

Signal converter SCDN



Signal converter SCDN

Key features

At a glance

Connections for up to 2 sensor transmitters

Flexible use

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

Values can be displayed in many

- | | | |
|--------------|------------------------|--------|
| units | • inchH ₂ O | • GPM |
| • bar | • kgf/cm ² | • mm |
| • kPa | • l/min | • inch |
| • MPa | • l/h | • V |
| • psi | • scfm | • MA |
| • mmHg | • scfh | • % |
| • inchHg | | |



Many integrated functions

- Min./max. monitoring
- PNP/NPN, switchable
- Eco mode
- Tamper protection with security code
- Filter can be adjusted to smooth the signals
- The switching points can be easily set via teach-in
- Parameters can be easily copied to other devices

Easy operation

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

Communication interface



Product description

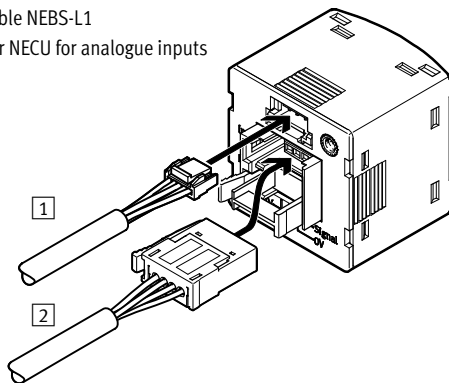
The signal converter detects analogue current or voltage signals from sensors (transmitters). Connection to the higher-level system is provided by 1 or 2 switching outputs or alternatively by an IO-Link® interface. The signal converter has a display for visualising the signals and parameters, and can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

Connection in 2 steps

- 1 Connecting cable NEBS-L1
- 2 Plug connector 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 the control systems
- Fast and decentralised signal processing to reduce the load on the control system
- Remote visualisation of process values, the display is detached
- Quantity detection, e.g. pressure transmitters, vacuum transmitters, flow transmitters
- Object detection, e.g. inductive sensors with analogue output, distance sensors
- Position detection, e.g. position sensors 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 sensors SDAT, SMAT-8E, SMAT-8M
- Analogue sensor box SRAP
- Inductive sensors with analogue output SIEA

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Key features

Mounting options (shown here with SPAN)

Front panel mounting



Manifold mounting with mounting bracket

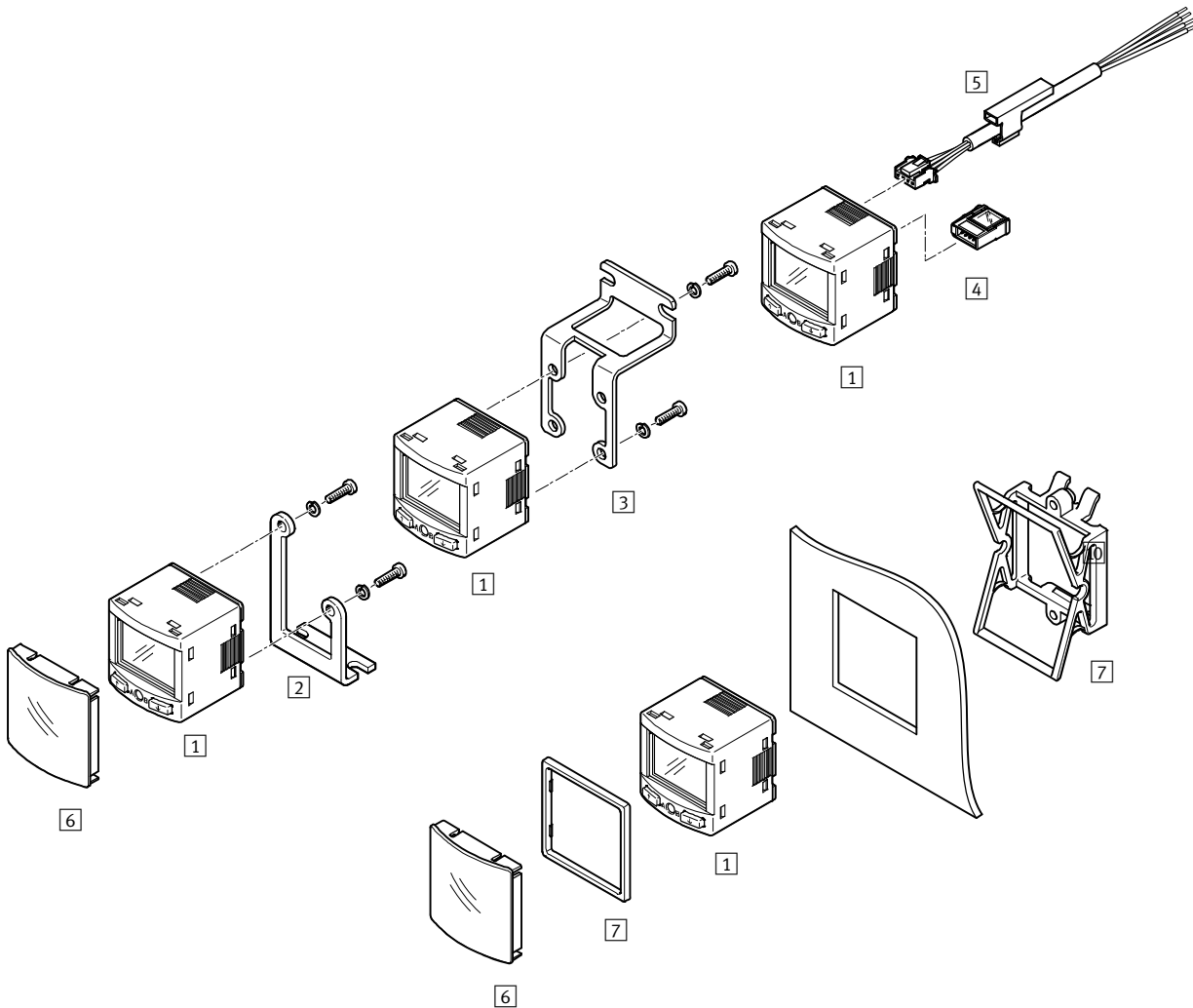


Wall mounting



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Peripherals overview

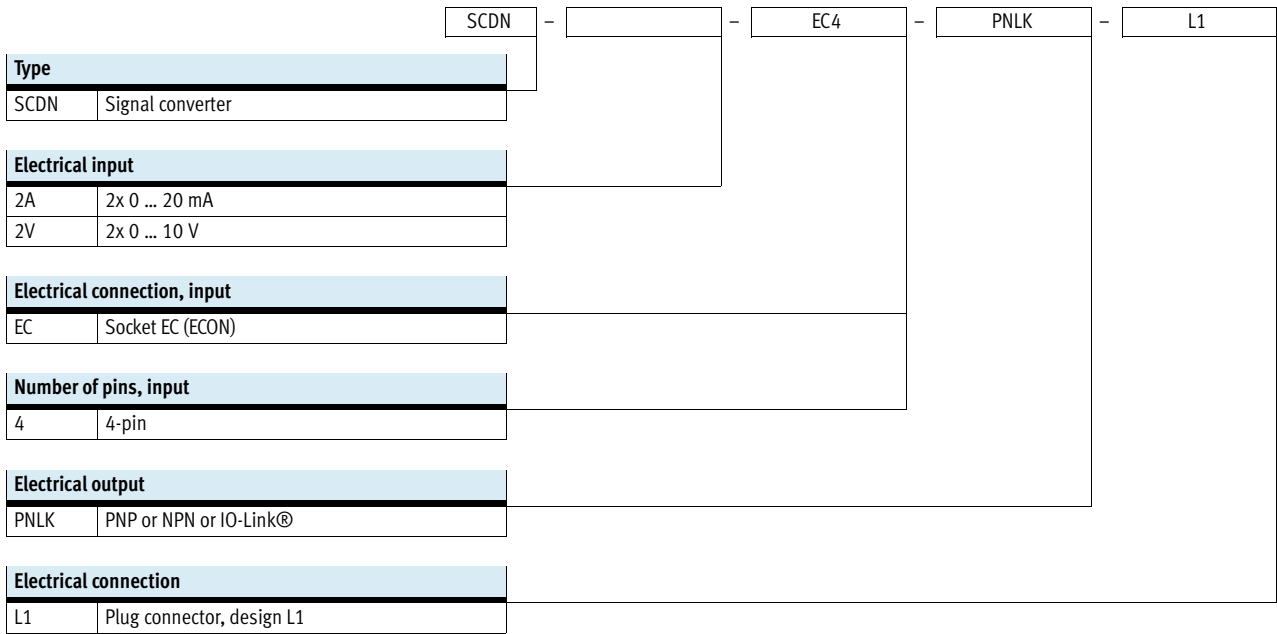


| Accessories | → Page/ Internet |
|--|---------------------|
| 1 Signal converter SCDN | 6 |
| 2 Mounting bracket SAMH-PU-A | 9 |
| 3 Wall mounting SAMH-PN-W | 9 |
| 4 Plug connector for analogue inputs NECU-S-ECG4-HX-Q3 | 10 |

| Accessories | → Page/ Internet |
|--------------------------------------|---------------------|
| 5 Connecting cables NEBS-L1G4-... | 10 |
| 6 Protective cover SACC-PN-G | 10 |
| 7 Front panel mounting kit SAMH-PN-F | 10 |

Signal converter SCDN

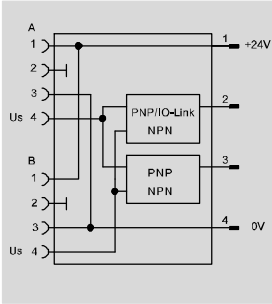
Type codes



Signal converter SCDN

Technical data

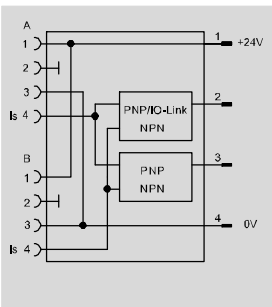
Variant for 0 ... 10 V



- 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 compliance mark |
| CE marking (see declaration of conformity) | In accordance with EU EMC Directive |
| Ambient temperature [°C] | 0 ... +50 |
| Note on materials | RoHS compliant |

| Input signal | -2V | -2A |
|------------------------|----------|----------|
| 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 contact, switchable |
| Max. output current [mA] | 100 |
| Short circuit protection | Yes |

Signal converter SCDN

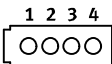
Technical data

| 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 | | 2x socket |
| Connection technology | | Plug pattern EC |
| Number of pins/wires | | 4 |
| Electrical connection, output | | |
| Function | | Power supply, communication, switching output |
| Connection type | | Plug connector |
| 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 kBaud) |
| 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 (measured value monitoring) |
| Minimum cycle time | 5 ms |
| Data memory required | 0.5 kilobyte |

| Pin allocation, output | | | |
|---|-----|---------------------------|-------------------------------|
| Plug connector 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 |

Signal converter SCDN

Technical data

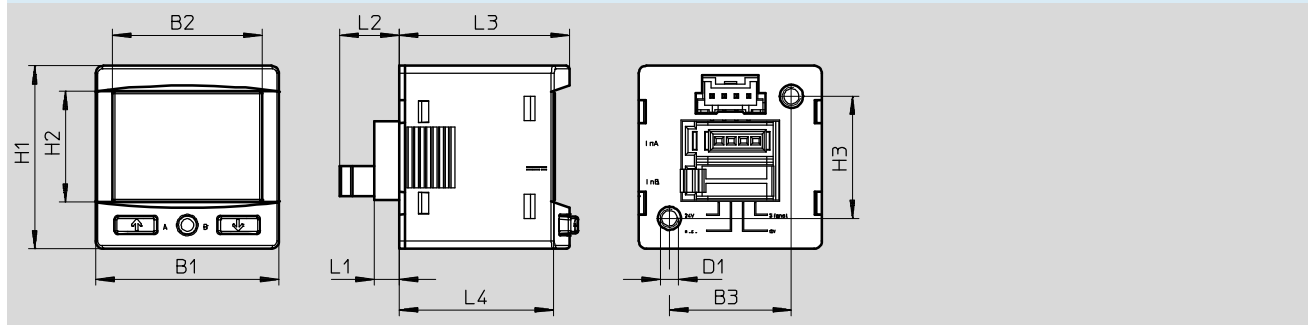
| Mechanical system | |
|--------------------|--|
| Type of mounting | Front panel mounting Via wall/surface bracket |
| Product weight [g] | 23 |
| Housing material | Reinforced PA |

| Display/operation | |
|------------------------------|--|
| Display type | Illuminated LCD, multi-colour |
| Setting options | Teach-in IO-Link® Via display and keys |
| Protection against tampering | IO-Link® PIN code |

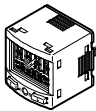
| Immissions/emissions | |
|--|------|
| Degree of protection | IP40 |
| Corrosion resistance class CRC ¹⁾ | 2 |

1) Corrosion resistance class 2 according to Festo standard 940070
Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with the surrounding industrial environment or media such as coolants or lubricating agents.

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

Signal converter SCDN

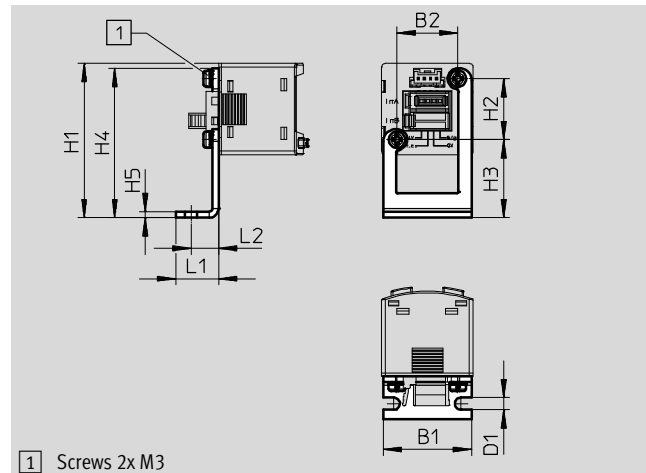
Accessories – Ordering data



Mounting bracket SAMH-PU-A

Material: High-alloy stainless steel

Note on materials: RoHS compliant



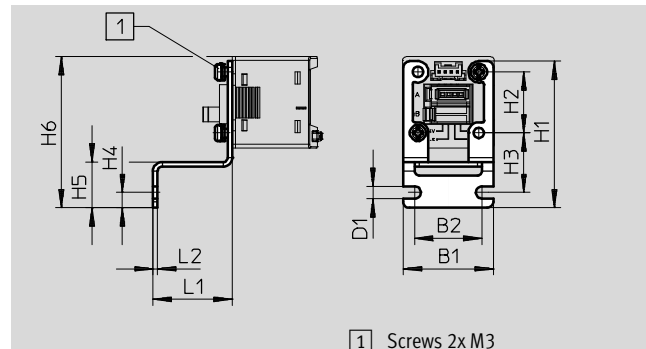
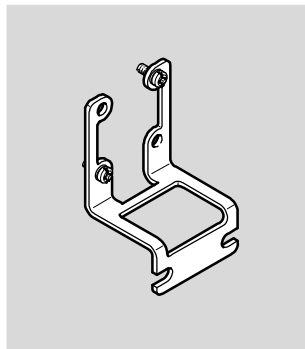
| Ordering data | | | | | | | | | | | | | |
|---------------|----|----|---------|------|----|------|----|----|----|----|-------------------|----------|-----------|
| Type | B1 | B2 | D1 ∅ | H1 | H2 | H3 | H4 | H5 | L1 | L2 | CRC ¹⁾ | Part No. | Type |
| SAMH-PU-A | 29 | 20 | 4 | 50.6 | 20 | 25.6 | 49 | 2 | 14 | 9 | 2 | 8003354 | SAMH-PU-A |

1) Corrosion resistance class 2 to Festo standard 940070
Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with the surrounding industrial environment or media such as coolants or lubricating agents.

Wall mounting SAMH-PN-W

Material: High-alloy stainless steel

Note on materials: RoHS compliant



| 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 2 to Festo standard 940070
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Signal converter SCDN

Accessories – Ordering data

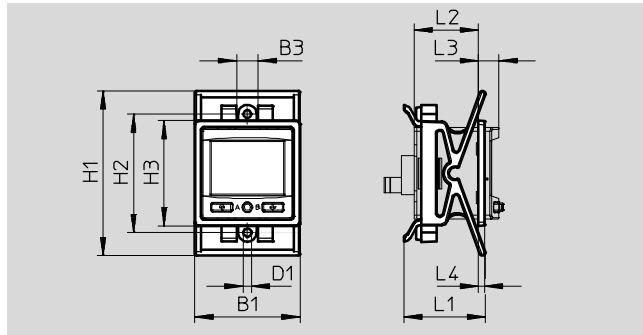
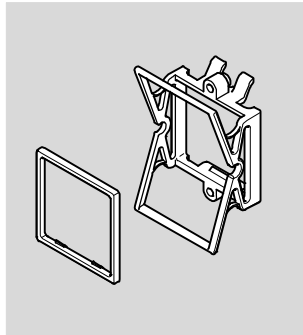
FESTO

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 |

Protective cover

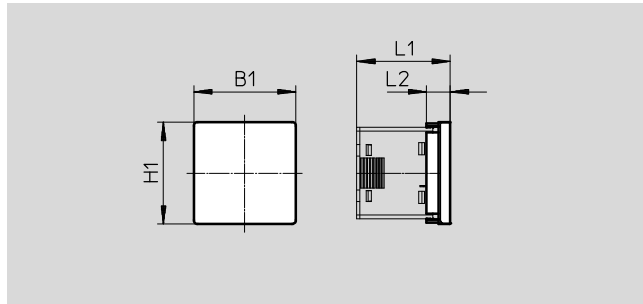
SACC-PN-G

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 |
|-------------------------------|-----------------|------------------|----------|---------------------------------|
| | | | | Technical data → Internet: nebs |
| Socket, rectangular design L1 | 4 | 2.5 | 572576 | NEBS-L1G4-K-2,5-LE4 |
| | | 5 | 572577 | NEBS-L1G4-K-5-LE4 |

Ordering data – Plug connector

| | Description | Part No. | Type | |
|---|---|----------|-------------------|---------------------------------|
| | | | | Technical data → Internet: necu |
| EC plug connector for analogue inputs (3M Mini Clamp) | One plug connector required for each transmitter/signal | 570922 | NECU-S-ECG4-HX-Q3 | |