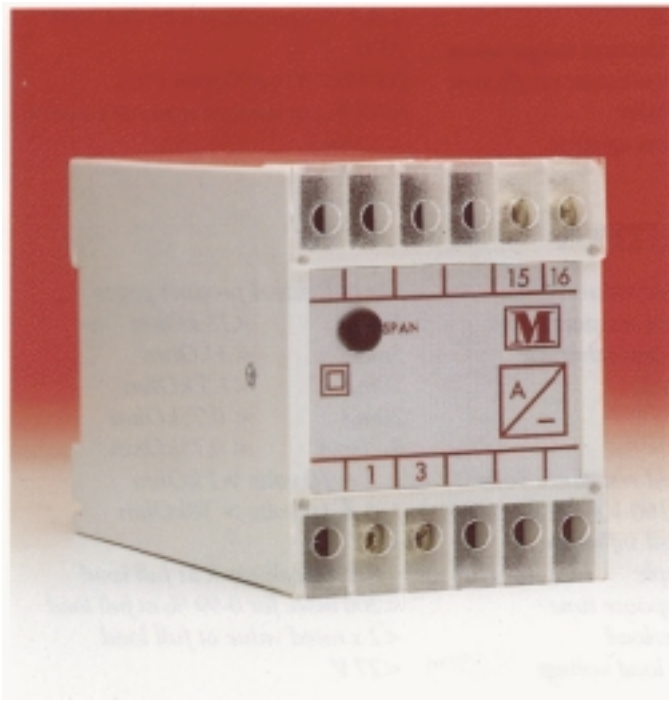
AC CURRENT



SELECTION GUIDE

M100-AA1	*1 ph. self powered ave. sensing RMS calibrated*
M100-AL1	*1 ph. aux. powered ave. sensing RMS calibrated*
M100-AR1	*1 ph. aux powered true RMS sensing RMS cal.*
M100-AA3	*3 ph. self powered ave. sensing RMS calibrated*
M100-AL3	*3 ph. aux powered ave. sensing RMS calibrated*

TYPICAL APPLICATIONS

The M100 series current transducers are designed to measure A.C. Current in single and 3 phase systems. They convert the A.C. signal to a D.C. Output that is directly proportional to the input signal.

The M100-AA1 AA3 are self powered (i.e. no auxiliary required) average sensing RMS calibrated current transducers, mA and voltage outputs are available.

The M100-AL1 AL3 are average sensing RMS calibrated, live zero current transducers. Auxiliary is required to provide power, so that 4mA output signal is present, when the input is zero.

The M100-AR1 is true RMS sensing RMS calibrated allowing measurement of distorted waveforms of up to 9th harmonic with a crest factor of 5. The AR1 is typically used in current measurement where distorted waveform is common, such as thyristor drives

The above units are used to measure current in energy management systems, switchboards, generator and telemetery controls. Isolation of 4kV is provided between the input and output signal, allowing the output to be fed to conventional analogue meters, digital meters, PLC, and computer systems.

TECHNICAL SPECIFICATION

INPUT	
Rated value In	*1 or 5 Amp C.T. connected* *0.5-10 Amp direct connected*
Power consumption	*<1 VA (AA1, AA3)* *<0.2 VA (AL1, AL3, AR1)*
Working range	*10-125% In (AA1, AA3)* *0-125% In (AL1, AL3, AR1)*
Rated Frequency	*50 / 60 / 400 Hz*
Frequency influence	*0.005 % / Hz*
Overload continuous	*4 x In*
Overload for 1 sec.	*50 x In*
OUTPUT	
Rated value mA	*0-1/5/10/20mA (AA1, AA3)*
Rated value mA	*0-1/5/10/20 & 4-20mA (AR1)*
Rated value mA	*4-20mA (AL1 AL3)*
Rated value volts	*0-5 / 10 V (AA1 AA3)*
Rated value volts	*0-5 / 10 & 1-5 V (AR1)*
Rated value volts	*1-5 V (AL1 AL3)*
ADJUSTMENT	
Zero	*No adjustment (AA1 AA3)*
Zero	*± 2% (AR1, AL1 AL3)*
Span	*± 10% (AA1, AR1, AL1 AA3 AL3)*
AUXILIARY	
A.C. Voltage	*115 / 230 / 400 V (± 25% / 45-65 Hz / < 2VA)*
D.C. Voltage	*24 / 48 / 110 V (± 20% / galvanically isolated / <3 W)* *Note M100-AA1 AA3 are self powered*
WEIGHT & CASE	
M100-AA1	*Approx. 0.3 kg. 55mm case*
M100-AL1,AR1	*Approx. 0.4 kg. 55mm case*
M100-AA3	*Approx. 0.6 kg. 100mm case*
M100-AL3	*Approx. 0.7 kg. 100mm case*

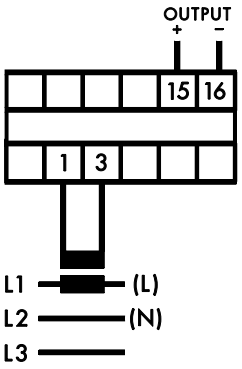
ORDERING INFORMATION

Product Code	*Input In*	*Output*	*Aux*	*Freq.*	*Options*
M100-AL1	*5A*	*4-20mA*	*230V*	*50Hz*	

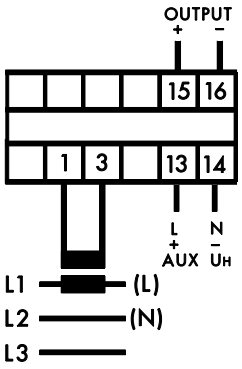
OPTIONS

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*

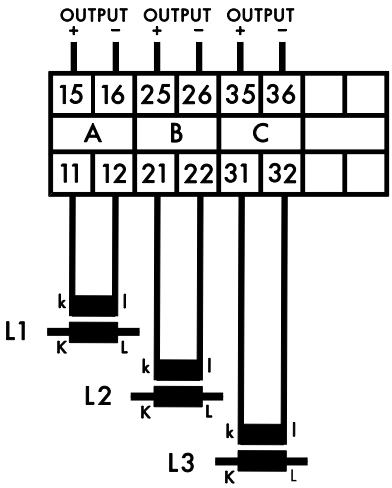
AC CURRENT CONNECTION DIAGRAMS



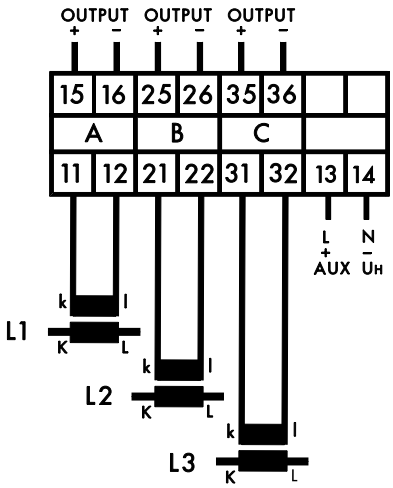
M100-AA1



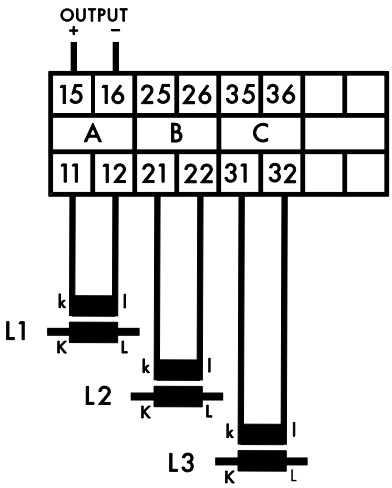
M100-AL1 / AX1 / AR1



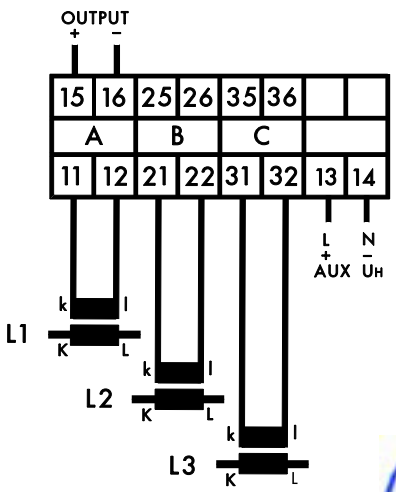
M100-AA3



M100-AL3 / AX3



M100-AAS



M100-ALS

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*

CASE DIMENSIONS

All Dimensions in mm