

FICO Pneumatic 1:1 Level Transmitter

FICO Pneumatic 1:1 Level Transmitters are generally employed in liquid level measurements where they offer the advantage of 1:1 ratio air filled systems, allowing instruments to be located at a remote position either above or below the process liquid, without effecting instrument calibration. Up to 34 Meters Head of water can be measured. The FICO 1:1 transmitter needs no external air supply, and the pneumatic signal can be connected to any pressure instrument with suitable measuring range.

Application

When used in conjunction with any pressure gauge, switch, transmitter or recorder, the Pneumatic 1:1 transmitter can provide continuous indication, switching, recording or when used with a pressure transmitter, further transmission via an electrical signal e.g 4-20mA to a remote monitoring system.

When coupled with a pressure gauge the system becomes a continuous level indicator. Pressure gauges can be calibrated in any unit to suit your application, e.g. Percent, Litres, Gallons, kPa, Barrels, Meters Head Water, Liquid level height in metres, feet, etc.

The Pneumatic Transmitter is particularly useful where remote indication is required.

Typical applications include:

- Water Reservoirs
- Tank Contents
- Cement Lined Tanks
- Hazardous/Combustible Liquids Storage Tanks
- Ocean Tides
- Sludge and Waste Pits
- Ships Bilges

For use on tanks vented to atmosphere. For non vented tanks consult your local AES branch.

Operation

The FICO pneumatic 1:1 level transmitter utilises a large flexible diaphragm of high displacement and a sealed air filled capillary system to provide a pneumatic signal equal to the process/input pressure, to a remote pressure measuring instrument via the air filled capillary system the measuring instrument can be located either above or below the process liquid, because the capillary is air filled the relative positions of the Pneumatic 1:1 Transmitter and the measuring instrument have no effect on the calibration of the system.

When used for liquid level measurements the Pneumatic 1:1 Transmitter is fixed at a location which becomes the reference point for the measurement. As the liquid level rises above the diaphragm the liquid head exerts pressure on the diaphragm which yields slightly to compress the air trapped in the closed system. The pressure of the air in the closed system is exerted, via the capillary tubing, on the pressure measuring element of the instrument.

Features

- Large flexible diaphragm
 - tolerates product build up
 - sensitive to level changes
 - drives most pressure instruments or combination of instruments
- Simple to install
- Measuring instruments can be up to 150 metres from transmitter without affecting calibration.

Mounting Style (Drawing not to scale)	Internal/Open Process Housing Total Immersion					
Model	77A2/N	77A2/V	77A1/N	77A1/V	77A9/N	77A9/V
Materials						
- Housing	316. st.st.		316. st.st.		316. st.st.	
- Process Connection	None, 316 st. st. straps protecting diaphragm		316. st.st.		Carbon Steel Flanges, 316 available	
- Diaphragm	Nitrile	Viton	Nitrile	Viton	Nitrile	Viton
Dimensions (mm)						
- Height (Dim. A)	107		107		104	
- Diameter (Dim. B)	153		153		B ₁ +153 B ₂ +254(5" 150lb ANSI Flange)	
- Bracket (Dim. C)	62 3x 6mm holes on 25mm centres					
Operating Temperature Range	0/130°C	-20/120°C	0/130°C	-20/120°C	0/130°C	-20/120°C
Pressure Range @ 20°C	0/345kPa (not recommended for vacuum or compound ranges)					
Sensitivity	Approximately 0.1" H ₂ O (0.025kPa)					
Instrument Capillary Connection	FICO softseal tube connection for capillaries (1/4" BSP male connection) - others on request.					
Process Connection	None, total immersion		3/4" BSP Female. Other connections on request.		5" 150lb ANSI. Other flanges on request.	
Typical Installation Drawing						
Pressure gauges and digital displays can be supplied scaled in any unit and should be specified on application sheet on page 4.						

Application Worksheet - Photocopy this page as a worksheet and fax to us.

Company: _____ Customer Address: _____

Contact Name: _____

Phone No: _____ Fax No: _____

Application Description: _____

Process Fluid: _____ Fluid SG: _____ Process Temp: _____

Instrumental Detail - If required to be matched to 1:1 Level Transmitter

Instrument Supplied by: _____ Customer: _____ AES: _____ Instrument Connection: _____

Pressure: _____ Transmitter: _____ Gauge: _____ Switch Recorder: _____ Other: _____

Output: _____ Dial Scale: _____ Units: _____ Dial Size: _____

Power Supply: _____ Mounting: _____

Hazardous Area Classification: _____ Wetted Parts: _____

FICO 1:1 Pneumatic Level Transmitter Model No. (Select from options belows)

Your Model:

Example: 77A2/ N O C1 075 S 1/4"BSPT Female

Table A

Style	Code
Total Immersion	77A2/
External Mount Threaded 3/4BSPF	77A1/
External Mount Flanged 5" 150lb ANSI	77A9/
External Mount Special Process Connection	77AX/
Specify Separately	

Table B

Diaphragm Material	Code
Nitrile	N
Viton	V

Table C

Weight	Code
For cable tethered total immersions	W
All others	O

Table D

Capillary/Armour Type	Code
3/16" Nylon/ No Armour	C1
3/16" Nylon/s/s Armour	C2
1/8" s/s/No Armour	C3
No Capillary	OO
Special Capillary - Specify Separately	XX

Table E

Capillary Length	Code
In metres eg. 40 metres	040
No Capillary	000

Table F

Capillary Level Transmitter Connection	Code
FICO softseal capillary connection Transmitter Instrument Connection if not FICO Softsteel. Specify Fully eg.	S 1/4"NPTM

Table G

Capillary Instrument Connection	Code
Specify Fully eg.	3/8"BSPF 1/2"NPTM

Application Sketch

Please indicate vessel shape, dimensions, mounting style and position of 1:1 transmitter and capillary length from 1:1 transmitter to measuring instrument in space below.

