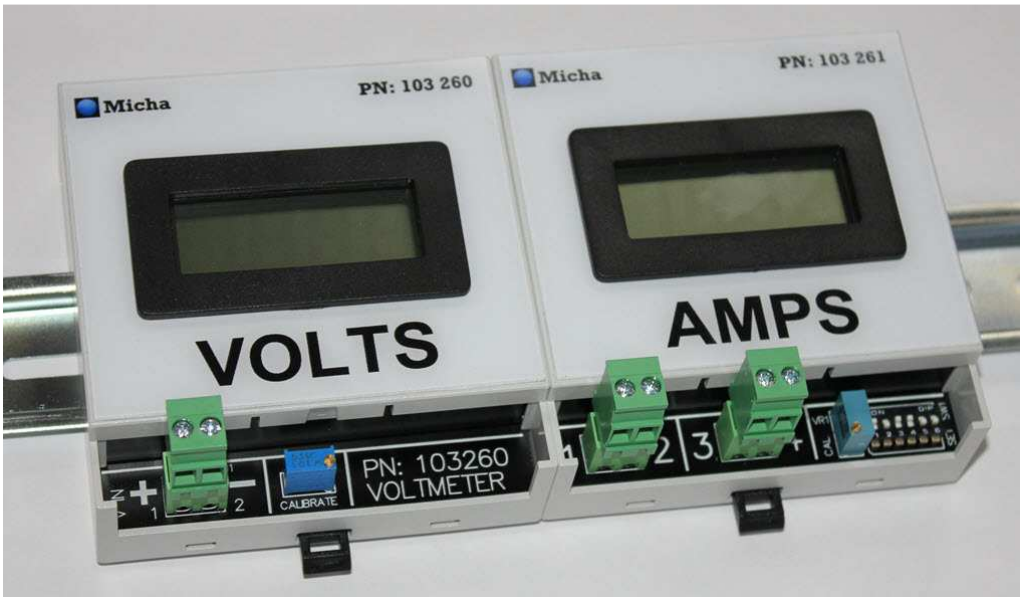


Voltmeter ***Ammeter***

Shunt Assembly

The **Micha** range of panel meters are designed to mount onto standard 35mm DIN-rail and provide a large digit display that can be easily fitted with minimal wiring. The LCD displays feature 15mm characters which can be read from a distance of over 2m.

Voltmeter:

The Volts meter is self-powered and can be run from any voltage between approximately 9VDC and 70VDC and consumes around 1mA.

Ammeter:

The Amps meter is available in two versions; one allowing operation between 10VDC and 32VDC, and the other between 18VDC and 65VDC allowing use with a variety of battery voltages. An on-board isolating DC-DC power supply allows measurement from shunts in either the positive or negative rails, and will display positive and negative current flow. A DIP-switch allows selection of a variety of shunt inputs, from 60A to 300A, with access to a calibration trimmer if required. The meters can either be used with Micha shunts, or the user's own. Typical power consumption is around 10mA.

Shunt Assemblies:

Six shunt assemblies are available, with 0.5% precision shunts mounted onto a PCB with terminals for connection to the Ammeter.

General Specification and Part Numbers:

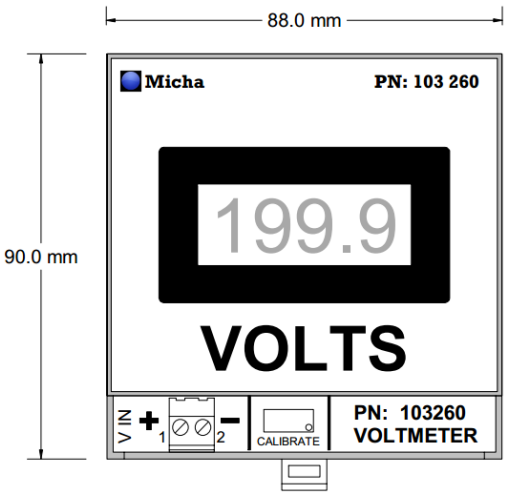
Part No:	Description	Accuracy
103 260	Panel Meter - Volts (10-70V)	1% ±2 digit
103 261	Panel Meter - Current 12-24V	1% ±2 digit
103 262	Panel Meter - Current 24-48V	1% ±2 digit
103 263	DIN-rail Shunt: 60A 60mV	0.5%
103 264	DIN-rail Shunt: 100A 60mV	0.5%
103 265	DIN-rail Shunt: 150A 60mV	0.5%
103 266	DIN-rail Shunt: 200A 60mV	0.5%
103 267	DIN-rail Shunt: 250A 60mV	0.5%
103 268	DIN-rail Shunt: 300A 60mV	0.5%

All meters:

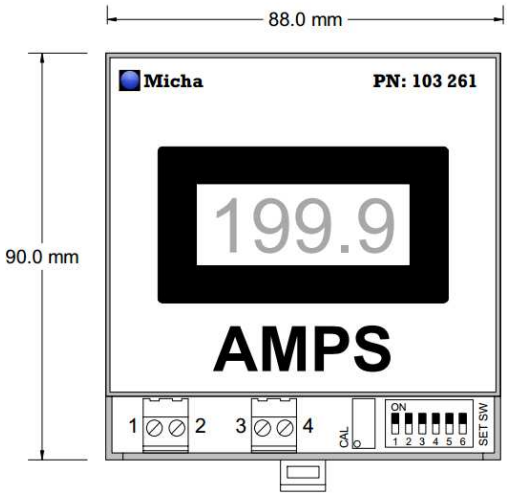
Operating temperature:
-5°C to +55°C

Connectors:
2-part, rising-clamp, max cable size: 2.5mm²

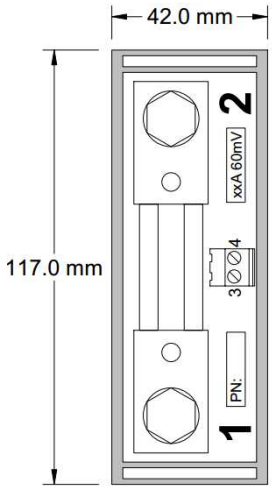
Shunt connections:
M8/M10 bolt



Volts Meter
Dimensions: 90 x 88 x 35mm



Amps Meter
Dimensions: 90 x 88 x 35mm



Shunt Assembly
Dims: 117 x 42 x 36mm

Voltmeter

The voltmeter measures the supply, which can be in the range of 10VDC to 70VDC. The meters are supplied pre-calibrated, but can be recalibrated as required by adjusting the potentiometer, VR1.

Connections: Connect the positive supply to terminal 1, and the negative supply to terminal 2.

Ammeter

The ammeters measure and display a ± 0-60mV input with a variety of pre-set scales that can be configured using the DIP switch:

DIP SW. SETTINGS:

Shunt = 60mV	F/S INPUT:	1	2	3	4	5	6
	60A :	●	○	●	●	○	○
	100A :	●	○	●	○	○	○
	150A :	●	●	○	○	○	○
	200A :	●	○	○	○	○	○
	250A :	○	○	●	●	●	●
	300A :	○	○	●	●	●	○

ON = ● OFF = ○

Switch 1 activates the decimal point and is only applicable for the 60A to 200A ranges.

(Note: the maximum display in the 200A range is ± 199.9)

The shunt input is isolated from the power supply allowing measurement in both positive and negative rails, and on separate system rails.

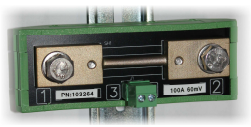
Calibration:
The meters are supplied pre-calibrated but can be recalibrated as required by adjusting the potentiometer, VR1.

Connections:
Power: Connect the positive to terminal 1 and the negative to terminal 2.
Shunt: Connect the positive to terminal 3 and the negative to terminal 4.

PN 103261: Power supply 10-33VDC (0.25W nominal)

PN 103262: Power supply 18-63VDC (0.25W nominal)

Shunts



Micha shunts have a ± 0.5% accuracy and are available with 60mV FS outputs to match the Ammeters.