

WPR Series Flow Monitor with Flow Rate Transmitters

● Hydraulic or pneumatic models available

The WPR series in-line flow rate transmitters provide proportional analogue outputs of 4 - 20 mA, 0 - 5 Vdc and 1 - 5 Vdc*, 20 - 2000 Hz square-wave pulse. These outputs will drive popular data acquisition devices, meters and analogue input cards. Typical applications include monitoring the minimum flow in lubrication systems and protecting against high flows. A flow rate transmitter will rapidly pay for itself by reducing down time and avoiding damage to critical equipment.

WPR flow rate transmitters maintain all the features of a standard WP flow rate monitor in addition to the transmitted output. The unit is fully sealed for weather tight or wash down applications. The WPR series flow monitors do not require straight inlet or outlet piping and can be installed in any orientation. The advanced design of the sharp edged orifice ensures good reliability over a wide viscosity range and minimises the effect of contamination. Accuracy is 2.5% over the centre third of the scale and 4% over the entire flow range.

* The 1 - 5 Vdc output requires an external 249 ohm resistor (not included with transmitter) to be wired at the receiving device.



Manufacturers of hydraulic components and test equipment
for the Mobile, Industrial and Agricultural industries



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Features

- Economic early warning solution
- Factory calibrated for 4 - 20 mA, 0 - 5 Vdc, 1 - 5 Vdc and square wave pulse outputs
- Available for fluids or air
- Wide variety of flow ranges
- Port sizes from 3/8" to 2"
- Direct reading
- Accurate within 2.5% over mid-scale, 4% FSD
- Advanced stainless steel sharp edge orifice
- Unrestricted mounting in any orientation



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Specifications

Measuring accuracy

±2.5% of full-scale in the centre third of the measuring range
±4% of full-scale over the entire scale range

Repeatability: ± 1% of full scale

Flow measuring range

Hydraulic: 0.2 - 560 lpm (0.05 - 150 US gpm), Pneumatic: 1.5 - 1300 SCFM

Maximum operating pressure

Hydraulic: Aluminium & brass monitors 240 bar (3000 psi), stainless steel 410 bar (5900 psi)
Pneumatic: Aluminium & brass monitors 40 bar (580 psi), stainless steel 70 bar (1000 psi)

Maximum operating temperature: 116° C (240° F)

Pressure differential: See graphs below

Standard calibration fluids

Hydraulic: DTE 25 @ 43°C (40 cSt), 0.873 sg
Pneumatic: Air @ 21°C, 1.0 sg and 6.9 bar (100 psi)

Electronic Transmitter Performance

Power Requirements: 12 - 35 Vdc

Load Driving capacity: 4 - 20 mA: Load resistance is dependant on power supply voltage. Use the following equation to calculate maximum load resistance: Max loop Load () = 50 (Power supply volts - 12)
0 - 5 Vdc: Minimum load resistance 1000.
1 - 5 Vdc: Minimum load resistance 25k
Square Wave Pulse: Minimum load resistance 1000

Transmission distance: 4 - 20 mA and 1 - 5 Vdc are limited only by wire resistance and power supply voltage.
< 200 feet recommended for 0 - 5 Vdc and square wave pulse

Over-current protection: Self limiting at 35 mA

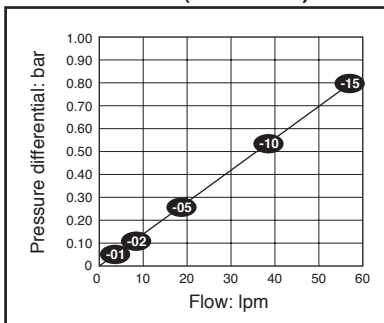
Resolution: 10 bit (0.1 %)

Isolation: Inherently isolated from the process

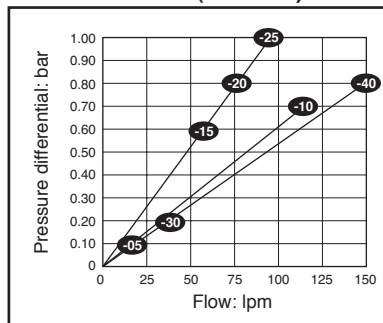
Response time: < 100 milliseconds

Pressure differential graphs categorised by size code

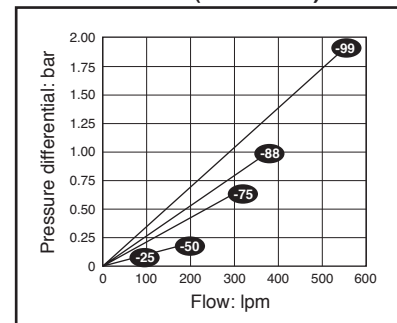
Series 3 (3/8" - 1/2")



Series 4 (3/4" - 1")



Series 5 (1 1/4" - 2")



-15 = Model number (see Sales Brochure)

14.5 psi = 1 bar, 1 US gpm = 3.785 lpm

Construction

Wetted components:

High pressure casing, end ports and tapered shafts:

Aluminium, Brass & Stainless Steel

Seals:

Buna-N (STD), EPR, Viton® or Kalrez®

Transfer magnet:

Teflon® coated Alnico

Floating Orifice disc:

Stainless Steel

All other internal parts:

Stainless Steel

(Teflon® is a registered trademark of DuPont) (Viton® & Kalrez® are registered trademarks of Dow DuPont Elastomers)

Non-wetted components:

Window tube:

Polycarbonate (STD), Pyrex

Window seals:

Buna-N (STD), Teflon®

Enclosure + Cover

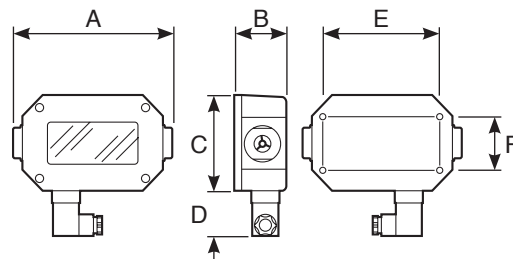
Aluminium

DIN Connector

Polyamide

Dimensions

Size code	3	4	5	5 (2" Ports)
Dim. A mm (inches)	167 (6.6)	182 (7.2)	258 (10.2)	322 (12.7)
Dim. B mm (inches)	56 (2.2)	75 (3)	97 (3.8)	97 (3.8)
Dim. C mm (inches)	101 (4)	114 (4.5)	135 (5.3)	135 (5.3)
Dim. D mm (inches)	47 (1.9)	47 (1.9)	47 (1.9)	47 (1.9)
Dim. E mm (inches)	128 (5)	127 (5)	172 (6.8)	172 (6.8)
Dim. F mm (inches)	57 (2.2)	73 (2.9)	95 (3.7)	95 (3.7)



Product Selector

Standard Flow Meter Part Number (For custom units, consult the Sales Office)

Series # WP - - Webtec Part Number

Step 1 - Style

BASIC in line for liquid	= B
Pneumatic for air and gas	= G
High Temp 200 °C (400 °F)	= H
Flow alarm, 1 switch	= M
Flow alarm, 2 switches	= N
Flow transmitter	= R
Phosphate esters	= P

Step 2 - Port / Line Size

1/4" - 1/2"	= 3
3/4" - 1"	= 4
1 1/4" - 2"	= 5

Step 3 - Material

Aluminium	= A
Brass	= B
Stainless Steel	= S

Step 4 - Pressure rating maximum

42 bar (600 psi)	= 4
(Air and gas / Aluminium and brass)	
69 bar (1000 psi)	= 5
(Air and gas / Stainless steel)	
240 bar (3500 psi)	= 6
(Liquids / Aluminium and brass)	
420 bar (6000 psi)	= 7
(Liquids / Stainless steel)	

Step 5 - Fluid:

Air and Gases	= A
Oil and 0.873 specific gravity	= H
Water and 1.0 specific gravity	= W

Step 6 - Thread porting

Size 3 available threads	
1/4" NPTF	= S
1/8" NPTF	= A
1/2" NPTF	= B
9/16" -18UN #6 SAE ORB	= E
3/4" -16UN #8 SAE ORB	= F
7/8" -14UN #10 SAE ORB	= G
3/8" BSPP	= R
1/2" BSPP	= T

Size 4 available threads	
3/4" NPTF	= C
1" NPTF	= D
1-1/16" -12UN #12 SAE ORB	= H
1-5/16" -12UN #16 SAE ORB	= J
3/4" BSPP	= U
1" BSPP	= V

Size 5 available threads	
1-1/4" NPTF	= K
1-1/2" NPTF	= L
2" NPTF	= M
1-5/8" -12UN #20 SAE ORB	= N
1-7/8" -12UN #24 SAE ORB	= P
2" -12UN #32 SAE ORB	= Q
1-1/4" BSPP	= W
1-1/2" BSPP	= Y
2" BSPP	= X

Please note - SAE porting not available in brass

Step 7 - Flow ranges

Oil and Water LPM (USgpm)	@100 PSIG SCFM	Size
0.5-4 (0.05 - 1)	1.5 -12 = 01	3 only
0.5-4 (0.1 - 1) water		
1-8 (0.2-2)	4-23 = 02	3 & 4
2-19 (0.5-5)	5-50 = 05	3 & 4
4-38 (1-10)	10-100 = 10	3 & 4
4-56 (1-15)	25-150 = 15	3 & 4
10-75 (2-20)	20-215 = 20	4 only
10-100 (2-25)	20-250 = 25	4 & 5
10-115 (3-30)	30-330 = 30	4 only
15-150 (4-40)	30-400 = 40	4 only
15-190 (5-50)	40-500 = 50	4 only
15-190 (5-50)	30-470 = 50	5 only
30-280 (8-75)	30-750 = 75	5 only
40-375 (10-100)	150-900 = 88	5 only
75-550 (20-150)	150-1300 = 99	5 only

Step 8 - Optional flow directions

Uni-directional	=
Bi directional	= BI
Reverse flow	= RF

Not all flow ranges are available with Bi and reverse directional options, please consult the sales office.

Case Drain Monitor

Series # WPC - - Webtec Part Number

Port / Line Size

1/2"	= 3
3/4" - 1"	= 4

Material

Aluminium	= A
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Pressure Rating Max.

70 bar (1000 psi)	= 5
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Fluid Media

Oil and 0.873 specific gravity	= H
Water and 1.0 specific gravity	= W

Flow ranges (oil and water)

LPM (USgpm)	Size
0.5-4 (0.05 - 1)	= 01 3 only
0.5-4 (0.1 - 1) water	
1-8 (0.2-2)	= 02 3 & 4
2-19 (0.5-5)	= 05 3 & 4
4-38 (1-10)	= 10 3 & 4
4-56 (1-15)	= 15 3 & 4
10-75 (2-20)	= 20 4 only
10-100 (2-25)	= 25 4 & 5
10-115 (3-30)	= 30 4 only

Thread Type

Porting (All Female)	Size
1/2" BSPP	= T 3 only
3/4" BSPP	= U 4 only
1" BSPP	= V 4 only
1/2" NPTF, dry seal	= B 3 only
3/4" NPTF, dry seal	= C 4 only
1" NPTF, dry seal	= D 4 only