

Current window monitoring relay IMR F1

with 3 measuring ranges and adjustable cut-off delay

Ring-type current transformer IW 32

Ratio 30:1 / Measuring range up to 60A

SPECIAL FEATURES:

- 3 measuring ranges: 20mA-0.2A / 0.2-2A / 1.6-16A (freely extendable with ext. current transformer)
- Electrically isolated measuring circuit
- Changeover contact 16A (potential-free)
- Adjustable response time
- Switch status display
- Holding threshold LED
- Low power consumption

GENERAL:

The IMR F1 current window monitoring relay is used to monitor the current flow of AC loads.

The independently adjustable switching thresholds “ I_{Low} ” and “ I_{High} ” provide a precisely definable current window. If the load is ever outside this predefined current range, the relay trips after a user-definable response time.

Using the potential-free changeover contact, the relay can be used to switch on e.g. warning systems or else directly to switch off the monitored load.

Input B1 can be used to trigger a switch-on pulse to restart the relevant load after it has been switched off by the IMR F1.

The IW 32 current transformer available as accessory extends the maximum possible measuring range from 16A to 60A.

APPLICATION:

Current monitoring of AC loads such as machines, drives, switchgear etc.

OPERATION:

The supply voltage of the IMR F1 is applied at terminals L and N. The alternating current to be measured must flow across the transformer input I-k.

The measuring range (max. switching thresholds 0.2A / 2A / 16A) is set by means of a rotary control on the front of the device. To detect higher currents, an external current transformer must be inserted upstream of the device (e.g. IW 32 for up to 60A).

With the “ I_{high} ” and “ I_{low} ” controls, a precisely definable current range (“window”) can now be set within the selected monitoring range.

If the measured current is within the set window, the “hold” LED lights up and the relay contact is switched.

The active relay contact is indicated by the “on” LED.

If the current input of the load is outside the defined window, the “hold” LED goes out and the relay is tripped after an user-adjustable response time (1s to 30s).

In order to use the relay for automatic cut-off of the monitored load, the load simply has to be routed via the normally open contact of the IMR F1.

By actuating input B1, a switch-on pulse is generated (the relay contact is briefly closed). This method can be used to switch the monitored load back on again after an automatic cut-out.

The duration of the switch-on pulse corresponds to the adjustable response time and can therefore be adapted to the conditions of the system.

ORDERING INFORMATION:

Part No.	Type	Description
imrf19	IMR F1	Current window monitoring relays
iw3200	IW 32	Current transformer 60A

TECHNICAL DATA IMR F1:

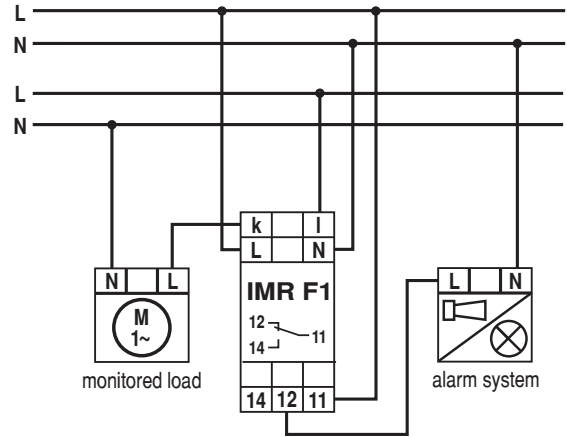
Operating voltage	230V 50/60Hz 10%
Power input	approx. 0.6W
Measuring ranges (AC 50/60 Hz)	20mA-0.2A / 0.2A-2A / 1.6A-16A
Lower limit value (I_{low})	10-100% of the measuring range
Upper limit value (I_{high})	10-100% of the measuring range
Switch-on delay	approx. 1 sec
Response time	adjustable from 1s 30s
Transformer input	Potential-free
Max. continuous current	16A
Max. voltage	400V
Relay output	1 changeover cont., potential free
Max. switching voltage	250V
Max. continuous current	16A
Max. switching capacity	3500VA
Electrical service life	1×10^5 switching cycles
Ambient temperature	-10°C to +45°C
Interference immunity	compliant IEC 801-4 level 4
Equipment protection	compliant IEC 801-5 level 3
Creepage distance/clearance	compliant VDE 0110 Gr. C/250V
Insulated housing	Flameproof to VDE 0304 Part 3, level FV 0
Connections	Socket terminals with captive screws M3.5
Installation position	Freely selectable
Fixing	Clip fastening on 35 mm standard rail DIN EN 50022
External dimensions	18x88(45)x58mm
Installation depth	55 mm
Weight	approx. 80g
Colour (RAL)	Grey 7035 / green 6029

TECHNICAL DATA IW32:

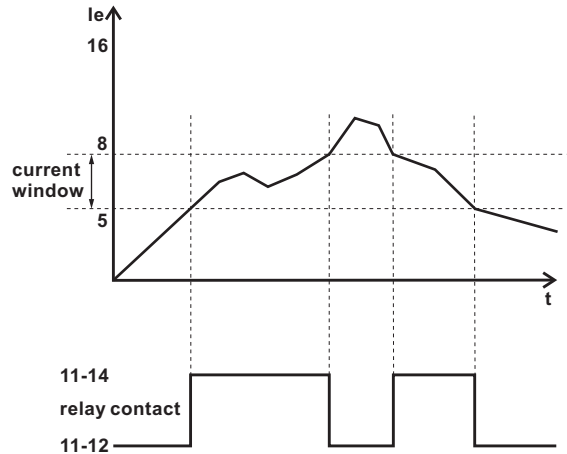
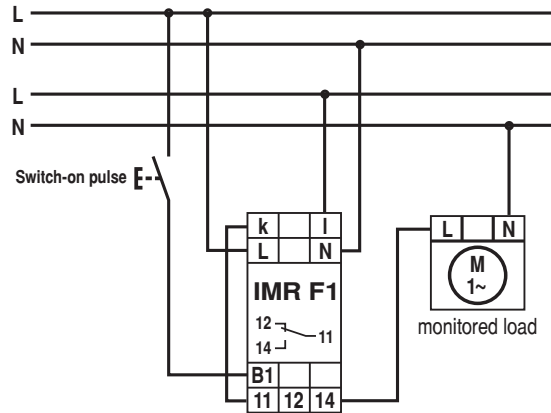
Transformer ratio	30:1
Measuring range	Max. 60A
Rated power	0.3VA
Line resistance	max. 0.25 Ohm (approx. 10m supply line 1.5mm ²)
Housing dimensions	32x32x15.5mm ³
Hole diameter	10mm

TYPICAL APPLICATIONS:

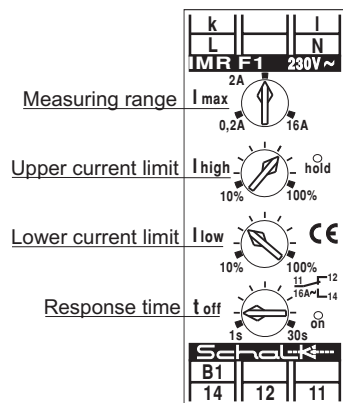
Current monitoring with alarm



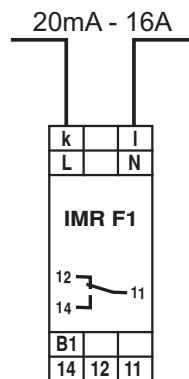
Current monitoring with automatic cut-off



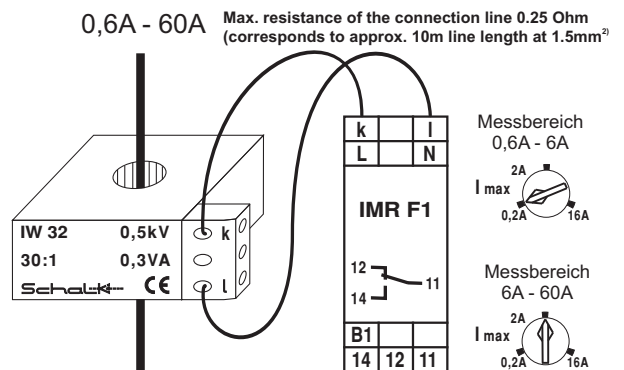
IMR F1 Function diagram



IMR F1 controls



IMR F1 with direct connection



IMR F1 with IW 32 ratio 30:1 / max. current 60A