

# FLOW RATE TRANSMITTERS

Flow Rate Transmitter is ideal for batching, industrial process control, mobile hydraulic equipment and computer / PLC controlled hydraulic system monitoring application. Available in analog or pulse outputs.

## TECHNICAL SPECIFICATIONS



### Measuring Accuracy

±2.0% of full scale for oil and water  
±2.5% of full scale in center third of measuring range; ±4% in upper & lower thirds for air and gas

### Repeatability

±1% of full scale

### Flow Measuring Range

0.1-150 GPM (0.5-550 LPM)  
2-1300 SCFM (1-600 SLPS)

### Standard Calibration Fluids

Oil monitors: DTE 25® @ 110°F (43°C), 0.873 sg

Water monitors: tap water @ 70°F (21°C), 1.0 sg

Air monitors: air @ 70°F (21°C), 1.0 sg and 100 PSIG (6.8 Bar)

### Maximum Operating Pressure

#### Liquids

Aluminum and brass monitors:

3500 PSIG (240 Bar)

Stainless steel: 6000 PSIG (410 Bar)

#### Air/Gas

Aluminum and brass: 600 PSIG (40 Bar)

Stainless steel: 1000 PSIG (69 Bar)

### Maximum Operating Temperature

Media: 185°F (85°C)

Ambient: 185°F (85°C)

### Filtration Requirements

74 micron filter or 200 mesh screen minimum

### Viscosity

Standard viscosities up to 110 cSt. For viscosities between 110 to 430 cSt contact factory.

*DTE 25 is a registered trademark of Exxon Mobil.*

## BENEFITS

### Simple to Install

All transmitters are factory calibrated and ship fully assembled. Simply install the transmitter into your system and apply power. No straight plumbing required at inlet or outlet.

### Industry Standard Outputs

Transmitters provide proportional analog or pulse outputs that will drive popular data acquisition devices, meters and analog input cards.

### Direct Reading

All transmitters provide a visual indication of flow rate that matches the transmitted output.

### Weather-Tight Construction

The rugged cast aluminum enclosure is built to NEMA 4X standard and allows installation outdoors and in environments where liquid tight seals are required.

### Rugged and Reliable

Without delicate internal components to break, abrade or corrode, the flow transmitter will provide many years of low-maintenance service.

## ELECTRONIC TRANSMITTER PERFORMANCE

### Power Requirements

12-24 VDC, Regulated

### Load Driving capacity

4-20mA: Load resistance is dependent on power supply voltage.

Use the following equation to calculate maximum load resistance:

Max Loop Load ( $\Omega$ ) = 50 (Power supply volts - 12).

0-5 VDC (regulated): Minimum load resistance 1000  $\Omega$ .

1-5 VDC\* (regulated): Minimum load resistance 25 K  $\Omega$

Square Wave Pulse: Minimum load resistance 1000  $\Omega$

### Transmission Distance

4-20mA and 1-5 VDC (regulated) are limited only by wire resistance and power supply voltage.

<200 feet recommended for 0-5 VDC (regulated) and square wave pulse.

### Over-Current Protection

Self limiting at 35mA

### Resolution

10-bit (0.1%)

### Response Time

<100 milliseconds

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

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## ENCLOSURE MATERIALS OF CONSTRUCTION (NON-WETTED COMPONENTS)

Enclosure & Cover	Painted Aluminum	Painted Aluminum	Painted Aluminum
Seals	Buna-N®	Buna-N	Buna-N
Window	Pyrex®	Pyrex	Pyrex
Din Connector	Polyamide	Polyamide	Polyamide

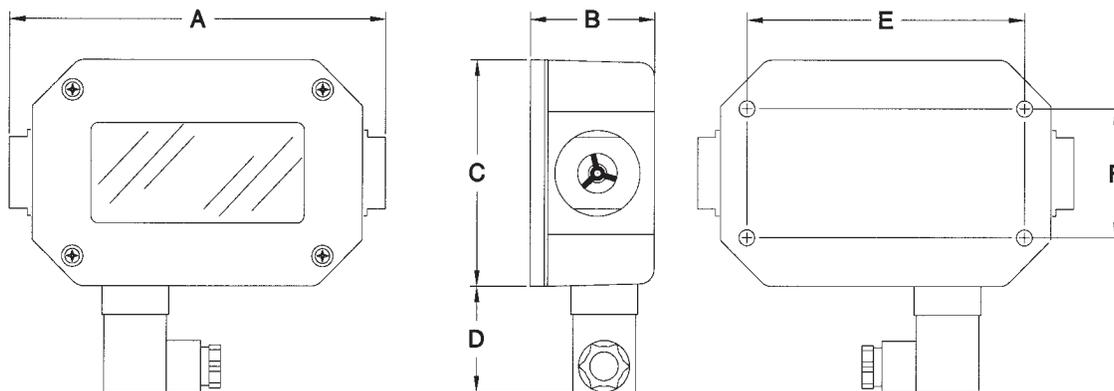
Buna-N is a registered trademark of Chemische Werke Huls. Pyrex® is a registered trademark of Corning Incorporated.

## FLOW METER MATERIALS OF CONSTRUCTION (WETTED COMPONENTS)

Casing & End Ports	Anodized Aluminum	Brass	Stainless Steel 303
Seals	Buna-N (STD), EPR, FKM or Kalrez®	Buna-N (STD), EPR, FKM or Kalrez	FKM with PTFE backup (STD), Buna-N, EPR or Kalrez
Transfer Magnet	PTFE coated Alnico	PTFE coated Alnico	PTFE coated Alnico
All other internal parts	Stainless Steel	Stainless Steel	Stainless Steel

Kalrez is a registered trademark of DuPont Incorporated.

## MECHANICAL - SIZE CODE



DIM	Series 3	Series 4	Series 5	Series 5 (2" port only)
A	6-9/16" (167mm)	7-5/32" (182mm)	10-1/8" (258mm)	12-5/8" (322mm)
B	2-3/16" (56mm)	2-15/16" (75mm)	3-13/16" (97mm)	3-13/16" (97mm)
C	4" (101mm)	4-1/2" (114mm)	5-5/16" (135mm)	5-5/16" (135mm)
D	1-7/8" (47mm)	1-7/8" (47mm)	1-7/8" (47mm)	1-7/8" (47mm)
E	4-7/8" (128mm)	5" (127mm)	6-3/4" (172mm)	6-3/4" (172mm)
F	2-1/4" (57mm)	2-7/8" (73mm)	3-3/4" (95mm)	3-3/4" (95mm)

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## PART NUMBER GUIDE

R [ ] [ ] - [ ] [ ] [ ] - [ ] [ ] [ ] [ ] - [ ] [ ] [ ] [ ]

### TRANSMITTER

R

### PORTING/THREAD TYPE

(all female)

1/4" NPTF, dry seal	3 only	=	S
3/8" NPTF, dry seal	3 only	=	A
1/2" NPTF, dry seal	3 only	=	B
3/4" NPTF, dry seal	4 only	=	C
1" NPTF, dry seal	4 only	=	D
#6 SAE, O-ring seal	3 only	=	E
#8 SAE, O-ring seal	3 only	=	F
#10 SAE, O-ring seal	3 only	=	G
#12 SAE, O-ring seal	4 only	=	H
#16 SAE, O-ring seal	4 only	=	J
1-1/4" NPTF, dry seal	5 only	=	K
1-1/2" NPTF, dry seal	5 only	=	L
2" NPTF, dry seal	5 only	=	M
#20 SAE, O-ring seal	5 only	=	N
#24 SAE, O-ring seal	5 only	=	P
#32 SAE, O-ring seal	5 only	=	Q
1/4" BSPP	3 only	=	8
3/8" BSPP	3 only	=	R
1/2" BSPP	3 only	=	T
3/4" BSPP	4 only	=	U
1" BSPP	4 only	=	V
1-1/4" BSPP	5 only	=	W
1-1/2" BSPP	5 only	=	Y
2" BSPP	5 only	=	X
Cartridge			Z

### SPECIAL SCALE/CUSTOM PRODUCT

### OPTIONAL FLOW DIRECTIONS

Standard Flow, Uni-Directional = [ ] [ ]  
 Reverse Flow = [ R ] [ F ]

### PORT SIZE RANGE

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

### MATERIAL

Aluminum = [ A ]  
 Brass = [ B ]  
 Stainless Steel = [ S ]

### MAX. PRESSURE RATING

600 psig (air & gas, aluminum & brass) = [ 4 ]  
 1000 psig (air & gas, stainless steel) = [ 5 ]  
 3500 psig (liquids, aluminum & brass) = [ 6 ]  
 6000 psig (liquids, stainless steel) = [ 7 ]

### FLUID MEDIA

Air & Gases = [ A ]  
 Oil @ 0.873 specific gravity = [ H ]  
 Water @ 1.0 specific gravity = [ W ]

*Note: For special scales consult the factory.*

### FLOW RANGES

Liquid	Air	Size		
0.1-1.0 GPM	2-12 SCFM	3 only	=	[ 0 ] [ 1 ]
0.2-2.0 GPM	4-23 SCFM	3 & 4	=	[ 0 ] [ 2 ]
0.5-5.0 GPM	5-50 SCFM	3 & 4	=	[ 0 ] [ 5 ]
1-10 GPM	10-100 SCFM	3 & 4	=	[ 1 ] [ 0 ]
1-15 GPM	25-150 SCFM	3 & 4	=	[ 1 ] [ 5 ]
2-20 GPM	20-215 SCFM	4 only	=	[ 2 ] [ 0 ]
2-25 GPM	20-250 SCFM	4 & 5	=	[ 2 ] [ 5 ]
3-30 GPM	30-330 SCFM	4 only	=	[ 3 ] [ 0 ]
4-40 GPM	30-400 SCFM	4 only	=	[ 4 ] [ 0 ]
5-50 GPM	40-500 SCFM	4 only	=	[ 5 ] [ 0 ]
5-50 GPM	30-470 SCFM	5 only	=	[ 5 ] [ 0 ]
8-75 GPM	30-750 SCFM	5 only	=	[ 7 ] [ 5 ]
10-100 GPM	150-900 SCFM	5 only	=	[ 8 ] [ 8 ]
20-150 GPM	150-1300 SCFM	5 only	=	[ 9 ] [ 9 ]

*Note: SAE porting not available in Brass. Consult factory for SAE brass monitor requirements.*

Products may be subject to change without notice - Contact factory for the most up-to-date product information.