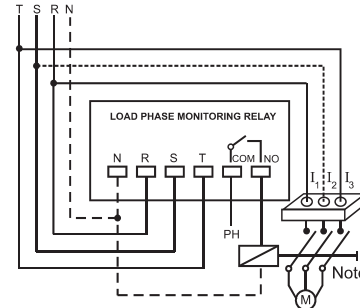
Note that these values change based on motor condition and sensitivity

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Installation and utilization guide

First install digital monitoring relay on the rail. In case of absence of rail, use the rail inside the box. Wiring the device in accordance with wiring diagram and pass the current carrier wire through I₁, I₂ and I₃ (passing current channels) current holes

Note: passing current through the middle hole (I₂) is not under control in this model and passing or not passing wire, makes no effect.



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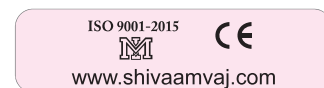
3 year no question asked guarantee under these conditions;

1-at most it should be within 3 years from the date printed on the label of the product

2-the label on the product should be safe and sound

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