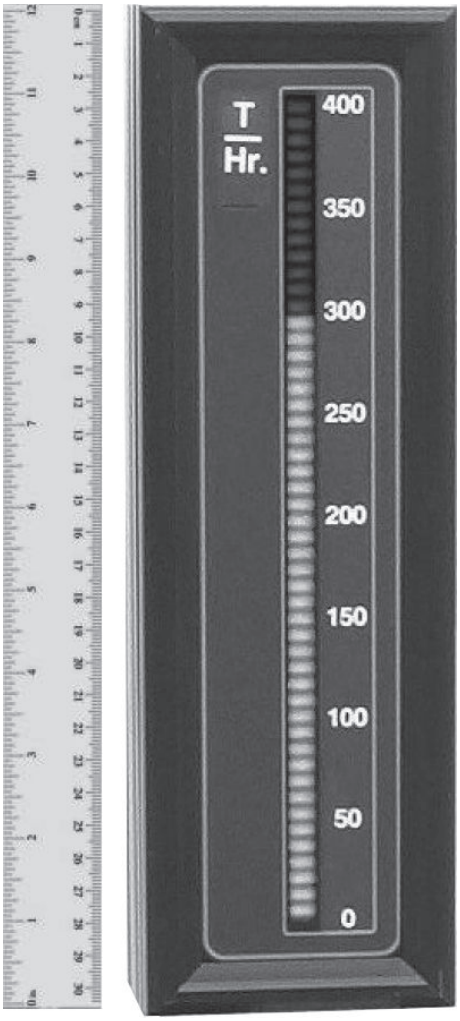
Panel or wall mounting process bargraph / controller

PRO-BAR

Connection details, scaling and general information



LAUREL Electronics, Inc.

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INTRODUCTION

Thank you for choosing to use a Laurel Electronics, Inc. product. We hope that you will be entirely satisfied with your purchase, and welcome any comments you may have which will help us to improve the ease of use, clarity of this manual, etc. for future shipments.

Please contact us for technical support. You can email us at **sales@laurels.com**, or call us at **+1 714-434-6131** (8:00 am to 5:00 pm Pacific Standard Time).

Please provide the following information if you need support:

1) Full model number, which includes options.
2) Serial Number
3) Detailed description of your difficulties, suggestions, etc.
4) Input range and display range

This product is covered by a 1-year warranty, during which period we will put right or replace any meter found to be faulty through workmanship or materials. This warranty does not cover damage caused by misuse or accident.

IMPORTANT: If your meter is a vital component in your process, you may wish to consider the purchase of a spare to cover the possible eventuality of a failure or accident, as we cannot guarantee instant repair or replacement.

We are constantly striving to improve our products and services, and as a result, changes to instruments do occur. Please ensure that this manual is kept safely for future reference, as future manuals, covering revised designs may no longer describe your product accurately.

We believe these instructions to be accurate, and the product to be competently designed and manufactured. We do not make any claims as to the suitability of this product for any particular application. The choice of product and responsibility for the choice lies with the User.

WARNINGS

You should carefully read all warnings and commence installation ONLY when you are satisfied that all warnings are adequately covered.

Connections to this equipment shall be carried out in accordance with current IEE regulations, and all wiring shall be separated in accordance with IEC1010.

Power supplies to this equipment must be anti-surge fused at 125 mA for 230V supply, or 250 mA for 110V supply.

Check that model number and supply voltage fit your application.

Lethal voltages may be present on the circuit board. Do not touch any circuitry when power is applied.

This product is designed for Installation Class II service.

This product is designed for use in Pollution-Degree 2 environments.

Use an insulated screwdriver when adjusting potentiometers and do not touch any circuitry.

Replace front cover when meter is unattended.

Adjustments to jumper settings or terminations must be made with power removed.

Ensure all screw terminals are tight before applying power.

Safety First ..... Don't make assumptions..... Always double check.
If in doubt, ask someone who is QUALIFIED to help you in the subject.

SPECIFICATIONS

Input Signal..... 4-20 mA or 0-10 Vdc
Input Resistance..... 22 Ohms
Resolution..... 1 part in 50
CMRR.....70 dB, DC to 450 Hz.
NMRR.....56 dB, 45 to 10000 Hz.
Open Circuit Input Response..... Downscale drive
Speed of Response..... Display = 100 mS
Accuracy.....± 2% of reading
Temperature Sability..... 100 ppm of range / °C, span and zero
A/D Technique..... Microprocessor controlled A/D
Conversion Rate..... Continuous

Excitation Supply..... 24V nominal
Max. Load current.....25 mA
Regulation.....not regulated

Display ..... High brightness LED
Scale Height..... 50 segments, total length 251 mm (10")
Scale colour..... Red

Power Supply (specified at time of ordering)
AC Supply..... 95-265 Vac
DC Supply..... 11-30 Vdc
Current Consumption..... Allow 8 VA

Mechanical
Case Size..... 310 x 95 mm (H x W).
Mounting Direction.....Vertical or horizontal
Case Depth .....75 mm (3.0"). Allow for 105 mm (4.1") including cables.
Weight..... 1950 g typical (4.3 lbs)
Case Material..... Heavy duty bonded uPVC

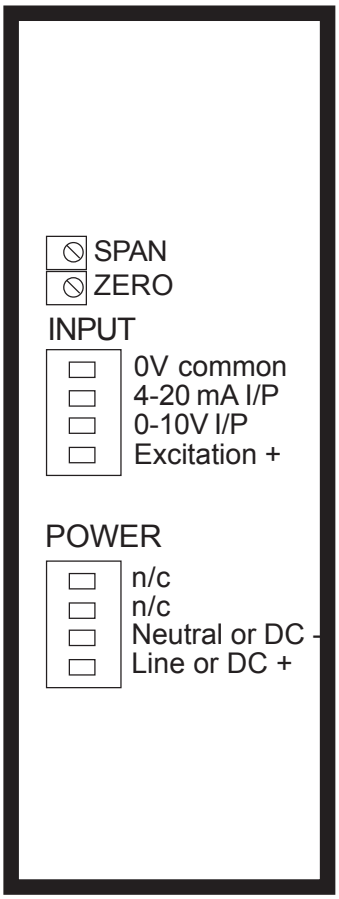
Environmental
Operating Temperature..... -20 to +50°C (-4 to +122°F)
Storage Temperature..... -40 to +85°C (-40 to +185°F)
Humidity..... 90% RH max. at 40°C (104°F), non-condensing.

PANEL REQUIREMENTS

All wiring to this meter must be carried out in accordance with applicable safety regulations, such as current IEC regulations. Separation of all power carrying cables must be ensured in accordance with IEC 1010.

Installation Class II
Pollution degree 2

Connections



View inside enclosure

Connector Specifications

VDE Rated Voltage, group B insulation Vac: 380V
VDE Rated Current: 8 Amps
Vibration Immunity per VDE0611: < 10g
Rated Number of mating cycles: < 100
Screw Clamp material/plating: Steel/ZnCc
Contact Spring material/plating: CuSN/gal SnPb
Plug-in force, per pole: 3 to 6 Newtons
Disconnect force per pole: 4 to 7 Newtons
Screw clamp tightening torque, recommended: 0.5 Nm
Solid wire csa: 0.13 to 1.5 mm^2
Multistrand wire csa: 0.5 to 1.5 mm^2
AWG conductor range: 22 to 16
Gauge to DIN/EN50027: Size A1]

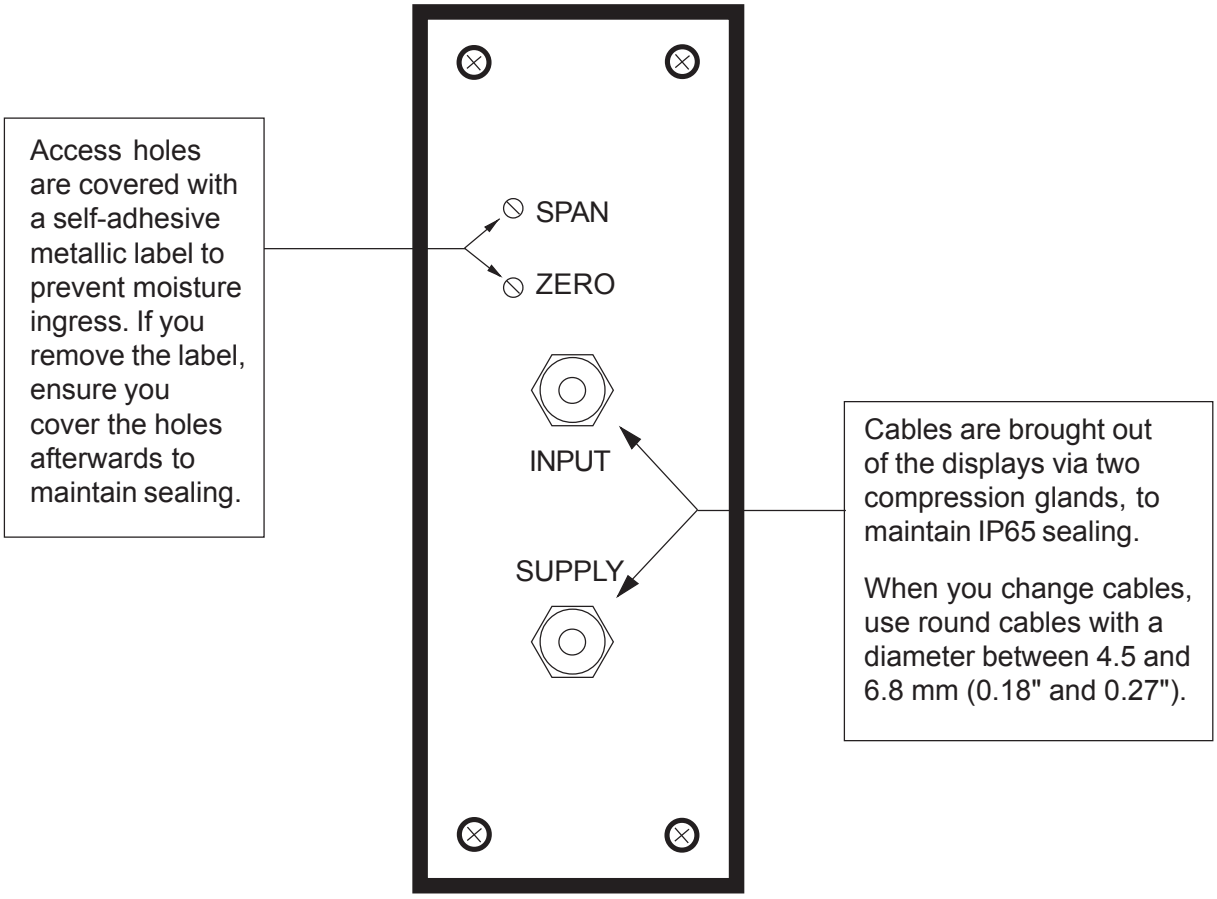
Important: Do not run signal wires near power-carrying cables. Power-carrying cables will almost certainly radiate appreciable amounts of electromagnetic energy, which could interfere with the small signals you are trying to measure. Use screened cable in its own separate conduit or tray. Connect the screen at one end only, to a clean earth point as near to the meter as possible.

ADJUSTMENT & CALIBRATION

1) Ensure that the device's power voltage settings are correct.

2) If calibration details were given at the time of ordering, you should not need to make any changes to the device's settings.

3) If you wish to change the display's calibration, you will need to inject 10% and 90% signals and adjust the zero and span potentiometers to obtain 5 and 45 lit segments. The zero and span potentiometers are located on the rear panel.



Rear view of case

4) Apply 10 % of input and adjust the ZERO pot to obtain 10% of display range.

5) Apply 90 % of input and adjust the FULL SCALE pot for 90 % of display range.

6) Repeat steps 4) and 5) until no further adjustment is necessary.

7) A pply 25%, 50% and 75% of input signal in turn, and check to ensure that the display responds accurately

8) The display will flash if the input exceeds 20 mA or 10V. The lowest segment will flash if the input falls below 4 mA or 0V.

Declaration of Conformity

Declaration Number : PRO-BAR Iss. 2
Issue Date : 19 September 1997
Products Covered : PRO-BAR
Title : 50 seg. bargraph

This is to confirm that the Products covered by this declaration have been designed and manufactured to meet the following specifications :

EN55022:1987 Conducted Emissions: Class B
EN55022:1987 Radiated Emissions : Class B
IEC801-2:1984 Electro-Static Discharge Immunity: 8kV Air
IEC801-3:1984 Radiated ElectroMagnetic field Immunity: 3V/m
IEC801-4:1988 Fast Transient Immunity : AC 1kV, cable 0.5kV

Thus the products conform with the applicable sections of the following standards:

EN50081-1:1992 (normative)
EN50082-1:1992 (normative)

Conditions

The meters are permitted a worst case error of 4% of A/D range during electro-magnetic disturbance, and must recover automatically when disturbance ceases without the need for human intervention, such as resetting, power-down, etc.

The meters covered by this certificate must be installed in adherence to the following conditions:

- ☐ Signal cabling shall be routed separately to power carrying cabling (includes relay output wiring).

- ☐ All signal cabling shall be screened. The screen shall only be terminated to the power earth terminal.

This certificate applies only to meters carrying Serial Numbers 701001 or higher.

Declared true and correct, for and on behalf of Laurel Electronics, Inc.