TI01422S/04/EN/05.21-00
71549735
2021-11-13

Technical Information
Modbus Edge Device SGC400

Edge Device to connect measuring technology to the Netilion Cloud

Application

The Modbus Edge Device SGC400 allows Modbus TCP devices to be connected to the Netilion Cloud. Data transmission is via a global SIM card and LTE network. The device ID data, measured values, NAMUR NE 107 status information and available diagnostics information are transmitted.

Your benefits

- Communication with measuring transmitters via Modbus TCP.
- Independent data transmission to the Netilion Cloud via LTE.
- No onsite configuration required.
- Transmission of the measurement and status information of the connected instruments.
- Easy installation and commissioning.

Endress+Hauser
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About this document

Symbols used

Safety symbols

Symbol	Meaning
DANGER	**DANGER!** This symbol alerts you to a dangerous situation. Failure to avoid this situation will result in serious or fatal injury.
WARNING	**WARNING!** This symbol alerts you to a dangerous situation. Failure to avoid this situation can result in serious or fatal injury.
CAUTION	**CAUTION!** This symbol alerts you to a dangerous situation. Failure to avoid this situation can result in minor or medium injury.
NOTICE	**NOTE!** This symbol contains information on procedures and other facts which do not result in personal injury.

Symbols for certain types of information

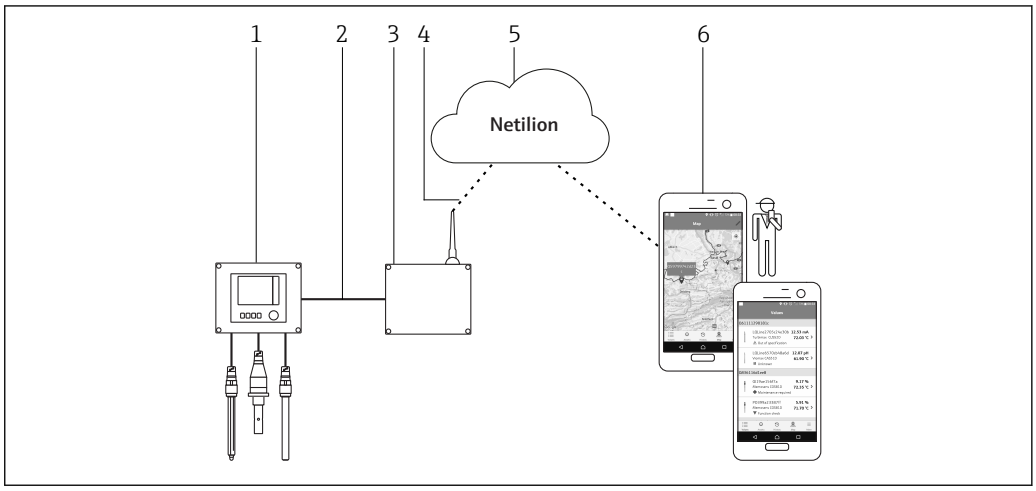
Symbol	Meaning
	**Permitted** Procedures, processes or actions that are permitted.
	**Preferred** Procedures, processes or actions that are preferred.
	**Forbidden** Procedures, processes or actions that are forbidden.
	**Tip** Indicates additional information.
	Reference to documentation.
	Reference to page.
	Reference to graphic.
	Visual inspection.

Function and system design

Function

Endress+Hauser devices with Modbus TCP communication can be connected to the Netilion Cloud with the Modbus Edge Device SGC400. Point-to-point connections are supported. The Edge Device transmits the device ID data, measured values and status information to the Netilion Cloud. Connection to the web is via an integrated LTE modem with a global SIM card. The data sent to the Netilion Cloud can be either queried directly via a REST JSON API or used in a smartphone application.

System design



1 *Network architecture*

1 *Field device e.g. Liquiline CM444*
2 *Modbus TCP connection*
3 *Modbus Edge Device SGC400*
4 *LTE connection*
5 *Netilion Cloud*
6 *User application on smartphone*

Communication and data processing

Modbus TCP (Ethernet)	2x LAN port, 10/100 Mbps, comply with IEEE 802.3, IEEE 802.3u standards
Wireless LAN	IEEE 802.11b/g/n, Access Point (AP), Station (STA)
Mobile	4G (LTE) CAT4 up to 150 Mbps 3G up to 42 Mbps

Power supply

Supply voltage

Version 100 to 240 V_{AC}

Voltage	100 to 240 V_{AC}, 50/60 Hz
Current consumption	0.07 A
Power consumption	Max. 72.1 VA
Electrical connection	Terminal X1 (green/yellow): PE Terminal X2 (blue): N Terminal X3 (gray): L
Integrated overvoltage protection	Varistor surge arrester for transient overvoltage protection

Version 24 V_{DC}

Voltage	24 V_{DC}
Current consumption	0.07 A
Power consumption	Max. 15 W
Electrical connection	Terminal X1 (green/yellow): PE Terminal X2 (blue): 0 V Terminal X3 (gray): 24 V_{DC}
Integrated overvoltage protection	ESD protection according to IEC 61000

Performance characteristics

Hardware

CPU	BCM2837, 1.2 GHz, quad-core
Ports	2x Ethernet Modbus TCP

Software

Operating system	Raspbian version Jessie incl. RT patch
Standard software	Endress+Hauser-specific runtime environment

Environment

Ambient temperature range

−25 to 55 °C (−13 to 131 °F)

Storage temperature

−40 to 80 °C (−40 to 176 °F)

Humidity

10 to 90 % (non-condensing)

Degree of protection

IP54

Degree of contamination

The product is suitable for pollution degree 4.

Shock resistance

LTE modem Teltonika RUT240 (IEC 60950-1:2005, EN 60950-1:2006)

Kunbus RevPi 3 (EN 61131-2)

Phoenix Contact UNO-PS (IEC 60068-2-27, IEC 60068-2-6)

Electromagnetic compatibility (EMC)

Complies with EMC Directive 2014/30/EU

LTE modem Teltonika RUT240 (EN61000-4)

Kunbus RevPi Core 3 (EN 61131-2, IEC 61000-6-2)

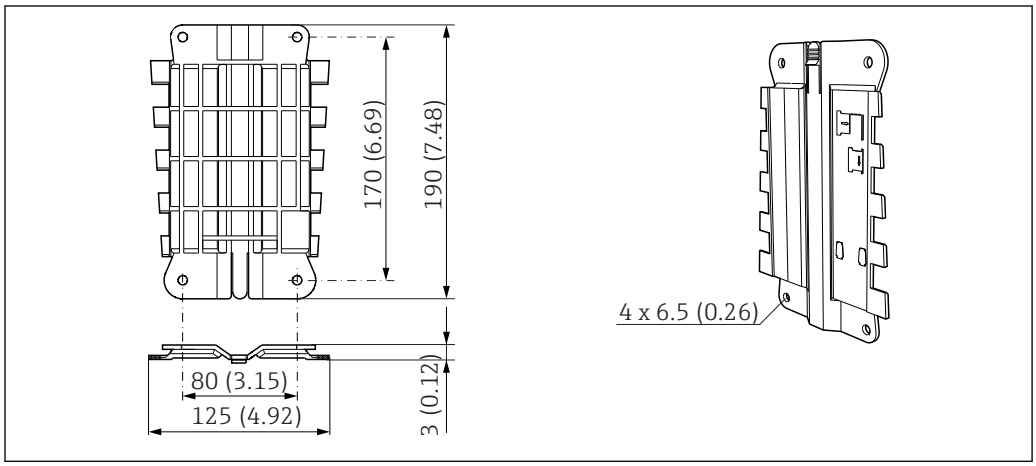
Phoenix Contact UNO-PS (EN 61000-4)

Mechanical construction

Design, dimensions

Mounting plate

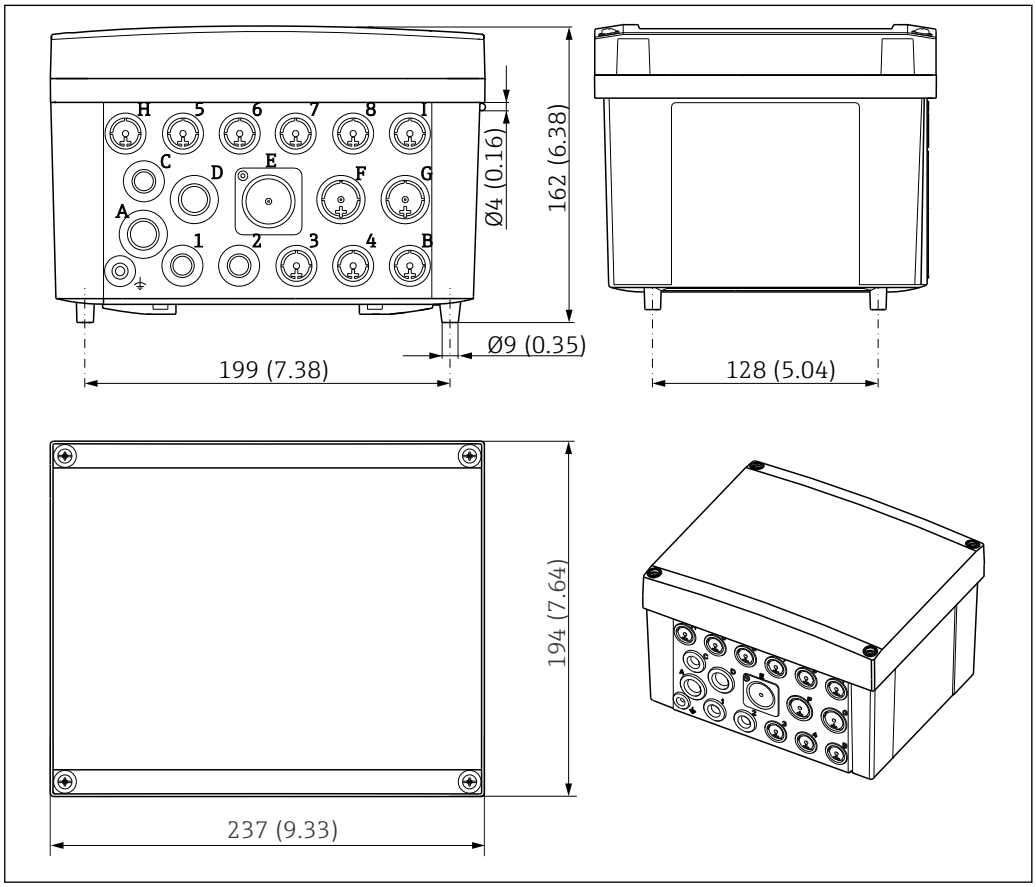
190 mm · 125 mm · 3 mm (7.48 in · 4.92 in · 0.12 in)



2 Dimensions of mounting plate

Modbus Edge Device SGC400

237 mm · 194 mm · 162 mm (9.33 in · 7.64 in · 6.38 in)



3 Modbus Edge Device SGC400 dimensions

Weight

2.3 kg (5.08 lb)

Materials

Housing	PC-FR
Seal	EPDM
Carrier board	Stainless steel 1.4301, AISI304
Cable entries	Polyamide V0 as per UL94

Antenna

MIMO directional antenna

Certificates and approvals

CE mark

The Modbus Edge Device SGC400 meets the legal requirements of the relevant EU Directives. The manufacturer has affixed the CE mark as confirmation that the Modbus Edge Device SGC400 has been successfully tested.

UL mark

The Modbus Edge Device SGC400 meets the legal requirements of the relevant UL directives. The manufacturer has affixed the UL mark as confirmation that the Modbus Edge Device SGC400 has been successfully tested.

Radio approval

Teltonika RUT240: CE/RED, UKCA, CCC, Ukraine UCRF, FCC, IC, PTCRB, Anatel, RCM, Thailand NBTC, Sirim, IMDA, SDPPI (POSTEL), AT&T approval, Verizon, Deutsche Telekom AG, GCF, WiFi Certified, Giteki, Arcotel, ETA-WPC, NOM

Other standards and guidelines	Electrical safety IEC61010-1 In compliance with 2014/35/EU

Ordering Information

For detailed information on the product structure, contact the Sales Center at:
www.addresses.endress.com

Scope of delivery

The scope of delivery comprises:
- Modbus Edge Device SGC400
- LTE antenna
- Cable grommet to connect the Ethernet cable for the Modbus TCP connection

Supplementary documentation

Water Quality Smart System for Surface Water SSP100B

- Technical Information TI01550S/04/EN
- Operating Instructions BA02044S/04/EN

Water Quality Smart System for Aquaculture SSP200B

- Technical Information TI01551S/04/EN
- Operating Instructions BA02045S/04/EN

Registered trademarks

Modbus is the registered trademark of Modicon, Incorporated.

RUT240 is a product of Teltonika Ltd., 08105 Vilnius/Lithuania.

RevPi Core 3 is a product of Kunbus GmbH, 73770 Denkendorf/Germany.

UNO PS is a product of Phoenix CONTACT GmbH & Co. KG, 32825 Blomberg/Germany.

All other brand and product names are trademarks or registered trademarks of the companies and organizations in question.

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