

Flow transmitters SFTE



Flow transmitters SFTE

Key features

At a glance

Compact and lightweight

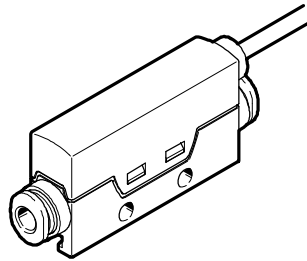
- Compact design 10x40x22 mm
- IP40 degree of protection
- Weight: 9 g for M5 connection (without cable)

Universal flow detection

- 4 variants 1 ... 10 l/min
- Repetition accuracy +/-1%FS
- Range of application -0.9 ... 10 bar
- Suitable for compressed air and non-corrosive gases

Fast

- Rise time 3 ms
- Pure analogue signal processing



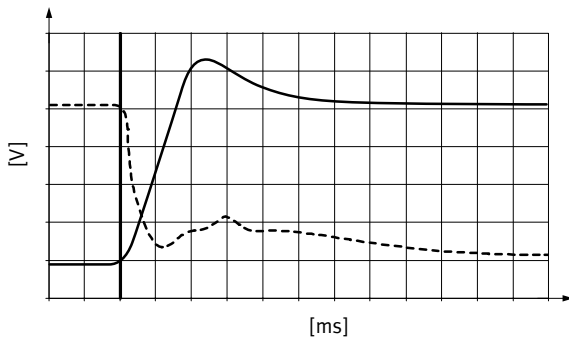
Simple installation

- No run-in sections required
- Integrated push-in connectors
- With 2.5 m cable and open ends or M8 plug
- Copper-free threaded connections

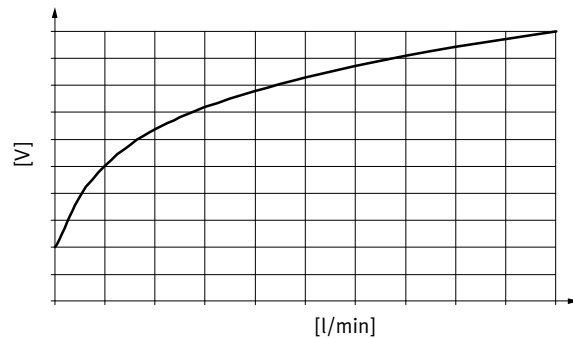
Reliable pick and place application

- High signal strength in comparison with pressure measurement
- Reliable sensing "Part picked up"
- 1 ... 5 V or 0 ... 10 V, type for higher signal strength

Typical signal profile for an abrupt change in flow, on ... off



Sensor signal



Product description

The flow transmitter SFTE is suitable for monitoring compressed air and non-corrosive gases. The non-linear sensor signal is output in analogue form as a voltage signal to detect the

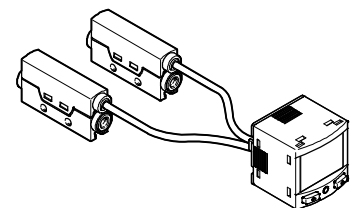
flow. This signal can optionally be processed e.g. by a controller or a signal converter. The SFTE also supplies an output signal in the event of return flow.

Areas of applications

- Pick and place the smallest of workpieces
- Monitoring of air dosing (air bearing, compressed air motor, purge air etc.)
- Process monitoring
- Pneumatic object detection via air-gap measurement

With signal converter SCDN

Threshold monitoring of the SFTE voltage output can take place in combination with the signal converter SCDN. 2 flow transmitters SFTE can be connected to one signal converter SCDN.

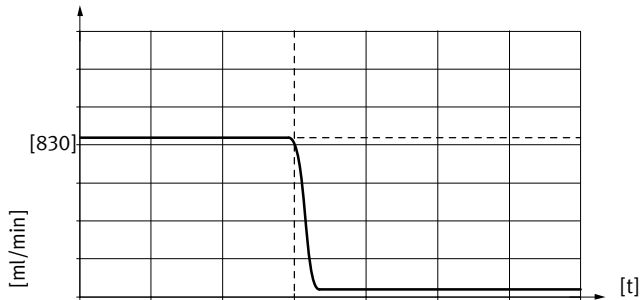


Flow transmitters SFTE

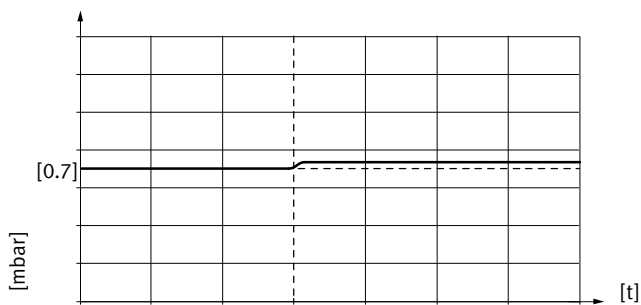
Key features

Comparison of signal strength for a pick and place application

With flow transmitter

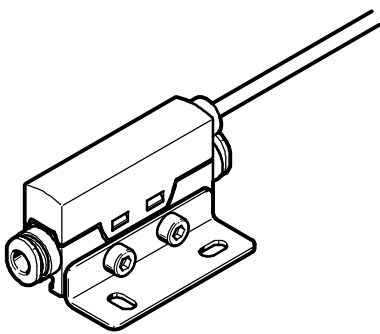


With pressure transmitter



Mounting options

Bracket mounting, single sensor



Bracket mounting, multiple sensors

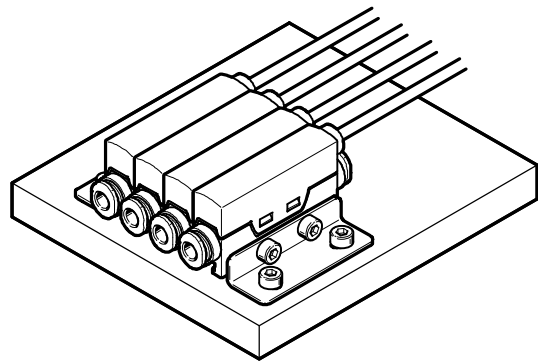


Plate mounting (from underneath)

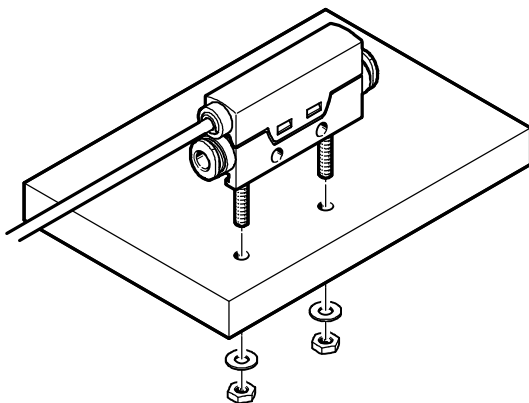
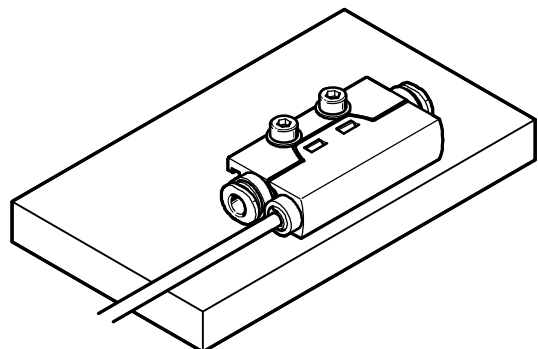
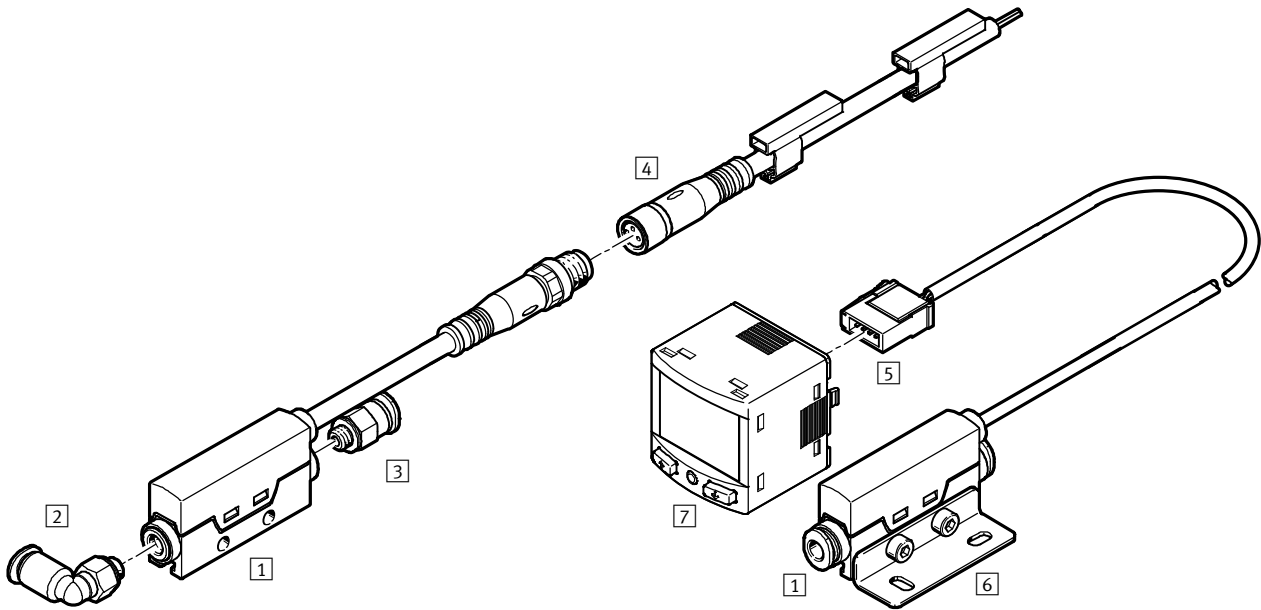


Plate mounting (from the side)



Flow transmitters SFTE

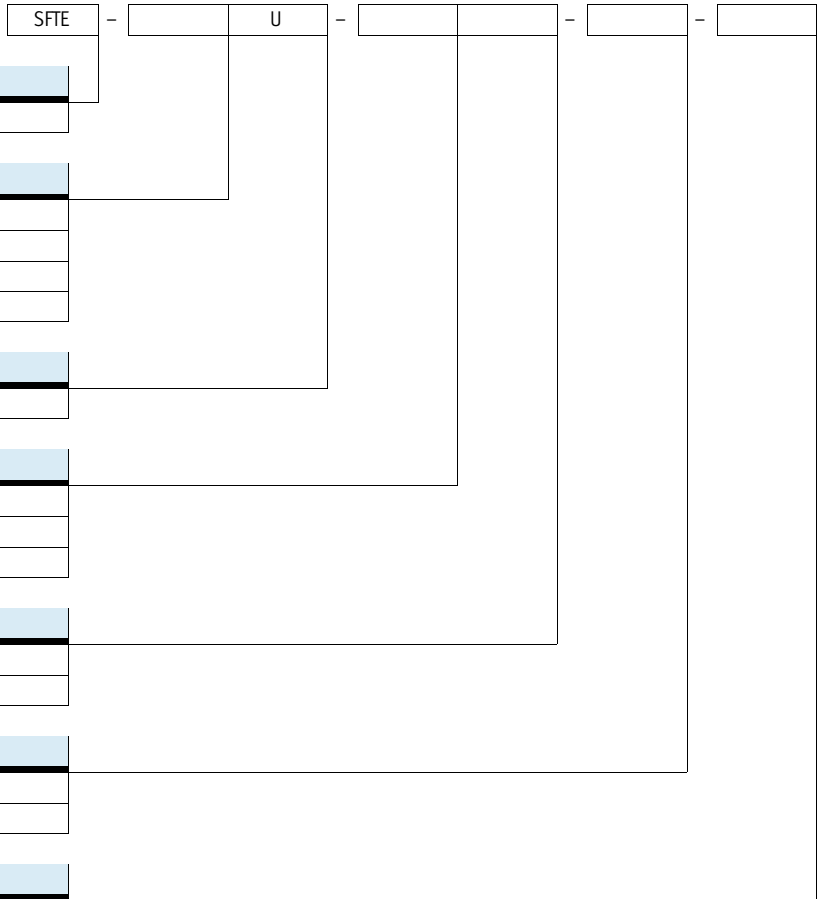
Peripherals overview



Mounting components and accessories		
	Description	→ Page/Internet
1	SFTE Flow transmitter	6
2	QSML-M5-3 Push-in fitting	12
3	QSM-M5-6 Push-in fitting	12
4	NEBU-M8G3- ... Connecting cable	12
5	NECU-S-ECG4-HX-Q3 Plug	12
6	SAMH-FE-A Mounting bracket	11
7	SCDN- ... Signal converter	12

Flow transmitters SFTE

Type code



Type	
SFTE	Flow transmitter

Flow measuring range [l/min]	
1	Max. 1 l/min
2	Max. 2 l/min
5	Max. 5 l/min
10	Max. 10 l/min

Flow input	
U	Unidirectional

Pneumatic connection	
Q3	Push-in connector 3 mm
Q4	Push-in connector 4 mm
M5	M5

Thread type	
	None
F	Female thread

Electrical output	
B	1 ... 5 V
V	0 ... 10 V

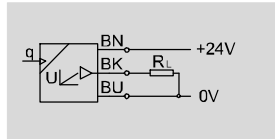
Electrical connection	
2.5K	2.5 m cable, open end
0.3M8	0.3 m cable, with M8 plug

Flow transmitters SFTE

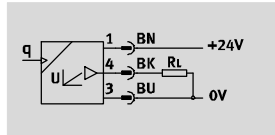
Technical data

Function

SFTE with cable and open end



SFTE with cable and M8 plug



- Max. flow rate
 - 1 l/min
 - 2 l/min
 - 5 l/min
 - 10 l/min
- Size 10 mm
- Operating pressure –0.9 ... 10 bar
- Temperature range 0 ... +50 °C
- Voltage 24 V DC
- IP40 degree of protection



General technical data		1U	2U	5U	10U
Measured variable		Volumetric flow rate			
		Mass flow rate			
Flow direction		Unidirectional			
Measuring principle		Thermal			
Method of measurement		Heat loss			
Certification		RCM mark			
CE marking (see declaration of conformity)		To EU EMC Directive			
		To EU RoHS Directive			
KC marking		KC-EMV			
Flow rate detection range, start value	[l/min]	0			
Flow rate detection range, end value	[l/min]	1	2	5	10
Operating pressure	[bar]	–0.9 ... 10			
Operating medium		Compressed air to ISO 8573-1:2010 [6:4:4]			
		Nitrogen			
Temperature of medium	[°C]	0 ... 50			
Ambient temperature	[°C]	0 ... 50			
Nominal temperature	[°C]	23			

General output		
Repetition accuracy	[% FS] ¹⁾	±1

1) The unit %FS relates to the entire voltage range of the analogue output.

Analogue output		
	V	B
Analogue output ¹⁾	[V]	0 ... 10
Rise time	[ms]	3
Min. load resistance of voltage output	[kOhm]	20

1) Output characteristic is not linear to the flow.

Additional output data	
Short circuit protection	Yes
Overload protection	Present

Flow transmitters SFTE

Technical data

Electronic system		
Operating voltage range DC	[V]	22 ... 26
Idle current	[mA]	≤ 17
Reverse polarity protection		For all electrical connections

Electromechanical components		
Electrical connection	0.3M8	2.5K
Connection type	Cable with plug	Cable
Connection technology	M8x1, A-coded, to EN 61076-2-104	Open end
Number of pins, wires	3	3
Cable length	[m] 0.3	2.5
Weight	[g] 40	37
Material of cable sheath	TPE-U(PUR)	

Mechanical system	
Type of mounting	In-line installation
	Via through-hole
	With accessories
Mounting position	Any
Materials	
Housing	PA-reinforced
Note on materials	RoHS-compliant

Immissions/emissions	
Degree of protection	IP40
Corrosion resistance class CRC ¹⁾	2

1) Corrosion resistance class CRC 2 to Festo standard FN 940070

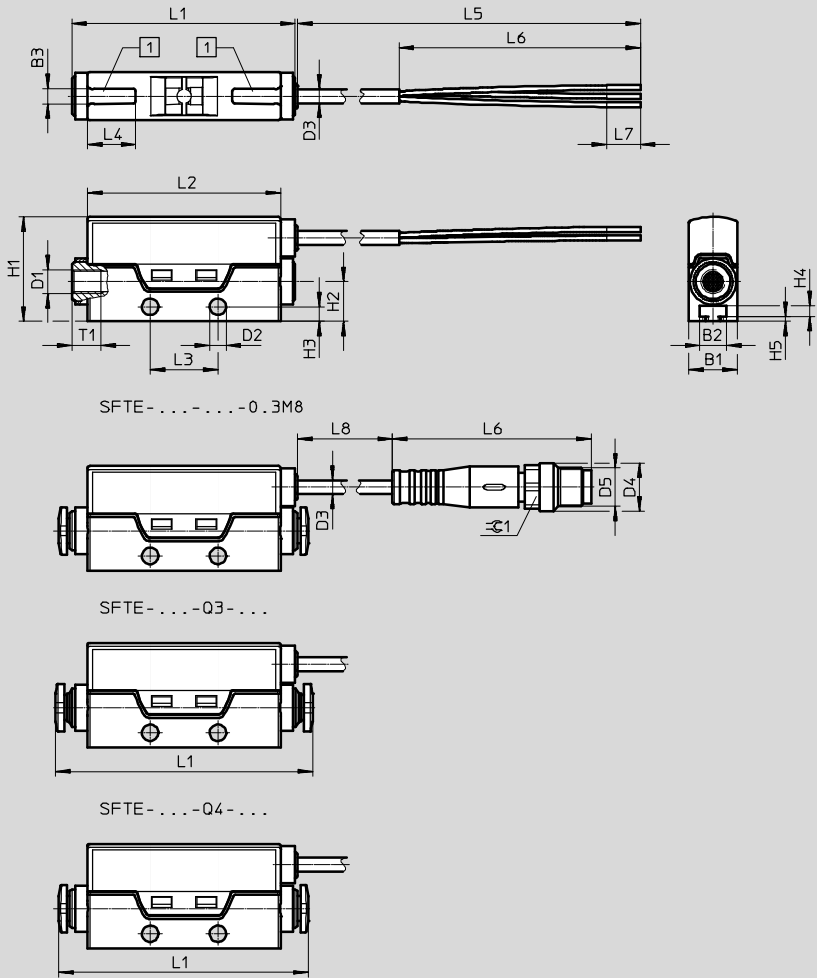
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.

Flow transmitters SFTE

Technical data

Dimensions

Download CAD data → www.festo.com




Type code	B1	B2	B3	D1	D2 ∅	D3 ∅	H1	H2	H3	H4
SFTE-...-M5F-...	10	5.5	3.2	M5	3.4	2.9	21.6	8.2	3	2.2
SFTE-...-Q4-...				Q4						
SFTE-...-Q3-...				Q3						

Type code	H5	L1	L2	L3	L4	L5	L6	L7	T1
		max.							
SFTE-...-M5F-...	1	47	40	14	10	~2500	50	7	6
SFTE-...-Q4-...		55							
SFTE-...-Q3-...		55							

Flow transmitters SFTE

Technical data

Ordering data					
Version	Flow measuring range [l/min]	Connection type	Voltage output [V]	Part no.	Type code
	0 ... 1	Female thread M5	1 ... 5	8058510	SFTE-1U-M5F-B-2.5K
		For push-in connector O.D. 4 mm		8058511	SFTE-1U-Q4-B-2.5K
	0 ... 5	Female thread M5		8058512	SFTE-5U-M5F-B-2.5K
		For push-in connector O.D. 4 mm		8058513	SFTE-5U-Q4-B-2.5K
	0 ... 10	Female thread M5		8058514	SFTE-10U-M5F-B-2.5K
		For push-in connector O.D. 4 mm		8058515	SFTE-10U-Q4-B-2.5K

Flow transmitters SFTE

Ordering data – Modular product system

Ordering table		Conditions	Code	Entry code
M	Module no.	8035301		
	Function	Flow sensor	SFTE	-SFTE
	Flow measuring range l/min	Max. 1	-1	
		Max. 2	-2	
		Max. 5	-5	
		Max. 10	-10	
	Flow rate input	Unidirectional	U	
	Pneumatic connection	M5	-M5	
		Push-in connector 3 mm	-Q3	
		Push-in connector 4 mm	-Q4	
O	Thread type	None	1	
		Female thread	2	F
M	Electrical output	1 ... 5 V		-B
		0 ... 10 V		-V
	Electrical connection	Cable 2.5 m, open end		-2.5K
		Cable 0.3 m, with M8 plug		-0.3M8

- 1** Not in combination with pneumatic connection M5
- 2** Not in combination with push-in connector 4 mm Q4
Not in combination with push-in connector 3 mm Q3

Transfer order code

-
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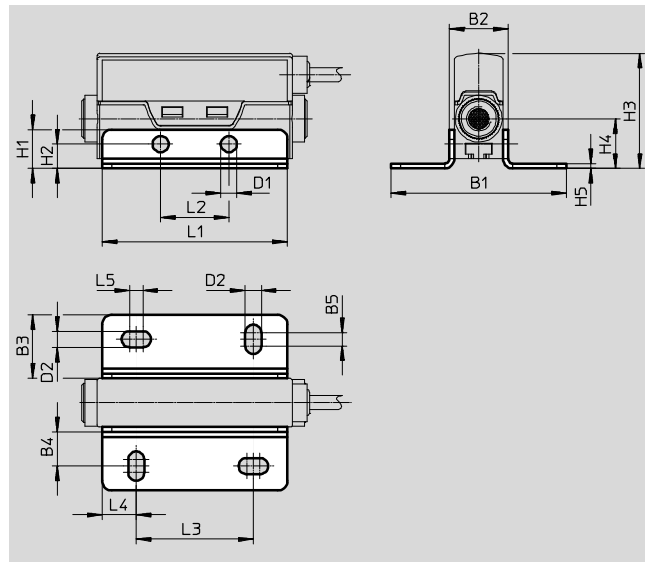
Flow transmitters SFTE

Accessories – Ordering data

Mounting bracket SAMH-FE-A

For wall or surface mounting

Material: High-alloy stainless steel,
RoHS-compliant




Dimensions and ordering data											
Type code	B1	B2	B3	B4	B5	D1 Ø	D2	H1	H2	H3	H4
SAMH-FE-A	36	12	13	7	2.7	3.3	3.3	8	5	23.6	10.2



Type code	H5	L1	L2	L3	L4	L5	CRC ¹⁾	Weight [g]	Part no.	Type code
SAMH-FE-A	1	38	14	24	7	2.7	2	6	8058519	SAMH-FE-A

1) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.


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Accessories – Ordering data

Ordering data – Connecting cables			Technical data → Internet: nebu	
	Number of wires	Cable length [m]	Part no.	Type code
Socket, 3-pin, M8 – open cable end				
	3	2.5	541333	NEBU-M8G3-K-2.5-LE3
		5	541334	NEBU-M8G3-K-5-LE3

Ordering data – Push-in fittings				Technical data → Internet: qsm		
	O.D.	Nominal width [mm]	For tubing O.D. [mm]	Part no.	Type code	PU ¹⁾
Straight connection						
	M5	2.2	6	153306	QSM-M5-6	10
90° connection						
	M5	1.5	3	153331	QSML-M5-3	10
		1.7	4	153333	QSML-M5-4	10
		2.1	6	153335	QSML-M5-6	10

1) Packaging unit

Ordering data – Signal converters		Technical data → Internet: scdn	
	Measured variable	Part no.	Type code
	Voltage	8035555	SCDN-2V-EC4-PNLK-L1

Ordering data – Plugs			Technical data → Internet: necu	
	Electrical connection	Connection diameter [mm ²]	Part no.	Type
	Square design, 4-pin, straight, insulation displacement connector	0.14	570922	NECU-S-ECG4-HX-Q3