

Truflo® — TKM Series In-Line Paddle Wheel Flow Meter Sensor

ICON™ Corrosion-Free
PROCESS CONTROLS Instrumentation Equipment

Flow | Total | Pulse | 4-20mA



truflo®

Industry's **Longest Lasting** Paddle Wheel Flow Meter

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ICON™ Corrosion-Free
PROCESS CONTROLS Instrumentation Equipment

- ✓ No Programming | Quick Installation
- ✓ Industry's Highest Accuracy: $\pm 0.5\%$
- ✓ Lifetime Warranty*



- ✓ Pulse | 4-20mA Outputs
- ✓ Flow | Total
- ✓ Revolutionary ShearPro® Paddle Wheel Design
- ✓ Low Pressure Drop
- ✓ NEMA 4X | IP 66 Protection
- ✓ Password Protected Security
- ✓ True Union Design ½" - 2"
- ✓ Flange Connection 3" - 4"

Engineered for accuracy, ruggedness and longevity

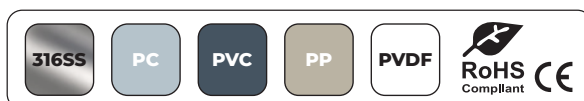
The Truflo® TKM Series digital in-line flow meter sensors are easy to install with exceptional guaranteed long-life performance. They are highly repeatable, extremely rugged sensors that offer outstanding value and require no scheduled maintenance.

The TKM Series has a process-ready output signal with a wide dynamic flow range of 0.3 to 33 ft/s | 0.1 to 10 m/s. The sensor measures liquid flow rates in full pipes.

TKM Series flow meters are offered in a variety of materials and are available from ¼" - 4" pipe sizes. The many material choices, including PVC, PP, PVDF and 316 SS make this model highly adaptable and chemically resistant to many corrosive liquid process applications.

The TKM Series flow meter bodies (PVC, PP, PVDF) are true-union designed up to 2" just as any true-union ball valve is designed. 3" - 4" versions are flanged. They come completely pre-programmed with a bright LCD Display that rotates 360°.

* The Truflo® TKM Series also comes equipped with a lifetime warranty on the paddle wheel assembly.



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In-Line Paddle Wheel Flow Meter Sensor

New ShearPro® Design

- ✓ Contoured Flow Profile
 - ✓ Reduced Turbulence = Increased Longevity
 - ✓ 78% Less Drag than Old Flat Paddle Design*
- *Ref: NASA "Shape Effects on Drag"



Tefzel® Paddle Wheel

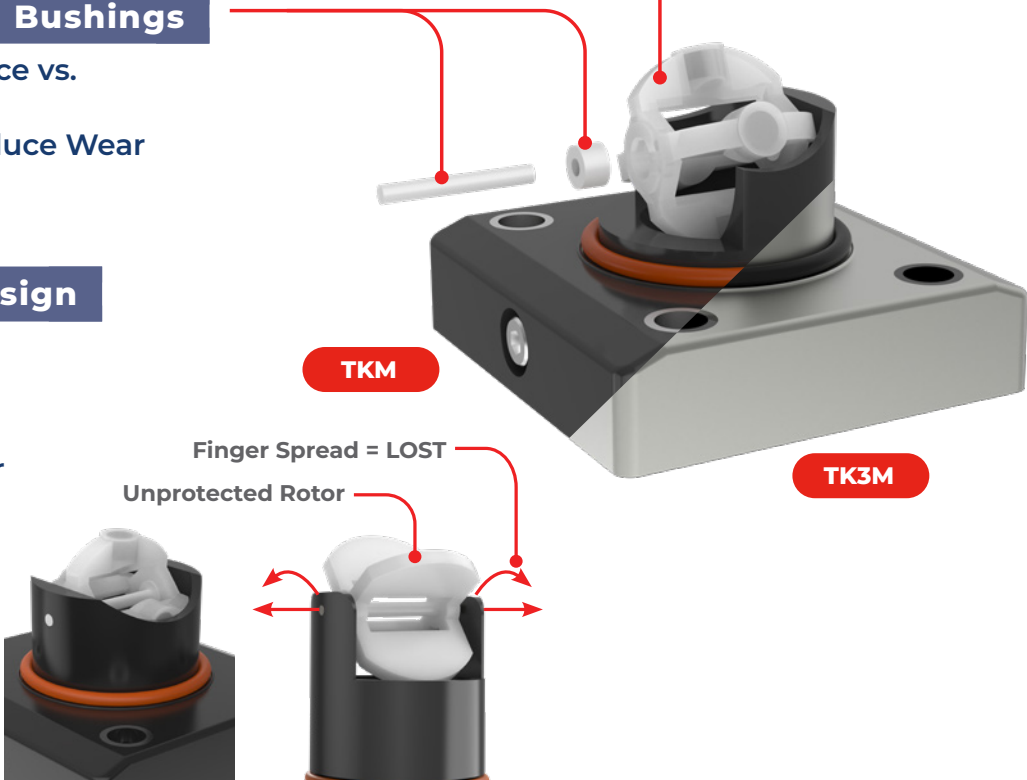
- ✓ Superior Chemical And Wear Resistance vs PVDF

Zirconium Ceramic Rotor | Bushings

- ✓ Up to 15x the Wear Resistance vs. Regular Ceramic
- ✓ Integral Rotor Bushings Reduce Wear and Fatigue Stress

ShearPro® Through-Pin Design

- ✓ Eliminates Finger Spread
- ✓ No Lost Paddles
- ✓ Increased Temp. Rating
- ✓ 360° Housing Protects Rotor



ShearPro® vs. Competitor 'A'

Wiring Diagram

TKM - (4-20mA or 0-5V DC + NPN Pulse) Flow Rate + Flow Totalizer + Pulse Diagram

TKM Flow Meter Output Circuit	Green	Ground		
	Brown	Flow Rate	Load	+VDC
	Black	Totalizer	Load	Pulse (NPN)
	White			Pulse (NPN)
	Yellow	4-20	or	5V DC
	Grey			
	Blue			0V

Brown	10 - 30 VDC (+)	Yellow	+ (4-20mA) or (0-5V)
Blue	0V (-)	Grey	Totalizer Output NPN (4-20mA or 0 - 5V DC) (4-20mA Default -0-5VDC Option-Special Order)
White	Totalizer Pulse Output NPN	Black	Flow Rate Pulse Output NPN

Black Wire can be Changed for Flow Total Limit Output or Unit Volume Pulse Output

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Specifications

General		
Operating Range	0.3 to 33 ft/s	0.1 to 10 m/s
Pipe Size Range	¼" to 4"	DN08 to DN100
Linearity	±0.5% of F.S @ 25°C 77°F	
Repeatability	±0.5% of F.S @ 25°C 77°F	
Wetted Materials		
Sensor Body	PVC (Dark) PP (Pigmented) PVDF (Natural) 316SS	
O-Rings	FKM EPDM* FFKM*	
Rotor Pin Bushings	Zirconium Ceramic ZrO ₂	
Paddle Rotor	ETFE Tefzel®	
Electrical		
Frequency	49 Hz per m/s nominal	15 Hz per ft/s nominal
Supply Voltage	9 to 30 VDC ±10% regulated	
Supply Current	<1.5 mA @ 3.3 to 6 VDC	<20 mA @ 6 to 24 VDC
Max. Temperature/Pressure Rating - Standard and Integral Sensor Non-Shock		
PVC	180 psi @ 68°F 40 psi @ 140°F	12.5 bar @ 20°C 2.7 bar @ 60°C
PP	180 psi @ 68°F 40 psi @ 190°F	12.5 bar @ 20°C 2.7 bar @ 88°C
PVDF	200 psi @ 68°F 40 psi @ 240°F	14 bar @ 20°C 2.7 bar @ 115°C
316 SS	Consult Factory	
Operating Temperature		
PVC	32°F to 140°F	0°C to 60°C
PP	-4°F to 190°F	-20°C to 88°C
PVDF	-40°F to 240°F	-40°C to 115°C
316 SS	-40°F to 300°F	-40°C to 149°C
Outputs		
TKM Series	NPN Pulse 4-20mA Outputs	
Standards and Approvals		
CE FCC RoHS Compliant		

See Temperature and Pressure Graphs for more information

*Optional

K-Factors for TK Series

Size	LPM	GPM
¼"	547	2079
⅜"	300	1140
½"	127.6	484.9
¾"	81.8	310.8
1"	55.1	209.4
1½"	18.8	71.4
2"	10.2	38.8
3"	4.7	18
4"	2.1	8
⚠ K-Factor is Pre-Programmed		

Min/Max Flow Rates

Pipe Size (O.D.)	LPM GPM		LPM GPM
	0.3m/s min.		10m/s max.
DN08 (¼")	0.04	0.16	12 3
DN10 (⅜")	1.0	3.8	50 13
DN15 (½")	3.5	1.0	120 32
DN20 (¾")	5.0	1.5	170 45
DN25 (1")	9.0	2.5	300 79
DN40 (1½")	25.0	6.5	850 225
DN50 (2")	40.0	10.5	1350 357
DN65 (2½")	60.0	16.0	1850 357
DN80 (3")	90.0	24.0	2800 739
DN100 (4")	125.0	33.0	4350 1149

◀ SS Only

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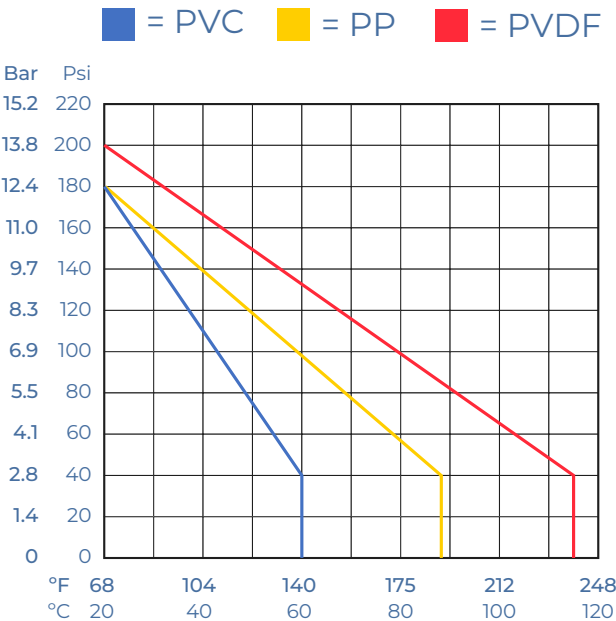
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In-Line Paddle Wheel Flow Meter Sensor

Temperature | Pressure Graphs | Non-Shock

Note: The Pressure/Temperature graphs are specifically for the Truflo® Flow Meter Sensors.

During system design the specifications of all components must be considered.



Model Selection

TKM - - - - **NOTE:** Leave blank for standard options

Pipe Size	Material	End Connections	Seals
15 : ½" 20 : ¾" 25 : 1" 40 : 1½"	P : PVC PP : PP PF : PVDF	Sch 80 Soc (Standard on PVC) T : NPT (Standard on PP/PVDF, available on PVC) F : ANSI 150lb Flange B : Butt Fusion	FKM (std) E : EPDM K : FFKM Kalrez®

TK3M - - - - **NOTE:** Leave blank for standard options

Pipe Size	Material	End Connections	Seals
08 : ¼" 10 : ⅜" 15 : ½" 20 : ¾" 25 : 1"	S : SS	T : NPT (Standard) SE : Sanitary	FKM (std) E : EPDM K : FFKM Kalrez®