2



INDUSTRIAL COMMUNICATION AND REMOTE CONTROL

2 INDUSTRIAL COMMUNICATION AND REMOTE CONTROL

This line includes smart data loggers and industrial gateways, VPN routers, UHF/VHF radio devices, serial and fiber optic communication interfaces, remote control units, and remote alarm and assistance units. Seneca's industrial communication products support major network protocols such as HTTP, FTP, SMTP, TCP-IP, and technologies like 3G+, 4G LTE, IIoT (Cloud, HTTP post, OPC UA, MQTT) and web servers. Seneca communication devices expand network reach and enable the transfer of process data across different levels of IT and industrial communication architecture. Seneca solutions for networking and remote control ensure openness, scalability, and maximum connectivity for data transmission to and from supervision centers.

2.1 REMOTE ALARM UNITS



2.2 SMART DATALOGGERS



2.3 RTU FOR REMOTE CONTROL APPLICATIONS



2.4 INDUSTRIAL GATEWAYS



2.5 IIoT EDGE GATEWAYS



2.6 REMOTE ASSISTANCE AND CONTROL IOT/VPN PLATFORM



2.7 SERIAL/USB CONVERTERS



2.8 FIBER OPTIC CONVERTERS



2.9 RADIO MODULES



2.10 RADIO MEASUREMENT SYSTEMS



2.1



REMOTE ALARM UNITS



OVERVIEW

Seneca's remote alarm and data collection devices are designed to manage, monitor, and execute small automations for homes, buildings, plants, and production machinery via simple commands sent by SMS or app. With any mobile phone or smartphone, it's possible to control the switching on and off of a technical system, activate a contact, and receive alerts of anomalies or alarms. These professional and universal devices are easily programmable and operate on a 2G (GSM/GPRS), 4G/LTE, or Wi-Fi module, serving as a communication system capable of intelligently handling calls, commands, contacts, and data storage.

THE RANGE

B-ALARM



2G · 1DI 1DO

MYALARM2 BASE



2G · 4DI, 2AI 2DO (optional)

MYALARM2 SECURITY AUDIO



2G · 4G · 4DI, 2AI 2DO (optional)

MYALARM2 GPS



2G · 4G · 4DI, 2AI 2DO (optional) · GPS

MyALARM3 Cloud



2G · 4DI, 2AI 2DO (optional) · GPS Dashboard

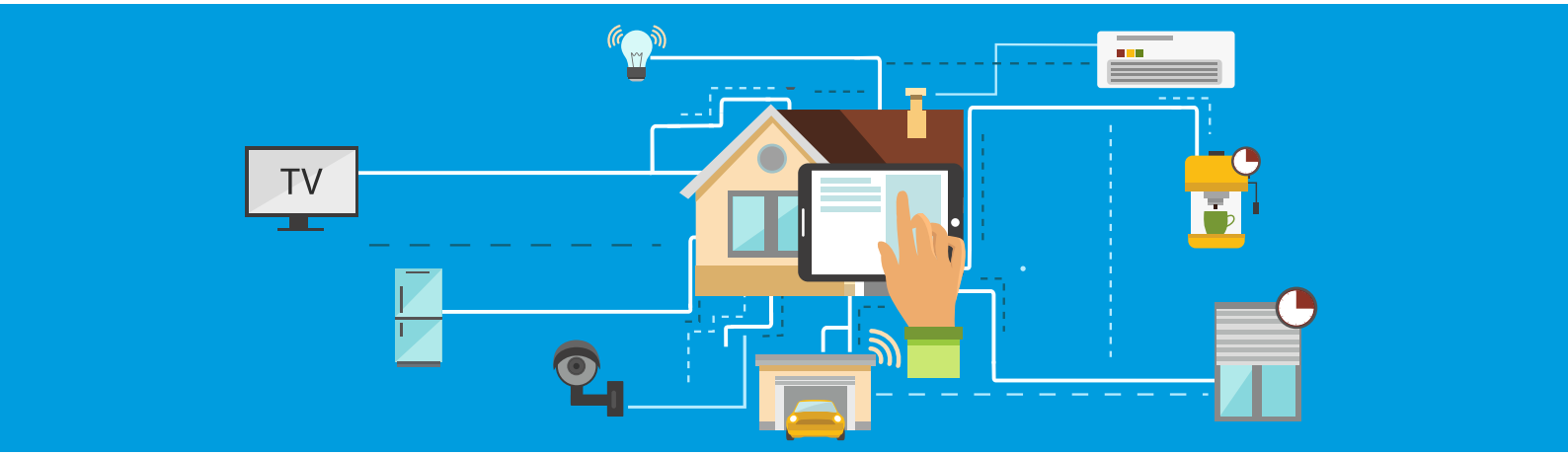
MyALARM3 Cloud W-AIR



WI-FI · 4DI, 2AI 2DO (optional)

VERSATILITY AND MULTIFUNCTIONALITY

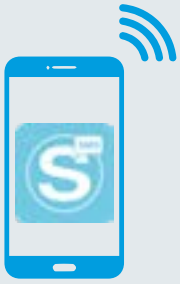
- Remote control of unattended sites
- Flexible configuration
- Automatic dispatch of commands, data, and alarms with push notifications/SMS
- Integrated 2G/4G/Wi-Fi and I/O
- Built-in temperature sensor
- Real-time alarm notifications and management
- On-off and timed commands for gates, motors, pumps, lights, etc.
- Open/close temperature threshold contacts (HVAC systems)
- Rechargeable Li-Ion battery
- Optional GPS module



APPLICATIONS

	B-ALARM	MYALARM2 MY2B:	MYALARM2 MY2S:	MYALARM2 MY2G:	MYALARM3 CLOUD
DOMOTICS & BUILDING					
Universal remote (gates, boilers, HVAC systems, etc.)	x	x	x	x	x
Smart thermostat	x	x	x	x	x
Light and lighting system controls	x	x	x	x	x
Access control and presence	x	x	x	x	x
Flood prevention system	x	x	x	x	x
Astronomical twilight switch		x	x	x	x
ENERGY MONITORING					
Network voltage control and blackout management	x	x	x	x	x
AUTOMATION AND REMOTE CONTROL					
Remote alarm and control systems	x	x	x	x	x
Water supply network alarm management	x	x	x	x	
Photovoltaic plant output control (via photodiode)	x	x	x	x	
Fiber optic continuity checks	x	x	x	x	
Plant metrics control (temperature, flow rate, level, etc.)		x	x	x	
Water leakage control		x	x	x	
Pump and motor operations (logic and operating hours)		x	x	x	x
Automatic irrigation systems		x	x	x	x
Data logger and event recorder		x	x	x	
Cold chain monitoring		x	x	x	
SECURITY					
Telephone dialer			x	x	
DTMF tone commands			x	x	
Automatic dispatch of commands and push notifications for alarms					x
GEOLOCATION					
Geolocation for machinery, vehicles, boats				x	(optional)
Virtual fence control				x	(optional)
MOBILE APPS iOS / Android					
Custom applications through widgets					x

CONFIGURATION AND PROGRAMMING

			B-ALARM	MYALARM2	MYALARM3 CLOUD
EASY SETUP		I/O management, data acquisition timing, logs (MYALARM2 only), commands, alarms, GSM communication, audio files (MYALARM2 only), administrative functions (passwords, credit, message redirection, etc.)	✓	✓	
SMS COMMANDS		Up to 16 different “fast” commands can be defined from the action list. Some smartphones send SMS in UNICODE characters instead of using the GSM alphabet.	✓	✓	
RINGS		If the unit has a voice type SIM CARD, operations can be performed at "zero cost" by sending rings, in response to which the units can carry out configured operations.	✓	✓	
SENECA SMS		With the iOS/Android Seneca SMS app, you can manage remote alarm units and data loggers equipped with a GSM interface via simple SMS. The app allows you to modify predefined templates and add one or more editable commands with extreme ease.	✓	✓	
MY3 CLOUD (APP)		MyALARM3 Cloud app offers high levels of parameter setting. It allows easy setting of critical plant times and guides users in customizing the interface.			✓

B-ALARM
Basic Alarm Unit

WANT TO KNOW MORE?

B-ALARM is a GSM device designed for remote alarm management of homes, buildings, plants, production machinery through simple commands sent via SMS. With any smartphone, you can control the switching on and off of the boiler, activate a contact, etc. The device contains a GSM module that acts like any cellular network terminal. The unit allows operation with zero-cost ring commands as well as fast numeric and timed code commands. It also has 1 digital input and 1 SPDT relay output with a capacity of 3 A / 250 Vac. B-ALARM can rely on a command book of 5 users and an extended SIM phone book up to 250 users.

HIGHLIGHTS

- INSTANT MESSAGING ALARM
- UNICODE MULTILINGUAL SUPPORT
- INTEGRATED MODEM AND I/O
- SMS COMMANDS / FREE RINGTONE COMMANDS
- CONTACT LIST UP TO 250 USERS PER APPLICATION
- RECHARGEABLE LI-ION BATTERY
- COMPATIBLE WITH ALL STANDARD VOICE/DATA SIM TYPES
- COUNTER AND TIMER MANAGEMENT



Shutdown button

SMA antenna connector

#1 Single pull-push slot
for mini SIM card

Wall
or DIN rail mounting - CEI EN 60715

Status LED

Quad-band GSM
(850 / 900 / 1800 /1900 MHz)

Power supply range: 10..28 Vdc
Rechargeable NiMh backup battery, 600 mAh, up to 1 hour of autonomy

#1 digital relay output,
SPDT 2A – 250V

#1 digital reed input,
contact, NPN / PNP 2 wires, FD01 5Hz

Micro USB
for upgrades and configuration

MYALARM2
A concentration of technologies

WANT TO KNOW MORE?

MyALARM2 BASE (MY2B) is a 2G (GSM/GPRS) or 4G/LTE device designed for remote monitoring of homes, buildings, facilities, and production machinery using simple SMS commands. Capable of sending alarms and SMS/emails in response to input anomalies, power failures, or exceeded temperature thresholds. Records all data on a MicroSD card and sends log files via email or FTP. MyALARM2 SECURITY AUDIO (MY2S) can also make voice calls and receive DTMF tone commands, including silencing alarms. The MyALARM2 GPS (MY2G) version includes geolocation features allowing for setting alarms for virtual fencing and speed.

QUICK SELECTION

	MyALARM2 - MY2B	MyALARM2 - MY2S	MyALARM2 - MY2G
SD card included	No	Yes	Yes
Integrated NTC sensor	(external optional)	(external optional)	(external optional)
I/O	4DI, 2AI, 2DO (optional)	4DI, 2AI, 2DO (optional)	4DI, 2AI, 2DO (optional)
Communication	GSM/GPRS	GSM/GPRS or 4G/LTE	GSM/GPRS or 4G/LTE
Integrated GPS	No	No	Yes
Datalogger	Yes	Yes	Yes
Pre-set scenarios	Yes	Yes	Yes
DTMF commands / Voice alarms	No	Yes	Yes
Email management	Yes	Yes	Yes
Contact list	20 SMS contacts, 20 email contacts, 1000 contacts for call commands	20 SMS contacts, 20 email contacts, 1000 contacts for call commands	20 SMS contacts, 20 email contacts, 1000 contacts for call commands

Communication: 2G (GSM/GPRS) or 4G/LTE
Integrated GSM/GPRS Quad-band modem 850/900/1800/1900 MHz, 4G/LTE-FDD B1/B3/B5/B7/B8/B20

Quick setup

Quick programming mini USB interface

GPS module (My2G version)
22-channel receiver, -165 dBm, fix time 32s, accuracy up to 2.5m

LCD Display
LCD display 128 x 32 pixels for I/O status visualization, totalizers/counters, GSM, and date

Data Acquisition
#4 Digital Inputs: Max frequency 30 Hz @ 32-bit [10 timers, 4 counters, 4 totalizers, 4 hour counters]
#2 Analog Inputs: Range (0-20 mA, 0-30 V), resolution 16-bit
#2 Digital Outputs: SPST Relay 3A (optional)

Compact dimensions
MyALARM2: 80 x 105 x 30 mm
IP66 enclosure (MY2-KITIP66) 130 x 180 x 75 mm



"SCROLL DISPLAY" button

SIM port for voice/data

Integrated and expandable memories
SD slot for microSD and microSDHC up to 32 GB
Integrated Flash memory

Rechargeable backup battery
(Li-On, 1000 mAh, max 8 hours autonomy)

Power supply: 12V

NTC sensor
wired to terminal

MYALARM3 CLOUD
Cloud at Your Fingertips

WANT TO KNOW MORE?

MyAlarm3 Cloud is a system composed of an intelligent GSM/GPRS or 4G/LTE or Wi-Fi control unit and a mobile app for remote control of homes, plants, machinery, and unattended installations. MyAlarm3 Cloud is an all-in-one, compact, and reliable system for residential or industrial applications, especially for the automatic transmission of data and alarms from unattended sites. The app offers the main features for monitoring with immediate consultation and easy use both from a web browser and mobile devices, allowing alarm management (in case of blackout, digital contact variations, exceeding analog input and temperature thresholds), timed, pulse, and on/off commands (lights, motors, gates, pumps, basculants, HVAC systems contacts, and twilight contacts), GPS (position notifications, virtual fence alarm).

SYSTEM CONFIGURATION

1. CONTROL UNIT



GSM/GPRS monitoring unit including 4 digital inputs, 2 analog inputs, 2 digital outputs (optional), LCD display, temperature sensor, external NTC sensor input, battery, and GPS module (optional).

2. APP iOS / ANDROID



Free mobile application MyALARM3 Cloud available on the Apple or Play Store. This powerful app, available in 10 languages, allows for simple advanced system configuration. Integrates tutorials, manuals, and online help.

3. CLOUD SERVICE



The MyALARM3 Cloud kit includes a 12-month subscription starting from the first activation date. For renewal information and costs, please visit:
www.seneca.it/myalarm3cloud
https://cloud.seneca.it

Wi-Fi module and antenna
(alternative to GSM/GPRS module)



Quick setup

Quick programming mini USB interface

LCD display
128x32 Dots
(shows status, I/O, battery level, GSM)



GSM/GPRS antenna and module

"Scroll display" button

Internal GPS module
(optional)

SIM slot for voice/data

SD Memory card

Rechargeable Li-Ion battery,
3.7V, 1100 mAh, autonomy up to 5 hours

Integrated I/O terminals

- 4 digital inputs: REED Contact, PNP, Pulscap, relay (max frequency 30Hz)
- 2 analog inputs: Current 0..20 mA, 0..30 V; Resolution 16-bit; Accuracy 0.1% f.s.
- 2 digital outputs: SPST relay 3A/250Vac (optional)

Power supply: 12V

Power cable
with 230V plug

External IP66 enclosure
(optional)

5 cm NTC temperature sensor



MYALARM3 CLOUD
Powerful and Easy App for Installation Monitoring

ADVANCED CONFIGURATION



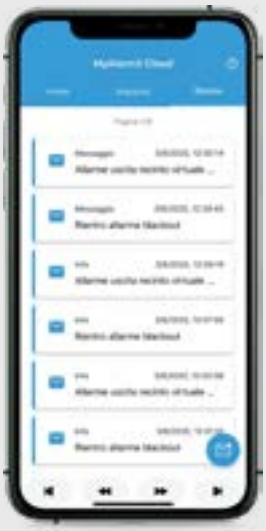
ALARM AND COMMAND MANAGEMENT



GEOLOCATION



ALARM AND EVENT HISTORY



TUTORIALS AND ONLINE SUPPORT



DEVICE MANAGEMENT AND INVITATIONS



SCHEDULING AND CALENDAR



THERMOSTAT FUNCTION



TECHNICAL DATA

	B-ALARM	MYALARM2 MY2B	MyALARM MY2S	MYALARM2 MY2G	MYALARM3 CLOUD	MYALARM3 CLOUD W-AIR
						
	2G alarm unit, 1DI, 1DO with basic functions	**2G alarm unit, 4DI, 2AI, 2DO (optional), base version**	**2G (4G) alarm unit, 4DI, 2AI, 2DO (optional), security audio version**	**2G (4G) alarm unit, 4DI, 2AI, 2DO (optional), GPS version**	**2G (4G) alarm unit, 4DI, 2AI, 2DO, remote control, app-based version**	**Wi-Fi alarm unit, 4DI, 2AI, 2DO, remote control, app-based version**
GENERAL DATA						
Power Supply	10 - 30 Vdc	6-15 Vdc				
Max Consumption	2 W	3.5 W				
Protection class	IP20					
Rechargeable battery	Ni-MH, 600 mAh, autonomy up to 100 minutes	Li-ION (1,100 mAh), autonomy up to 8 hours (without auxiliary relay)				
SD Support	-	Push-push for SD card and SD HC card / max 32GB				
SIM slot	Push-push for mini SIM (15 x 25 mm)					-
Supported SIM	Mini SIM					-
Temperature probe	-	Integrated NTC thermistor (standard), external optional				
Protocols	SMS,	FTP client, SMTP client, SMTPS with SSL client			MQTT	
Display	-	128x32 Dots LCD with visible area 39mm x 8.6mm				
		Display scroll button				
2G modem	Quad-band (850/900/1800/1900 MHz).					-
4G modem	-	LTE-FDD B1/B3/B5/B7/B8/B20 or GSM/GPRS/EDGE 900/1800 MHz				-
Wi-Fi	-					2.4GHz (802.11b/g/n; Up to 150Mbps)
GPS	-			22-channel receiver Sensitivity: -165 dBm Fix time: 32 s typical Accuracy: Up to 2.5 m	Optional 22-channel receiver Sensitivity: -165 dBm Fix time: 32 s typical Accuracy: Up to 2.5 m	-
Connections	Spring-loaded terminals, 3.5 mm pitch					
	Micro USB					
	SMA Connector					
			MMCX Connector			-
Dimensions	114x54x32 mm	80 x 105 x 30 mm				
Weight	80 g	150 g				
Operating temperature	-10..+55°C	Operating temperature 0..45°C (recommended), -20..+55°C (powered), -20..+45°C (discharging)				
Material	ABS Polycarbonate					
Installation	DIN rail or wall					
Certifications	CE, UKCA					
FUNCTIONS AND SETTINGS						
Datalogger	-	Yes			-	
Basic configuration	Software (EASY SETUP), SMS commands, ringing	Software (EASY SETUP, EASY MYALARM2), SMS commands, ringing			Web or Mobile App (MyALARM3 CLOUD)	
App management	-	SENECA SMS			MyALARM3 Cloud	
CLOUD SERVICE					12 months free from activation	
Scenario management / widgets		Advanced automations, alarms on inputs, data logger, control of leaks, solar panels, pools, automatic gates, timed automations, hour counters, boiler control, blackout control			Electric network, temperature, 2G/4G/Wi-Fi network, GPS, present alarms, uptime, I/O management MAX/MIN analog threshold, counter threshold, digital input/output, GPS fence, absence, electric network, dawn and dusk, MIN/MAX temperature, selectable command	
Commands and alarms	Fast and timed commands (SMS) through ringing, SMS alarms	Fast and timed commands (SMS) through ringing, DTMF, vocal SMS alarms			Push alarms through App	
Email management	-	Yes			-	
History	-				Alarm logs, events, calendar	
Contact list	5 users (1 administrator), 250 contacts (for command ringing)	20 users (multi-administrator), 1000 contacts (for command ringing)			-	
Counter and timer management	1 counter / totalizer	4 counters / totalizers, 10 timers			4 counters / totalizers, 10 timers	
DIGITAL INPUTS						
Channels	1	4				
Type	Contact, voltage 6-24 V	Reed, Contact, PNP, Pulscap				
Max frequency	-	30 Hz				
ANALOG INPUTS						
Channels	-	2				
Type	-	Current 0..20 mA (max impedance 60 Ω); voltage 0..30 V (max impedance 100 kΩ)				
Resolution	-	16 bit				
Accuracy	-	0.1% f.s.				
DIGITAL OUTPUTS						
Channels	1	2 (optional)			2	
Type	SPDT relay 3 A / 250 Vac	SPST relay 3 A / 250 Vac				

The technical data and diagrams in this document are indicative and not binding.

SALES CONFIGURATION

B-ALARM



- Power supply 10..28Vdc
- Backup battery NiMh 600 mAh
- #1 digital Reed input, contact, NPN / PNP 2 wires, FD01 5Hz
- #1 digital output relay SPDT 2A - 250V
- #1 Micro USB port
- #1 GSM quad-band modem

ORDER CODES

Codes	Description
B-ALARM	Basic Alarm Unit, 1DI,1DO, SMS, backup battery

MYALARM2



- Power supply 12V
- Battery Li-On, 1,000 mAh, maximum autonomy 8 h
- #4 Digital Inputs: Max frequency Max 30 Hz @ 32 bit
- #10 timers, 4 counters, 4 totalizers, 4 hour meters
- #2 Analog Inputs: Range (0-20 mA, 0-30 V), 16-bit resolution
- #2 Digital Outputs: SPST Relay 3A (optional)
- #1 Micro USB port
- #1 2G/4G modem, optional GPS

ORDER CODES

Versions / Options	Codes	Description
Base Unit	MY2B	MYALARM2 BASE / DATALOGGER
	MY2S	MYALARM2 SECURITY AUDIO
	MY2G	MYALARM2 GPS
Modem	L	4G / LTE (only for MY2G and MYS versions)
SPST Relay Board	-0	Absent
	-R	Present
Preparation for other connections	-0	Absent
Connection system	-C	Connectors
	-M	Terminals
Colors	-B	Blue
	-G	Grey
IP66 enclosure (option)	-4X	IP66, electrically isolated, with front door

MYALARM3 CLOUD



- Power supply 12V
- Rechargeable battery 1100 mAh, autonomy up to 5h
- #4 digital REED Contact inputs, PNP, Pulscap, relay
- #2 analog inputs Current 0..20 mA, 0..30 V;
- 16-bit resolution; Accuracy 0.1% f.s.
- #2 digital outputs Relay SPST 3 A / 250 Vac (optional)
- GSM/GPRS or Wi-Fi communication
- Optional GPS

ORDER CODES

Codes	Description
MY3C-1Y	12-month Cloud Service renewal MyAlarm3 Cloud
MY3CLOUD-APP	iOS / Android MyAlarm3 Cloud Management App
MY3CLOUD-R-0-0-G	Cloud support alarm unit, relay, grey color
MY3CLOUD-R-0-0-G-G	Cloud support alarm unit, relay, GPS, grey color
MY3W-AIR-R-0-G	Cloud support alarm unit, relay, Wi-Fi, grey color

ACCESSORIES

Code	Description	Code	
A-GPS	External GPS antenna with magnetic base and MMCX connection	ALIM-MY2	Replacement power supply
A-GSM	Multiband external antenna with 3 m cable and SMA male connector	BATT-MY2	Replacement battery
A-GSM-DIR-5M	Compact directional GSM-UMTS antenna	BATT□GP80	Replacement battery for B-ALARM
A-GSM-OMNIDIR	Omnidirectional GSM-UMTS-WIFI antenna	BATT□MY2	Lithium battery 3.7V - 1,200mAh for MYALARM2
A-GSM-OMNiDIR-10	Omnidirectional GSM-UMTS-WIFI antenna with 10 m cable length	CU-A-MICRO-B	USB-A Micro USB-B 5 P plug cable
A□GSM□QUAD□N	External omnidirectional 4G/WI□FI antenna, FME, 3 mt cable	FD01	PULSECAP, photo-detector for pulse counting, max freq 10 Hz
ANT-WIFI-MP	WiFi 2.4/5.0 GHz "Blade", Black, Connector Mount, SMA Male	MSD	MicroSD card with SD adapter
ANTENNA-ST-4G	SMA Male straight Antennas Black - 4G - LTE	MY2-KITIP66	IP66 kit in ABS for quick field mounting
ANTENNA-STI-LO-MY2	GSM STILO STRAIGHT SMA-M nickel-plated	MY3C□1Y	12-month Cloud Service renewal MyAlarm3 Cloud
A□SCR□90	Antenna/spare part with 90-degree screw mounting on SMA connector	NTC-150	External NTC probe 1.5 m

2.2



SMART DATALOGGERS



OVERVIEW



The advanced MYALARM SEAL, Z-GPRS3, Z-LOGGER3, Z-LTE dataloggers are solutions designed to meet the increasing demands for data collection, real-time analysis, and integration with IT systems in automation and plant monitoring, in line with the new productivity and communication models of Industry 4.0 and the Internet of Things.

Designed for alarm, telemetry, and datalogging functions, these devices come with an integrated UPS, built-in I/O channels, dedicated programming and visualization software, support for serial and Ethernet communication, MQTT protocol, and in most models, 2G or 4G modems with GNSS/GPS/GLONASS receiver.

The dataloggers can be linked to third-party IoT/Cloud platforms to centralize data, manage remote connections, and create customizable multi-user supervision pages.

MODELS	MYAALARM SEAL	Z-LOGGER3	Z-GPRS3	Z-LTE-WW
HARDWARE				
Integrated UPS	x	x	x	x
Modem	2G	-	2G	4GWW
Flash Memory	8 MB	8 MB	8 MB	8 MB
Micro SD	Max 32 GB	Max 32 GB	Max 32 GB	Max 32 GB
GPS/GNSS/GLONASS	x	-	-	x
I/O	4DI, 2AI, 2DO (optional)	4DI, 2AI, 2DO	4DI, 2AI, 2DO	4DI, 2AI, 2DO
Communication Interfaces	1 Micro USB	1 Ethernet 10/100, 1 RS232/RS485, 1 RS485, 1 Micro USB	1 Ethernet 10/100, 1 RS232/RS485, 1 RS485, 1 Micro USB	1 Ethernet 10/100, 1 RS232/RS485, 1 RS485, 1 Micro USB
Integrated NTC sensor	x	-	-	-
DATA/ALARMS				
Synchronous, asynchronous datalogger, on trigger	x	x	x	x
Alarm and email management	SMS / App / FTP / DTMF	FTP	SMS / App / FTP / DTMF	SMS / App / FTP / DTMF
Vocal alarms/DTMF commands	x		x	x
COMMUNICATION / IoT				
Protocols	http(s), MQTT(s), http(s) post	http(s), Ftp, ModBUS RTU/TCP-IP, MQTT(s), http(s) post	http(s), Ftp, ModBUS RTU/TCP-IP, MQTT(s), http(s) post, Rest	http(s), Ftp, ModBUS RTU/TCP-IP, MQTT(s), http(s) post, Rest
Routing	Public IP SIM, private APN	-	Public IP SIM, private APN, DDNS, ModBUS Pass Through	Public IP SIM, private APN, DDNS, ModBUS Pass Through
Transparent gateway ModBUS RTU – TCP-IP	-	x	x	x

PROGRAMMING

The advanced SENECA dataloggers ensure open and flexible programming thanks to a dedicated environment for developing control logics (SEAL), an integrated Web Server, an app for direct management of commands via SMS, and a data import and visualization tool (Log Factory). The HMI interface of the Cloud BOX' system completes the data management capability through customizable web supervision pages with widgets. They are also integrable with third-party Scada, Cloud, database, and web portal systems already available at the plants or managed by end-users.

SEAL
SYSTEM CONFIGURATIONS AND LOGICAL-MATHEMATICAL FUNCTIONS

WEB SERVER
MONITORING AND SETTING PARAMETERS

LOG FACTORY
STORAGE AND VISUALIZATION HISTORICAL FILES

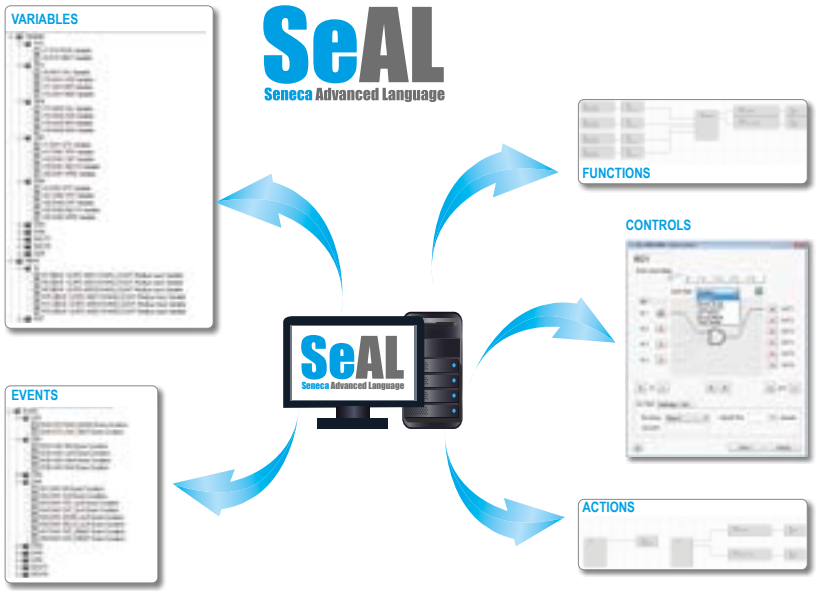
SENECA SMS
ANDROID / IOS APP FOR SENDING AND CUSTOMIZING SMS COMMANDS

THIRD-PARTY SYSTEMS
SCADA SYSTEMS, CLOUD, DATABASES AND THIRD-PARTY WEB PORTALS



	MYALARM SEAL	Z-LOGGER3	Z-GPRS3	Z-LTE
SEAL	x	x	x	X
WEB SERVER	-	x	x	x
LOG FACTORY	x	x	x	x
SENECA SMS (mobile app)	x	-	x	x

SEAL, BLOCK PROGRAMMING ENVIRONMENT



SEAL is software designed for advanced management of automation and remote communication projects.
SEAL allows intuitive management of variables, commands, automations, alarms, thresholds, reporting, communication network with remote configuration and update capabilities via SIM or Ethernet.
Among the key features managed by SEAL are the monitoring of alarms and events associated with I/O channels, operations on bits, comparators, triggers, and timers.
SEAL allows for the setting of function blocks, threshold command blocks, and complete management of the ModBUS variables of the devices to be programmed.

MAIN FEATURES

DATA & EVENT LOGGING

There are three types of logs: events, data, and on trigger.
When activated, the logger saves the data on an internal Flash, which can then be sent to an email server, ftp server, http server, mqtt broker, or MicroSD card.

MQTT BROKER DATA SENDING

Data can be sent in real-time to an MQTT broker. The data is JSON-encoded and contains measurements and identifiers that trace back to the specific instrument that measured them and the variable measured.

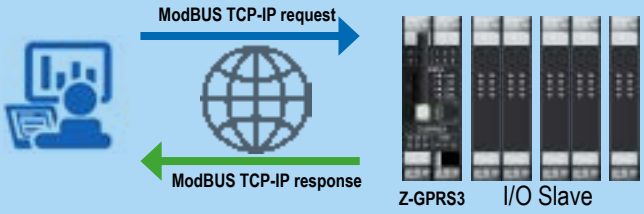


AUDIO COMMAND SENDING

The dataloggers can receive audio calls for command execution through DTMF codes. Upon call, the device responds with an audio file from the SD card.

MODBUS PASS THROUGH

The devices can be used to convert Modbus TCP-IP to Modbus RTU from Ethernet or 2G/3G/4G connection in real-time.





DDNS

Dynamic DNS (DDNS or DynDNS) is a method to automatically link the server name with a dynamic IP.
It relies on the fact that in a modem connection, the IP can change without changing the name.

ACTIONS AND COMMANDS

Actions (commands) and messages must be executed by the device in response to a state change. Messages can be sent via EMAIL, SMS, AUDIO CALL, HTTP POST, and MQTT broker.

EMERGENCY MODE

It is possible to disable the execution of the SEAL program by setting all the dip switches to ON at startup. This emergency mode is useful if a SEAL program prevents connection to the SEAL itself (e.g., if the board is continuously rebooting).

THIRD-PARTY PLATFORMS

Thanks to the support of http(s) post/Rest and MQTT(s) protocols, SENECA dataloggers can connect industrial machines and thousands of I/Os in the field to third-party Cloud Computing platforms.

REMOTE UPDATING

It is possible to update a program developed in the SEAL environment and/or a configuration from the datalogger's webserver through a simple procedure via PPP modem connection or IP/ Ethernet address.

POWER CALCULATION FOR PHOTOVOLTAIC PLANTS

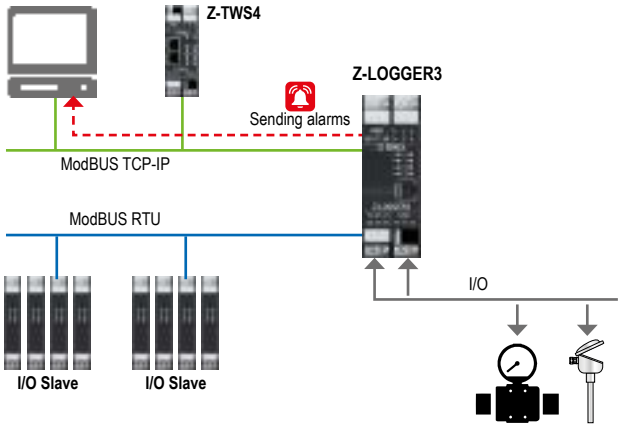
Using a Modbus TCP-IP client connection with the Z-GPRSS datalogger (Modbus TCP-IP Server), it is possible to estimate the average total typical power for use with solar panels.

	MYALARM SEAL	Z-LOGGER3	Z-GPRS3	Z-LTE
				
	Remote Datalogger with Programmable Logic	**Datalogger with integrated I/O and alarm management functions**	**GSM/GPRS datalogger with integrated I/O, remote control functions, and vocal alarms**	**4G/LTE WW datalogger with integrated I/O, remote control functions, and vocal alarms**
GENERAL DATA				
Power Supply	6..15 Vdc	11..40 Vdc/ 19..28 Vac		19..40 Vdc/ 19..28 Vac
Power supply for transducers	No	Yes		
Max isolation	-	1,500 Vac	1,500 Vac	1,500 Vac
Integrated UPS/Battery	Backup battery LiOn 3.7 V - 1.000 mAh	Yes (max autonomy 60 minutes)		
Connections	Spring-loaded terminals, 3.5 mm pitch	3-way screw terminals (5 mm pitch for cable up to 2.5 mm2)		
Vocal Alarms and DTMF Commands	Yes	No	Yes	
Protection class	IP20			
SIM	Push-push slot for mini SIM 15x25 mm	-	Push-push slot for mini SIM 15x25 mm	
Display	LCD 128x32 dots with visible area 39x8,6 mm	-		
OPERATING TEMPERATURE	-20..+55°C (0..45°C recommended)	-10..+50°C		
Built-in temperature sensor	Yes	No	No	No
Weight	150 g	250 g	280 g	
Dimensions (wxhxd)	80x105x30 mm	100x112x35 mm		
Installation	DIN rail or wall	35 mm DIN rail IEC EN60715		
Enclosure	ABS Polycarbonate	PBT, black		
Certifications	CE			
I/O CHANNELS				
Digital Inputs	#4 channels Reed, contact, PNP, Pulscap (photodiode) 30 Hz	#4 channels PNP, NPN (counters @32bit up to 30 Hz)		
Analog Inputs	#2 channels, voltage range (0..30 Vdc); current (0..20 mA); accuracy 0.1% f.s.	#2 channels, range 0..20 mA, 0..30 V, 16 bit		
DIGITAL OUTPUTS	Optional 2Relay board 3 A max - 250V SPST	#2 SPDT relay channels, max 2 A 250 Vac		
Expandability I/O ModBUS	No	Yes		
COMMUNICATION				
Communication Ports	-	#1 Ethernet 10/100 M (RJ45)		
	-	#1 RS232/RS485 switchable (terminal)		
	-	#1 RS485 ModBUS		
	#1 Micro USB B Host			
Protocols	http(s) post, MQTT(s)	FTP, SMTP, HTTP, ModBUS TCP, ModBUS RTU, HTTP post, MQTT	FTP client, SMTP client, HTTP rest (SSL), MQTT (SSL), ModBUS TCP Client/ Server, ModBUS RTU Master / Slave, Https, SMTP with SSL/TLS, MQTT with SSL/TLS	
Modem / GPS / Radio	GSM/GPRS Quad band (850 / 900 / 1800 / 1900 MHz)	No	2G - GSM/GPRS Quad Band 850/900/ 1800/1900 MHz	Multiband M2M/IoT, 4G / LTE World Wide · LTE-FDD: B1/B2/B3/B4/B5/B7/ B8/B12/ B13/B18/ B19/B20/B25/B26/B28 · LTE-TDD: B38/B39/B40/ B41 · WCDMA: B1/B2/B4/B5/B6/B8/B19 · GSM: B2/B3/B5/B · GPS / GLONASS / BeiDou (compass) / Galileo / QZSS
Transparent Gateway	No	Yes		
PROCESSING, MEMORY				
Flash Memory	8 MB			
Expandable memory	Micro SD included, push-push slot for SD and SDHC card up to 32 GB			
Datalogger	Measurements, alarms, events, logging on Micro SD card and on Flash			
Synchronous datalogger	Minimum sampling time 1 minute			
Asynchronous datalogger	Up to 8 trigger events with max input freq. 1 Hz			
PROGRAMMING				
Programming environment	SEAL (SENECA Advanced Language)			
Variable and trend visualization tool	Log Factory			
Max # logical blocks (SEAL)	32			
Max # variables managed per device	91	100		
Mobile app	SENECA SMS			
WEB SERVER	-	Yes		
Character encoding	UTF8/UNICODE			
Firmware update	SD Card, USB Port, external FTP	FTP, Webserver, micro SD		
IoT / Cloud support	Yes via http(s) post, MQTT(s)			

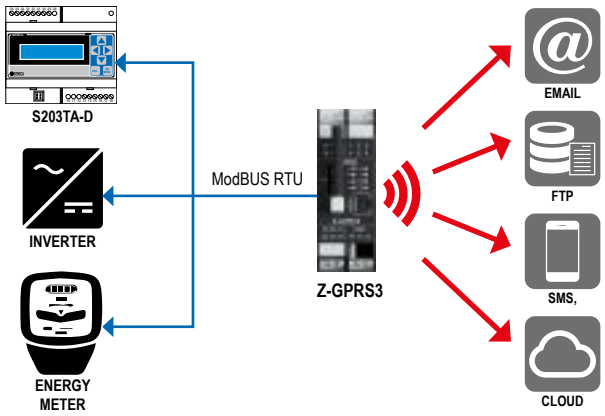
The technical data and diagrams in this document are indicative and not binding.

APPLICATION DIAGRAMS

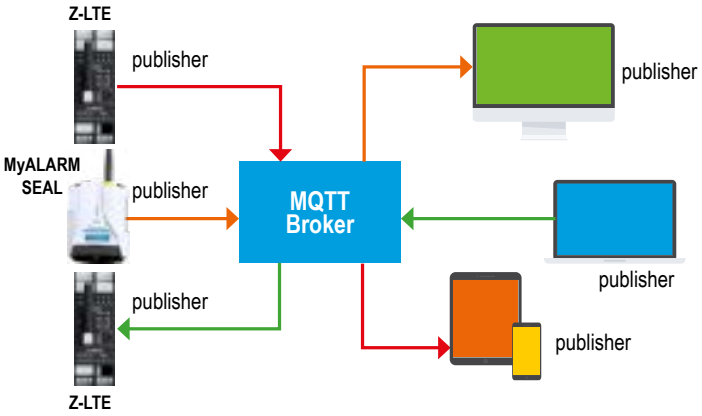
DATA ACQUISITION AND RETRANSMISSION



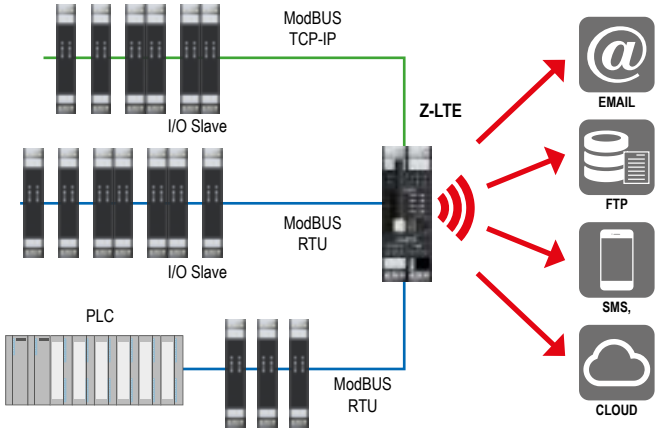
SUPERVISION AND CONTROL ENERGY MEASURES



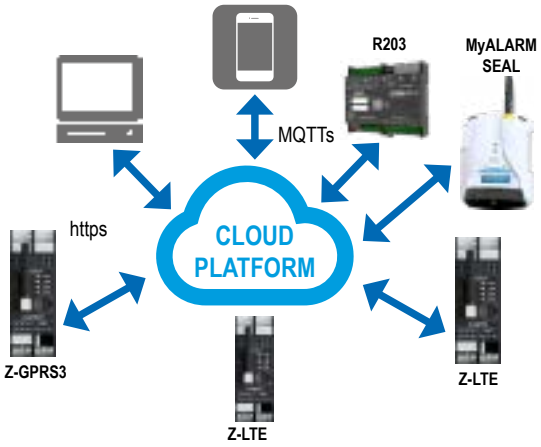
MQTT / MQTTS ARCHITECTURE



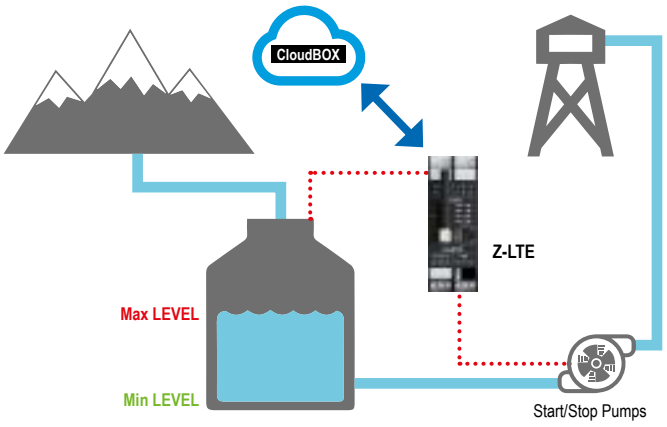
DATA LOGGING AND DATA RETRANSMISSION



DATA EXCHANGE ARCHITECTURE



REMOTE MONITORING PUMPS



ORDER CODES

Code	Description
MY-SEAL-0-0-0-B	Remote datalogger with SEAL programmable logic, blue color
MY-SEAL-0-0-0-G	Remote datalogger with SEAL programmable logic, gray color
MY-SEAL-0-0-G-B	Remote datalogger with SEAL programmable logic, GPS module, blue color
MY-SEAL-0-0-G-G	Remote datalogger with SEAL programmable logic, GPS module, gray color
MY-SEAL-R-0-0-B	Remote datalogger with SEAL programmable logic, relay board, blue color
MY-SEAL-R-0-0-G	Remote datalogger with SEAL programmable logic, relay board, gray color
MY-SEAL-R-0-G-B	Remote datalogger with SEAL programmable logic, relay board, GPS module, blue color
MY-SEAL-R-0-G-G	Remote datalogger with SEAL programmable logic, relay board, GPS module, gray color
Z-GPRS3	Advanced GSM/GPRS datalogger, integrated I/O, vocal alerts
Z-LOGGER3	Advanced alarm management module, datalogger, webserver
Z-LTE-WW	4G worldwide datalogger with integrated I/O, remote control functions, and vocal commands

2.3



RTU FOR REMOTE CONTROL APPLICATIONS

OVERVIEW

SENECA remote control devices are a perfect combination of the world of remote control and automation. The RTU range includes solutions for small plants, all-in-one solutions that concentrate I/O, control logic, and communication systems, and devices for special applications (unattended sites, pumping stations, energy management). The use of compatible platforms and widespread technological standards offers users the opportunity to improve the efficiency and quality of their investments in their applications. SENECA RTUs can be integrated with SENECA hardware (I/O modules, HMIs, communication interfaces) and third-party devices as well as with the LET'S remote assistance platform. They also offer flexible programming tools and dedicated libraries for remote control.



HIGHLIGHTS

WIDE RANGE OF RTUS FOR MULTI-SECTOR APPLICATIONS

REMOTE PLANT CONTROL 24/7

ADVANCED ALARMS

OPERATIONAL COST REDUCTION

ENERGY MONITORING

DATA STORAGE

OPEN TO SCADA / OPC

COMMANDS AND NOTIFICATION VIA EMAIL/SMS/APP

SOFT PLC IEC 61131 - STRATON

VPN / SSL SUPPORT

LET'S VPN/IOT PLATFORM (remote assistance / remote control)

INTEGRATED I/O

INTEGRATION WITH THIRD-PARTY DEVICES AND COMMUNICATION DEVICES

INTEGRATED MODEM/ROUTER 2G / 3G+ / 4G

SERIAL INTERFACES / MODBUS / ETHERNET

SPECIAL APPLICATIONS (PUMP CONTROLLER, LOW POWER)

KEY FUNCTIONS

DATA ACQUISITION



- Data acquisition and exchange from sensors, actuaries, counters, analyzers, thresholds
- Distributed I/O system
- A range of modules from 5 to 24 points
- Three-way galvanic isolation
- ModBUS RTU, ModBUS TCP-IP, CANopen, M-BUS, Profinet IO protocols
- Self-diagnosis and safety status management
- Hot swapping

INTEGRATED ALARM MANAGEMENT



- Timely warning in case of faults
- Event-driven actions towards external actuaries
- Alarm transmission to maintenance personnel via SMS
- Receiving and sending commands via SMS, email, or app
- Checking and verifying alarms, events, and plant status

MULTI-STANDARD COMMUNICATION



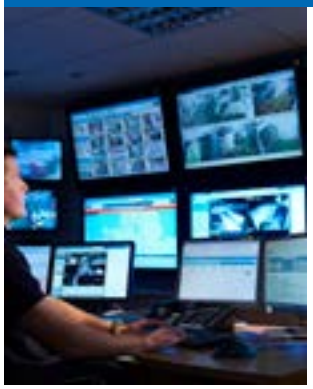
- Modem/Router 2G/3G+/4G/
- Fast Ethernet ports, serial, USB
- Point-to-point, multipoint connections
- "Always ON" and "ON Demand" connection management
- Support for ModBUS RTU, /TCP-IP/, ASCII
- ModBUS RTU, ModBUS TCP-IP, CANopen, M□BUS, Profinet IO protocols
- Data log transfer via FTP, SMTP (email), pre-set hourly threshold

PROGRAMMING AND LIBRARIES



- Control logic based on SoftPLC Straton IEC 61131
- Sending emails/SMS
- Creation, storage, and display of data logs
- Alarm management and notifications
- Automated motorized user management
- Operating hour counting
- Counter management and totalizations
- Flow rate calculations

OPC / SCADA OPENING



- Opening to SCADA with OPC UA / OPC DA technology
- Integration between field and supervision with ModBUS RTU or TCP/IP protocol
- Integrated visualization environment Web Factory
- Real-time communication front end between field and Scada

IOT / VPN PLATFORMS



- Controllers integrable into the remote access platform, LET'S
- Support for VPN and SSL technologies
- Centralized supervision
- Predictive maintenance and diagnostics
- Remote software update
- Data and plant access in "Single LAN" and "Point-to-Point" mode
- MQTT, HTTP post

PUMP AND PRESSURIZATION GROUP CONTROL



- Sending commands via SMS
- Flow rate calculation
- Configuration via 7" touchscreen HMI
- Adjustment, startup, stop, and acceleration
- Water hammer elimination
- Extending the life of pumps
- Adjustment of pressures, levels, flows

ENERGY SECTOR APPLICATIONS



- RTU for transmission and distribution systems of electrical energy
- Availability of IEC 61850 protocol for local communication between devices in medium and high voltage electrical installations
- Availability of IEC 60870 (101 and 104) for communication in distributed networks of transport and distribution of electrical energy

LOW POWER RTU

RTU-LP



Family of low-consumption datalogger/RTU for remote contro of unattended sites.
The device can provide power to external sensors (max 100 mA) with automatic pre-activation and can operate autonomously for up to 3 years with the standard batteries provided.



RTU REMOTE ALARM

B-ALARM



B-ALARM is a GSM device designed for the remote management
of alarms in homes, buildings, plants, and production machines
through simple commands sent via
SMS messages. With any smartphone,
it is possible to control utilities, activate contacts, etc.



RTU REMOTE ALARM

MYALARM2



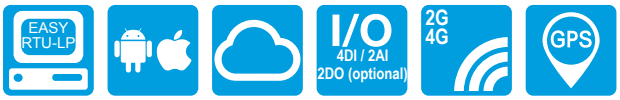
MyAlarm2 is a control unit designed for the remote contro of installations or remote sites, via GSM
or SMS. The MY2S version, with support for vocal alarms and DTMF tones, acts as a security control unit while the MY2G version, with an integrated GPS receiver, is applied to geolocation scenarios.



MYALARM3 CLOUD



MyAlarm3 Cloud is a system composed of an intelligent GSM/GPRS control unit and a mobile app for remote control of homes, plants, machinery, and unattended installations.
MyAlarm3 Cloud is a compact and reliable all-in-one system for residential or industrial applications.



COMPACT RTU / DATALOGGER

MYALARM SEAL



MYALARM SEAL is a datalogger capable of meeting the growing needs for data acquisition, real-time analysis, integration with IT systems, and control logic. MYALARM SEAL supports vocal alarms/audio commands with DTMF tones and the support of IT/IoT communication protocols.



Z-GPRS3



Z-GPRS3 is a high-performance quad-band GSM/GPRS datalogger, with integrated I/O and communication interfaces Ethernet, RS232/RS485, and MicroUSB.
The device is configured as the Master unit of the distributed I/O system SENECA Serie Z-PC.



COMPACT RTU / DATALOGGER

Z-LTE



Z-LTE meets the growing needs for data collection, real-time analysis, and integration with IT systems. This 4G/LTE device is available with 4 integrated communication ports (1 Ethernet 10/100, 1 RS232/RS485, 1 RS485, 1 MicroUSB) and support for industrial and IT/IoT protocols.

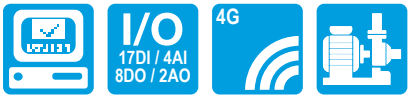


RTU PUMP CONTROLLER

S6001 PUMP CONTROLLER



S6001 Pump Controller is a controller for pumping systems and pressurization groups capable of managing from 2 to 6 pumps (with possible I/O expansion modules), with constant regulation of flow, level, and pressure.



RTU IEC 61131

Z-TWS11



Z-TWS11 is a multifunctional and multiprotocol control unit programmable via SoftPLC IEC 61131-1 Straton environment. The controller also has 2 analog inputs at 16 bits configurable in voltage or current and can realize expandable automation systems with I/O modules.



Z-TWS4-RT



Z-TWS4-RT is a high-performance multifunctional controller that combines PLC functionalities with those of datalogging, routing, and remote access via an external modem. It is based on softPLC StratON IEC 61131-3, equipped with 2 Fast Ethernet ports, 3 serial ports, and 1 USB host 2.0 port.



The technical data and diagrams in this document are indicative and not binding.

RTU IEC 61131

R-PASS-S

R-PASS-S represents a flexible and space-saving Industrial IoT Edge computing solution with multiple daisy chain connections. Besides the functions of sofPLC IEC 61131-3 and advanced routing, R-PASS-S integrates 10 I/O channels.
It is also expandable with the R-COMM modem.



I/O 4DI / 2AI 2DO | Modem/ Router External | LET'S | ModBUS RTU/CTP, M-BUS master, SNMP, S7 Client, FTP(s), HTTP(S), SMTP(s) client, Samba, J1939, CANopen, MQTT(S), MQTTs, OPC UA, http(s) post, OpenVPN. TLS

R-PASS-W-S

R-PASS-W-S represents a flexible and space-saving Industrial IoT Edge computing solution with multiple daisy chain connections.
Besides the functions of sofPLC IEC 61131-3 and advanced routing, R-PASS-W-S integrates 10 I/O channels and 1 Wi-Fi module.
It is also expandable with the R-COMM modem.

I/O 4DI / 2AI 2DO | Modem/ Router External | LET'S | ModBUS RTU/CTP, M-BUS master, SNMP, S7 Client, FTP(s), HTTP(S), SMTP(s) client, Samba, J1939, CANopen, MQTT(S), MQTTs, OPC UA, http(s) post, OpenVPN. TLS

Z-PASS2-RT-S

Z-PASS2-RT-S is a high-performance multifunctional controller that combines PLC functionalities with those of routing and remote access.
It is indeed based on softPLC StratON with integrated web server, VPN, and 4G LTE modem/router with GPS/Glonass capabilities.



I/O 6DI / DIO 2AI | 4G GPS | LET'S | PENETRATION TEST PASSED | ModBUS RTU/TCP, FTP/SFTP, HTTP(s), SNMP, MQTT(s), OPC UA, http(s) post

S6001 RTU

S6001-RTU is a compact all-in-one remote control unit that has 31 I/O channels. Thanks to extended connectivity (4G, Ethernet, Serial), the unit is expandable and interfaced with other systems through support for system protocols, allowing remote monitoring of plants.



I/O 17DI / 4AI 8DO / 2AO | 4G GPS | LET'S | ModBUS RTU/TCP, FTP/SFTP, HTTP(s), SNMP, MQTT(s), OPC UA, http(s) post

RTU ENERGY

Z-TWS4-RT ENERGY

The Z-TWS4-RT-E controller supports the communication protocols
IEC 60870-101/104 and IEC 61850.
The unit can be employed as a redundant controller for automation and remote contr of plants, electrical substations, transformation cabins, energy management, smart grids, distributed networks, etc.



I/O 4DI / 2AI 2DO | Modem/ Router External | LET'S | ModBUS RTU/CTP, M-BUS master, SNMP, S7 Client, FTP(s), HTTP(S), SMTP(s) client, Samba, J1939, CANopen, MQTT(S), MQTTs, OPC UA, http(s) post, OpenVPN. TLS

R-PASS-S ENERGY

The R-PASS-S-E controller supports the communication protocols IEC 60870-101/104 and IEC 61850.
The unit can be employed as a redundant controller for automation and remote contr of plants, electrical substations, transformation cabins, energy management, smart grids, distributed networks, etc.



I/O 6DI / DIO 2AI | Modem/ Router External | LET'S | ModBUS RTU/CTP, M-BUS master, SNMP, S7 Client, FTP(s), HTTP(S), SMTP(s) client, Samba, J1939, CANopen, MQTT(S), MQTTs, OPC UA, http(s) post, OpenVPN. TLS

R-PASS-W ENERGY

The R-PASS-W-E controller supports the communication protocols IEC 60870-101/104 and IEC 61850.
The unit can be employed as a redundant controller for automation and remote contr of plants, electrical substations, transformation cabins, energy management, smart grids, distributed networks, etc.



I/O 4DI / 2AI 2DO | Modem/ Router External | LET'S | Wi Fi | IEC 60870 IEC 61850

Z-PASS2-RT ENERGY

The Z-PASS2-RT-E controller supports the communication protocols IEC 60870-101/104 and IEC 61850. The unit can be employed as a redundant controller for automation and remote contr of plants, electrical substations, transformation cabins, energy management, smart grids, distributed networks, etc.



I/O 6DI / DIO 2AI | 4G GPS | LET'S | PENETRATION TEST PASSED | IEC 60870 IEC 61850

S6001 RTU ENERGY

The S6001-RTU-E controller supports the communication protocols IEC 60870-101/104 and IEC 61850.
The unit can be employed as a redundant controller for automation and remote contr of plants, electrical substations, transformation cabins, energy management, smart grids, distributed networks, etc.



I/O 17DI / 4AI 8DO / 2AO | 4G GPS | LET'S | IEC 60870 IEC 61850 | ModBUS RTU/TCP, FTP/SFTP, HTTP(s), SNMP, MQTT(s), OPC UA, http(s) post

MYALARM2 CEI

MYALARM2-CEI 0-16 is a remote management unit that allows for remote disconnection, reconnection, and diagnostics of energy generation plants.
The integrated GSM/GPRS module enables network operator (GSE) and plant manager intervention via coded SMS.

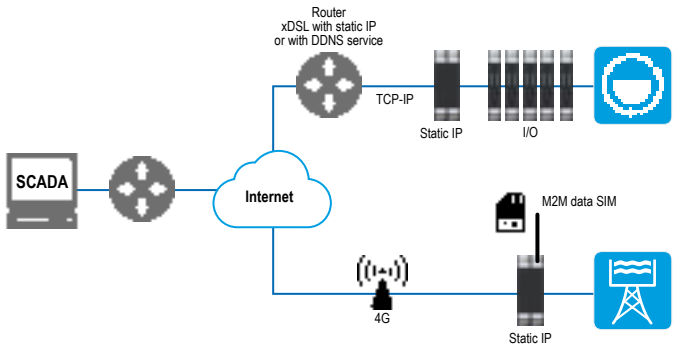


EASY CEI | I/O 4DI 2DO | GSM GPRS | CEI -016

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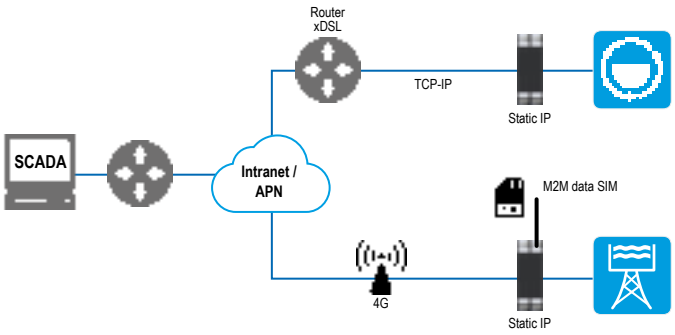
REMOTE CONTR ARCHITECTURES

WEB REMOTE CONTR INTRANET



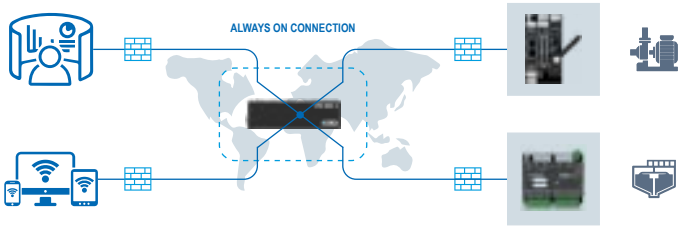
Web-based remote contr offers services for remote viewing, alarm notification, remote plant management, data collection, and analysis, leveraging the Internet, 4G standard, and DDNS technology.

REMOTE CONTR / PRIVATE APN



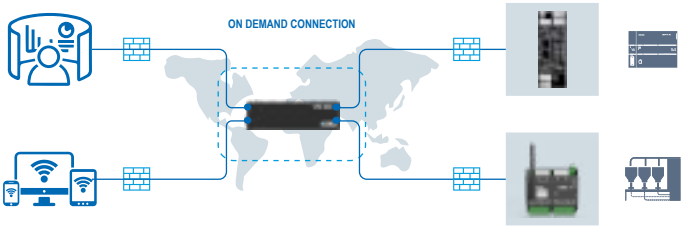
INTRANET / PRIVATE APN REMOTE CONTR SYSTEMS Intranet systems with a private APN involve a network with static IP addresses on peripheral SIM cards.

ALWAYS ON REMOTE CONTR ON



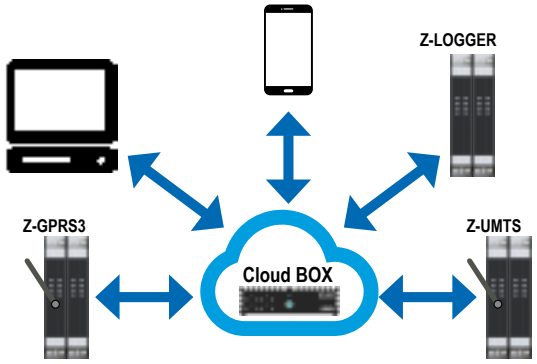
In Single LAN remote contr mode (always on connection), a public static IP is assigned to the VPN BOX server. Communication is simultaneous and always active between all remote sites and the various subnets that are part of the overall system.

ON DEMAND REMOTE ASSISTANCE



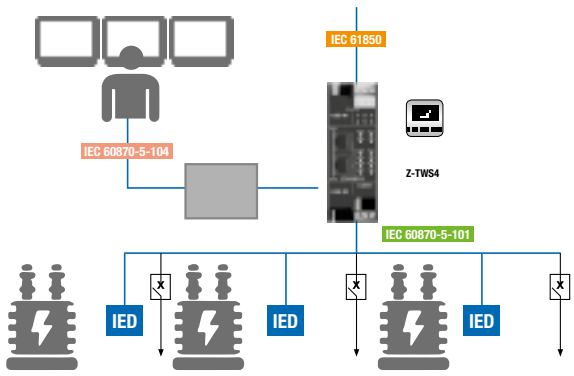
Point-To-Point remote assistance mode (on demand communication) establishes a point-to-point connection between supervision and machinery. Ideal for remote maintenance and diagnostic applications.

IOT / CLOUD MONITORING



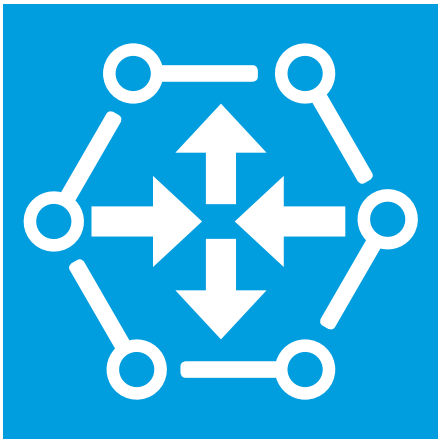
The Cloud-IoT solution proposed by SENECA allows centralizing data, managing remote connections, and creating customizable multi-user supervision pages.

ENERGY SECTOR MONITORING



SENECA controllers for Energy Management applications can serve as IEC 61850 Servers, conversion systems from ModBUS-RTU to ModBUS TCP, devices for creating virtual networks via the internet, and point-to-point tunnels.

2.4



INDUSTRIAL GATEWAYS

INDUSTRIAL GATEWAYS



SENECA's DIN rail protocol converters - industrial gateways are devices used to transfer data between different networks and fieldbuses.
The gateways available in R (32x53x90mm) or Z (17.5x100x112mm) formats can be used within the infrastructure to facilitate communication between networks and systems with different protocols. Configuration is performed via a Web Server or the dedicated EASY SETUP 2 software. Available in various Master / Slave configurations and compatible with major PLCs, they are integrable into configurators from various manufacturers.

HIGHLIGHTS

PROTOCOL CONVERSION
Industrial gateways connect Modbus devices to networks and fieldbuses by bidirectionally converting protocols such as ModBUS RTU/TCP-IP, M-BUS, Profinet, IO, M-BUS, Ethernet/IP0, OPC UA, IEC 61850.

SERIAL DEVICE SERVER
Gateways in this mode connect devices with RS232 or RS485 serial interfaces to a local network for the transmission of serial data via Ethernet.

CONNECTIVITY
Gateways manage up to 128 slave nodes per serial port, 1,200 bytes read/write, and 10 TCP-IP Servers.

FLEXIBLE CONFIGURATION
Configuration through serial, Ethernet, or USB ports is straightforward and immediate using the EASY SETUP 2 configuration software or a web server.

SHARED MEMORY
In the "Tag – 'shared memory'" Gateway mode, SENECA devices continuously acquire data via ModBUS and store it in their shared memory,

SERIAL SNIFFERS
With the serial sniffer feature, gateways analyze serial network traffic and display ModBUS protocol variables.

CERTIFICATIONS
Having passed stringent tests for potential fire hazards, electrical shocks, and mechanical failures, many models are equipped with UL certification.

INTEGRATION
"KEY" gateways facilitate compatibility and coexistence with PLCs, automation systems, and third-party programming environments (e.g., TiA Portal, PLCLogix 5000) thanks to the generation of specific configuration files EDS or GDSML.

AVAILABLE CONVERSIONS AND MODELS

PLC Side / Field Side	Modbus RTU	Modbus ASCII	Modbus TCP/IP	PROFINET	ETHERNET/IP
Modbus RTU		R-KEY-LT Z-KEY-0 Z-KEY-2ETH	R-KEY-LT Z-KEY-0 Z-KEY-2ETH	R-KEY-LT-P Z-KEY-P Z-KEY-2ETH-P	R-KEY-LT-E Z-KEY-E Z-KEY-2ETH-E
Modbus ASCII	R-LT Z-KEY-0 Z-KEY-2ETH		R-KEY-LT Z-KEY-0 Z-KEY-2ETH	R-KEY-LT-P Z-KEY-P Z-KEY-2ETH-P	R-KEY-LT-E Z-KEY-E Z-KEY-2ETH-E
Modbus TCP/IP	R-KEY-LT Z-KEY-0 Z-KEY-2ETH	R-KEY-LT Z-KEY-0 Z-KEY-2ETH		R-KEY-LT-P Z-KEY-P Z-KEY-2ETH-P	R-KEY-LT-E Z-KEY-E Z-KEY-2ETH-E
M-Bus	R-KEY-MBUS Z-KEY-MBUS		R-KEY-MBUS Z-KEY-MBUS	R-KEY-MBUS-P (*) Z-KEY-MBUS-P (*)	

(*) Soon available

FLEXIBLE AND RECONFIGURABLE DEVICES WITH FLEX TECHNOLOGY

SENECA's proprietary FLEX technology allows connecting a single device capable of supporting various protocols in serial and Ethernet industrial communication networks. From the same gateway, for example, it is possible to change the type of protocol conversion in a few steps, quickly addressing changes in production layouts or efficiently transferring data to and from PLCs and other Master/Slave or Client/Server devices. This flexible approach saves time, financial resources, and the hassle of managing multiple devices with different purchasing codes, regardless of the application type.

STRENGTHS

- A single multiprotocol solution on one device
- Maximum connectivity in a single hardware
- The functionality of multiple gateways at the price of one
- Simplification of purchasing codes
- Reduction in storage and handling costs
- Immediate selection of multiple protocol combinations based on the freely downloadable Seneca Discovery Device tool from the Seneca website
- No programming software or change of tag and I/O registers needed
- Supported and interchangeable protocols: ModBUS RTU, ModBUS TCP-IP, ModBUS ASCII, Profinet, Ethernet/IP, upcoming implementations (OPC UA, IEC 61850)
- Models integrating FLEX technology: R-KEY-LT, R-KEY-LT-E, R-KEY-LT-P, Z-KEY-0, Z-KEY-2ETH, Z-KEY-2ETH-E, Z-KEY-2ETH-P, Z-KEY-P, Z-KEY-E, upcoming integrations (R203-2-L; R203-2-H, R203-2-L-P, R203-H-P)

PROTOCOL RECONFIGURATION PROCEDURE WITH FLEX TECHNOLOGY

- Connect the PC to the FLEX device via Ethernet
- Launch the SENECA DISCOVERY DEVICE software, available on the SENECA website; scan the ModBUS / Ethernet network
- Select the new combination of protocols to apply to the device
- With the module turned off, set the DIP Switch to "Factory Reset"
- Turn on the module and set the DIP Switch to "Read configuration from Flash"

1 Connect the PC via Ethernet to the SENECA module



2 Launch the SENECA DISCOVERY DEVICE software and scan the ModBUS / Ethernet network



3 Change the protocol from ModBUS to Profinet or Ethernet/IP



4 With the module turned off, set the DIP Switch to "ON" (reset factory settings)



5 Turn on the module and set the DIP Switch to "OFF", read configuration from Flash

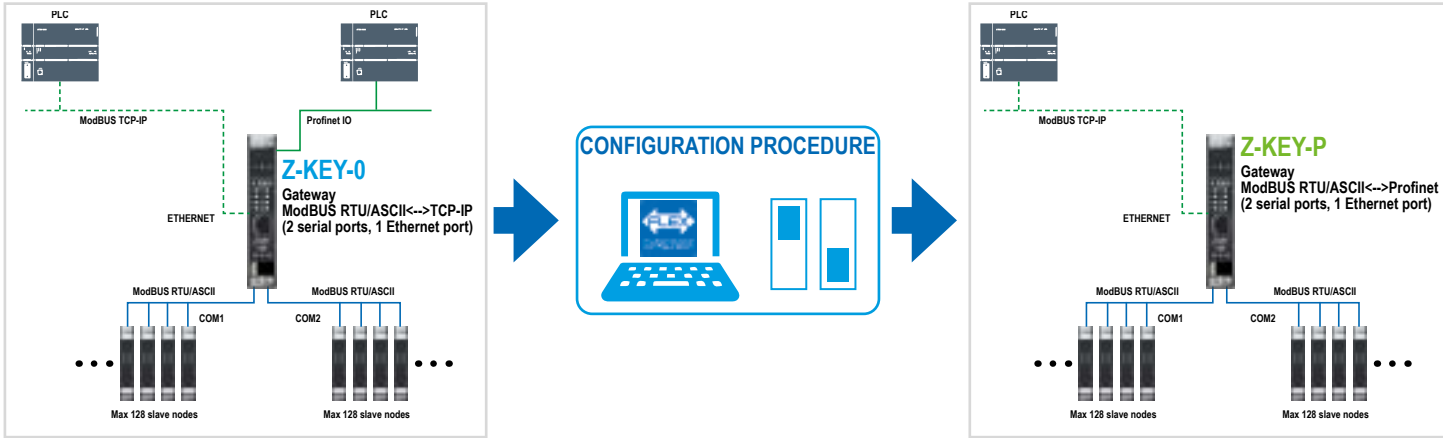


6 Now the module operates with another combination of protocols



For more information: www.seneca.it/flex

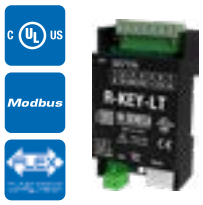
EXAMPLE OF TRANSFORMATION FROM MODBUS GATEWAY TO PROFINET GATEWAY



TECHNICAL DATA

ModBUS Gateways

This family of gateways allows connecting PLCs with serial, ModBUS, or Ethernet interfaces to ModBUS RTU/ASCII Master/Slave and TCP-IP Client/Server devices







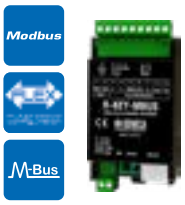
	R-KEY-LT	Z-KEY-0	Z-KEY-2ETH
	ModBUS RTU/ASCII Gateway↔TCP-IP (1 serial port, 1 Ethernet port)	**ModBUS RTU/ASCII Gateway↔TCP-IP (2 serial ports, 1 Ethernet port)**	**ModBUS RTU/ASCII Gateway↔TCP-IP (2 serial ports, 2 Ethernet ports)**
GENERAL DATA			
Power Supply	10..40 Vdc; 19..28 Vac	11..40 Vdc; 19..28 Vac	10..40 Vdc; 19..28 Vac
Max Consumption	1 W	1.5 W	2 W
Max isolation	1.5 kVac (Ethernet)		
LED, status indicators	Power Supply Rx/Tx RS232/R485 Ethernet ACT/LNK		
Protection class	IP20		
Operating temperature	-25 °C..+65 °C		
Connections	7-way removable screw terminal, 5 mm pitch 2-way removable screw terminal, 5 mm pitch Bottom RJ45 connector	Removable screw terminals 3 ways, pitch 5 mm Rear IDC10 connector for DIN rail 46277	
		Front RJ45 connector	Front RJ45 connector (x2)
Dimensions (WxHxD)	32 x 53 x 90 mm	17.5 x 100 x 112 mm	
Weight	80 g	100 g	170 g
Enclosure	PC/ABS self-extinguishing UL94-V0, Grey RAL 7035	Nylon PA6 30% glass fiber, self-extinguishing class V0	
Installation	For DIN rail (IEC EN 60715)		
Certifications	CE, UKCA, UL		CE, UKCA
COMMUNICATION			
Ethernet Ports	#1 Fast Ethernet 100 Tx		port #2 Fast Ethernet 100 Tx ports, switch configuration
Serial Ports #1	#1 serial port RS232 / RS485 switchable, max baud rate 115kbps on connector		
#2	-	#1 RS485 port, max baud rate 115k on IDC10 connector for bus and terminals	
Supported Protocols	ModBUS TCP-IP ModBUS RTU ModBUS ASCII		
Operating Modes	ModBUS RTU/ASCII TCP-IP Gateway ModBUS 'TAG' Gateway Serial Device Server TCP Server Serial Device Modbus Gateway Serial to Ethernet Virtual ID		
FLEX (multiprotocol configuration)	Yes		
Variable memory area	500 tags		
Connectivity	Max 8 TCP-IP Clients (Server Mode) Max 10 TCP-IP Servers (Client Mode) Max 128 Slave Nodes ModBUS RTU/ASCII per serial port		
CONFIGURATION			
DIP Switch	Yes		
WEB SERVER	Yes		
EASY SETUP 2	Yes		
EDS/GSDML	-		
SDD (Seneca Discovery Device)	Yes		
SESC (Seneca Ethernet to Serial Connection)	Yes		
ORDER CODES	R-KEY-LT	Z-KEY-0	Z-KEY-2ETH

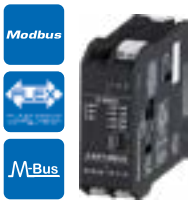
The technical data and diagrams in this document are indicative and not binding.

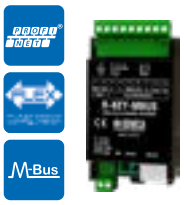
TECHNICAL DATA

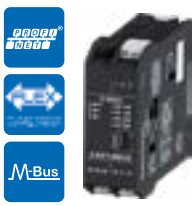
M-BUS Gateways

This family of gateways enables conversion from M-BUS (Meter Bus) protocol to ModBUS RTU / ModBUS TCP-IP and Profinet. These converters are capable of reading, converting, and transferring data from up to 25 M-BUS devices.









	R-KEY-MBUS	Z-KEY-MBUS	R-KEY-MBUS-P	Z-KEY-MBUS-P
	ModBUS RTU/TCP-IP ↔ M-BUS (1 M-BUS port, 1 serial port, 1 Ethernet port)	**ModBUS RTU/TCP-IP ↔ M-BUS (1 M-BUS port, 2 serial ports, 1 Ethernet port)**	**Profinet Gateway ↔ M-BUS (1 M-BUS port, 1 serial port, 1 Ethernet port)**	**Profinet Gateway ↔ M-BUS (1 M-BUS port, 2 serial ports, 1 Ethernet port)**
GENERAL DATA				
Power Supply	10..40 Vdc; 19..28 Vac			
Max Consumption	Max 1 W	6.5 W (3.5 W typical)	Max 1 W	6.5 W (3.5 W typical)
Max isolation	1,500 Vac	1,500 Vac across 3 ways	1,500 Vac	1,500 Vac across 3 ways
LED status indicators	Power Supply M-BUS Power Supply Rx/Tx RS232/R485 M-BUSTx/Rx			
Protection class	IP20			
Operating temperature	-25..+65°C			
Connections	Screw terminals, 7-way removable screw terminal, 5 mm pitch Screw terminals, 2-way removable screw terminal, 5 mm pitch Ethernet connector on the bottom side -	Removable screw terminals 3 ways, pitch 5 mm Rear IDC10 connector for DIN rail 46277 Front RJ45 connector Side Micro USB	Screw terminals, 7-way removable screw terminal, 5 mm pitch Screw terminals, 2-way removable screw terminal, 5 mm pitch Ethernet connector on the bottom side -	Removable screw terminals 3 ways, pitch 5 mm Rear IDC10 connector for DIN rail 46277 Front RJ45 connector Side Micro USB
Dimensions (WxHxD)	53.3 x 90 x 32.2 mm	100 x 35 x 112 mm	53.3 x 90 x 32.2 mm	100 x 35 x 112 mm
Weight	80 g	190 g	80 g	190 g
Enclosure	PC / ABS self-extinguishing UL94-V0	Black glass-filled PA6 plastic, black color	PC / ABS self-extinguishing UL94-V0	Black glass-filled PA6 plastic, black color
Installation	On DIN rail IEC EN 60715 or wall-mounted		On DIN rail IEC EN 60715 or wall-mounted	
Certifications	CE, UKCA		CE, UKCA	
COMMUNICATION				
Ethernet Ports	#1 Fast Ethernet 100 Tx port, RJ45		#1 Fast Ethernet 100 Tx port, RJ45	
Serial Ports	#1 switchable RS232 / RS485 serial port, max baud rate 115kbps			
#1				
#2		#1 RS485 port, max baud rate 115k on IDC10 connector for bus and terminals		#1 RS485 port, max baud rate 115k on IDC10 connector for bus and terminals
USB Ports		#1 Micro USB port on side connector		#1 Micro USB port on side connector
M-BUS Ports	#1 M-BUS port, max 25 slave nodes, baud rate from 300 to 38,400 bps			
Supported Protocols	ModBUS TCP-IP server ModBUS RTU slave M-BUS Master		Profinet IO (Class A Device, Cyclic Real-Time (RT), Acyclic Data) M-BUS Master	
Operating Modes	ModBUS RTU/TCP-IP↔M-BUS		Profinet IO Gateway↔ M-BUS	
FLEX (multiprotocol configuration)	Yes			
Variable memory area	500 tags			
Connectivity	Max 8 TCP-IP Clients (Server Mode) Max 128 slave nodes ModBUS RTU/ASCII Max 25 slave nodes M-BUS			
CONFIGURATION				
DIP Switch	Yes			
WEB SERVER	Yes			
EASY SETUP 2	-		Yes	
EDS/GSDML	-		Yes	
SDD (Seneca Discovery Device)	Yes			
ORDER CODES	R-KEY-MBUS	Z-KEY-MBUS	R-KEY-MBUS-P	Z-KEY-MBUS-P

The technical data and diagrams in this document are indicative and not binding.

TECHNICAL DATA

PROFINET IO Gateways

This family of gateways allows connecting PLCs with Profinet IO interfaces to ModBUS RTU/ ASCII Master/Slave devices and ModBUS TCP-IP Server.





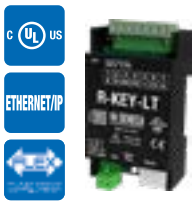


	R-KEY-LT-P	Z-KEY-P	Z-KEY-2ETH-P
	ModBUS ↔ Profinet IO Gateways (1 serial port, 1 Ethernet port)	**ModBUS ↔ Profinet IO Gateways (2 serial ports, 1 Ethernet port)**	**ModBUS ↔ Profinet IO Gateways (2 serial ports, 2 Ethernet ports)**
GENERAL DATA			
Power Supply	10..40 Vdc; 19..28 Vac	11..40 Vdc; 19..28 Vac	
Max Consumption	1 W	1.5 W	2 W
Max isolation	1,500 Vac		
LED, status indicators	Power Supply Rx/Tx RS232/R485 Ethernet ACT/LNK Profinet Communication		
Protection class	IP20		
Operating temperature	-25 °C..+65 °C		
Connections	Screw terminals, 7-way removable screw terminal, 5 mm pitch	Removable screw terminals 3 ways, pitch 5 mm	
	Screw terminals, 2-way removable screw terminal, 5 mm pitch	Rear IDC10 connector for DIN rail 46277	
	RJ45 connector on the bottom (x1)	Front RJ45 connector (x1)	Front RJ45 connector (x2)
Dimensions (WxHxD)	32 x 53 x 90 mm	17.5 x 100 x 112 mm	
Weight	80 g	100 g	170 g
Enclosure	PC/ABS self-extinguishing UL94-V0, Grey RAL 7035	Nylon PA6 30% glass fiber, V0 flame retardant class	
Installation	For DIN rail (IEC EN 60715)		
Certifications	CE, UKCA, UL		CE, UKCA
COMMUNICATION			
Ethernet Ports	#1 Fast Ethernet 100 Tx port, RJ45		#2 Fast Ethernet 100 Tx ports, front RJ45 (switch configuration)
Serial Ports #1	#1 serial port RS232 / RS485 switchable, max baud rate 115kbps on connector		
#2	-	#1 RS485 port, max baud rate 115k on IDC10 connector for bus and terminals	
Supported Protocols	ModBUS TCP-IP ModBUS RTU MQTT ModBUS ASCII Profinet IO (Class A Device, Cyclic Real-time (RT) and Acyclic Data)		
Operating Modes	Profinet IO ModBUS RTU/TCP-IP Master Gateway Profinet IO ModBUS RTU/TCP-IP Slave Gateway Gateway with tag for Port#1 and Port#2 Master		
FLEX (multiprotocol configuration)	Yes		
Variable memory area	1200 Byte R + 1200 Byte W		
Connectivity	Max 3 TCP-IP Servers (Client Mode) Max 8 TCP-IP Clients Max 128 Slave Nodes ModBUS RTU/ASCII for serial port		
CONFIGURATION			
DIP Switch	Yes		
WEB SERVER	Yes		
EASY SETUP 2	Yes		
EDS/GSDML	Yes		
SDD (Seneca Discovery Device)	Yes		
SESC (Seneca Ethernet to Serial Connection)	-		
ORDER CODES	R-KEY-LT-P	Z-KEY-P	Z-KEY-2ETH-P

The technical data and diagrams in this document are indicative and not binding.

TECHNICAL DATA

Ethernet / IP Gateways

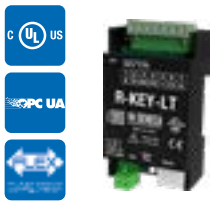
	R-KEY-LT-E	Z-KEY-E	Z-KEY-2ETH-E
Allows PLCs with Ethernet/IP interface to connect to ModBUS RTU Master/Slave and ModBUS TCP-IP Server devices.			
	ModBUS → Ethernet/IP (1 serial port, 1 Ethernet port)	**ModBUS → Ethernet/IP (2 serial ports, 1 Ethernet port)**	**ModBUS → Ethernet/IP (2 serial ports, 2 Ethernet ports)**
GENERAL DATA			
Power Supply	10..40 Vdc; 19..28 Vac		
Max Consumption	1 W	1.5 W	2 W
LED Status Indicators	Power Supply Ethernet port connections RX / TX RS232/RS485 RX/TX RS485 Ethernet/IP Communication		
Max isolation	1.5 kVac		
Protection class	IP20		
Operating temperature	-25..+65°C		
Connections	Screw terminals, 7-way removable screw terminal, 5 mm pitch Screw terminals, 2-way removable screw terminal, 5 mm pitch RJ45 connector on the bottom	Removable screw terminals 3 ways, pitch 5 mm Rear IDC10 connector for DIN rail 46277 Front RJ45 connector	Front RJ45 connector (x2)
Dimensions (WxHxD)	32 x 53 x 90 mm	17.5 x 100 x 112 mm	
Weight	80 g	100 g	170 g
Enclosure	PC/ABS self-extinguishing UL94-V0	Nylon 6 with 30% glass fiber, V0 flame retardant class	
Installation	For DIN rail (IEC EN 60715)		
Certifications	CE, UKCA, UL		CE, UKCA
COMMUNICATION			
Ethernet Ports	#1 Fast Ethernet 100 Tx port, RJ45		#2 Fast Ethernet 100 Tx ports, front RJ45
Serial Ports #1	#1 serial port RS232 / RS485 switchable, max baud rate 115kbps on connector		
#2	-	#1 RS485 port, max baud rate 115k on IDC10 connector for buses and terminals	
Supported Protocols	ModBUS RTU, ModBUS TCP-IP, ModBUS ASCII MQTT		
Operating Modes	ModBUS RTU/TCP-IP/ASCII ↔ Ethernet/IP Gateway		
FLEX (multiprotocol configuration)	Yes		
Variable memory area	512 Byte R + 512 Byte W		
Connectivity	Max 3 TCP-IP clients (Server Mode) Max 128 slave nodes ModBUS RTU/ASCII		
CONFIGURATION			
DIP Switch	Yes		
WEB SERVER	Yes		
EASY SETUP 2	Yes		
EDS/GSDML	Yes		
SDD (Seneca Discovery Device)	Yes		
SESC (Seneca Ethernet to Serial Connection)	-		
ORDER CODES	R-KEY-LT-E	Z-KEY-E	Z-KEY-2ETH-E

The technical data and diagrams in this document are indicative and not binding.

TECHNICAL DATA

OPC UA Gateways

This family of gateways allows OPC Servers to connect to ModBUS RTU/TCP-IP Master devices and systems.







	R-KEY-LT-P	Z-KEY-P	Z-KEY-2ETH-P
	ModBUS ↔ OPC UA Gateway (1 serial port, 1 Ethernet port)	**ModBUS ↔ OPC UA Gateway (2 serial ports, 1 Ethernet port)**	**ModBUS ↔ OPC UA Gateway (2 serial ports, 2 Ethernet ports)**
GENERAL DATA			
Power Supply	10..40 Vdc; 19..28 Vac		
Max Consumption	1 W	2 W @ 24 Vac (typical)	
Max isolation	1,500 Vac		
LED, status indicators	Power Supply Rx/Tx RS232/R485 Ethernet ACT/LNK		
Protection class	IP20		
Operating temperature	-25 °C..+65 °C		
Connections	Screw terminals, 7-way removable screw terminal, 5 mm pitch	Removable screw terminals 3 ways, pitch 5 mm	
	Screw terminals, 2-way removable screw terminal, 5 mm pitch	Rear IDC10 connector for DIN rail 46277	
	RJ45 connector on the bottom (x1)	Front RJ45 connector (x1)	Front RJ45 connector (x2)
Dimensions (WxHxD)	32 x 53 x 90 mm	17.5 x 100 x 112 mm	
Weight	80 g	170 g	
Enclosure	PC/ABS self-extinguishing UL94-V0, Grey RAL 7035	Nylon PA6 30% glass fiber, V0 flame retardant class	
Installation	For DIN rail (IEC EN 60715)		
Certifications	CE, UKCA, UL		CE, UKCA
COMMUNICATION			
Ethernet Ports	#1 Fast Ethernet 100 Tx port, RJ45		#2 Fast Ethernet 100 Tx ports, front RJ45 (switch configuration)
Serial Ports	-	#1 serial port RS232 / RS485 switchable, max baud rate 115kbps on connector	
Supported Protocols	ModBUS TCP-IP ModBUS RTU ModBUS ASCII OPC UA		
Operating Modes	OPC UA Server Gateway ↔ ModBUS RTU/TCP-IP Master		
FLEX (multiprotocol configuration)	Yes		
Variable memory area	1200 Bytes R/W		
Connectivity	Max 3 TCP-IP Servers (Client Mode) 128 ModBUS RTU/ASCII slave nodes per serial port		
CONFIGURATION			
DIP Switch	Yes		
WEB SERVER	Yes		
EASY SETUP 2	Yes		
EDS/GSDML	Yes		
SDD (Seneca Discovery Device)	Yes		
SESC (Seneca Ethernet to Serial Connection)	-		
ORDER CODES	R-KEY-LT-U	Z-KEY-U	Z-KEY-2ETH-U

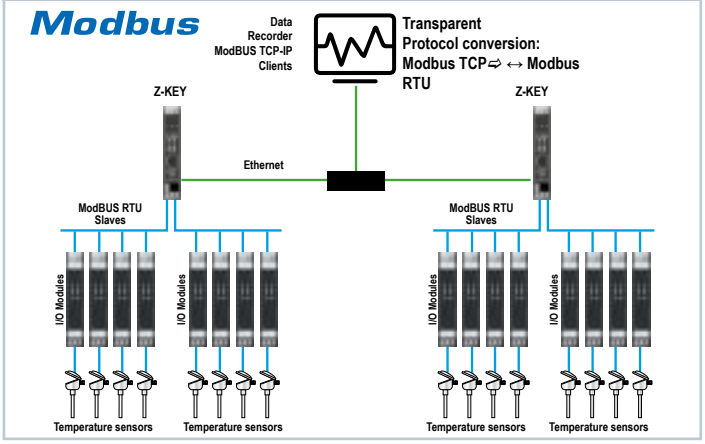
TECHNICAL DATA

IEC 81850 Gateways

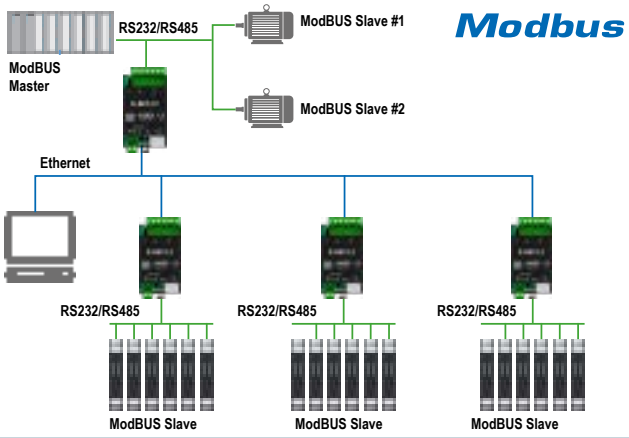
	R-KEY-LT-I	Z-KEY-I	Z-KEY-2ETH-I
This family of gateways allows IEC 61850 Servers to connect to ModBUS RTU/TCP-IP devices and systems. Master			
	ModBUS ↔ IEC 61850 Gateway (1 serial port, 1 Ethernet port)	**ModBUS ↔ IEC 61850 Gateway (2 serial ports, 1 Ethernet port)**	**ModBUS ↔ IEC 61850 Gateway (2 serial ports, 2 Ethernet ports)**
GENERAL DATA			
Power Supply	10..40 Vdc; 19..28 Vac		
Max Consumption	1 W	2 W @ 24 Vac (typical)	
Max isolation	1,500 Vac		
LED, status indicators	Power Supply Rx/Tx RS232/R485 Ethernet ACT/LNK		
Protection class	IP20		
Operating temperature	-25 °C..+65 °C		
Connections	Screw terminals, 7-way removable screw terminal, 5 mm pitch	Removable screw terminals 3 ways, pitch 5 mm	
	Screw terminals, 2-way removable screw terminal, 5 mm pitch	Rear IDC10 connector for DIN rail 46277	
	RJ45 connector on the bottom (x1)	Front RJ45 connector (x1)	Front RJ45 connector (x2)
Dimensions (WxHxD)	32 x 53 x 90 mm	17.5 x 100 x 112 mm	
Weight	80 g	170 g	
Enclosure	PC/ABS self-extinguishing UL94-V0, Grey RAL 7035	Nylon PA6 30% glass fiber, V0 flame retardant class	
Installation	For DIN rail (IEC EN 60715)		
Certifications	CE, UKCA, UL		CE, UKCA
COMMUNICATION			
Ethernet Ports	#1 Fast Ethernet 100 Tx port, RJ45		#2 Fast Ethernet 100 Tx ports, front RJ45 (switch configuration)
Serial Ports	#1 serial port RS232 / RS485 switchable, max baud rate 115kbps on connector		
Supported Protocols	ModBUS TCP-IP ModBUS RTU ModBUS ASCII IEC 61850 Server		
Operating Modes	IEC 61850 Server Gateway ↔ ModBUS RTU/TCP-IP Master		
FLEX (multiprotocol configuration)	Yes		
Variable memory area	512 Bytes R / 512 Bytes W		
Connectivity	Max 3 TCP-IP Servers 128 ModBUS RTU/ASCII slave nodes per serial port		
CONFIGURATION			
DIP Switch	Yes		
WEB SERVER	Yes		
EASY SETUP 2	Yes		
EDS/GSDML	Yes		
SDD (Seneca Discovery Device)	Yes		
SESC (Seneca Ethernet to Serial Connection)	-		
ORDER CODES	R-KEY-LT-I	Z-KEY-I	Z-KEY-2ETH-I

APPLICATION DIAGRAMS

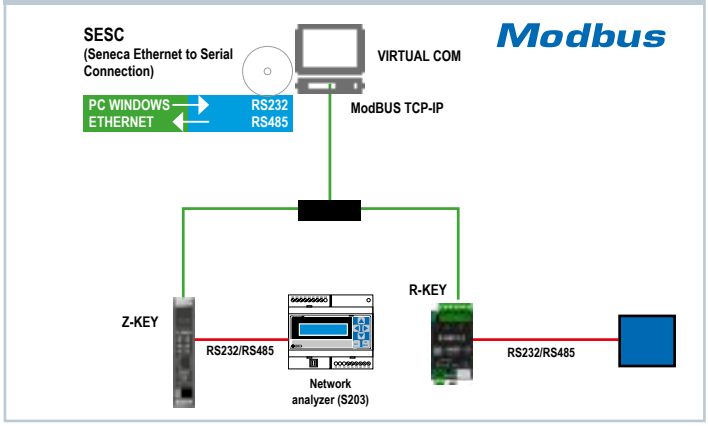
MODBUS GATEWAY - ETHERNET TO SERIAL



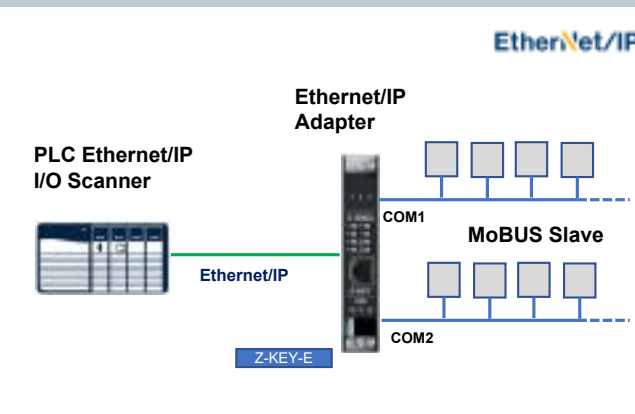
EXTENDED SERIAL OVER ETHERNET



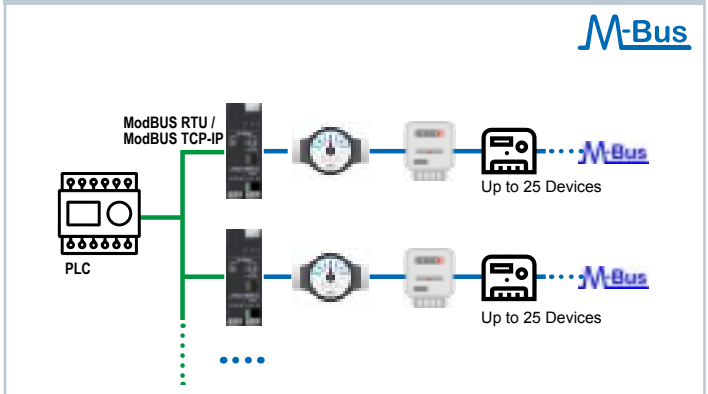
SERIAL DEVICE SERVER – VIRTUAL COM



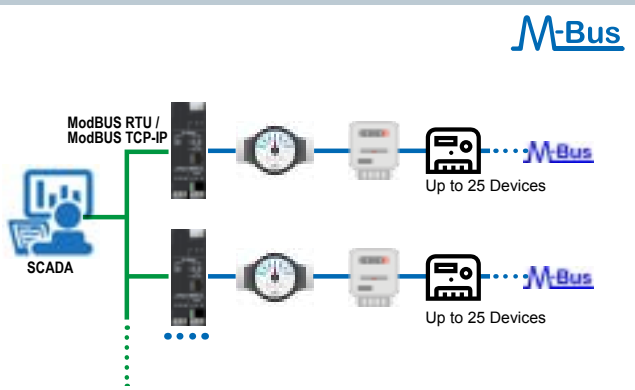
ETHERNET/IP GATEWAY - ADAPTER



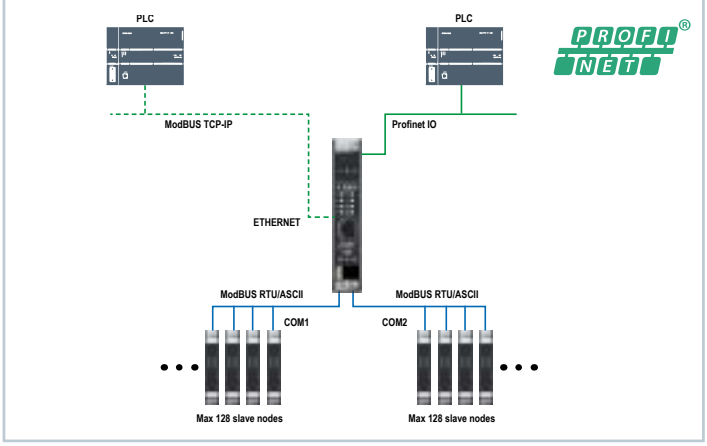
M-BUS GATEWAY - PLC CONNECTION



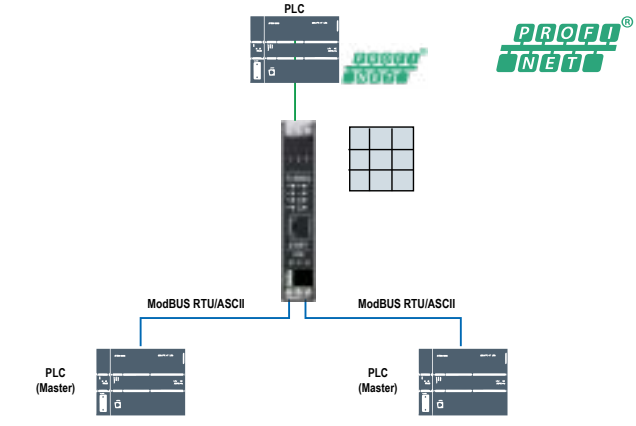
M-BUS GATEWAY - SCADA CONNECTION



PROFINET IO TO MODBUS GATEWAY MASTER



PROFINET IO TO MODBUS GATEWAY SLAVE



2.5



IIoT EDGE GATEWAY

IIoT EDGE GATEWAY

SENECA's Industrial IoT Edge computing devices are multipurpose with advanced functionality such as gateway, datalogger, alarm management, Wi-Fi router, logical functions, cybersecurity, and sofPLC IEC 61131-3 (also with IEC 61850 /60870 protocols). The modules offer client/server connectivity solutions for the creation of systems with varying complexity and simultaneous access points to the plant or single machine. Integrated into the LET'S platform, the gateways can support Point-To-Point connections for remote assistance or Single LAN for remote control. By using IIoT protocols like MQTT and OPC-UA, they perfectly integrate data analysis, supervision, and enterprise management systems, ERP and MES. Applications range from M2M/IoT communications to remote maintenance, network integration, protocol conversion, and integration with Cloud platforms and services across most industrial sectors.

MODELS

GATEWAY EDGE IIoT

SOFTPLC IEC 61131

SOFTPLC IEC 61131 IEC 60870 IEC 61850

HMI

Z-PASS1-RT



Z-PASS2-RT-4G



R-PASS-0-4-0



R-PASS-W-4-0



Z-PASS2-RT-4G-S



R-PASS-0-4-S



R-PASS-W-4-S



Z-PASS2-RT-4G-E



R-PASS-0-4-E



R-PASS-W-4-E



SSD



R-COMM

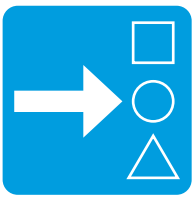


Auxiliary module that interfaces directly with the R-PASS modules, providing modem and mini UPS functionalities.
Available in 2 versions:
R-COMM-0-4GWW
R-COMM-B-4GWW

OPERATION AND CONNECTIVITY

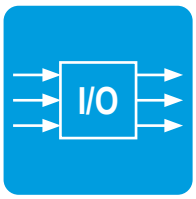
	GATEWAY				GATEWAY + SOFTPLC			GATEWAY+SOFTPLC+ ENERGY PROTECTION			GATEWAY+HMI
	R-PASS-0-4-0	R-PASS-W-4-0	Z-PASS1-RT	Z-PASS2-RT-4G	R-PASS-0-4-S	R-PASS-W-4-S	Z-PASS2-RT-4G-S	R-PASS-0-4-E	R-PASS-W-4-E	Z-PASS2-RT-4G-E	SSD
GATEWAY FEATURES											
ModBUS / Ethernet Serial Gateway	x	x	x	x	x	x	x	x	x	x	x
Shared memory gateway - Gateway with Tag	x	x	x	x	x	x	x	x	x	x	x
Transparent Gateway / Serial Device Server	x	x	x	x	-	-	-	-	-	-	x
IIoT / Edge / MQTT Gateway	x	x	x	x	x	x	x	x	x	x	Dashboard
ROUTING											
Router LAN	x	x	x	x	x	x	x	x	x	x	x
4G Router	Optional	Optional	-	x	Optional	Optional	x	Optional	Optional	x	-
Wi-Fi Router / Access Point	-	x	-	-	-	x	-	-	x	-	x
Advanced Router - Nat 1:1 & Static Router	x	x	x	x	x	x	x	x	x	x	x
ADVANCED FEATURES											
Datalogger	x	x	x	x	x	x	x	x	x	x	x
Remote alarm unit	x	x	x	x	x	x	x	x	x	x	x
VPN remote access unit	x	x	x	x	x	x	x	x	x	x	Dashboard
If-Then-Else logical rules	x	x	x	x	-	-	-	-	-	-	Dashboard
SoftPLC IEC 61131	-	-	-	-	x	x	x	x	x	x	-
Energy Controller IEC 60870/61850	-	-	-	-	-	-	-	x	x	x	-
HMI											
Widgets and Synoptics on HMI	x	x	x	x	x	x	x	x	x	x	x
Remote Display	x	x	x	x	x	x	x	x	x	x	x
7" LCD capacitive touch display	-	-	-	-	-	-	-	-	-	-	x

HIGHLIGHTS



Multifunctional devices

Z-PASS1 and Z-PASS2 are multifunction IoT devices: Modbus Gateway for data acquisition of up to 2000 tags (shared memory mode) with data logging and the ability to process data (If Then Else Logic); Transparent Gateways for extending serial communications via Ethernet/3G+/4G/VPN networks; Routers with Firewall, DynDNS, DHCP Server; Remote Assistance Units.



Integrated I/O

The integrated I/O expands input/output capabilities for general use. For diagnostic, security, and monitoring functions, the devices integrate DI/DO channels, which can be individually configured as digital inputs or outputs. The gateways also feature analog I/O for exchanging data with the field.



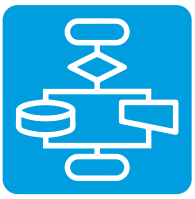
High connectivity

Equipped with Fast Ethernet ports, serial ports, and USB, the Edge gateways support ModBUS RTU / TCP-IP, FTP/FTPs, HTTP/HTTPS, OpenVPN, SSL/TLS, and Wi-Fi protocols. The Z-PASS2 models with 4G/LTE, SIM, and integrated GPS/GNSS function as 4G routers, capable of instantly sharing connections. Thanks to the external R-COMM modem, the R-PASS models provide 4G functionality, GPS receiver, and UPS battery.



Multilevel Cybersecurity

In IoT gateways, cybersecurity is of fundamental importance. Particularly ensuring security at the Edge level reduces the attack surface and is guaranteed by mechanical blocking of remote access, LAN/WAN separation, two-factor authentication, advanced access management, data encryption, OpenVPN protocols, HTTPS Server, TLS certificates for HTTPS, penetration testing compliant with OASWAP, NITS 800 115, Risk Analysis, IEC 62443.



Integrated If-Then-Else Logic

The Edge IoT gateways allow the implementation of logic rules that involve integrated or external I/O (acquired or written in shared memory). The configurable control logic (e.g., continuous or event-based writings, alarm sending, data processing, etc.) supports up to 2000 rules.



Data logging function

In Modbus Gateway functionality with Shared Memory, the Edge IIoT gateways can also activate the "Data Logger" mode, capable of handling up to 1000 log files / 100,000 samples. The tag values, associated with up to 4 groups with different sampling and transfer periods, are stored in log files. File transfer can be performed via USB stick, FTP server, email, HTTP post, MQTT.



NAT 1:1 and Advanced Routing

The NAT 1:1 and Static Router functionalities enable direct communication between the corporate WAN and automation LAN (which by default are independent and do not communicate with each other). They also allow the redirection of outgoing traffic from a device to a particular host or subnet.



IIoT Protocols

The IIoT gateways operate as OPC UA Servers and can be used in automation and data management applications with OPC UA clients from other manufacturers. They also support the MQTT protocol (Message Queue Telemetry Transport), ideal for real-time data transmission and M2M connections, and HTTP post communication for sending log samples and events, as well as advanced data logger and server settings management.



Remote Assistance Support

The Edge IIoT gateways also function as Client devices for the remote access platform to machines and plants "LET'S". Through the VPN BOX 2 Server, it is possible to implement Point-to-Point and On-Demand (P2P) connections to the field or create virtual networks, for "Always ON" connections for supervision, management, and monitoring of remote plants (Single LAN).



Easy Cloud Support

The Edge IIoT gateways can connect machines, plants, and thousands of field I/Os, ensuring compatibility with the most widespread IoT Cloud platforms via MQTT(s) and HTTP(s) protocols, simplifying configuration procedures with some of them.



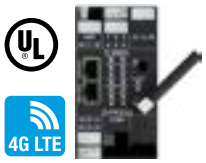
Wi-Fi (option)

The gateways equipped with a 2.4 GHz 802.11 b/g/n Wi-Fi module ensure router or redundant network unit functionalities. It is also possible to select the Station mode (connection to an existing Wi-Fi access point) or Access Point mode (which other devices can connect to).

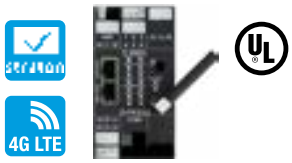
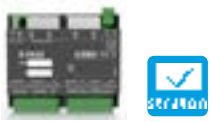
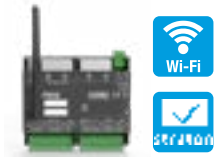


SoftPLC IEC 61131-3 (option)

The gateways that include the Straton IEC 61131-3 softPLC platform combine PLC tasks with web server, data logger, remote control, remote assistance, and energy management functionalities (in compliance with IEC 60870-101/104, IEC 61850 protocols). The devices can be used with different architectures and configurations depending on the system complexity and hardware requirements.

	Z-PASS1-RT	Z-PASS2-RT-4G	R-PASS-0-4-0	R-PASS-W-4-0
				
	IIoT Edge Gateway, integrated I/O	**IIoT Edge Gateway / 4G Router, GPS, integrated I/O**	**Compact multifunction IIoT Gateway with 4 Ethernet ports**	**Compact multifunction IIoT Gateway, Wi-Fi, 4 Ethernet ports**
GENERAL DATA				
Power Supply	11..40 Vdc		10..40 Vdc; 19..28 Vac	
Max Consumption	6 W	6 W	8 W	8 W
Battery / UPS	-	-	With additional R-COMM module	
Max isolation	1.5 kVac			
LED status indicators	Power, Run; I/O Status; VPN Status; VPN Connection; RX/TX serial communication; Ethernet Link/Traffic	Power, Run; I/O Status; VPN Status; VPN Connection; RX/TX serial communication; Ethernet Link/ Traffic; 4G/LTE Level; Registered Modem; Data Connection; GPS; Battery; Modem Power	Power; Log; Status; Serial Communication; Ethernet Communication; VPN Connection; I/O Status	Power; Log; Status; Serial Communication; Ethernet Communication; VPN Connection; Wi-Fi Communication I/O Status
Protection class	IP20			
Connections	Removable terminal block, 3.5 mm pitch, 1.5 mm^2 cable section			
	IDC10 power/bus connector		-	-
Flash Memory (data)	≥4 GB			
RAM	512 MB			
Slot for SD card	Yes, Max 32GB		-	-
I/O Channels	#6 DI/DO configurable, #2 AI (mA,V)		#4 DI, #4 DO, #2 AI (mA, V)	
Operating temperature	-25..+65°C		-20..+65°C	
Dimensions (WxHxD)	35 x 102.5 x 111 mm	52.5 x 102.5 x 111 mm	106 x 90 x 32 mm	
Weight	Approximately 240 g	Approximately 270 g	170 g	
Enclosure	PA6 glass-fiber reinforced		PC / ABS self-extinguishing material UL94-V0	
Installation	For 35 mm DIN rail IEC EN 60715		On DIN rail EN 60715, wall / panel mounted	
Certifications	CE, UKCA			
COMMUNICATION				
Ethernet Ports (ETH1, ETH2)	#2 Fast Ethernet 10/100Tx ports (RJ45)		#24Fast Ethernet 10/100Tx ports (RJ45)	
Serial ports	#1 RS232 / RS485 port, max baud rate 115kbps			
	#2 RS485 ports, max baud rate 115kbps		#1 RS485 port, max baud rate 115kbps	
USB Ports	#1 USB host port on side type A connector			
	-	#1 micro USB port for debugging		
CAN Port	#1 CAN port (terminals)			
Modem	-	Multiband M2M/IoT, 4G / LTE World Wide	Optional (R-COMM)	
Sat Receiver.	-	GPS / GLONASS / BeiDou (compass) / Galileo / QZSS	-	-
Wi-Fi	-	-	-	Integrated WiFi 802.11 b/g/n, band 2.4 ÷2.4835GHz, max Output Power: 17dBm (50 mW), security WEP / WPA / WPA2
Serial protocols	ModBUS TCP server, ModBUS RTU master/slave, FTP/SFTP server, HTTP/HTTPS server, SNMP		ModBUS TCP-IP Server/Client, ModBUS RTU Master/Slave, FTP/FTPs Client, FTP/sFTP Server, HTTP/HTTPS server, SMTPs client, Samba	
IoT Protocols	MQTT, MQTTs, OPC UA Server, https, http post			
Connectivity	Max TCP-IP Clients 50, Max ModBUS RTU/ASCII slave nodes 128 per port, Memory area for 2,000 variables (tags)			
SECURITY				
Authentication	Two-factor authentication (Google Authenticator)		User / Password	
Permission Management	Supervisor / Users / Groups		Supervisor	
Encryption algorithm (data encryption)	OpenVPN AES-256bit-CBC + Auth SHA256 bit or user-selectable		OpenVPN BF-CBC + Auth SHA1	
Security Protocols	OpenVPN, SSL, HTTPS Server, MQTT over SSL/TLS, TLS 1..2 or higher		OpenVPN, SSL, HTTPS Server, MQTT over SSL/TLS	
SSL/TLS Certificates	Automated TLS certificate management for HTTPS		-	-
Cybersecurity certificates (penetration test)	Yes, OWASP, NIST 800-115, Risk Analysis, IEC62443		-	-
SETTINGS				
Programming	WEB SERVER		Web Server, EASY SETUP 2	
VPN Management Software	OpenVPN, VPN Client Communicator			
Management tools	SDD (Seneca Discovery Device), SESC (Seneca Ethernet to Serial Connection)			
If Then Else Logic	Yes			
LET'S Support	Yes			
ORDER CODES	Z-PASS1-RT	Z-PASS2-RT-4G	R-PASS-0-4-0	R-PASS-W-4-0

The technical data and diagrams in this document are indicative and not binding.

	Z-PASS2-RT-4G-S	R-PASS-0-4-S	R-PASS-W-4-S
			
	IIoT Edge Gateway / 4G Router, GPS / SoftPLC Straton	**Compact multifunction IIoT Gateway / SoftPLC Straton, 4 Ethernet ports**	**Compact multifunction IIoT Gateway, Wi-Fi / SoftPLC Straton, 4 Ethernet ports**
GENERAL DATA			
Power Supply	11..40 Vdc	10..40 Vdc; 19..28 Vac	
Max Consumption	6 W	8 W	
Battery / UPS	-	With additional R-COMM module	
Max isolation	1.5 kVac		
LED status indicators	Power, Run; I/O Status; VPN Status; VPN Connection; RX/TX serial communication; Ethernet Link/Traffic; 4G/LTE Level; Registered Modem; Data Connection; GPS; Battery; Modem Power	Power; Log; Status; Serial Communication; Ethernet Communication; VPN Connection; I/O Status	Power; Log; Status; Serial Communication; Ethernet Communication; VPN Connection; Wi-Fi Communication I/O Status
Protection class	IP20		
Connections	Removable terminal block, 3.5 mm pitch, 1.5 mm^2 cable section		
	IDC10 power/bus connector	-	-
Flash Memory (data)	≥4 GB		
RAM	512 MB		
Slot for SD card	Yes, Max 32GB		
I/O Channels	#6 DI/DO configurable, #2 AI (mA,V)	#4 DI, #4 DO, #2 AI (mA, V)	
Operating temperature	-25..+65°C	-20..+65°C	
Dimensions (WxHxD)	52.5 x 102.5 x 111 mm	106 x 90 x 32 mm	
Weight	Approximately 270 g	170 g	
Enclosure	PA6 fiberglass reinforced, black color	PC / ABS self-extinguishing material UL94-V0, black color	
Installation	For 35 mm DIN rail IEC EN 60715	On DIN rail EN 60715, wall / panel mounted	
Certifications	CE, UKCA		
COMMUNICATION			
Ethernet Ports (ETH1, ETH2)	#2 Fast Ethernet 10/100Tx ports with front RJ45 connector	#4 Fast Ethernet 10/100Tx ports with front RJ45 connector	
Serial ports (COM1, COM2, COM4)	#1 RS232 / RS485 port on terminals, max baud rate 115kbps		
	#1 RS485 port, max baud rate 115kbps via terminals		
	#1 RS485 port, max baud rate 115kbps via IDC10 connector for bus and terminals	-	-
USB Ports	#1 USB host port on side type A connector	#1 USB host port on side type A connector	
	#1 micro USB port for debugging		
CAN Port	#1 CAN port (terminals)		
Modem	Multiband M2M/IoT, 4G / LTE World Wide	Optional (R-COMM)	
Sat Receiver.	GPS / GLONASS / BeiDou (compass) / Galileo / QZSS	-	-
Wi-Fi	-	-	Integrated WiFi 802.11 b/g/n, band 2.4 ÷2.4835GHz, max Output Power: 17dBm (50 mW), security WEP / WPA / WPA2
Serial protocols	ModBUS TCP server, ModBUS RTU master/ slave, FTP/SFTP server, HTTP/HTTPS server, SNMP	ModBUS TCP-IP Server/Client, ModBUS RTU Master/Slave, FTP/FTPs Client, FTP/sFTP Server, HTTP/HTTPS server, SMTPs client, Samba	
IoT Protocols	MQTT, MQTTs, OPC UA Server, https, http post		
Connectivity	Max TCP-IP Clients 50, Max ModBUS RTU/ASCII slave nodes 128 per port, Memory area for 2,000 variables (tags)		
SECURITY			
LAN / WAN separation	Yes		
Authentication	Two-factor authentication (Google Authenticator)	User / Password	
Permission Management	Supervisor / Users / Groups	Supervisor	
Encryption algorithm (data encryption)	OpenVPN AES-256bit-CBC + Auth SHA256 bit or user-selectable	OpenVPN BF-CBC + Auth SHA1	
Fixed TCP-IP ports for remote assistance	Yes	Yes	Yes
Security Protocols	OpenVPN, SSL, HTTPS Server, MQTT over SSL/ TLS, TLS 1..2 or higher	OpenVPN, SSL, HTTPS Server, MQTT over SSL/TLS	
SSL/TLS Certificates	Automated TLS certificate management for HTTPS	-	-
Cybersecurity certificates (penetration test)	Yes, OWASP, NIST 800-115, Risk Analysis, IEC62443	-	-
SECURITY			
Programming	WEB SERVER	Web Server, EASY SETUP 2	
VPN Management Software	OpenVPN, VPN Client Communicator		
Management tools	SDD (Seneca Discovery Device), SESC (Seneca Ethernet to Serial Connection), SMS network and IO management		
If Then Else Logic	Yes		
LET'S Support	Yes		
PLC Programming	IEC 61131-3 (Straton)		
Max # PLC variables/tags	1,000		
PLC program size	2048 kB		
ORDER CODES	Z-PASS2-RT-4G-S	R-PASS-0-4-S	R-PASS-W-4-S

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IIoT EDGE GATEWAY

	Z-PASS2-RT-4G-E	R-PASS-0-4-E	R-PASS-W-4-E
			
	IIoT Edge Gateway / 4G Router, GPS, SoftPLC Straton with energy protection	**Compact multifunction IIoT Gateway / SoftPLC Straton with energy protection, 4 Ethernet ports**	**Compact multifunction IIoT Gateway / SoftPLC Straton with Energy, Wi-Fi, 4 Ethernet ports**
GENERAL DATA			
Power Supply	11..40 Vdc	10..40 Vdc; 19..28 Vac	
Max Consumption	6 W	8 W	
Battery / UPS	-	With additional R-COMM module	
Max isolation	1.5 kVac	1.5 kVac	1.5 kVac
LED status indicators	Power, Run; I/O Status; VPN Status; VPN Connection; RX/TX serial communication; Ethernet Link/Traffic; 4G/LTE Level; Registered Modem; Data Connection; GPS; Battery; Modem Power	Power; Log; Status; Serial Communication; Ethernet Communication; VPN Connection; I/O Status	Power; Log; Status; Serial Communication; Ethernet Communication; VPN Connection; Wi-Fi Communication I/O Status
Protection class	IP20		
Connections	Removable terminal block, 3.5 mm pitch, 1.5 mm^2 cable section		
	IDC10 power/bus connector	-	
Flash Memory (data)	≥4 GB		
RAM	512 MB		
Slot for SD card	Yes, Max 32GB	-	
I/O Channels	#6 DI/DO configurable, #2 AI (mA,V)	#4 DI, #4 DO, #2 AI (mA, V)	
Operating temperature	-25..+65°C	-20..+65°C	
Dimensions (WxHxD)	52.5 x 102.5 x 111 mm	106 x 90 x 32 mm	
Weight	Approximately 270 g	170 g	
Enclosure	PA6 fiberglass reinforced, black color	PC / ABS self-extinguishing material UL94-V0, black color	
Installation	For 35 mm DIN rail IEC EN 60715	On DIN rail EN 60715, wall / panel mounted	
Certifications	CE, UKCA		
GENERAL DATA			
Ethernet Ports (ETH1, ETH2)	#2 Fast Ethernet 10/100Tx ports with front RJ45 connector	#4 Fast Ethernet 10/100Tx ports with front RJ45 connector	
Serial ports (COM1, COM2, COM4)	#1 RS232 / RS485 port on terminals, max baud rate 115kbps		
	#1 RS485 port, max baud rate 115kbps via terminals		
	#1 RS485 port, max baud rate 115kbps via IDC10 connector for bus and terminals	-	-
USB Ports	#1 USB host port on side type A connector	#1 USB host port on side type A connector	
	#1 micro USB port for debugging		
CAN Port	#1 CAN port (terminals)		
Modem	Multiband M2M/IoT, 4G / LTE World Wide	Optional (R-COMM)	
Sat Receiver.	GPS / GLONASS / BeiDou (compass) / Galileo / QZSS	-	-
Wi-Fi	-	-	Integrated WiFi 802.11 b/g/n, band 2.4 ÷2.4835GHz, max Output Power: 17dBm (50 mW), security WEP / WPA / WPA2
Serial protocols	ModBUS TCP server, ModBUS RTU master/slave, FTP/SFTP server, HTTP/HTTPS server, SNMP	ModBUS TCP-IP Server/Client, ModBUS RTU Master/Slave, FTP/FTPs Client, FTP/sFTP Server, HTTP/HTTPS server, SMTPs client, Samba	
IoT Protocols	MQTT, MQTTs, OPC UA Server, https, http post		
Energy Protocols	IEC60870-101 Master / Slave IEC60870-104 Client / Server IEC61850 Client/Server		
Connectivity	Max TCP-IP Clients 50, Max ModBUS RTU/ASCII slave nodes 128 per port, Memory area for 2,000 variables (tags)		
SECURITY			
Authentication	Two-factor authentication (Google Authenticator)	User / Password	
Permission Management	Supervisor / Users / Groups	Supervisor	
Encryption algorithm (data encryption)	OpenVPN AES-256bit-CBC + Auth SHA256 bit or user-selectable	OpenVPN BF-CBC + Auth SHA1	
Security Protocols	OpenVPN, SSL, HTTPS Server, MQTT over SSL/TLS, TLS 1..2 or higher	OpenVPN, SSL, HTTPS Server, MQTT over SSL/TLS	
SSL/TLS Certificates	Automated TLS certificate management for HTTPS	-	-
Cybersecurity certificates (penetration test)	Yes, OWASP, NIST 800-115, Risk Analysis, IEC62443	-	-
SECURITY			
Programming	WEB SERVER	Web Server, EASY SETUP 2	
VPN Management Software	OpenVPN, VPN Client Communicator		
Management tools	SDD (Seneca Discovery Device), SESC (Seneca Ethernet to Serial Connection), SMS network and IO management		
If Then Else Logic	Yes		
LET'S Support	Yes		
PLC Programming	IEC 61131-3 (Straton)		
Max # PLC variables/tags	1,000		
PLC program size	2048 kB		
ORDER CODES	Z-PASS2-RT-4G-E	R-PASS-0-4-E	R-PASS-W-4-E

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7" touchscreen HMI with gateway, datalogger, remote assistance, and integrated I/O functions

HARDWARE
- Power supply 24Vac/dc
- Flash Memory 2 / 4 GB
- #2 DI/DO
- Protection degree: IP64 with membrane
- Operating temperature -20..+60°C

DISPLAY
- Display 7" TFT, 16M colors
- Capacitive multitouch
- Resolution 800x480 pixels
- Standard widget display
- Display on Display
- Remote display

STANDARD COMMUNICATION
- "2 Fast Ethernet ports
- #2 serial ports
- #2 USB ports
- ModBUS RTU
- ModBUS TCP-IP
- Max 32 TCP-IP clients, 2000 tags, 128 slave nodes ModBUS
- Max 244 slave nodes (128 on a single serial without repeater)

CONFIGURATION
- Integrated Web Server
- Widget library
- VPN management software
- Network management software (SDD, SESC)
- DIP switch factory reset
- Firmware update via web or USB pen (Fat32)

IIOT PROTOCOLS
- MQTT
- OPC UA
- http post, https
- FTP / SFTP
- Cloud support
- OpenVPN / SSL

CYBERSECURITY
- Data Encryption: Blowfish — Blowfish (128bit) in CBC mode
- Data Authentication: SHA1 — HMAC using Secure Hash Algorithm (160bit)
- Certification authority provided by VPN BOX
- Handshake Encryption: TLSv1/SSLv3 RSA- 2048 — 2048bit Ephemeral Diffie-Helman (DH)
- Service Channel: TLSv1/SSLv3 2048bit certificate

TECHNICAL DATA

HMI DATA	
Screen	7" LCD TFT backlit, scratch-resistant glass
Resolution	800 x 480 pixels
Format	16/9
Brightness	350 cd/m2
Colors	16 M
Touchscreen	Capacitive
Durability	30,000 h (backlight level 5)
Viewing angles	70° / 50° / 70° / 70° (Top, Bottom, Left, Right)
Display Functionality	Standard widget-based display Remote display (on PC and devices with any O.S.) Display on Display (display emulation)
GENERAL DATA	
Power Supply	24 Vdc/ac +/- 10%
Consumption	AC: Max. 16 VA, 10 W; DC: Max. 9 W
Status Indicators	Ethernet Link and Traffic
Connections	#1 Removable terminal block, 3.5 mm pitch, 10 ways
Protection class	IP64 (front panel with membrane)
Operating temperature	-20 °C..+60 °C
Dimensions (WxHxD)	192 x 127 x 32 mm
Panel cutout dimensions (WxH)	157x102 mm
Weight	Approximately 420 g
Enclosure	ABS, black color
Installation	Via mounting brackets or wall mount
COMMUNICATION	
Ethernet Ports	#2 Fast Ethernet 10/100Tx ports on the rear RJ45
Serial Ports	#1 switchable RS232 / 485 serial port, max 115k #1 RS485 port, baud rate max 115kbps
USB Ports	#1 USB OTG port #1 serial USB port for software debugging
WiFi Module	WiFi 802.11 b/g/n, frequency band 2.4 to 2.4835 GHz
Protocols	ModBUS TCP-IP Server/Client, ModBUS RTU Master/Slave, FTP/SFTP Server/Client, HTTP/HTTPS server, OpenVPN, SSL, MQTT, OPC UA, HTTP post
Operating Modes	ModBUS Gateway (Ethernet - Serial, shared memory, transparent gateway, serial tunneling), IoT/Cloud-based gateway, datalogger, alarm management unit, serial sniffer, WiFi router, network redundancy unit, VPN remote assistance/ Remote Control module, microcontroller, LAN/WAN separator
I/O	
Configurable DI/DO	#2 digital channels (PNP inputs with internal power)
PROCESSING & MEMORY	
Processor	ARM 800 MHz
Flash Memory (data)	2 / 4 GB
RAM	512 GB
Micro SD card	no
SECURITY	
Data Encryption	Blowfish — Blowfish (128bit) in CBC mode
Data Authentication	SHA1 — HMAC using Secure Hash Algorithm (160bit)
Handshake Encryption	TLSv1/SSLv3 RSA-2048 — 2048bit Ephemeral Diffie-Helman (DH)
Service Channel	TLSv1/SSLv3 2048bit certificate
Web server authentication	Yes
Security Protocols	OpenVPN, SSL
SETTINGS & SOFTWARE	
DIP Switch	Factory reset
Web server	Yes, status information, setup, alarms, charts, widgets
VPN Management Software	VPN BOX Manager, OpenVPN, VPN Client Communicator
SDD (Seneca Discovery Device)	Yes
SESC (Seneca Ethernet to Serial Connection)	Yes
Firmware update	From web page or USB stick (FAT32)
STANDARDS	
Marking / Certifications	CE
Standards	EN 300328, EN 301489-17, EN 301489-1, EN 60368-1, EN 62311

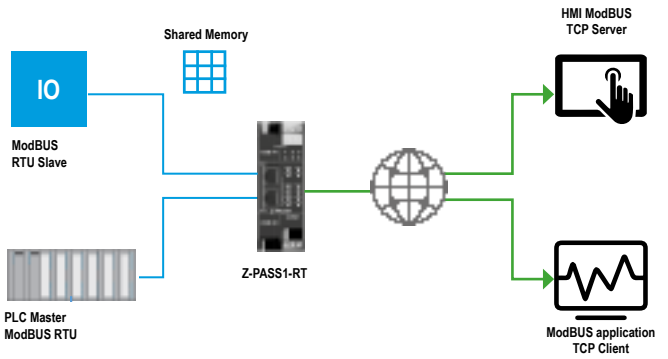
ORDER CODES

Code	Description
HMI MULTIFUNCTION	
SSD-0-0-0-0	Advanced HMI touchscreen with integrated I/O
SSD-0-L-0-0	Advanced HMI touchscreen with logic and I/O
SSD-0-0-V-0	Advanced HMI touchscreen with VPN and I/O
SSD-0-0-0-I	Advanced HMI touchscreen with IIoT and I/O
SSD-0-L-V-0	Advanced HMI touchscreen with logic, VPN, and I/O
SSD-0-L-0-I	Advanced HMI touchscreen with IIoT, logic, and I/O
SSD-0-0-V-I	Advanced HMI touchscreen with IIoT, VPN, and I/O
SSD-0-L-V-I	Advanced HMI touchscreen with IIoT, logic, VPN, and I/O
UPGRADE	
SSD-UPG-L	SSD - Upgrade "logic" functions
SSD-UPG-V	SSD - Upgrade "VPN" functions
SSD-UPG-I	SSD - Upgrade "IIoT" functions
SSD-UPG-L-V	SSD - Upgrade "logic" and "VPN" functions
SSD-UPG-L-I	SSD - Upgrade "logic" and "IIoT" functions
SSD-UPG-V-I	SSD - Upgrade "VPN" and "IIoT" functions
SSD-UPG-L-V-I	SSD - Upgrade "logic," "VPN," and "IIoT" functions
VPN SERVER	
VPN BOX	Codes and features available at www.seneca.it/linee-di-prodotto/comunicazione-industriale-e-telecontrollo/lets-connectivity-solutions/modulo-server-di-connettivita/vpn-box
IOT/CLOUD SOLUTION	
CLOUD BOX	Codes and features available at www.seneca.it/linee-di-prodotto/comunicazione-industriale-e-telecontrollo/soluzioni-iot-scada-cloud/cloud-box
SOFTWARE TOOL	
SDD	SENECA Discovery Device, IP scanner
SESC	SENECA Ethernet to Serial Connection
ACCESSORIES	
CE-RJ45-RJ45-R	Straight Ethernet cable (RJ45 / RJ45)
CU-A-MICRO-OTG	Micro USB OTG to USB Type A female adapter cable
MSD	Micro SD memory card with adapter

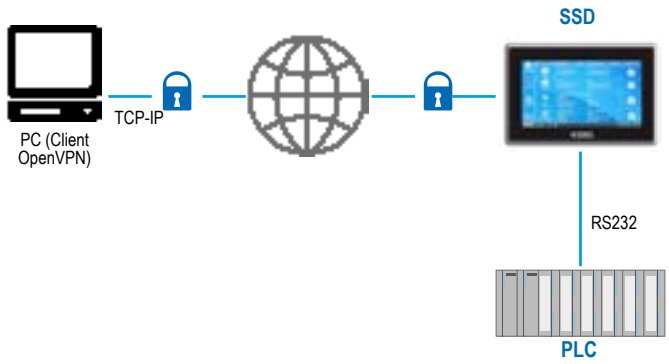
The technical data and diagrams in this document are indicative and not binding.

APPLICATION DIAGRAMS

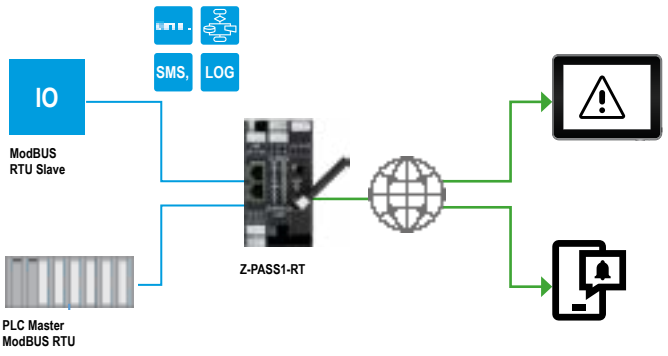
GATEWAY MODBUS SHARED MEMORY



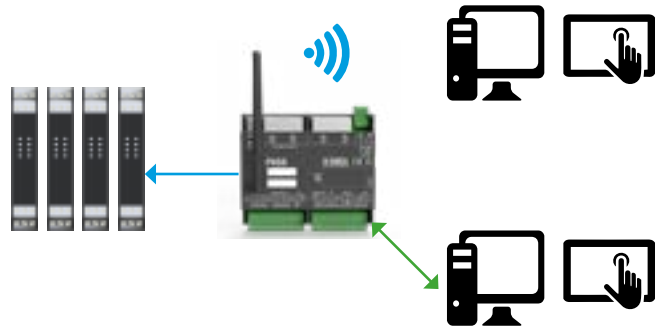
TRANSPARENT GATEWAY



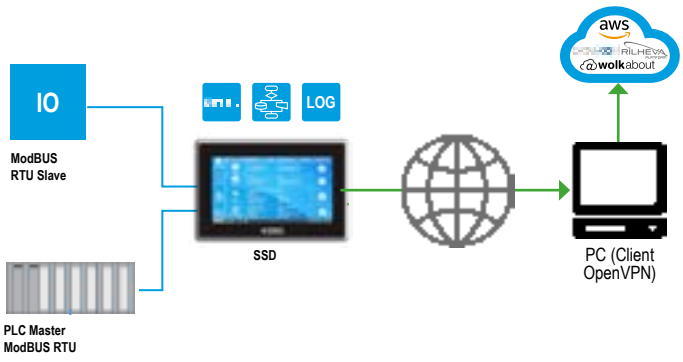
REMOTE ALARM



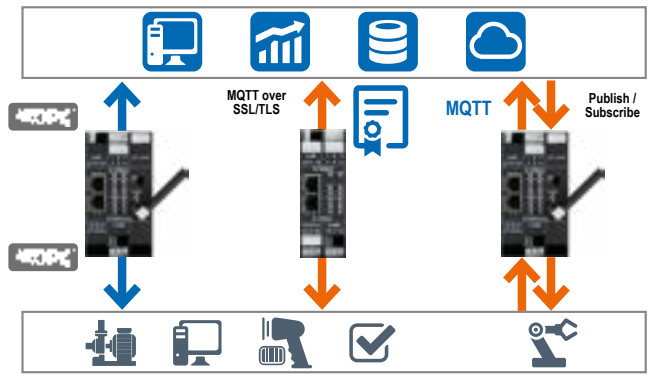
WI-FI Gateway



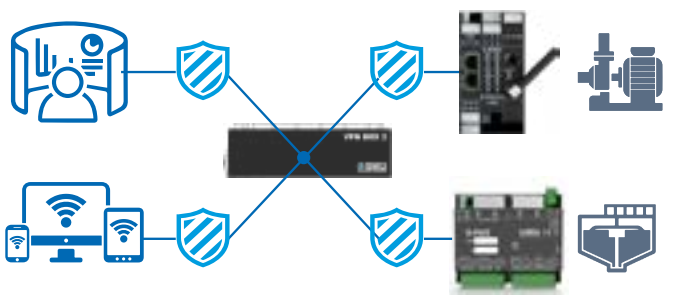
DATALOGGER / CLOUD GATEWAY



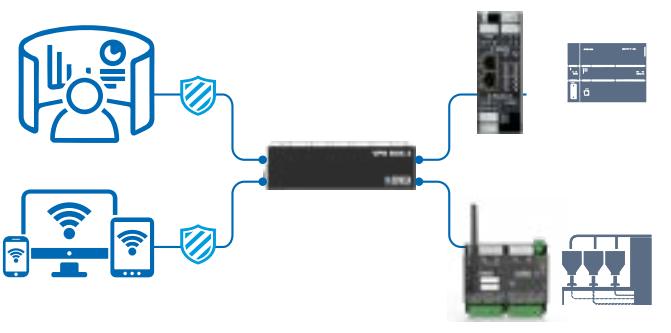
IIOT Connections



Remote Control SINGLE LAN



Remote Assistance POINT-TO-POINT



2.6



REMOTE ASSISTANCE AND REMOTE CONTROL VPN PLATFORM

VPN IIOT platform FOR REMOTE ASSISTANCE AND REMOTE CONTROL



LET'S is SENECA's VPN - IIoT platform that reduces maintenance costs for machine and plant automation and management applications, offering an integrated connectivity service at 3 levels: remote data access, programmable control, and network monitoring. Based on the VPN BOX Server module, LET'S enables "Always ON" connections (Remote Control / Single LAN mode) for plant supervision and "On Demand" connections (Remote Assistance / Point-to-Point mode) for third-party machines and devices and for maintenance or data collection services. Communication from a PC or mobile device takes place via desktop software or VPN Client Communicator APP. The industrial VPN – IoT gateways of the LET'S platform extend serial networks over Ethernet while also supporting complex architectures and safety-critical applications. The Z-PASS2-RT model, with an integrated 4G LTE modem, also functions as a router, DynDNS Server, and redundant communication device. SSD (Surprise Smart Display) is a versatile device that includes gateway, datalogger, alarm management, Wi-Fi router, and remote assistance / remote control functions, even in the Cloud. One of the platform's main innovations is integrating remote access functions with programmable automation through IEC 61131-3 based SENECA controllers. For energy management applications, LET'S controllers also support IEC 60870-5-101, IEC 60870-5-104, and IEC 61850 protocols.

MULTIFUNCTION CLIENT
LET'S Client devices perform gateway, datalogger, alarm management, LAN/Wi-Fi/4G router functions with DynDNS and NAT 1:1 support, control, remote assistance, and remote control.

REMOTE ALARM
LET'S devices send configurable alarms from the Web Server, associated with integrated I/O or Modbus tags, and send SMS/Email/notifications using HTTP, MQTT protocols, or control logic.

IN-HOUSE SERVER
Server connectivity module (HW or Virtual machine) compatible with LET'S client devices in Point-to-Point and Single LAN modes.
VPN BOX 2 offers advanced technologies and security standards validated by penetration testing.

OPC UA
OPC UA is a standard for cross-communications based on the client-server principle via a platform-independent architecture. LET'S gateways and controllers operate as OPC UA Servers offering interoperability, scalability, security, and centralized data management.

THIRD-PARTY PLC SUPPORT
LET'S devices are compatible with the most popular PLCs, supporting numerous fieldbus systems including the Siemens S7 protocol for IoT communications.

MQTT
LET'S devices open up to the IoT world thanks to the support of the MQTT protocol (Message Queue Telemetry Transport), ideal for real-time data transmission and M2M connections. The MQTT Client configuration is performed via Web Server.

CONTROL LOGIC AND SOFTPLC
LET'S gateways/routers perform microcontrol functions with an integrated set of if-then-else instructions. Remote controllers are real SoftPLC based on IEC 61131-3 Straton.

EXTENDED CONNECTIVITY
With Fast Ethernet and serial ports, LET'S products support fieldbus and IT systems. The wireless models also feature 4G LTE routers with integrated GPS/GNSS and/or 2.4 GHz Wi-Fi 802.11 b/g/n.

REMOTE ACCESS
Remote access clients for machines and plants interact with the VPN BOX 2 server, with which it is possible to implement Point-to-Point and Single LAN connections to the field or create virtual networks.

FLEXIBLE CONFIGURATION
Thanks to the web server, VPN tools, and integrated programming environments, diagnostics, security, connection checks, data acquisition, and alarm signaling are guaranteed with maximum flexibility.

DATALOGGING
LET'S clients also operate as a real-time multivariable DAQ system capable of handling up to 1000 log files / 100,000 samples and transferring them via USB stick, FTP server, email, HTTP post, MQTT.

CYBERSECURITY
The LET'S platform ensures advanced cybersecurity requirements, from two-factor authentication to automated TLS certificate management for HTTPS, and is certified through penetration testing.

PROGRAMMING REMOTE SOFTWARE UPDATE

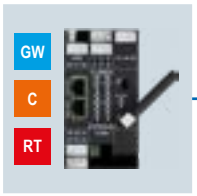
ASSET MANAGEMENT

REMOTE MONITORING AND KPI ANALYSIS

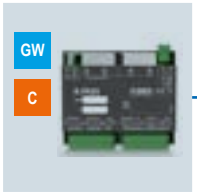
PLANT REMOTE CONTROL

REMOTE MACHINERY ASSISTANCE

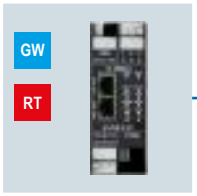
PREDICTIVE MAINTENANCE AND DIAGNOSTICS



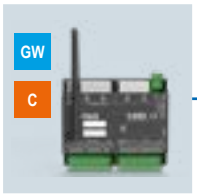
Z-PASS2-RT



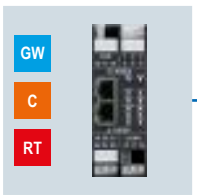
R-PASS



Z-PASS1-RT



R-PASS-W



Z-TWS4-RT



SSD (SURPRISE SMART DISPLAY)

LET'S IIoT CONNECTIVITY SOLUTIONS

IoT / VPN Connectivity Server Infrastructure based on VPN BOX 2 (Hardware or Virtual Machine)



wmvare

- Centralized configuration
- IIoT / Industry 4.0 ready
- State-of-the-art cybersecurity (certified penetration test)
- Simultaneous connection management
- Firewall-friendly architecture
- Available in Hardware and Virtual Machine versions

SCADA / Control Room

Data Center

IoT / Cloud Platforms

Mobile access

Remote programming

GW Gateway/Router

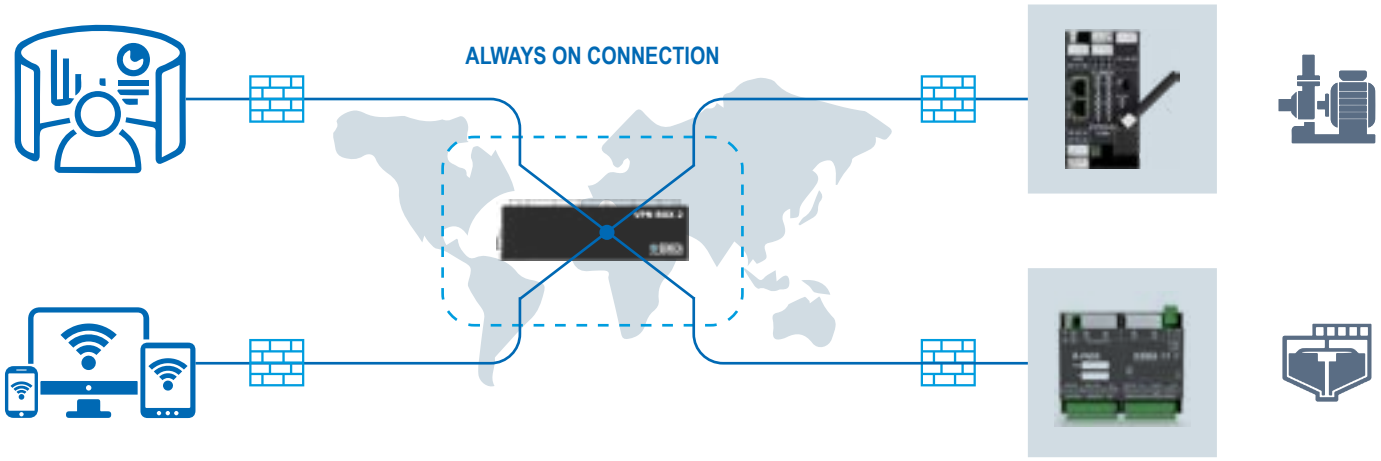
C IEC 61131-3 controllers

RT "Real-time" devices

SIMULTANEOUS OPERATIVE MODES

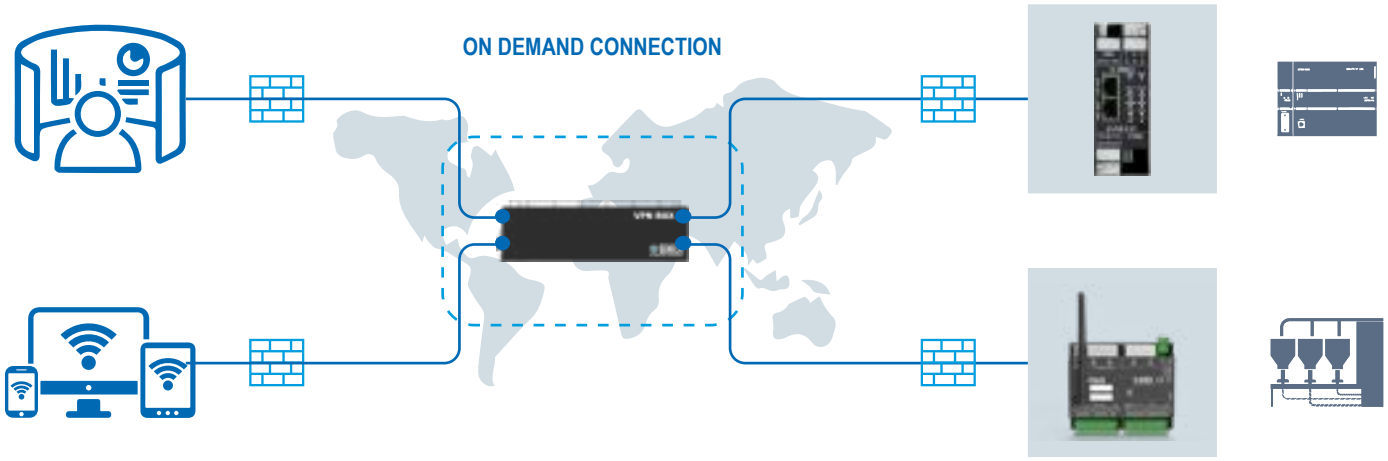
SINGLE LAN - REMOTE CONTROL

In Remote Control / Single LAN mode (always-on connection), VPN BOX functions as a network server to which a static and public IP is assigned. Communication is simultaneous and always active between all remote sites and the server, as well as between the various subnets that are part of the overall system. This type of connection is ideal for real-time monitoring and implementing a unified supervision system.



POINT-TO-POINT – REMOTE ASSISTANCE

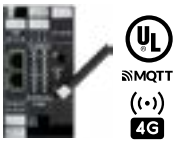
In Remote Assistance / Point-To-Point mode (on-demand connection), VPN BOX functions as a concentrator and establishes point-to-point communication between a PC (or mobile device) and the machine/plant. It also requires the assignment of a static and public IP or potentially a DynDNS address. This type of connection is ideal for remote maintenance and diagnostics applications, allowing multiple types of users/plants with different access profiles to coexist.



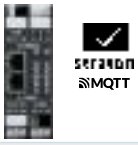
	Single LAN / Remote Control	Point-To-Point / Remote Assistance
Typical Applications	Monitoring, maintenance, supervision, data acquisition, local automation, alarms	Maintenance, diagnostics, plant startup, real-time customer assistance
Connection Types	Always ON Simultaneous and always active across all remote sites. Connection between different networks (e.g., 192.168.30.x, 192.168.40.x…) via VPN.	ON Demand P2P connection between user's PC / mobile device and the device / machine. On request and not simultaneous for the different sites.
Communication between VPN subnets	Yes, plants are visible / accessible by all VPN clients.	No, different plants for different users.
Subnet access	Via local addresses	Via local addresses / Layer 2 support
Multi-user management	No	Yes
Network configurations	Different configurations for different sites to avoid network conflicts.	Same for all sites (e.g., 192.168.20.x)
Supported SIM	.	.
Benefits	• Remote access to different LANs • Ability to query devices as if on-site (local) • Integration of heterogeneous networks	• Reduction of logistics and maintenance costs • Remote machine control • Multi-level user profiling and by individual plant

THE PLATFORM

VPN CLIENT / IIoT GATEWAY / ROUTER

	Z-PASS1-RT	Z-PASS2-RT	R-PASS	R-PASS-W	SSD
					
Versions	ModBUS / Ethernet (Real-Time)	ModBUS / Ethernet / 4G-LTE (Real-Time)	ModBUS / Ethernet	Wi-Fi	ModBUS / Ethernet / Wi-Fi
Integrated I/O	6DI/DO, 2AI	6DI/DO, 2AI	4DI, 4DO, 2AI	4DI, 4DO, 2AI	2DIDO
HMI	Web App				
Max # VPN Clients	500				
Protocols	ModBUS TCP-IP Server/Client, ModBUS RTU Master/Slave, FTP/SFTP Server/Client, HTTP/HTTPS server, MQTT, OPC UA, http post				
Security Protocols	OpenVPN, SSL, HTTPS Server, MQTT over SSL/TLS, TLS 1..2 or higher				
ModBUS / Shared Memory / Transparent Gateway	✓	✓	✓	✓	✓
Serial Device Server	✓	✓	-	-	-
Datalogger	✓	✓	✓	✓	✓
Alarm management	✓	✓	✓	✓	✓
Serial sniffer	✓	✓	✓	✓	✓
(NAT1:1) Static / LAN Router	✓	✓	-	-	-
Wi-Fi Router / AP	-	-	-	✓	✓
4G/LTE Router	-	✓	-	-	-
Remote Assistance / Remote Control VPN	✓	✓	✓	✓	✓
Microcontroller (If-then-else)	✓	✓	✓	✓	✓
LAN/WAN Switch	-	-	✓	✓	✓

VPN CLIENT / IIoT MULTIFUNCTION STRATON CONTROLLER

	Z-PASS2-RT-S	Z-TWS4-RT	R-PASS-S	R-PASS-W-S	S6001-RTU
					
Fast Ethernet ports	2	2	2 (4)	2 (4)	1
Serial Ports	3	3	3	3	3
USB Ports	1	1	2	2	1
Integrated I/O	6 DI/DO, 2AI	6 DI/DO, 2AI	4DI, 4DO, 2AI	4DI, 4DO, 2AI	15+2DI, 4AI, 8DO, 3AO
Modem/Router	4G/LTE	(Optional external)	Optional external (R-COMM)	Optional external (R-COMM)	4G/LTE
Programming environment	Z-NET4, Web Server, EASY SETUP 2				
Max # variables / tags	1000				
Program Size	2048 kB				
Diagnostics	WEB SERVER				
Protocols	ModBUS RTU/TCP-IP/ASCII, ModBUS TCP-IP, S7 Protocol, M-BUS, (S)FTP Server, HTTP(s) Server, SMTP(s) Client, SNMP, SAMBA, OPC UA/DA Client / Server, MQTT(s), http(s) post.				
Security Protocols	OpenVPN, SSL, HTTPS Server, MQTT over SSL/TLS, TLS 1..2 or higher				
Energy Protocols (Optional)	IEC 60870-101 Slave, IEC 60870-104 Master / Slave, IEC 61850 Client / Server.				
SoftPLC IEC 61131-3	✓	✓	✓	✓	✓
Energy Controller	✓	✓	✓	✓	✓
Datalogger	✓	✓	✓	✓	✓
Gateway	✓	✓	✓	✓	✓
LAN Router	✓	✓	✓	✓	✓
Wi-Fi Router	-	-	-	✓	-
4G/LTE Router	✓	-	-	-	✓
Remote assistance / remote control unit	✓	✓ (with external router).	✓	✓	✓
LAN/WAN Switch	-	-	-	-	✓

THE PLATFORM

SERVER INFRASTRUCTURE



- Hardware appliance or virtual machine
- Firewall friendly
- Simultaneous LAN / P2P management
- Automated firmware updates and backups
- Compliance LTS, 2FA, OpenVPN
- Flexible license management
- Full log management
- Supported products: R-PASS, R-PASS-S, SSD, Z-PASS1-RT, Z-PASS2-RT, Z-TWS4-RT, Z-PASS1, Z-PASS2, Z-TWS4

MULTILEVEL CYBERSECURITY

- Remote access lock with digital input
- LAN/WAN separation
- Two-factor authentication (Google Authenticator)
- Advanced permissions management (supervisor, users, groups)
- Data Encryption Algorithm (OpenVPN AES 256bit CBC + AUTH SHA 256bit or user-selectable)
- Security protocols: OpenVPN, SSL, HTTPS Server, MQTT Over TLS/SSL
- Automated TLS certificate management for HTTPS
- Certified penetration test (OASWAP, NITS 800 115, Risk Analysis, IEC 62443)

CONFIGURATION / PROGRAMMING

- Management Suite LET'S: Configuration, interface, and programming environments for complete remote monitoring project management
- Web Server (Network configuration, client, RTC, firmware updates)
- VPN Client Communicator (P2P/SINGLE LAN connections, credential-based access, automated certificate installation)
- OPEN VPN CONNECT (Client OpenVPN configuration, client authentication, support for TUN, TAP interfaces)
- STRATON (IEC 61131 SoftPLC automation logic, R/W functions from Siemens PLC with S7 Protocol).

VPN SCENARIOS

LET'S supports 3 main connection architectures based on the selected server infrastructure

1 - SENECA VPN BOX 2 Solution
HARDWARE APPLIANCE



2 - SENECA VPN BOX 2 Solution
VIRTUAL MACHINE



1 - Server-based solution
Open VPN

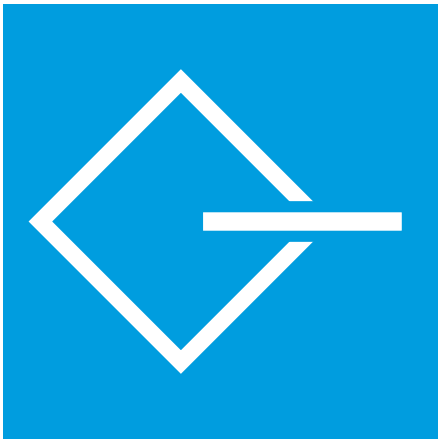


ORDER CODES

ORDER CODES	
Code	Description
VPN CONNECTIVITY SERVER	
VPN-BOX-2	PC Box - VPN server for simultaneous connections and low latency Point-to-Point / Single LAN.
VPN-BOX-2-D	VPN-BOX-2 Point-to-Point testing service valid for up to 30 days for max 2 devices.
VPN-BOX-2-VM	VPN-BOX-2 Virtual Machine
VPN-BOX-2-VM-D	VPN-BOX-2 Virtual Machine Point-to-Point / Single LAN max 2 devices.
VPN-CC-2	VPN Client Communicator, remote access software for VPN-BOX-2
VPN CLIENT / IIoT GATEWAY / ROUTER	
R-PASS-W-2-0	IIoT Edge Gateway with Wi-Fi and 2 Ethernet ports.
R-PASS-W-4-0	IIoT Edge Gateway with Wi-Fi and 4 Ethernet ports.
SSD-0-0-0-0	Advanced HMI touchscreen with integrated I/O
SSD-0-0-0-I	Advanced HMI touchscreen with IIoT and I/O
SSD-0-0-V-0	Advanced HMI touchscreen with VPN and I/O
SSD-0-0-V-I	Advanced HMI touchscreen with IIoT, VPN, and I/O
SSD-0-L-0-0	Advanced HMI touchscreen with logic and I/O
SSD-0-L-0-I	Advanced HMI touchscreen with IIoT, logic, and I/O
SSD-0-L-V-0	Advanced HMI touchscreen with logic, VPN, and I/O
SSD-0-L-V-I	Advanced HMI touchscreen with IIoT, logic, VPN, and I/O
Z-PASS1-RT	Industrial Gateway - Serial Device Server, integrated I/O, Real-Time.
Z-PASS2-RT-4G	4G real-time Gateway / Router, GPS and integrated I/O.

ORDER CODES	
Code	Description
VPN CLIENT / IIOT MULTIFUNCTION CONTROLLER	
R-PASS-0-2-E	Edge Controller IIoT Straton with Energy protocols and 2 Ethernet ports
R-PASS-0-2-S	Edge Controller IIoT Straton with 2 Ethernet ports
R-PASS-0-4-E	Edge Controller IIoT Straton with Energy protocols and 4 Ethernet ports
R-PASS-0-4-S	Edge Controller IIoT Straton with 4 Ethernet ports
R-PASS-W-2-E	Edge Controller IIoT Straton with Energy protocols, Wi-Fi, and 2 Ethernet ports
R-PASS-W-2-S	Edge Controller IIoT Straton with Wi-Fi and 2 Ethernet ports
R-PASS-W-4-E	Edge Controller IIoT Straton with Energy protocols, Wi-Fi, and 4 Ethernet ports
R-PASS-W-4-S	Edge Controller IIoT Straton with Wi-Fi and 4 Ethernet ports
Z-PASS2-RT-4G-S	4G real-time Remote Controller, GPS and integrated I/O.
Z-PASS2-RT-4G-E	4G real-time Remote Controller, energy protection, GPS and integrated I/O.
S6001-PC-4GWW	Pump controller with integrated I/O, 4G WW LTE, Straton programming system and 7" HMI
S6001-RTU-4GWW	All-in-one RTU with integrated I/O, 4G WW LTE modem, Straton
S6001-RTU-E-4GWW	All-in-one RTU with integrated I/O, 4G WW LTE modem, Straton, Energy protocols
Z-TWS4-RT-S	Multifunction IEC 61131 real-time controller, integrated I/O, Straton workbench.
Z-TWS4-RT-E	Multifunction IEC 61131 real-time controller, integrated I/O, energy protection. energy protection
SETTINGS AND PROGRAMMING	
EASY SETUP 2	SENECA programmable tool suite configurators
STRATON-256-UPD	STRATON IDE 256 Tags UPGRADE from V8 to V9
STRATON-512-UPD	STRATON IDE 512 Tags UPGRADE from V8 to V9
STRATON-870-850	License: IEC 60870-5-101/104 Master / Slave + IEC 61850 Client / Server
STRATON-870M	Activation License for IEC 60870-5-101/104 Master
STRATON-870S	Activation License for IEC 60870-5-101/104 Slave
STRATON-870S-850	License activation: IEC 60870-5-101/104 Slave + IEC 61850 Client / Server
STRATON-D-USB	Straton USB dongle
STRATON-IDE256	Straton 256 tag IDE with USB activation key
STRATON-IDE512	Straton 512 tag IDE with USB activation key
STRATON-IDEUN	Straton IDE unlimited tag - IEC 61131 development environment
Z-NET4	Z-PC Series I/O system and controller configurator

2.7



SERIAL/USB CONVERTERS

SERIAL CONVERTERS

	K107A	K107B	S107P
			
	Isolated serial repeater converter RS485 / RS48	Isolated serial repeater converter RS232 / RS485	Portable RS232 - RS485/422 serial converter.
GENERAL DATA			
Power Supply	19.2..30 Vdc; 22 mA (24 Vdc)	19.2..30 Vdc; 22 mA (24 Vdc)	9..12 Vdc (220 Vac power supply included)
Max Consumption	0.5 W	0.5 W	1 W
Isolation	1,500 Vac (3-way)	1,500 Vac (3-way)	1,000 Vac (RS232//RS485, power supply//RS485)
Status Indicators	Data Presence Reversed connection Power Supply	Data Presence Reversed connection Power Supply	Power Supply RTS signal status Data transmission Data reception
Protection class	IP20	IP20	IP20
Operating temperature	-20..+65°C	-20..+65°C	0..+55°C
Dimensions	6.2 x 93.1 x 102.5 mm	6.2 x 93.1 x 102.5 mm	100.5 x 50 x 24 mm
Weight	45 g	45 g	90 g
Enclosure	PBT, black	PBT, black	White self-extinguishing ABS
Connections	Spring terminals	Spring terminals	-
Mounting	35 mm DIN rail (IEC/EN 60715)	35 mm DIN rail (IEC/EN 60715)	35 mm DIN rail (IEC/EN 60715)
COMMUNICATION, PROCESSING			
Interfaces	RS485 half duplex, 31 nodes, terminator, protection up to 30 Vdc	RS232B, protection up to 30 Vdc RS485 half duplex, 31 nodes, terminator, protection up to 30 Vdc	RS232 DB9: RS485, 5-pole terminal block.
Operating modes	-	-	2-wire Half Duplex, 4-wire Full Duplex, point-to-point or multidrop.
Direction Change	Timed automatic	Timed automatic	Timed automatic, controlled by RTS RS232
Speed	Up to 250 kbps	Up to 250 kbps	Up to 115,200 bps
Protocol	ModBUS RTU slave	ModBUS RTU slave	ModBUS RTU slave
Distance	Up to 1,200 m	Up to 1,200 m	Up to 1,200 m
CONFIGURATIONS, STANDARDS			
Programming	DIP Switch	DIP Switch	DIP switch (speed, communication, direction change)
Standard	UL-UR, CE	UL-UR, CE	CE
ORDER CODES	K107A	K107B	S107P

	Z107	Z-4AI-D	Z-4TC-D
			
	Serial converter RS232 - RS485/422 For control panel	A/D converter for 4 analog signals	A/D converter for 4 thermocouples
GENERAL DATA			
Power Supply	19..40 Vdc, 19..28 Vac	9..30 (option) - 19..40 Vdc 19..28 Vac (50..60 Hz)	9..30 (option) - 19..40 Vdc 19..28 Vac (50..60 Hz)
Max Consumption	2.5 W	2.5 W	2 W
Status Indicators	Power Supply RST signal status Data transmission Data reception	Power Supply RST signal status Data transmission Data reception	Power Supply RST signal status Data transmission Data reception
Protection class	IP20	IP20	IP20
Operating temperature	0..+55°C	0..+50°C	0..+50°C
Dimensions	17.5 x 100 x 112 mm	17.5 x 100 x 112 mm	17.5 x 100 x 112 mm
Weight	200 g	200 g	200 g
Enclosure	Nylon 6 preloaded 30% fiberglass – V0 self-extinguishing class	Nylon 6 preloaded 30% fiberglass – V0 self-extinguishing class	Nylon 6 preloaded 30% fiberglass – V0 self-extinguishing class
Connections	Removable screw terminals for conductors up to 2.5 mm^2	Removable screw terminals for conductors up to 2.5 mm2	Removable screw terminals for conductors up to 2.5 mm^2
Mounting	35 mm DIN rail (IEC/EN 60715)	35 mm DIN rail (IEC/EN 60715)	35 mm DIN rail (IEC/EN 60715)
COMMUNICATION, PROCESSING			
Interfaces	RS232 on RJ45 connector on the front RS485/RS422, removable terminals, screw connection	RS232 (configuration)	RS232 (configuration)
Input	-	VOLTAGE (V) - 2..10 V full scale 16,000-point resolution - Impedance: 100 KΩ CURRENT (mA) ± 20 mA (bipolar) 16,000-point resolution - Impedance: 100 Ω	VOLTAGE ± 80 mV Impedance 10 MΩ Thermocouple Types: J, K, R, S, T, E; B, N
Output	-	4 digital channels from/to the control unit (1 configurable as clock or reset input)	4 digital channels from/to the control unit (1 configurable as clock or reset input)
CONFIGURATIONS, STANDARDS			
Programming	DIP switch (speed, communication, direction change)	PLC IEC 61131 libraries DIP switch (filter time, input time, scales, serial interface) Z-PROG (PC software)	PLC IEC 61131 libraries DIP switch (filter time, input time, scales, serial interface) Z-PROG (PC software)
Standard	CE	UL-UR, CE	UL-UR, CE
ORDER CODES	Z107	Z-4AI-D	Z-4TC-D

The technical data and diagrams in this document are indicative and not binding.

USB CONVERTERS

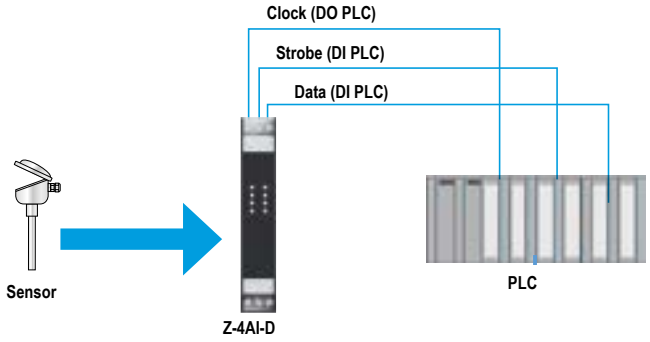
	K107USB	S117P1	S107USB
			
	Opto-isolated serial converter RS485 / USB (control panel version)	**Asynchronous serial converter RS232/USB, TTL/USB, RS485/USB**	**Opto-isolated serial converter RS485 / USB (portable version)**
GENERAL DATA			
Power Supply	Via PC USB port	Via PC USB port	Via PC USB port
Max Consumption	0.5 W	0.35 W	0.5 W
Isolation	1,500 Vac	1,500 Vac	1,500 Vac
Status Indicators	Data presence, reversed connection Power Supply	Power, Data transmission Data reception	Power, Data transmission Data reception
Protection class	IP20	IP20	IP20
THERMOMECHANICAL CHARACTERISTICS			
Operating temperature	-20..+65°C	-20..+65°C	0..+55°C
Dimensions	6.2 x 93.1 x 102.5 mm	90 x 50 x 25 mm	40 x 48 x 20.17 mm
Weight	45 g	50 g	ABS
Enclosure	PBT, black	ABS	ABS
Connections	Spring terminals	DB9 (RS232 connector) RJ10 (TTL connector)	5-pole terminal block
Mounting	35 mm DIN rail (IEC/EN 60715)	-	-
COMMUNICATION, PROCESSING			
Interfaces	RS485, 31 nodes, spring terminal Standard USB 1.0 and 2.0 interface, USB A and MINI USB B connectors, multiple connection on the same PC	RS232 USB 1.0, 1.1, and 2.0	RS485, termination and speed (from 1,200 bps to 250 kbps) adjustable Standard USB 1.0 and 2.0 interface, USB A and MINI USB B connectors, multiple connection on the same PC
Direction Change	Timed automatic	Timed automatic	Timed automatic
Speed	Up to 250 kbps	From 300 bps to 250 kbps	Up to 250 kbps
Protocol	ModBUS RTU slave	-	ModBUS RTU slave
Distance	Up to 1,200 m	-	Up to 1,200 m
CONFIGURATIONS, STANDARDS			
Programming	CD with driver, USB connection cable	CD driver support for Windows; Mac OS-X; Linux	CD with driver, USB connection cable
Certifications	CE	CE	CE
ORDER CODES	K107USB	S117P1	S107USB

	Z-MBUS	USB-ISO	EASY-USB
			
	RS232 Serial Adapter ↔ M-BUS	**Galvanic isolator USB**	**USB - UART TTL converter**
GENERAL DATA			
Power Supply	11..40 Vdc; 19..28 Vac	5V - 1A	From PC 5 V @ 100 mA
Max Consumption	0.5 W	-	0.35 W
Isolation	1,500 Vac	2,500 Vac	-
Status Indicators	Power supply Data transmission/reception on M-BUS port	Power Supply	-
Protection class	IP20	IP20	IP20
THERMOMECHANICAL CHARACTERISTICS			
Operating temperature	-20..+70°C	0..+50°C	-10..+65°C
Dimensions	100 x 17.5 x 112 mm	43 x 50 x 20 mm	84 x21 x 17 mm
Weight	140 g	25 g	-
Enclosure	Black glass-filled PA6 plastic, black color	ABS, black	PVC, transparent
Connections	3-way removable screw terminals, 5 mm pitch for cable up to 2.5 mm2 IDC10 rear connector	-	USB
Mounting	3-way removable screw terminals, 5 mm pitch for cable up to 2.5 mm² IDC10 rear connector	-	-
COMMUNICATION, PROCESSING			
Interfaces	#1 RS232 port on terminals M7-M8-M9 #1 Micro USB port on the front connector #1 M-BUS port (max 25 slave nodes)	#1 USB port (to MSC or other devices) #1 Mini USB port (to PC)	UART TTL serial, RJ11 connector USB, standard type A connector, USB 1.0, 1.1, 2.0 compatibility
Speed	From 300 bps to 250 kbps	Up to 250 kbps	From 300 bps to 250 kbps
Distance	3,000 m (M-BUS)	12 Mbps	-
CONFIGURATIONS, STANDARDS			
Programming	Web Server, SDD	CD with driver, USB connection cable	CD with driver, TTL connection cable
Certifications	CE	CE	CE
ORDER CODES	Z-MBUS	USB-ISO	EASY-USB

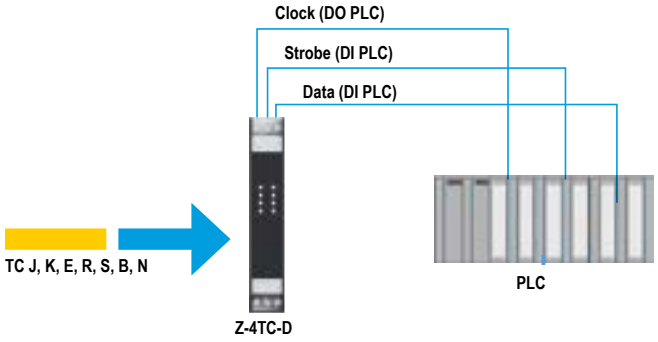
The technical data and diagrams in this document are indicative and not binding.

APPLICATION DIAGRAMS

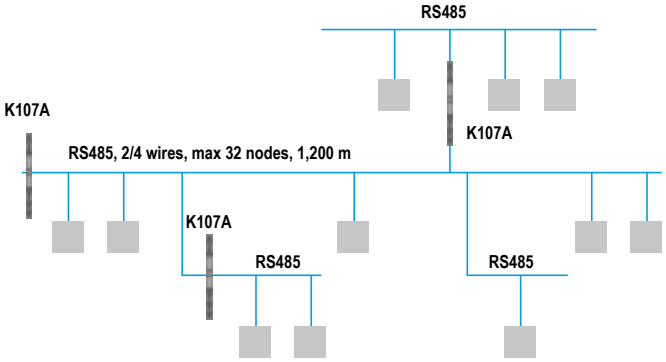
A/D conversion for mA/V input signals



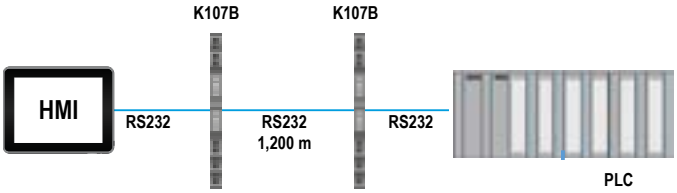
A/D conversion for thermocouples



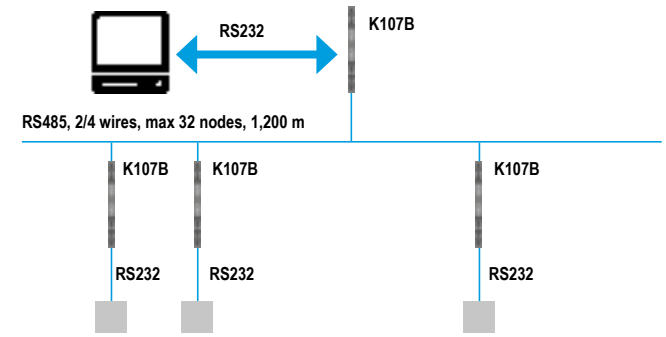
Connection of Multiple RS485 (ModBUS) serial lines with electrical isolation



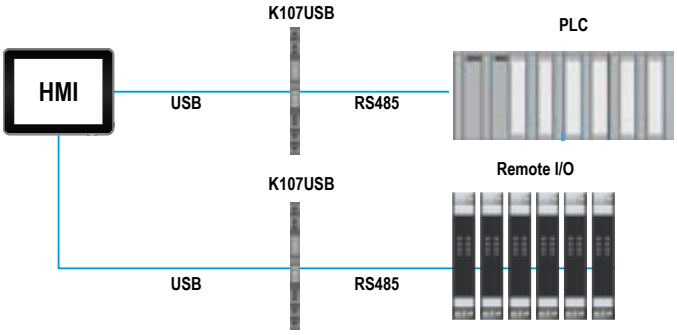
Bidirectional remote RS232 / RS485 transmission with electrical isolation



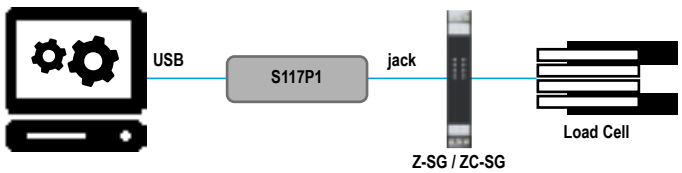
Bidirectional remote RS232 / RS485 transmission with electrical isolation for up to 32 nodes



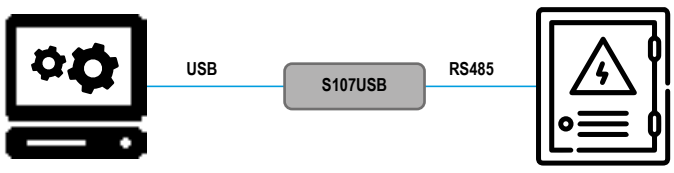
Multiple connection and data transmission with USB / RS485 electrical isolation



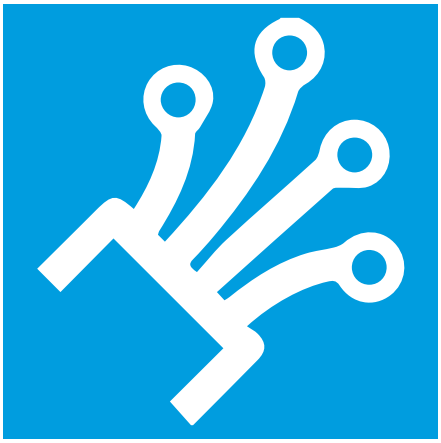
Configuration connection for strain gauge module



On-board diagnostics



2.8



FIBER OPTIC CONVERTERS

FIBER OPTIC CONVERTERS



SENECA's S232, S485, SETH, and SCAN fiber optic converters enable the extension of any type of network/bus (LAN/Ethernet, CAN, or serial) over optical fiber, even simultaneously.
They also guarantee high levels of safety and reliability. The modules allow the use of both single-mode and multi-mode fiber, ensuring a solid, reliable, and high-speed communication. The application of optical fiber ranges from industrial to civil environments, energy production plants, and telecommunications and control systems.

HIGHLIGHTS

HIGH-SPEED COMMUNICATION

NO NEED FOR PHYSICAL SEPARATION OF POWER AND DATA LINES

ABSOLUTE PROTECTION AGAINST ELECTRICAL SURGES

EASIER AND IMMEDIATE FIBER NETWORK DIAGNOSTICS

REAL-TIME DATA TRANSMISSION

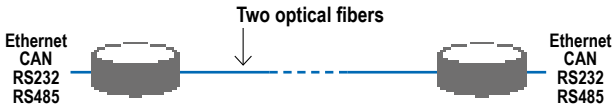
DURABLE COMMUNICATION MEDIUM

DISTANCE EXTENSION

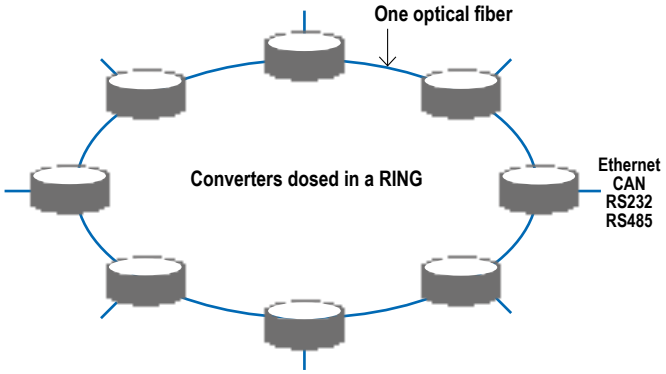
TOTAL IMMUNITY TO NOISE

CONNECTION TOPOLOGIES

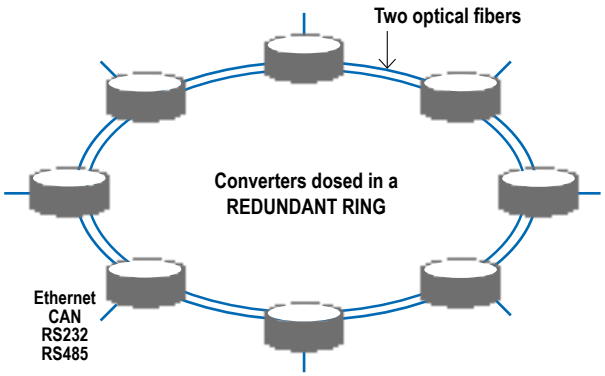
1. POINT TO POINT (LINKED DIRECTLY)



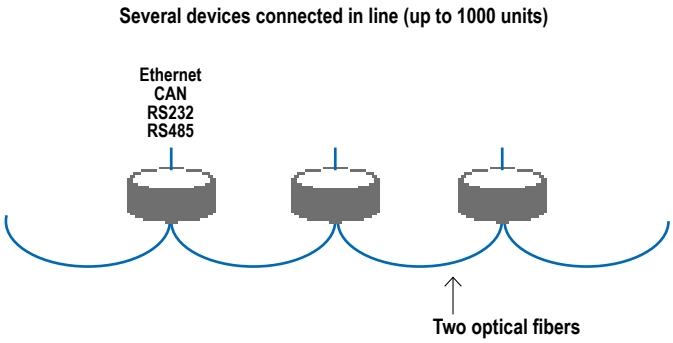
2. RING (SINGLE LOOP)



3. REDUNDANT RING (DOUBLE LOOP)



4. MULTI-DROP (IN-LINE)



	SERIAL CONVERTERS		BUS CONVERTERS	
	S232-FO	**S485-FO**	**SETH-FO**	**SCAN-FO**
				
	RS232 converter in single-mode/ multi-mode optical fiber single/ double loop	**RS485 converter in single-mode/ multi-mode optical fiber single/ double loop**	**Ethernet converter in single-mode/multi-mode optical fiber single/double loop**	**CAN converter in single-mode/ multi-mode optical fiber single/ double loop**
GENERAL DATA				
Power Supply	12..35 Vdc; 8..24 Vac	12..35 Vdc; 8..24 Vac	12..35 Vdc; 8..24 Vac	12..35 Vdc; 8..24 Vac
Max absorption @24V	4 W	4 W	4 W	4 W
Isolation	4 kV on 3 paths	4 kV on 3 paths	4 kV on 3 paths	4 kV on 3 paths
Status Indicators	Optical fiber communication, serial communication, device status	Optical fiber communication, serial communication, device status	Optical fiber communication, Ethernet communication, device status	Optical fiber communication, CAN communication, device status
Operating temperature	-40..+85°C	-40..+85°C	-40..+85°C	-40..+85°C
Dimensions (WxHxD)	71 x 95 x 60 mm	71 x 95 x 60 mm	71 x 95 x 60 mm	71 x 95 x 60 mm
Weight	200 g	200 g	200 g	200 g
Enclosure	PVC, white	PVC, white	PVC, white	PVC, white
Mounting	DIN 46277 guide	DIN 46277 guide	DIN 46277 guide	DIN 46277 guide
Programming	COMPOSITOR software (S232-FO-MONO) DIP Switch (S232-FO-MULTI)	COMPOSITOR software (S485-FO-MONO) DIP Switch (S485-FO-MULTI)	COMPOSITOR software	COMPOSITOR software
Integrated self-diagnostics	Yes	Yes	Yes	Yes
Compliance	CE	CE	CE	CE
COMMUNICATION				
Communication Ports	#1 isolated RS232	#1 isolated RS485	#1 Ethernet RJ45 port 100 Mbps, cat.7E cable	#1 CAN port
Topology	Single Loop (S232-SL- ...) Double Loop (S232-DL-...)	Single Loop (S485-SL- ...) Double Loop (S485-DL- ...)	Single Loop (SETH-SL- ...) Double Loop (SETH-DL- ...)	Single Loop (SCAN-SL-...) Double Loop (SCAN-DL- ...)
Max # of converters in series	1,000	1,000	1,000	1,000
Max # of independent networks	6	6	6	6
Fiber optics and connectors	Single-mode, LC/LC connectors (S232-FO-MONO) Multi-mode (62.5/125 or 50/125 µm), ST/ST connectors (S232-FO-MULTI)	Single-mode, LC/LC connectors (S485-FO-MONO) Multi-mode (62.5/125 or 50/125 µm), ST/ST connectors (S485-FO-MULTI)	Single-mode, LC/LC connectors (SETH-FO-MONO) Multimode, LC connectors (SETH-FO-MULTI)	Single-mode, LC/LC connectors (SCAN-FO-MONO) Multimode, LC connectors (SCAN-FO-MULTI)
Coverage	10 km (S232-FO-MONO) 2 km (S232-FO-MULTI)	10 km (S232-FO-MONO) 2 km (S232-FO-MULTI)	10 km (SETH-FO-MONO) 500 m (SETH-FO-MULTI)	10 km (SCAN-FO-MONO) 500 m (SCAN-FO-MULTI)
Interface and protocols	ModBUS RTU, transparent to communication protocols	ModBUS RTU, transparent to communication protocols	Ethernet, ModBUS TCP-IP, transparent to communication protocols	CAN (CAN 2.0, CANopen), transparent to communication protocols
Speed	From 1,200 to 115,200 bps	From 1,200 to 115,200 bps	10/100 MHz	From 5 kHz to 1 MHz

The technical data and diagrams in this document are indicative and not binding.

CONFIGURATION SOFTWARE





Through the **COMPOSITOR** software, freely downloadable from www.seneca.it, it is possible to configure projects and network parameters, identify the devices present on the network and their connections, as well as perform diagnostics and monitor the networks. Diagnostic registers can be easily read directly by SCADA and management software.

ORDER CODES	
SERIAL CONVERTERS	
S232-FO-MONO-SL	RS232 converters in single-mode fiber single loop
S232-FO-MONO-DL	RS232 converter in single-mode fiber double loop
S485-FO-MONO-SL	RS485 converter in single-mode fiber single loop
S485-FO-MONO-DL	RS485 converter in single-mode fiber double loop
S232-FO-MULTI-SL	Multi-drop fiber optic converter ↔ RS232 single loop
S232-FO-MULTI-DL	Multi-drop fiber optic converter ↔ RS232 double loop
S485-FO-MULTI-SL	Multi-drop fiber optic converter ↔ RS485 double loop
S485-FO-MULTI-DL	Multi-drop fiber optic converter ↔ RS485 single loop
ETHERNET CONVERTERS	
SETH-FO-MONO-SL	Ethernet converter in single-mode fiber single loop
SETH-FO-MONO-DL	Ethernet converter in single-mode fiber double loop
SETH-FO-MULTI-SL	Ethernet converter in multimode fiber single loop
SETH-FO-MULTI-DL	Ethernet converter in multimode fiber double loop
CAN CONVERTERS	
SCAN-FO-MONO-SL	CAN converter in single-mode fiber single loop
SCAN-FO-MONO-DL	CAN converter in single-mode fiber double loop
SCAN-FO-MULTI-SL	CAN converter in multimode fiber single loop
SCAN-FO-MULTI-DL	CAN converter in multimode fiber double loop
CABLES	
CU-A-MINIB-1	USB-A Mini USB-B 5P plug cable, 1 meter
CU-A-MINIB-2	USB-A Mini USB-B 5P plug cable, 2 meters
CE-RJ45-RJ45-C	Ethernet crossover cable (RJ45 / RJ45)
CE-RJ45-RJ45-R	Straight Ethernet cable (RJ45 / RJ45)
SOFTWARE	
COMPOSITOR	Configuration and test tool for fiber optic converters
FO TEST	Automatic test environment for fiber optic converters

2.9



RADIO MODULES

RADIO MODULES

THE RANGE

Leveraging its interface technology experience, SENECA's offering of radio modules and radio modems is one of the key elements of automation and communication systems, particularly in the transmission of signals over distances ranging from a few meters to tens of kilometers.
The use of radiofrequency devices allows distances of several kilometers to be reached with maximum reliability. It also enables remote control functions, remote device queries, and diagnostics in the field through point-to-point, multipoint, broadcasting, or signal repetition connections. Radio devices comply with the essential requirements of the Radio Equipment Directive (RED) 2014/53/EU and can be freely marketed within the European Union.






STRENGTHS

- Modulation NBFM / GFSK
- Interfaces RS232/RS485
- Wide power supply Vac/dc
- Integrated I/O
- Transmission power 25..500 mW
- Technologies ModBUS and LoRa
- Operating bands: 169 / 869 MHz
- Outdoor and harsh environment versions

ANTENNA SELECTION

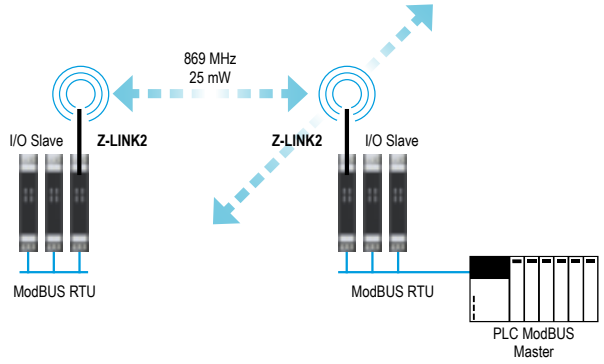
		Cable length	RM169-1	RTURADIO	Z-LINK2
	**A-169DV12**	5 m	1st choice for RM 169-1 code RM169-1-169DV12	1st choice for RM 169-1 code RTURA-DIO-169DV12	-
	**A-169DV12-10**	10 m	Alternative to A-169DV12	Alternative to A-169DV12	-
	A-169DV14	-	Alternative to A-169DV12	Alternative to A-169DV12	-
	A-169DV16	-	Alternative to A-169DV12	Alternative to A-169DV12	-
	**A-169YAGI**	10 m	Alternative to A-169DV12	Alternative to A-169DV12	-
	**A-GSM-MG**	3 m	-	-	Optional configu-rations available
	**A-STIL-D**	-	-	-	Included items



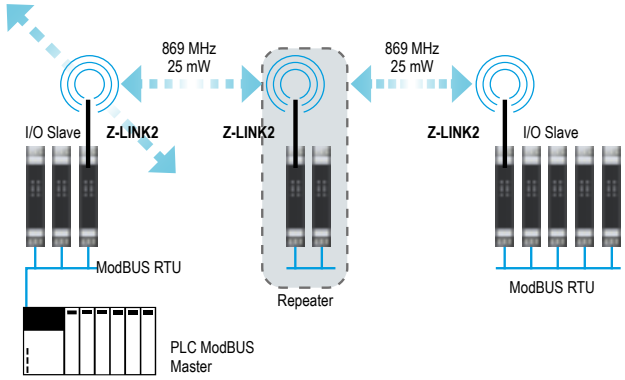
	Z-LINK2	Z-AIR-1	RM169-1	RTURADIO
				
	Wireless LoRa gateway / repeater	Simplex/half-duplex radio modem, 868 - 870 MHz, with integrated antenna, power supply 9-32 Vdc	169MHz radio modem, aluminum housing, RS232/RS485 interface	169MHz radio modem with integrated I/O (4DI, 2DO, 1 COUNT, RS485)
GENERAL DATA				
Power Supply	10..40 Vdc; 19..28 Vac	9 – 32 Vdc	9 – 32 Vdc	9-32 Vdc with limited power source; 3.3-4.8 Vdc with battery power supply
Power for external modules	-	-	-	Yes
Max Consumption	1 W	30 mA (Rx) / 200 mA (Tx) @12Vdc	30 mA (Rx) / 200 mA (Tx) @12Vdc	30 mA (Rx) / 200 mA (Tx) @12VDC
LED Status Indicators	Power, data transmission via bus, data transmission via radio, installation test		On Air, On Data, IO status	On Air, On Data, IO status
Isolation	1,500 Vac	-	-	-
Hot swapping	Yes	No	No	No
Operating band		868 – 870 MHz	169.400 – 169.475 MHz	169.400 - 169.475 MHz
# of channels		1@CH50kHz; 3@CH25kHz	1@CH50kHz; 3@CH25kHz; 6@ CH12.5kHz	1@CH50kHz; 3@CH25kHz; 6@ CH12.5kHz
Channelization		25-50 kHz	12.5-25-50 kHz	12.5-25-50 kHz
Modulation		9K00F1D (@25 kHz channelization); 18K00F1D (@ 50 kHz channelization)	9K00F1D or 18K0F1D (NBFM / GFSK)	9K00F1D or 18K0F1D (NBFM / GFSK)
Data rate (radio)		9.6 kbps (@ 25 kHz channelization); 19.200 bps (@ 50 kHz channelization)	4,800 bps (@ 12.5 kHz channelization); 9.6 kbps (@ 25 kHz channelization); 19.200 bps (@ 50 kHz channelization)	4,800 bps (@ 12.5 kHz channelization); 9.6 kbps (@ 25 kHz channelization); 19.200 bps (@ 50 kHz channelization)
Encryption		AES 128 bit	AES 128 bit	AES 128 bit
RTC		-	Onboard encryption for custom applications	Onboard encryption for custom applications
Antenna		λ/2 integrated	λ/4 - λ/2 or 3-element Yagi	Short vertical whip antenna λ1/2 / λ1/4 / 3-element Yagi
Dimensions	17.5 x 100 x 112 mm	Ø 40 x L 320 mm	90 x 100 x 40 mm	140 x 110 x 50 mm
OPERATING TEMPERATURE	-10..+65°C	-30..+60°C	-30..60°C	-30..60°C
Weight	110 g	750 g	210 g	330 g
Enclosure	PA6, black color	Fiberglass	Aluminum casing	Aluminum casing
Protection class		IP65 (suitable for outdoor installations)	IP20	IP20
Mounting	Vertical position DIN rail 35mm IEC EN60715	Stainless steel wall mounting bracket (included)	On plate/wall	On plate/wall
Integrated I/O	-	-	#1 Digital Input, 5-24 Vdc or 3-20 Vac, Zinp. 2.2 kΩ (optoisolated) #1 Relay Output, N.O. 24 Vac @ 0.5 A or 32 Vdc @ 1 A	# 4 Digital Inputs, PNP 0-12 Vdc + 1 Counter 10 Hz # 2 Relay Outputs, N.O. 28 Vac @ 0.5 A or 60 Vdc @ 1 A #2 Analog Inputs (4-20 mA) #2 Analog Outputs (4-20 mA)
Connections	Removable screw terminals 3 ways, pitch 5 mm Rear IDC10 connector for DIN rail 46277 Standard front SMA connector for antenna			
Operating Modes	Bridge, Remote I/O, I/O repeater	Point-to-point, point-to-multipoint, broadcasting, digirepeater; routing table support for addressing	Point-to-point, point-to-multipoint, broadcasting, digirepeater; routing table support for addressing	Point-to-point, point-to-multipoint, broadcasting, Modbus (master/slave), routing table support for addressing
Programming	EASY SETUP, DIP-switch	RADIO SETUP	RADIO SETUP	RADIO SETUP
COMMUNICATION				
Interfaces	#1 RS232, # 1 RS485	RS485	RS232 / RS485	RS485
Protocol	ModBUS RTU, LoRa® (Z-LINK2, physical level) not compatible with Z-LINK1-LO	Transparent to the protocol (max 1024 bytes of buffer)	Transparent to the protocol (max 1024 bytes of buffer)	Modbus
Data speed		from 1.2 to 57.6 kbps	from 1.2 to 57.6 kbps	From 2,400 to 57,400 bps
Transmitter output power	25 mW	25/150/500 mW depending on the operational sub-band	50-150-500 mW	50-150-500 mW
Frequency deviation		±1.8 kHz @12.5 kHz / ±3 kHz @25 kHz	±1.8 kHz @12.5 kHz; ±3.8 kHz @25 kHz	±1.8 kHz @12.5 kHz; ±3.8 kHz @25 kHz
Output power stability		±1,5 dB		
Receiver type	Class 2	CLASS 2 - LBT and AGILITY	CLASS 2 - LBT and AGILITY	CLASS 1 - LBT and AGILITY
Receiver input sensitivity		BER <10-2 <-105dBm@50 kHz; <-107dBm@25 Khz	BER <10-2 <-105dBm@50 kHz; <-107dBm@25 kHz; <-110dBm@12.5 kHz	BER <10-2 <-105dBm@50 kHz; <-107dBm@25 kHz; <-110dBm@12.5 kHz
Coverage	Up to 1,000 m in open field	Up to 7 km in open field with directional antenna in a dominant position	Up to 10 km in open field with directional antenna	Up to 10 km in open field with directional antenna
STANDARD				
Approval	CE	CE	CE	CE
Standards	RED Directive (2014/53/EU), RoHS Directive (2011/65/EU), EN 62368-1+A11+AC, EN 62311, ETSI EN 300220-1 v.3.1.1, ETSI EN 300220-2 v.3.2.1, EN 55032+AC, EN IEC 61000-3-2, EN 61000-3-3+A1, EN 55024+A1, ETSI EN 301489-3 v.2.3.2, ETSI EN 301489-1 v.2.2.3	EN 50401, EN 60950-1, EN 301489-1/3, EN 300220-1/2 v 2.3.1, ERC 70-03, RED Directive 2014/53/EU, Directive 1999/5/EC, Directive 2012/19/EU	EN 300 220-1 v2.3.1, EN 300 220-2 v2.3.1, RED Directive 2014/53/EU	EN 300 220-1 v2.3.1, EN 300 220-2 v2.3.1, RED Directive 2014/53/EU

APPLICATION DIAGRAMS

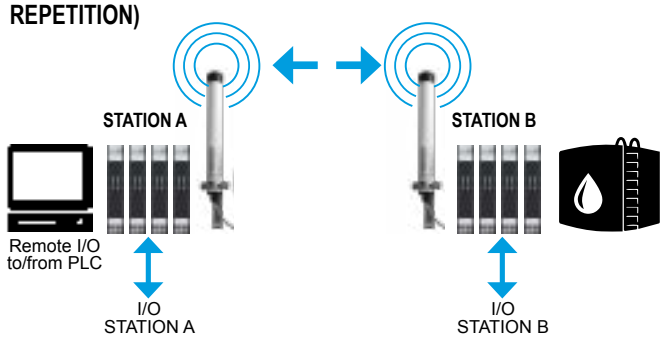
Z-LINK2
BRIDGE MODE (WIRELESS TRANSPARENT CONNECTION)



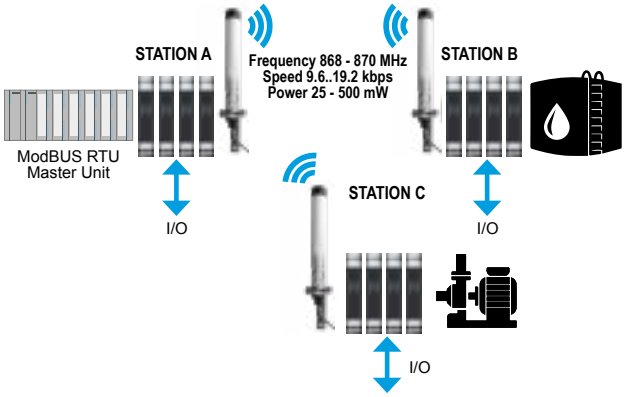
Z-LINK2 REPEATER MODE



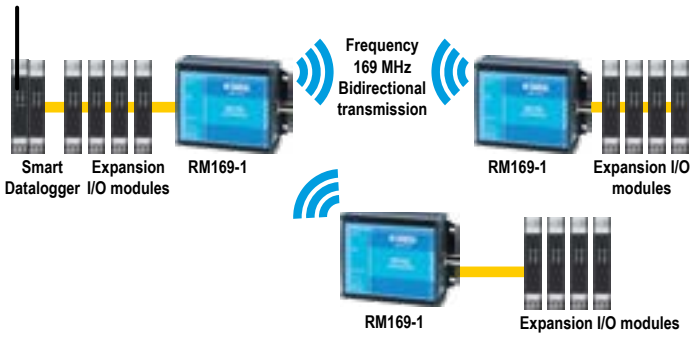
Z-AIR-1 POINT-TO-POINT DATA TRANSMISSION (E.G., I/O REPETITION)



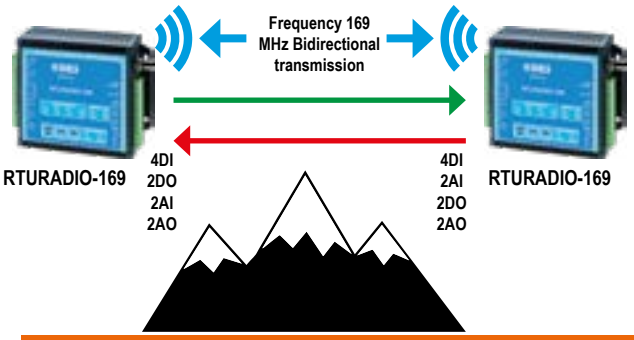
Z-AIR-1 POINT-TO-MULTIPOINT DATA TRANSMISSION



RM169-1 MODBUS I/O EXPANSION - POINT / MULTIPOINT



RTURADIO MIRRORING I/O - REMOTE SIGNAL REPLICATION



ORDER CODES

Code	Description
Z-LINK2	
Z-LINK2-LO	LoRa® WIRELESS GATEWAY / REPEATER
CS-RJ10-DB9F	RS232 serial cable (RJ10 / DB9F)
Z-PC-DIN2-17.5	Support for rapid mounting on DIN rail 2 slot, 17.5 mm pitch
Z-PC-DINAL2-17.5	Support for rapid mounting on DIN rail head + 2 slot, 17.5 mm pitch
ANT-LINK1-MG	External dual-band magnetic antenna SMA 4 dBi, 2.5 m cable
EASY SETUP 2	Configuration software
Z-AIR-1	
Z-AIR-1	868-870 MHz radio modem with integrated antenna, IP65 protection grade, RED directive
S107USB	Portable USB/RS485 Serial Converter
Z-AIR-1-SETUP	Z-AIR radiomodem configuration software
RM169-1	
RM169-1	169MHz radiomodem, 1DI, 1DO, RS485 with BNC F, RED
RM169-1-169DV12	169MHz radiomodem, 1DI, 1DO, RS485, dipole antenna, 5 m lambda/2, RED
RM169-1-DV12-10	169MHz radiomodem, 1DI, 1DO, RS485, dipole antenna, 10 m lambda/2, RED
RM169-1-169YAGI	169MHz radiomodem 0.2W, 1DI, 1DO, 1 RS485 + 3-element Yagi antenna (A-169DVYAGI) and 10 m RG58U cable
RM169-1-169DV14	169MHz radiomodem, 1DI, 1DO, RS485 + Yagi 3-element directional antenna, RED
A-169DV12	169MHz antenna, vertical dipole λ/2, BNC M, 5 m low-loss cable, mounting bracket
A-169DV14	169MHz antenna, vertical whip λ/4, BNC M, L=450 mm, no cable
A-169YAGI	169MHz antenna, 3-element Yagi, BNC M, 10 m low-loss cable, mounting bracket
RM169-SETUP	RM169 radiomodem configuration software

ORDER CODES

Code	Description
RTURADIO-169	
RTURADIO-169	RTU Radio 169MHz, 4DI, 2DO, 1 counter, 2AO, 2AI, RS485
RTURADIO-169DV14	RTU Radio 169MHz, 4DI, 2DO, 1 counter, 2AO, 2AI, RS485
RTURADIO-169DV12	RTU Radio 169MHz, 4DI, 2DO, 1 counter, 2AO, 2AI, RS485, dipole antenna, 5 m cable
RTURADIO-DV12-10	RTU Radio 169MHz, 4DI, 2DO, 1 counter, 2AO, 2AI, RS485, dipole antenna, 10 m cable
RTURADIO-169YAGI	RTU Radio 169MHz, 4DI, 2DO, 1 counter, 2AO, 2AI, RS485, Yagi antenna
S117P1	Serial converter RS232-TTL-RS485/USB portable
RTURADIO-SETUP	RTURADIO radiomodem configuration software
ANTENNAS	
A-169DV12	169MHz antenna dipole vertical λ/2, BNC M, 5 m cable
A-169DV12-10	169MHz antenna dipole vertical λ/2, BNC M, 10 m cable
A-169DV14	antenna 169MHz vertical whip λ/4, BNC M, L=450 mm
A-169DV16	169MHz ¼ λ antenna, length 45 cm, + BNC M
A-169YAGI	169MHz 3-element Yagi antenna, BNC M, 10 m cable

2.10



RADIO MEASUREMENT SYSTEMS



R-GWR

RADIO HUB LORA FOR WIRELESS SENSORS

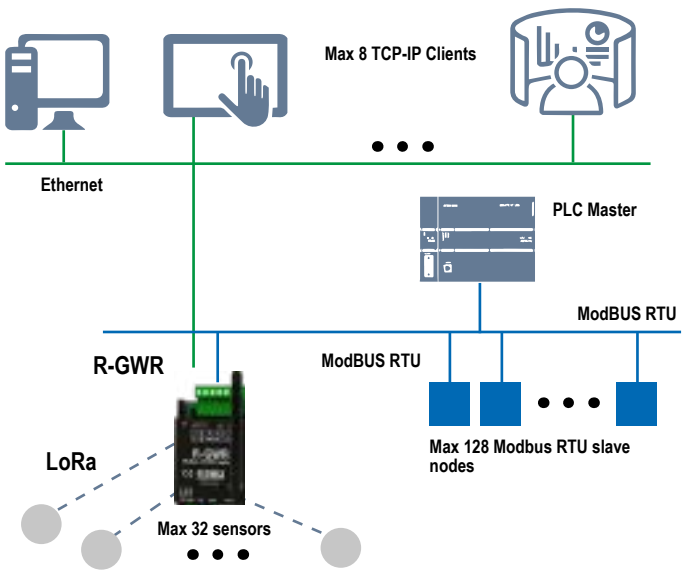
TECHNICAL DATA

GENERAL DATA	
Power Supply	10..40 Vdc; 19..28 Vac
Consumption	Max 1 W
Status Indicators	Power Supply Rx-Tx serial communications Assigned sensors Sensors in error
Protection class	IP20
Operating temperature	-20..+70°C
Connections	Screw terminals, 7-way removable screw terminal, 5 mm pitch Screw terminals, 2-way removable screw terminal, 5 mm pitch Ethernet Connector
Dimensions (WxHxD)	53.3 x 90 x 32.2 mm
Weight	80 g
Enclosure	PC / ABS self-extinguishing UL94-V0
Installation	On DIN rail IEC EN 60715 or wall-mounted
COMMUNICATION	
Ethernet Ports (ETH1, ETH2)	# 1 Fast Ethernet 100 Tx, RJ45 front Up to 8 TCP-IP Clients / Up to 10 TCP/IP Servers
Serial ports (COM1, COM2, COM4)	#1 serial port RS232 / RS485 switchable, max baud rate 115k on connector
Protocols	ModBUS TCP-IP, ModBUS RTU
Max # TCP-IP Clients (Server Mode)	8
Max # Modbus RTU Slave Nodes	128
WIRELESS	
Radio Technology	LoRa
Minimum measurement interval	30 seconds
Security	AES 128bit
Frequency	Frequency Band 865-865 MHz Nominal Frequency 863.110 MHz Bandwidth 25 kHz Max Power +14 dBm
Sensitivity	Up to -146 dBm
Power	+14 dBm
Max # of pairable sensors	32
SETTINGS & ADVANCED FUNCTIONS	
DIP Switch	Yes
Web server	Yes
SDD (Seneca Discovery Device)	Yes
Firmware update	WEB SERVER
Advanced diagnostics	Yes
STANDARDS	
Marking / Certifications	CE

ORDER CODES

Code	Description
R-GWR	ModBUS Gateway / Radio Hub for wireless sensors
SENSORS	
R-GWR-IP-1	Industrial sensor with digital/analog input
R-GWR-S-1	Home sensor with digital/analog input and flood protection
ACCESSORIES	
CE-RJ45-RJ45-R	Straight Ethernet cable (RJ45 / RJ45), 1.5 m
ALIM-MY2	Optional 230 V / 12 V power supply

APPLICATION DIAGRAM



PAIRABLE SENSORS

	R-GWR-IP-1	R-GWR-S-1
		
	Industrial sensor with digital/ analog input	Home sensor with digital/ analog input and flood protection
GENERAL DATA		
Power Supply	3 V	3 V
Rechargeable	Lithium, 1,650 mAh, indicative max life 2 years	Lithium, 900 mAh, indicative max life 1 year
Protection class	IP40	IP20
Status LED	Data transmission/reception to/ from R-GWR	Data transmission/reception to/ from R-GWR
Temperature Operating environment	-25..+70°C	-25..+70°C
Temperature Storage	-40..+85°C	-40..+85°C
Humidity	10% ÷ 90% non-condensing	10% ÷ 90% non-condensing
Dimensions (WxHxD)	80 x 60 x 45 mm	65 x 45 x 30 mm
Weight	150 g	45 g
Enclosure	PC / ABS self-extinguishing UL94-V0 material	PC / ABS self-extinguishing UL94-V0 material
Connections	Screw terminals, 2-way removable screw terminal, 3.5 mm pitch	Screw terminals, 2-way removable screw terminal, 3.5 mm pitch Flood sensor connector
Mounting	Wall-mounted via screws or adhesive tape	Wall-mounted via screws or adhesive tape
Programming	WEB SERVER Pairing button	WEB SERVER Pairing button
RADIO COMMUNICATION		
Technology	LoRa	LoRa
Frequency Band	863..865 MHz	863..865 MHz
Nominal Frequency	863.11 MHz	863.11 MHz
Bandwidth	25 kHz	25 kHz
Sensitivity	Up to -146 dBm	Up to -146 dBm
Max RF Power	+14 dBm	+14 dBm
Max # of pairable sensors	32	32
INPUTS		
Integrated temperature/ humidity sensor	Temperature detection: -25..70 °C; Accuracy: 0.5 °C between 5..60 °C Humidity detection: 0..100%; Accuracy: 3% between 20 ÷ 80% RH	Temperature detection: -25..70 °C; Accuracy: 0.5 °C between 5..60 °C Humidity detection: 0..100%; Accuracy: 3% between 20 ÷ 80% RH
Analog/Digital/Counter Input (IN0)	Configurable analog input (measurement range 0-30V; accuracy: ±0.15 V) or digital (clean contact) or counter @16bit, max frequency 1Hz	Configurable analog input (measurement range 0-30V; accuracy: ±0.15 V) or digital (clean contact) or counter @16bit, max frequency 1Hz
Digital Input (IN1)	-	Reed relay for monitoring door openings and environments
Water Sensor Input (alternative to IN0 and IN1)	-	Level 1, Level 2, Flood sensor (optional)
Digital Input (IN2)	-	Tamper contact for opening housing

The technical data and diagrams in this document are indicative and not binding.