

Transducer

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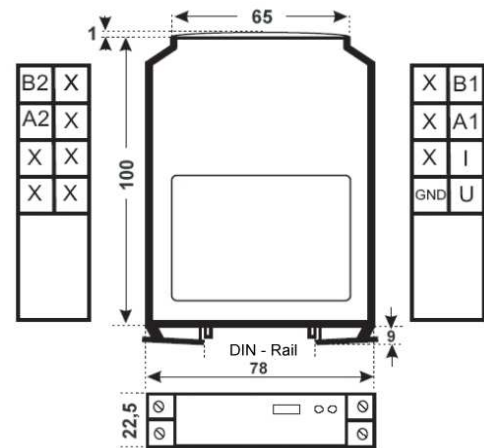
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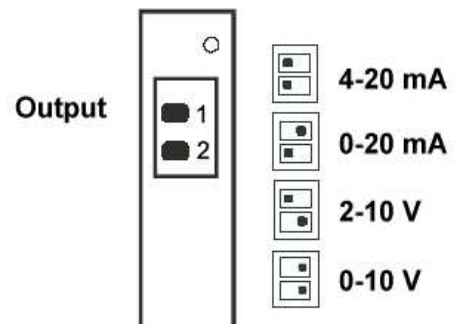
SIM - Current transducer for AC conversion

22,5 mm housing

Technical Data		Description
Supply voltage	24 VAC/DC or 230 VAC (-15/+10%)	The SIM current transducer uses the terminals A1 and A2 for connection to 24V AC/DC and 230V AC (please specify). The green LED indicates the connection of the power supply, which must be continuously connected to the transducer.
Power consumption	2 VA	
Supply Insulation voltage	1 KV	The SIM transducer converts a flowing alternating current connected to the terminals B1 and B2 into an independent current or voltage signal. The desired output signal can be adjusted with the DIP switches located on the relay's front panel. The current or voltage signals are connected to different terminals (I out or U out). The SIM has three-way isolation.
Measuring accuracy	0.5% over the entire temperature and voltage range	
Input	0.. 20 mA AC/ 5 Ohm 0..100 mA AC/ 1 Ohm 0..500 mA AC/ 200 mOhm 0.. 1 A AC/ 100 mOhm 0.. 5 A AC/ 20 mOhm	
Output values	0 (4) .. 20 mA / 0 (2) .. 10 V (selectable)	
Overload capability	10% continuous, 100% 1s	
Response time	< 0.7 s	
Ohmic resistance	< 750 Ohm / >2 KOhm	
Input Insulation voltage	3.75 KV DC	
Operation indicators	Supply voltage LED, green	
Ambient temperature	0 .. +65° C	
Climate resistance	VDE 0435T.2021	
Mounting position	any	
Vibration resistance	VDE 0435T.2021	
Test voltage	2.5 KV	
Connection terminals	Crosshead screws; M3.5 self opening	
Connection cross section	Multi-strand wire with wire sleeves 2 x 2.5mm ² single wire 2 x 2.5mm ²	
Dimensions L x W x H	78mm x 22.5mm x 110 mm	
Finger touch proof	VDE 0106T.100 and VBG4	
Mounting	Symmetrical DIN rail EN 50022	
Weight	76 .. 150 g	



Selector switch



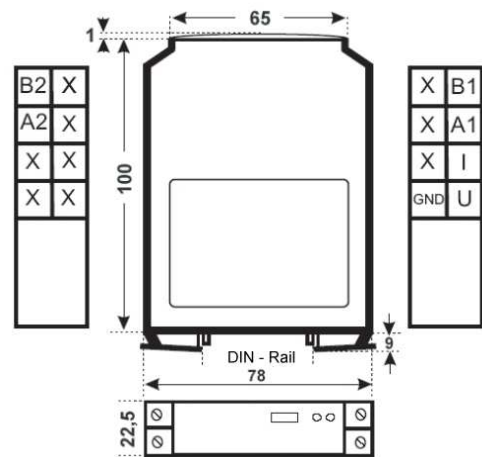
Input	Supply	Type
0.. 20 mA AC	24 V AC/DC	SIM-013006
0..100 mA AC	24 V AC/DC	SIM-013007
0..500 mA AC	24 V AC/DC	SIM-013008
0.. 1 A AC	24 V AC/DC	SIM-013009
0.. 5 A AC	24 V AC/DC	SIM-013010
0.. 20 mA AC	230 V AC	SIM-013030
0..100 mA AC	230 VAC	SIM-013031
0..500 mA AC	230 VAC	SIM-013032
0.. 1 A AC	230 VAC	SIM-013033
0.. 5 A AC	230 VAC	SIM-013034



SUM - Voltage transducer for AC conversion

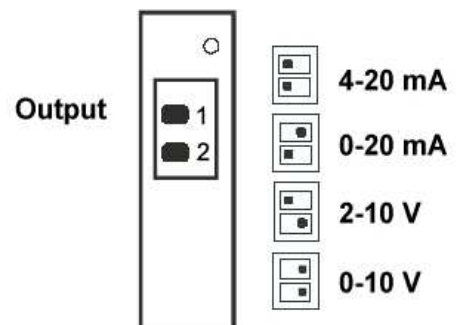
22,5 mm housing

Technical Data		Description
Supply voltage	24 VAC/DC or 230 VAC (-15/+10%)	The SUM voltage transducer uses the terminals A1 / A2 for connection to 24V AC/DC or 230V AC (please specify). The green LED indicates the connection of the power supply, which must be continuously connected to the transducer.
Power consumption	2 VA	
Supply Insulation voltage	1 KV	
Measuring accuracy	0.5% over the entire temperature and voltage range	
Input	0..500 mV AC/ 200 kOhm 0.. 1 V AC/ 20 kOhm 0.. 5 V AC/ 200 kOhm 0.. 10 V AC/ 20 kOhm 0.. 50 V AC/ 100 kOhm 0.. 100 V AC/ 350 kOhm 0.. 250 V AC/ 700 kOhm	The SUM transducer converts an alternating voltage, connected to the terminals B1 and B2, into an independent current or voltage signal. The desired output signal can be adjusted with the DIP switches located on the front panel of the relay. The current or voltage signals are connected to different terminals (I out or U out). The SUM has three-way isolation.
Output values	0 (4) .. 20 mA / 0 (2) .. 10 V (selectable)	
Overload capability	10% continuous, 100% 1s	
Response time	< 0.7 s	
Ohmic resistance	< 750 Ohm / >2 KOhm	
Input Insulation voltage	3.75 KV DC	
Operation indicators	Supply voltage LED, green	
Ambient temperature	0 .. +65° C	
Climate resistance	VDE 0435T.2021	
Mounting position	any	
Vibration resistance	VDE 0435T.2021	
Test voltage	2.5 KV	
Connection terminals	Crosshead screws; M3.5 self opening	
Connection cross section	Multi-strand wire with wire sleeves 2 x 2.5mm ² single wire 2 x 2.5mm ²	
Dimensions L x W x H	78mm x 22.5mm x 110 mm	
Finger touch proof	VDE 0106T.100 and VBG4	
Mounting	Symmetrical DIN rail EN 50022	
Weight	76 .. 150 g	



Input	Supply	Type
0..500 mV AC	24 V AC/DC	SUM-013011
0.. 5 V AC	24 V AC/DC	SUM-013012
0.. 5 V AC	24 V AC/DC	SUM-013013
0.. 10 V AC	24 V AC/DC	SUM-013014
0.. 50 V AC	24 V AC/DC	SUM-013015
0..100 V AC	24 V AC/DC	SUM-013016
0..250 V AC	24 V AC/DC	SUM-013017
0..500 mV AC	230 VAC	SUM-013040
0.. 1 V AC	230 VAC	SUM-013041
0.. 5 V AC	230 VAC	SUM-013042
0.. 10 V AC	230 VAC	SUM-013043
0.. 50 V AC	230 VAC	SUM-013044
0..100 V AC	230 VAC	SUM-013045
0..250 V AC	230 VAC	SUM-013046

Selector switch

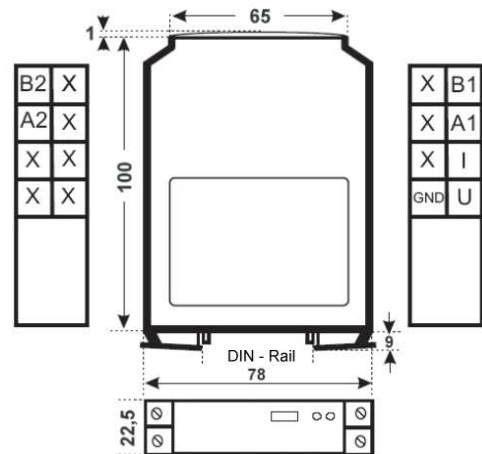




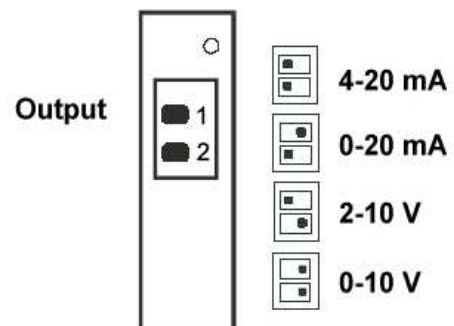
SUM - Voltage transducer for DC conversion

22,5 mm housing

Technical Data		Description
Supply voltage	24 VAC/DC or 230 VAC (-15/+10%)	The SUM voltage transducer uses the terminals A1 and A2 for connection to 24V AC/DC and 230V AC (please specify). The green LED indicates the connection of the power supply, which must be continuously connected to the transducer.
Power consumption	2 VA	
Supply Insulation voltage	1 KV	
Measuring accuracy	0.5% over the entire temperature and voltage range	
Input	0.. 5 V DC/ 690 kOhm 0.. 10 V DC/ 20 kOhm 0.. 50 V DC/ 110 kOhm 0.. 100 V DC/ 700 kOhm 0.. 250 V DC/ 700 kOhm	The SUM transducer converts a direct voltage connected to the terminals B1 and B2 into an independent current or voltage signal. The desired output signal can be adjusted with DIP switches located on the relay's front panel. The current or voltage signals are connected to different terminals (I out or U out). The SUM has three-way isolation.
Output values	0 (4) .. 20 mA / 0 (2) .. 10 V (selectable)	
Overload capability	10% continuous, 100% 1s	
Response time	< 0.7 s	
Ohmic resistance	< 750 Ohm / >2 KOhm	
Input Insulation voltage	3.75 KV DC	
Operation indicators	Supply voltage LED, green	
Ambient temperature	0 .. +65° C	
Climate resistance	VDE 0435T.2021	
Mounting position	any	
Vibration resistance	VDE 0435T.2021	
Test voltage	2.5 KV	
Connection terminals	Crosshead screws; M3.5 self opening	
Connection cross section	Multi-strand wire with wire sleeves 2 x 2.5mm ² single wire 2 x 2.5mm ²	
Dimensions L x W x H	78mm x 22.5mm x 110 mm	
Finger touch proof	VDE 0106T.100 and VBG4	
Mounting	Symmetrical DIN rail EN 50022	
Weight	76 .. 150 g	



Selector switch



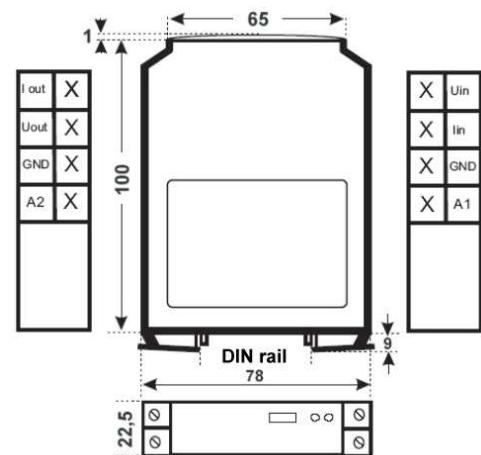
Input	Supply	Type
0.. 5 V DC	24 V AC/DC	SUM-013025
0.. 10 V DC	24 V AC/DC	SUM-013026
0.. 50 V DC	24 V AC/DC	SUM-013027
0..100 V DC	24 V AC/DC	SUM-013028
0..250 V DC	24 V AC/DC	SUM-013029
0.. 5 V DC	230 VAC	SUM-013049
0.. 10 V DC	230 VAC	SUM-013050
0.. 50 V DC	230 VAC	SUM-013051
0..100 V DC	230 VAC	SUM-013052
0..250 V DC	230 VAC	SUM-013053



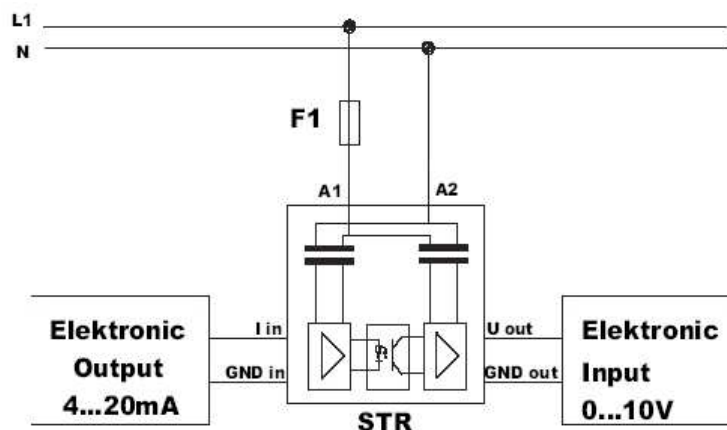
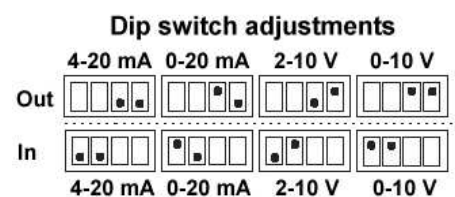
STR - Isolation transducer DC conversion

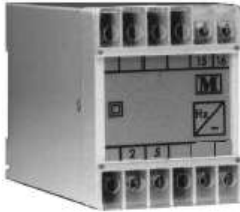
22,5 mm housing

Technical Data		Description
Supply voltage	24 VAC/DC or 230 VAC (-15/+10%)	The STR Isolation transducer uses the terminals A1 and A2 for connection to 24V DC/AC or 230V AC (please specify). The green LED indicates the connection to the power supply, which must be continuously connected to the transducer.
Power consumption	2 VA	
Supply Insulation voltage	1 kV	The STR transducer acquires a standard signal 0 (4) ... 20mA or 0 (2) ... 10 V and converts it into an independent current or voltage signal. The measuring circuit is electrically isolated from the power supply. The desired configuration is selected with the DIP switches on the relay's front panel. The STR isolation transformer has three-way isolation.
Measuring accuracy	0.5% over the entire temperature and voltage range	
Input	0 (4) .. 20 mA / 0 (2) .. 10 V (selectable)	
Input resistance	I : 237 Ohm U : 20 KOhm	
Overload capability	10% continuous, 100% 1s	
Output	0 (4) .. 20 mA / 0 (2) .. 10 V (selectable)	
Response time	< 0.7 s	
Ohmic resistance	< 750 Ohm / >2 KOhm	
Input Insulation voltage	3.75 kV DC	
Operation indicators	Supply voltage LED, green	
Ambient temperature	0 .. +65° C	
Climate resistance	VDE 0435T.2021	
Mounting position	any	
Vibration resistance	VDE 0435T.2021	
Test voltage	2.5 kV	
Connection terminals	Crosshead screws; M3.5 self opening	
Connection cross section	Multi-strand wire with wire sleeves 2 x 2.5mm ² single wire 2 x 2.5mm ²	
Dimensions L x W x H	78mm x 22.5mm x 110 mm	
Finger touch proof	VDE 0106T.100 and VBG4	
Mounting	Symmetrical DIN rail EN 50022	
Weight	76 .. 150 g	



Supply Voltage	Type
230 V AC	STR-016019
24 V AC/DC	STR-016018

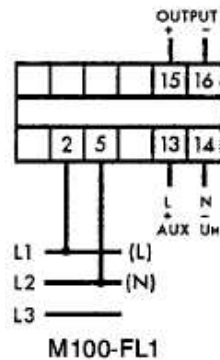
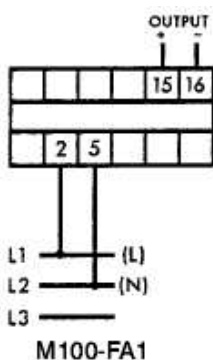


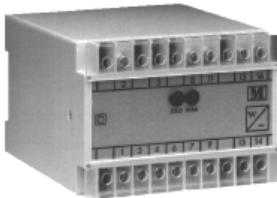


Transducer for Frequency

Technical Data		Description
Measuring accuracy	+/- 0,2 % IEC 688	<p>The M100 series of frequency transducers are designed to measure frequency in single and 3 phase systems. The A.C. Input is converted to a D.C. Output, that is directly proportional to the change in input frequency within a specified span. The M100-FA1 is self powered. (No auxiliary required) The working voltage range is 75-125% of the nominal voltage. The M100-FL1 is auxiliary powered. The outputs are live zero either 4mA or 1 volt. The auxiliary enables the working voltage range to be 15-125%. The M100-FX1 is essentially the same as the FA1 but an auxiliary is provided to enable the unit to have a working voltage range of 15-125%. All types of the above frequency transducers are typically used to monitor and control frequency in such applications as 3 phase mains supplies, A.C. Generating sets and process control etc.</p>
Max. burden	750 Ohm	
Supply voltage	115/230/400 VAC, 24/48/110 VDC	
Nominal voltage	57,8 .. 600 V	
Working range U_N	75-125 % (FA1), 15 -125% (FL1)	
Output	0-1/5/10/20 mA, 0-10 V (4-20 mA with FL1)	
Operation temperature	0 .. +60° C	
Storage temperature	-55 .. +85° C	
Connections	2,5 mm ²	
Case protection rating	IP 30 terminals, IP 50 case	
Power consumption	3 W	
Dimensions W x D x H	55 x 70 x 112 mm	
Case material	PA (UL E157034)	
Case color	Grey	

Range	Output	Type	
45 - 55 Hz	0-20 mA	M100-FA1	self powered
55 - 65 Hz	0-20 mA	M100-FA1	self powered
45 - 65 Hz	0-20 mA	M100-FA1	self powered
45 - 55 HZ	4-20 mA	M100-FL1	230 VAC
55 - 65 Hz	4-20 mA	M100-FL1	230 VAC
45 - 65 Hz	4-20 mA	M100-FL1	230 VAC
45 - 55 Hz	0-20 mA	M100-FX1	230 VAC
55 - 65 Hz	0-20 mA	M100-FX1	230 VAC
45 - 65 Hz	0-20 mA	M100-FX1	230 VAC

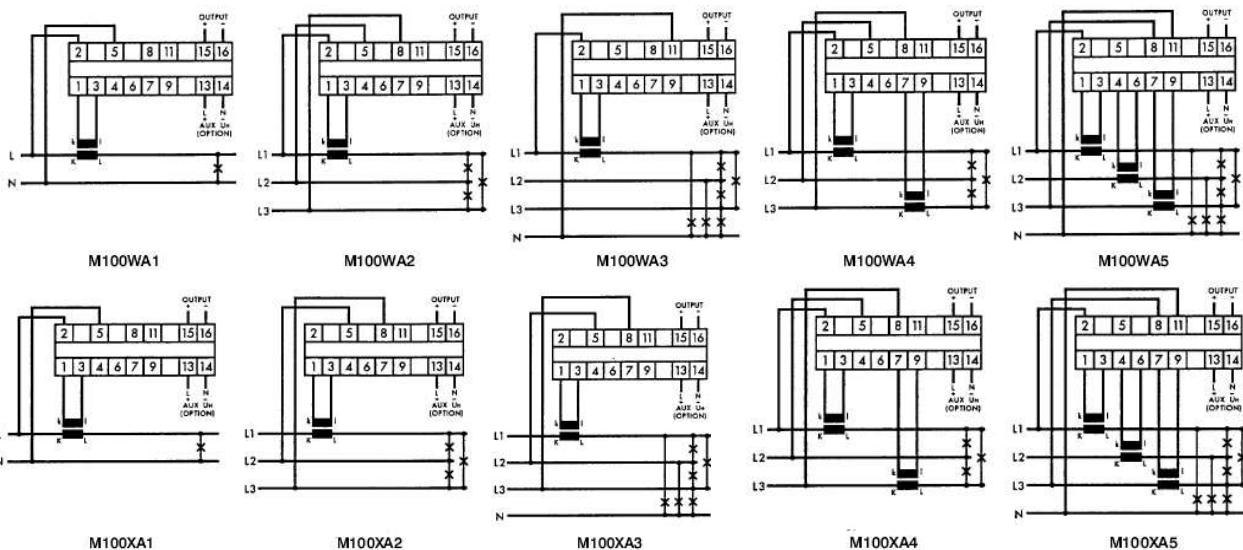


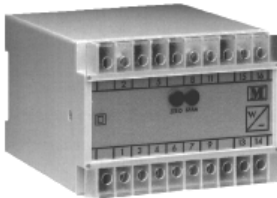


Transducer for Active and Reactive Power

Technical Data		Description
Measuring accuracy	+/- 0,2 % IEC 688	<p>The M100-WA series measure active power in single, 3 phase 3 or 4 wire balanced and unbalanced systems. Using the time division multiplier circuit means that they can be used over a wide range of input waveforms. The D.C. Output signal is directly proportional to the instantaneous power being measured.</p> <p>Typical applications include the measurement of power in switchboards, power stations, generating sets etc. The high isolation of 4kV as with all the M100 series, allows these watt transducers to be connected to a variety of measuring and control devices and systems, such as analogue meters, PLC, computers, data loggers, digital instruments and telemetry systems.</p> <p>Both auxiliary powered and self powered versions of each type are available, it is recommended to use an auxiliary powered version if the system being measured has voltage variations in excess of $\pm 20\%$.</p>
Max. burden	750 Ohm	
Supply voltage	115/230/400 VAC, 24/48/110 VDC	
Nominal voltage	57,8 .. 600 V	
Working range U_N	0-125 % (with supply voltage) 75-125% (self powered)	
Output	0-1/5/10/20/4-20 mA, 0-10 V	
Operation temperature	0 .. +60° C	
Storage temperature	-55 .. +85° C	
Connections	2,5 mm ²	
Case protection rating	IP 30 terminals, IP 50 case	
Power consumption	3 W	
Dimensions W x D x H	100 x 70 x 112 mm	
Case material	PA (UL E157034)	
Case color	Grey	

Input	Output	Type
1-phase	0-20 mA	M100-WA1 Active Power
3-wire balanced	0-20 mA	M100-WA2 Active Power
4-wire balanced	0-20 mA	M100-WA3 Active Power
3-wire unbalanced	0-20 mA	M100-WA4 Active Power
4-wire unbalanced	0-20 mA	M100-WA5 Active Power
1-phase	0-20 mA	M100-XA1 Reactive
3-wire balanced	0-20 mA	M100-XA2 Reactive
4-wire balanced	0-20 mA	M100-XA3 Reactive
3-wire unbalanced	0-20 mA	M100-XA4 Reactive
4-wire unbalanced	0-20 mA	M100-XA5 Reactive





Transducer for Phase angle

Technical Data		Description
Measuring accuracy	+/- 1 °	The M100-PA series of phase angle transducers measure the phase angle between current and voltage. They can be used on single and 3 phase 3 or 4 wire balanced systems. Ideal for optimising power factor correction. The M100-PV2 measures the phase angle between two voltage supplies and provides a D.C. Output signal proportional to the phase angle between the voltages.
Max. burden	750 Ohm	
Supply voltage	115/230/400 VAC, 24/48/110 VDC	
Nominal voltage	57,8 .. 600 V	
Working range U_N	0-125 % (with supply voltage) 75-125% (self powered)	
Range	+/- 45/ 60° (M100-PA2) +/- 90/180° (M100-PA3)	
Output	0-1/5/10/20/4-20 mA, 0-10 V	
Operation temperature	0 .. +60° C	
Storage temperature	-55 .. +85° C	
Connections	2,5 mm ²	
Case protection rating	IP 30 terminals, IP 50 case	
Power consumption	3 W	
Dimensions W x D x H	100 x 70 x 112 mm	
Case material	PA (UL E157034)	
Case color	Grey	

Type

3 phase, 3 or 4 wire, balanced, 2 quadrants
Input 100/230/400/500 V, x/1 oder x/5 A
Output 0-20 mA, 0.5 - 1 - 0.5 cos phi

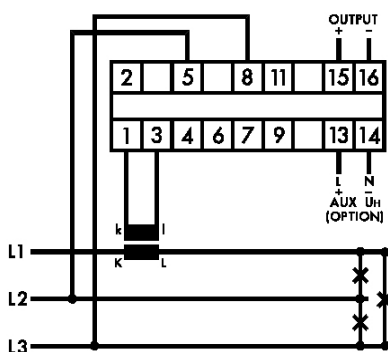
M100-PA2

3 phase, 3 or 4 wire, balanced, 2 quadrants
Input 100/230/400/500 V, x/1 oder x/5 A
Output 0-20 mA, 0.8 - 1 - 0.2 cos phi

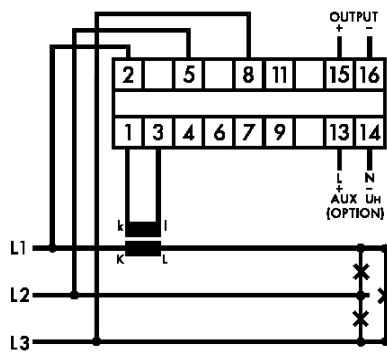
M100-PA2

3 phase, 3 or 4 wire, balanced, 4 quadrants
Input 100/230/400/500 V, x/1 oder x/5 A
Output 0-20 mA, 0 - 1 - 0 cos phi

M100-PA3



M100-PA2



M100-PA3