



TI-P335-23
 MI Issue 3

Scanner 2000 Steam Mass Flow Transmitter

Description

The Scanner 2000 steam mass flow transmitter takes its inputs from a primary flowmeter, (Gilflo or ILVA) through impulse lines. It converts the differential and static pressure into a corrected mass flowrate of saturated steam, which is accessible via the RS485 Modbus link or optionally via a 4 - 20 mA signal.

Configuration

Scanner 2000 steam mass flow transmitters are uniquely configured at the factory to work with a single, specific Gilflo or ILVA flowmeter, for a specific flow application.

For correct operation the Scanner 2000 transmitter must be installed with its allocated flowmeter. A label on the packaging gives the serial number of the matched product.

The Scanner 2000 can be configured using an RS485 equipped PC with the supplied configuration software.

Note: A DB9 Serial RS232 to RS485 converter will otherwise be required to connect your PC to the Scanner 2000.

If your PC only has USB ports a USB to DB9 Serial port converter will be required. These are available from most electronic equipment suppliers.

Available types and approvals

Explosion proof types available:

- Class 1, Div 1, Groups B, C and D

CSA

- Type 4 Enclosure
- T6 Temperature Class

ATEX

- ATEX II 2 GD
- Ex d IIC T6 (-40°C to +70°C) or
- Ex td A21 IP68 T85C (-40°C to +70°C)
- All Scanner 2000's are compliant

Features

In head LCD providing local indication of density compensated rate and total saturated steam flow.

RS485 Modbus RTU slave functionality for remote indication, data logging and configuration.

Associated equipment

- Gilflo flowmeter
- ILVA flowmeter
- M750 flow indicator
- Optional local display

Materials

Enclosure	Cast aluminium (painted with epoxy and polyurethane)	
Body	Stainless steel	AISI 316
3-way manifold	Stainless steel	AISI 316
Fluid fill	Silicone oil	

Pipe connections

The process ports on the 3-way manifold are threaded ½" NPT connections at 54 mm (2 1/8") centres.

Electrical connections

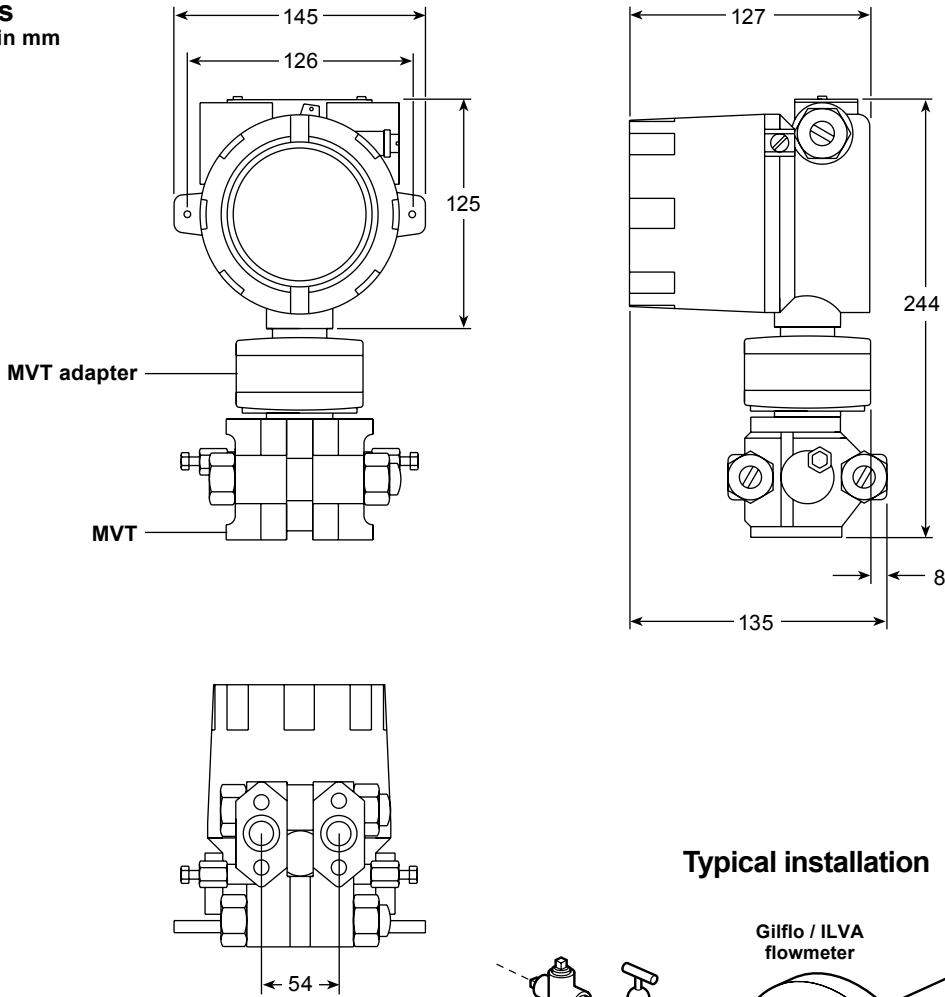
¾" NPT	Non approved and ATEX units
¾" NPT	CSA units



Technical data

Range	Minimum 2" H ₂ O (4.98 mbar)
	Maximum 200" H ₂ O (498 mbar)
Outputs	4-20 mA (expansion board required)
	RS485 Modbus RTU slave (baud rate 300 to 38.4 K)
	Solid state relay, configurable as pulse or alarm
Power supply	6 V to 30 Vdc at 31 mA
Pressure limits	155 bar
Temperature limits	-40°C to 70°C (-40°F to 158°F)
	LCD contrast is reduced below -30°C (-22°F)
Accuracy	±0.05% for Spans >10% of the URL
	±0.005 (URL / SPAN) for Spans <10% of the sensor
Enclosure rating	IEC IP68

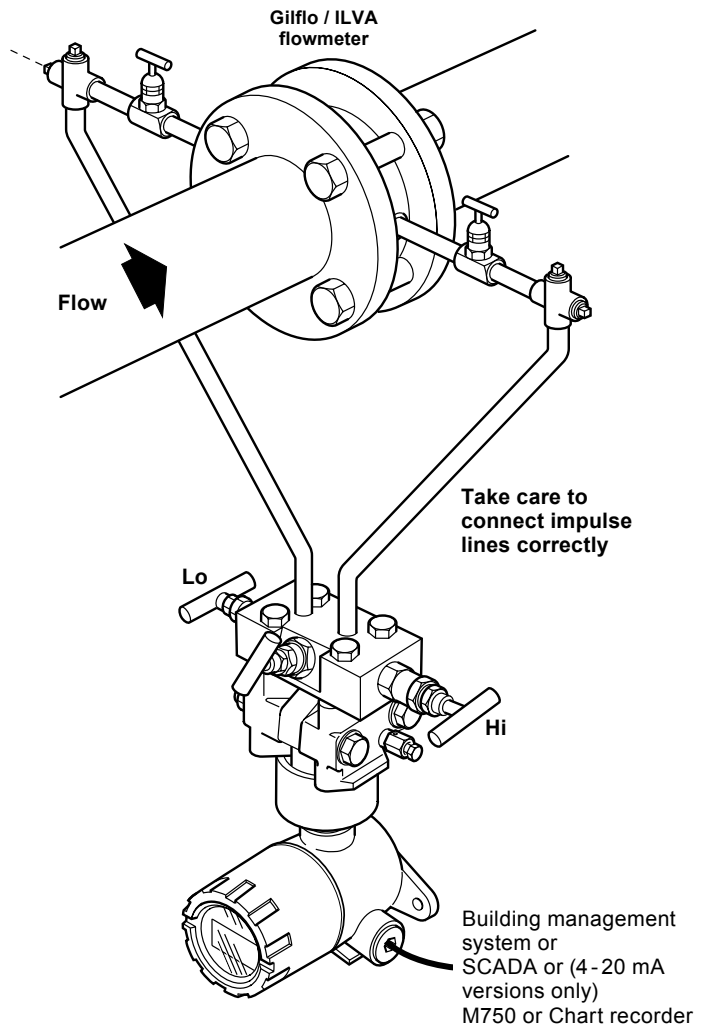
Dimensions
(approximate) in mm



Weights (approximate) in kg

DP transmitter	3-way manifold	Scanner 2000 assembly
5	1	6

Typical installation



Safety information, Installation and Maintenance

Warning: This document does not give sufficient information for safe installation of the product.

Full details are given in the Installation and Maintenance Instructions supplied with the Scanner 2000.

How to order

Each Scanner 2000 is uniquely configured to suit the application that it is going to be fitted to. To ensure that the Scanner 2000 is correctly configured the table below must be completed and sent with the corresponding order.

Configuration data sheet

Customer:					P.O No.			
Application details (Tick as appropriate)								
Primary element	GILFLO			ILVA		Orifice Plate		
Serial number of primary element								
Flowmeter size:	2"	3"	4"	6"	8"	10"	12"	16"
Flow units:	kg/h		lb/h		btu/h		kJ/h	
Dryness fraction (60 - 100%)								
Scanner approval			CSA			ATEX		
Analogue board requirements								
Analogue: output units	kg/h		lb/h		btu/h		kJ/h	
Analogue output scaling (4 mA)				(Normally zero)				
Analogue output scaling (20 mA)				(Normally maximum flowrate)				
Pressure sensor requirements								
Pressure units:	in H ₂ O	mbar	Pa	kPa	mmHg	psi	kg/cm ²	in Hg
Maximum range: differential pressure				(Normally 2 to 200 in H ₂ O or 2.49 to 498 mbar)				
Temperature requirements								
Temperature units:			°C			°F		
Orifice plate requirements								
Tappings type:	Flange			Radius (D-D/2)			Corner	
Device material:	Monel	Carbon steel	Inconel	Brass	Stainless steel	Nickel	Hast C22	
Pipe internal diameter:	2" (2.07")	3" (3.07")	4" (4.03")	6" (6.07")	8" (7.98")	10" (10.01")	12" (11.94")	16" (15")
Orifice bore:								