

# WPM Series

## Flow Monitor with Flow Rate Alarm

- Hydraulic or pneumatic models available

The WPM series in-line flow rate alarms are ideal for protecting hydraulic or pneumatic systems by sounding an alarm if flow passes a user defined preset level.

The easily adjustable dry contact switch connects via a standard Hirschmann plug and only an allen key is required for set-up.

A flow rate alarm will rapidly pay for itself by reducing down time and avoiding damage to critical equipment.

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

- **ECONOMIC** early warning solution
- **EASILY** adjustable, dry contact alarm settings
- **AVAILABLE** for fluids or air
- **WIDE** variety of flow ranges
- **CHOICE** of aluminium, brass & stainless steel
- **WIDE** variety of thread sizes
- **DIRECT** reading
- **ACCURATE** within 2.0% FSD
- **ADVANCED** stainless steel sharp edge orifice
- **UNRESTRICTED** mounting in any orientation
- **DOUBLE** break switches available on request



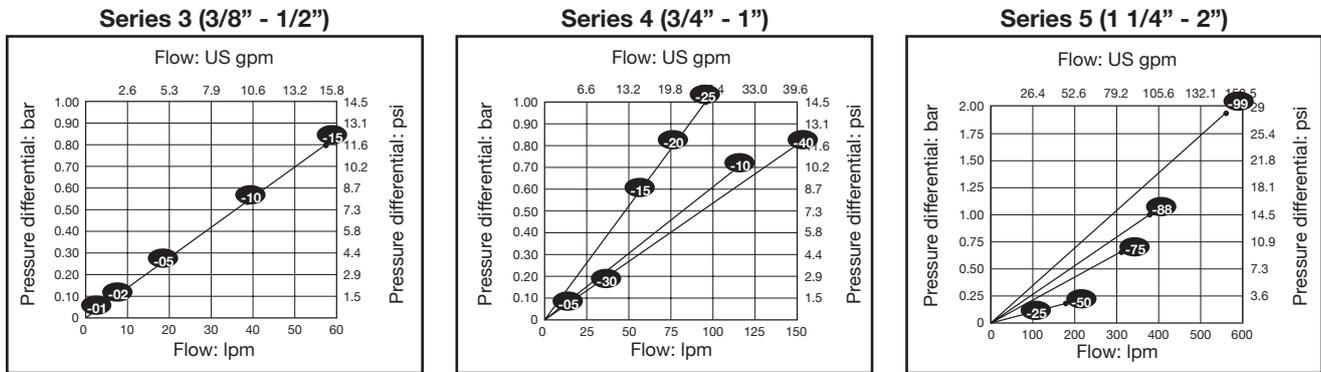
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## Specifications

<b>Measuring accuracy</b>	± 2.0 % of full scale
<b>Repeatability</b>	± 1% of full scale
<b>Flow measuring range</b>	Hydraulic: 0.5 - 550 lpm (0.1 - 150 US gpm), Pneumatic: 1.5 - 1300 SCFM
<b>Max. operating pressure</b>	Hydraulic: Aluminium & brass monitors 240 bar, (3000 psi) Stainless steel 420 bar (6000 psi) Pneumatic: Aluminium & brass monitors 40 bar, (580 psi) Stainless steel 70 bar (1000 psi).
<b>Max. operating temperature</b>	85°C (185°F)
<b>Pressure differential</b>	See graphs below
<b>Calibration</b>	Oil monitors: DTE 25 @ 43°C (40 cSt), 0.873 sg Water monitors: Tap water @ 21°C (1 cSt), 1.0 sg Pneumatic: Air @ 21°C, 1.0 sg and 6.9 bar (100 psi) Flow calibration certificates are available on request, this is a chargeable option. Note: Must be requested at time of order & cannot be retrospectively requested.
<b>Alarm switch dead-band</b>	4% of full scale
<b>Alarm switch contacts</b>	SPDT (dry contact), rating 10 amps and 1/4 hp, 125 or 250 V AC, 1/2 amp, 125 V DC, 1/4 amp, 250 V DC; 3 amps, 125 V AC (Lamp load).

### 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)
Transfer magnet:	Optional: EPR, Viton® or Kalrez®
Floating Orifice disc:	Teflon® coated Alnico
All other internal parts:	Stainless Steel

### Non-wetted components:

Window tube:	Polycarbonate (STD), Pyrex
Window seals:	Buna-N (STD), 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.

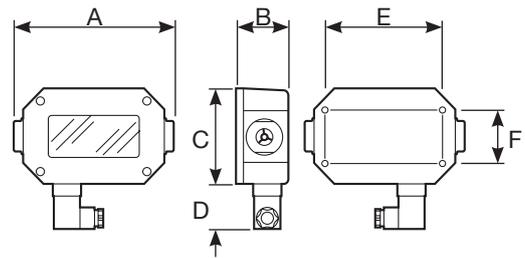
As flow moves through the monitor, a pressure differential occurs across the floating orifice disk, forcing the disk & transfer magnet against the return spring. As flow increases, the pressure differential increases, forcing the disk transfer magnet along the tapered shaft. As flow decreases, the biased 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)	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

### Style

Flow alarm, 1 switch	= M
Flow alarm, 2 switches	= N

### 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

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)	

### Fluid Media:

Air and Gases	= A
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)	@100 PSIG		Size
	SCFM		
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

### Optional flow directions

Uni-directional	=
Reverse flow	= RF

## Other Series available

WPB Series Hydraulic Flow Monitor  
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  
WPC Series Hydraulic Case Drain Monitor