

### PRODUCT DESCRIPTION

The SP 400 features a 200mV d.c. measurement range with auto-zero and auto-polarity. Decimal points are user selectable. The SP 400 features a negative rail generator which enables the meter to measure a signal referenced to its own power supply GND. LED backlighting ensures excellent readability under low light conditions. The module is easily fitted into the panel, using the fixing clip provided. The module's 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.

### FEATURES

- 9.75mm (0.38") Digit Height
- 200mV d.c. Full Scale Reading
- 3.0 to 7.5V or 6.0 to 15.0V Operation
- Auto-zero and Auto-polarity
- Programmable Decimal Points
- LED Backlighting
- Low Battery Warning
- Splash Proof



### TYPICAL APPLICATIONS

- Precision Instrumentation Systems
- Power Supply Monitoring
- Test Boxes
- Panel-Mount Indication
- Low Power Voltage Measurement

### ORDERING INFORMATION

Standard Meter

Stock Number  
**SP 400**

### ELECTRICAL SPECIFICATIONS

Specification	Min.	Typ.	Max.	Unit	
Accuracy (overall error) *		0.1		% ( $\pm 1$ count)	
Linearity			$\pm 1$	count	
Sample rate		2.5		samples/sec	
Operating temperature range	0		50	$^{\circ}\text{C}$	
Temperature stability		100		ppm/ $^{\circ}\text{C}$	
Supply voltage	V+ to GND configuration	3.0	5.0	7.5	V d.c.
	V+ to V- configuration	6.0	9.0	15.0**	V d.c.
Supply current	V+ to GND configuration		350		$\mu\text{A}$
	V+ to V- configuration		175		$\mu\text{A}$
Backlight supply voltage	4.75	5.0	***	V d.c.	
Backlight supply current @ 5V d.c.		40	80****	mA	
Input leakage current ( $V_{in} = 0\text{V}$ )		1	10	pA	

\* To ensure maximum accuracy, re-calibrate periodically.

\*\* Operation of the meter beyond the maximum supply voltage rating may cause permanent damage to the meter.

\*\*\* An external series resistor is required above 5V, see Applications.

\*\*\*\* This specification linearly derates to 50mA @ 50 $^{\circ}\text{C}$ .

Unless otherwise noted, specifications apply at  $T_A = 25^{\circ}\text{C}$ ,  $V_{supply} = 5\text{V d.c.}$  ( $f_{dock} = 48\text{kHz}$ ) and are tested with the module configured for single ended input mode.

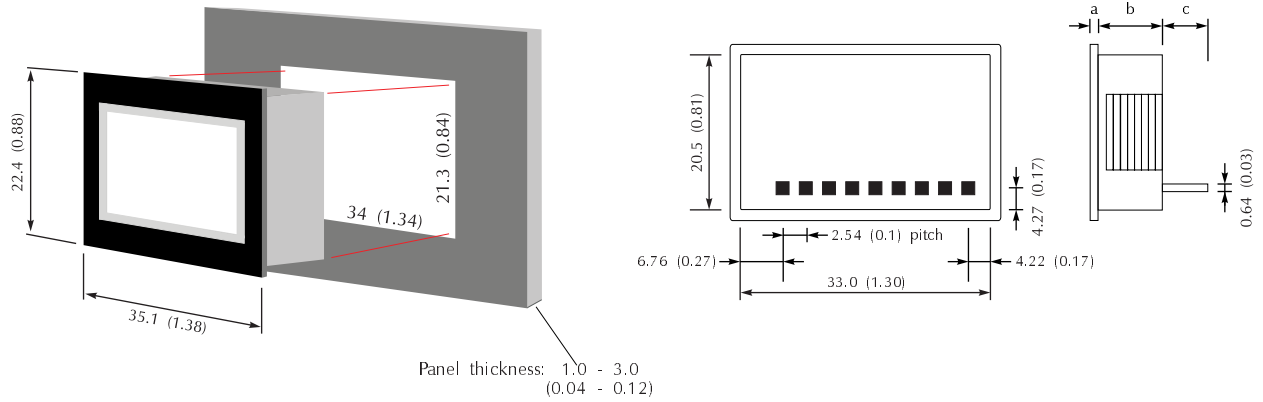
### SAFETY

To comply with the Low Voltage Directive (LVD 93/68/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 conforms to the relevant sections of BS EN 61010 (Safety Requirements for Electrical Equipment for Measuring, Control and Laboratory Use).

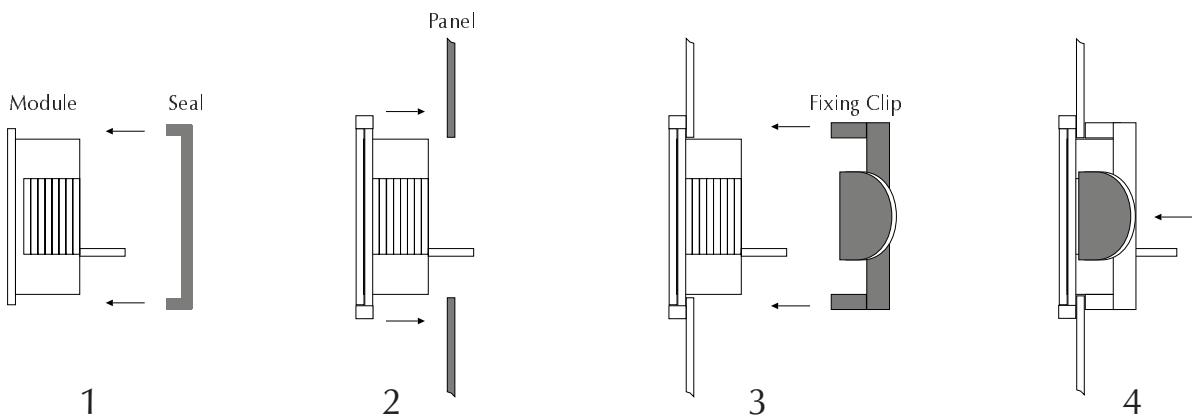
### DIMENSIONS

All dimensions in mm (inches)

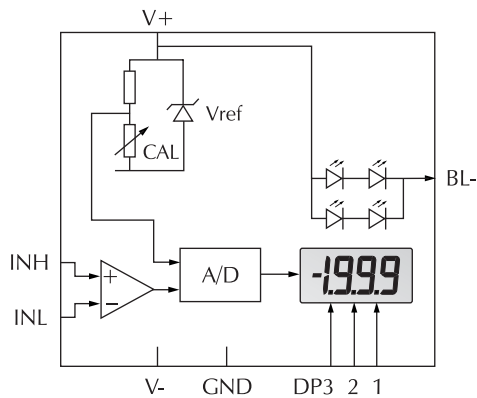
- a. 0.75 (0.03)
- b. 10.00 (0.39)
- c. 6.00 (0.24)



### PANEL FITTING



### FUNCTIONAL BLOCK DIAGRAM



### PIN CONFIGURATION (rear view)

