Signal converter SCDN

Key features

At a glance

Connections for up to 2 sensor transmitters

Flexible in use
- Transmitter signal range scalable (e.g.: 1 ... 5 V)
- Measured value indicator can be individually configured
- Lots of integrated switching functions

Numerous display units

• bar	• inchH_2O	• GPM
• kPa	• kgf/cm²	• mm
• MPa	• l/min	• inch
• psi	• l/h	• V
• mmHg	• scfm	• mA
• inchHg	• scfh	• %

Communication interface

IO-Link

Many integrated functions
- Min./max. monitoring
- PNP/NPN, switchable
- Eco mode
- Tamper protection with security code
- Filter can be adjusted to smooth the signals
- Fast and straightforward setting of switching points via teach-in
- Easy copying of parameters to further devices

Easy operation
- Blue display with high-contrast white text and red switchover
- Intuitive menu navigation, as for pressure sensors SPAU and SPAN

Product description

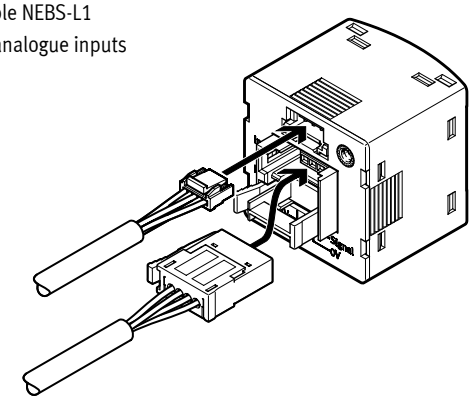
The signal converter detects analogue current or voltage signals from sensors (transmitters). Connection to the higher-level system is provided by 1 or 2 switching outputs or alternatively by an IO-Link interface. The signal converter has a display for visualising the signals and parameters, and can thus be used as a remote display for transmitters.

The switching outputs can be configured to monitor a threshold value, signal range or signal change. The outputs can be set as PNP or NPN and normally open (NO) or normally closed (NC).

Process values can be read out and parameters changed and transmitted to additional devices via the IO-Link interface.

2-step connection

[1] Connecting cable NEBS-L1
[2] Plug NECU for analogue inputs



Area of application

- Converts analogue signals into digital switching signals
- Conversion of analogue signals in IO-Link
- Reduction in analogue signals to control systems
- Fast and decentralised signal processing to reduce the load on the control system
- Remote visualisation of process values, the display is remote
- Quantity detection, e.g. pressure transmitter, vacuum transmitter, flow transmitter
- Object detection, e.g. inductive sensors with analogue output, distance sensors
- Position detection, e.g. position transmitters for pneumatic cylinders
- Auto difference monitoring, e.g. leak test

The signal converter can be used with the following Festo products, for example.

- Pressure transmitters SPTE, SDE5-NF-V, SPTW
- Vacuum generator OVEL with SPTE
- Flow transmitters SFET-F, SFET-R
- Position transmitters SDAT, SMAT-8E, SMAT-8M
- Analogue sensor box SRAP
- Inductive sensors with analogue output SIEA

Key features

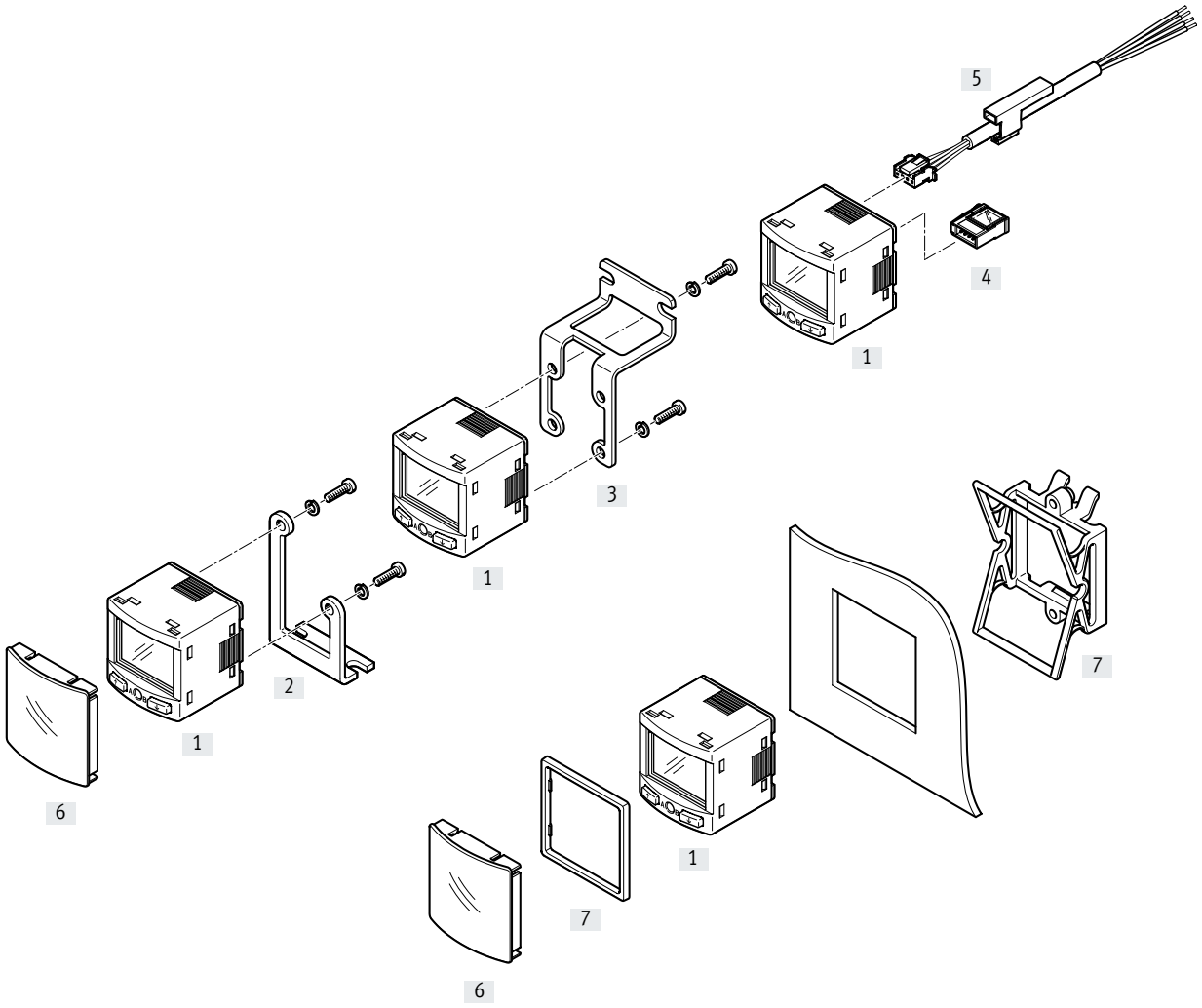
Mounting options (shown here with SPAN)

Front panel mounting

Manifold mounting with mounting bracket

Wall mounting

Peripherals overview



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[2]	Mounting bracket SAMH-PU-A	9
[3]	Wall mounting SAMH-PN-W	9
[4]	Plug for analogue inputs NECU-S-ECG4-HX-Q3	10
[5]	Connecting cables NEBS-L1G4-...	10
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[7]	Front panel mounting kit SAMH-PN-F	10

Type codes

001	Series	
SCDN	Signal converter	

002	Electrical input	
2A	2 x 0 ... 20 mA	
2V	2 x 0 ... 10 V	

003	Electrical connection, input	
EC	Socket EC	

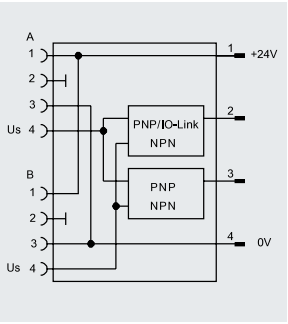
004	Number of pins, input	
4	4-pin	

005	Electrical output 1	
PNLK	PNP/NPN/IO-Link	

006	Electrical connection	
L1	Plug type L1	

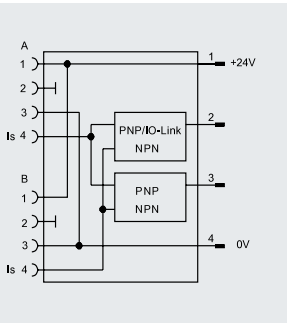
Data sheet

Variant for 0 ... 10 V



- Connections for 2 sensor transmitters
- Device variants for 0 ... 10 V and 0 ... 20 mA
- 2 switching outputs + IO-Link
- Flexible in use owing to scaling of the signal inputs, e.g.: 1 ... 5 V and scaling of the measured value indicator e.g.: –1 ... 1 bar

Variant for 0 ... 20 mA



General technical data		
Certification		RCM
		c UL us listed (OL)
CE marking (see declaration of conformity)		To EU EMC Directive
		To EU RoHS Directive
UKCA marking (see declaration of conformity)		To UK instructions for EMC
		To UK RoHS instructions
Certificate issuing authority		UL E322346
Ambient temperature	[°C]	0 ... +50
Note on materials		RoHS-compliant

Input signal		–2 V	–2 A
Measured variable		Voltage	Current
Signal range	[V]	0 ... 10	–
	[mA]	–	0 ... 20
Sampling interval	[ms]	1	

Output, general		
Accuracy FS	[%]	0.5
Repetition accuracy	[%]	0.2

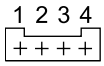
Switching output		
Switching output		2 x PNP or 2 x NPN, switchable
Switching function		Freely programmable
Switching element function		N/C or N/O, switchable
Max. output current	[mA]	100
Short circuit current rating		Yes

Data sheet

Electronics		
Operating voltage range DC	[V]	15 ... 30
Reverse polarity protection		For all electrical connections
Electrical connection, input		
Function		Analogue input, power supply
Connection type		2 x socket
Connection technology		Connection pattern EC
Number of pins/wires		4
Electrical connection output		
Function		Power supply, communication, switching output
Connection type		Plug
Connection technology		Plug pattern L1J
Number of pins/wires		4

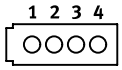
IO-Link device to IEC 61131-9	
Protocol	IO-Link
Protocol version	Device V 1.1
Profile	Smart sensor profile
Function classes	Binary data channel (BDC)
	Process data variable (PDV)
	Identification
	Diagnostics
	Teach channel
Communication mode	COM2 (38.4 kBd)
SIO mode support	Yes
Port class	A
Process data width OUT	0 bytes
Process data width IN	5 bytes
Process data content IN	14-bit PDV (measured value InA)
	14 bit PDV (measured value InB)
	2-bit BDC (measurement monitoring)
Minimum cycle time	5 ms
Data memory required	0.5 kilobyte

Pin allocation, output

Plug L1J	Pin	Wire colour[1)]	Allocation
	1	Brown	Operating voltage +24 V DC
	2	Black	Switching output A / IO-Link
	3	White	Switching output B
	4	Blue	0 V DC

1) Wire colour applies to NEBS-L1

Pin allocation, input

EC socket	Pin	Wire colour	Allocation
	1	–	Operating voltage for the connected signal converter +24 V DC
	2	–	NC
	3	–	0 V DC
	4	–	Analogue input

Data sheet

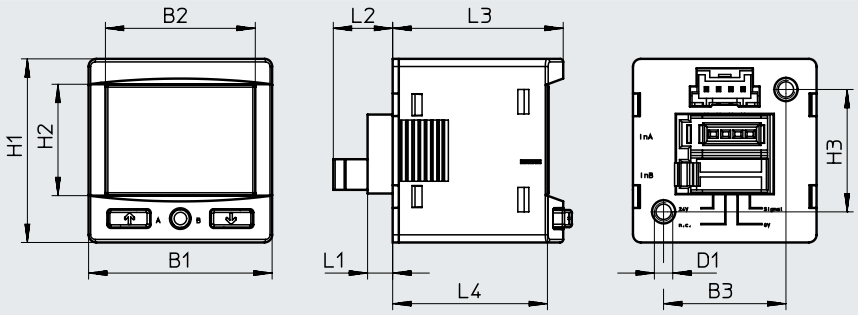
Mechanics		
Type of mounting		Front panel mounting
		Via wall/surface bracket
Product weight	[g]	23
Housing material		Reinforced PA

Display/operation	
Display type	Multi-coloured, illuminated LCD
Setting options	Teach-in
	IO-Link
	Via display and buttons
Protection against tampering	IO-Link
	PIN code

Immission/emission	
Degree of protection	IP40
PWIS conformity	VDMA24364-B2-L
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 can occur. External visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment.

Dimensions Download CAD data ➔ www.festo.com



Type	B1	B2	B3	D1	H1	H2	H3	L1	L2	L3	L4
SCDN-2V-EC4-PNLK-L1	30	24.5	20	M3	30	18.2	20	4.1	9.7	27.9	~25.3
SCDN-2A-EC4-PNLK-L1											

Ordering data

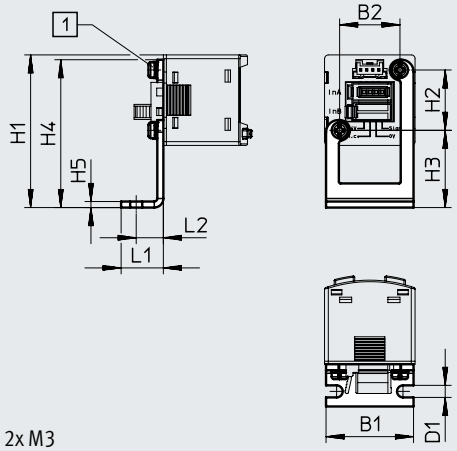
	Measured variable	Part no.	Type
	Voltage	**8035555**	**SCDN-2V-EC4-PNLK-L1**
	Current	**8035556**	**SCDN-2A-EC4-PNLK-L1**

Accessories – Ordering data

Mounting bracket
SAMH-PU-A

Material: High-alloy stainless steel

Note on materials: RoHS-compliant



[1] Screws 2x M3

Ordering data

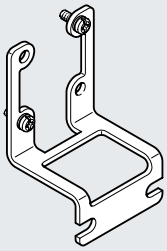
Type	B1	B2	D1 @	H1	H2	H3	H4	H5	L1	L2	CRC[1]	Part no.	Type
SAMH-PU-A	29	20	4	50.6	20	25.6	49	2	14	9	2	**8003354**	**SAMH-PU-A**

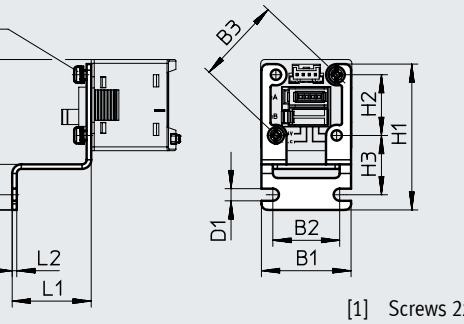
1) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation can occur. External visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment.

Wall mounting
SAMH-PN-W

Material: High-alloy stainless steel

Note on materials: RoHS-compliant





[1] Screws 2x M3

Dimensions and ordering data

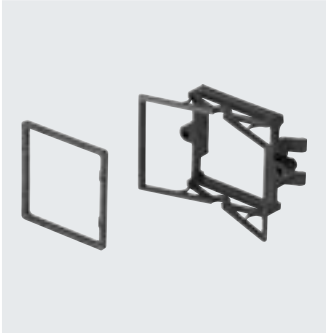
Type	B1	B2	D1 @	H1	H2	H3	H4	H5	H6	L1	L2	CRC[1]	Part no.	Type
SAMH-PN-W	29.5	22	4	48	20	19.5	5	15	49.5	26	1.5	2	**8035563**	**SAMH-PN-W**

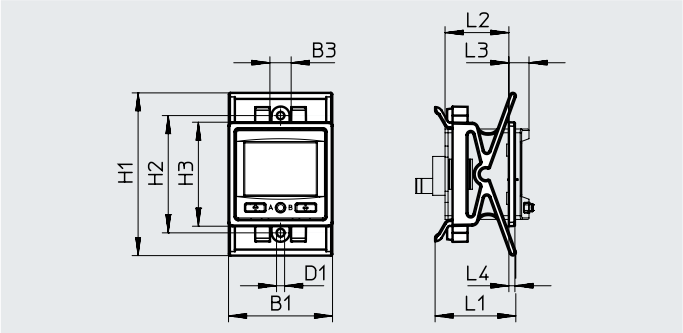
1) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation can occur. External visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment.

Accessories – Ordering data

Front panel mounting kit
SAMH-PN-F
Mounting kit for front panel

Material: PA, POM



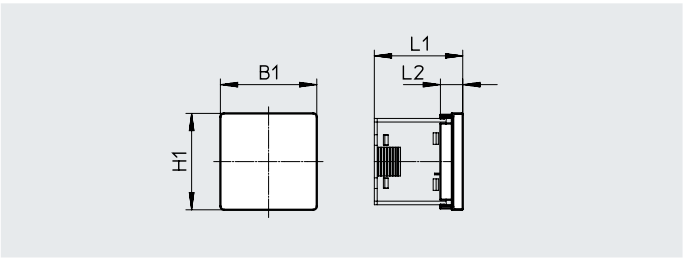


Dimensions and ordering data

Type	B1	B3	D1	H1		H2	H3	L1	L2	L3	L4	Part no.	Type
			@	min.	max.								
SAMH-PN-F	34.5	7	2.5	54	57.5	38.9	34.5	26.8	~21.2	~6.7	2	**8035561**	**SAMH-PN-F**

Safety guard
SACC-PN-G
To protect the display and control elements

Material: PA
Note on materials:
RoHS-compliant



Dimensions and ordering data

Type	B1	H1	L1	L2	Part no.	Type
SACC-PN-G	33.5	33.5	~31	7.7	**8035560**	**SACC-PN-G**

Ordering data – Connecting cables

	Number of wires	Cable length [m]	Part no.	Type
Socket, rectangular design L1				Data sheets → Internet: nebs
	4	2.5	**572576**	**NEBS-L1G4-K-2.5-LE4**
		5	**572577**	**NEBS-L1G4-K-5-LE4**

Ordering data – Plug

	Description	Part no.	Type
EC plug for analogue inputs (3M Mini Clamp)			Data sheets → Internet: necu
	One plug required for each transmitter/signal	**570922**	**NECU-S-ECG4-HX-Q3**