

DIGITAL LOAD MONITORING RELAY

Using modern technology and microprocessor system, load 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: □ DLF - 60A
□ DLF - 15A
CODE: 13F6
WEIGHT : 180 gr
(63x57x95) mm
IP 30



SCAN OR TO VIEW
THE PRODUCT



①

Shiva Amvaj LOAD monitoring relay features

- 3phase devices protection using microprocessor system
 - Current control based on I^2t curve
 - Current measuring without CT using and by passing maximum 25mm² wire directly from the hole
 - Displaying current, set values and error messages
 - Protection against, under current and current asymmetry
 - 8 indicators for indicating:
 - OL: overload (1 - 60A),(0.5 - 15A).
 - UL: underload (adjustable till 1A less than OL)
 - %A: current asymmetry(7 - 100%)
 - ON: on delay or reset delay (0 - 240 Sec)
 - OFF: off delay for OL and A% faults (0 - 10 Sec)
 - OFF(u): off delay for UL fault (5 - 10 Sec)
 - Normal: relay condition
 - Delay Start: primary start time (0 - 120 Sec)
- (All indicators are ON during setting and flashing during fault occurrence)

*1: in case of setting zero for UL, under current is disabled.

*2: primary start time is the time after relay connection and passing current. Over current (for motor primary drive) is not considered.

②

Technical specification:

- supply voltage: 180- 250 VAC / 50-60 Hz
- Accuracy
 - DLF15A: 0.1A
 - DLF60A: 1A
- Operating condition
 - Temperature : -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.

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

button	Description/display
←	Device setting (table 2)
▼ + ▲	Reset after fault fixing and after elapsing On delay
for 2 seconds ←	Relay condition setting
—	Displaying the current

Device setting

table ②

Entering setting stage	Flashing indicator	Description/display	Setting range by buttons ▼, ▲
←	OL	Max current	0.5-15A / 1-60A
←	UL	Min current	since 0 till 1A less than OL
←	%A	Current asymmetry	7- 100%
←	ON	On delay	0-240 sec
←	OFF	Off delay %A , OL	0-10 sec
←	OFF(u)	Off delay UL	5-10 sec
←	Delay Start	Primary start time	0-120 sec
←	Save all applied changes		

④

Error messages

table ③

Flashing indicator	Detail	Display	Relay off delay
OL	Over current	Lod	I^2t
UL	Under current	UnC	OFF(u) set time
%A	Current asymmetry	Ubc	OFF set time
Reset = ▼ + ▲			

After fault fixing and elapsing on delay, normal display is flashing and displaying error.

Setting relay condition

table ④

Entering setting relay status stage by pressing ← for 2 seconds	
Device display adjustable by ▼, ▲	Detail
← - C	Relay is on during fault condition
← - 0	Relay is on during normal condition

⑤

Auto recloser

The device is put in auto recloser mode by connecting auto terminal to phase.

In this case after each fault which leads to relay disconnection, the device which automatically displays countdown mode with delay time of On delay +60 Sec, connects and keeps its duty in normal situation.

In case of fault repetition, this operation repeats for 3 times and after that the device is waiting for manual Reset.

Auto recloser is done by pressing ▲ and ▼ button simultaneously. the disconnectin time value is calculated as below:

$$T(\text{off}) = \frac{\text{OFF DELAY}}{\Delta I^2}$$

⑥

Note: In Auto recloser term, the possibility of manual reset is available as well.

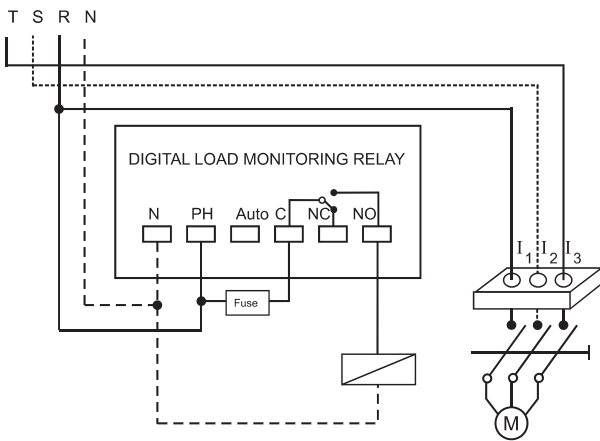
Installation and utilization guide

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 I_1 , I_2 and I_3 (passing current channels) current holes

Note: In this model the load that pass from the hole (I_2), hole is effectless.

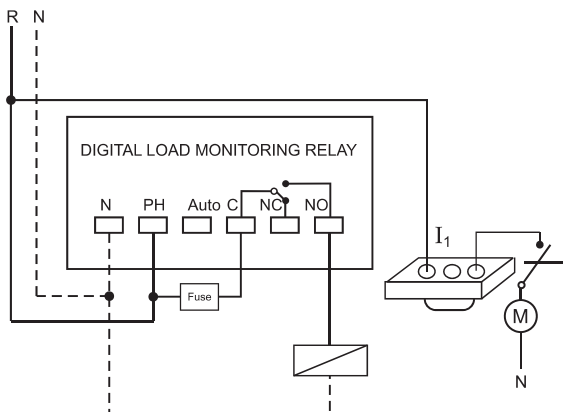
⑦

3phase-



⑧

1phase-



⑨

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 sensivity

⑩

Note : Two below factors are noticeable in UBC error (current asymmetry)

1- low adjusted value for %A error raises sensitivity It is necessary to set the parameters on 40%

2-passing current channel via phase R or T after load monitoring relay e.g., turn on the fan. It may fix after wiring modification.



Respecting the customer is our duty

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

⑪

Shiva Amvaj products in accordance with international standards and with a 3 year no question asked guarantee are presented

ISO 9001-2015



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