

Truflo® — TKW Series (Blind) In-Line Paddle Wheel Flow Meter Sensor

ICON™ Corrosion-Free
PROCESS CONTROLS Instrumentation Equipment

Pulse | Voltage | 4-20mA



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

Truflo® — TKW Series (Blind) In-Line Paddle Wheel Flow Meter Sensor

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



- ✓ Pulse | Voltage | 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

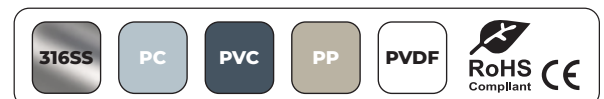
The Truflo® TKW Series digital in-line flow meter sensors are easy to install with exceptional guaranteed long-life performance. They are highly repeatable, extremely rugged sensors that offer outstanding value and require no scheduled maintenance.

The TKW 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.

TKW 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 TKW 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. This blind unit comes completely pre-programmed with a bright LED power indicator.

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

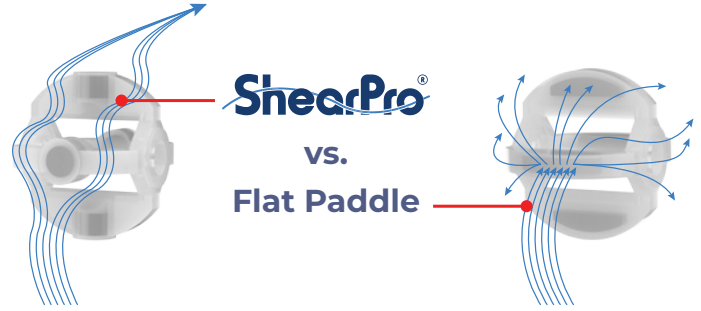


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New ShearPro® Design

- ✓ Contoured Flow Profile
- ✓ Reduced Turbulence = Increased Longevity
- ✓ 78% Less Drag than Old Flat Paddle Design*

*Ref: NASA "Shape Effects on Drag"



Tefzel® Paddle Wheel

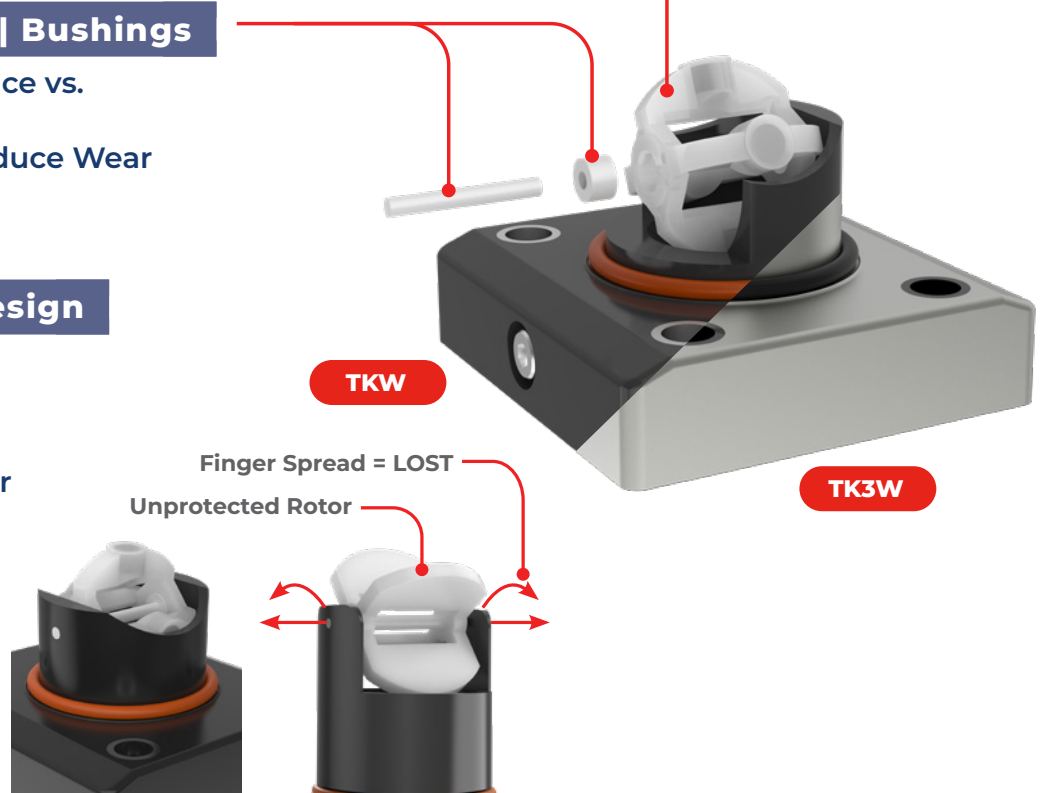
- ✓ Superior Chemical And Wear Resistance vs PVDF

Zirconium Ceramic Rotor | Bushings

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

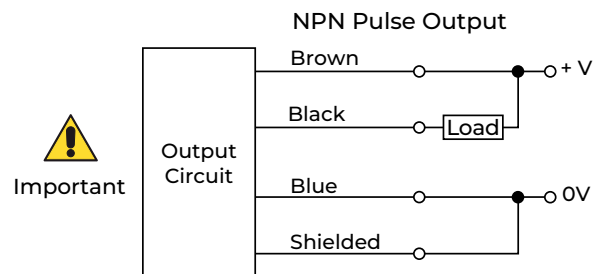
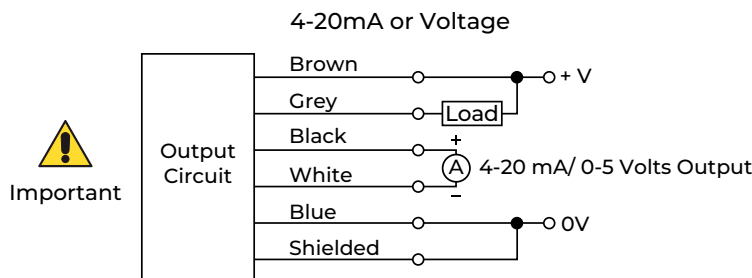
ShearPro® Through-Pin Design

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



ShearPro® vs. Competitor 'A'

Wiring Diagram



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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		
TKW Series	NPN Pulse Voltage 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.		
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

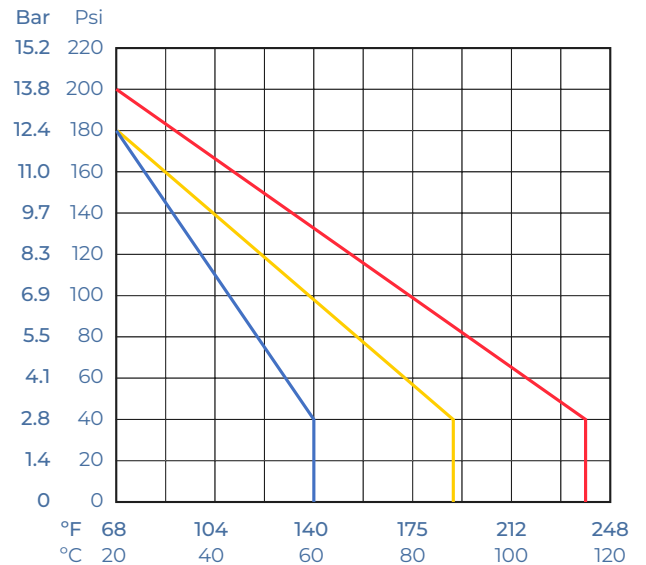
◀ SS Only

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Range of Transmitter

TKW Series		Range LPM GPM	
DN15	½"	0-30 LPM	0-8 GPM
DN20	¾"	0-60 LPM	0-16 GPM
DN25	1"	0-90 LPM	0-24 GPM
DN40	1 ½"	0-200 LPM	0-53 GPM
DN50	2"	0-330 LPM	0-87 GPM

■ = PVC ■ = PP ■ = PVDF



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

PVC		
Size	End Connections	Part Number
½"	Sch 80 Soc	TKW-15-P
¾"	Sch 80 Soc	TKW-20-P
1"	Sch 80 Soc	TKW-25-P
1 ½"	Sch 80 Soc	TKW-40-P
2"	Sch 80 Soc	TKW-50-P
3"	Flanged	TKW-80-P
4"	Flanged	TKW-100-P

PP		
Size	End Connections	Part Number
½"	NPT	TKW-15-PP
¾"	NPT	TKW-20-PP
1"	NPT	TKW-25-PP
1 ½"	NPT	TKW-40-PP
2"	NPT	TKW-50-PP
3"	Flanged	TKW-80-PP
4"	Flanged	TKW-100-PP

PVDF		
Size	End Connections	Part Number
½"	NPT	TKW-15-PF
¾"	NPT	TKW-20-PF
1"	NPT	TKW-25-PF
1 ½"	NPT	TKW-40-PF
2"	NPT	TKW-50-PF

Add 1st Suffix (end connection):

- T ▶ NPT End Connectors (on PVC)
- B ▶ Butt Fused End Connections for PP or PVDF
- F ▶ Flange ANSI 150lb - Consult Factory

Add 2nd Suffix (seals):

- FKM (std, no suffix required)
- E ▶ EPDM Seals
- K ▶ FFKM | Kalrez® Seals

Add 3rd Suffix (optional output):

- A ▶ 4-20mA Output
- V ▶ 0-5V Output
- PA ▶ 4-20mA + Pulse Output

Note: PVC Socket Ends (Std)
PP/PVDF NPT Ends (Std)

316 SS		
Size	End Connections	Part Number
¼"	NPT	TK3W-08-SS
⅜"	NPT	TK3W-10-SS
½"	NPT	TK3W-15-SS
¾"	NPT	TK3W-20-SS
1"	NPT	TK3W-25-SS
1 ½"	NPT	TK3W-40-SS
2"	NPT	TK3W-50-SS
3"	NPT	TK3W-80-SS
4"	NPT	TK3W-100-SS

Add 1st Suffix (end connection):

- T ▶ NPT End Connectors
- SE ▶ Sanitary - Consult Factory for Pricing
- F ▶ Flange ANSI 150lb - Consult Factory

Add 3rd Suffix (optional output):

- A ▶ 4-20mA Output
- V ▶ 0-5V Output
- PA ▶ 4-20mA + Pulse Output

Add 2nd Suffix (seals):

- FKM (std, no suffix required)
- E ▶ EPDM Seals
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by



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Instrumentation Equipment

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