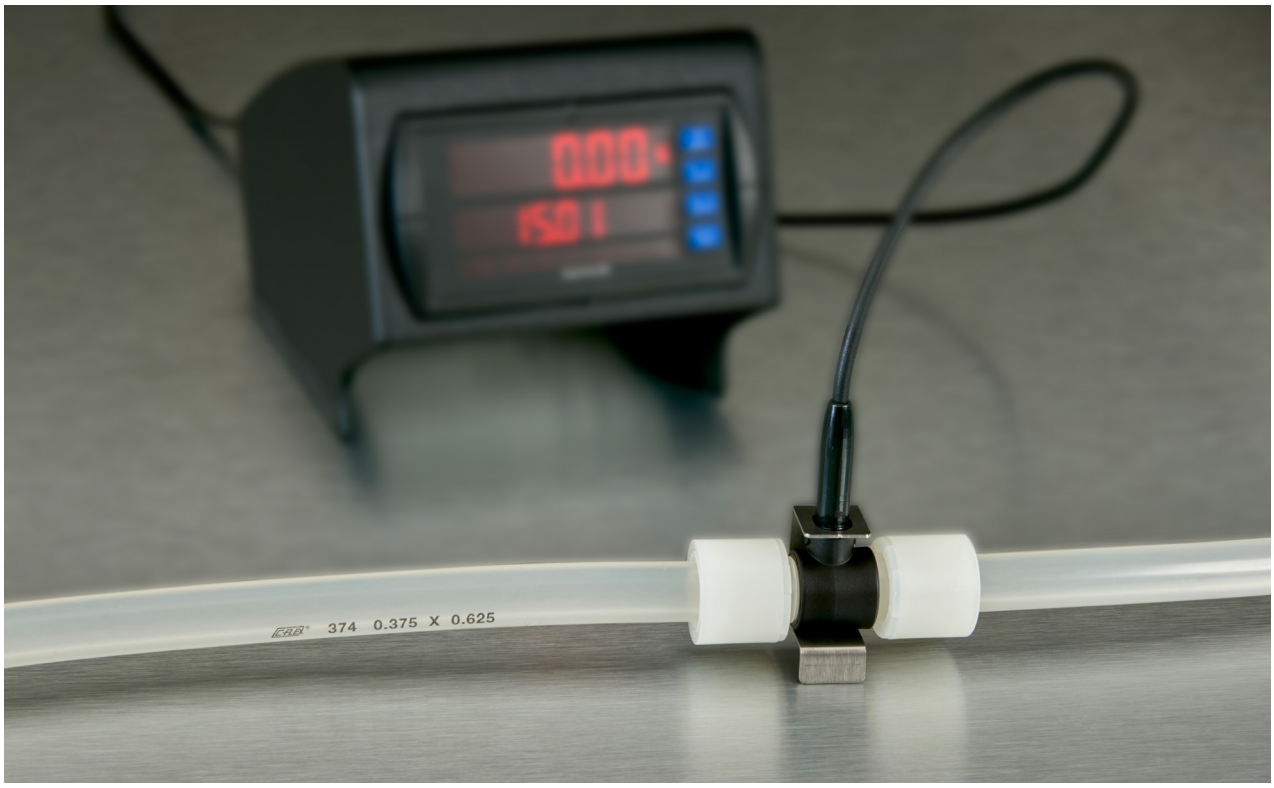
Saint-Gobain Life Sciences

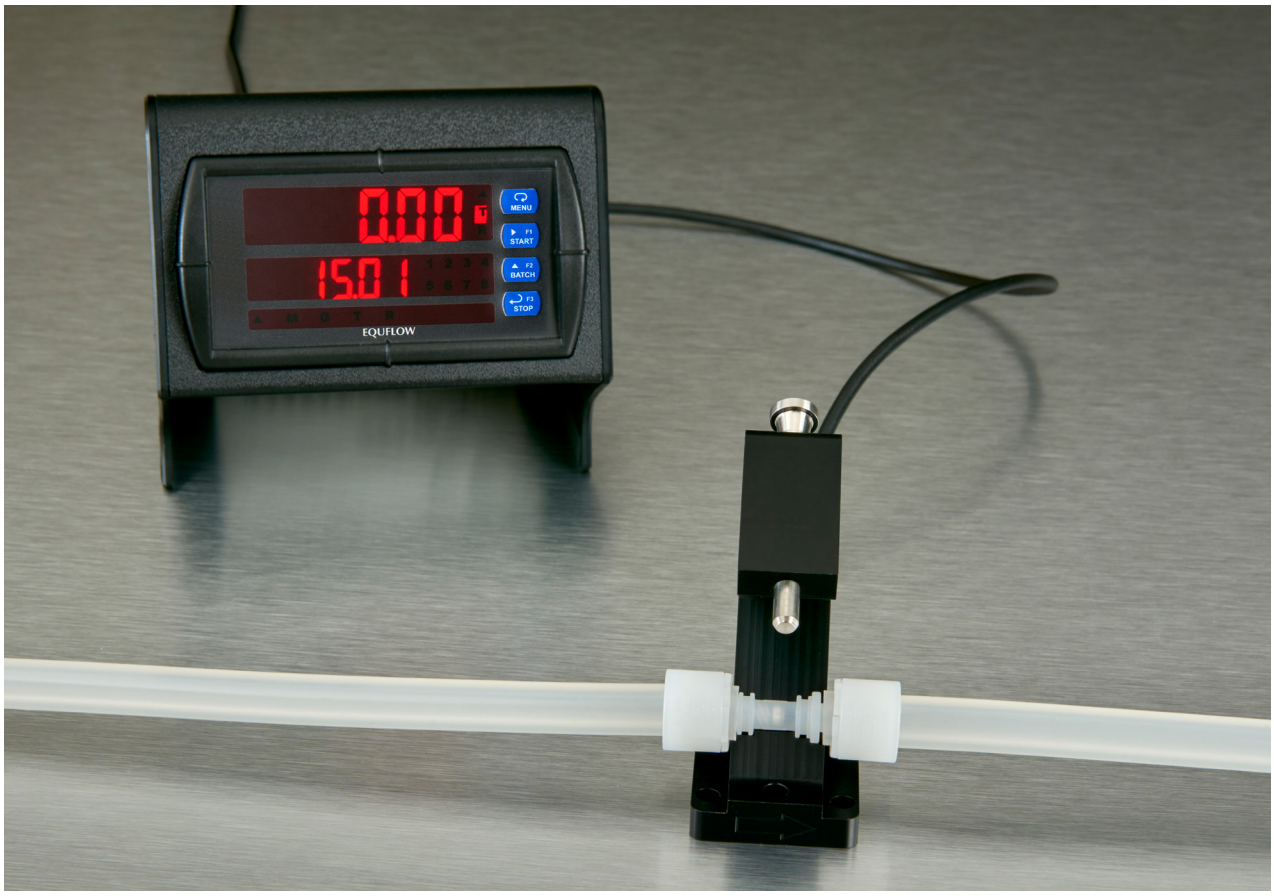


Equflow® Single-Use Flow Sensors:

Precision, Purity, and Performance for Bioprocessing

SAINT-GOBAIN

YOUR **BIOPROCESSING** PARTNER



SAINT-GOBAIN

INTRODUCTION

In the demanding world of bioprocessing, reliability, sustainability, and unparalleled expertise are absolute necessities. Contamination and inefficiency can lead to costly delays and compromised product. Backed by Saint-Gobain Life Sciences' deep material science expertise and designed with an eye on operational efficiency and sustainability, Equflow® Single-Use Flow Sensors are engineered to provide unmatched precision and proven reliability, ensuring your critical bioprocesses run flawlessly. The Equflow® sensor empowers you with the real-time insights you need to optimize your operations and safeguard your valuable products.

KEY ADVANTAGES OF FLOW SENSORS

Equflow® offers a distinct advantage designed specifically for the rigorous demands of bioprocessing:

GUARANTEED STERILITY

Our gamma-sterilizable, single-use PVDF flow tubes eliminate cross-contamination and the need for costly cleaning and re-sterilization.

SMART, COST-SAVING DESIGN

A durable, reusable housing holds the advanced electronics, while the disposable flow tube ensures a sterile fluid path. This design delivers long-term value and reduces operational costs.

UNMATCHED PRECISION

Our innovative, ultra-lightweight turbine rotor design provides exceptional accuracy down to 1%, giving you confidence in your measurements.

SEAMLESS AND EFFICIENT INTEGRATION

Our modular design and multiple mounting options including flexible clips, secure clamps, and robust screw fixtures provides fast and precise integration into any single-use assembly.

EXTENSIVE CO-DESIGN

We offer extensive co-design and customization options for tailored solutions that meet your exact needs.

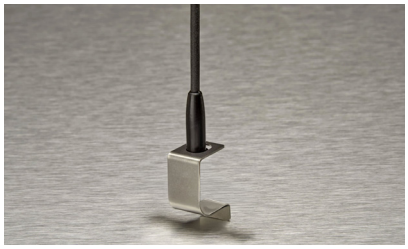
BACKED BY THE SAINT-GOBAIN BRAND

Backed by Saint-Gobain's legacy of material science expertise, you gain a partner committed to your success. Ensuring highly reliable products, we keep sustainability in mind while offering seamless support, reliable lead times, and comprehensive documentation to keep your operations running smoothly.

SELECT YOUR SOLUTION

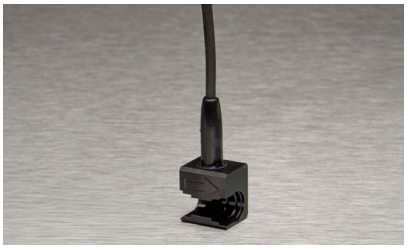
Our two-part flow sensor system is designed for both performance and efficiency. The **reusable electronics housing** stays with your machine, while the **single-use flow tube** ensures a sterile fluid path every time. This smart design delivers long-term value and reduces operational costs.

1 Reusable Housing and Mounting Options



Clip Mounting

Mobile and floating version for a flexible use and ease of installation to suit any single-use assemblies manufacturing tolerances



Clamp

Single screw mounting fixture allowing fixed sensor position and fast exchange of flow tubes

Tubeholder

Four screws mounting fixture for solid and precise positioning on your equipment

2 Single-Use PVDF (Polyvinylidene Fluoride) Flow Tubes

Model 0045	Model 0085	Model 0125	Model 0250
Flow Range: 0.03 - 2.0 l/min	Flow Range: 0.5 - 20.0 l/min	Flow Range: 1.5 - 40.0 l/min	Flow Range: 3.0 - 200.0 l/min
Suitable for 1/4” tubing	Suitable for 3/8” or 1/2” tubing	Suitable for 3/4” tubing	Suitable for 1 1/4” tubing

APPLICATIONS

THE EQUFLOW® ADVANTAGE FOR CRITICAL BIOPROCESSES:

From upstream to downstream, Equflow® sensors provide the critical insights you need:

Depth Filtration

Precisely monitor and control flow to maximize filter capacity, prevent product loss, and maintain absolute product purity.

Tangential Flow Filtration (TFF)

Achieve optimal separation and concentration of biomolecules with accurate measurement of feed, permeate, and retentate streams, ensuring consistent results.

Chromatography

Guarantee precise control of mobile phase flow rates for superior separation and purification of biomolecules, preventing column overloading and ensuring reproducible results.

HOW IT WORKS

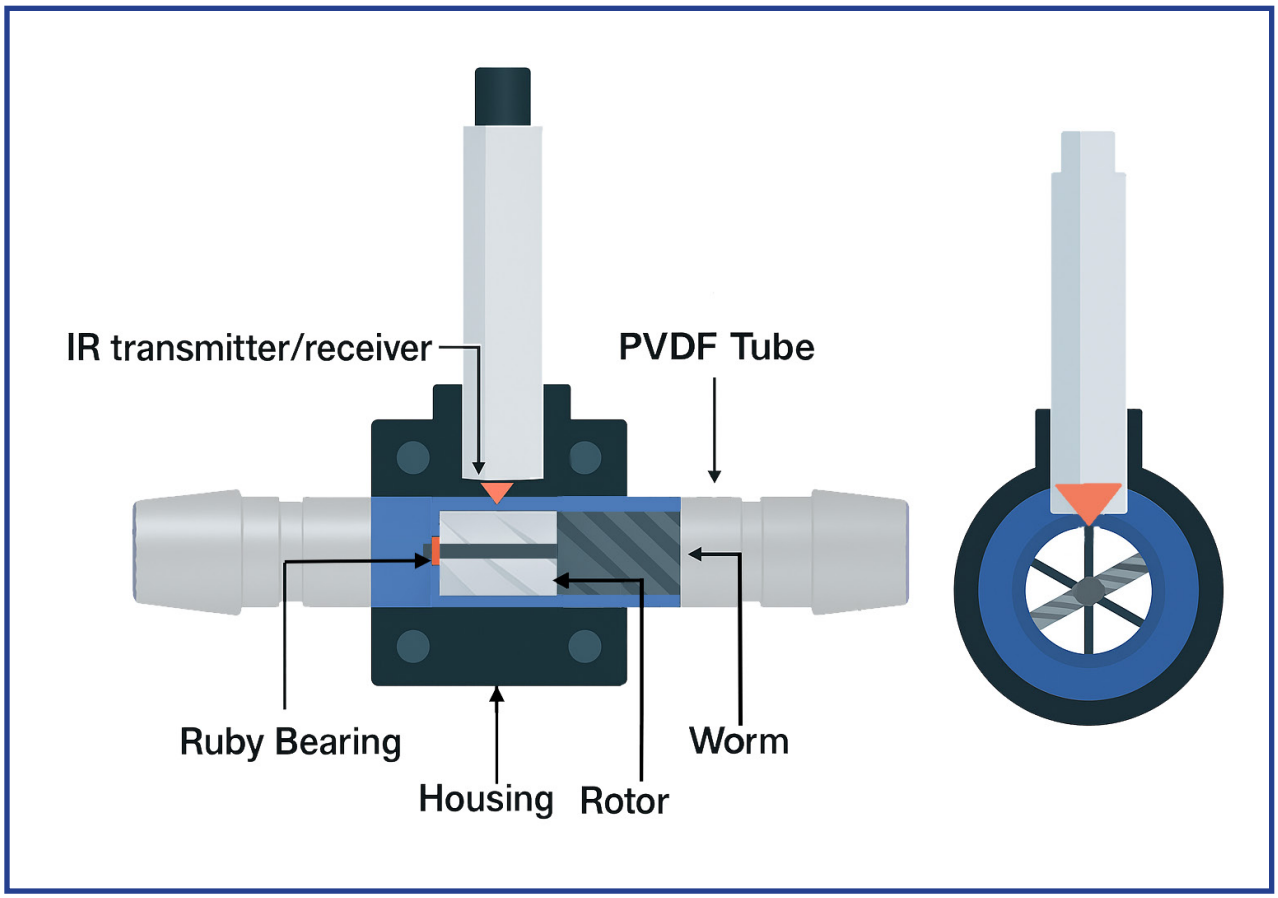
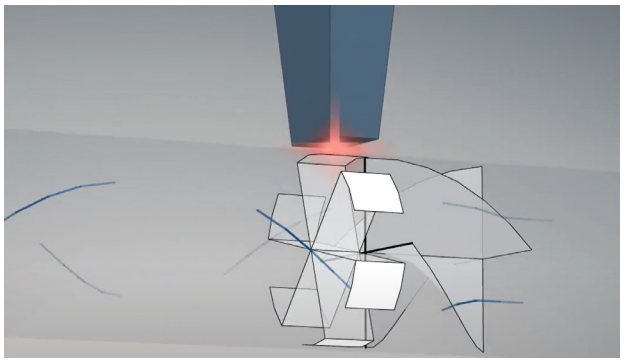
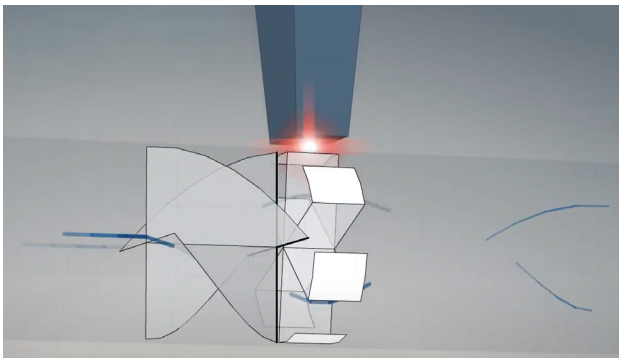


Figure 1: cut-out image of flow sensor

The Equflow® single-use flow sensors operate based on a turbine rotor reflection mechanism — a simple yet precise principle. At the heart of the sensor is an innovative high-resolution, ultra-lightweight turbine rotor. As liquid flows through the sensor, it spins the tiny internal turbine. An infrared (IR) sensor detects each rotation, generating electronic pulses. The frequency of these pulses is directly proportional to the flow rate, providing an accurate and reliable measurement. This data can be used to monitor and automate your processes, ensuring consistent and optimal conditions.

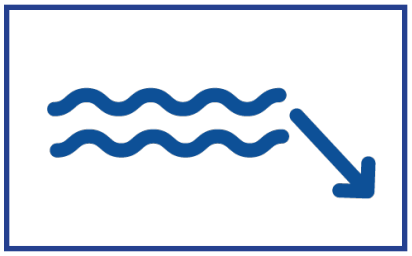




OUR GUIDANCE AND EXPERTISE:

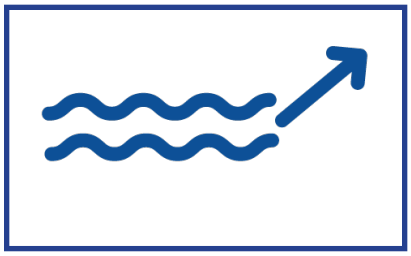
CHOOSING THE RIGHT SYSTEM

Selecting the right flow sensor is crucial for achieving optimal performance in your application. We offer expertise to help you design a system that fits your specific needs.



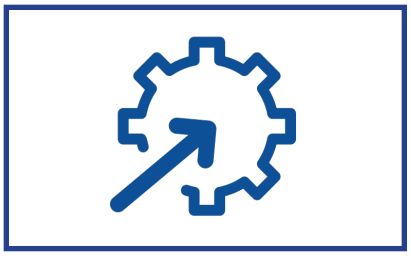
LOW FLOW & HIGH PURITY

If your application involves sensitive or low-volume fluids, such as in cell culture or chromatography, you'll need a smaller-diameter sensor. This ensures a higher level of accuracy and reduces the risk of contamination.



HIGH FLOW & VISCOUS FLUIDS

For demanding applications like fermentation or media preparation, a larger-diameter sensor with a more robust design is ideal. It helps maintain accuracy and durability under high-flow or higher-viscosity conditions.



INTEGRATION & AUTOMATION

Our sensors are designed for seamless integration with process control systems. We can help you automate your bioprocessing operations, ensuring precision and reliability from start to finish.

TECHNICAL SPECIFICATIONS

Accuracy:	1% of reading (5% of reading for 0250 model)
Operating temperature:	-20 to 80°C
Operating viscosity:	0,8-10 cp
Output signal:	5-24 V square wave
Repeatability:	< 0,15%
Power consumption:	34 mA at 5V
Power supply:	5-24 VDC
Sterility of single-use part:	Gamma (50 kGy) and x-ray compatible, sterilizable up to 150°C in autoclave
Wetted materials:	USP Class VI PVDF material and Ruby*

	0045	0085	0125	0250
Inner diameter	4.6 mm (0.18")	9.3 mm (0.37")	14.0 mm (0.55")	25.4 mm (1")
Linear flow range	0.1 – 2.0 L/min (0.03 – 0.53 GPM)	1.0 – 20.0 L/min (0.26 – 5.28 GPM)	3.0 – 40.0 L/min (0.79 – 10.57 GPM)	10.0 – 200.0 L/min (10.64 – 52.83 GPM)
Minimum flow	0.03 L/min (0.008 GPM)	0.5 L/min	1.5 L/min	3.0 L/min
Process connection	7 mm hose barb or 1/8" NPT	(0.13 GPM)	(0.40 GPM)	(0.79 GPM)
Recommended tubing size for hose barb	6 mm (1/4") ID	12 mm hose barb or 13 mm hose barb	19.5 mm hose barb	32 mm hose barb
Max. pressure at 20°C (68°F)	25 Bar (362 psi)	9 mm (3/8") ID or 12.5 mm (1/2") ID	19 mm (3/4") ID	30 mm (1.18") ID
Approx. K-factor (P = pulses)	100,000 P/L (377,000 P/G)	4,800 P/L (18,000 P/G)	1,800 P/L (6,800 P/G)	250 P/L (940 P/G)

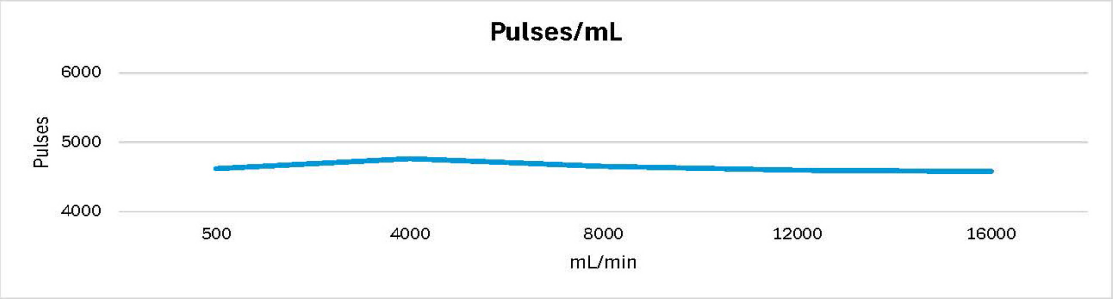
*Also available in PFA (Perfluoroalkoxy)

SINGLE-POINT AND MULTIPOINT CALIBRATION

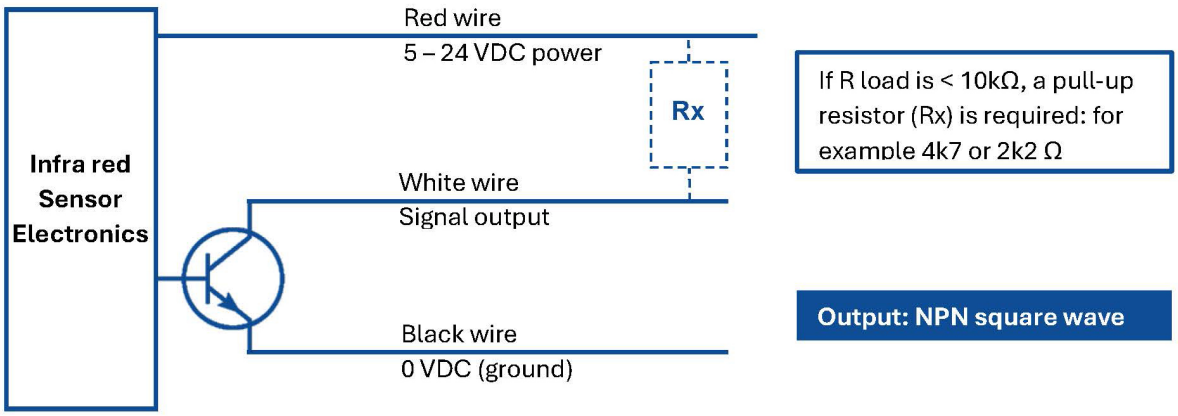
Multipoint calibration involves adjusting a flow sensor's output at multiple known flow rates across its full measurement range. Unlike single-point calibration (which only verifies accuracy at the medium flow rate), multipoint calibration corrects for non-linearities and ensures precision at low, mid, and high flow levels.

CALIBRATION CERTIFICATES AVAILABLE: C1/C5

Test Results:	Accuracy ≤ 1%				
mL/min	500	4000	8000	12000	16000
Pulses/L	4620	4765	4655	4600	4580



Electrical specifications and sensor connections



ORDERING INFORMATION

REUSABLE HOUSING

Item Number	Housing model	Including single-use flow tube	Process connection	Linear flow range L/min (GPM)	Minimum flow L/min (GPM)	ID mm (in)	Sensor cable length m (ft)	UOM	MOQ
0045CHP01TA	Tubeholder	Yes	7 mm HB	0.1 – 2.0 (0.03 – 0.53)	0.03 (0.008)	4.6 (0.18)	1 (3.28)	PC	1 PC
0045CNP01TA	Tubeholder	Yes	1/8" NPT						
0045CXP01TA	Tubeholder	No	N/A						
0045PHP01CA	Clip Mounting	Yes	7 mm HB						
0045PHP01LA	Clamp	Yes	7 mm HB						
0045PNP01CA	Clip Mounting	Yes	1/8" NPT						
0045PNP01LA	Clamp	Yes	1/8" NPT						
0045PXP01CA	Clip Mounting	No	N/A						
0045PXP01LA	Clamp	No	N/A						
0085CHP01TA	Tubeholder	Yes	12 mm HB	1.0 – 20.0 (0.26 – 5.28)	0.5 (0.13)	9.3 (0.37)	1 (3.28)	PC	1 PC
0085CXP01TA	Tubeholder	No	N/A						
0085PHP01CA	Clip Mounting	Yes	12 mm HB						
0085PHP01LA	Clamp	Yes	12 mm HB						
0085PLP01CA	Clip Mounting	Yes	13 mm HB						
0085PXP01CA	Clip Mounting	No	N/A						
0085PXP01LA	Clamp	No	N/A						
0125CHP01TA	Tubeholder	Yes	19.5 mm HB	3.0 - 40.0 (0.79 – 10.57)	1.5 (0.40)	14.0 (0.55)	1 (3.28)	PC	10 PCs
0125CXP01TA	Tubeholder	No	N/A						
0250CHP01TA	Tubeholder	Yes	32 mm HB	10.0 – 200.0 (10.64 – 52.83)	3.0 (0.79)	25.4 (1)	1 (3.28)	PC	10 PCs
0250CXP01TA	Tubeholder	No	N/A						

SINGLE-USE PVDF FLOW TUBES

Item Number	Housing model	Process connection	Linear flow range L/min (GPM)	Minimum flow L/min (GPM)	ID mm (in)	UOM	MOQ
0045PH000CX	Clip Mounting	7 mm HB	0.1 – 2.0 (0.03 – 0.53)	0.03 (0.008)	4.6 (0.18)	PC	10 PCS
0045PH000TX	Tubeholder or Clamp	7 mm HB					
0045PN000CX	Clip Mounting	1/8" NPT					
0045PN000TX	Tubeholder or Clamp	1/8" NPT					
0085PH000CX	Clip Mounting	12 mm HB	1.0 – 20.0 (0.26 – 5.28)	0.5 (0.13)	9.3 (0.37)	PC	10 PCS
0085PH000TX	Tubeholder or Clamp	12 mm HB					
0085PL000CX	Clip Mounting	13 mm HB					
0085PL000TX	Tubeholder or Clamp	13 mm HB					
0125PH000TX	Tubeholder	19.5 mm HB	3.0 – 40.0 (0.79 – 10.57)	1.5 (0.40)	14.0	PC	10 PCS
0250PH000TX	Tubeholder	32 mm HB	1.0 – 20.0 (10.64 – 52.83)	3.0 (0.79)	25.4	PC	10 PCS

RELATED PRODUCTS

- Multi-use sensors (of other materials, different process connections, or for high-pressure usage)
- Useful add-ons to our sensors (signal converters, displays, and controllers)

OUR PILLARS OF COMMITMENT

RELIABILITY

With an extensive global manufacturing footprint and industry-leading quality system, Saint-Gobain Life Sciences is committed to ensuring the reliable performance, durability, safety, and on-time delivery of tubing products to help customers in critical pharmaceutical applications. Our global manufacturing footprint helps us meet the local needs of customers around the world.

EXPERTISE

Saint-Gobain Life Sciences offers a broad selection of tubing materials and sizes to meet the diverse needs of our customers. Backed by decades of experience and a track record of cutting-edge innovation in material science, our experts can provide comprehensive technical support by helping with material selection, compatibility assessment, and optimization to ensure the best performance and process outcomes.

REGULATORY

Saint-Gobain Life Sciences adheres to stringent quality standards and regulatory compliance to guarantee the reliability and safety of our tubing products. Committed to transparency, we make it simple for you to access important information, including our comprehensive Regulatory Information Overview (RIO), available for download on our website here.

SUSTAINABILITY

Saint-Gobain Life Sciences is committed to delivering innovative solutions for the biopharmaceutical market that maximize impact for our customers, while minimizing our footprint. We support sustainable bioprocessing by developing alternative materials, minimizing packaging waste, and planning recycling programs.