

TURCK
works

Industrial
Automation

**Digital Read
Out Flow
Monitors**



www.turck.com

TURCK

Instrumentation Products

TURCK: Delivering Advanced Automation Products

As the market for automation components continues to evolve and requires smarter, smaller, more robust sensing and productivity products, **TURCK** is rising to meet these challenges with a complete offering of automation components. Established as the industry's leading brand in proximity sensors, the **TURCK** name is synonymous with high-quality, rugged sensing products. Now users can expect that same quality in an expanded offering of automation products that will help improve their processes and profits.

A Digital Read Out Flow Sensor for Your Flow Monitoring Applications

The rugged design and high repeatability of **TURCK's** Digital Read Out (DRO) flow sensor brings a new level of reliability to flow monitoring. This self-contained, fully programmable sensor allows for both flow and temperature monitoring, and features a highly visible three-digit display that can alternate between flow rate and media temperature when required.

The DRO flow monitor allows the user to program set points specific to an application, and can be programmed to perform in many different media, such as water, glycol and Galden HT110. If the fluid is a glycol/water mix, the percentage of glycol can be selected so that the monitor can adjust to each unique application without the need for factory calibration. The DRO flow monitor has an adjustable filter to smooth out a variety of erratic flow conditions, and is able to monitor changes in flow as low as 0.2 gallons per minute (GPM) or as fast as 12 GPM.

This unique flow monitor can be programmed with two different set points to reflect flow rate. It can be programmed to have one set point monitor flow and one point monitor temperature. A model with 4 set-points is also available, where two points monitor flow and two points monitor temperature. And an analog current monitor is available with one set-point.

The DRO flow monitor also features programmable on and off time delay functions, and allows the user to define hysteresis for both the flow and temperature set-points. It is manufactured with a standard **euromast**® M12 connector, has a pressure rating of 145 psi, and can be ordered with a number of different fluid connections; making the DRO flow monitor an economical solution for your demanding flow applications.



Typical Applications:

- Weld Tip Protection
- Transformer Cooling
- Semiconductor Chamber Cooling
- Hot Roller Coolant

Solid-State with No Intrusive or Moving Parts

The DRO flow monitor is an in-line device that approximates flow rate without disrupting the flow. Typical flow monitors often need to be installed by a specialist so that the monitor is precisely oriented to the direction of flow. These devices are also prone to material build up, which can affect the accuracy of the monitor.

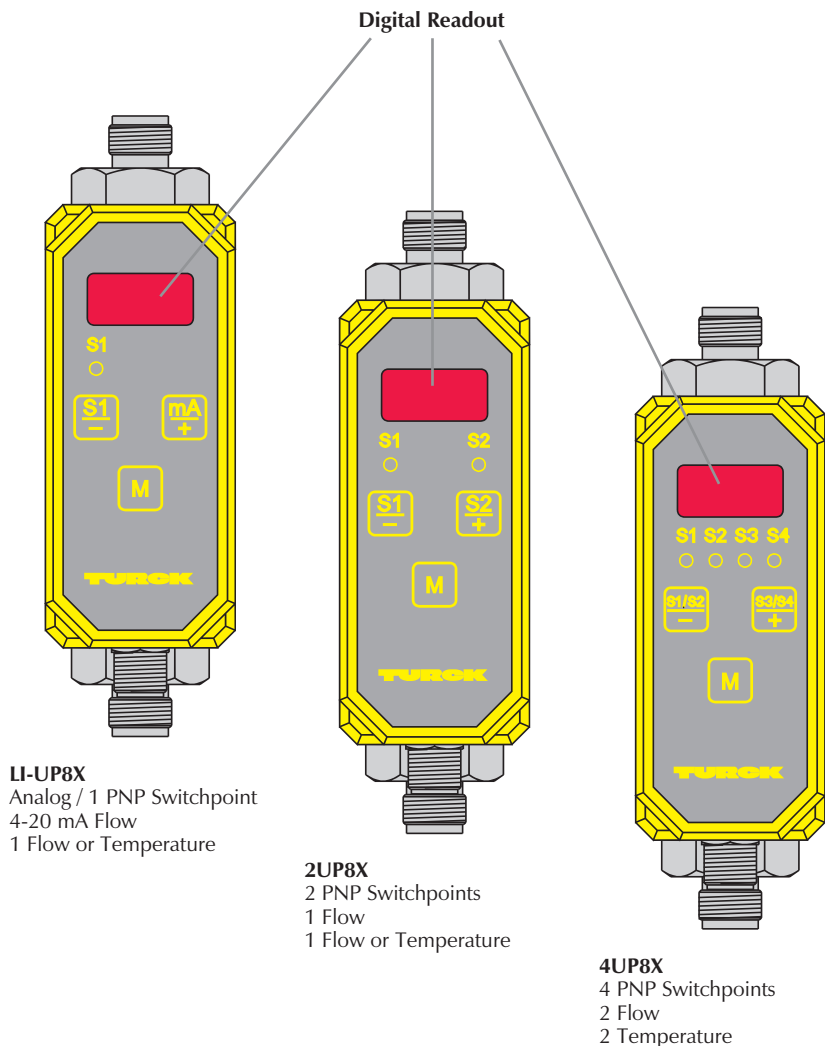
The DRO flow monitor is a solid-state device that operates on the calorimetric principle, resulting in a sensor with no moving parts that can break or become lodged in the pipeline. This technology, combined with the in-line mounting of the sensor, allows the DRO flow monitor to perform dependably in a variety of demanding applications without concern for flow restriction or expensive downtime.

Product Features

- Selectable Media Inputs
- Flow/Temperature Readout
- User Programmable Set-Points
- User Programmable Keypad
- Mounts Directly Into Pipeline
- 3 Digit - Highly Visible Display
- Adjustable On and Off Delay
- Adjustable Filtering
- Low Pressure Drop
- Solid-State Device
- Stainless Steel Wetted Parts
- Password Protected Programming

Selectable Media

- Water
- Deionized Water
- Ethylene Glycol (0-70%)
- Galden® HT110
- Galden® HT135



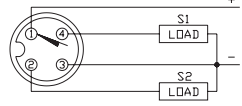


Housing Style	Part Number	ID Number	Flow Detection Range (CPM)	Temperature Monitoring Range (°C)	Output 1: Flow	Output 2: Temperature or Flow
<p>Inline Flow Monitor, Digital Readout, 3/8" Tubing Connection</p>	FTCI-3/8D10A4P-2UP8X-H1141	M6870806	0.2 to 4	-10 to +90	PNP N.O./N.C.	PNP N.O./N.C.
<p>Inline Flow Monitor, Digital Readout, 1/2" Tubing Connection</p>	FTCI-1/2D10A4P-2UP8X-H1141	M6870807	0.2 to 5	-10 to +90	PNP N.O./N.C.	PNP N.O./N.C.
<p>Inline Flow Monitor, Digital Readout, 3/4" Tubing Connection</p>	FTCI-3/4D15A4P-2UP8X-H1141	M6870808	1 to 12	-10 to +90	PNP N.O./N.C.	PNP N.O./N.C.

Compatible Fluids: Water, Deionized Water, Ethylene Glycol (0-70%), Galden® HT110, Galden® HT135

Material

Housing	PBT
Wetted Parts	316 Ti Stainless Steel
O-Ring	FKM

Voltage	Current Consumption (mA)	Switching Current (mA)	Pressure Rating (psi)	Fluid Connection	Operating Temp. (°C) (ambient)	Protection	Mating Cordset	Wiring Diagram #	Wiring Diagram
21.6-26.4 VDC	≤100	200	290	3/8" swage	0 to +60	IP 65	RK 4.4T-*	1	<p>Diagram 1</p> 
21.6-26.4 VDC	≤100	200	290	1/2" swage	0 to +60	IP 65	RK 4.4T-*	1	
21.6-26.4 VDC	≤100	200	290	3/4" swage	0 to +60	IP 65	RK 4.4T-*	1	

* Length in meters.

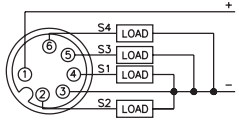


Housing Style	Part Number	ID Number	Flow Detection Range (CPM)	Temperature Monitoring Range (°C)	Output 1 & 2: Flow	Output 3 & 4: Temperature
Inline Flow Monitor, Digital Readout, 3/8" Tubing Connection 	FTCI-3/8D10A4P-4UP8X-H1160	M6870814	0.2 to 4	-10 to +90	PNP N.O./N.C	PNP N.O./N.C
Inline Flow Monitor, Digital Readout, 1/2" Tubing Connection 	FTCI-1/2D10A4P-4UP8X-H1160	M6870815	0.2 to 5	-10 to +90	PNP N.O./N.C	PNP N.O./N.C
Inline Flow Monitor, Digital Readout, 3/4" Tubing Connection 	FTCI-3/4D15A4P-4UP8X-H1160	M6870813	1 to 12	-10 to +90	PNP N.O./N.C	PNP N.O./N.C

Compatible Fluids: Water, Deionized Water, Ethylene Glycol (0-70%), Galden[®] HT110, Galden[®] HT135

Material

Housing	PBT
Wetted Parts	316 Ti Stainless Steel
O-Ring	FKM

Voltage	Current Consumption (mA)	Switching Current (mA)	Pressure Rating (psi)	Fluid Connection	Operating Temp. (°C) (ambient)	Protection	Mating Cordset	Wiring Diagram #	Wiring Diagram
21.6-26.4 VDC	≤100	200	290	3/8" swage	0 to +60	IP 65	RKC 6T-*	1	<p>Diagram 1</p> 
21.6-26.4 VDC	≤100	200	290	1/2" swage	0 to +60	IP 65	RKC 6T-*	1	
21.6-26.4 VDC	≤100	200	290	3/4" swage	0 to +60	IP 65	RKC 6T-*	1	

* Length in meters.

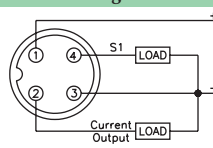


Housing Style	Part Number	ID Number	Flow Detection Range (GPM)	Temperature Monitoring Range (°C)	Output 1: Temperature	Output 2: Flow
Inline Flow Monitor, Digital Readout, 3/8" Tubing Connection 	FTCI-3/8D10A4P-LI-UP8X-H1141	M6870809	0.2 to 4	-10 to +90	PNP N.O./N.C	Analog 4-20 mA
Inline Flow Monitor, Digital Readout, 1/2" Tubing Connection 	FTCI-1/2D10A4P-LI-UP8X-H1141	M6870810	0.2 to 5	-10 to +90	PNP N.O./N.C	Analog 4-20 mA
Inline Flow Monitor, Digital Readout, 3/4" Tubing Connection 	FTCI-3/4D15A4P-LI-UP8X-H1141	M6870811	1 to 12	-10 to +90	PNP N.O./N.C	Analog 4-20 mA

Compatible Fluids: Water, Deionized Water, Ethylene Glycol (0-70%), Galden[®] HT110, Galden[®] HT135

Material

Housing	PBT
Wetted Parts	316 Ti Stainless Steel
O-Ring	FKM

Voltage	Current Consumption (mA)	Switching Current (mA)	Pressure Rating (psi)	Fluid Connection	Operating Temp. (°C) (ambient)	Protection	Mating Cordset	Wiring Diagram #	Wiring Diagram
21.6-26.4 VDC	≤100	200	290	3/8" swage	0 to +60	IP 65	RK 4.4T-*	1	<p>Diagram 1</p> 
21.6-26.4 VDC	≤100	200	290	1/2" swage	0 to +60	IP 65	RK 4.4T-*	1	
21.6-26.4 VDC	≤100	200	290	3/4" swage	0 to +60	IP 65	RK 4.4T-*	1	

* Length in meters.

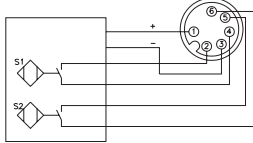
TURCK

Instrumentation Products

Housing Style	Part Number	ID Number	Flow Detection Range (water)	Flow Detection Range (glycol/water)	Temperature Monitoring Range (°C)	Output
Inline Flow Monitor, Digital Readout, 3/8" Tubing Connection 	FCI-D10A4P-2ARX-H1160/D201	M6870679	0.2 to 4 GPM	0.2 to 4 GPM	-18 to +100	Dual Relay N.O.
	FCI-D10A4P-2ARX-H1160/D203	M6870680	0.2 to 4 GPM	N/A (water only)	-18 to +100	Dual Relay N.O.
Inline Flow Monitor, Digital Readout, 1/2" Tubing Connection 	FCI-D10A4P-2ARX-H1160/D205	M6870681	0.2 to 5 GPM	0.2 to 5 GPM	-18 to +100	Dual Relay N.O.
Inline Flow Monitor, Digital Readout, 3/4" Tubing Connection 	FCI-D10A4P-2ARX-H1160/D209	M6870684	1 to 12 GPM	1 to 12 GPM	-18 to +100	Dual Relay N.O.

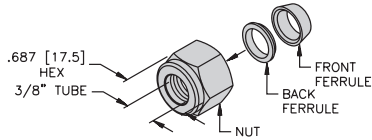
Material

Housing	PBT
Wetted Parts	316 Stainless Steel
O-Ring	FKM

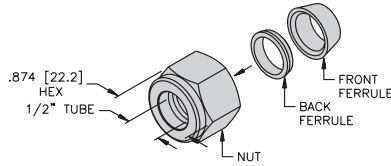
Voltage	Load Current/ Analog Load	Pressure Rating (psi)	Fluid Connection	Operating Temp. (°C) (ambient)	Operating Temp. (°C) (fluid)	Protection	Mating Cordset	Wiring Diagram #	Wiring Diagram
21.6-26.4 VDC	≤0.5 A at 30 VDC ≤1 A at 36 VAC	290	3/8" swage	0 to +60	-10 to +95	IP 65	RKC 6T-*	1	<div style="border: 1px solid black; padding: 5px;"> <p style="text-align: center; margin: 0;">Diagram 1</p>  </div>
21.6-26.4 VDC	≤0.5 A at 30 VDC ≤1 A at 36 VAC	290	3/8" swage	0 to +60	-10 to +95		RKC 6T-*	1	
21.6-26.4 VDC	≤0.5 A at 30 VDC ≤1 A at 36 VAC	290	1/2" swage	0 to +60	-10 to +95	IP 65	RKC 6T-*	1	
21.6-26.4 VDC	≤0.5 A at 30 VDC ≤1 A at 36 VAC	290	3/4" swage	0 to +60	-10 to +95	IP 65	RKC 6T-*	1	

* Length in meters.

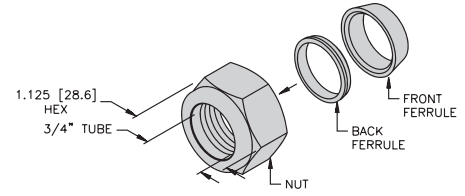
DRO Flow Sensor Accessories



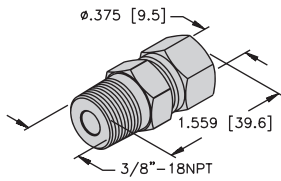
FSV-SS 3/8 KIT (2 sets)
(A9183)



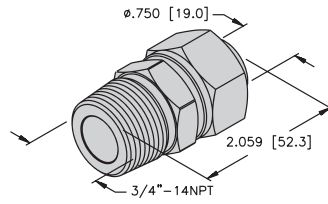
FSV-SS 1/2 KIT (2 sets)
(A9184)



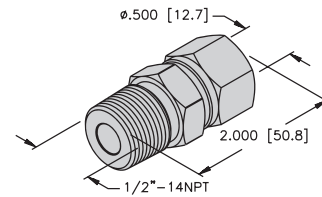
FSV-SS 3/4 KIT (2 sets)
(A9185)



FSV-SS 3/8 TS-NPT
(A9307)

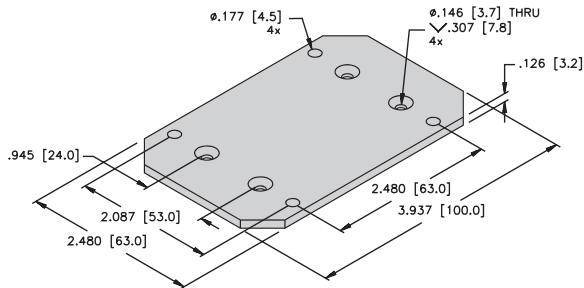


FSV-SS 3/4 TS-NPT
(A9306)



FSV-SS 1/2 TS-NPT
(A9305)

Mounting Bracket



FCI-BP
(A9181)

TURCK USA

TURCK Inc.
3000 Campus Drive
Minneapolis, MN 55441
Phone: (763) 553-7300
Fax: (763) 553-0708
Application Support:
1-800-544-7769

TURCK Mexico

TURCK MEXICO S. DE R.L. DE C.V.
Carr Saltillo-Sacatecas km 4.5 s/n
Parque Industrial "La Angostura"
Saltillo, COAH. C.P. 25070
MEXICO
Phone: +52 (844) 411-6647/46
Fax: +52 (844) 482-6926
Toll Free: 01-800-01-88725 (Mexico only)
E-mail: ventasmexico@turck.com

TURCK Canada

CHARTWELL
ELECTRONICS, INC.
140 Duffield Drive
Markham, Ontario
Canada, L6G 1B5
Phone: (905) 513-7100
Fax: (905) 513-7101
Toll Free: 1-877-513-7769

TURCK

World Headquarters

Hans TURCK GmbH & Co. KG
Witzlebenstrasse 7
D-45472 Muelheim der Ruhr
Federal Republic Of Germany
Phone: (+49) 208-49 52-0
Fax: (+49) 208-49 52 264

.....Sense It!.....Connect It!.....Bus It!