

TS-103  
Rev. B  
5/8", 3/4" and 1" Type S Flowmeters  
15.88mm (5/8"): 90000-XXX  
19.02mm (3/4"): 90002-XXX  
25.40mm (1"): 90003-XXX



## 5/8", 3/4", & 1" TYPE S INDUSTRIAL FLOWMETERS WITH THREADED END CONNECTIONS AND MODEL 157 & 600 REGISTERS

### SPECIFICATIONS

#### DESCRIPTION

The 5/8", 3/4", and 1" Type S flowmeters utilize the nutating disc principle positive displacement measuring chamber technology. This design results in an extremely accurate flowmeter that is insensitive to small changes in viscosity and flow profile disturbances. Each flowmeter includes a base unit that houses and protects the measuring chamber and a gear train. Registers provide reset of delivery and totalization. A wide variety of digital pulse transmitters permit remote operation and monitoring.

#### DESIGN FEATURES

##### SUSTAINED ACCURACY

The Actaris design nutating disc measuring chamber is both accurate and dependable, with repeatability of 100%  $\pm 0.1\%$ . The double case feature reduces the effect of higher pressure losses in measuring viscous liquids. In addition, the disc design permits accurate measurement of liquids with suspended solid particles (up to 0.22mm/0.009in) without major damage or erosion to the measuring element for intermittent (i.e., batching) operations.

##### FLEXIBILITY

The rugged bronze outer body components are compatible with hundreds of nonacidic liquids. Threaded end connections allow rapid conversion from right to left hand flow with provided coupling sets. Pulse transmitters, when used with the BATCHMATE 1500 electronic batch controller and a solenoid valve, provide an economical and dependable local or remote batching system.

##### LONG SERVICE LIFE

Rugged construction of Type S flowmeters, along with continual design improvements, assure a system that is simple to operate and economical to use. The overall design of the Type S yields a meter with the ability to measure a wide variety of mild corrosive and erosive liquids.



Type S Flowmeter with 600 Series Register

##### EASE OF MAINTENANCE

The Type S flowmeters do not require elaborate timing gears or difficult adjustment procedures to insure proper functioning of the measuring element. Replacement of a worn or damaged measuring chamber, gear train, or register is both simple to accomplish and requires very little time.

##### POSITIVE AND ACCURATE REGISTRATION

Time proven positive adjustment through Actaris calibration change gears allows changes in increments as small as 0.15% and reduces errors caused by mechanical wear or changes in process fluid.

##### ASSEMBLY OPTIONS

Normally assembled as a right hand flow: inlet on left, with outlet on right. Optional left hand flow: inlet on right, with outlet on left requires rotating the register by 180°.

## ACCURACY

All Actaris Type S nutating disc flowmeters (sizes: 5/8", 3/4" and 1") are functionally tested for proper operation, verified for accuracy and calibrated to an approved unit of measure.

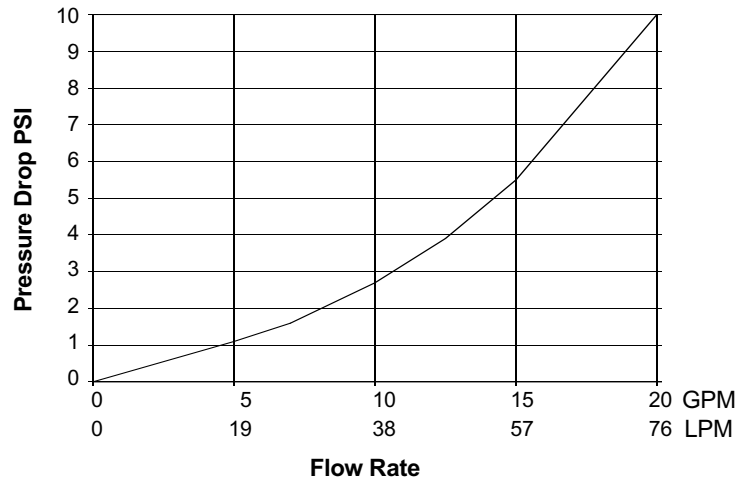
- Maximum error, based on a 10:1 turndown, shall not exceed 100%  $\pm$ 1.0%, as a percentage of rate for the entire flow range.
- For reduced variables, i.e.: turndown, temperatures, pressures and higher viscosities; accuracies of  $\pm$ 0.5% or better may be obtained.
- Repeatability is 100%  $\pm$ 0.1%



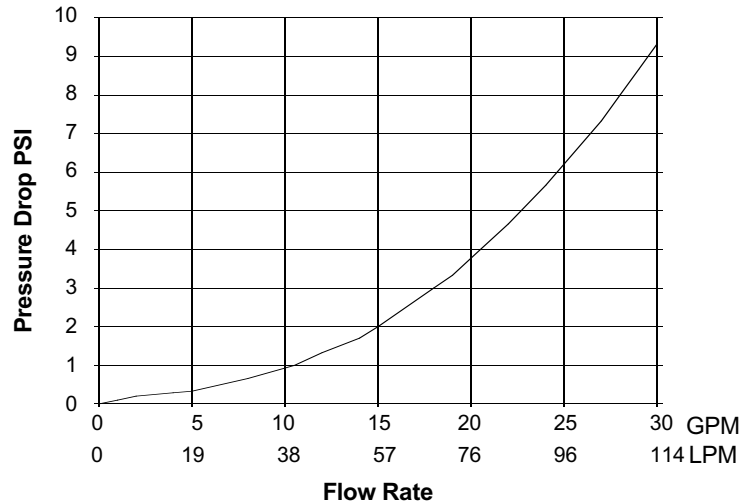
**5/8" Type S with Model 35 Pulse Transmitter and Model 157 Register**

## PRESSURE LOSS CURVES FOR WATER

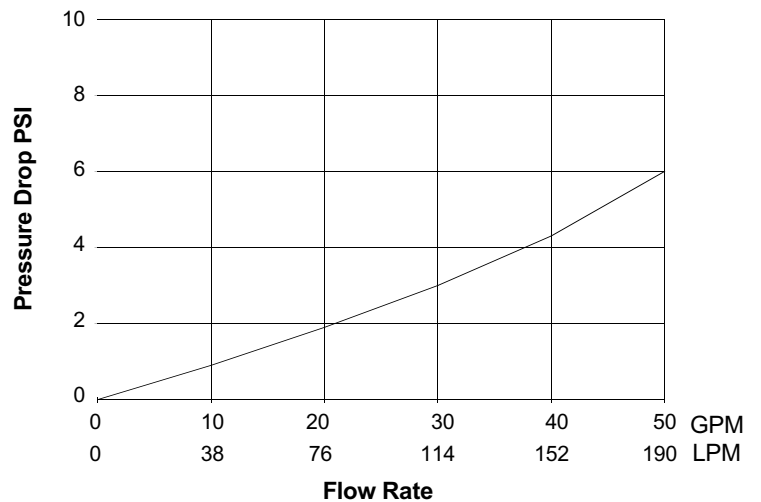
### 5/8" TYPE S



### 3/4" TYPE S



### 1" TYPE S



## FLOWMETER OPERATING SPECIFICATIONS

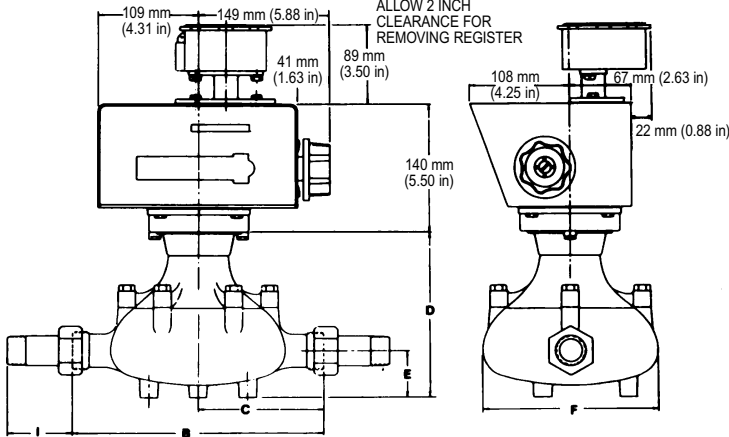
CATEGORY	5/8" TYPE S	3/4" TYPE S	1" TYPE S	
<b>METER</b>	<b>Type of Measuring Element</b>			Positive Displacement Double Case Nutating Disc
	<b>Coupling Connections (Threaded)</b>			1/2" External NPT      3/4" External NPT      1" External NPT
	<b>Temperature Rating (T Max)</b>			121°C (250°F)
	<b>Pressure Rating (P max)</b>			10.34 bar (150 psi) @ 121°C (250°F)
	<b>Pressure Rating (P min)</b>			Dependent upon through-put, viscosity, and the torque required to drive the register
	<b>Flow Range (Q Max) (Q Min)</b>			76 LPM (20 GPM)      113 LPM (30 GPM)      189 LPM (50 GPM) 7.6 LPM (2 GPM)      11.3 LPM (3 GPM)      19 LPM (5 GPM)
	<b>Totalized Units</b>			10 Litres, 10 Kilograms, 10 Pounds, 1 US Gallon, or 10 US Gallons
	<b>Enclosure Class</b>			Totally mechanical. If interfaced with a pulse transmitter, the rating of the device applies.
	<b>Power Supply</b>			None, unless fitted with a pulse transmitter, then the rating of the installed device applies.
	<b>Main Body Material</b>			Bronze
	<b>Main Body Cover Material</b>			Bronze
	<b>Disc Piston</b>			Phenolic
	<b>Shaft Material</b>			Stainless Steel
<b>Gasket Material</b>			Klingersil	
<b>COUNTER AND OPTIONS</b>	<b>Register Type</b>			Model 157 Register: Non-Resettable, 7 digit Totalizer Capacity: Totalizer 9999999 Model 600 Register: Resettable (5 digit), 8 digit Totalizer Capacity: Totalizer 99999999: Reset 99999
	<b>Alternate Units of Measure</b>			Only with pulse transmitter and BATCHMATE 1500
	<b>Transmitter Type</b>			Consult Form TS-510
	<b>Transmitter Output</b>			Consult Form TS-510
	<b>Air Eliminator</b>			Not Available
	<b>Strainer Size and Mesh</b>			Recommend procure locally. Mesh dependent upon viscosity.
<hr/>				
<b>Manufacturer</b>			<b>Actaris U.S. Liquid Measurement Inc.</b>	
<b>Model Number</b>			<b>TS062      TS075      TS100</b>	

### WEIGHT Kilograms (Pounds)

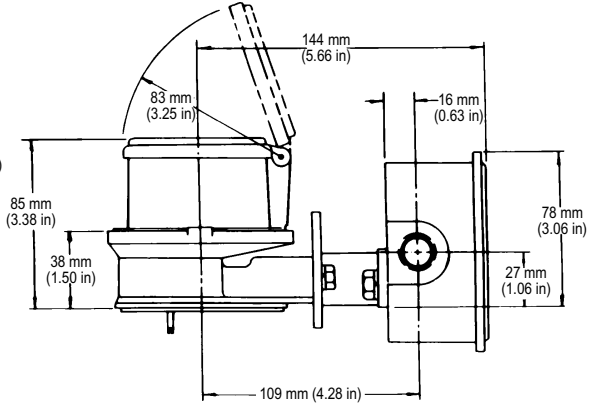
<b>REGISTER AND PULSE TRANSMITTER DATA</b>	<b>TYPE S METER SIZE</b>		
	<b>5/8"</b>	<b>3/4"</b>	<b>1"</b>
Model 157 Standard Unit	<b>5.5</b> (12)	<b>7.3</b> (16)	<b>12.7</b> (28)
Model 157 with Dry Reed or Hall Effect Pulse Transmitter	<b>7.3</b> (16)	<b>9.1</b> (20)	<b>14.5</b> (32)
Model 600 Standard Unit	<b>9.1</b> (20)	<b>10.9</b> (24)	<b>15</b> (33)
Model 600 with Dry Reed or Hall Effect Pulse Transmitter	<b>10</b> (22)	<b>11.8</b> (26)	<b>15.9</b> (35)

# DIMENSIONAL DATA

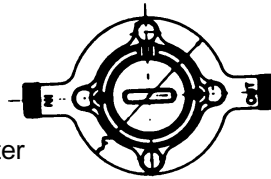
5/8", 3/4", & 1" Type S Flowmeter  
with Model 600 Register and Pulse Transmitter



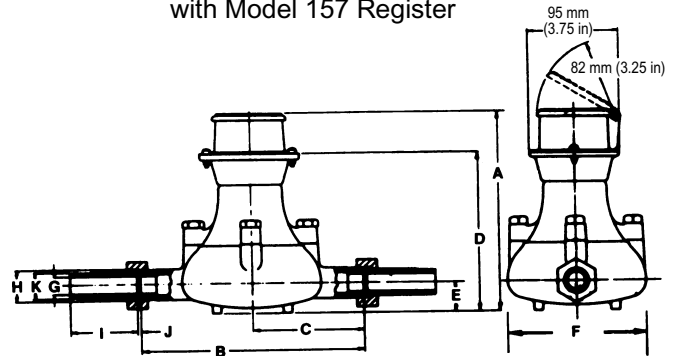
Model 30 Pulse Transmitter with Model 157 Register



5/8", 3/4", & 1" Type S Flowmeter  
with Model 157 Register



Bottom View of Type S Flowmeter



## DIMENSIONS Millimeters (Inches)

**NOTE:** A1 = Model 157 Standard  
A2 = Model 157 with Model 30 Pulse Transmitter

Meter Size	A1	A2	B	C	D	E	F	G	H		I	J	K
									O.D. Inches	Threads per inch			
5/8"	200 (7.88)	219 (8.63)	191 (7.50)	95 (3.75)	156 (6.13)	25 (1.00)	127 (5.00)	16 (0.63)	*	*	60 (2.38)	2 (0.09)	* 0.50 NPT
3/4"	210 (8.25)	248 (9.75)	289 (9.00)	114 (4.50)	165 (6.50)	30 (1.19)	143 (5.63)	19 (0.75)	*	*	64 (2.50)	3 (0.11)	* 0.75 NPT
1"	235 (9.25)	273 (10.75)	273 (10.75)	137 (5.38)	191 (7.50)	51 (2.00)	191 (7.50)		*	*	67 (2.63)		* 1.0 NPT

**NOTE:** Item H (Spud End Connections) on Meter Body is National Pipe Straight (NPS). Coupling Sets provided with meter are 1/2", 3/4" and 1" to fit National Pipe Tapered (NPT) threads.



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Specifications subject to change without prior notification.

