



## Current measuring relay IMR 3 / IMR U3

with 3 measuring ranges and adjustable switch-off delay

## Ring-type current transformer IW 32

Ratio 30:1 / Measuring range up to 60 A

Current-dependent switching of consumers, e.g. for switching-on the dust exhaust system when starting wood processing machines

### Special features

- ▶ 3 measuring ranges: 20 mA-0.2 A / 0.2-2 A / 1.6-16 A (extendable via external current transformer)
- ▶ Measuring circuit galvanically isolated
- ▶ Holding threshold display
- ▶ adjustable hysteresis (IMR 3 only)
- ▶ Adjustable switch-off delay (IMR 3 only)
- ▶ Output contacts potential-free (IMR 3 only)

### General information

The current measuring relay IMR 3 is used where loads are switched on or off depending on a defined alternating current. The potential-free monitoring of a preset power consumption for signalling and monitoring systems is also possible.

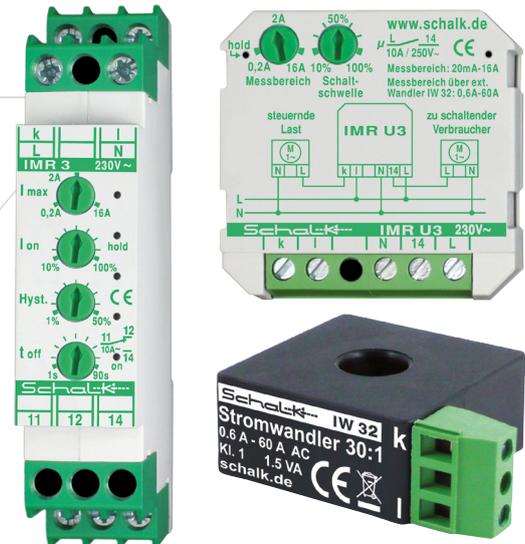
Supply voltage, measuring input and relay output are each galvanically isolated from each other.

### Applications

Current-dependent switching in control, signalling and monitoring systems. E.g. control an dust eshaust system in wood processing plants, depending on the switching status of various machines.

### 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 phase position is irrelevant here. The required measuring range (0.2 A, 2 A or 16 A) is set via a rotary switch on the front panel. Regardless of the selected measuring range, however, the current via terminals I and k can be up to 16 A at all times. An external current transformer (e.g. IW 32 for up to 60 A) can also be connected upstream for the detection of larger currents.



Measuring relays

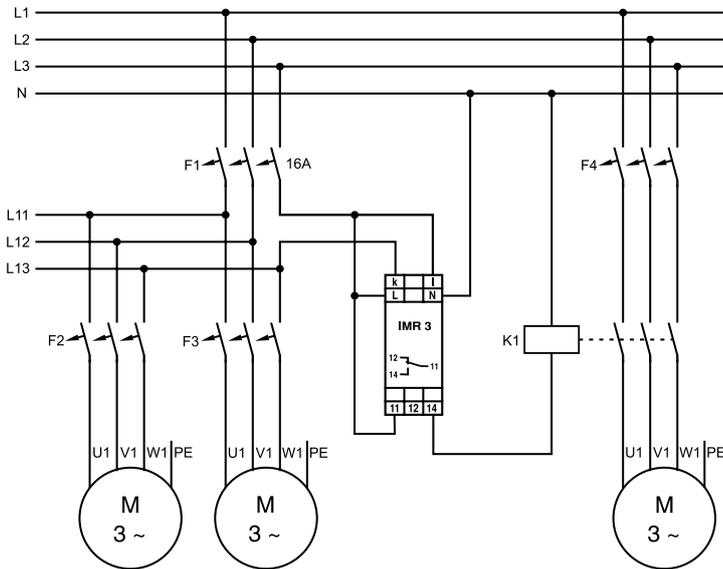
The desired switching-on threshold (within the selected measuring range) can be set exactly with the "Ion" controller. The setting range is 10% to 100% of the measuring range. Thus currents from 20mA to 16A can be detected.

With the aid of the adjustable hysteresis, the switch-off threshold can be set up to 50% below the value of the switch-on threshold. This results in a very wide holding range if required. This ensures stable switching behaviour even under difficult measuring conditions.

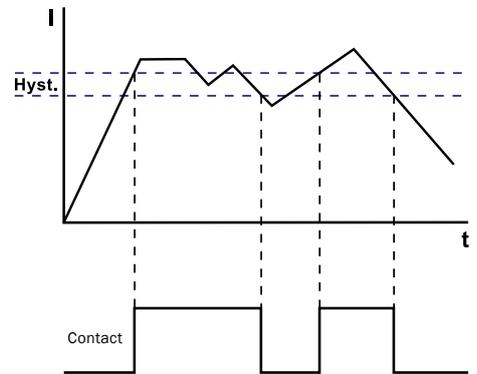
With the "toff" controller, the IMR 3 can still set a switch-off delay in the range from 1s to 90s. The "hold" LED indicates whether the measured current is within the set range and thus serves as a setting aid. The "on" LED indicates the current switching state of the relay.

The very compact flush-mounted version IMR U3 can also be installed directly near the consumer if required. With this variant, only the adjustable hysteresis (permanently set to 10%) and the follow-up time are omitted.

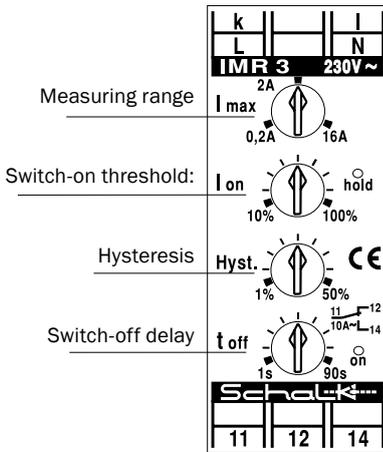
**Connection example**



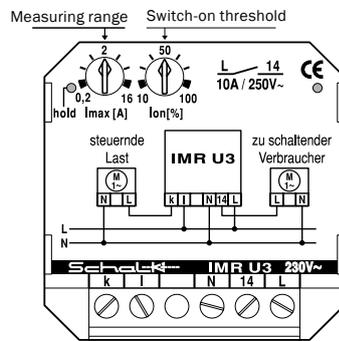
**Functional diagrams IMR 3 / IMR U3**



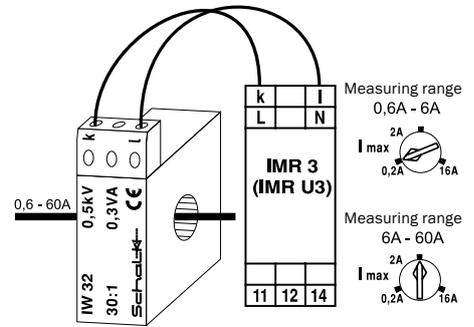
Measuring relays



IMR 3 control elements



IMR U3 control elements



IMR 3 / IMR U3 measurement up to 60 A with IW 32

### Technical Data IMR 3

<b>Operating voltage:</b>	230 V 50/60 Hz 10 %
<b>Power consumption:</b>	approx. 0.65 W
<b>Measuring range</b>	20 mA-0,2 A / 0,2 A-2 A / 1,6 A-16 A
<b>Switch-on threshold:</b>	10-100 % of the measuring range
<b>Hysteresis</b>	1-50 % of the switch-on threshold
<b>Switch-on delay</b>	approx. 0.5s
<b>Switch-off delay</b>	adjustable 1-90s
<b>Relay output</b>	1 CO contacts potential-free 10 A 250 V AC
<b>Connection terminals</b>	Socket terminals with captive screws M3.5
<b>Clamping range</b>	0.5 mm <sup>2</sup> - 4.0 mm <sup>2</sup>
<b>Strip length</b>	6.0 mm - 6.5 mm
<b>Screwing torque</b>	0.80 Nm
<b>Mounting</b>	Click-mount on standard 35-mm rail (EN 60715)
<b>External dimensions</b>	18 x 88(45) x 58 mm
<b>Installation depth</b>	55 mm
<b>Weight</b>	approx. 80 g

### Technical Data IMR U3

<b>Operating voltage:</b>	230 V 50/60 Hz 10 %
<b>Power consumption:</b>	approx. 0.3 W
<b>Measuring range</b>	20 mA-0,2 A / 0,2 A-2 A / 1,6 A-16 A
<b>Switch-on threshold:</b>	10-100 % of the measuring range
<b>Hysteresis</b>	10 % of the switch-on threshold
<b>Switch-on delay</b>	approx. 0.5s
<b>Switch-off delay</b>	approx. 0.5s
<b>Relay output</b>	1 NO contacts 10 A 250 V AC
<b>Connection terminals</b>	Socket terminals with captive screws M3
<b>Clamping range</b>	0.5 mm <sup>2</sup> - 2.5 mm <sup>2</sup>
<b>Strip length</b>	6.5 mm - 7.0 mm
<b>Screwing torque</b>	0.50 Nm
<b>External dimensions</b>	43 x 43 x 18,5 mm
<b>Weight</b>	approx. 40 g

### Common data for IMR 3 and IMR U3

Transformer input	max. 16 A / 250 V~ (100 % ED)
max. switching capacity	see "Relay contacts" data sheet
Mounting orientation	arbitrarily
Ambient temperature	-10°C to +45°C
RAL colour	grey 7035 / green 6029

### Technical Data IW 32

Transformer ratio	30:1
Measuring range	0,6 A-60 A
Accuracy class	1
Nominal power	1.5 VA
Line resistance	max. 0.25 Ω (corresponds approx. 10 m supply cable with 2 x 1.5 mm <sup>2</sup> )
Housing dimensions	32 x 32 x 15,5 mm <sup>3</sup>
Hole diameters	10 mm

### Order data

Item no.	EAN	Type	Designation
IMR309	4 046929 301008	IMR 3	Current measuring relay, 230V AC, 3 measuring ranges 0.02-16A
IMRU39	4 046929 301015	IMR U3	Current measuring relay, 230V AC, 3 measuring ranges 0.02-16A (FMD)
IW3200	4 046929 901031	IW 32	Ring-type current transformer 30:1