

WPH Series

High Temperature Flow Monitor

Up to

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

The WPH series high temperature in-line flow monitors are ideal for continuous monitoring or intermittent use on high temperature fluid systems (not suitable for steam).

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.



Symbol



Hydraulic measurement and control



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Features

- **FLOW:** 0.5 - 550 lpm, 0.1 - 150 US gpm
- **PRESSURE** rating up to 420 bar (6000 psi)
- **ACCURATE** $\pm 2\%$ 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

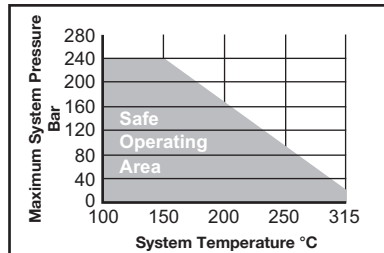


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(Issue 6)

Specifications

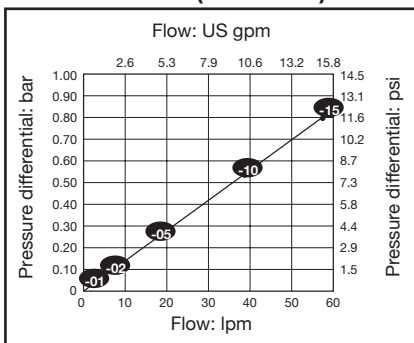
Measuring accuracy	± 2.0 % of full scale
Repeatability	± 1% of full scale
Max. operating pressure	Aluminium & brass monitors 240 bar (3000 psi), stainless steel 420 bar (6000 psi) (Note: See temperature / pressure de-rating chart)
Max. operating temperature	H series 204°C (400°F) J series 315°C (600°F)
Pressure differential Calibration	See graphs below 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.

Temperature De-rating for Aluminium & Brass Monitors

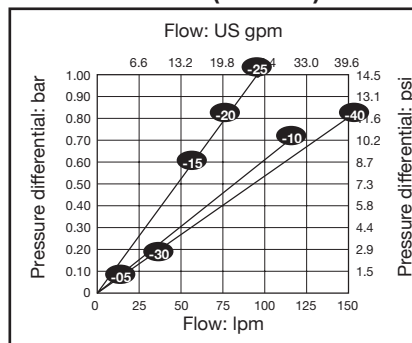


Pressure differential graphs categorised by size code

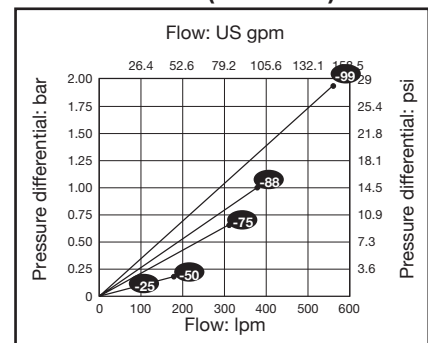
Series 3 (3/8" - 1/2")



Series 4 (3/4" - 1")



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



15 = 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:	Viton® (H model) KALREZ® (J model)
Transfer magnet	Teflon® coated Alnico
Floating Orifice disc:	Stainless Steel
All other internal parts	Stainless Steel

Non-wetted components:

Window tube:	Pyrex
Window seals:	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.

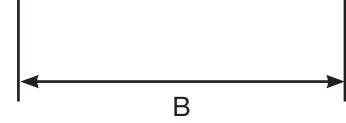
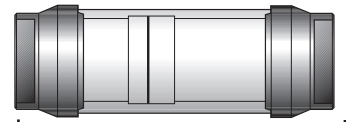
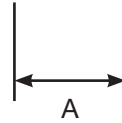
As flow moves through the monitor, a pressure differential occurs across the floating orifice disk, forcing the disk & transfer magnet against the return spring. As flow increases, the pressure differential increases, forcing the disk & transfer magnet along the tapered shaft. As flow decreases, the 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 # WP - - Webtec Part Number

Style

200 °C (400 °F)	= H
315°C (600°F)	= J

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

WPB Hydraulic Flow Monitor

WPG Series Pneumatic 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