

## Flow transmitters SFTE

**FESTO**



## Key features

### At a glance

#### Compact and lightweight

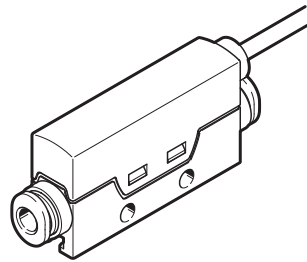
- Compact design 10x40x22 mm
- Degree of protection IP40
- Weight: 9 g for M5 connection (without cable)

#### Universal flow detection

- 4 variants 1 ... 10 l/min
- Repetition accuracy  $\pm 1\%$ FS
- Application range  $-0.9 \dots 10$  bar
- Suitable for compressed air and non-corrosive gases

#### Fast

- Rise time 3 ms
- Pure analogue signal processing



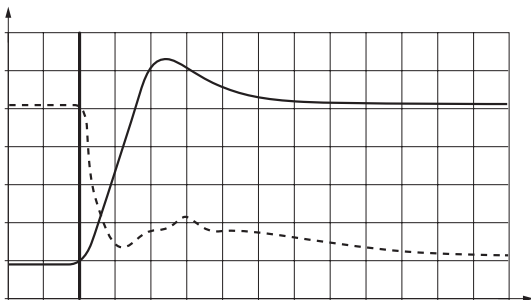
#### Easy installation

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

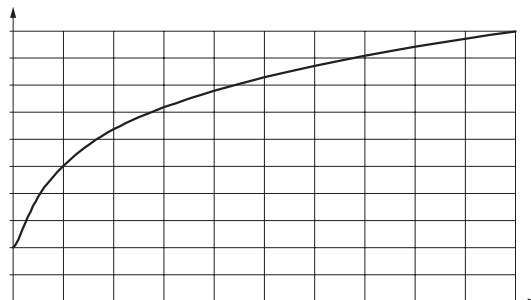
#### Reliable Pick&Place application

- 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 rate. This signal can optionally be processed e.g. by a controller or a signal converter.

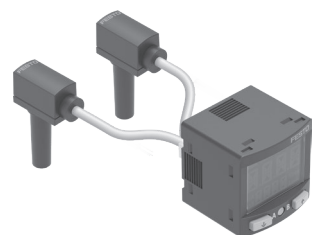
The SFTE also supplies an output signal in the event of return flow.

### Areas of application

- Picking and placing 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

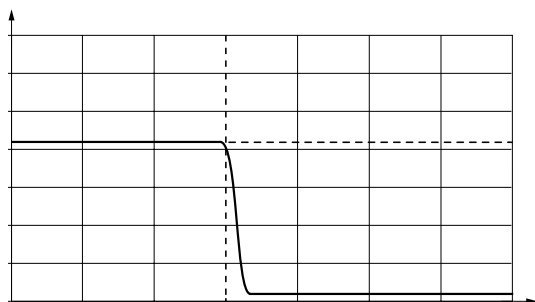
Threshold monitoring of the SFTE voltage output can take place in combination with the signal converter SCDN. 2 flow transmitters SFTE can be connected to one signal converter SCDN.



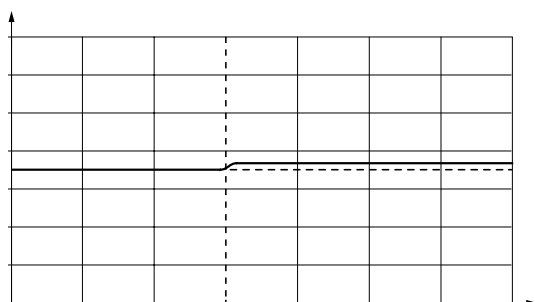
## Key features

### Comparison of signal strength for a Pick&Place application

With flow transmitter

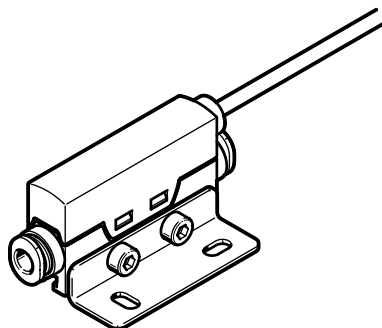


With pressure transmitter



### Mounting options

Bracket mounting, single sensor



Bracket mounting, multiple sensors

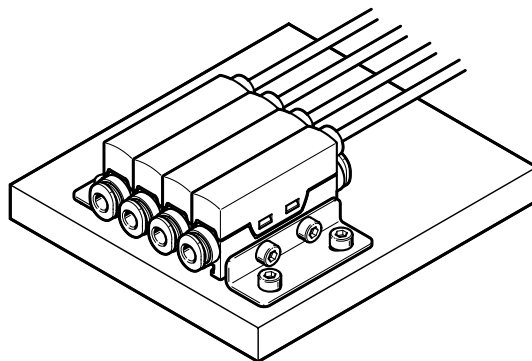


Plate mounting (from underneath)

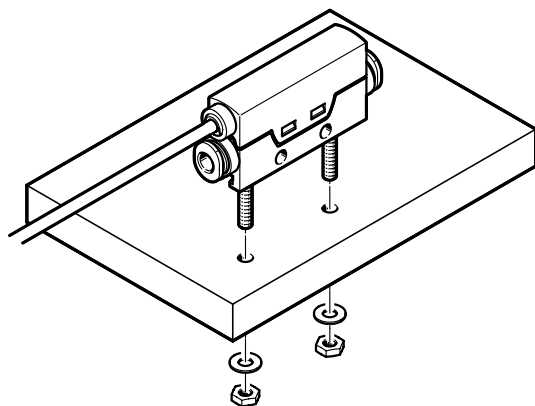
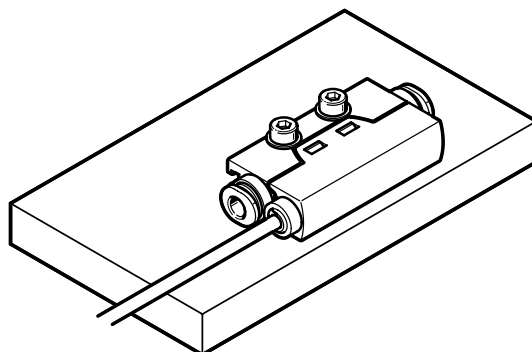
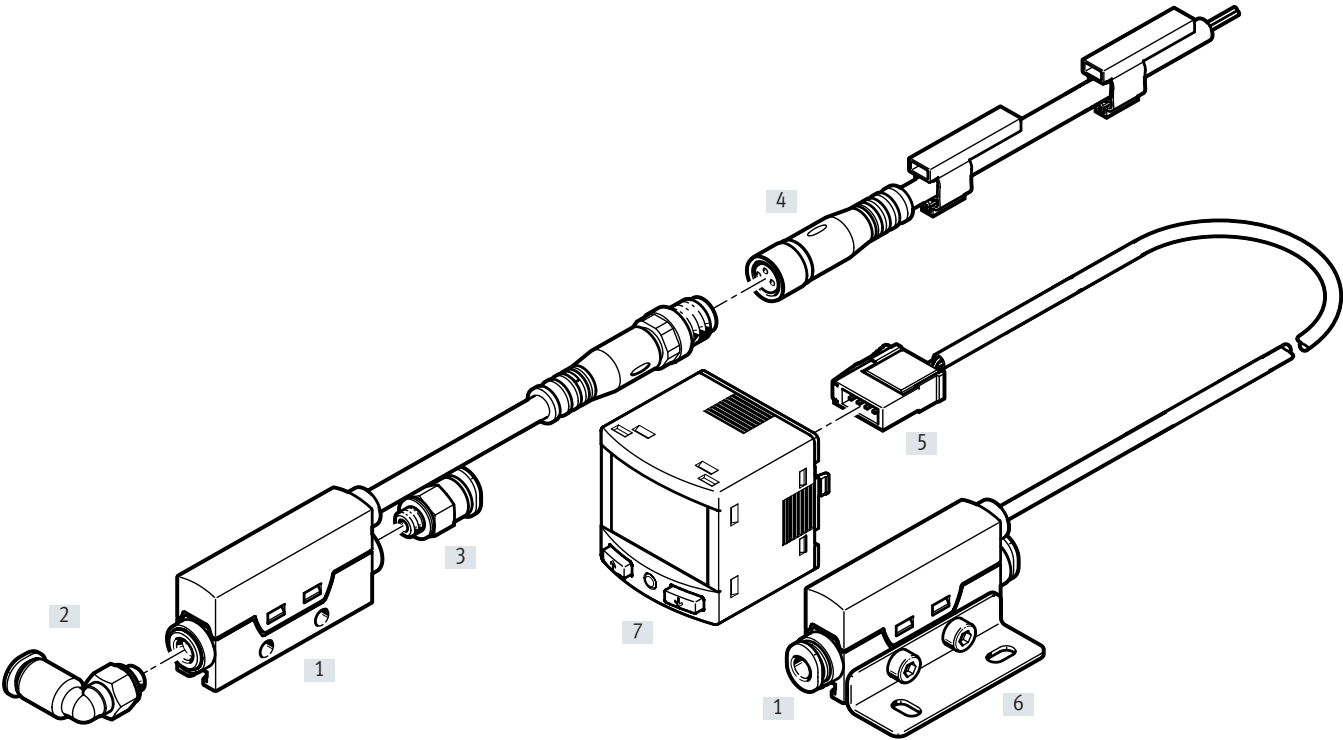


Plate mounting (from the side)



Peripherals overview



Mounting components and accessories		Description	→ Page
[1]	SFTE Flow transmitter	Flow transmitter	6
[2]	QSML-M5-3 Push-in fitting	90° connection	12
[3]	QSM-M5-6 Push-in fitting	Straight connection	12
[4]	NEBU-M8G3- ... Connecting cable	M8x1, straight socket	12
[5]	NECU-S-ECG4-HX-Q3 Plug	Square design, 4-pin, straight, insulation displacement connector	12
[6]	SAMH-FE-A Mounting bracket	For wall or surface mounting (screws are not included in scope of delivery)	11
[7]	SCDN- ... Signal converter	Converts analogue signals into digital switching signals or IO-Link	12

## Type codes

001	Series	
SFTE	Flow transmitter	

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

003	Flow rate input	
U	Unidirectional	

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

005	Thread type	
	None	
F	Female thread	

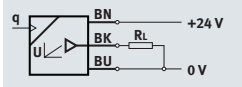
006	Electrical output 1	
B	1 ... 5 V	
V	0 ... 10 V	

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

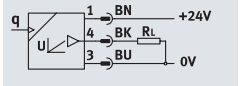
Data sheet

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			
Measurement method		Heat loss			
Certification		RCM			
CE marking (see declaration of conformity)		To EU EMC Directive			
		To EU RoHS Directive			
KC mark		KC EMC			
UKCA marking (see declaration of conformity)		To UK instructions for EMC			
		To UK RoHS instructions			
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] <sup>1)</sup>	±1

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

Analogue output		V	B
Analogue output <sup>1)</sup>	[V]	0 ... 10	1 ... 5
Rise time	[ms]	3	
Min. load resistance of voltage output	[kOhm]	20	

1) Output characteristic is not linear to the flow.

Output, additional data	
Short circuit current rating	Yes
Overload protection	Provided

## Data sheet

Electronics		
Operating voltage range DC	[V]	22 ... 26
No-load supply current	[mA]	≤ 17
Reverse polarity protection	For all electrical connections	
Electromechanics		
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
Weight	[g]	40
Cable sheath material	TPE-U(PUR)	
Mechanics		
Type of mounting	In-line installation	
	With through-hole	
	Via accessories	
Mounting position	Any	
Materials		
Housing	Reinforced PA	
Note on materials	RoHS-compliant	
Immission/emission		
Degree of protection	IP40	
PWIS conformity	VDMA24364-B2-L	
Cleanroom class	Class 4 to ISO 14644-1	
Corrosion resistance class CRC <sup>1)</sup>	2	

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

Moderate corrosion stress. Indoor applications in which condensation can occur. External visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment.

Data sheet

Dimensions

SFTE-...-0.3M8

SFTE-...-Q3-...

SFTE-...-Q4-...

Download CAD data → [www.festo.com](http://www.festo.com)

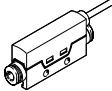
[1] T-slot for M3 hexagon head screws (EN ISO 4017). Distance between holes 27 mm to 33 mm

Type	B1	B2	B3	D1	D2 Ø	D3 Ø	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	H5	L1 max.	L2	L3	L4	L5	L6	L7	T1
SFTE-...-M5F-...	1	47	40	14	10	~2500	50	7	6
SFTE-...-Q4-...		55							
SFTE-...-Q3-...		55							



## Data sheet

Ordering data					
Design	Flow measuring range [l/min]	Connection type	Voltage output [V]	Part no.	Type
	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

## Ordering data – Modular product system

Ordering table		Conditions	Code	Enter code
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 input	Unidirectional		U	
Pneumatic connection	M5		-M5	
	Push-in connector 3 mm		-Q3	
	Push-in connector 4 mm		-Q4	
Thread type	None	[1]		
	Female thread	[2]	F	
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

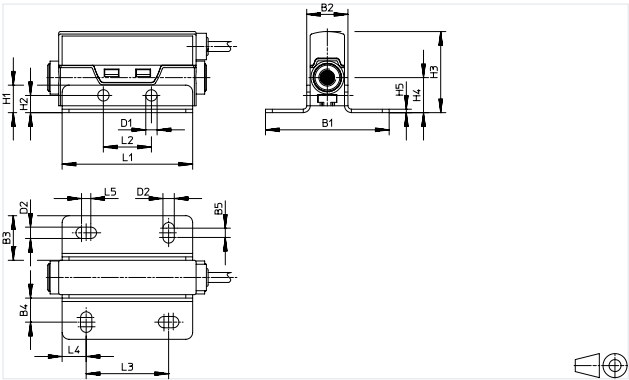
[2] Not in combination with push-in connector 4 mm Q4  
Not in combination with push-in connector 3 mm Q3

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	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	H5	L1	L2	L3	L4	L5	CRC <sup>1)</sup>	Weight [g]	Part no.	Type
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 can occur. External visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment.


## Accessories – Ordering data

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

Ordering data – Push-in fittings				Data sheets → Internet: qsm		
	O.D.	Nominal width [mm]	For tubing O.D. [mm]	Part no.	Type	PU <sup>1)</sup>
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 converter			Data sheets → Internet: scdn	
	Measured variable		Part no.	Type
	Voltage		8035555	SCDN-2V-EC4-PNLK-L1

Ordering data – Plug			Data sheets → Internet: necu	
	Electrical connection	Connection cross section [mm²]	Part no.	Type
	Square design, 4-pin, straight, insulation displacement connector	0.14	570922	NECU-S-ECG4-HX-Q3