

Current window measuring relay IMR F1

with 3 measuring ranges and adjustable switch-on delay

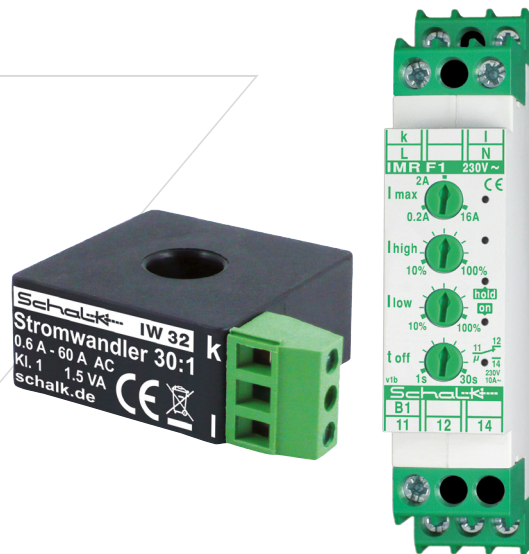
Ring-type current transformer IW 32

Ratio 30:1 / Measuring range up to 60 A

Current monitoring of AC loads, with two adjustable switching thresholds, e.g. for safety shutdown in the event of under- or overcurrent).

Special features

- ▶ 3 measuring ranges 20 mA-0.2 A/ 0.2-2 A/ 1.6-16 A (extendible via ext. current transformers)
- ▶ Measuring circuit galvanically isolated
- ▶ Output contacts (change-over contact 16 A) potential-free
- ▶ Adjustable response time
- ▶ Switching status display
- ▶ Holding threshold display
- ▶ very low power consumption



General information

The current window measuring relay IMR F1 is used for current monitoring of AC loads. The "I Low" and "I High" switching thresholds, which can be set independently of one another, monitor a precisely definable current window. If the consumer to be monitored leaves this set current range, the relay drops out after an adjustable response time has elapsed.

The potential-free change-over contact can be used to switch on warning devices, for example, or the monitored consumer itself can be switched off directly. Input B1 can be used to trigger a switch-on pulse in order to put the affected consumer back into operation after it has been switched off. The IW 32 current transformer available as an accessory extends the maximum possible measuring range from 16 A to 60 A.

Applications

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

Operation

The supply voltage of IMR 3 is applied to terminals L and N. The alternating current to be measured is conducted via the potential-free current measuring input (terminals k and I). The required measuring range (0.2 A, 2 A or 16 A) is set via a

rotary switch on the front panel. An external current transformer (e.g. IW 32 for up to 60 A) can also be connected upstream for the detection of larger currents.

With the "I high" and "I low" controllers, an exactly definable current window can now be set within the selected measuring range.

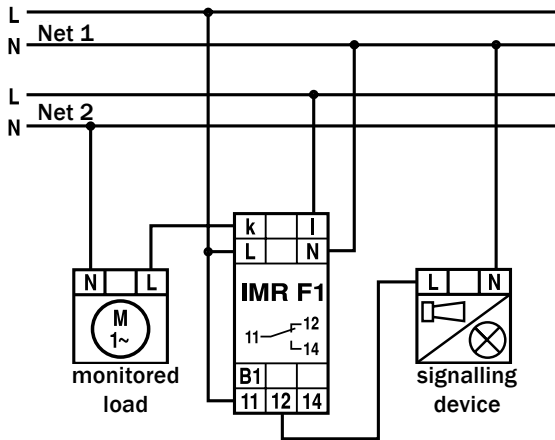
If the measured current is within the set window, the "hold" LED starts to light up and the relay contact is switched.

The active relay contact is indicated by the "on" LED. If the current consumption of the load leaves the set window, the "hold" LED goes out and the relay is switched off after the adjustable response time (1s - 30s).

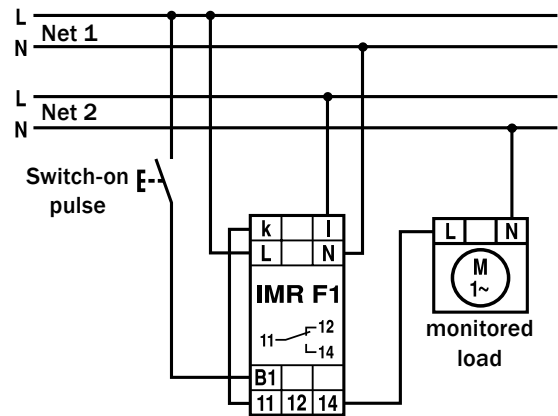
In order to achieve an automatic switch-off of the monitored consumer, it only has to be routed via the normally open contact of the IMR F1. A switch-on pulse is generated by controlling input B1 (relay contact is briefly closed). This means that the monitored load can be put back into operation without any problems after it has been switched off.

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

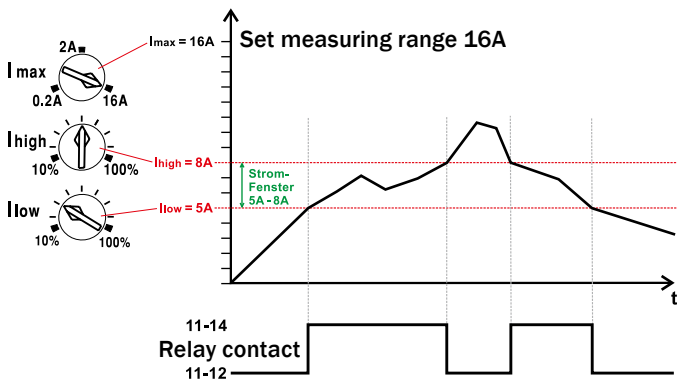
Current monitoring with signalling



Current monitoring with switch-off

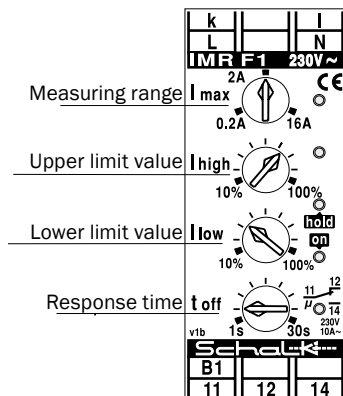


Configuration example with functional diagram

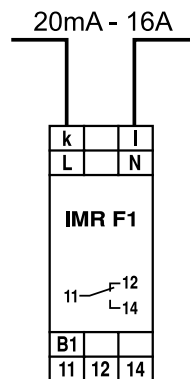


Info: Irrespective of the set measuring range and the set current window, the current to be measured via the connections k and I may be permanently 16A.

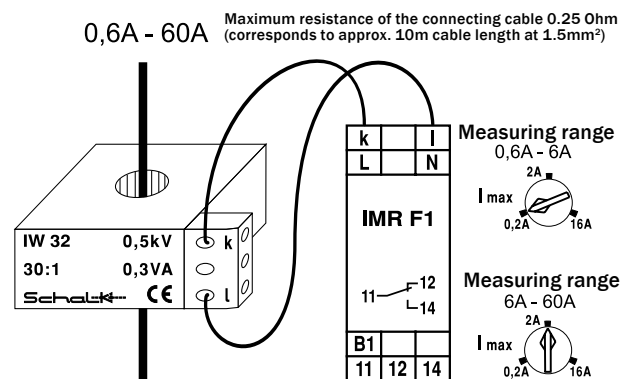
Control elements



Example: direct measurement



Example: with IW 32 (ratio 30:1/max. 60A)



Technical Data IMR F1

Operating voltage:	230 V 50/60 Hz 10%
Power consumption:	approx. 0.6 W
Measuring range	20 mA-0.2 A / 0.2-2 A / 1.6-16 A (AC 50/60 Hz)
Lower limit (I low)	10-100 % of the measuring range
Upper limit value (I high)	10-100 % of the measuring range
Switch-on delay	approx. 1 s
Response time	adjustable from 1s - 30s
Transformer input	potential-free
- continuous current max.	16 A
- voltage max.	400 V
- higher measuring currents	60 A via external converter IW 32
Relay output	1 CO potential-free
- switching voltage max.	250 V
- continuous current max.	16 A
- switching capacity max.	3500 VA
- electrical service life	1 x 10 ⁵ cycles
Ambient temperature	-10°C to +45°C
Connection terminals	Socket terminals with captive screws M3.5
Clamping range	0.5 mm ² - 4.0 mm ²
Strip length	6.0 mm - 6.5 mm
Screwing torque	0.80 Nm
Mounting orientation	arbitrarily
Mounting	Click-mount on standard 35-mm rail (EN 60715)
External dimensions	18 x 88 (45) x 58 mm
Installation depth	55 mm
Weight	approx. 80 g
RAL colour	grey 7035

Technical data IW 32

Transformer ratio	30:1
Measuring range	max. 60 A
Nominal power	0.3 VA
Line resistance	max. 0.25 Ohm (approx. 10 m cable with 1.5 mm ²)
Housing dimensions	32 x 32 x 15,5 mm ³
Hole diameters	10 mm

Order data

Item no.	EAN	Type	Designation
IMRF19	4 046929 301022	IMR F1	Current window measuring relay 230V AC, 3 measuring ranges 0.02 - 16A
IW3200	4 046929 901031	IW 32	Ring-type current transformer 30:1