

3½ DIGIT LCD VOLTMETER MODULE**Splashproof***35,1x22,4 mm***FEATURES**

- * 9.75mm (0.38") LCD DIGIT HEIGHT
- * $\pm 200\text{mV}$ D.C. FULL SCALE READING
- * 3.5 TO 7V OR 7.5 TO 14V OPERATION
- * typ. 50mA @ +5V $\pm 5\%$ D.C. POWER SUPPLY
- * LED BACKLIGHTING (3.5 TO 7V OPERATION ONLY)
- * PROGRAMMABLE DECIMAL POINTS
- * LOW BATTERY WARNING
- * SIMPLIFIED CONNECTION
- * SPLASH PROOF
- * AUTO-ZERO AND AUTO-POLARITY

ORDERING INFORMATION

3½-ST. DVM MODULE, 5V, 1x9 PIN, LCD WITH BACKLIGHT

EA 4035-400S

**ELECTRONIC
ASSEMBLY** GM
BH

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EA 4035-400S

ELECTRONIC ASSEMBLY

PRODUCT DESCRIPTION

The EA 4035-400S features a 200mV d.c. measurement range with auto-zero and auto-polarity. Decimal points are user selectable.

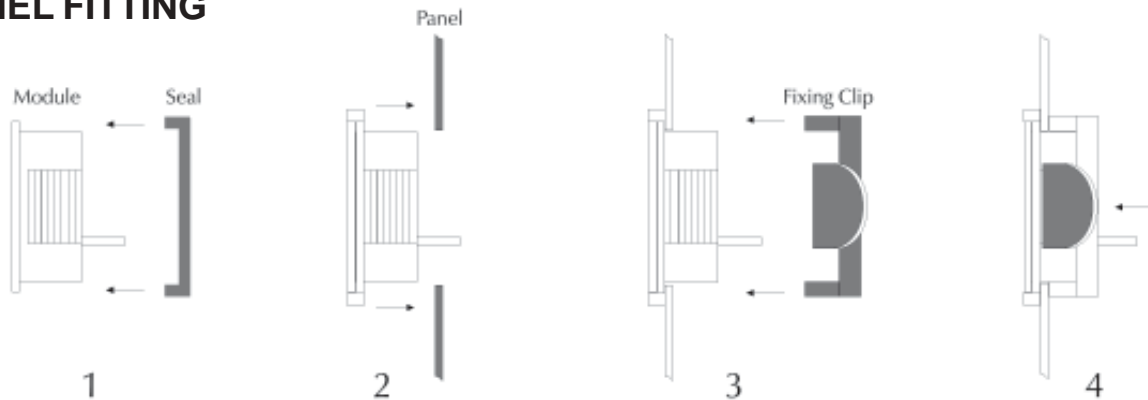
LED backlighting ensures excellent readability under low light conditions. The module is easily fitted into the panel, using the fixing clip provided. The EA 4035-400S features a negative rail generator which enables the meter to measure a signal referenced to its own power supply GND.

low cost means it will suit high and low volume applications. The design of the panel meter's housing ensures splash proofing using the supplied seal.

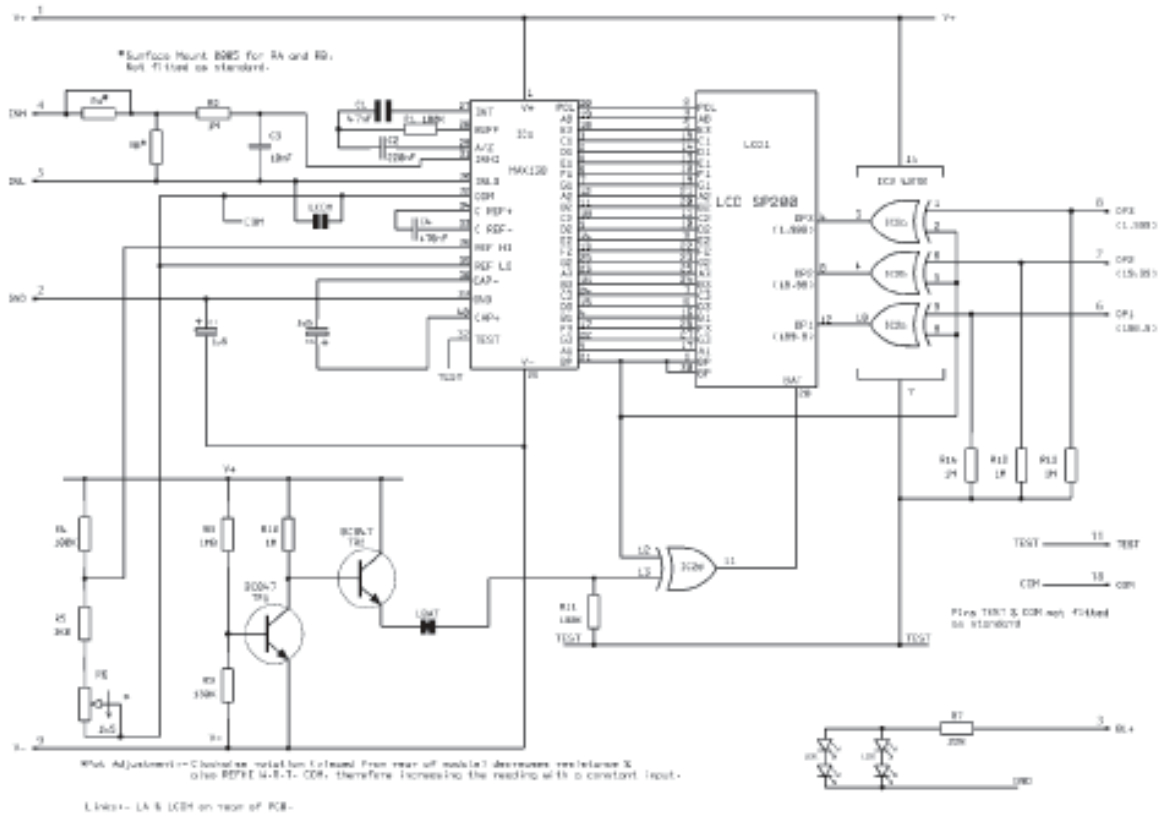
SAFETY

To comply with the Low Voltage Directive (LVD93/68/EEC), input voltages to the module's pins must not exceed 60Vdc. The user must ensure that the incorporation of the panel meter into the user's equipment conformsto the relevant sections of BS EN 61010 (Safety Requirements for Electrical Equipment for Measuring, Control and Laboratory Use).

PANEL FITTING



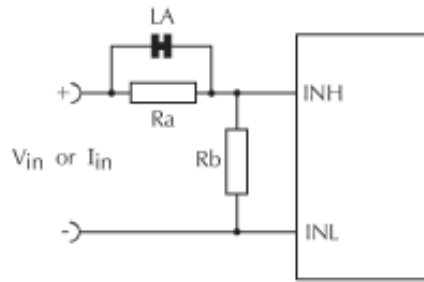
CIRCUIT DIAGRAM



ELECTRONIC ASSEMBLY

SCALING

Two resistors Ra and Rb may be used to alter the full scale reading (FSR) of the meter - see table. The meter will have to be recalibrated by adjusting the calibration potentiometer on the rear of the module.



| | FSR | Ra | Rb |
|----------------|--------|--------|------|
| Voltage Vin | 2V | 910k** | 100k |
| | 20V | 1M** | 10k |
| | 200V | 1M** | 1k |
| | 2000V* | 1M** | 100R |
| Current Iin | 200uA | 0R | 1k |
| | 2mA | 0R | 100R |
| | 20mA | 0R | 10R |
| | 200mA | 0R | 1R |

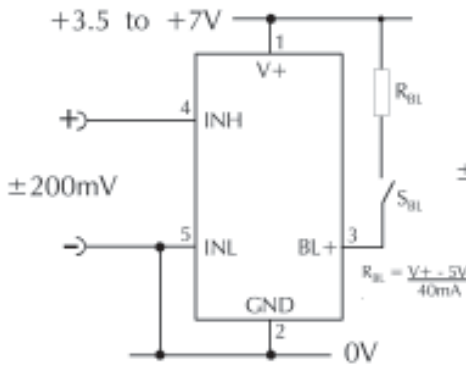
* Ensure that Ra is rated for high voltage use.

** Ensure solder link LA is cut.

APPLICATIONS

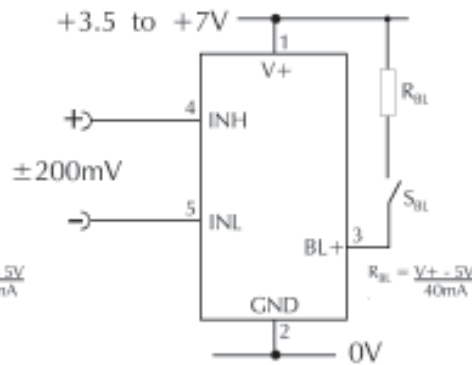
Do not connect more than one meter to the same power supply if the meters cannot use the same signal ground. Taking any input beyond the power supply rails will damage the meter.

3.5 to 7V Meter Power Supply



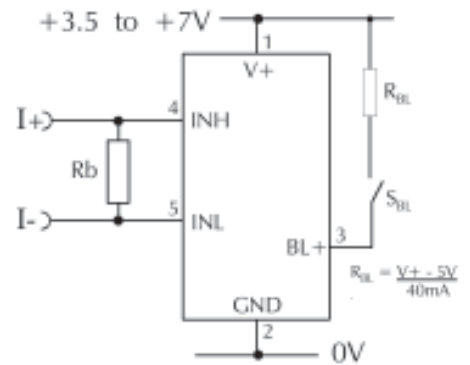
Measuring a single ended input voltage referenced to supply, i.e. the input voltage and the meter's power supply share the same 0V rail.

Ensure solder link LCOM is open.



Measuring an input voltage referenced to a floating supply, i.e. the input voltage and the meter's power supply are isolated from each other.

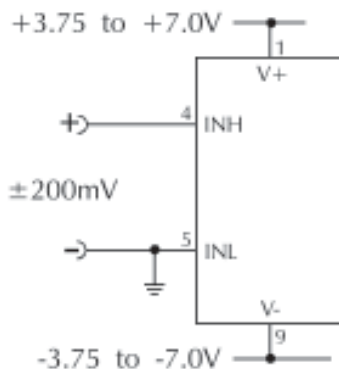
Ensure solder link LCOM is closed.



Measuring a current from a circuit which is floating with respect to the DPM's supply, i.e. the current and the meter's power supply are isolated from each other.

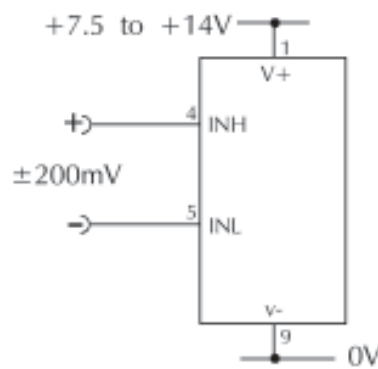
Ensure solder link LCOM is closed.

7.5 to 14V Meter Power Supply



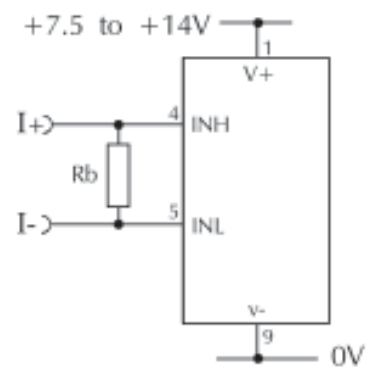
Measuring a single ended input voltage referenced to supply, i.e. the input voltage and the meter's power supply share the same 0V rail.

Ensure solder link LCOM is open.



Measuring an input voltage referenced to a floating supply, i.e. the input voltage and the meter's power supply are isolated from each other.

Ensure solder link LCOM is closed.

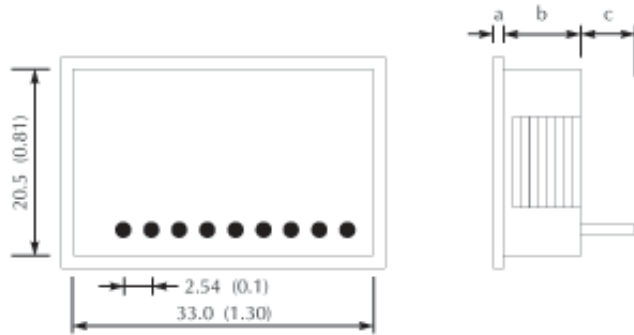


Measuring a current from a circuit which is floating with respect to the DPM's supply, i.e. the current and the meter's power supply are isolated from each other.

Ensure solder link LCOM is closed.

EA 4035-400S

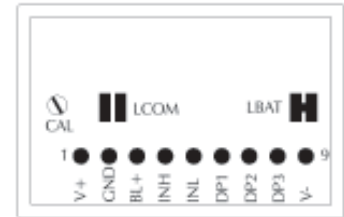
DIMENSION



all Dimensions are in mm (inch)
Panel Cutout 34x21,3 mm

a. 0.75 (0.03)
b. 10.00 (0.39)
c. 6.00 (0.24)

PINOUT



Solder Links:

LCOM Normally Open. Connects INL to COM.
LBAT Normally Closed. Cut this link to disable the lowbattery warning sign.

PIN FUNCTION

| PIN FUNCTION | | |
|--------------|--------|--|
| Pin | Symbol | Function |
| 1 | V+ | Positive power supply to the meter. |
| 2 | GND | 0V power supply connection to the meter. |
| 3 | BL+ | Connect to V+ to switch on the LED backlighting (V+ to GND configuration only) Important note: For correct meter operation, the LED backlighting must not be enabled in 7.5 to 14V meter power supply configurations. |
| 4 | INH | Positive measuring input. |
| 5 | INL | Negative measuring input. |
| 6 | DP1 | Connect to 0V to display DP1 (199.9). |
| 7 | DP2 | Connect to 0V to display DP2 (19.99). |
| 8 | DP3 | Connect to 0V to display DP3 (1.999). |
| 9 | V- | Negative power supply to the meter. |



Note:

A negative supply is generated internally and mirrors the positive supply. For example: if V+ is +5V, then the internally generated V- is -5V. When measuring with the input referenced to the same supply rail as that of the panel meter, then the limitations on the input range are (V- +1.5V) to (V+ - 1.5V).

ELECTRICAL SPECIFICATIONS

| Specification | Min. | Typ. | Max. | Unit | |
|----------------------------------|-------------------------|------|------|-------------|----|
| Accuracy (overall error) * | | 0.1 | | %(±1 count) | |
| Linearity | | | ±1 | count | |
| Sample rate | | 2.5 | | samples/sec | |
| Operating temperature range | 0 | | 50 | °C | |
| Temperature stability | | 100 | | ppm/°C | |
| Supply voltage | V+ to GND configuration | 3.5 | 5 | 7 | V |
| | V+ to V- configuration | 7.5 | 9 | 14 | V |
| Supply current | V+ to GND configuration | | 350 | | µA |
| | V+ to V- configuration | | 350 | | µA |
| Backlight current @5V d.c. | | 40 | 80 | mA | |
| Input leakage current (Vin = 0V) | | 1 | 10 | pA | |

BLOCK DIAGRAM

