



Top product features!

- Thermal sensing principle with no moving parts is more reliable than mechanical switches
- Replaces mechanical switches for monitoring liquids and gases
- Wide measuring range to cover more applications
- LED bar graph display for flow and setpoint
- Additional features such as plug-and-play replacement, real-time recipe changes and diagnostic feedback

ifm's flow switches are an ideal alternative to mechanical flow switches

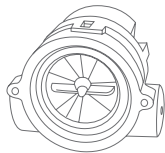


The SI flow switch features microprocessor-based pushbutton programming and highly visible LED status of flow and output conditions. They are ideally suited to flow / no flow applications in most industries.

ifm effector flow switches offer a variety of process connections to fit most applications. This flexibility allows the switch

to be easily installed in many different applications that have various mounting requirements.

ifm effector flow switches are solid state alternatives to mechanical flow switches for sensing the flow rate of liquids and gases. Because there are no moving parts to jam or break, ifm effector flow switches eliminate the maintenance headaches of mechanical flow switches.



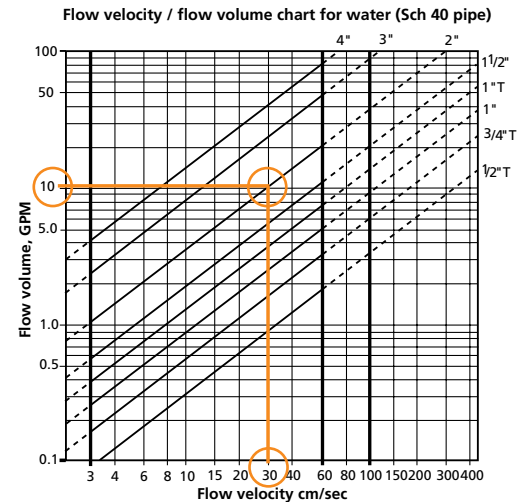
Challenge
Mechanical flow switches that stick.



Solution
ifm flow switches have no moving parts that can stick or break.

How to convert flow rate to flow velocity

1. Find the volumetric flow rate for the switchpoint on the y-axis. (Example: 10).
2. Follow the line horizontally until it intersects the diagonal line for the pipe diameter. (Example: 2").
3. From that intersection point, drop straight down to read the velocity on the x-axis to find the flow velocity. (Example: 30).



Ideal switchpoint setting ranges for the following flow models:

SI 5xxx (see page 165): 3...100 cm/sec. for water
SF xxxx (see page 167): 3...60 cm/sec. for water

If the velocity falls within the ideal switchpoint range (as indicated between the bold lines in the chart: 3...100 cm or 3...60 cm), the switch will be very repeatable. If it does not fall within that range, consider increasing the pipe size or reducing the switchpoint flow rate.

IO-Link

Position Sensors

Motion Control

Vision Sensors

Company

IO-Link

Inductive

Capacitive

Cylinder / valve position

Photoelectrics / lasers / fiber optics

Distance / Application specific

Ultrasonic

Encoders / Speed monitors

2D / 3D inspection



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Product + accessory selector

Output	Process Connection	Ideal Switchpoint Setting Range for Water*	Supply Voltage	Current/Power Consumption	Load Current/Contact Rating	Response Time	Pressure Rating	Part No.	List Price (1-pc.)
1 x PNP, N.O. / N.C.	See required accessories	3...100 cm/sec	19...36 VDC	< 60 mA	250 mA	1...10 sec	4350 psi (300 bar)	SI5010	\$321.00
1 x NPN, N.O. / N.C.	See required accessories	3...100 cm/sec	19...36 VDC	< 60 mA	250 mA	1...10 sec	4350 psi (300 bar)	SI5011	\$321.00
1 x AC relay, N.O./N.C.	See required accessories	3...100 cm/sec	90...240 VAC	< 3.5 VA	3A contact rating	1...10 sec	4350 psi (300 bar)	SI5006	\$399.00

* Refer to technical specs for ideal switchpoint setting range for other media.

Required Accessories

Type	Description	Part No.	List Price (1-pc.)
	1/4" NPT adapter, 316 stainless steel	E40106	\$22.00
	1/2" NPT adapter, 316 stainless steel	E40107	\$24.00
	3/4" NPT adapter, 304 stainless steel	U40085	\$45.00
	1" NPT adapter, 304 stainless steel and brass	U40080	\$72.00
	G1/4 BSPP adapter, 316 stainless steel	E40099	\$22.00
	G1/2 BSPP adapter, 316 stainless steel	E40096	\$27.00
	Weldable adapter, carbon steel	E40113	\$19.00
	Weldable adapter, 316 stainless steel	E40124	\$41.00

Optional Accessories and Cordsets

Type	Description	Part No.	List Price (1-pc.)
	LineRecorder Device, software for parameter setting (requires E30390 cable)	QA0011	\$110.00
	USB IO-Link master cable for parameter setting	E30390	\$367.00
	Memory plug to store sensor's parameters for easy upload without a computer	E30398	\$51.00
	1/2" tee, brass	U40029	\$18.00
	1/2" tee, stainless steel	U40030	\$66.00
	M12 Micro DC (4-pin) 2 m, PUR	EVC001	\$11.00
	M12 Micro DC (4-pin) 5 m, PUR	EVC002	\$15.00
	M12 Micro DC (4-pin) 10 m, PUR	EVC003	\$19.00
	M12 Micro DC (4-pin) 2 m, PUR	EVC004	\$11.00
	M12 Micro DC (4-pin) 5 m, PUR	EVC005	\$15.00
	M12 Micro DC (4-pin) 10 m, PUR	EVC006	\$18.00
	1/2" Micro AC (5-pin) 4 m, PUR (for SI5006)	E18026	\$32.00
	1/2" Micro AC (5-pin) 4 m, PUR (for SI5006)	E18027	\$32.00

For more information on IO-Link, see pages 6 - 21.

Technical Specs

Medium temperature range:	-13...176 °F (-25...80 °C)
Ideal switchpoint setting range for oils:	3...300 cm/sec
Ideal switchpoint setting range for gases:	200...800 cm/sec
Maximum temperature gradient of medium:	300 °C / min
Repeatability:	1...5 cm/sec (for water)
Hysteresis:	2...5 cm/sec (for water)
Wetted parts:	316 stainless steel, FKM
Protection rating:	IP67

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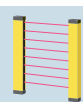
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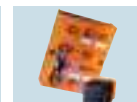
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Top product features!

- 2-piece monitoring system for remote flow indication
- Sensor connects to variety of control monitors
- Ideal for applications where mounting space is limited
- Reduced inventory via modular mounting adapter system
- High temperature model available

Direct or remote mount flow monitoring systems offer a modular solution for installation



Remote flow probe connects to a cabinet control monitor.



Field-mount monitors can be direct mounted or remote mounted.

ifm's flow monitoring system is a modular solution for direct or remote indication of fluids and gases. With no moving parts or paddles to stick or break, ifm's flow monitor provides reliable flow detection in a variety of equipment. This modular solution is ideal for environments with limited mounting space or locations that do not permit local installation of the control monitor.

Cabinet mount control monitor

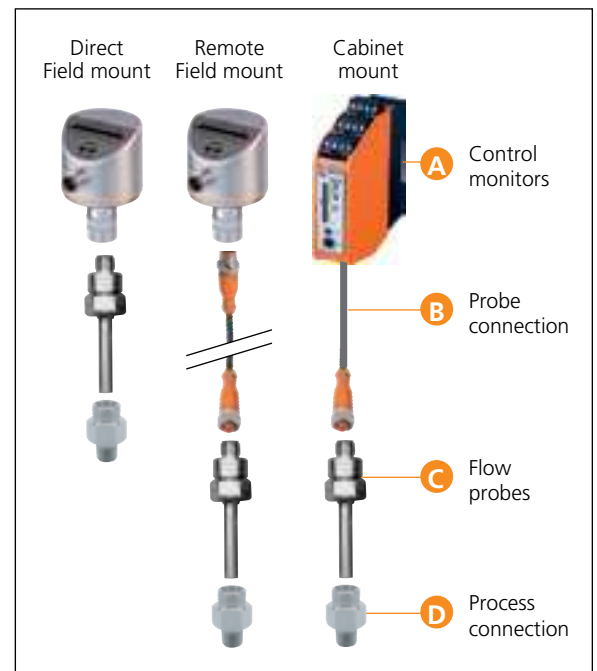
ifm's cabinet mount control monitor offers easy to access terminal connections and can be wired prior to installing inside the control cabinet. The connection to the flow probe is low voltage and does not require a conduit for protection. The control monitor's LED display provides a visual indication of flow and flow setpoint. Separate LEDs indicate temperature and wire break relay output.

Field mount control monitor

ifm's field mount control monitor connects to multiple probes and can be used directly at the application or remote mounted. The monitor features pushbutton programming and a bar graph LED display for visual operating status.

Component guide

Select a control monitor depending on your application. Next, determine an electrical connection, flow probe and process connection.



IO-Link

Position Sensors

Motion Control

Vision Sensors

Company

IO-Link

Inductive

Capacitive

Cylinder / valve position

Photoelectrics / lasers / fiber optics

Distance / Application specific

Ultrasonic

Encoders / Speed monitors

2D / 3D inspection



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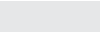



Product + accessory selector





A Control monitors

Type	Description	Output	Power Connection	Operating Voltage	Flow / Temperature / Wire Break Monitoring	Part No.	List Price (1-pc.)
	Field mount control monitor	PNP, N.O. / N.C.	M12 Micro DC	19...36 DC	yes / no / yes	SR5900	\$304.00
	Field mount control monitor	AC, relay, N.O. / N.C.	1/2" Micro AC	90...240 AC	yes / no / yes	SR5906	\$345.00
	Cabinet mount control monitor	3 x SPDT relay	Combicon	24 VDC	yes / yes / yes	SR0150	\$429.00
	Cabinet mount control monitor	3 x SPDT relay	Combicon	90...240 AC	yes / yes / yes	SN0150	\$429.00



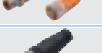


C Flow probes

Type	Process Connection	Probe Connection to SR590x Field Mount	Probe Connection to Sx0150 Cabinet Mount	Part No.	List Price (1-pc.)
	Requires E40106, E40107, U40085, or U40080	Connect directly for field mount or use EVC059 patchcord for remote mount	Use EVC074 cordset for remote mount	SF5200	\$251.00
	6" insertion depth, requires E40174	Connect directly for field mount or use EVC059 patchcord for remote mount	Use EVC074 cordset for remote mount	SF6200	\$290.00
	4" insertion depth, requires E40174	Connect directly for field mount or use EVC059 patchcord for remote mount	Use EVC074 cordset for remote mount	SF6201	\$276.00
	Requires E40106, E40107, U40085, or U40080	Use E11506 connector for remote mount	Wire directly to combicon cable connector	SF5300	\$359.00

D Process connection


Type	Description	Part No.	List Price (1-pc.)
	1/2" NPT adapter (SF6200 or SF6201)	E40174	\$63.00
	1/4" NPT adapter (SF5200 or SF5300)	E40106	\$22.00
	1/2" NPT adapter (SF5200 or SF5300)	E40107	\$23.00
	3/4" NPT adapter, 304 stainless steel	U40085	\$45.00
	1" NPT adapter, 304 stainless steel and brass	U40080	\$72.00

B Cordsets (for power / probe connections)

Type	Description	Part No.	List Price (1-pc.)
	M12 Micro DC cordset (4-pin) 5 m, PUR (for SR5900)	EVC004	\$11.00
	1/2" Micro AC cordset (5-pin), 4 m, PUR (for SR5906)	E18027	\$32.00
	M12 Micro DC patchcord (5-pin), PUR (for SF 5200 or SF 6200)	EVC059	\$35.00
	M12 Micro DC connector (5-pin), PA (for SF 5300)	E11506	\$17.00
	M12 Micro DC cordset (5-pin) 5 m, PUR (for SF 5200 or SF 6200)	EVC074	\$19.00

Technical Specs

Ideal switchpoint setting range for water: 3...60 cm/sec*
 Ideal switchpoint setting range for oils: 9...180 cm/sec
 Ideal switchpoint setting range for gases: 50...600 cm/sec
 Medium temperature:
 SF 5200 and SF 6200: -13...176 °F (-25...80 °C)
 SF 5300: 32...248 °F (0...120 °C)
 Protection rating: IP67 (SR0150, SN0150: IP20)

 For additional cordsets, please call 800-441-8246 or visit www.ifm.com/us

* See flow velocity/flow volume chart for water (page 176)

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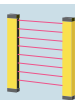
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Top product features!

- Flow meter optimized for water, oils, glycol and air
- ⚙️ Additional features such as plug-and-play replacement, real-time recipe changes and diagnostic feedback
- ⚙️ Digital transmission of two process values: flow rate and temperature
- Fast response time and integrated temperature measurement
- Red / green numeric display for process values and at-a-glance status
- Internal pipe diameter selectable from 0.6" to 16" and selectable outputs for switching, frequency and analog

Thermal flow meter with digital display for liquids and gases

NEW! The new SA Series flow sensors are designed to detect and measure the flow and temperature of oil, water, glycol and air in large internal pipe diameters up to 16 inches.

These volumetric flow sensors operate using the calorimetric measuring principle. The sensor tip houses two RTD elements and a heat source. When power is applied, the tip of the sensor is heated. The flow rate is determined as these RTDs react to the physical effect of a flowing medium conducting heat energy away from the sensor tip. This temperature-based operating principle can reliably sense the flow of virtually any liquid or gas.

Quick setup

A simple pushbutton menu allows the sensor to be programmed to fit your application setpoints. Switching, frequency or analog outputs are also selectable. Designed with an integrated digital display, values may be set in green or red for indicating if process values are within range or if limits have been exceeded. Parameters may also be set via ifm's LineRecorder software or IO-Link.

Various mounting options

ifm's SA Series flow sensors are available in various probe lengths and process connections to fit most mounting requirements.



ifm flow sensors are solid state alternatives to mechanical flow switches. Because there are no moving parts to jam or break, ifm flow switches eliminate the maintenance of mechanical flow switches.

Company	IO-Link		Position Sensors					Motion Control	Vision Sensors
	IO-Link	Inductive	Capacitive	Cylinder / valve position	Photoelectrics / lasers / fiber optics	Distance / Application specific	Ultrasonic	Encoders / Speed monitors	2D / 3D inspection
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Product + accessory selector

Process Connection	RTD Length (mm)	Display Units	Measuring Range (Water)	Measuring Range (Air)	Outputs Switching / Frequency and 4...20 mA Analog Part No.	Outputs Dual 4...20 mA Analog Part No.	List Price (1-pc.)
1/2" NPT	27	% , fps, g/m, cfm, °F	0.15...9.8 ft/s	6.5...328 ft/s	SA6010	SA6014	\$330.00
M18 x 1.5	45				SA5010	SA5014	\$330.00
Compression fitting	100				SA4110	SA4114	\$345.00
	200				SA4310	SA4314	\$355.00
G 1/2 BSPP	19				SA2000	SA2004	\$330.00
M18 x 1.5	45	% , m/s, l/min, m³/h, °C	0.04...3 m/s	2...10 m/s	SA5000	SA5004	\$330.00
Compression fitting	100				SA4100	SA4104	\$345.00
	200				SA4300	SA4304	\$355.00

Required Accessories (for SA4xxx)

Type	Description	Part No.	List Price (1-pc.)
	Compression fitting 1/2" NPT	E40261	\$22.00
	Compression fitting 1/4" NPT	E40262	\$22.00

Required Accessories (for SA5xxx)

Type	Description	Part No.	List Price (USD)
	1/4" NPT adapter	E40106	\$22.00
	1/2" NPT adapter	E40107	\$24.00
	3/4" NPT adapter	U40085	\$45.00

Cordsets

Type	Description	Part No.	List Price (1-pc.)
	M12 Micro DC (4-pin) 2 m, PUR cable	EVC001	\$11.00
	M12 Micro DC (4-pin) 5 m, PUR cable	EVC002	\$15.00
	M12 Micro DC (4-pin) 2 m, PUR cable	EVC004	\$11.00
	M12 Micro DC (4-pin) 5 m, PUR cable	EVC005	\$15.00

Optional Accessories

Type	Description	Part No.	List Price (1-pc.)
	LineRecorder Device, software for parameter setting	QA0011	\$110.00
	USB IO-Link master cable for parameter setting	E30390	\$367.00
	Memory plug, parameter memory for IO-Link sensors	E30398	\$51.00

Technical Specs

Operating voltage:	18...30 VDC
Current consumption:	< 100 mA
Current rating:	250 mA
Accuracy flow measurement:	± (5 % of measured value + 2 % of full range) for water
Accuracy temp monitoring:	± 1.8 °F (1 °C)
Protection:	IP65 / IP67
Housing materials:	316L stainless, steel, PBT
Response time:	0.5 sec. (water)

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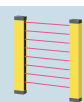
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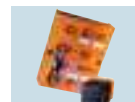
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Top product features!

- Flow meter monitors flow rate and temperature of water and oil-based media
- Additional features such as plug-and-play replacement, real-time recipe changes and diagnostic feedback
- Digital transmission of two process values: flow rate and temperature
- Fast response time 10 ms: great for cycling applications
- Two-color digital display for at-a-glance status
- Ideal for applications with rapid temperature changes of media

ifm mechatronic flow meter

The ifm SBN Series mechatronic flow meter monitors water and oil-based media and provides reliable flow control for various flow applications.

The mechatronic flow meter sensing principle ensures extremely fast response time and can be easily set via pushbuttons or IO-Link.

The SBN mechatronic flow meter is ideal for applications with rapid temperature changes or where fast response time is required, such as:

- Spindle coolant flow monitoring for drilling
- Furnace cooling water flow detection
- Cycling coolant flow monitoring in machining applications

SBN Principle of operation

The flow sensor utilizes a spring-supported piston that is lifted by the flowing medium. The piston position is detected via a magnetic sensor and is output as a binary or analog signal. The spring resets the piston to its initial position with decreasing flow. This allows the sensor to be mounted in any position (horizontally or vertically) and function as a check valve.



The mechatronic sensor reliably monitors the flow of water in cooling loops of an induction furnace.

Company	IO-Link	Position Sensors		Cylinder / valve position	Photoelectrics / lasers / fiber optics	Distance / Application specific	Ultrasonic	Motion Control	Vision Sensors
		Inductive	Capacitive					Encoders / Speed monitors	2D / 3D inspection
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Product + accessory selector

Measuring Range (Flow)	Measuring Range (Temperature)	Output 1	Output 2	Process Connection	Part No.	List Price (1-pc.)
0.1...4 gpm	14...212 °F			3/4" NPT female	SBN232	\$282.00
0.1...6 gpm	14...212 °F	PNP/NPN switching or frequency (flow or temperature)	PNP/NPN switching or 4...20 mA analog (flow or temperature)	3/4" NPT female	SBN233	\$275.00
0.2...10 gpm	14...212 °F			3/4" NPT female	SBN234	\$275.00
0.5...27 gpm	14...212 °F			1" NPT female	SBN246	\$295.00
0.3...15 lpm	-10...100 °C	PNP/NPN switching or frequency (flow or temperature)	PNP/NPN switching or 4...20 mA analog (flow or temperature)	G 1/2 BSPP	SBG232	\$275.00
0.5...25 lpm	-10...100 °C			G 1/2 BSPP	SBG233	\$275.00
1.0...50 lpm	-10...100 °C			G 1/2 BSPP	SBG234	\$275.00
2.0...100 lpm	-10...100 °C			G 3/4 BSPP	SBG246	\$345.00
4.0...200 lpm	-10...100 °C			G 1-1/4 BSPP	SBG257	\$420.00
0.3...15 lpm	-10...100 °C	PNP/NPN switching or frequency (flow or temperature)	PNP/NPN switching or 4...20 mA analog (flow or temperature)	R 3/4 BSPT	SBY232	\$275.00
0.5...25 lpm	-10...100 °C			R 3/4 BSPT	SBY233	\$275.00
1.0...50 lpm	-10...100 °C			R 3/4 BSPT	SBY234	\$275.00
2.0...100 lpm	-10...100 °C			R 1 BSPT	SBY246	\$295.00
4.0...200 lpm	-10...100 °C			R 1-1/2 BSPT	SBY257	\$395.00

Optional Accessories

Type	Description	Part No.	List Price (1-pc.)
	LineRecorder Device, software for parameter setting (requires E30390 cable)	QA0011	\$110.00
	USB IO-Link master cable for parameter setting	E30390	\$367.00
	Memory plug to store sensor's parameters for easy upload without a computer	E30398	\$51.00

Cordsets

Type	Description	Part No.	List Price (1-pc.)
	M12 Micro DC (4-pin) 2 m, PUR cable	EVC001	\$11.00
	M12 Micro DC (4-pin) 5 m, PUR cable	EVC002	\$15.00
	M12 Micro DC (4-pin) 10 m, PUR cable	EVC003	\$19.00
	M12 Micro DC (4-pin) 2 m, PUR cable	EVC004	\$11.00
	M12 Micro DC (4-pin) 5 m, PUR cable	EVC005	\$15.00
	M12 Micro DC (4-pin) 10 m, PUR cable	EVC006	\$19.00

For more information on IO-Link, see pages 6 - 21.

Technical Specs

Operating voltage:	18...30 VDC
Current consumption:	< 50 mA
Accuracy flow measurement:	± (4 % measured value + 1 % full range)
Accuracy temp monitoring:	± 5.4 °F (3 °C)
Protection:	IP65 / IP67
Wetted parts:	316, 316L stainless steel, brass, nickel-plated brass, PPS, FKM



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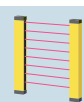
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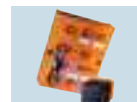
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Top product features!

- Vortex flow meter simultaneously monitors flow rate up to 25 gpm and fluid temperature up to 194° F
- Additional features such as plug-and-play replacement, real-time recipe changes and diagnostic feedback
- Digital transmission of two process values: flow rate and temperature
- Two-color TFT digital display rotates for at-a-glance status
- Mounts in-line with rotatable process connections for quick installation
- Selectable outputs for switching and frequency or dual analog

Reliable vortex flow meter for water-based applications

NEW! ifm's SV Series vortex flow meter is designed to simultaneously monitor flow rate and detect fluid temperature of circulating water in industrial applications.

Encased in a compact robust housing for harsh environments, the meter utilizes the vortex flow principle. Behind a blunt body (or shedder) integrated in a measuring pipe, the flowing medium generates swirling vortices depending on the velocity. A piezoceramic sensor detects these vortices. Since the cross-section of the pipe is known, the number of the vortices determines the flow rate, independent of the medium's pressure and temperature fluctuations. The vortex flow technology enables a simple sensor design that can be easily manufactured at a very low cost.

At-a-glance display and easy installation takes less than five minutes

The meter provides a high contrast TFT LCD digital display that can be customized to best suit the application. The setpoints are established through a simple pushbutton menu by using scroll and enter buttons. The meter can be programmed to provide switching output (flow rate and/or temperature), flow frequency, or analog output (flow rate or temperature).

The meter's NPT process connection is easy to mount in line and fits either 1/2 inch or 3/4 inch piping.

With features that ensure reliability and convenience, ifm's compact SV Series Vortex flow meter offers an excellent price / performance value.



In welding applications, it is essential to control the flow rate and temperature of cooling water to prolong the life of the welding tip and to assure that the weld cools rapidly for optimum quality. The SV Vortex flow meter is an ideal solution.

Company	IO-Link		Position Sensors					Motion Control	Vision Sensors	
			Inductive	Capacitive	Cylinder / valve position	Photoelectrics / lasers / fiber optics	Distance / Application specific	Ultrasonic	Encoders / Speed monitors	2D / 3D inspection
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Product + accessory selector

Measuring Range (Flow)	Measuring Range (Temperature)	Output 1	Output 2	Process Connection	Part No.	List Price (USD)
0.3...5.3 gpm				1/2" NPT	SV4610	\$283.00
0.6...10.5 gpm	14...194 °F	PNP/NPN switching or frequency (flow)	PNP/NPN switching or frequency (flow or temp)	1/2" NPT	SV5610	\$283.00
1.3...26.3 gpm				3/4" NPT	SV7610	\$299.00
0.3...5.3 gpm				1/2" NPT	SV4614	\$283.00
0.6...10.5 gpm	14...194 °F	4...20 mA scalable analog (temp)	4...20 mA scalable analog (flow)	1/2" NPT	SV5614	\$283.00
1.3...26.3 gpm				3/4" NPT	SV7614	\$299.00
1...20 lpm				G 1/2 BSPP	SV4200	\$283.00
2...40 lpm	-10...90 °C	PNP/NPN switching or frequency (flow)	PNP/NPN switching or frequency (flow or temp)	G 1/2 BSPP	SV5200	\$283.00
5...100 lpm				G 3/4 BSPP	SV7200	\$299.00
1...20 lpm				G 1/2 BSPP	SV4204	\$283.00
2...40 lpm	-10...90 °C	4...20 mA scalable analog (temp)	4...20 mA scalable analog (flow)	G 1/2 BSPP	SV5204	\$283.00
5...100 lpm				G 3/4 BSPP	SV7204	\$299.00
1...20 lpm				R 1/2 BSPT	SV4500	\$283.00
2...40 lpm	-10...90 °C	PNP/NPN switching or frequency (flow)	PNP/NPN switching or frequency (flow or temp)	R 1/2 BSPT	SV5500	\$283.00
5...100 lpm				R 3/4 BSPT	SV7500	\$299.00
1...20 lpm				R 1/2 BSPT	SV4504	\$283.00
2...40 lpm	-10...90 °C	4...20 mA scalable analog (temp)	4...20 mA scalable analog (flow)	R 1/2 BSPT	SV5504	\$283.00
5...100 lpm				R 3/4 BSPT	SV7504	\$299.00

Optional Accessories

Type	Description	Part No.	List Price (1-pc.)
	Mounting plate	E40249	\$6.00
	LineRecorder Device, software for parameter setting (requires E30390 cable)	QA0011	\$110.00
	USB IO-Link master cable for parameter setting	E30390	\$367.00
	Memory plug to store sensor's parameters for easy upload without a computer	E30398	\$51.00

Cordsets

Type	Description	Part No.	List Price (1-pc.)
	M12 Micro DC, 2 m, PUR cable	EVC001	\$11.00
	M12 Micro DC, 5 m, PUR cable	EVC002	\$15.00
	M12 Micro DC, 2 m, PUR cable	EVC004	\$11.00
	M12 Micro DC, 5 m, PUR cable	EVC005	\$15.00

Technical Specs

Operating voltage:	18...30 V DC
Current consumption	typ. 25 (at 24 V) mA
Accuracy flow measurement	2 % of full range
Accuracy temperature monitoring	± 1.8 °F (1 °C)
Medium temperature	14...194 °F (-10...90 °C)
Protection rating	IP 65 / IP 67
Max. pressure	175 psi
Wetted parts	316L stainless steel, PTFE, PA6T, PPS, FKM

For more information on IO-Link, see pages 6 - 21.

Safety Technology

Process Sensors

Industrial Networks

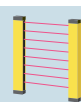
ID Systems

Machine Condition

Power Supplies

Wiring Technology

Safety products



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Pressure



156 - 175

Flow



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Level



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Temperature



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AS-i network



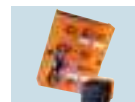
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Safety systems



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RF identification systems



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Diagnostic systems



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Power supplies



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Cordset solutions



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Top product features!

- Magnetic inductive flow technology provides high-precision measurement of all conductive media up to 160 gpm
- ⚙️ Additional features such as plug-and-play replacement, real-time recipe changes and diagnostic feedback
- 📡 Digital transmission of three process values: flow rate, flow volume and temperature
- Compact, in-line stainless steel housing with NPT connection – fits up to 2" pipes
- 4-digit numeric display indicates flow rate, total volume and temperature
- No compromise in quality – high performance at a great price

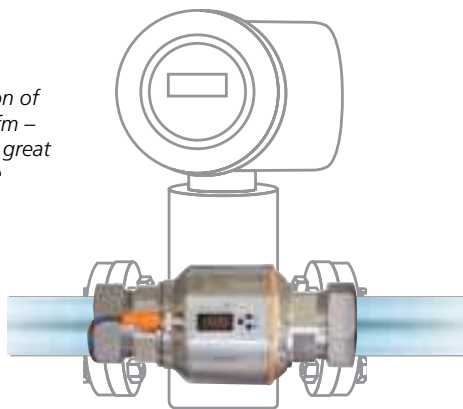
The next generation of magmeters from ifm



ifm's SM Series Magmeter is designed to reliably detect the flow rate of conductive media up to 160 gallons per minute. The stainless steel, mechanically-robust design mounts directly in-line providing a compact, low-profile installation for process control.

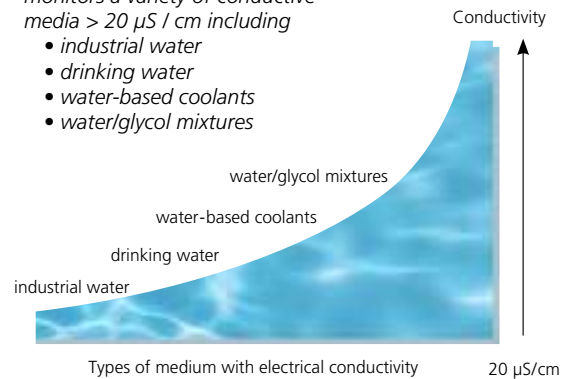
A 4-digit numeric display with pushbutton setup simultaneously indicates flow rate, fluid temperature and total volume. Simple to setup and easy to install, the SM is a reliable alternative to traditional flow meters and mechanical flow switches.

The next generation of magmeters from ifm – smaller in size at a great price/performance



The volumetric flow meter monitors a variety of conductive media > 20 $\mu\text{S/cm}$ including

- industrial water
- drinking water
- water-based coolants
- water/glycol mixtures



Typical applications

- Flow and temperature monitoring through heat exchangers
- Guard welding equipment against loss of cooling water
- Batching applications
- Totalize flow of process water
- Pump run dry protection

IO-Link

IO-Link

Company



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Position Sensors

Inductive

Capacitive

Cylinder / valve position

Photoelectrics / lasers / fiber optics

Distance / Application specific

Ultrasonic



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Motion Control

Encoders / Speed monitors



120 - 127

Vision Sensors

2D / 3D inspection



128 - 143



Product + accessory selector

Measuring Range (Flow)	Measuring Range (Temperature)	Output 1	Output 2	Display Units Available	Empty Pipe Detection	Process Connection	Part No.	List Price (1-pc.)
0...6.6 gpm		PNP / NPN Switching or pulse (flow)	PNP / NPN Switching or 4...20 mA / 0...10 V DC Scaleable analog (flow or temperature)	gpm, gph, gal, °F	No	1/2" NPTF	SM6601	\$513.00
0...13.2 gpm	-4...176 °F					3/4" NPTF	SM7601	\$617.00
0...26.4 gpm						1" NPTF	SM8601	\$719.00
0...80 gpm	-4...176 °F	PNP / NPN Switching, pulse or frequency (flow)		gpm, gph, gal, °F	Yes	1-1/2" NPTF	SM9601	\$961.00
0...160 gpm						2" NPTF	SM2601	\$999.00
0...13.2 gpm		4...20 mA Scaleable analog (temperature)	4...20 mA Scaleable analog (flow)	gpm, gph, lpm, m ³ /h, °F, °C	No	3/4" NPTF	SM7604	\$617.00
0...26.4 gpm	-4...176 °F					1" NPTF	SM8604	\$719.00
0...80 gpm						1-1/2" NPTF	SM9604	\$961.00
0...160 gpm						2" NPTF	SM2604	\$999.00

Optional Accessories

Type	Description	Part No.	List Price (1-pc.)
	LineRecorder Device, software for parameter setting (requires E30390 cable)	QA0011	\$110.00
	USB IO-Link master cable for parameter setting	E30390	\$367.00
	Memory plug to store sensor's parameters for easy upload without a computer	E30398	\$51.00

Cordsets

Type	Description	Part No.	List Price (1-pc.)
	M12 Micro DC (4-pin) 2 m, PUR	EVC001	\$11.00
	M12 Micro DC (4-pin) 5 m, PUR	EVC002	\$15.00
	M12 Micro DC (4-pin) 2 m, PUR	EVC004	\$11.00
	M12 Micro DC (4-pin) 5 m, PUR	EVC005	\$15.00

For more information on IO-Link, see pages 6 - 21.

Technical Specs

Fluid conductivity	≥ 20 µS / cm
Fluid viscosity	≤ 70 cSt at 104 °F
Supply voltage	19...30 VDC (20...30 VDC SMxxx4)
Accuracy (flow)	< ± (0.8% measured value + 0.5% of full range)
Repeatability (flow)	± 0.2% of full range
Response time (flow)	< 150 msec
Accuracy (temperature)	± 4.5 °F (2.5 °C)
Response time (temperature)	T09 = 30 sec
Pressure rating	232 psi (16 bar)
Wetted parts	316L stainless steel, PEEK™, FKM
Protection rating	IP67



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Easy ordering via eShop

Safety Technology

Process Sensors

Industrial Networks

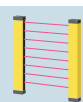
ID Systems

Machine Condition

Power Supplies

Wiring Technology

Safety products



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Pressure



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Flow



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Level



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Temperature



208 - 225

AS-i network



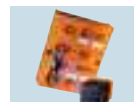
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Safety systems



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RF identification systems



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Diagnostic systems



254 - 259

Power supplies



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Cordset solutions



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Top product features!

- Magnetic inductive flow technology provides high-precision measurement of all conductive media up to 160 gpm
- ⚙️ Additional features such as plug-and-play replacement, real-time recipe changes and diagnostic feedback
- 📡 Digital transmission of three process values: flow rate, flow volume and temperature
- Compact, in-line stainless steel housing fits up to 2" pipes
- 4-digit numeric display indicates flow rate, total volume and temperature
- No compromise in quality – high performance at a great price

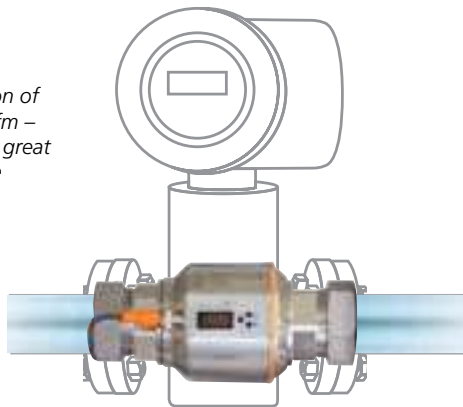
The next generation of magmeters from ifm



ifm's SM Series Magmeter is designed to reliably detect the flow rate of conductive media up to 160 gallons per minute. The stainless steel, mechanically-robust design mounts directly in-line providing a compact, low-profile installation for process control.

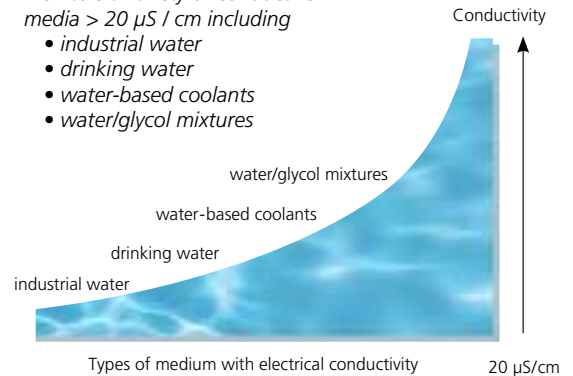
A 4-digit numeric display with pushbutton setup simultaneously indicates flow rate, fluid temperature and total volume. Simple to setup and easy to install, the SM is a reliable alternative to traditional flow meters and mechanical flow switches.

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The volumetric flow meter monitors a variety of conductive media > 20 $\mu\text{S/cm}$ including

- industrial water
- drinking water
- water-based coolants
- water/glycol mixtures



Typical applications

- Flow and temperature monitoring through heat exchangers
- Guard welding equipment against loss of cooling water
- Batching applications
- Totalize flow of process water
- Pump run dry protection

IO-Link

Company

IO-Link

Position Sensors

Inductive

Capacitive

Cylinder / valve position

Photoelectrics / lasers / fiber optics

Distance / Application specific

Ultrasonic

Motion Control

Encoders / Speed monitors

Vision Sensors

2D / 3D inspection



1 - 5



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Top product features!

- Simultaneously monitors flow rate, fluid temperature and totals liquid volume
- Monitors water, glycol and oil up to 53 gpm
- Integrated display with pushbutton setup
- Ultrasonic sensing principle uses no moving parts
- Selectable outputs for switching, totalizer and pulse

ifm's in-line flow meter provides accurate feedback for your critical flow applications



The SU Ultrasonic Flow meter is designed to simultaneously monitor flow rate, detect fluid temperature and provide a totalizer function for a variety of flow applications. With its compact design, the ultrasonic flow meter is intended for small diameter pipes – 1" or less.

The meter provides a four-digit numeric display of the liquid's flow rate (gal/min or l/min), total quantity accumulated (gallons or liters), and medium temperature (°F or °C). The setpoints are established

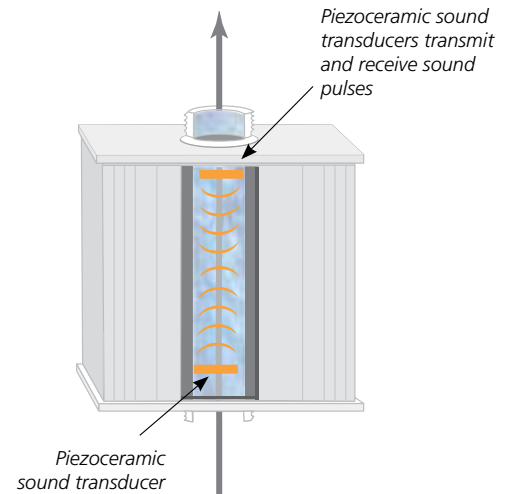
through a simple pushbutton setup. The meter can be programmed to provide switching output (flow rate and/or temperature), pulse output (flow volume), or analog output (flow rate or temperature).

Batching applications

The ultrasonic flow meter has the capability to count the number of gallons of fluid. In addition to the totalizer display, the meter provides a pulse output for each gallon (or liter).



SU Ultrasonic Flow Meter – Principle of Operation



Ultrasonic technology is based on the differential transit time principle. Sound pulses are alternately emitted and detected with and against the direction of flow using piezoceramic sound transducers. The flow rate is calculated from the difference of the transit time.

Company	IO-Link	Position Sensors			Cylinder / valve position	Photoelectrics / lasers / fiber optics	Distance / Application specific	Ultrasonic	Motion Control	Vision Sensors
		Inductive	Capacitive					Encoders / Speed monitors		
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Product + accessory selector

Measuring Range (Flow)	Output 1	Output 2	Measuring Range (Temperature)	Display Units Available	Part No.	List Price (1-pc.)
0...13.2 gpm	PNP / NPN Switching or pulse (flow)	PNP / NPN Switching / 4...20 mA / 0...10V Scaleable analog (flow or temperature)	14...176 °F	gpm, gph, gal, °F	SU7001	\$739.00
0...26.4 gpm					SU8001	\$763.00
0...53 gpm					SU9001	\$1,320.00
0...50 lpm	PNP / NPN Switching or pulse (flow)	PNP / NPN Switching / 4...20 mA / 0...10V Scaleable analog (flow or temperature)	-10...80 °C	lpm, m³/h, L, °C	SU7000	\$739.00
0...100 lpm					SU8000	\$801.00
0...200 lpm					SU9000	\$1,320.00
0...200 lpm	4...20 mA Scaleable analog (temperature)	4...20 mA Scaleable analog (flow)	14...176 °F (-10...80 °C)	lpm, m³/h, gpm, gph, °C, °F	SU9004	\$1,320.00

Required Accessories (2 adapters per package)

Type	Description	Use With	Part No.	List Price (1-pkg.)
	1/2" NPT adapter	SU7	E40191	\$58.00
	1/2" NPT adapter	SU8	E40192	\$58.00
	3/4" NPT adapter	SU8	E40193	\$58.00
	1" NPT female adapter	SU8	US0041	\$54.00
	1" NPT adapter	SU9	E40206	\$223.00

Adapter material: 316 stainless steel

Optional Accessories and Cordsets

Type	Description	Part No.	List Price (1-pc.)
	SU mounting bracket	E40166	\$27.00
	M12 Micro DC (4-pin) 2 m, PUR	EVC001	\$11.00
	M12 Micro DC (4-pin) 5 m, PUR	EVC002	\$15.00
	M12 Micro DC (4-pin) 10 m, PUR	EVC003	\$19.00
	M12 Micro DC (4-pin) 2 m, PUR	EVC004	\$11.00
	M12 Micro DC (4-pin) 5 m, PUR	EVC005	\$15.00
	M12 Micro DC (4-pin) 10 m, PUR	EVC006	\$19.00

▶ Can't find the right sensor for your application, call 800-441-8246 or visit www.ifm.com/us

Technical Specs

Supply voltage: 19...30 VDC
 Maximum load current: 2 x 250 mA
 Accuracy (flow): SU7, SU8, SU9: ±3% of measured value + 0.2% of full range (water)
 SU7 and SU8: ±5% of measured value + 0.5% of full range (oil and glycol)
 SU9: ±8% of measured value + 0.5% of full range (oil and glycol)
 Repeatability (flow): SU7, SU8: 0.2% of full range
 SU9: 0.5% of full range
 Response time (flow): < 0.25 sec
 Load resistance for analog output: 4...20 mA: max 500Ω / 0...10V: min. 2,000Ω
 Pressure rating: 232 psi (16 bar)
 Wetted parts: Stainless steel (316L); FKM; PES (Ultrason 2010); Centellen 200
 Protection rating: IP67

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Safety Technology	Process Sensors				Industrial Networks			ID Systems	Machine Condition	Power Supplies	Wiring Technology
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