

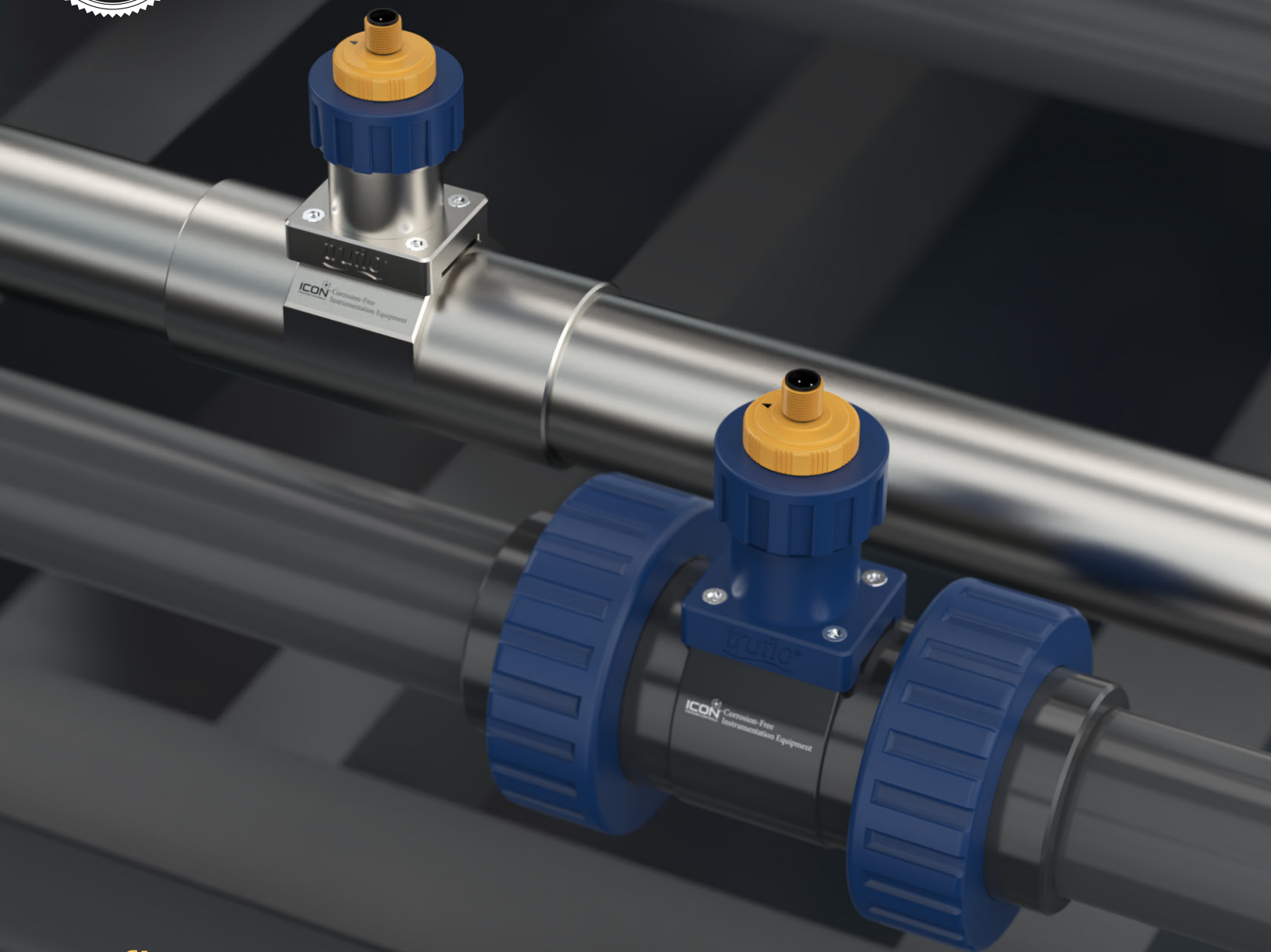
Truflo® — TIW | TI3W Series Insertion Paddle Wheel Flow Meter Sensor

ICON™ Corrosion-Free
PROCESS CONTROLS Instrumentation Equipment™

Frequency Pulse Output



US LISTED



truflo®

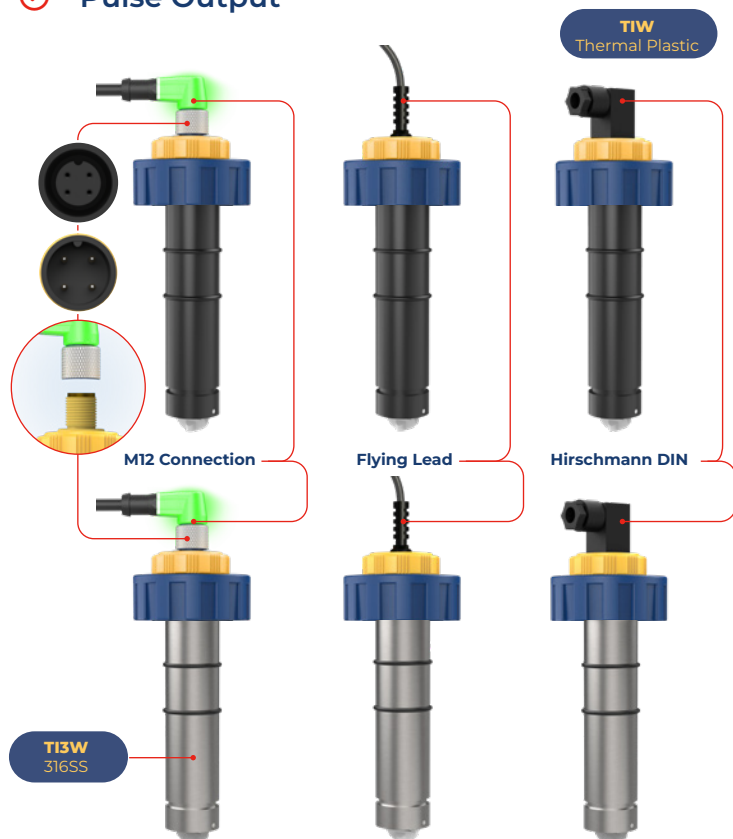
Industry's **Longest Lasting** Paddle Wheel Flow Meter

Truflo® — TIW | TI3W Series

Insertion Paddle Wheel Flow Meter Sensor

ICON™ Corrosion-Free
PROCESS CONTROLS Instrumentation Equipment™

- ✓ Lifetime Warranty
- ✓ ½" – 24" Line Sizes
- ✓ Pulse Output



Features

- ✓ M12 | Flying Lead | Hirschmann DIN
- ✓ Industry's Highest Accuracy: $\pm 0.5\%$ F.S
- ✓ Retrofits into Signet® Type Fittings
- ✓ Double O-Ring Seal
- ✓ Available in PVC | PP | PVDF | 316SS

Industry's Most Accurate & Reliable Paddle Wheel Flow Meter Sensors

The TIW digital flow meter sensors are easy to install with exceptional guaranteed long-life performance and have been engineered to provide long-term accurate flow measurement in tough industrial applications.

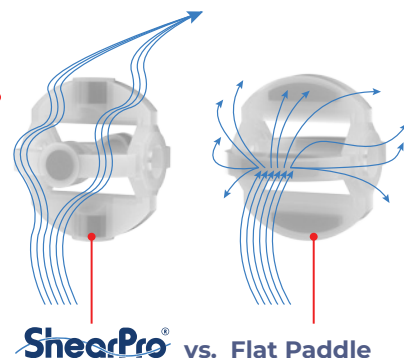
The paddle wheel assembly consists of an engineered high performance Tefzel® paddle and micro-polished zirconium ceramic rotor pin and bushings, providing excellent chemical and wear resistant properties.

The TIW Series paddle wheel flow meter sensors are highly repeatable, exceptionally accurate, extremely rugged, offer outstanding value and require absolutely no maintenance.

The TIW flow meter sensors can be installed using Truflo's® extensive line of ANSI and DIN fittings. Truflo® offers SDR Pipe Saddles from DN15 - DN600 in GFPP material.

Revolutionary 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 & Wear Resistance vs. PVDF

Zirconium Ceramic Rotor | Bushings

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

360° Shielded Rotor Design

- ✓ Eliminates Finger Spread
- ✓ No Lost Paddles



On Paddle Wheel Assembly

Truflo® — TIW | TI3W Series

Insertion Paddle Wheel Flow Meter Sensor



Technical Specifications

General		
Operating Range	1 to 33 ft/s	0.3 to 10 m/s
Pipe Size Range	½ to 24"	DN15 to DN600
Linearity	±0.5% of F.S @ 25°C 77°F	
Repeatability	±0.5% of F.S @ 25°C 77°F	
Output Type	NPN or PNP with 4.7K pull high resistor	
Output Current	150mA with short circuit protection	
Wetted Materials		
Sensor Body	PVC (Dark) PP (Pigmented) PVDF (Natural) 316SS	
O-Rings	FKM EPDM* FFKM*	
Rotor Pin Bushings	Zirconium Ceramic ZrO₂	
Paddle Rotor	ETFE Tefzel®	
Electrical		
Frequency	49 Hz per m/s nominal	15 Hz per ft/s nominal
Supply Voltage	5-30 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°F
PP	180 Psi @ 68°F 40 Psi @ 190°F	12.5 Bar @ 20°C 2.7 Bar @ 88°F
PVDF	200 Psi @ 68°F 40 Psi @ 240°F	14 Bar @ 20°C 2.7 Bar @ 115°F
316SS	200 Psi @ 180°F 40 Psi @ 300°F	14 Bar @ 82°C 2.7 Bar @ 148°F
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
316SS	-40°F to 300°F	-40°C to 148°C
Output		
Pulse		
Display		
Blind		
Standards and Approvals		
UL NSF CE RoHS Compliant		

See Temperature and Pressure Graphs for more information

*Optional

Model Selection

PVC PP PVDF		
Size	Part Number	Material
½" - 4"	TIW-P-S	PVC
6" - 24"	TIW-P-L	PVC
1" - 4"	TIW-PP-S	PP
6" - 24"	TIW-PP-L	PP
1" - 4"	TIW-PF-S	PVDF
6" - 24"	TIW-PF-L	PVDF

Add Suffix -
'E' - EPDM Seals

316SS		
Size	Part Number	Material
½" - 4"	TI3W-SS-S	316SS
6" - 24"	TI3W-SS-L	316SS

Add Suffix -
'E' - EPDM Seals

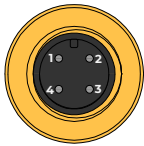
Truflo® — TIW | TI3W Series

Insertion Paddle Wheel Flow Meter Sensor

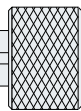
Terminal Connections

M12 Connection (no Internal wiring required)

Terminal	Description	Color
1	5~30 VDC	Brown
2	- VDC	Blue
3	PNP Output	Black
4	NPN Output	White



TIW - M12 Male

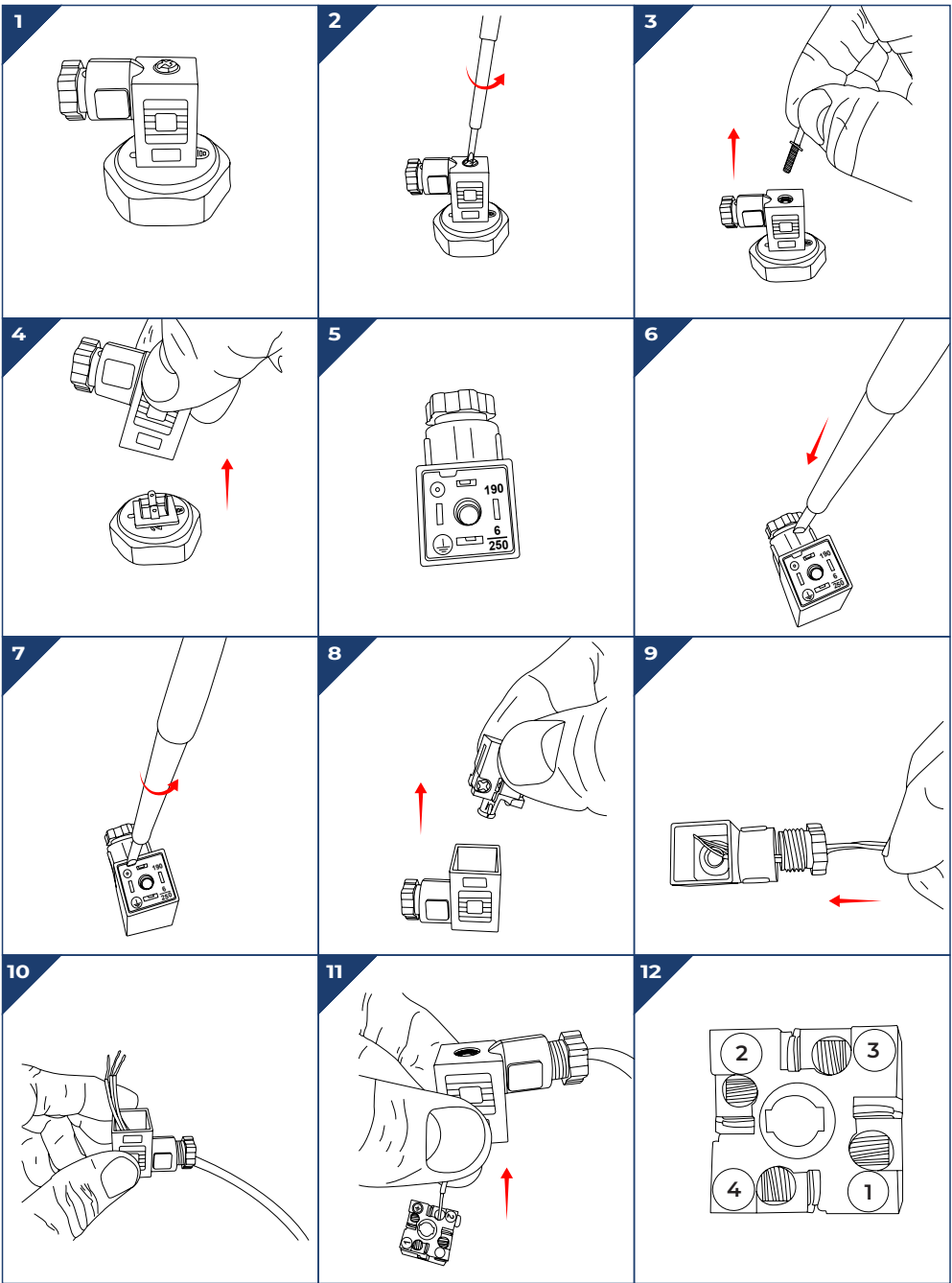
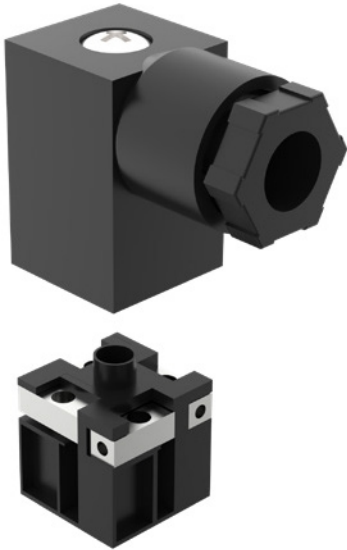


M12 Female Cable



Hirschmann DIN Connection

Terminal	Description
1	5~30 VDC
2	- VDC
3	PNP Output
4	NPN Output



Truflo® — TIW | TI3W Series

Insertion Paddle Wheel Flow Meter Sensor

Fittings and K-Factor

TEE FITTINGS

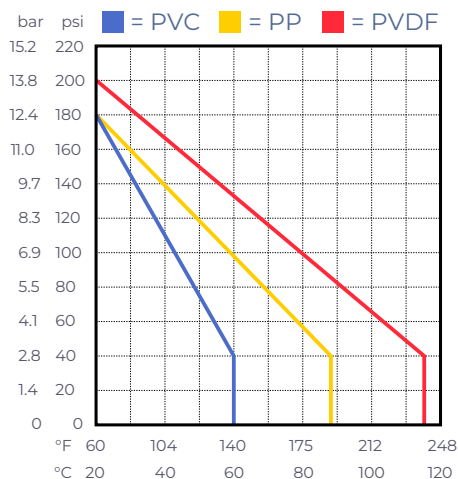


Tee Fitting		K-Factor		Sensor Length
IN	DN	LPM	GPM	
½" (V1)	15	156.1	593.0	S
½" (V2)	15	267.6	1013.0	S
¾"	20	160.0	604.0	S
1"	25	108.0	408.0	S
1½"	40	37.0	140.0	S
2"	50	21.6	81.7	S
2½"	65	14.4	54.4	S
3"	80	9.3	35.0	S
4"	100	5.2	19.8	S

TEE FITTINGS (V2)

Size	K-Factor
½"	282.0
¾"	196.0
1"	136.0
1½"	43.2
2"	23.2

Pressure vs. Temperature



Note: During system design the specifications of all components must be considered. | Non-Shock

CLAMP-ON SADDLES

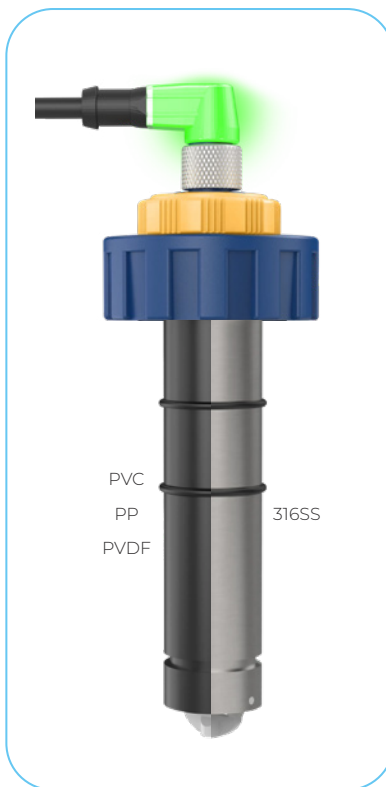


Clamp Saddles		K-Factor		Sensor Length
IN	DN	LPM	GPM	
2"	50	21.6	81.7	S
3"	80	9.3	35.0	S
4"	100	5.2	19.8	S
6"	150	2.4	9.2	L
8"	200	1.4	5.2	L

CPVC SOCKET WELD-ON ADAPTERS



Weld On Adapter		K-Factor		Sensor Length
IN	DN	LPM	GPM	
2"	50	14.4	54.4	S
2½"	65	9.3	35.5	S
3"	80	9.3	35.0	S
4"	100	5.2	19.8	S
6"	150	2.4	9.2	L
8"	200	1.4	5.2	L
10"	250	0.91	3.4	L
12"	300	0.65	2.5	L
14"	400	0.5	1.8	L
16"	500	0.4	1.4	L
18"	600	0.3	1.1	L
20"	800	0.23	0.9	L
24"	1000	0.16	0.6	L



Min/Max Flow Rates

Pipe Size (O.D.)	LPM GPM		LPM GPM
	0.3m/s min.		10m/s max
½" DN15	3.5 1.0		120.0 32.0
¾" DN20	5.0 1.5		170.0 45.0
1" DN25	9.0 2.5		300.0 79.0
1 ½" DN40	25.0 6.5		850.0 225.0
2" DN50	40.0 10.5		1350.0 357.0
2 ½" DN60	60.0 16.0		1850.0 489.0
3" DN80	90.0 24.0		2800.0 739.0
4" DN100	125.0 33.0		4350.0 1149.0
6" DN150	230.0 60.0		7590.0 1997.0
8" DN200	315.0 82.0		10395.0 2735.0

Installation Fittings



SA Clamp-On Saddle Fittings

- PVC Material
- Viton® O-Rings
- Available in Metric DIN
- Will Accept Signet® Type Flow Meter

PVC	
Size	Part Number
2"	SA020
3"	SA030
4"	SA040
6"	SA060
8"	SA080



PT | PPT | PFT Installation Fittings

- PVC | PP | PVDF
- Socket End Connections
- Will Accept Signet® Type Flow Meter
- True-Union Design

	PVDF	PVC	PP
Size	Part Number	Part Number	Part Number
1½"	PFT005	PT005	PPT005
¾"	PFT007	PT007	PPT007
1"	PFT010	PT010	PPT010
1½"	PFT015	PT015	PPT015
2"	PFT020	PT020	PPT020

Add Suffix -

'E' - EPDM Seals

'T' - NPT End Connectors

'B' - Butt Fused End Connections for PP or PVDF



SAR Clamp-On Saddle Fittings (SDR Pipe)

- PVC Material
- Viton® O-Rings
- Available in Metric DIN
- Will Accept Signet® Type Flow Meter

PVC	
Size	Part Number
2"	SAR020
3"	SAR030
4"	SAR040
6"	SAR060
8"	SAR080
10"	SAR100
12"	SAR120
14"	SAR140
16"	SAR160



CT CPVC Tee Installation Fitting

- 1"-4" Pipe Sizes
- Easy to Install
- Will Accept Signet® Flow Meter

CPVC	
Size	Part Number
1"	CT010
1 ½"	CT015
2"	CT020
3"	CT030
4"	CT040

Add Suffix -

'E' - EPDM Seals

'T' - NPT End Connectors

'B' - Butt Fused End Connections for PP or PVDF



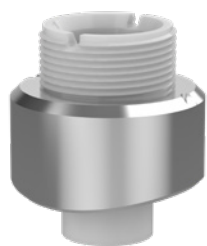
PG Glue-On Adapter

- 2"-24" Pipe Sizes
- Easy to Install
- Will Accept Signet® Flow Meter

Glue-On Adapter – CPVC	
Size	Part Number
2" - 4"	PG4
6" - 24"	PG24

Truflo® — TIW | TI3W Series

Insertion Paddle Wheel Flow Meter Sensor



SWOL Weld-On Adapter

- 2"-12" Pipe Sizes
- 316SS Weld-o-let with PVDF Insert
- Easy to Install
- Will Accept Signet® Flow Meter

Weld-On Adapter - 316SS	
Size	Part Number
3"	SWOL3
4"	SWOL4
6"	SWOL6
8"	SWOL8
10"	SWOL10
12"	SWOL12



SST 316SS TI3 Series NPT Tee Fittings

- Will Accept Signet® Type Flow Meter

Threaded Tee Fitting - 316SS	
Size	Part Number
½"	SST005
¾"	SST007
1"	SST010
1 ½"	SST015
2"	SST020
3"	SST030
4"	SST040



SSS 316SS TI3 Series Sanitary Tee Fittings

- Will Accept Signet® Type Flow Meter

Sanitary Tee Fitting - 316SS	
Size	Part Number
½"	SSS005
¾"	SSS007
1"	SSS010
1 ½"	SSS015
2"	SSS020
3"	SSS030
4"	SSS040



SSF 316SS TI3 Series Flanged Tee Fittings

- Will Accept Signet® Type Flow Meter

Flanged Tee Fitting - 316SS	
Size	Part Number
½"	SSF005
¾"	SSF007
1"	SSF010
1 ½"	SSF015
2"	SSF020
3"	SSF030
4"	SSF040