

TIB SERIES

INSTRUCTION MANUAL



 **Corrosion-Free**
Instrumentation Equipment

Read the User's Manual Carefully.



Manufacturer Reserves the Right to Implement Changes Without Prior Notice.

Safety Information

1. De-pressurize and Vent System Prior to Installation or Removal.
2. Confirm Chemical Compatibility Before Use.
3. DO NOT Exceed Maximum Temperature or Pressure Specifications.
4. ALWAYS Wear Safety Goggles or Face-Shield During Installation and/or Service.
5. DO NOT Alter Product Construction.



Warning | Caution | Danger

Indicates a potential hazard. Failure to follow all warnings may lead to equipment damage, injury, or death



Hand Tighten Only

Overtightening may permanently damage product threads and lead to failure of the retaining nut.



Note | Technical Notes

Highlights additional information or detailed procedure.

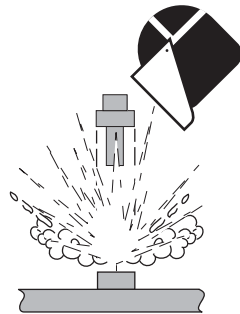


Do Not Use Tools

Use of tool(s) may damage product beyond repair and potentially void product warranty.



WARNING!



Personal Protective Equipment (PPE)

Always utilize the most appropriate PPE during installation and service of Truflo products.



Pressurized System Warning

Sensor may be under pressure, take caution to vent system prior to installation or removal. Failure to do so may result in equipment damage and/or serious injury.

General Data

Specification	Description
Battery	Lithium Battery 3 VDC
Life of Battery	3 Years Sleep Mode
Current Consumption	60mA max.
Flow Totalizer GAL LTR	0 - 999999
Flow Rate GPM LPM	0.0 - 999.9 GPM
Fluid	Water Liquid Chemicals
Accuracy	± 0.5% of F.S. @ 25°C
Response frequency	5K Hz
Max Flow Rate	10m/s 33ft/s
Min Flow Rate	0.1m/s 0.3ft/s
Materials of Construction	Paddle ETFE Tefzel® Rotor Bushings Zirconium Ceramic Sensor Body PVC PP PVDF
O-Ring Material	Viton (std) EPDM*
Operating Temperature	PVC < 60°C PP < 80°C PF < 100°C
Protection Class	IP-65 General Purpose
Approval	CE RoHS

*Optional

Installation



Very Important

- Lubricate O-rings with a Viscous Lubricant Compatible with the Materials of Construction.
- Using an Alternating | Twisting Motion Carefully Lower the Sensor into the Fitting. | Do Not Force | Fig 5
- Ensure Tab | Notch are Parallel to Flow Direction | Fig-2



Hand Tighten the Sensor Cap. **DO NOT** use any tools on the sensor cap or the cap threads or fitting threads may be damaged. | Fig-5

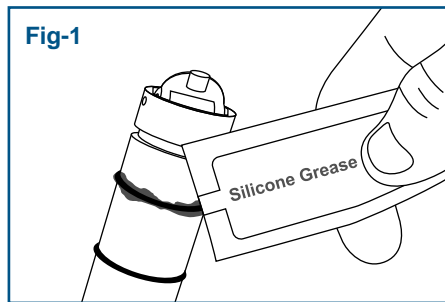


Fig-1

Ensure Amble Silicon Grease (Supplied) is Applied Prior to Insertion

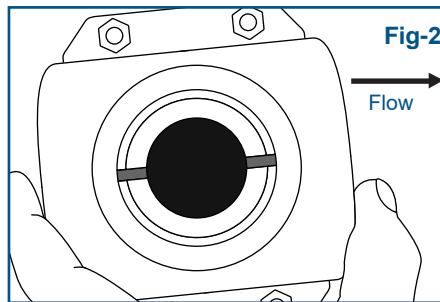


Fig-2

Ensure Location Tabs Are Parallel to Direction of Flow

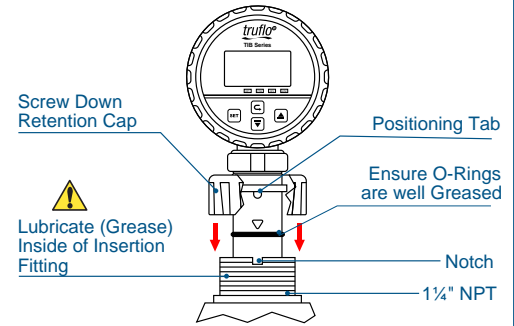


Fig-3

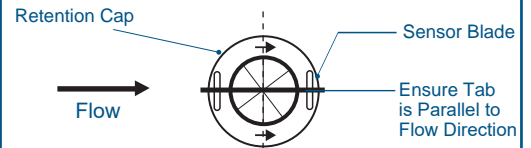


Fig-4

Process Pipe (Top View)

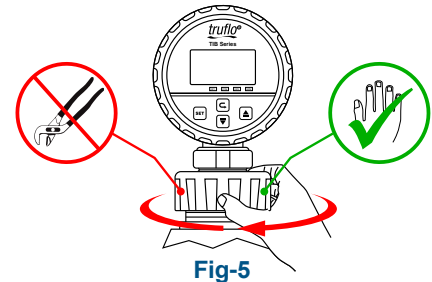
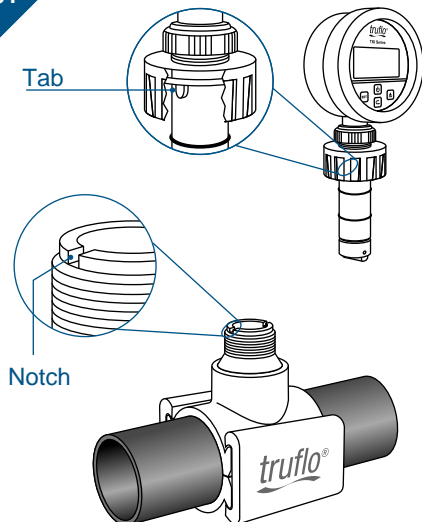


Fig-5

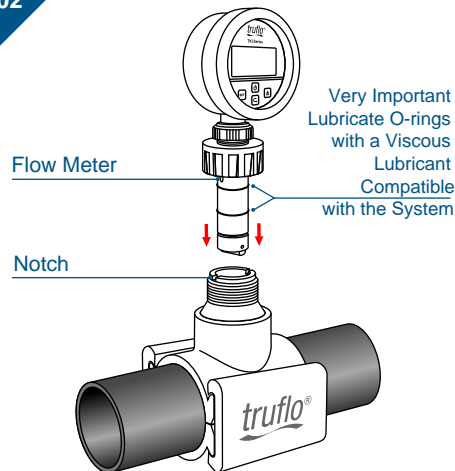
Correct Sensor Installation

01



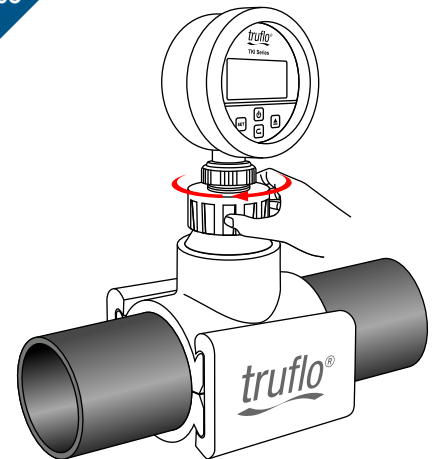
Flow Meter Positioning Tab and Clamp Saddle Notch

02



Engage one Thread of the Sensor Cap then turn the Sensor until the Alignment Tab is Seated in the Fitting Notch, Ensure Tab is Parallel to Flow Direction.

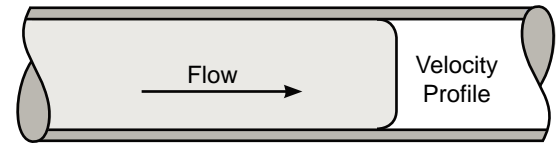
03



- Hand Tighten the Screw Cap.
- **DO NOT** use any Tools, Threads may be Damaged.
- Ensure Meter is Firmly in Place

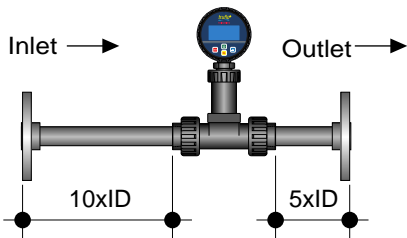
Correct Sensor Positioning

TIB Series Flow Meters measure liquids only. No air bubbles should be present and the pipe **must always be full**. The sensors are not effective in laminar or transitional flow applications. Minimum Reynolds number required is 4500. For accurate flow measurement there must be a developed turbulent velocity profile at the sensor location. This requires a straight run pipe with a minimum number of pipe diameters distance upstream and downstream of the flow sensor. These distances depend on the type of piping element (i.e. valves, elbows, reducers etc.) causing the disturbance. To ensure maximum accuracy, the following guidelines need to be observed when installing.

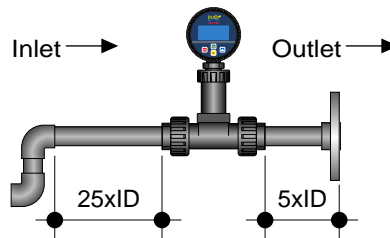


Developed Turbulent Flow

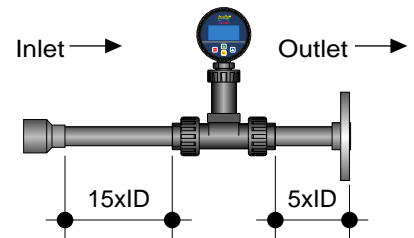
Flange



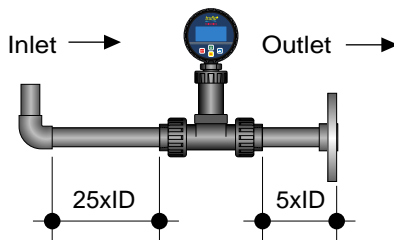
2 X 90° Elbow



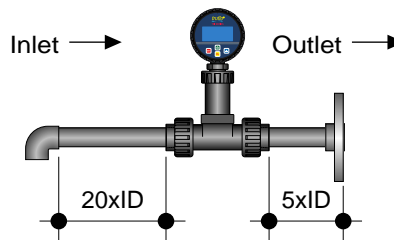
Reducer



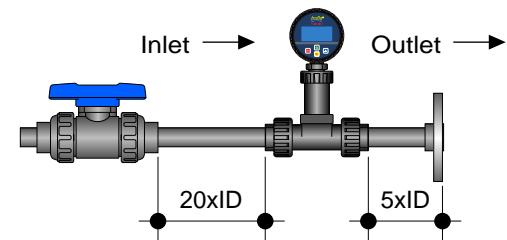
90° Elbow | Flow Downward



90° Elbow | Flow Upward

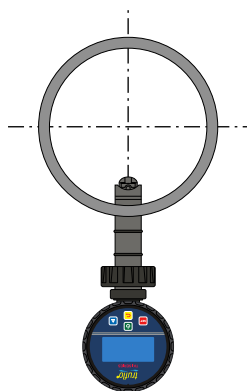


Ball Valve



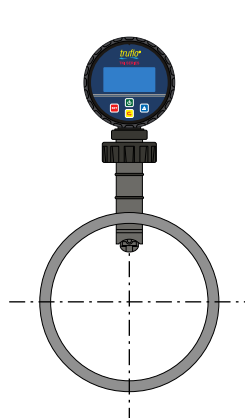
Installation Positions

Figure 1



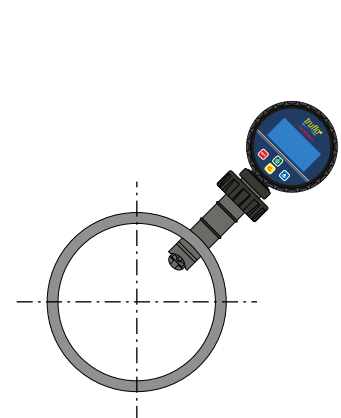
Good if NO Sediment Present

Figure 2



Good if NO Air Bubbles Present

Figure 3

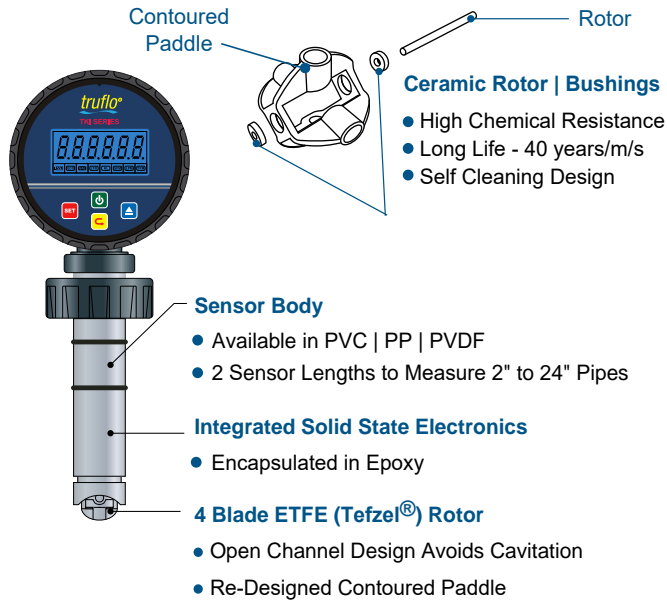


Preferred Installation if Sediment* or Air Bubbles may be Present

* Maximum % Solids: 10% with particle size not exceeding 0.5 mm cross section or length.

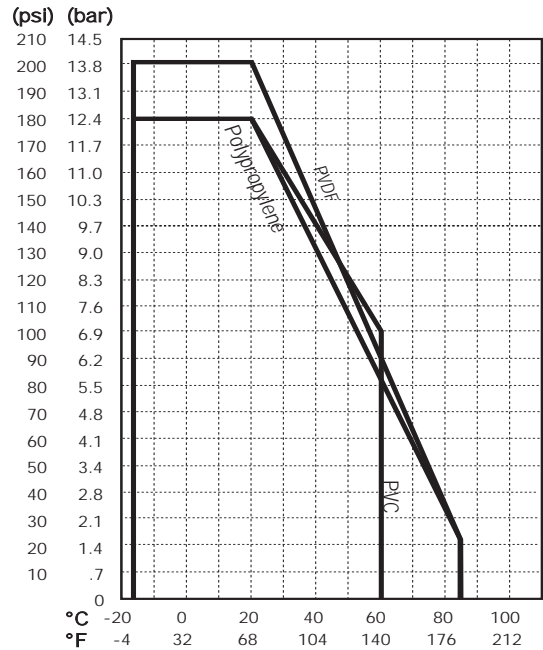
Long Service Life

The TIB Series is equipped with a Zirconium Ceramic Rotor Pin and 2 Bushings. The TIB Series also incorporates a contoured, 'Low Drag' Paddle Wheel leading to reduced drag, longer wear and a higher accuracy.

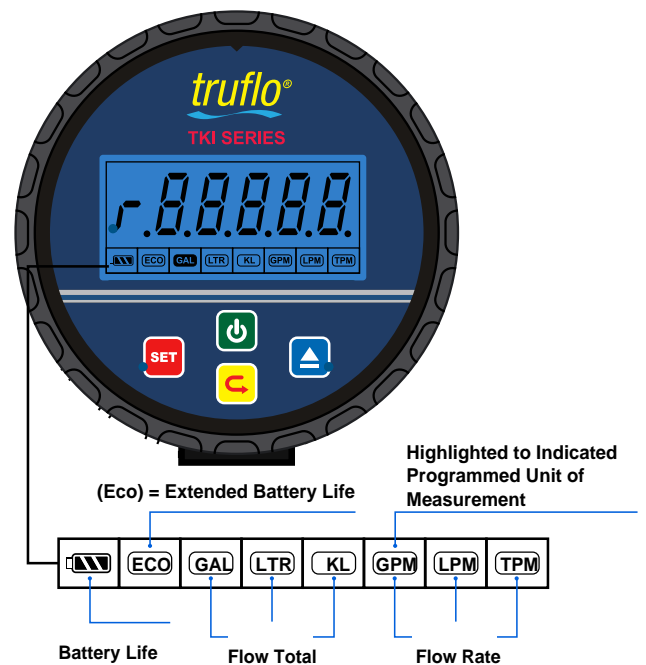
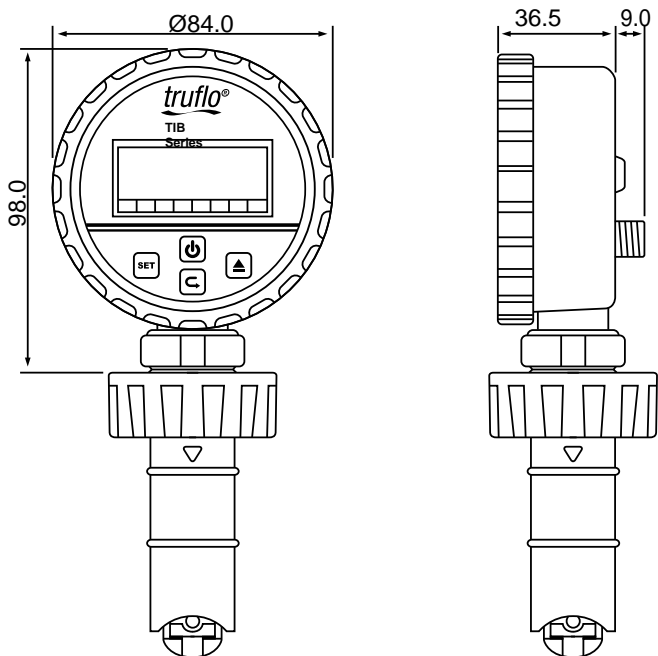


Maximum Pressure | Temperature

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



Dimensions | Display



Press for Increase Value & Press for Decrease Value

Press to Save Value Press to Change Digit

Programming

STEPS	DISPLAY	RANGE	OPERATION
Step-1 Home Screen Press & (HOLD) 3 sec Step-2			Current Flow Rate Total
Step-2 Screen Lock Press Key		0-1	Programming Lock Out Feature LCK= '0' Unlocked : Factory Default LCK= '1' Locked
Step-3 K Factor Press		0.1-9999	Enter K Factor Value See Chart on Page 9
Step-4 Display Mode Press		non Eco	dSP.non - LED Back Light Default is set to 5 secs. dSP-Eco - Back Light Function is not Active Extended Battery Life
Step-5 Back Light Timer Press		1-9999	Time on for Back Light (Secs) *Longer Time = Shorter Battery Life
Step-6 Flow Alarm Delay Press		1-9999	Time Delay for Visual Alarm
Step-7 Reset Totalizer Press		0-1	rESEt.0 - Flow Totalizer Reset Disabled rESEt.1 (Default) - Flow Totalizer Reset Enabled

Programming Display Units

STEPS	DISPLAY	RANGE	OPERATION
Step-1 Display Units Press (HOLD) 3 sec			Press to Select & Press To Confirm Flow Rate - GPM LPM TPM Flow Total - GAL LTR KL

1. Totalizer Reset → Press Both Together for 3 Seconds



2. Sleep Mode → Press for 3 Seconds to Reduce Power Consumption



3. Alarm Setup → Press Both Together for 3 Seconds



Battery Replacement Procedure

Rotor Pin | Paddle Replacement Procedure

<p>01</p> <p>Line up Pin with Rotor Hole</p> <p>Small Pin</p> <p>Rotor Hole</p>	<p>02</p> <p>GENTLY tap pin with Mallet or Hammer</p>	<p>03</p> <p>Tap until Rotor is 50% out</p>
<p>04</p> <p>Pull out Rotor Pin</p>	<p>05</p> <p>Paddle</p> <p>Pull Out Rotor Pin entire way until Paddle Wheel is loose</p>	<p>06</p> <p>Insert New Paddle in Flow Meter</p>
<p>07</p> <p>Push in Rotor Pin approx. 50%</p>	<p>08</p> <p>GENTLY tap Rotor Pin with Mallet or Hammer</p> <p>Ensure Holes are Aligned</p>	<p>09</p> <p>Congratulations! Replacement Procedure Complete!</p>

Min | Max | Flow Rates

Pipe Size (O.D.)	ANSI (ID) (Inches)		DIN (ID) (mm)	Flow Rate (LPM) / USGPM	
	Sch (40)	Sch (80)		0.3m/s min.	10m/s max.
1/2" DN15	0.62	0.55	Ø20	3.5 1.0	120 32
3/4" DN20	0.82	0.74	Ø25	5 1.5	170 45
1" DN25	1.00	0.96	Ø32	9 2.5	300 79
1 1/2" DN40	1.40	1.50	Ø50	25 6.5	850 225
2" DN50	2.00	1.90	Ø63	40 10.5	1350 357
2 1/2"	2.50	2.30	Ø75	60 16	1850 357
3" DN80	3.10	2.90	Ø78	90 24	2800 739
4" DN100	4.00	3.80	Ø96.50	125 33	4350 1149
6" DN150	6.06	5.70	Ø150	230 60	7590 1997
8" DN200	7.94	7.56	Ø200	315 82	10395 2735

K : UWcf' HUVYg

TEE FITTINGS					CLAMP-ON SADDLES					CPVC SOCKET WELD-ON ADAPTERS							
Tee Fitting (Unit:inch)			K-Factor		Sensor Length	Clamp Saddles			K-Factor		Sensor Length	Tee Fitting (Unit:inch)			K-Factor		Sensor Length
Size	DN	Id	CPVC SCH80			Size	DN	Id	CPVC SCH80			Size	DN	Id	CPVC SCH80		
1/2"	15	0.55	1013.04	S	2"	50	1.9	81.65	S	2"	50	1.9	81.65	S			
3/4"	20	0.74	604.80	S	3"	65	2.3	34.96	S	2-1/2"	65	2.3	54.43	S			
1"	25	0.96	408.24	S	4"	80	2.9	19.80	S	3"	80	2.9	34.96	S			
1-1/4"	32	1.30	250.40	S	6"	100	3.8	9.18	L	4"	100	3.8	19.80	S			
1-1/2"	40	1.50	139.86	S	8"	150	5.7	5.21	L	6"	150	5.7	9.18	L			
2"	50	1.90	81.65	S						8"	200	7.0	5.21	L			
2-1/2"	65	2.30	54.43	S						10"	250	9.5	3.43	L			
3"	80	2.90	34.96	S						12"	300	11.3	2.45	L			
4"	100	3.83	19.80	S						14"	350	12.4	1.77	L			
										16"	400	15.1	1.36	L			
										20"	500	19.0	0.86	L			
										24"	600	21.0	0.60	L			

Warranty Information

All warranty and non-warranty repairs being returned must include The RGA number and a fully completed Service Form and Flow Meter. must be returned to Icon Process Controls directly or to the authorized distributor. Product returned without a RGA number and Service Form will not be warranty replaced or repaired. Truflo Flow Meters are warranted out of box but not against any damage, due to Process or Misapplication Failures e.g. High Temperature, Chemical Attack or Physical Mishandling of Product.

TI Series Products

- Industry's Highest Accuracy: $\pm 0.50\%$
- PVC | PP | PVDF
- Retrofits into Signet® Fittings
- Size Range - 1/2" - 24"
- Low Pressure Drop
- Password Protected Security
- Lifetime Warranty on Paddle Wheel Assembly



TIW

Flow Transmitter
Frequency Pulse Output



TIR

Pulse + 4-20mA



TIM

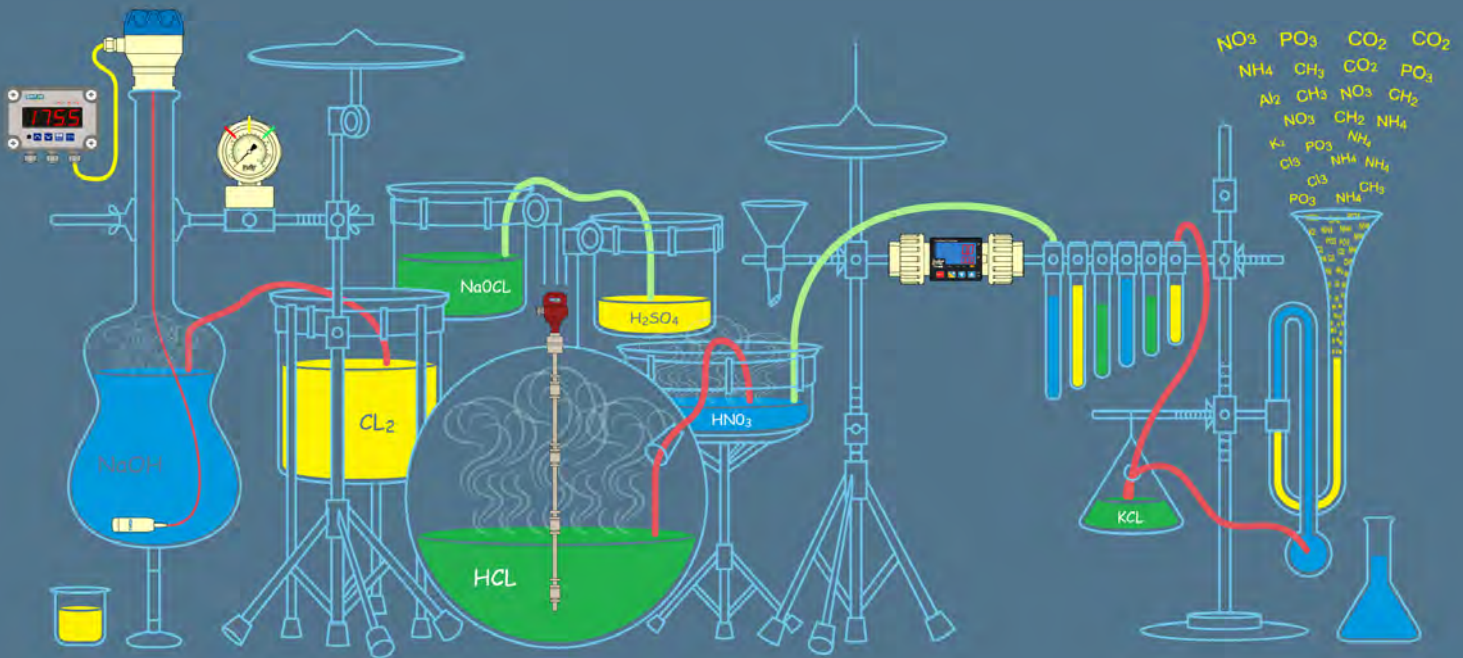
Flow Rate + Total Pulse | 4-20mA



TIP

Flow Rate + Flow Total
Pulse | RS485

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Industry Leading Technology
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All Kinds of Corrosive Liquid S#*%

FLOW + PRESSURE + LEVEL + TEMP