EN Quick-Start Guide

FTCI-3/4D15A4P-2LUX-H1141

Other documents

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

- Data sheet
- EU declaration of conformity (current version)

For your safety

Intended use

The devices are designed only for use in industrial areas.
The devices are used for flow measurement of water/glycol mixes up to 70 %, deionized water, HT110 and HT135.
The devices can monitor the flow rate and temperature and display these values on a three-digit seven-segment display. The devices are intended for inline mounting in a pipe.
The devices 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.

Obvious misuse

The devices are not safety components and must not be used for personal or property protection.

General safety notes

- The device must be mounted, installed, operated, parameterized and maintained only by trained and qualified personnel.
- The monitored medium must be free of air pockets and bubbles.

Product description

Device overview

See Fig. 1 (product image)

Functions and operating modes

The devices have two analog outputs (0…10 V). A voltage signal for the flow rate is issued at output 1, while a voltage signal for the temperature value is issued at output 2. The values for flow rate and temperature can also be shown alternately on the display. The following device functions can be configured using the three buttons on the front of the device:

- Access code: protects the device from unauthorized programming access
- Initial temperature value/final temperature value
- Mean value generation: sets a time interval for generating the mean value of the measuring signal (2…16 s). A low value results in a fast response, a higher value results in the steady display of the measured value.
- Media selection: sets the media to be monitored.
- Reference function: changes the value shown in the display by ± 25 %.

Mounting

CAUTION

Shearing forces between the pipe connections of the device
Damage to equipment caused by shearing forces

➤ Mount the device in such a way that shearing forces between the pipe connections of the device are prevented. See Fig. 2

The devices are intended for inline mounting in a pipe. When installing, the pipe can be connected either directly via the cutting ring fitting or by using an adapter (not included in the delivery).

➤ Pay attention to the flow direction when mounting (see type label).

Mounting the cutting ring fitting

➤ If mounting the device without using an adapter, use a precision pipe (3/4") in accordance with DIN 2391.
➤ Cut the pipe to length with a perpendicular cut and remove burrs.
➤ Slide the union nut onto the pipe, along with the clamp ring and cutting ring.
➤ Insert the pipe in the fitting body as far as it will go.
➤ Tighten the union nut by hand and check the position of the pipe.
➤ Apply an AF27 wrench to the sensor connection.
➤ Tighten the union nut by 1 ¼ turns.
➤ Check that the pipe is securely seated.

Mounting the housing

The sensor is equipped with four M4 threaded bushes with a depth of 5 mm in the bottom of the housing to facilitate mounting.
➤ Mount the device at the intended location using four M4 screws.
Alternatively:
➤ Mount the device on mounting plate FTCI-MP01AL (Ident-No. 6870040, not included in the delivery). With the mounting plate, it is possible to install the device from the front.

Connection

➤ Connect the device in accordance with the "Wiring Diagram."

Commissioning

The device is operational automatically once the power supply is switched on.

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Flow Meter
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Doc.-No. 100017718 2003

Additional information see turck.com

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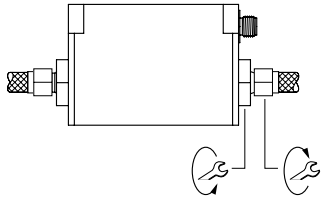
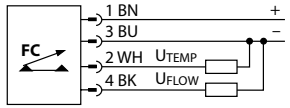


Wiring Diagram



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Operation

The device has three buttons on the front that can be used to activate functions and configure settings. All values are shown in the display.

Button	Function in normal mode	Function in programming mode
V/-	Displays the current value for the flow rate in V	Reduces the displayed value
V/+	Displays the current value for the temperature in V	Increases the displayed value
M	Displays the currently measured temperature or the current flow rate for 3 s	Selects functions and parameters

Changing the displayed value

➤ Press the [M] button as per the table below:

Press [M]	Displayed function	Possible display values
1x	Current temperature	-10…+90
2x	Initial temperature value 0 V (t0)	14…162 °F/-9.9…+74.0 °C
3x	Final temperature value 10 V (t10)	46…194 °F/6.1…90.0 °C
4x	Time interval for mean value generation (nfi)	2…16
5x	Fluid (FLU)	GLY, di, 110, 135

➥ The selected value is shown on the display for approximately 3 s.

Setting

➤ Start programming mode: Press and hold the [V/-] and [V/+] buttons at the same time for at least 3 s until the display starts to flash.
➤ Enter the access code (factory setting: 0).
➤ Select the value to be set: Press the [M] button as per the table below:

Press [M]	Configurable function	Possible display values
1x	Enter the access code (Cod)	0…255
2x	Initial temperature value 0 V in °F (t0)	14…162 °F
3x	Final temperature value 10 V in °F (t10)	46…194 °F
4x	Time interval for mean value generation (nfi)	2…16
5x	Fluid (FLU)	GLY: glycol 0…70 % di: deionized water 110: HT110 135: HT135
6x	Reference function ± 25 % (CAL)	
7x	Configure the display: temperature only, flow rate only, flow rate and temperature alternately (diS)	°F…GAL…°FG
8x	Change the access code (COD)	0…255

➤ Exit programming mode: Press and hold the [M] button for at least 3 s until the display stops flashing.

Changing the temperature unit

➤ Disconnect the sensor from the supply voltage.
➤ Reconnect the sensor while pressing the [V/-] and [V/+] buttons
➥ [°F] or [°C] appears on the display.
➤ Change the temperature unit using the [V/+] button.
➤ Confirm the selection using the [M] button.
➥ The programmed values for t0 and t10 will be set to 0 °C/32 °F for 0 V and 80 °C or 176 °F for 10 V after changing the temperature unit.

Changing the flow unit

➤ Disconnect the sensor from the supply voltage.
➤ Reconnect the sensor while pressing the [V/-] and [V/+] buttons
➤ Enter the access code.
➥ [GAL] or [L] appears on the display.
➤ Select the flow unit using the [V/+] button.
➤ Confirm the selection using the [M] button.

Resetting the device to the factory settings (see "Factory settings")

➤ Disconnect the sensor from the supply voltage.
➤ Reconnect the sensor while pressing the [M] button.
➥ [rES] appears on the display.
➤ Enter the access code.
➤ To reset the device, press the [M] button.

Maintenance

Operating the device in contaminated or chalky water causes deposits that can distort measurements.

➤ Clean the part of the sensor through which the medium flows. During cleaning, ensure that the metallic surface of the sensor is not damaged.

Repair

The device must not be repaired by the user. The device must be decommissioned if it is faulty. Observe our return acceptance conditions when returning the device to Turck.

Disposal

The devices must be disposed of correctly and must not be included in normal household garbage.

Technical Data

Technical data	FTCI-3/4D15A4P-2LUX-H1141
Ident-No.	6878041
Supply voltage	24 V DC ± 10% (PIN1: BN +, PIN3: BU -)
Current consumption	100 mA
Ambient temperature	32…140 °F
Output 1	Flow – analog 0…10 V (PIN 4: BK)
Output 2	Temperature – analog 0…10 V (PIN 2: WH)
Load	50…500 Ω
Medium temperature	14…194 °F
Detection range flow	
Water	1…12 gpm
Water/monoethylenglycol 0…70 %	1…12 gpm
Display range	0.8…14.4 gpm
Detection range temperature	14…194 °F
Accuracy temperature	± 5 °F (68…158 °F: ± 3.0 °F) (Flow rate > 3 gpm)
Adjustment range temperature	4 mA: 14…162 °F
	20 mA: 46…194 °F
	t20 mA – t4 mA ≥ 32 °F
Reaction time	2…8 s
Material sensor	AISI 316 Ti / FKM
Material housing	PBT
Protection	IP 65
Compressive strength	20 bar
Factory setting code	0

Factory Settings

Unit flow	gpm
Unit temperature	°F
t0	32 °F
t10	176 °F
nFi	8
Medium	Water
Display	Flow only (gal)