Detailed technical data

Features

Measurement principle	Calorimetric measurement process
Medium	Water and oil-based liquids
Pipe diameters	≥ 25 mm [1]
Operating range	3 cm/s ... 150 cm/s, Water 3 cm/s ... 300 cm/s, Oil
Process temperature	–40 °C ... +150 °C [2]
Process pressure	≤ 100 bar ≤ 16 bar, with clamp adapter P/N 2093548
Communication interface	IO-Link
Temperature measurement	✔
Indication	✔ / –, OLED + 3 status LEDs

[1] Place probe tip in the center of the pipe to ensure the highest measurement accuracy.

[2] For medium temperatures above 100 °C, the distance between the lower side of the housing and the upper side of the mounting adapter must be at least 25 mm. The version with the special length of 60 mm cannot be used at a process temperature of over 100 °C.

Performance

Minimim flow velocity	≥ 3 cm/s, for water and oil
Maximum flow velocity	≤ 150 cm/s, for water ≤ 300 cm/s, for oil
Inlet zone	5 x DN
Output zone	3 x DN
Accuracy of sensor element	± 10 %, relative to measuring range end value [1]
Reproducibility	< 1 cm/s [1]
Resolution	0.01 m/s, speed; 0.1 L/min volume; 0.1% relative (via IO-Link)
Response time	< 2.5 s [2]
Temperature measurement	
Accuracy (temperature)	± +1 °C
Resolution (Temperature)	< +0.1 °C
Response time (temperature)	< 6 s [3]
Operating mode	Relative speed (%) Absolute speed Absolute volume Relative teach (%)

[1] Under reference conditions with water, diameter of inner pipe 25 mm, vertical installation in pipe, probe tip in tube center, fully-filled pipe without air bubbles, speed from 10 cm/s to 100 cm/s, inlet zone > 30 cm, outlet zone > 30 cm, 26 °C ± 1 °C, 2 bar ± 1 bar.

[2] Filter off.

[3] Under reference conditions with water, diameter of inner pipe 25 mm, vertical installation in pipe, probe tip in tube center, fully-filled pipe without air bubbles, speed = 100 cm/s, inlet zone > 30 cm, outlet zone > 30 cm, 26 °C ± 1 °C, 2 bar ± 1 bar.

Mechanics

Process connection	Without process connection (adapter needed for installation)
Wetted parts	Stainless steel 1.4404 / 316L
Housing material	VISTAL® / polyester / Stainless steel 1.4404 / 316L (depending on type)
Enclosure rating	IP67 / IP67 / IP69 (depending on type)
Weight	74 g ... 210 g (depending on type)
Sealing material (only clamp adapter P/N 2093548)	FKM
Probe diameter	8 mm
Probe length	60 mm ... 200 mm (depending on type)

Minimum immersion length	12 mm
Distance to pipe wall	10 mm

Electronics

Supply voltage	9 V DC ... 30 V DC [1]
Power consumption	< 2 W at 24 V DC (without load on the outputs)
Initialization time	≤ 5 s ≤ 10 s (IO-Link)
Protection class	III
Connection type	M12 round connector x 1, 4-pin
Output signal	2 x push-pull digital outputs for flow and temperature (Q2 can be selected as digital input)
Output current	< 100 mA [2]
Signal voltage HIGH	> Uv - 2 V
Signal voltage LOW	≤ 2 V
Inductive load	1 H
Capacitive load	100 nF (2.5 nF, IO-Link mode)
EMC	EN 61326-1, EN 61326-2-3
Digital input limit	HIGH voltage dependent on Uv LOW voltage < 4.0 V
MTTF	> 200 years

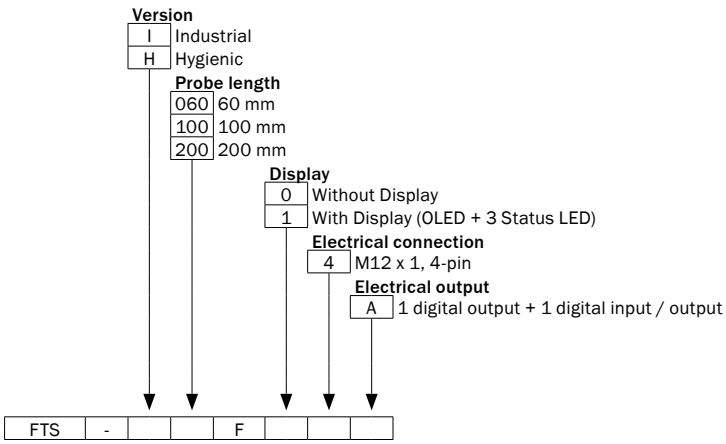
[1] All connections are reverse polarity and overload protected. Q1 and Q2 are short-circuit protected.

[2] Per output.

Ambient data

Ambient operating temperature	–40 °C ... +70 °C
Ambient storage temperature	–40 °C ... +80 °C

Type code



Ordering information

- **Process pressure:** ≤ 100 bar, ≤ 16 bar
- **Maximum flow:** ≤ 150 cm/s, ≤ 300 cm/s
- **Process connection:** Without process connection (adapter needed for installation)
- **Connection type:** M12 round connector x 1, 4-pin

Probe length	Housing material	Display	Type	Part no.
60 mm	VISTAL® / polyester	✔	FTS-I060F14A	1091146

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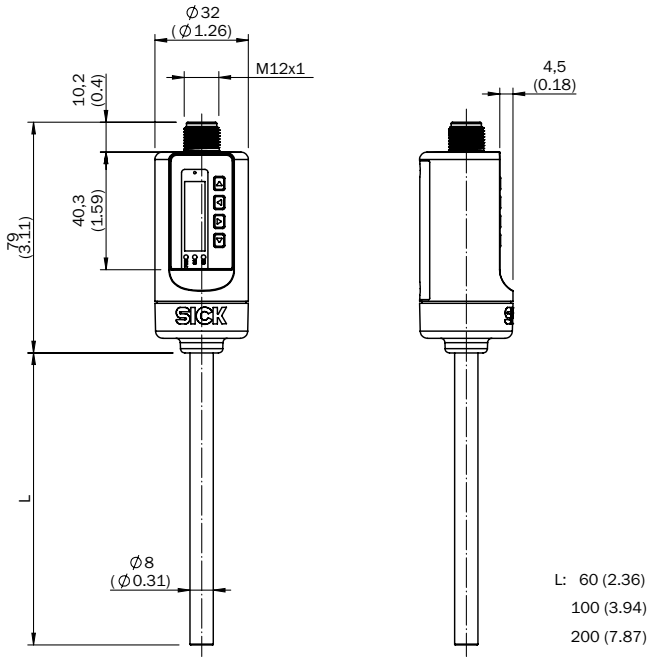
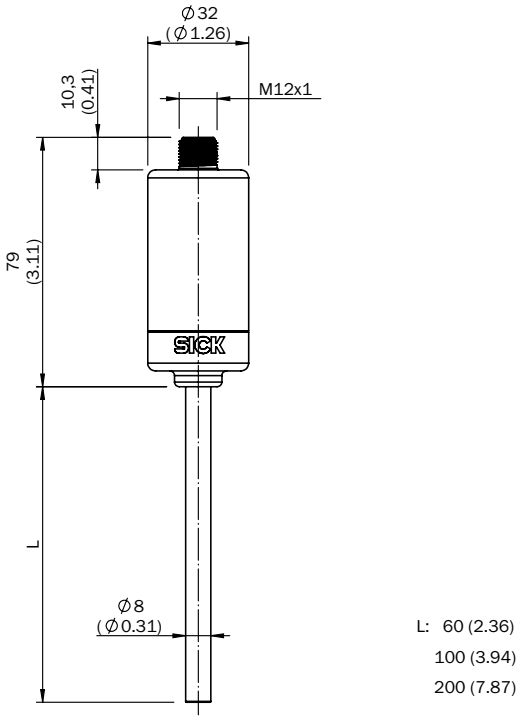
Probe length	Housing material	Display	Type	Part no.
100 mm	VISTAL® / polyester	✔	FTS-I100F14A	1091144
200 mm	VISTAL® / polyester	✔	FTS-I200F14A	1091145
60 mm	Stainless steel 1.4404 / 316L	–	FTS-H060F04A	1091149
100 mm	Stainless steel 1.4404 / 316L	–	FTS-H100F04A	1091147
200 mm	Stainless steel 1.4404 / 316L	–	FTS-H200F04A	1091148

Dimensional drawing (Dimensions in mm (inch))

FTS Industrial



FTS Hygenic



Accessories

Mounting systems

Flanges

Flange plates

Brief description	Type	Part no.
Compression fitting for T-Easic FTS, G ½	BEF-CFSG12-FTS1	5338774
Compression fitting for T-Easic FTS, M18 x 1.5	BEF-CFSM18-FTS1	2104208
Compression fitting for T-Easic FTS, ½'' NPT	BEF-CFSN12-FTS1	5338775
Compression fitting for T-Easic FTS, clamp (DIN 32676) DN 25-40 (50.5 mm)	BEF-HA-TCLI10-FTS1	2093548

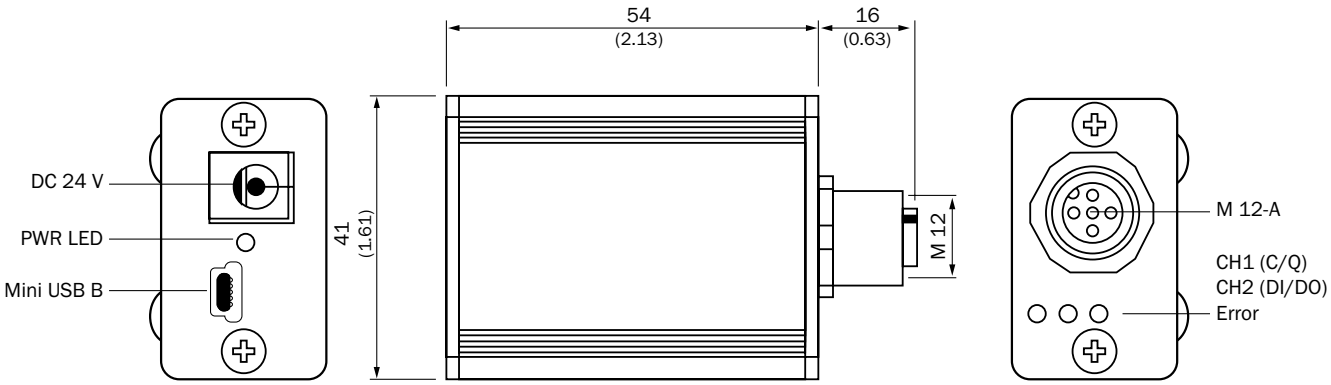
Connection systems

Modules and gateways

Connection modules

	Brief description	Type	Part no.
	IO-Link V1.1 Class A port, USB2.0 port, optional external power supply 24V / 1A	IOLA2US-01101 (SiLink2 Master)	1061790

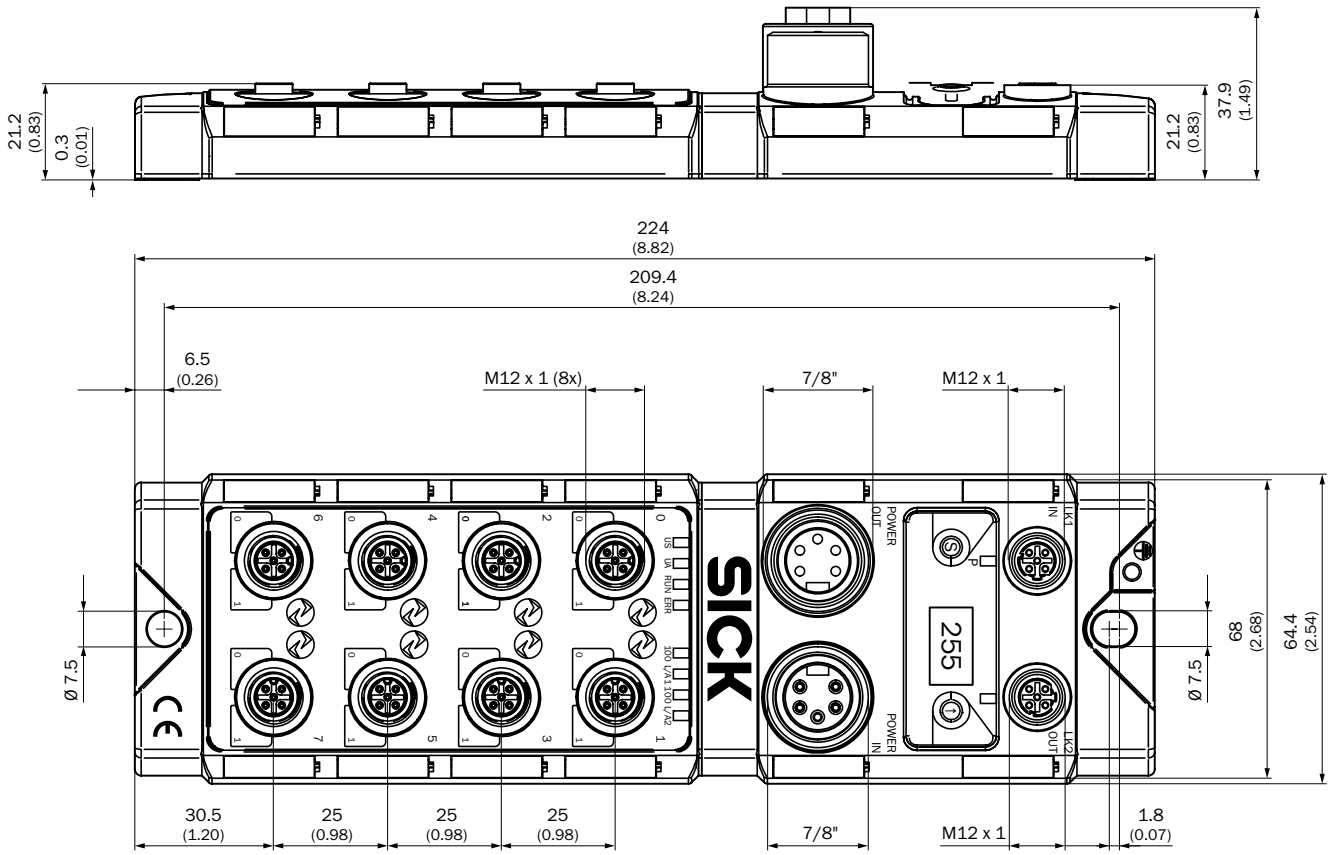
IOLA2US-01101 (SiLink2 Master)



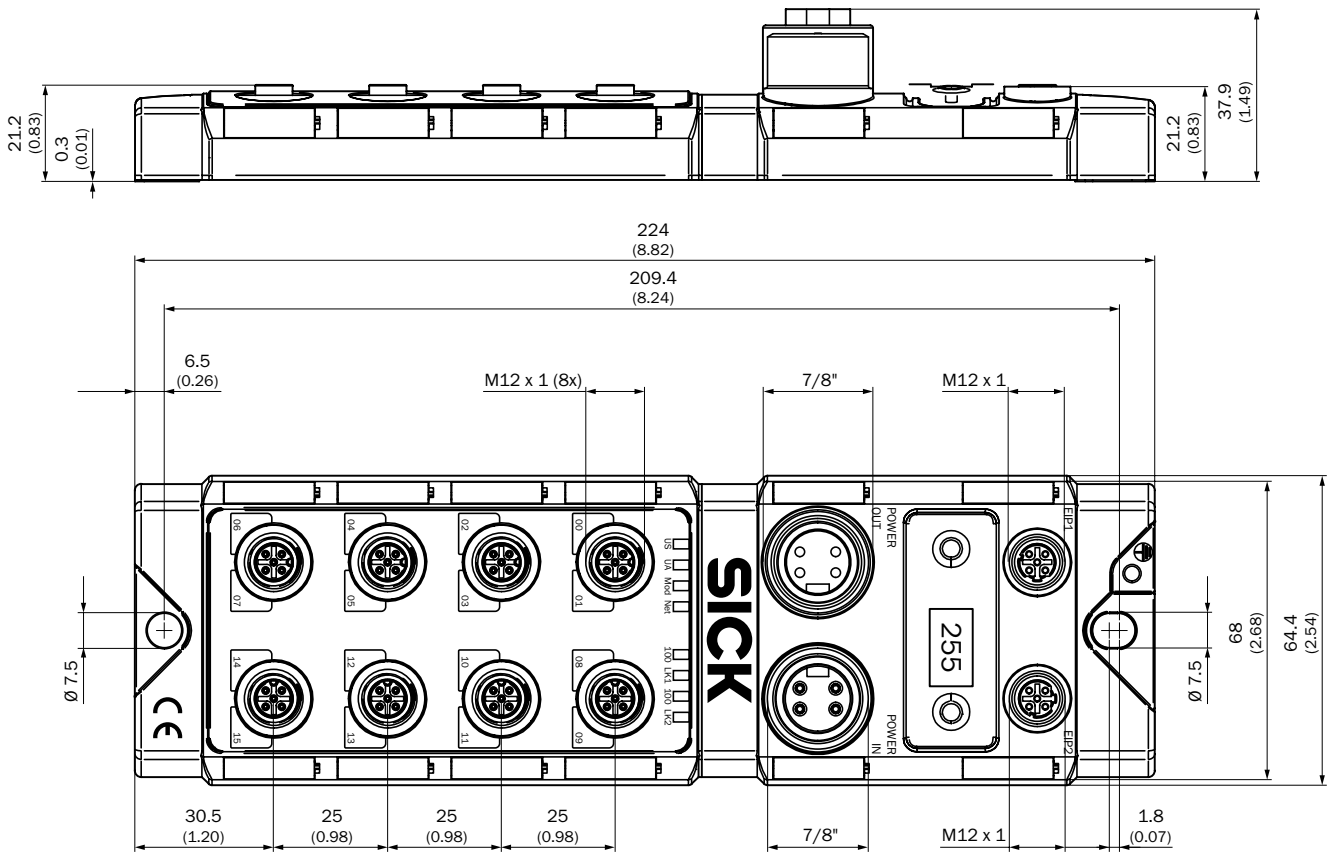
Fieldbus modules

	Brief description	Type	Part no.
 Illustration may differ	EtherCAT IO-Link Master, IO-Link V1.1, Port Class A, power supply via 7/8'' cable 24 V / 8 A, fieldbus connection via M12 cable	IOLG2EC-03208R01 (IO-Link Master)	6053254
 Illustration may differ	EtherNet/IP IO-Link Master, IO-Link V1.1, Port Class A, power supply via 7/8'' cable 24 V / 8 A, fieldbus connection via M12-cable	IOLG2EI-03208R01 (IO-Link Master)	6053255
	PROFINET IO-Link Master, IO-Link V1.1, Port Class A, power supply via 7/8'' cable 24 V / 8 A, fieldbus connection via M12 cable	IOLG2PN-03208R01 (IO-Link Master)	6053253

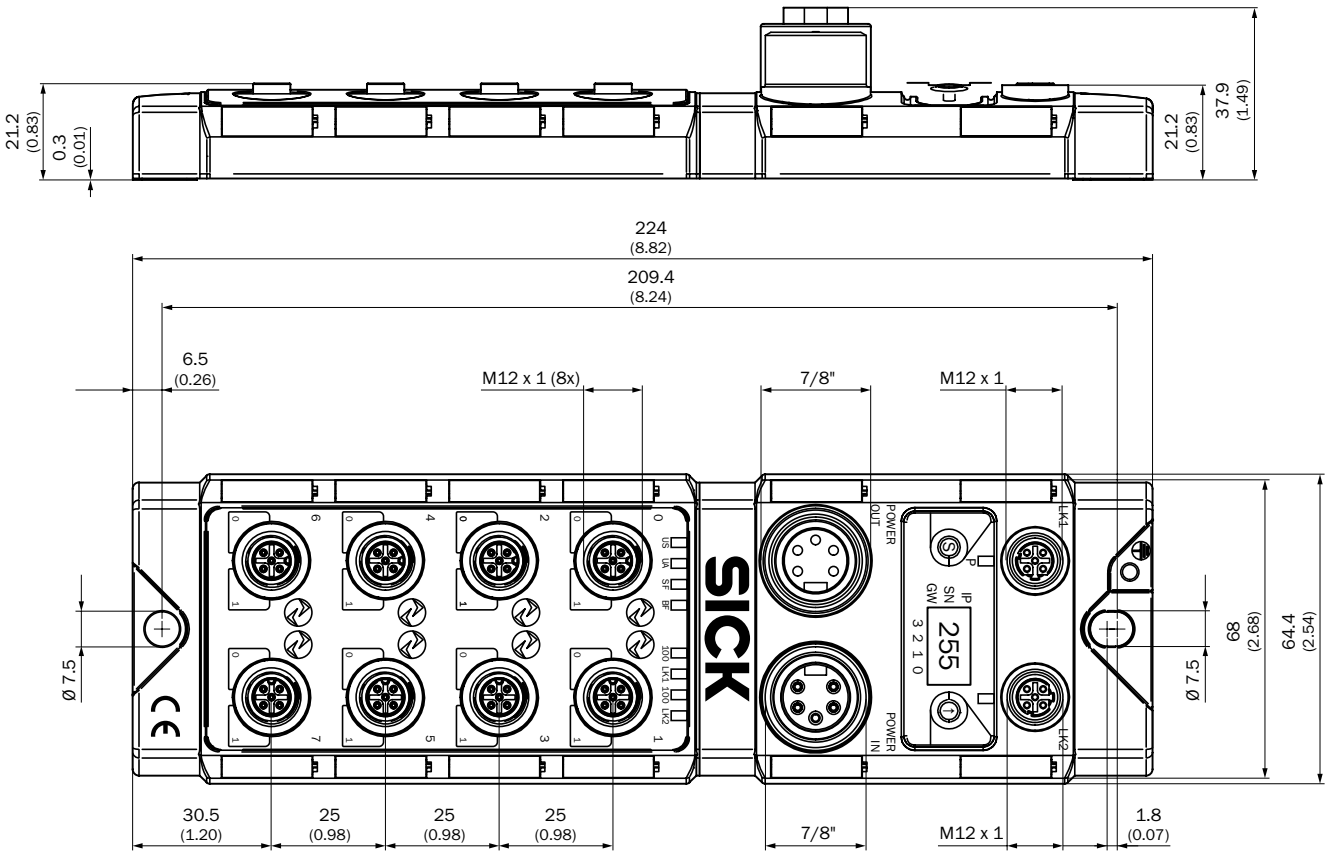
IOLG2EC-03208R01 (IO-Link Master)



IOLG2EI-03208R01 (IO-Link Master)



IOLG2PN-03208R01 (IO-Link Master)



Plug connectors and cables

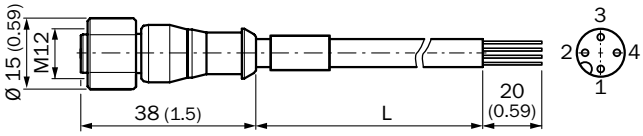
Connecting cables

	Brief description	Length of cable	Type	Part no.
	Head A: female connector, M12, 4-pin, straight Head B: Flying leads Cable: PVC, unshielded, 5 mm [1] [2]	2 m	DOL-1204-G02MNI	6052613
		5 m	DOL-1204-G05MNI	6052615
		10 m	DOL-1204-G10MNI	6052617

[1] Tested detergent: P3-topactive DES, P3-topax 19, P3-topax 56, P3-topax 66 and P3-topax 99; Insulating material group: Cat I.

[2] Insulating material group: Cat I.

DOL-1204-G02MNI
DOL-1204-G05MNI
DOL-1204-G10MNI



① brn
② wht
③ blu
④ blk

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