

WPB Series

Hydraulic Flow Monitor



Up to

- 550 lpm, 150 US gpm
- 420 bar, 6000 psi

The WPB series in-line flow meters are ideal for monitoring pump performance and media flows through hydraulic circuits and cooling systems.

The flow rate is easily read in either US GPM or LPM from the laser engraved scale.

A varied choice of materials and seals can make it suitable for a wide range of fluids.

Due to the sharp edge orifice technology the units have excellent viscosity stability which means it is suitable for a wide operating temperature range.

Installation is made easy with a choice of threaded ports, no need for straight lengths of pipe on inlet or outlet and no restriction to orientation. This combined with the unit being sealed means that it can nearly be installed anywhere.

Features

- **FLOW:** 0.5 - 550 lpm, 0.1 - 150 US gpm
- **PRESSURE** rating up to 420 bar (6000 psi)
- **ACCURACY** $\pm 2\%$ of full scale
- **DIRECT** reading,
- **DUAL SCALE** lpm & US gpm
- **EXCELLENT** viscosity stability to a min of 95 cSt
- **CHOICE** of BSPP, NPTF or SAE Port threads
- **CHOICE** of Aluminium, Brass or Stainless Steel Construction
- **ADVANCED** stainless steel sharp edge orifice
- **UNRESTRICTED** mounting in any orientation



Symbol



Hydraulic measurement and control

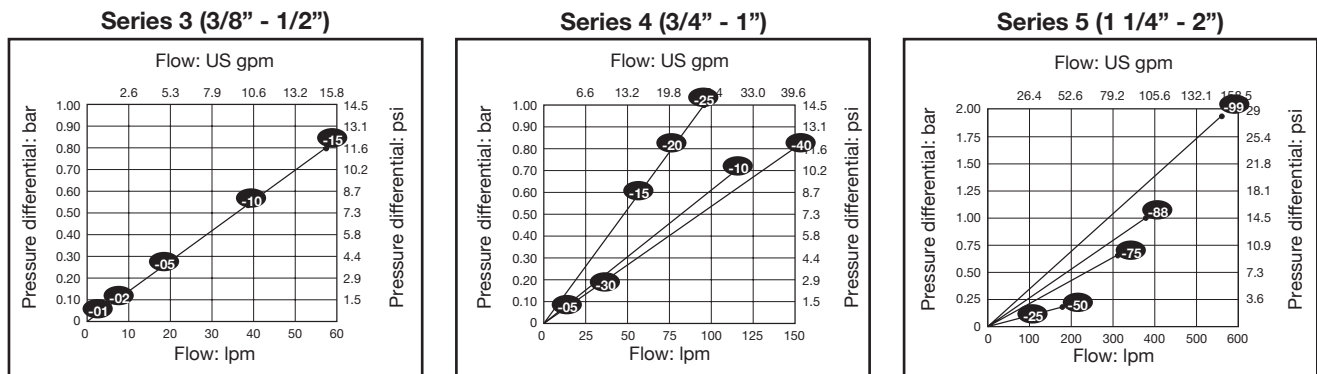


WPB-BU-ENG-1937.pdf 04/16
(Issue 6)

Specifications

Measuring accuracy	± 2.0 % of full scale
Repeatability	± 1% of full scale
Max. operating pressure	Aluminium and Brass monitors 240 bar (3500 psi), stainless steel 420 bar (6000 psi).
Max. operating temperature	115° C (240° F) Note: For operation to 315° C (600° F), a high temperature range is available
Pressure differential	See graphs below
Calibration	Oil monitors: DTE 25 @ 43°C (40 cSt), 0.873 sg Water monitors: Tap water @ 21°C (1 cSt), 1.0 sg Flow calibration certificates are available on request, this is a chargeable option. Note: Must be requested at time of order & cannot be retrospectively requested.

Pressure differential graphs categorised by size code



⑮ = Flow size (see Product Selector)

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

Construction

Wetted components:

High pressure casing, end ports and tapered shafts: 2014 Aluminium, CA360 Brass and 304 Stainless Steel

Seals: Buna-N (as standard)
Optional: EPR, Viton® or Kalrez®

Transfer magnet: Teflon® coated Alnico

Floating Orifice disc: Stainless Steel

All other internal parts: Stainless Steel

Non-wetted components:

Window tube: Polycarbonate (as standard), Pyrex

Window seals: Buna-N (as standard), Teflon®

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

Operation

The flow monitor consists of tapered center shaft, encircled by a sharp edged floating orifice disk, transfer magnet and return spring.

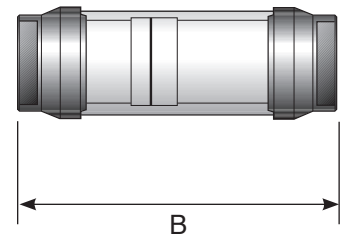
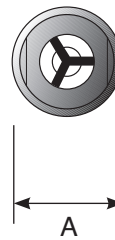
As flow moves through the monitor, a pressure differential occurs across the floating orifice disk, forcing the disk & transfer magnet against the return spring. As flow increases, the pressure differential increases, forcing the disk & transfer magnet along the tapered shaft. As flow decreases, the biased spring forces the disk & transfer magnet down the tapered shaft, returning to the “no flow” position.

In metal casing monitors, where the disk & transfer magnet are sealed in the body casing, there is a magnetically coupled magnet follower which displays the reading on the outside scale.

The flow monitor has a linear relationship between flow rate, pressure differential and piston displacement which is displayed on the calibrated scale.

Dimensions

Size code	3	4	5	5 (2" ports)
Dim. A mm (inches)	48 (1.9)	60 (2.4)	90 (3.5)	90 (3.50)
Dim. B mm (inches)	167 (6.6)	182 (7.2)	258 (10.2)	322 (12.7)



Product Selector

Standard Flow Meter Part Number

(For custom units, consult the Sales Office)

Series # WPB - - Webtec Part Number

Port / Line Size	
1/4" - 1/2"	= 3
3/4" - 1"	= 4
1 1/4" - 2"	= 5

Material	
Aluminium	= A
Brass	= B
Stainless Steel	= S

Pressure rating maximum	
240 bar (3500 psi) (Liquids / Aluminium and brass)	= 6
420 bar (6000 psi) (Liquids / Stainless steel)	= 7

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

Thread porting	
Size 3 available threads	
1/4" NPTF	= S
3/8" 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

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
15-150 (4-40)	= 40	4 only
15-190 (5-50)	= 50	4 only
15-190 (5-50)	= 50	5 only
30-280 (8-75)	= 75	5 only
40-375 (10-100)	= 88	5 only
75-550 (20-150)	= 99	5 only

Optional flow directions	
Uni-directional	=
Bi directional *	= BI
Reverse flow	= RF

* Bi-directional option only available in the following flow ranges:

Size code 3 - flow range 5, 10 and 15 gpm only

Size code 4 - flow range 10, 15, 20 and 30 gpm only

Size code 5 - flow range 50, 75 and 100 gpm only

Other Series available

WPG Series Pneumatic Flow Monitor
 WPH Series High Temperature Flow Monitor
 WPP Series Phosphate Ester Flow Monitor

WPR Series Flow Monitor with Flow Rate Transmitters
 WPM Series Flow Monitor with Flow Rate Alarm
 WPC Series Hydraulic Case Drain Monitor