SENS4

S4-Connect™
USB programming and communication unit
QSG-PRG-S4-01, Revision: A, December 2018

S4-Connect

CE

Quick start guide

✓ RoHS Compliant

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General information
Thank you for purchasing this Sens4 product. This quick start guide contains important safety information, and we encourage you to read this guide prior to installation and use of this product.

Symbols used
Following symbols are used in the quick start guide:

⚠️ **WARNING!** Critical information to prevent dangerous situations that can result in serious injury or death.

⚠️ **CAUTION!** Important information to prevent dangerous situations that can damage the device or auxiliary equipment.

❗ **ACTION!** Requires action or attention.

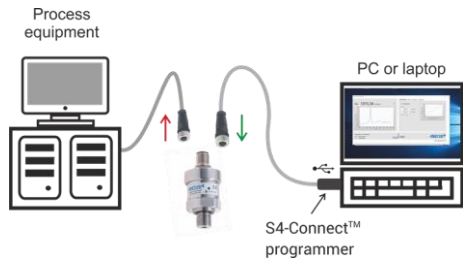ℹ️ **INFORMATION**: Important recommendations and information for efficient use and best practice.

Intended use
The S4-Connect™ communication device is intended for programming and configuration of temperature, vacuum and pressure transmitters from Sens4. The device is designed for USB connectivity and provides power to the connected transmitter unit.
The device complies with EMC (Electro Magnetic Compatibility) class B immunity requirements for industrial environments.

Safety information
This product should be installed and operated by technically skilled or trained personnel only.
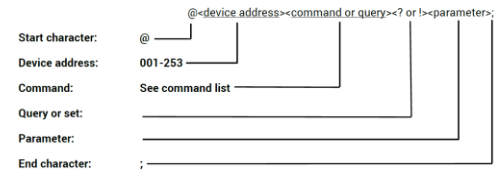
⚠️ **WARNING!** This product is not intended for use in the presence of flammable gases or other explosive environments.

⚠️ **WARNING!** The S4-connect™ programmer can be used to change transmitter settings and configurations that can interfere with the functionality and performance of process equipment that are used together with the transmitter.

ℹ️ **INFORMATION**: Software provided by Sens4 is supplied "as is" without warranty of any kind or guaranteed compatibility with customer IT systems and environment.

Getting started
The S4-Connect™ programmer requires a software driver to operate with a PC. When connected to a Windows 10 PC, provided the PC has internet access, Windows will automatically install the suitable driver.

Installing USB <-> Serial Converter
Please wait while Setup installs necessary files on your system. This may take several minutes.

For other operating systems, or if the driver does not install automatically, drivers are available on: https://sens4.com.

Once installed, the S4-Connect™ adapter will act as a regular COM port.

Software
The S4-Connect™ manager software is a freeware program to test, adjust and configure S4-Connect™ compatible transmitters with 4-20 mA current output and 0-10 VDC voltage output.
The software can be downloaded from: https://sens4.com.

As the S4-Connect™ adapter acts like a COM port, other communication software – such as terminals or LabVIEW – can be used to communicate with it, too.

Refer to transmitter operating manual for serial communication commands. Manuals are available online: https://sens4.com.

Connecting the transmitter (PC)
During the power-up cycle the transmitter will detect if there is a S4-Connect™ programmer connected. When the S4-Connect™ programmer is detected, the transmitter will enter S4-Connect™ service mode.

Process equipment

PC or laptop

S4-Connect™ programmer

1. Remove the electronics connection to the transmitter so that it is disconnected from any process equipment.
2. Connect the programmer to the PC and the S4-Connect™ software. The S4-Connect™ programmer will then enter a state where it searches for the transmitter. During this period the LED on the programmer will alternate between green and blue.
3. Connect the transmitter to the S4-Connect™ cable. The S4-Connect™ programmer's LED will turn green if a current output transmitter is connected or blue if a voltage output transmitter is connected.
4. When the S4-Connect™ programmer's LED turns solid blue or green, it is ready for communication.

Connecting the transmitter (Smartphone)
It is also possible to operate the S4-Connect™ adapter – and transmitter – from a USB OTG-capable Android smartphone, enabling quick and easy diagnosis, configuration or measurements in the field.

Android has native COM port support, so all that is required is to install your terminal program of choice from the Google Play Store. Make sure that OTG is enabled when using the S4-Connect™ adapter.

LED Signals
The S4-Connect™ USB programmer has an LED indicator that provides the following signals:

- 🔵 🟢 Alternating blue/green: Searching for transmitter.
- 🔵 Solid blue: Voltage output transmitter connected.
- 🟢 Solid green: Current output transmitter connected.
- ⚪ White flash: Locate Mode for S4-Connect™ programmer

Locate Mode
The Locate function can be used to visually identify the S4-Connect™ adapter. When the Locate function is on, the LED will flash white until the power is cycled or Locate is turned off.

```
Send:     @254S4C!LOCATE,ON;  (turn on)
Send:     @254S4C!LOCATE,OFF; (turn off)
Receive:  @253ACKLOCATE;
```

Serial Protocol
Sens4 transmitters all use the same syntax as illustrated in the below picture. The protocol is described in detail in each transmitter's respective documentation.

@<device address><command or query><? or !><parameter>;

Start character:	@
Device address:	001-253
Command:	See command list
Query or set:	
Parameter:	
End character:	;

Note that all transmitters – regardless of their programmed device address – will reply to address 254. Refer to the connected transmitter's manual for the command list for that transmitter model. Parameters are only relevant for certain commands or queries. Keep in mind that S4-Connect™ communication is relatively slow, and only one command or query can be active at any time.
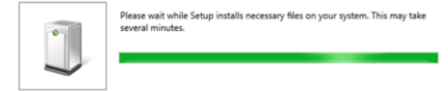
Examples:

Get the most recent temperature reading
```
Send:     @254T?;
Receive:  @253ACK25.24;
```

Change the temperature unit to Fahrenheit
```
Send:     @254U!FAHRENHEIT;
Receive:  @253ACKFAHRENHEIT;
```

Specifications

Specifications	
USB-interface	USB 2.0 type A
Power supply	+ 5 VDC USB
Transmitter supply output voltage	11 – 12 VDC
Communication	
Baud rate	115200 baud
Data bits	8 bit
Stop bits	1 bit
Parity and handshaking	None
Environment conditions	
Operating ambient temperature	-20 to +50 °C
Storage ambient temperature	-40 to +80 °C
Protection rating, EN 60529/A2:2013	IP40
Humidity, IEC 68-2-38	98%, non-condensing
Power supply	
Supply voltage (USB Powered)	+ 5 VDC USB
Power consumption (Voltage version)	750 mW (Max)
Materials	
Enclosure	ABS Plastic
Enclosure flammability rating	UL 94 HB
Connector M12 IEC 61076-2-101	PA Nylon, Nickel plated Zinc alloy
Connector DIN 175301-803A	PA Nylon
Cable	
Approvals	
CE	EN61000-6-2, EN 61000-6-3 Pressure directive 97/23/CE
RoHS compliance	Directive EU 2015/863