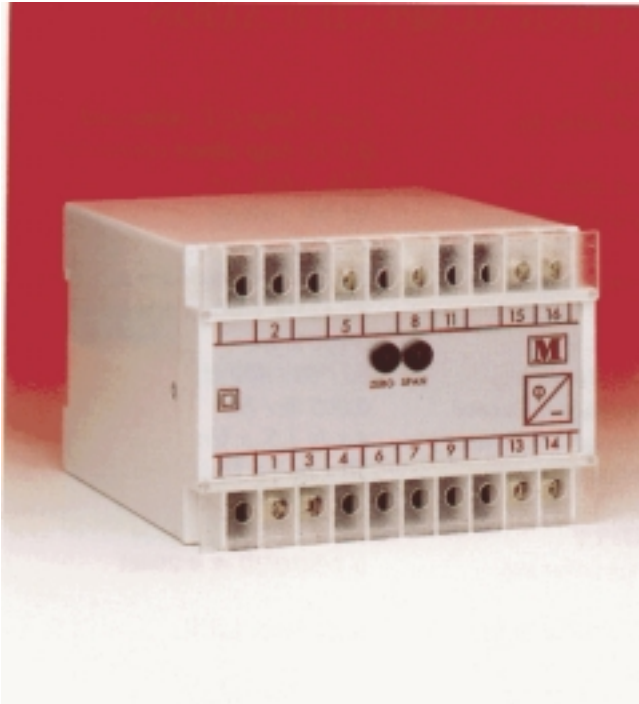


PHASE ANGLE



TECHNICAL SPECIFICATION

INPUT

Rated value In	1 or 5 Amp C.T. connected 0.5-10 Amp direct connected
Rated value Un	57.8 < 600 volt
Power consumption	<1 VA voltage (aux powered) <2.5 VA voltage (self powered) <0.2 VA current

Working range	15-125% Un auxiliary powered 75-125% Un self powered 10-150% In
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Measuring range	± 45 / 60 / 90 / 180° M100-PA1 ± 45 / 60° M100-PA2 ± 90 / 180° M100-PA3
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Rated Frequency	50 / 60 / 400 Hz
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Frequency influence	0.005 % / Hz
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Overload continuous	4 x In 1.5 x Un
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Overload for 1 sec.	50 x In 2 x Un
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ACCURACY	± 1 Degree
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OUTPUT

Rated value mA	0-1/5/10/20 & 4-20mA
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Rated Value Volts	0-5 / 10 & 1-5 V
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ADJUSTMENT

Zero	± 2%
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Span	± 10%
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AUXILIARY

A.C. Voltage	115 / 230 / 400 V (± 25% / 45-65 Hz / < 2VA)
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D.C. Voltage	24 / 48 / 110 V (± 20%
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galvanically isolated / <3W)

WEIGHT & CASE SIZE	Approx. 0.6 kg. 100mm case
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SELECTION GUIDE

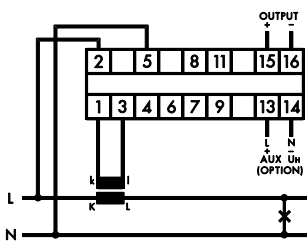
M100-PA1	Single phase 4 quadrants
M100-PA2	3 phase 3 or 4 wire balanced 2 quadrants
M100-PA3	3 phase 3 or 4 wire balanced 4 quadrants
M100-PV1	Single phase 4 quadrants phase angle between two voltages

TYPICAL APPLICATIONS

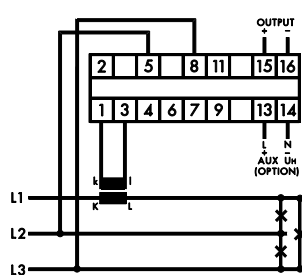
The M100-PA series of phase angle transducers measure the phase angle between current and voltage. They can be used on single and 3 phase 3 or 4 wire balanced systems. Ideal for optimising power factor correction.

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.

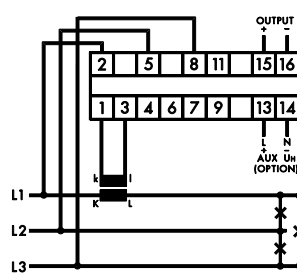
CONNECTION DIAGRAMS



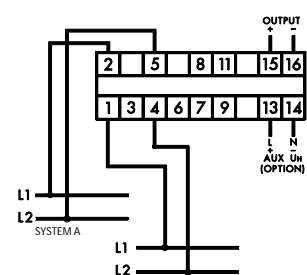
M100-PA1



M100-PA2



M100-PA3



M100-PV1

ORDERING INFORMATION

Product code I/P In Un O/P Range Aux. Freq. Opt.

M100-PA2	5Amp 400V	± 45°	120V 60Hz
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OPTIONS

1. Non standard inputs / outputs only as far as technically acceptable.
2. A.C. Auxiliary in range 57.7 to 450 volts
3. Calibration at nominal Hz 35.....450Hz
4. Calibration at temperature other than 23°C

CONNECTION DIAGRAMS



Panel Components & Systems

GENERAL SPECIFICATIONS

ENVIRONMENTAL

Working temperature	0 to +60 deg C
Functional temperature	-25 to +70 deg C
Storage temperature	-55 to +85 deg C
Temperature coefficient	0.02% per deg C (100 ppm / °C)
Relative humidity	95% non condensing
Class of climate	HSE complying with DIN 40040 -3 complying with VDE/VDI 3540

INSULATION

Test voltage	4kV RMS 50Hz 1min. between Input / Case / Auxiliary / Output
Impulse test	EMC 5kV transient complying with IEC 801 / EN55020
HF interference test	EHF 2.5kV 1MHz complying with IEC 255-4
Protection class	II complying with IEC 348 BS 4753 / DIN 57411 / VDE 0411

APPLIED STANDARDS

General	IEC 688 / BS 6253 / VDE/ VDI 2192
Safety	BS EN61010 DIN 57411 / VDE 0411 ANSI C37
Surge withstand	IEC 801 / EN 55020 ANSI C37-90a
Radio screening	RFI degree N complies with VDE 0875
EMC	Emissions EN50081-2 Immunity EN50082-1

ACCURACY

Class	±0.2 % complying with IEC 688
Calibration temperature	23°C
Temperature coefficient	0.01% / °C (100 ppm / °C)
Stability	0.05 % per annum non cumulative
Warm up time	<15 min

OUTPUT

Rated value	See individual product pages	
Load resistance mA (Unless otherwise stated)	1mA	<15 kOhm
	5mA	<3 kOhm
	10mA	<1.5 kOhm
	20mA	< 0.75kOhm
	4-20mA	< 0.75kOhm
Load resistance volts (M100-VA1,VA3 only)	1, 5 & 10 volts	>1 kOhm
	1, 5 & 10 volts	> 50kOhm
Load influence	<0.1 %	
Ripple	<0.5% peak-peak at full load	
Response time	<200 msec for 0-99 % at full load	
Overload	<2 x rated value at full load	
No load voltage	<27 V	

ENCLOSURE

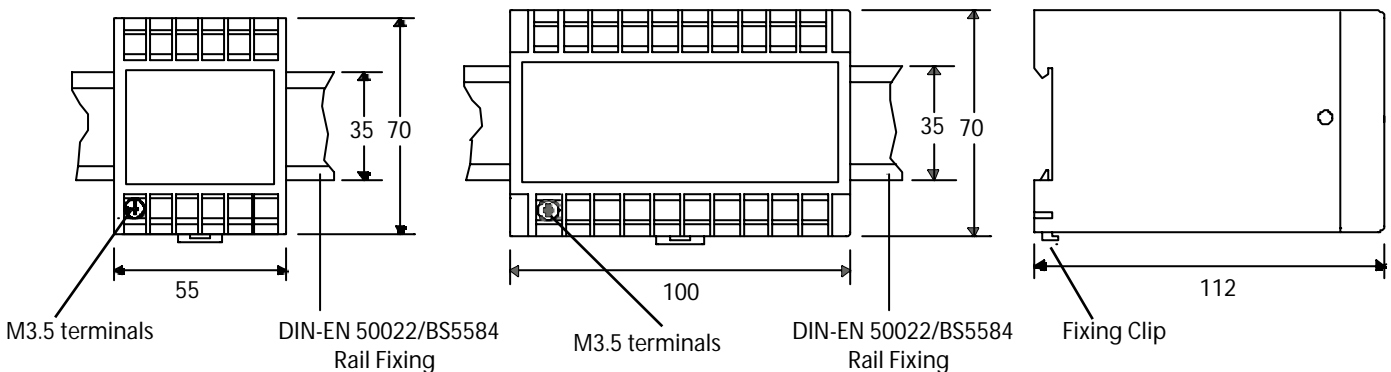
Fixing	Snap on to DIN rail 35 x 7.5 mm complies with DIN-EN 50022 BS 5584
Mounting	Any position
Enclosure Code	Case IP 50 / terminals IP 30 Complies with IEC 529 BS 5490 DIN 40050

APPROVALS

cU.L. Approval	File No E157034
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CASE DIMENSIONS

All Dimensions in mm



Panel Components & Systems

