

EN Quick Start Guide

IO-Link Water Control Block

Other documents

Besides this document the following material can be found on the Internet at www.turck.com:

- Data sheet
- Manual

For your safety

Intended use

The device must only be used as described in these instructions. Any other use is not in accordance with the intended use. Turck accepts no liability for any resulting damage.

General safety notes

- The device must only be fitted, installed, operated and maintained by trained and qualified personnel.

Product description

Device overview

Fig. 1

Application

The TURCK IO-Link Water Control block can be used on clean or dirty water, compatible with brass, PVDF and Viton. The fluid should not include long fibers or a significant level of abrasive solids. Typical applications will be for weld gun cooling loops using water or 50% glycols found in the automotive industry.

Mounting

Fig. 2

Operation of sensing technology

Water enters the Water Control block through the shut-off valve inlet port. The outlet from the manifold passes through a metering circuit and then attached to the weld gun circuit. The weld gun consists of the weld gun arms and/or transformer in cooling circuit. The return water from these devices is connected to the Water Control block. The water control block is directly inline on the return circuit and utilizes the vortex shedding measuring principle. The water strikes a bluff body, which impacts alternating vortices downstream of the bluff, which creates a pressure on the sensor body containing a piezoelectric crystal. The movement of the sensor is proportional to the velocity of the water flow. Vortex technology yields a Water Control block with no moving parts to hang up or wear. The water passes through the check valve and exits the Water Control block through the outlet port. The Water Control block displays, via the LED display and the IOL Process Data, the actual water flow on the return leg.

Commissioning

Operating Modes

There are two ways to operate/parameterize the IO-Link Water Control block. Refer to the manual for additional information.

Standalone via MENU/SET LCD pushbuttons or IO-Link slave via IO-Link Master

Standalone operation

Power up the water control block

On Power Up and NO flow, the display will alternate between "0.0" and countdown "9 - 0", with the Valve light ON. After the countdown (default 10secs), the valve light will go OFF and the display will read a steady "0.0". COMM ON (Green Light) will be ON for Power or will be flashing if IO-Link is connected to an IO-Link Master, with proper communication.

COMM OFF (Red Light) will be ON.

Press and hold both "MENU" and "SET" buttons for 5s (Bypass mode). The display will blink, the solenoid will open, and the device will no longer monitor flow. To exit Bypass mode, press and release both "MENU" and "SET" buttons."

Setting Flow Setpoint

Push and Hold the "SET" button for approximately 5 seconds to enter programming mode.

The current set point will be displayed.

Use the "MENU" button to change the current flow set point, if required.

The set point display will roll over at "6.0 or 12.0 GPM (22.7 or 45.4 LPM)" and start again at "0.0"

Once the desired set point is displayed, press the "SET" button again, to save the setting

If NO button is pushed for approximately 5 seconds, the system defaults to the current setting.

Setting Units (GPM/LPM)

Push the "MENU" button to see what units the water control block is in, either "G" (GPM) or "L" (LPM) will be displayed. If the water control block is in the correct units, press the "SET" button to return to the flow "0.0" display. Push and Hold the "MENU" button for approximately 5 seconds to enter programming mode. The units will switch to the opposite unit as previously displayed. Press the "SET" button to change the current units, if required.

Once the units are set, press the "MENU" button again, to save the setting.

Press the "SET" button, to return to the flow "0.0" display. If NO button is pushed for approximately 5 seconds, the system defaults to the current setting.

IO-Link operation

Input Process Datamap

Byte/ Bit	7	6	5	4	3	2	1	0
0	Temperature							
1	Flow rate x 10							
2								
3	n/a	n/a	n/a	TempOK	Min-Flow	InBypass	ValveClosed	FlowOK

Output Process Datamap

Byte/ Bit	7	6	5	4	3	2	1	0
0	Flow setpoint* x 10							
1								
2	n/a	n/a	n/a	Unlock**	Unit*	Bypass	Shutoff	Restart

Notes

*A flow setpoint of "0" will default to using the index data value

**Enables standalone operation via IO-Link command which allows for manual pushbutton operation

Parameters

Index	Sub-index	Name	Length	Value range	Default	Access Rights
0	8	VendorID1	Byte		6	r/o
0	9	VendorID2	Byte		5	r/o
0	10	DeviceID1	Byte		0	r/o
0	11	DeviceID2	Byte		0	r/o
0	12	DeviceID3	Byte		1	r/o
1	1	Temp Setpoint	Byte	0-255	0	r/w
1	2	Unit Selection*	Byte	0 (english) 1 (metric)	0	r/w
1	3	Operating Mode	Byte	0 (standalone) 1 (IO-Link)	0	r/w
1	4	Restart delay (sec)	Byte	0-20	10	r/w
1	5	Response time (msec)	Word	0-9999	100	r/w
1	6	Flow Setpoint* (tenths)	Word	0-65535	45	r/w

*Unit and flow setpoint can be manually set using pushbuttons. See Standalone operation.

Repair

The device must not be repaired by the user. Observe our return acceptance conditions when returning the device to Turck.



WCIOL-6GPM-75NPT-H1141
WCIOL-12GPM-75NPT-H1141
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100039258, 100041536

Additional information see



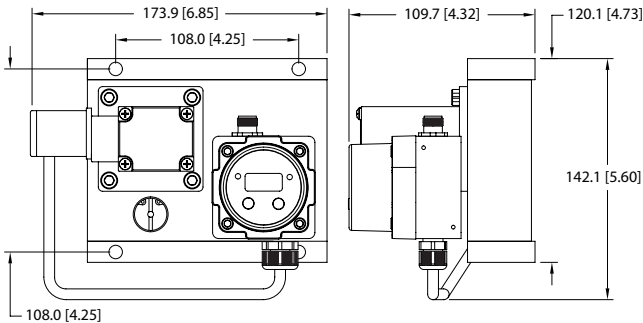
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Fig. 1



Mounting Dimensional

Fig. 2



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Technical Data

Flow range	2.3...22 l/min (0.60...6GPM*) 7...45 l/min (1.84...12GPM*) *default factory setting is GPM
Accuracy	± 5% of full scale
Repeatability	± 0.25% of actual flow
Medium temperature	+1...+90 °C
Pressure resistance	200 PSIG
Protection class	IP67
Power supply	10 - 30Vdc
Display	3 digit 0.3" LED
Electrical connection	M12 x 1 (5 pin male)
Process connection	3/4" NPT
Current consumption	≤ 80mA max
Communication protocol	IO-Link
Output 1	Solid State Relay
Output 2	IO-Link/Switching PNP output
IO-Link Specification	V1.1
IO-Link port type	Class B
Transmission rate	COM2/38.4 kbps
Minimum cycle time	3ms
Material	Brass, Stainless Steel, PVDF, Buna N

Wiring Diagram

Pinout	Pin	Color	Function
	1	Brown	24VDC (V1)
	2	White	24VDC (V2)
	3	Blue	GND (V1)
	4	Black	C/Q (IO-link)
	5	Gray	GND (V2)