

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

ICON™ Corrosion-Free
PROCESS CONTROLS Instrumentation Equipment

Flow | Total | Pulse | RS485



truflo®

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

1.888.610.7664

 www.calcert.com

sales@calcert.com

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In-Line Paddle Wheel Flow Meter Sensor

ICON™ Corrosion-Free
PROCESS CONTROLS Instrumentation Equipment

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



M12 Quick Connection

Flanged Connection

TK3P

316 Stainless Steel

Sanitary Connection



- ✓ Pulse | RS485 Outputs
- ✓ Flow | Total
- ✓ Revolutionary ShearPro® Paddle Wheel Design
- ✓ Low Pressure Drop
- ✓ NEMA 4X | IP 66 Protection
- ✓ Password Protected Security
- ✓ True Union Design $\frac{1}{2}$ - 2"
- ✓ Flange Connection 3" - 4"

Engineered for accuracy, ruggedness and longevity

The Truflo® TKP 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 TKP 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.

TKP Series flow meters are offered in a variety of materials and are available from $\frac{1}{4}$ " - 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 TKP 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® TKP Series also comes equipped with a lifetime warranty on the paddle wheel assembly.



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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

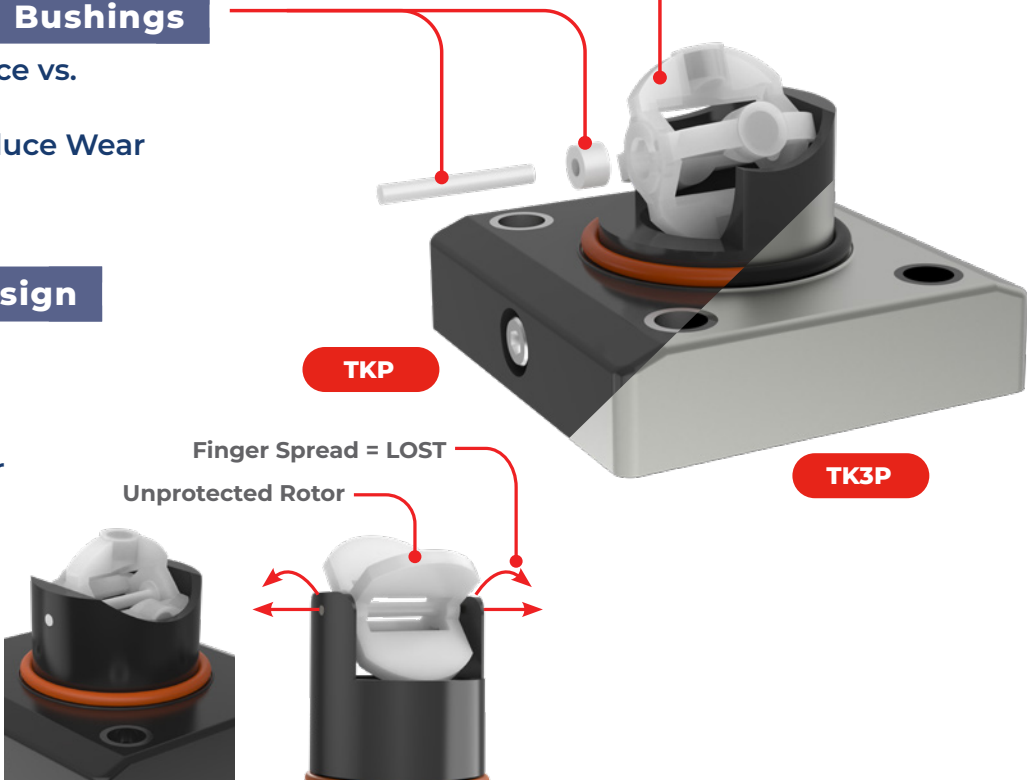
- ✓ Superior Chemical And Wear Resistance vs PVDF

Zirconium Ceramic Rotor | Bushings

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

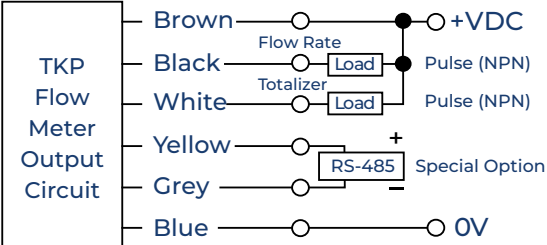
ShearPro® Through-Pin Design

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



Wiring Diagram

TKP - Flow Rate + Flow Totalizer + NPN Pulse Diagram



Brown	10 - 30 VDC (+)	Yellow	(+) RS-485 (OPT)
Blue	0V (-)	Grey	(-) RS-485 1 OPT RS485 is a Special Order Item
White	Totalizer Pulse Output NPN	Black	Flow Rate Pulse Output (NPN)

Yellow & Grey with RS485 (Only) Black Wire can be Changed for Flow Total Limit Output or Unit Volume Pulse Output

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In-Line Paddle Wheel Flow Meter Sensor

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		
TKP Series	NPN Pulse RS485 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	• SS Only
DN10 (⅜")	1.0 3.8		50 13	• SS Only
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	

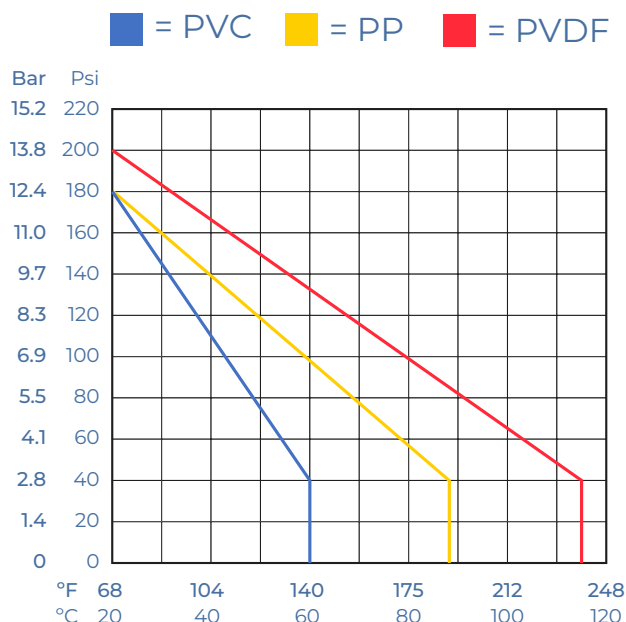
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In-Line Paddle Wheel Flow Meter Sensor

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

TKP - 20 - P - T - **NOTE:** Leave blank for standard options

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

TK3P- 20 - SS - SE - **NOTE:** Leave blank for standard options

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

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by

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