

DP & Flow Transmitter

MICRO-BAR DIFFERENTIAL PRESSURE/FLOW TRANSMITTER

Micro-Bar electronic transmitter incorporates a capacitance based differential pressure cell for sensitive measurement on Air or other dry gases. Designed for gas flow measurement applications on extraction or ventilation systems, the micro based electronics uses calibration formulae required for Flo-Bar Averaging Pitot tubes, Orifice Plates or other standard DP based sensors. Simply installed adjacent to the flow line, standard pressure impulse tubing links the sensor directly to the Micro-Bar unit. Flow rate, flow units and alarm status are displayed on the two line LCD: external signal transmission is via the 4-20mA loop power, with separate alarm relay and totaliser pulse.

With simple adjustment over a 5:1 full scale pressure range available to the operator on site, the Micro-Bar suits varying process conditions or output scaling requirements. The micro based electronics simplifies site setup procedures, allowing adjustment of alarm output set points, totalisation pulse rate, averaging time and zero checking.

Micro-Bar is applicable to measuring pressure differentials on operating theatres, clean rooms or glove boxes, to monitor system performance and provide alarms. On process monitoring, Micro-Bar is used for air filter blockage monitoring and burner control on furnaces. For these duties, the display shows the pressure drop directly.

FEATURES

- DP measurement for gases
- High sensitivity and linearisation for Pitot tube flow measurement
- Digital flowrate display in Engineering units
- $\pm 0.5\%$ accuracy
- Flow totaliser pulse output
- High and low flow alarms
- Site programmable outputs



MICRO-BAR APPLICATIONS

FLOW MEASUREMENT

Pressure ports are connected to a Platon Flobar Averaging Pitot tube or orifice plate via 4mm OD nylon impulse pipes. Using the calibration sheet supplied with the Flo-Bar, the Micro-Bar full scale pressure is ranged to the appropriate value for site conditions. Units are selected from the look up table and the square root extraction mode used to give using the Micro-Bar press buttons. Remote transmission is via the 4-20mA loop, wired via a recorder and display to a DC power source.

FLOW TOTALISATION

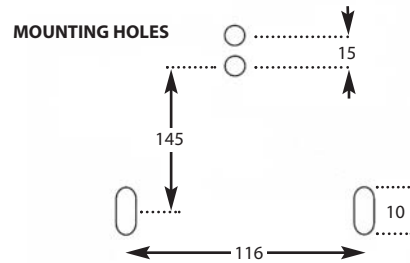
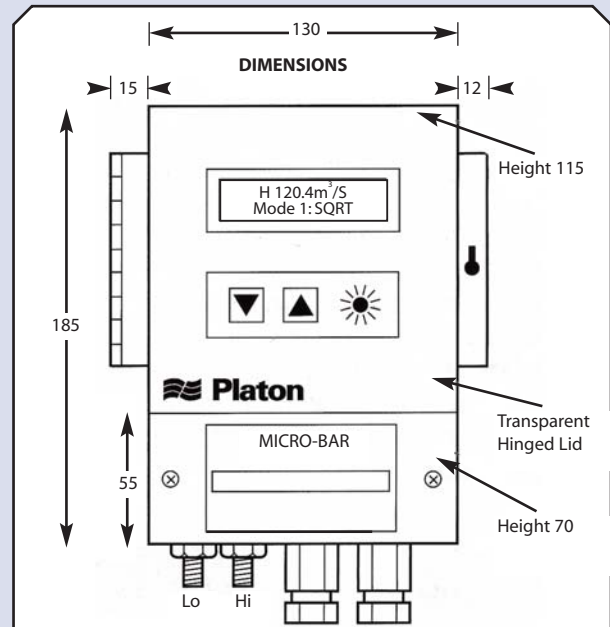
Separate flow totalisation with an external counter/display or a pulse totaliser can be achieved from the second relay output in the Micro-Bar.

DP ALARM

Simple impulse tube pressure connections can be made to the Micro-Bar unit to monitor DP across a filter, to detect blockage, or to a pressurised clean room, to monitor the maintenance of the required DP and alarm on hazardous conditions. Micro-Bar units provide the analogue output for recording purposes and the alarm output to signal the potential hazard: two separate alarm levels are available.

SPECIFICATION

Media	Air or dry non-corrosive gases
Range (max DP)	0-30 Pa (0-0.1" wg) 0-100 Pa (0-0.4" wg) 0-150 Pa (0-0.6" wg) 0-300 Pa (0-1.2" wg) 0-1000 Pa (0-4" wg) 0-3000 Pa (0-12" wg)
See Coding Breakdown For Details	0-10 kPa (0-40" wg) 0-30 kPa (0-120" wg) 0-1 bar (0-400" wg)
Output	4-20mA
20mA Adjustment	20% to 100% of max DP
Zero DP Setting	Adjustable 0-100% of max DP range
Output vs DP Display	Selectable linear or square root 2 line, 16 x 5mm high digits showing flow/pressure, units and alarm status
Power Supply	10-50vdc loop powered
Averaging	0-60 seconds adjustable
Accuracy@20mA	±0.5% of max DP range ±0.75% of reading
Temperature Range	0-40°C
Long Term Drift	0.5% per year
Static Pressure Max	5 times max DP range
Pressure Connections	Pushfit sockets for 4mm OD tubing or 1/4" NPT Female
Alarm Outputs	2 x volt free relay contacts Selectable NO/NC
Flow Totaliser	Max 1 Amp rating 110V ac/dc One alarm relay optionally selectable as totaliser. Max pulse rate 100 pulse/minute. Pulse length 50msec
Enclosure	Polyester. IP66 with separate terminal compartment
Electrical Connections	2 x M20 glands



CONNECTIONS

SK1	⊗ - ⊗ +	4-20mA Loop (to DC Power Supply)
SK2	C ⊗ 1	Alarm Output (Operator Adjustable) Selectable as Either Totaliser Pulse or Second Alarm
	NO/NC ⊗	
	C ⊗ 2	
	NO/NC ⊗	

Range (Pascals)	MB1 - BL - NO - ST	Connections
MB1a = 0-150	MB1 - BL - NO - ST	ST = 4mm O/D Tube Push-in Connector
MB0 = 0-30		CF = 1/4" NPT Female
MB1 = 0-100		
MB2 = 0-300		
MB3 = 0-1000		
MB4 = 0-3000		
MB5 = 0-10000		
MB6 = 0-30000		
MB7 = 0-1 bar		
Type of Display		Electrical Output
BL = Blind System/4-20mA Output		NO = No Alarm Output
DR = Display Rate of Flow/4-20mA Output		01 = 2 Relay Alarm or Totaliser Outputs (User Selectable) 110Vac @ 1Amp
DT = Display Rate of Flow/Totalised Display/4-20mA Output		02 = 2 Relay Alarm or Totaliser Outputs (User Selectable) 30Vac @ 3 Amps

Every effort has been made during the preparation of this document to ensure the accuracy of statements and specifications. However, we do not accept liability for damage, injury, loss or expense caused by errors or omissions made. We reserve the right to withdraw or amend products or documentation without notice.

Head Office: 2 Downton Drive, Sheffield, S4 8BT, England
Tel: +44(0)114 244 2521 Fax: +44(0)114 243 4838



RM&C Roxspur
Measurement
& Control Ltd

1-4 Campbell Court, Bramley, Tadley, Hampshire, RG26 5EG, England

Tel: +44(0)1256 884901 Fax: +44(0)1256 882986

email: sales@roxspur.com www.roxspur.com



CERTIFICATE No. FM22358