

*Your peace of mind is taking roots.*



# High technology for easy and cost-effective remote control

Our Z-PC Series system for telemetry has been conceived to assist system integrators, automation and instrumentation specialists and electrical engineers. The applications covered include water treatment, monitoring of public utilities' mains network and energy management. Using the Z-PC Series for telemetry means that you can count on state-of-the-art information technology to manage data and processes remotely in a cost-effective manner with ease of use.



## Open and multi-protocol system

The Z-PC Series is characterised by being open to many other systems by supporting the following means of communications: PSTN, dedicated line, GSM/GPRS, UMTS, ADSL, WLAN IEEE 802.11, UHF/VHF, satellite, internet, serial, optical fibre and PPP, IEC 870, SMTP, FTP, ModBUS TCP, Ethernet protocols.



## Communications with all the standards

We can guarantee the highest connectivity to assure reliability and responsiveness in data transmission: modem support; remote access; send/receive data (SMS, e-mail, file) between a control centre and remote stations; Smart Speech unit for sending voice messages; Profibus DP Slave interface.



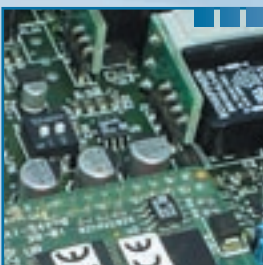
## Automatic configuration of remote stations

Z-NET, our configuration software based on IEC 61131, performs the automatic configuration of single stations. The communication parameters and data exchange with the supervising centre are setup at a high level, providing high levels of flexibility and simplicity to the user.



## Integration and centralization of data

The Z-NET RTU suite for remote control is a very powerful instrument. Auto-configuring, capable of optimizing the telecommunication services of the data-collecting centre, it integrates and archives information received from remote stations on SCADA, Windows Runtime systems and on the most common databases.



## Hardware of high specifications

All hardware, either in modular or integrated form, makes the most of the available CPU and I/O resources. The multifunction master units contain 4 functional modules (PLC, RTU, Web Server, Datalogger). The high-resolution, opto-isolated I/O is capable of powering transmitters and is truly distributed and flexible.

# Everything under control

## Water distribution



- Alarm handling from peripheral devices via voice messages with Smart Speech
- Expert system for flow rate calculations derived from level measurement of cisterns and basins
- Remote control of drinking water and remote management of water mains

## GSM/GPRS

### Food and agriculture climate control



- Cold storage and climatic-chamber temperature monitoring
- Remote control of greenhouses, irrigation plants etc.
- Remote measurement of hydraulic parameters

## INTERNET

## ADSL

## PSTN

## ETHERNET



## SERIAL LINE

### Public utilities



- Control of remote wireless sites for public lighting, community heating, garden watering, fountains and public baths
- Remote control of compressor stations for public transport

### Traffic and transport



- Traffic management
- Remote diagnostics of road-safety equipment
- Control of engineering plants in tunnels and boring applications

## Water treatment



- Alarm notification via SMS and data transmission via email
- Automatic flow rate calculation
- Rotation of pump use based on hours used, excluding non-usable units
- Control of inverters and reduction motors with P.I.D. algorithm

## Gas



- Remote control of gas reduction stations and networks distributor
- Remote control of cathodic protection systems
- Receive daily reports via e-mail of consumption and control of the dosing of odourising gas

## Environmental monitoring



- Monitoring of meteorological stations and pollution treatment
- Direct connection to send reports of current and historical data to public utilities and environment-control authorities
- Remote measurement of quality of fresh and irrigated water

## UMTS

## OPTICAL FIBRE

## WLAN

## SATELLITE

## UHF/VHF RADIO

## DEDICATED LINE

## Industrial - Mechanical construction



- Remote machine maintenance and transmission of M2M data
- Real-time monitoring of measurements and alarm management
- Scheduling and reports; preventative maintenance and unscheduled interventions

## Building automation and security



- Automation of non residential buildings and big structures
- Integrated alarms and security systems
- Access control and automatic identification of RFID tags
- Control of car parking

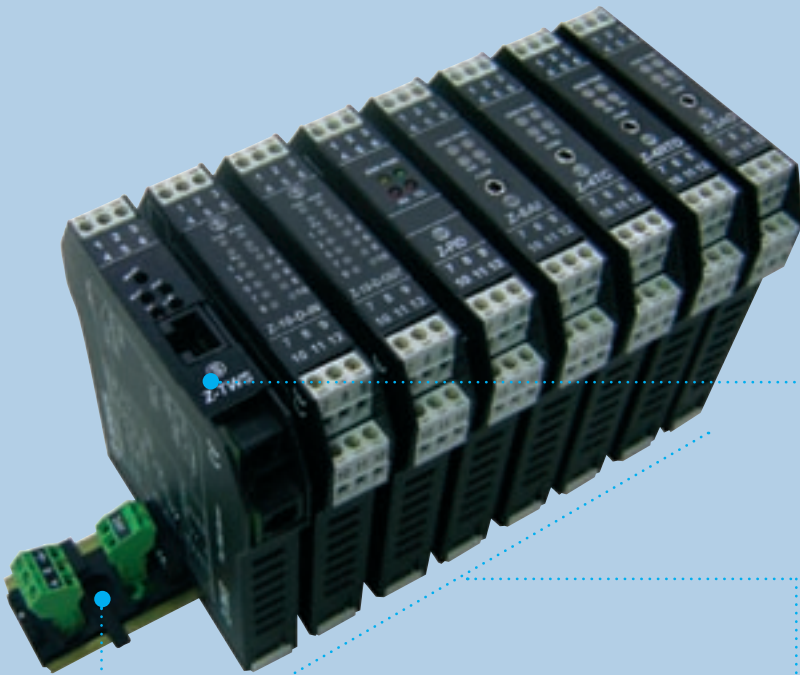
## Energy



- Remote management of distribution mains
- Automatic archiving of alarms and changes of status
- Measurement of water parameters in dykes/dams

# Modular solution

Flexible and distributed remote control



## CONNECTION METHOD

- Supports in GRP PA6 (to 30%), for 35mm DIN-rail mounting
- Hot Swapping
- Terminals for power supply and data line
- Mounting on DIN 46277 rail in vertical position

- ▶ Direct control of I/O signals
- ▶ High configurability and diagnostics of every module
- ▶ Remote management via web or serial port
- ▶ Reduction in cabling, commissioning and maintenance costs

## CONTROL UNIT

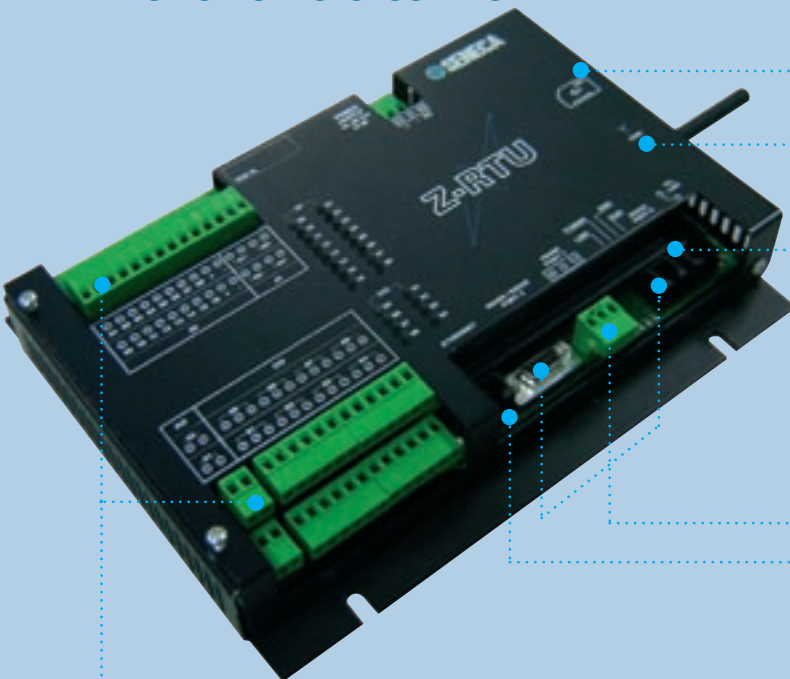
- PLC, Web Server, RTU
- RS485 for data exchange with peripherals
- RS232 interface (user free/programming)
- Ethernet port for supervising networks and remote connection
- 32-bit RISC Microprocessor, CPU RISC 200 MHz -20 MIPS; memory: 8 MB RAM, 16 MB flash (data)
- Battery backup for retention variables

## I/O MODULES

- I/O modules can be positioned close to the sensors/actuators
- Control of field I/O with 3-port isolation (power supply, inputs, outputs)

# Integrated solution

All-in-one remote control



## I/O WITH CONNECTORS

- 8+8 digital inputs (internal/external power supply)
- 2+2 analogue inputs (14 bits resolution, loop power)
- 4+4 digital outputs (relay SPDT, capacity 5A 250 Vac)
- 1+1 analogue outputs (12 bits resolution, volts/current)

- ▶ On-board isolated I/O (16 DI, 8 DO, 4 AI, 2 AO) with integral connectors
- ▶ I/O expansion with DIN Series Z-PC modules
- ▶ 3 serial communication ports + 1 Ethernet 10 Base-T
- ▶ Modem GSM/GPRS dual band (PSTN as option)

## REMOTE COMMUNICATION

- Housing for SIM + antenna GSM/GPRS
- PSTN communication port

## SERIAL PORTS

- RS232/RS485 programmable
- RS485 ModBUS RTU (connect I/O modules, ModBUS RTU/Master or Slave functions)
- RS232 debug/user

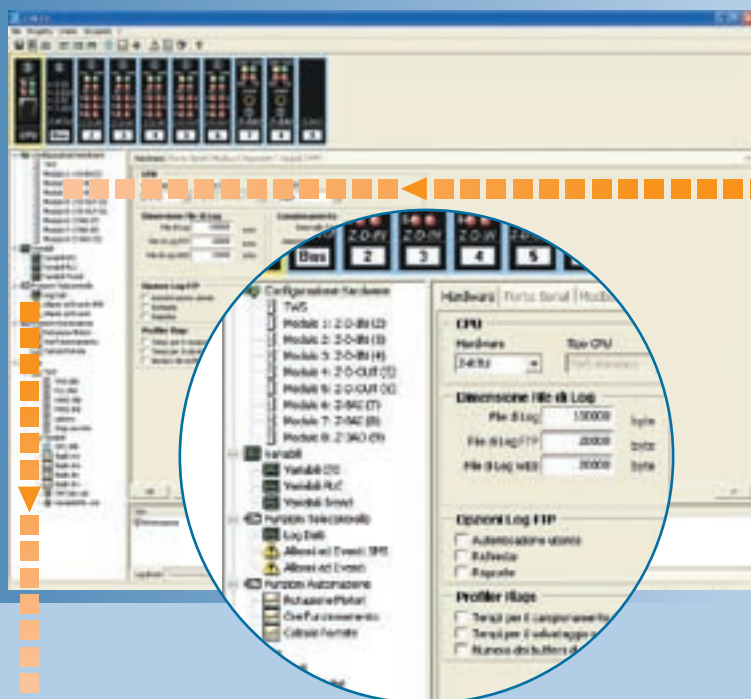
## ETHERNET 10 BASE-T

- Interface of control system with SCADA via OPC or Java/VB/Windows applications
- Use of other protocols such as ModBUS TCP/IP, ftp, http

# Configuring a remote control system in just 5 steps

SENECA's programming strategy is based on the Z-NET integrated and scalable engine: it simplifies the development of applications, offers maximum flexibility in dealing with information and allows complete system control.

Each configuration can be read, created and saved in a few steps. The integrated SENECA platform, based on IEC 61131 in a Windows environment, allows immediate operability.



## 1 Quick installation

With Z-NET it is possible to configure in a few steps any application via Ethernet or serial port. This can be done by creating a new project or reading an existing configuration automatically.

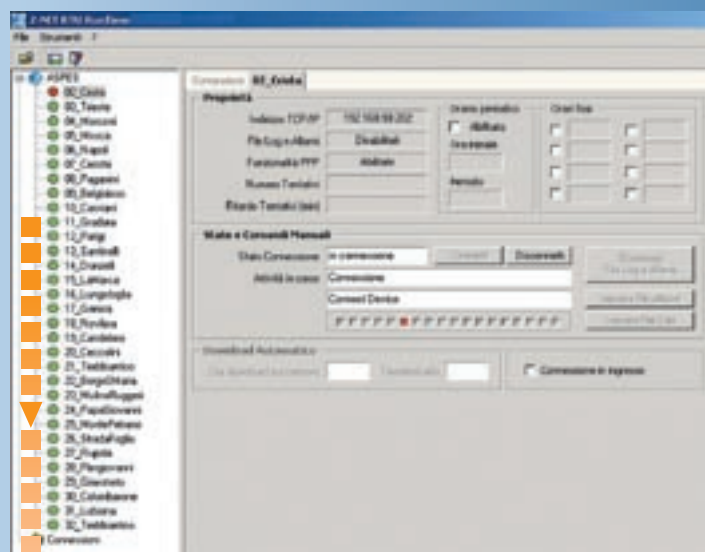
## 2 Hardware configuration

Through a guided or menu-driven procedure, the type of hardware to be inserted, removed or modified can be easily selected. The CPU version and the connection parameters of the controller; the type, measurement scale, scanning and data acquisition speed and many other parameters for each I/O module can be thus configured.

## 3 Remote control functions: sending email, SMS, motor rotation ...

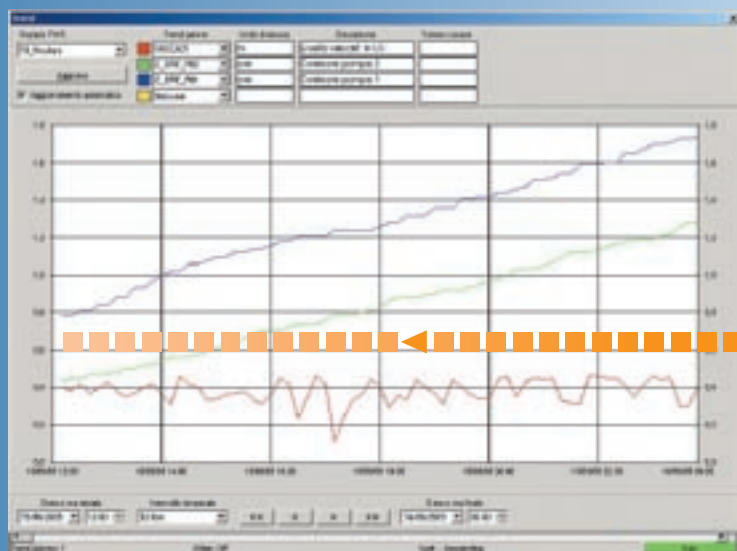
The master units perform remote control functions such as file saving and sending via email data with different sampling intervals, sending SMS messages associated with status changes or out-of-range analogue values.

In addition, a number of precompiled automation routines are available: the rotation of motors based on hours of operation, calculation of hours in operation etc.



## 4 Automatic communications configuration

The connections between the Supervising Centre and Remote Stations are implemented automatically from one scheduler. The Remote Station parameters (modem, user enabling, telephone number, scanning times) are managed in order to activate the polling or the direct connection from the Centre, upload and import historical files, data and alarms.



## 5 Data export in supervisory systems

System software enables data export in control and supervisory platforms (SCADA, VBA, HTML/Java, Excel Macro, Windows Runtime Application) through OPC technology, ActiveX controls (OCX) for visualizing data, integrated Web Server process, etc.