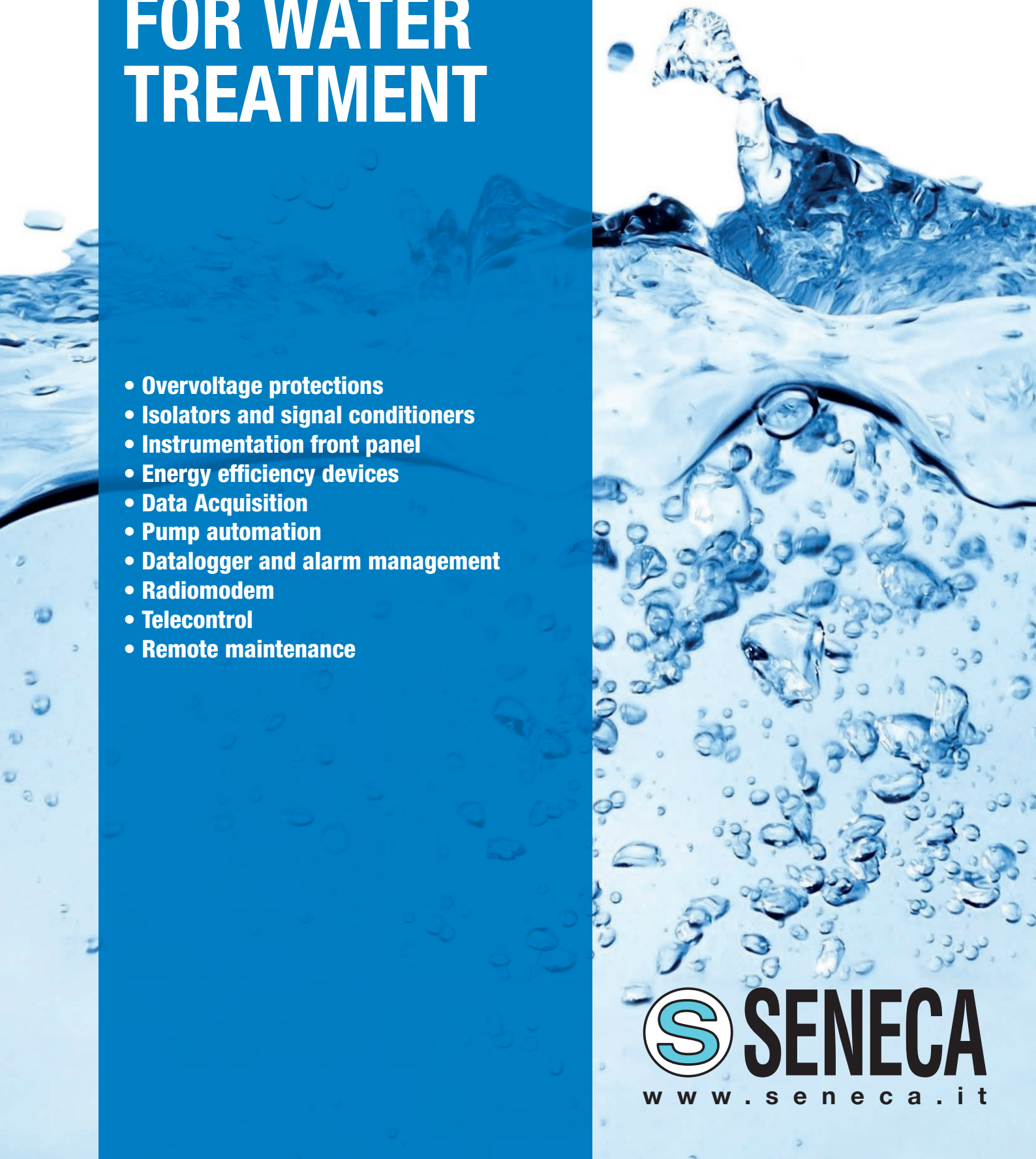
PRODUCTS AND SOLUTIONS FOR WATER TREATMENT

100% Made & Designed in Italy



- Overvoltage protections
- Isolators and signal conditioners
- Instrumentation front panel
- Energy efficiency devices
- Data Acquisition
- Pump automation
- Datalogger and alarm management
- Radiomodem
- Telecontrol
- Remote maintenance

SENECA

www.seneca.it

EFFICIENCY AND INNOVATION FOR WATER AND WASTEWATER TREATMENT

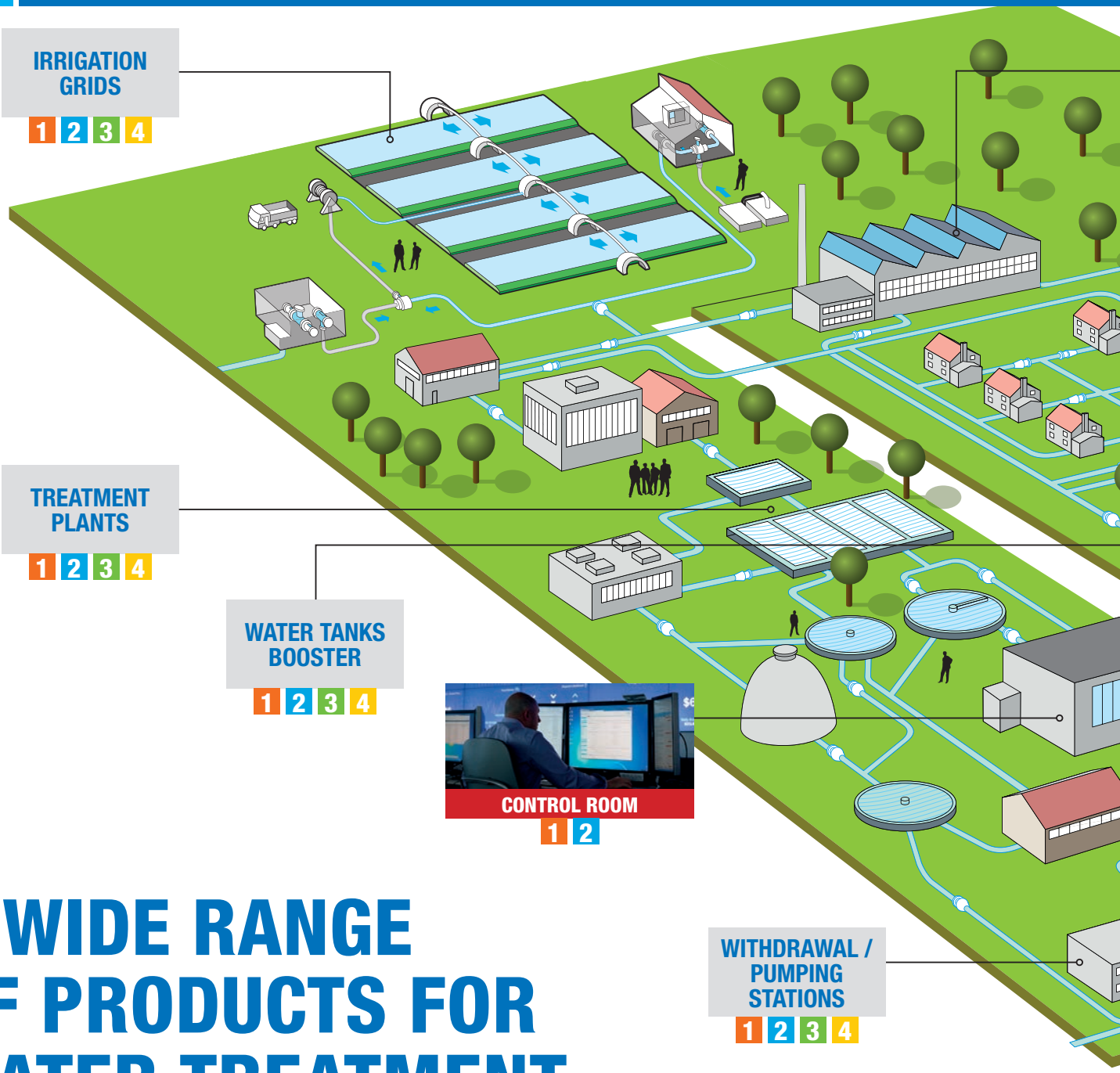
For over 30 years **SENECA** is an **Italian industrial company specialized** in the production of electrical interfaces and electronics for **automation**. Today, in Padua, inside of modern factories and with fully automated lines, SENECA produces hundreds of thousands of pieces per year.
In the **water treatment** SENECA offers one of the largest portfolios on the market: products related to air conditioning and **electrical protection** of signals, **remote control**, **data acquisition**, **consumption analysis** and to **energy efficiency**.
Newly designed SENECA **remote management** devices, based on 3G+/4G/Cloud communication, allow the **datalogging** of field measurements, power network analysis, **alarm messaging**, multiplatform data transmission,secure **data exchange** via IoT / VPN technology and multi-level password.In the integral water cycle, SENECA instrumentation finds almost universal application, from the **remote management of the water collection and pumping stations to the control of lifting and treatment plants**, up to the **supervision of distribution networks, booster wells, tanks, booster plants and piezometric towers**.

SENECA control and communication hardware is easily integrated with the systems of other Italian and foreign manufacturers. In this **publication** is summarized a wide range of solutions and products, available in our warehouses and therefore in prompt delivery, with favorable prices and state of the art technical features as you can verify by consulting our catalog or our website www.seneca.it. Our goal is to offer an excellent **"Made in Italy"** service, in close contact with the operators, for the **optimal and complete management of the water network**.

WATER PURIFICATION CYCLE

WATER DISTRIBUTION

WASTE WATER PURIFICATION CYCLE



A WIDE RANGE OF PRODUCTS FOR WATER TREATMENT

1 - DATA ACQUISITION AND AUTOMATION

I/Os remote systems with ModBUS / CANopen / Ethernet protocols
Z-PC Series

IEC 61131 / Process CPU
Z-TWS4, Z-TWS11, Z-TWS5, Z-FLOWCOMPUTER

Pump Controller
S6001-PC

HMI
Human Machine Interface
VISUAL, Display S401
Surprise Smart Display

2 - INDUSTRIAL COMMUNICATION AND REMOTE CONTROL

Dataloggers and Remote Alarm Units
B-ALARM, MYALARM2, MYALARM3, CLOUD, MYALARM SEAL, ZLOGGER3, Z-GPRS3, Z-LTE, Z-UMTS

Networking and remote maintenance
Z-KEY, Z-PASS1/2, Z-MODEM, USB, optical, serial converters

RTU
S6001-RTU, RTU-LP-ST, Z-PASS2-S

Radio modules
Z-LINK1-LO, Z-AIR-1, RM169-1, RTURADIO-169

INDUSTRIAL WATERS TREATMENT AND RECYCLING
1 2 3 4

NETWORK DESPATCHING FOR RESIDENTIAL BUILDINGS
1 2 3 4

REMOTE MAINTEINANCE
2

TREATMENT PLANTS
1 2 3 4

WATER DISCHARGING AND RECYCLING
1 2 3 4

UPLIFT STATIONS AND WASTE WATER TREATMENT
1 2 3 4

3 - ENERGY AND ELECTRIC MEASUREMENT

Power Meters
S203, S604, S711 Series

Energy Counters
S500 Series

Current Transformers
T201 Series

Multimeters
MSC, TEST-4

4 - INSTRUMENTATION FOR CONTROL PANEL

Multistandard Signal Converters and Isolators
Z Series

Compact Signal Converters and Isolators
K Series

Surge Protections
S400 Series

Displays, Totalizers, Batch controllers
S Series

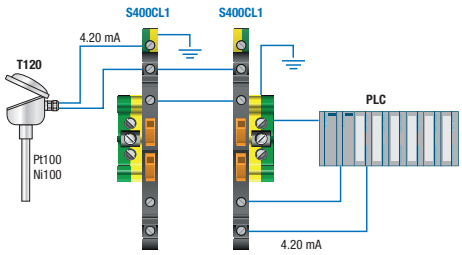
SURGE PROTECTION DEVICES

- Overvoltages interferences suppression
- High level of protection against atmospheric phenomena, network manuevers and parasite interferences
- Compliant to risk and safety analysis

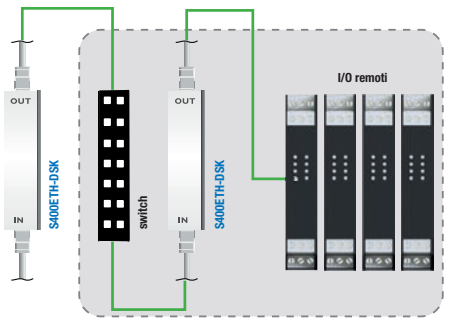
Surge Protection Devices are foundamental to protect electric and electronic devices from impulsive and temporary overvoltages due to network manuevers or athmospheric phenomena.
SENECA S400 Serie includes: protections against overvoltages in ICT networks with high speed data transmission and high level dispersing power; protection devices for measurement and control devices applied to digital and analog signals; protection devices (SPD type 2,3) for industrial power supply.

APPLICATION NOTES

Protection on an analogue measurement device



Protection on IT signal



For more information see the General Catalogue corresponding section or read the QR code.

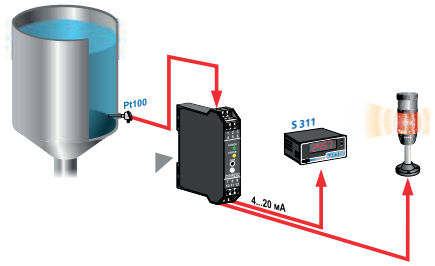
SIGNAL CONVERTERS AND ISOLATORS

- Electrically Standardization of Signals
- Signal filtering and amplification
- Galvanic Isolation
- Highest quality signals
- Quick wiring
- Optimized management of electrical loads

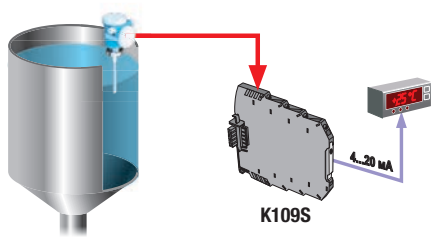
SENECA offers a wide range of electric and electronic interfaces, signal transmitters and electric panel components.
Available for several standard of supply voltages, our signal converters meet the most common needs in the market regarding signal interfacing and conditioning, by isolating electric and process signals with galvanic separation. The electric protection for an automation and telecontrol systems is guaranteed by latest technologies compliant to specific regulations. Signal convertes and isolators can avoid interferences, overvoltages, overcurrents, faults related to sensors, actuators, drives, emergency power systems.

APPLICATION NOTES

Analog signal acquisition, transmission and duplication in 2 independent signal



Conversion, isolation and analog signal re-transmission from a 2-wires technique sensor



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MEASUREMENT AND CONTROL PANEL INSTRUMENTATION

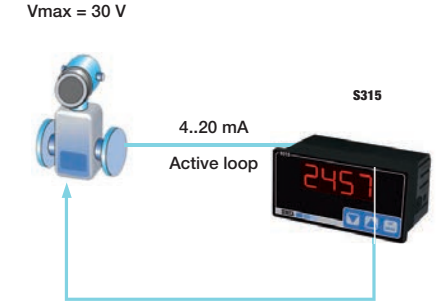
- Scalable display from 4 to 11 digits
- Analog, digital and sensor inputs
- Output re-transmission
- ModBUS interface
- Relay Alarms
- Multiple display of instantaneous, integrated and totalized values
- Software or front button programming

FRONT PANEL INSTRUMENTATION

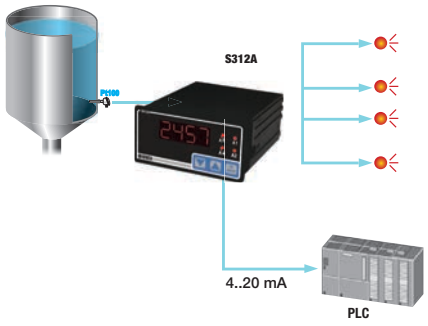
For every need of visualization SENECA proposes S Line, a digital LED indicators family featuring high brightness and high accuracy. S-Line is suitable for a wide range of measurement tasks and optimized for rear panel instrumentation.
Available in different power sizes, input types and display, indicators/totalizers also perform advanced functions for alarm management, threshold control and data retransmission. In the water cycle front panel instrumentation allows visualization of pressure, flow, level, electricity consumption, totalized values calculation pulse inputs from counters, and signal retransmission to the PLC.

APPLICATION NOTES

Visualization of analog signal from transducer with active loop



Visualization and signal retransmission of with output alarm



For more information see the General Catalogue corresponding section or read the QR code.

POWER MONITORING AND ELECTRICAL MEASUREMENT

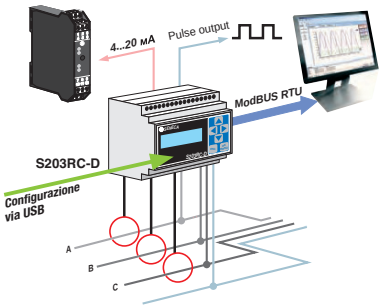
- Energy / Power data analysis, counting, conversion and acquisition
- Reliability and ease of use
- Savings and Energy Efficiency
- Plant and equipment costs management
- Energy consumption measurement

ENERGY EFFICIENCY DEVICES

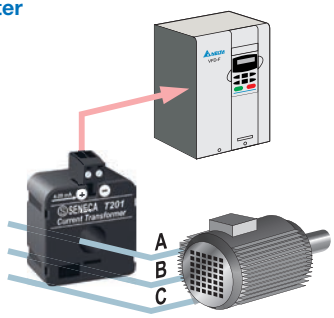
The SENECA proposal for energy efficiency and electrical measurements includes consumption monitoring systems such as Modbus / Ethernet multifunction power meters with web server, harmonics analysis, Rogowski sensors and energy counters with Modbus / Ethernet / M-BUS protocols also available with MID certification.
SENECA also provides a complete range of AC / DC current transformers based on a patented magnetic measuring principle or on Hall effect and modular signal converters for electric measuremens.

APPLICATION NOTES

Power Meters with three-phase input for use with Rogowski coils



Conversion of the output current from the electric motor into a 0-10V signal for inverter



For more information see the General Catalogue corresponding section or read the QR code.

DATA ACQUISITION AND AUTOMATION SYSTEMS

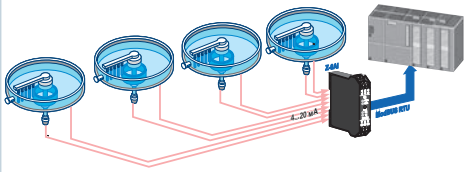
- Distributed I/O System
- I/O modules from 2 to 24 channels
- 3-way galvanic isolation
- Industrial Protocols ModBUS RTU, ModBUS TCP-IP, CANopen
- Energy Management protocols
- Self-diagnostic and safe state
- Hot swapping

DATA ACQUISITION

For integrated water cycle management SENECA proposes modular hardware platforms (remote I/O systems with ModBUS RTU and TCP-IP protocols) or built-in I/O for Controllers, Datalog-gers and RTUs supported by a user-friendly software for data logging. Typical applications are digital alarms management and pulses counting from energy meters, liter counters, volumetric flow systems, oxygen etc. Thel/O modules for data acquisition can also be used as contacts for thresholds, thermal, drives and as open-collector outputs for pumps and motors signalling and actuation.

APPLICATION NOTES

I/O acquisition from the field and retransmission via ModBUS RTU to the supervisory and control system



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For more information see the General Catalogue corresponding section or read the QR code.

DATA ACQUISITION AND AUTOMATION SYSTEMS

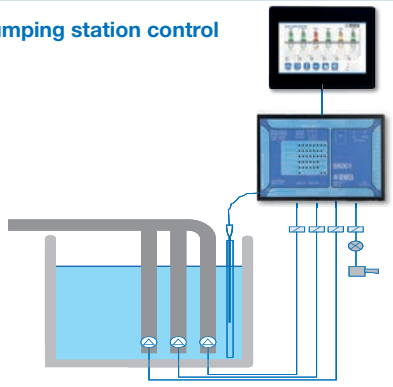
- Sending commands via SMS
- Flow calculation
- Configuration via HMI touch screen 7 “
- Pumps regulation, starting, stopping and acceleration
- Suppression of water hammer
- Extending pumps lifetime
- Pressures, levels, flow rates adjustment

PUMPS CONTROL

SENECA solutions for the automation of water treatment systems are based on recognized standards (eg. IEC 61131), software libraries and technological innovations. They are able to increase energy efficiency, productivity and reliability of all sizes equipment.
In particular S6001 Pump Controller is a controller for pumping and pressurization systems It is designed to handle up to 6 pumps, with constant adjustment of flow, level and pressure, controlling one drive continuously

APPLICATION NOTES

Pumping station control



1.4

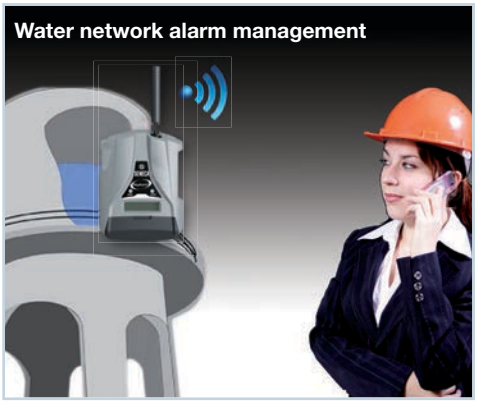
For more information see the General Catalogue corresponding section or read the QR code.

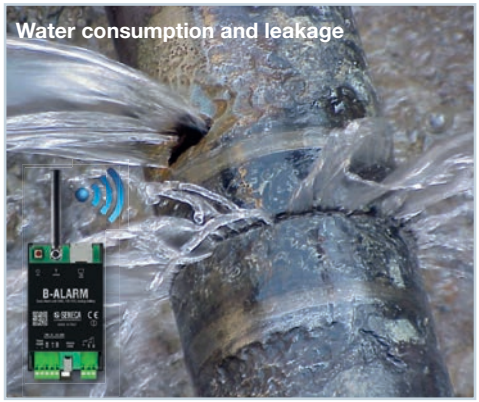
REMOTE ALARM UNITS

- Power supply 11..40 Vdc/ 19..28 Vac
- Backup battery with about 60 minutes lifetime
- 10/100 Mbps (RJ45) Ethernet interfaces , Serial(RS485 ModBUS Master and RS232/ RS485), MicroUSB
- Built-in I/O (4 DI, 2 AI, 2 DO)
- Measurements, alarms, events, logging • on Micro SD card (max 32 GB) or on Flash
- Ftp, Smtp, http, ModBUS TCP, ModBUS RTU protocol support

SENECA remote alarm and datalogging devices are designed to remote manage, monitor and realize small automations for houses, buildings, plants, manufacturing machines through simple commands sent with messages in SMS format. With any mobile device or smartphone you can control on/off switching of a technical installation, activate a contact, receive notification of a fail or alarm. These universal professional devices are easily programmable and are based on a GSM/GPRS module that behaves as a telephone communicator able to manage calls, commands, phonebooks in an intelligent way and data.

APPLICATION NOTES





For more information see the General Catalogue corresponding section or read the QR code.

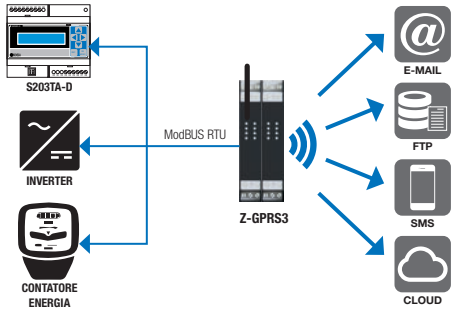
SMART DATALOGGER

- Synchronous or asynchronous 2G/3G/4G datalogging
- Measurements, alarms, events, data on Micro SD card or Flash Memory
- SMS, email and voice alarm support
- Management of logics, controls and mathematical functions via SEAL software
- Cloud platform support
- http post/rest and MQTT protocols support

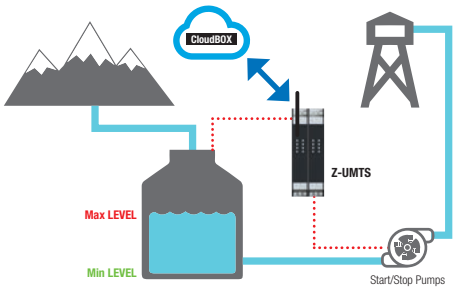
SENECA advanced data loggers represent a solution able to meet the growing needs of data collection, realtime analysis and integration with IT systems. Designed to perform remote alarm, telemetry and datalogging functions, these devices are available with integrated UPS, built-in I/O channels, dedicated programming and visualization software, serial and Ethernet communication support, MQTT protocol and in most models of 2G/3G+/4G modem with GNSS/GPS/GLONASS receiver. Optionally they can be combined with Cloud BOX, an IoT / Cloud solution proposed by SENECA that allows to centralize data, manage remote connections, create customizable multi-user supervision pages.

APPLICATION NOTES

Supervision and control of energy measurements



Pumps remote monitoring



For more information see the General Catalogue corresponding section or read the QR code.

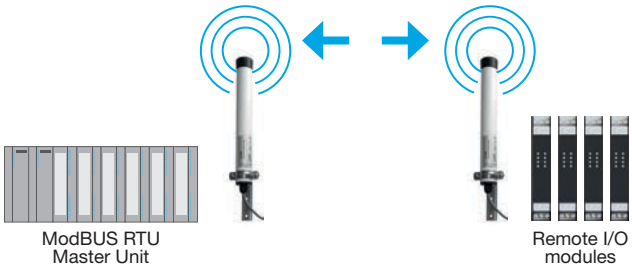
RADIO MODULES

Well experienced in interface technology, SENECA proposal of wireless modules and radiomodem is one of the key elements of automation systems and communication, in particular in transport signals from a few meters to tens of kilometers. The use of UHF/VHF equipment allows to reach distances of several km with maximum reliability.
It also allows you to perform remote control functions, remote queries and diagnostics of devices in the field via point-to-point connections, multipoint, broadcasting, signal repetition.
Radio devices comply with essential requirements Radio Equipment Directive (RED) 2014/53/EU and can be freely marketed within the European Union.

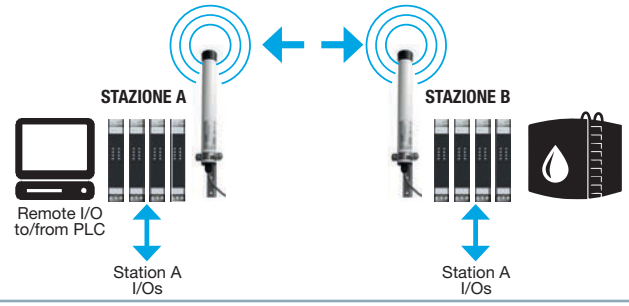
- NBFM / GDSK modulation
- RS232/RS485 interfaces
- Vac/dc wide range power supply
- Built-in I/O
- 25..500 mW transmission power
- Communication technologies: Modbus, LoRa
- Operating bandwidth 169 / 869 MHz
- Outdoor versions for harsh environments

APPLICATION NOTES

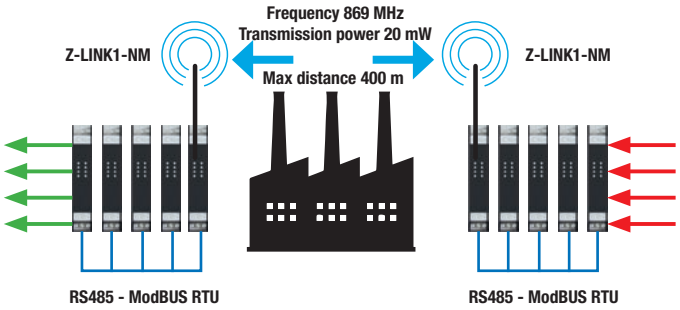
Z-AIR-1
DATA TRANSMISSION FROM GENERIC MASTER CONTROLLER



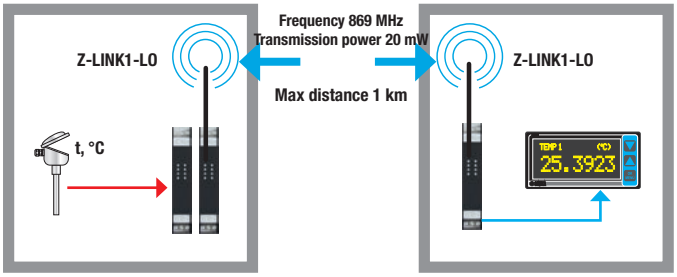
Z-AIR-1
POINT-TO-POINT DATA TRANSMISSION (E.G. I/O REPETITION)



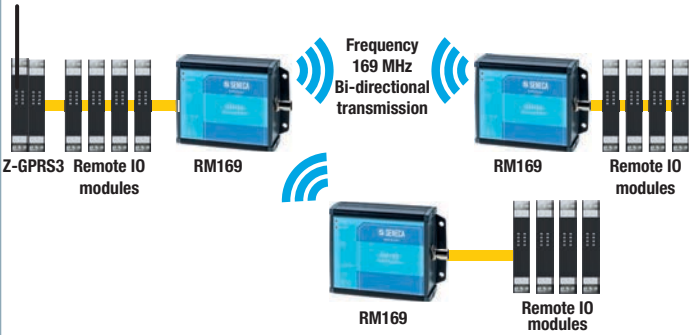
Z-LINK1-NM
CONVERSION AND RETRANSMISSION OF ANALOG SIGNALS



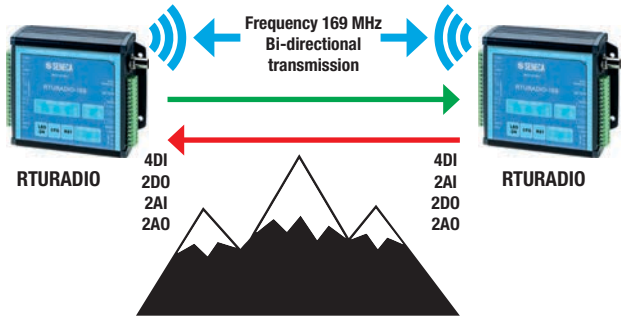
Z-LINK1-LO
«SHORT RANGE» SIGNAL REPETITION



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



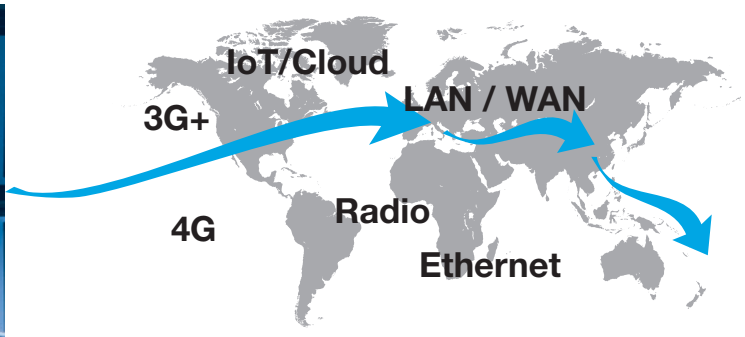
RTURADIO
MIRRORING I/O - REPLICA A DISTANZA DEI SEGNALI



For more information see the General Catalogue corresponding section or read the QR code.

RADIO MODULES

SENECA remote control devices are a perfect combination between the world of remote control and the world of automation. SENECA RTUs range include solutions for small plants, all-in-one solutions that concentrate I/O, control logic and communication system, equipment for special applications (unmanned sites, pumping stations, energy management). The use of compatible platforms and most common technological standards offers the user the possibility to improve the efficiency and quality of investments in their applications. SENECA RTUs can be integrated with SENECA hardware (I/O modules, HMI, communication interfaces) and third parties as well as with the LET'S remote assistance platform. They also make available flexible programming tools and dedicated libraries for the telecontrol.



WIDE RTU RANGE FOR MULTISECTOR APPLICATIONS

H24 REMOTE CONTROL PLANTS

ADVANCED ALARM MANAGEMENT

OPERATING COSTS REDUCTION

POWER MONITORING

DATA STORAGE

SCADA / OPC OPEN SYSTEM

COMMANDS AND NOTIFICATION VIA EMAIL / SMS / APP

SOFT PLC IEC 61131 - STRATON

straton

VPN / SSL SUPPORT

VPN / IOT LET'S PLATFORM (REMOTE ASSISTANCE / TELECONTROL)

BUILT-IN I/O

INTEGRATION WITH THIRD PARTY DEVICES AND COMMUNICATION EQUIPMENT

2G / 3G+ / 4G BUILT-IN MODEM / ROUTER

SERIAL / MODBUS / ETHERNET INTERFACES

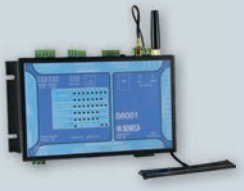
SPECIAL APPLICATIONS (PUMP CONTROLLER, LOWE POWER)

RTU, REMOTE TERMINAL UNITS

SENECA has developed a solution of excellence dedicated to remote control, so much so as to become one of the few Italian manufacturers to be protagonists of the sector. Through the use of established technological standards and innovative paradigms (cloud, VPN, IoT, M2M) SENECA systems enable users and utilities to achieve fundamental goals such as: rationalization of resources, energy saving, surveillance necessary to manage alarms, emergencies and maintenance, supervision and advanced support for plant controls.

RTU-LP-ST

Family of low consumption data loggers/RTUs for the remote control of unmanned remote sites. The device integrates a Quad Band modem, 8 I/O channels and 2 MB Flash memory for data collection.



S6001-RTU

Compact remote control unit all-inone with 31 built-in I/O and ModBUS RTU/TCP-IP, Energy protocols support. It's equipped with Fast Ethernet ports and 3G+ modem. Programmable with Straton

Z-PASS2-S

IEC 61131 remote controller, IDE Straton, VPN router with built-in I/O, integrated GPS and 3G+ modem. It supports remote assistance platform LET'S, MQTT and OPC UA protocols and main Cloud platforms.

Z-TWS4

Advanced control system for energy management applications (IEC 60870-101/104, IEC 61850) and plant automations (Straton IEC 61131). It supports ModBUS RTU / TCP-IP protocols.

Z-GPRS3, Z-UMTS, Z-LTE

Advanced data loggers satisfying the growing needs of data collection, realtime analysis and Integration with existing IT systems in automation and plant monitoring.

B-ALARM, MYALARM2

Devices designed for remote management, monitoring and small automations for homes, buildings, industrial plants, production machines through simple commands sent with messages in SMS format or app.

MYALARM3 CLOUD

GSM/GPRS device designed to remote control installations and systems through access to a dedicated cloud service and a mobile app.

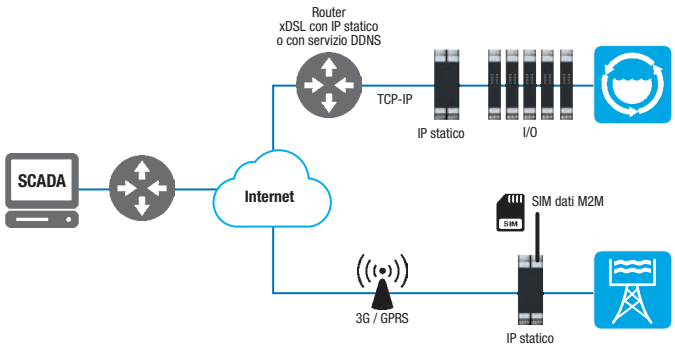
S6001 Pump Controller

Controller for pumping systems and pressurization units, with constant flow rate regulation, level and pressure.

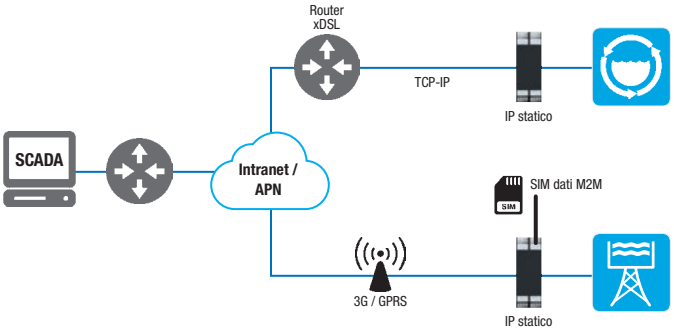
For more information see the General Catalogue corresponding section or read the QR code.

TELECONTROL ARCHITECTURES

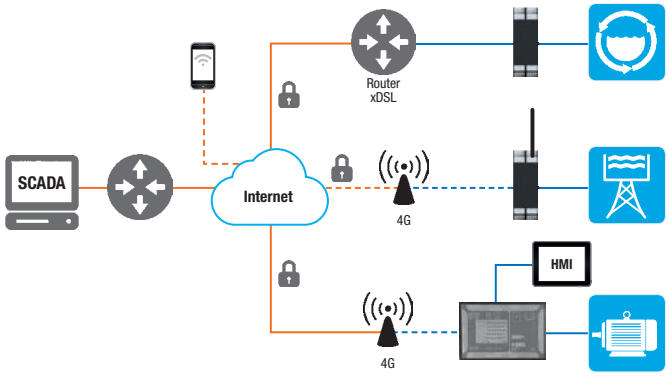
Web telecontrol



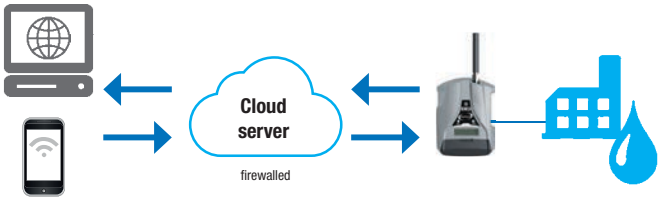
APN / Intranet telecontrol



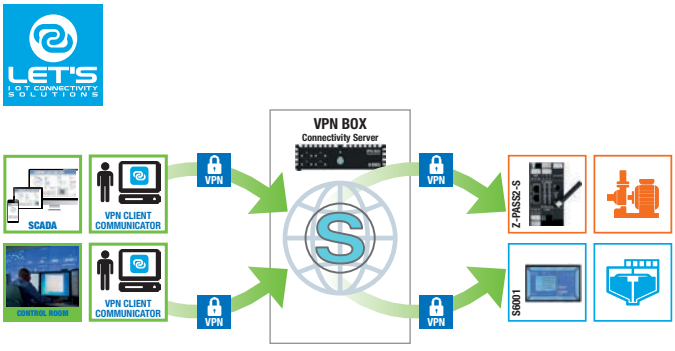
VPN telecontrol



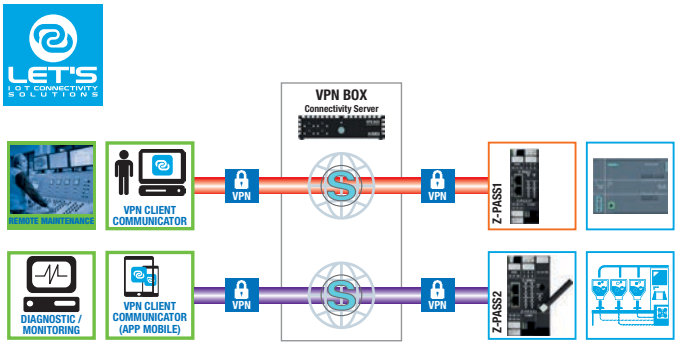
NRT telecontrol



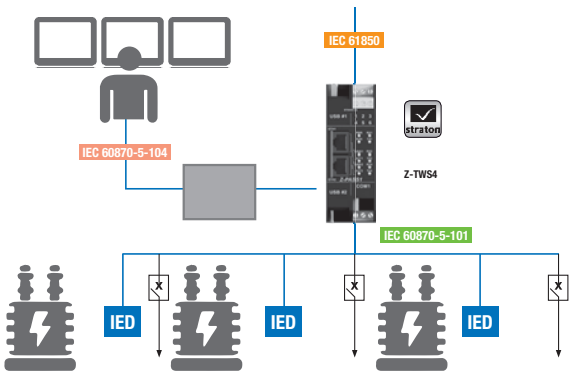
Always ON telecontrol



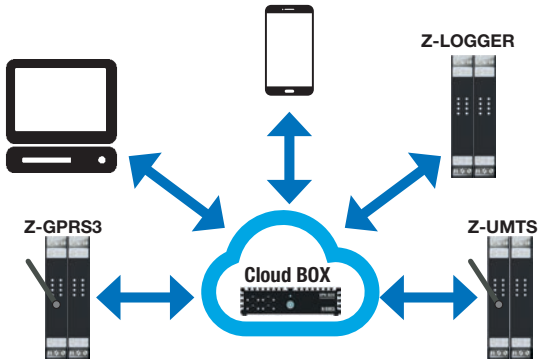
ON demand remote assistance



Power grids / systems telecontrol



Industry 4.0 / digital technologies telecontrol



REMOTE MAINTENANCE

- **PREDICTIVE MAINTENANCE AND DIAGNOSTICS**
- **REMOTE ASSISTANCE AND REMOTE CONTROL**
- **REMOTE SOFTWARE UPDATE**
- **ACCESS TO DATA AND INSTALLATIONS IN 'SINGLE LAN' AND 'POINT-TO-POINT' MODE**

LET'S is SENECA VPN - IoT platform that reduces maintenance costs. for automation applications and management of machines and plants, by offering an integrated connectivity service on 3 levels: remote access to the data, programmable control, network monitoring. Based on the Server module VPN BOX, LET'S allows "Always ON" connections (Telecontrol Mode / Single LAN) for plant supervision or "ON Demand" connections (Remote assistance / Poin-to-Point mode) to third-party machines and devices and for maintenance or data collection services . Communication from a PC or mobile device is done via desktop software or APP VPN Client Communicator.

The industrial VPN - IoT gateways of the LET'S platform, extend serial networks over Ethernet as well as supporting complex architectures and safety critical applications.
Z-PASS2 model, with built-in 3G+/4G LTE modem, also performs the following functions of routers, DynDNS Server and redundant communication device. One of the main innovations of the platform consists in integrating the following functions remote access with those of programmable automation thanks to the SENECA controllers based on IEC 61131.

PLATFORM

VMWARE

VPN BOX

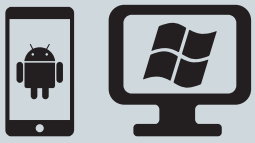
Server connectivity module compatible with devices SENECA with LET'S technology.
Optimized for Point-to-Point or Single LAN connections, VPN BOX offers security technologies SSL and VPN that guarantee a customized and secure control of accesses. Also available in virtual machine version

Z-PASS1, Z-PASS2

Industrial / serial gateways device server / router (Z-PASS2) able to manage up to one maximum of 32 clients. They support ModBUS TCP server protocols, odBUS RTU master, ModBUS RTU slave, FTP server, SFTP server, HTTP server, HTTPS server.

Z-TWS4, Z-PASS2-S, S6001

IoT Multifunction Controllers with builtin I/O, high connectivity, support MQTT , OPC UA IEC 60870-101-104, IEC 61850.
Router functions available with firewall, DynDNS, DHCP Server, VPN BOX or Open Client VPN Standard.



Configuratori e tool

VPN network configuration is easily done via Web Server, VPN BOX packets Manager and VPN Client Communicator for management PC communications and mobile devices, OpenVPN app.

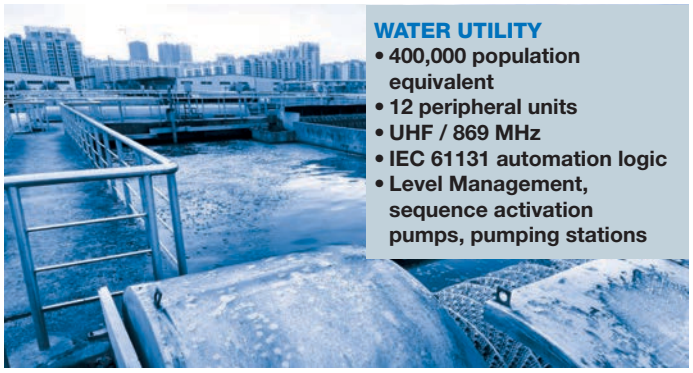
For more information see the General Catalogue corresponding section or read the QR code.

APPLICATION NOTES

Since many years SENECA solutions are chosen by a growing number of utilities, and public companies for water and sewage networks remote monitoring. SENECA proposal ensures openness, scalability and wide connectivity in data transmission to and from control centers, reducing maintenance costs and offering higher quality of service.

WASTEWATER TREATMENT

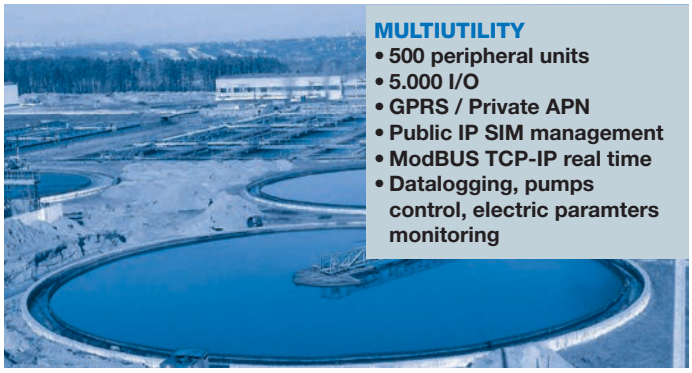
SEWAGE NETWORK REMOTE CONTROL



WATER UTILITY
- 400,000 population equivalent
- 12 peripheral units
- UHF / 869 MHz
- IEC 61131 automation logic
- Level Management, sequence activation pumps, pumping stations

WASTEWATER TREATMENT

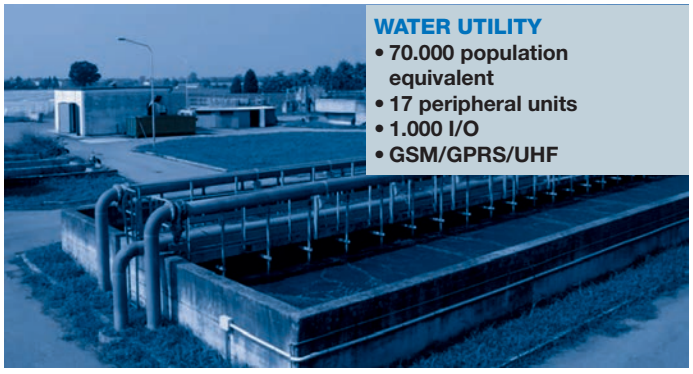
SEWAGE LIFT STATION CONTROL SYSTEM



MULTIUTILITY
- 500 peripheral units
- 5.000 I/O
- GPRS / Private APN
- Public IP SIM management
- ModBUS TCP-IP real time
- Datalogging, pumps control, electric paramters monitoring

WATER / WASTEWATER TREAMENT

WATER CYCLE MANAGEMENT



WATER UTILITY
- 70.000 population equivalent
- 17 peripheral units
- 1.000 I/O
- GSM/GPRS/UHF

WATER TREATMENT

RADIO CONTROL SYSTEM FOR FILTERS WASHING

MULTIUTILITY
- 250.000 population equivalent
- 250 I/O
- UHF/Wi-Fi
- Energy Management protocols (IEC 60870-5-101, IEC 60870-5-104, IEC 61850)

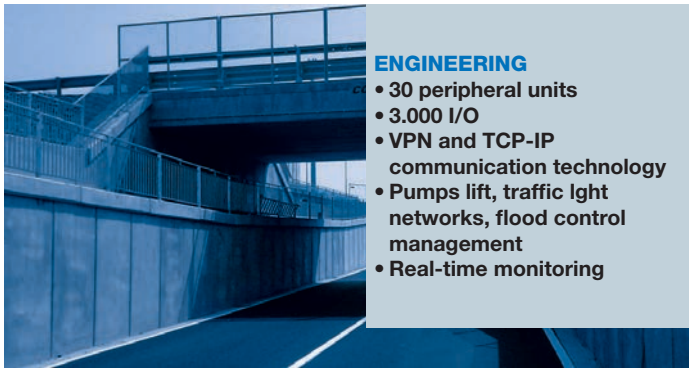
WATER DISTRIBUTION NETWORK

REMOTE CONTROL IN SURFACE IRRIGATION SYSTEM

ENGINEERING
- GSM / GPRS UHF / 869MHz
- Data Acquisition
- Pumps control
- SMS / email alarm management

ENVIRONMENT / INFRASTRUCTURES

TUNNEL AND ROAD WAY REMOTE CONTROL SYSTEM



ENGINEERING
- 30 peripheral units
- 3.000 I/O
- VPN and TCP-IP communication technology
- Pumps lift, traffic lght networks, flood control management
- Real-time monitoring

For more case histories and details please read the QR code.

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