Z-TWS4

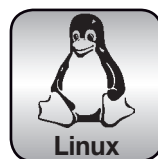## MULTIFUNCTION STRATON / LINUX CONTROLLER

HIGH-LEVEL CONTROL SYSTEM SUITABLE FOR:

• Energy Management (IEC 60870-5-101, IEC 60870-5-104, IEC 61850)

• Plant automation (Straton - Soft PLC IEC 61131-3)

• CPU Linux-based / Virtual Machine for data acquisition and control

SENECA

Made in Italy

w w w . s e n e c a . i t

ENERGY MANAGEMENT

Through to the integration with IDE Straton environment, **Z-TWS4** supports specific communication protocols in the energy applications such as **IEC 60870, IEC 61850**.

About remote management applications, Straton can be integrated with IEC 60870-5-101 and IEC 60870-5-104 Master and Slave.

Moreover with Straton, Z-TWS4 can be an IEC 61850 Server as well as Client so it's able to support functions as **RTU /Gateway, ModBUS RTU -ModBUS TCP conversion, virtual network creation via internet and point-to-point tunnelling**.

Z-TWS4 can be used also with redundant controller for plant automation, energy production control, plants management of renewable energies (biomass, photovoltaic, wind etc.), smart grid developments.

Configurable as web server and as TCP-IP node, Z-TWS4 is open to be integrated in a SCADA/EMS/WEB-based plataform.

CENTRI DI CONTROLLO SCADA / EMS
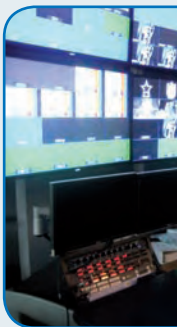
IEC 61850

IEC 61850

SUPERVISIONE LOCALE

IEC 60870-5-104

Z-TWS4

straton

IEC 60870-5-101

IED

IED

IED

ELECTRICAL SUBSTATIONS, CABINETS TRASFORMATION

IEC 61850

SMART GRID

WIND POWER PLANT

straton
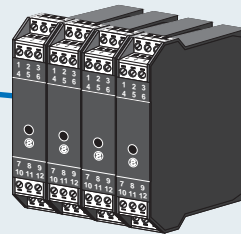
Z-TWS4

IEC 61850

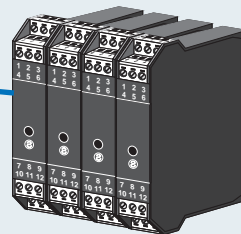## PV PLANTS
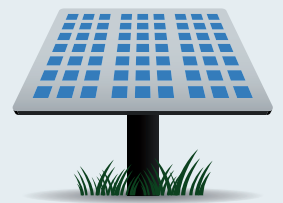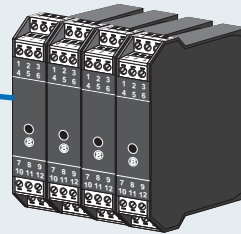
straton

Z-TWS4

IEC 61850

HYDROELECTRICALLY PLANTS

straton

Z-TWS4

IEC 61850

PLANT AUTOMATION

Z-TWS4 is also a softPLC system based on IEC 61131-3 that exploits the Straton environmental power for control applications and automation. It provides a workbench that is a programming interface, runtime, libraries and other programming features.
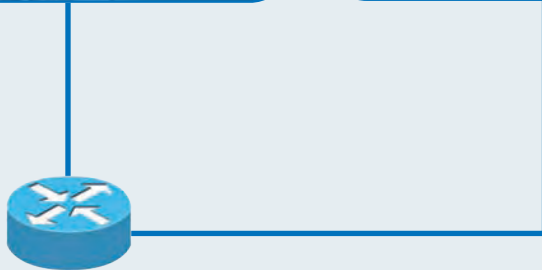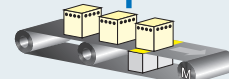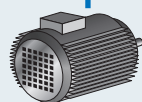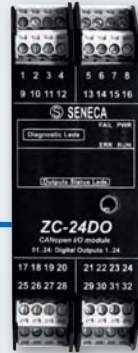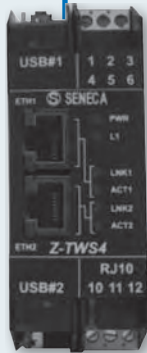
SUPERVISION

REMOTE POSITIONS

- **Programming system complying IEC 61131-3**
- **XML interface**
- **Communication with the common bus system**
- **Multi-driver communication**
- **Runtime Systems to connect on network with spontaneous data exchange**

Z-TWS4 System SoftPLC IEC 61131

ModBUS
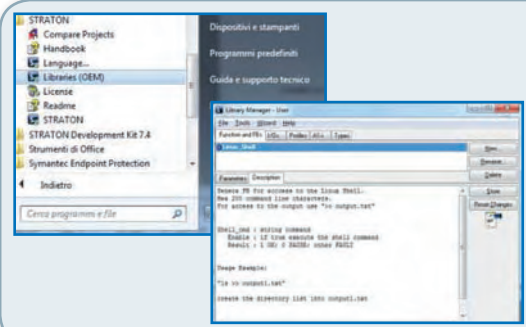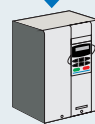
STRATON IDE DEVELOPMENT ENVIRONMENT

Straton IDE (Integrated Development Environment) available with tag numbers of 256, 512 and illimitated includes libraries and different tools for fieldbus and I/O channels configuration. The available editor compliant with the IEC 61131-3 standard comprises the following languages: Sequential Function Chart (SFC), Function Block Diagram (FBD), Continuous Function Chart (CFC), Ladder Diagram (LD), Structured Text (ST), Instruction List (IL).

CPU LINUX-BASED / VIRTUAL MACHINE FOR DATA ACQUISITION AND CONTROL

Z-TWS4 pan be utilized by Linux Ubuntu developers for data acquisition applications and control with a development environment, compilation and debug included. With a flash disk support fail safe, Z-TWS4 works as Virtual Machine and industrial PC.
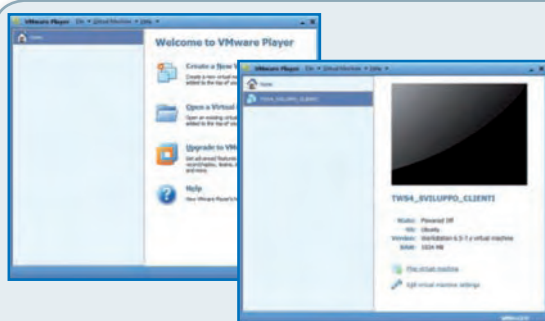
SUPERVISION

- **Tool for a free development**
- **Independent Virtual machine from other devices and applications**
- **Resistant to virus, crash and system errors**
- **High Power Data Management**
- **Development of Specific drivers**
- **Primitive Linux for CAN protocol management at low level**

Z-TWS4 Virtual Machine

ModBUS
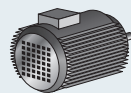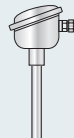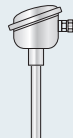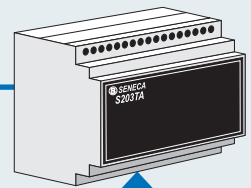
VIRTUAL MACHINE LINUX / UBUNTU

Based on virtual machine with a Linux/Ubuntu operating system, the environment **Seneca Open Development allows to write, compile and debug** code and applications to acquire data and other routine.

Linux gives Z-TWS4 programmable in C trough the compiler GNU Compiler Collection (GCC).

Z-TWS4 is in short a virtual machine VMWare with SO Ubuntu ready to use.

Z-TWS4 STRATON MULTIFUNCTION CONTROLLER

CONNECTORS AND INTERFACES

1) USB port #2 / on the go (micro USB connector), **2**) RJ10-RS232 Port, **3**) CANopen Port, **4**) LED status, **5**) IDC10 – CANopen (COM2) Connector, **6**) DIP-switch ModBUS ↔CANopen, **7**) RS485 Connection (COM2), **8**) RS485 (COM4) Connection, **9**) USB port #1 HOST, **10-11**) RJ45 – Ethernet 10/100 Mbps port, **12**) Micro SD card

ORDER CODE

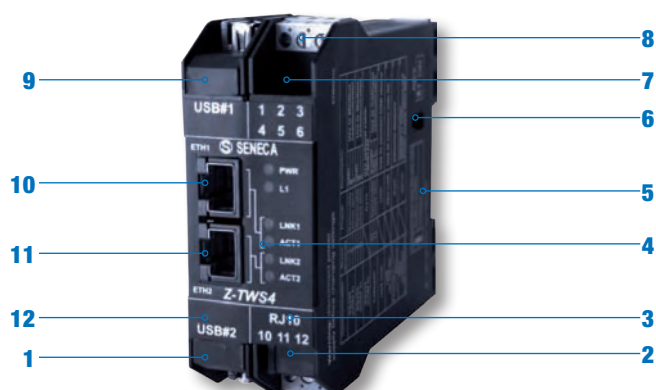| CODE	DESCRIPTION
Z-TWS4-S	Straton multifunction controller
ACCESSORIES	
DOCUMENTATION	
MIXXXXX	Installation Manual and Z-TWS4 use
MIXXXXX	Straton Manual
SOFTWARE	
Z-NET3-IO	I/O system Configurator Z-PC ModBUS Line
STRATON-IDE256	Straton Development environment - 256 Tag
STRATON-IDE512	Straton Development environment - 512 Tag
IDEUN	Development environment – Unlimited Tag
DIV-DONGLE-USB	USB Dongle
DVD	Seneca Development environment Linux for Z-TWS4
IEC	License to activate energy protocols (IEC 60870, IEC 61850)
OPC-SERVER	OPC Server Z-TWS
OPC-SERVER I/O-1	I/O-1 OPC Server I/O 100 tag
OPC-SERVER I/O-2	I/O-2 OPC Server I/O 500 tag
OPC-SERVER I/O-3	I/O-3 OPC Server I/O Unlimited Tag
OPC-SERVER MB-1	MB-1 OPC Server ModBUS Slave 100 tag
OPC-SERVER MB-2	MB-2 OPC Server ModBUS Slave 500 tag
OPC-SERVER MB-3	MB-3 OPC Server ModBUS Slave Unlimited Tag
CABLES	
PM001420	Serial cable RS232 (Z-TWS, Z-RTU, Z107, Z-LINK) (RJ10 / DB9F)
PM001430	Modem Communication cable (Z-TWS) (RJ10 / DB25M)
PM001450	Ethernet right cable (Z-TWS – apparato di rete) (RJ45 / RJ45)
PM001460	Ethernet crossing cable (Z-TWS - PC) (RJ45 / RJ45)
PM001530	Modem Serial cable (Z-TWS, Z-RTU) (RJ10 / DB9M)
PM002470	Serial cable (Z-TWS, Z-RTU, Z107) (RJ10 / RJ10)

TECNICAL FEATURES

GENERAL DATA

Power supply	DC 11..40 Vdc
Power supply	AC 19..28 Vac (50-60 Hz)
Max consumption	6 W
Isolation	1.500 Vac
Status indicator	Ethernet Transmission, power supply, PLC functioning, Ethernet connection
Installation	category II
Pollution degree	2
Protection degree	IP20
Operating temperature	0..+55 °C
Dimensions	100 x 112 x 35 mm
Weight 2	50 g
Case	Nylon 6 with 30% glass fiber class, self-extinguish class V0
Hot swapping	Yes
Connections	Screw removable clamps IDC10 connector for DIN guide RJ10-4/54, RJ45, USB, mini USB Plug in: micro SD card
Installation	for 35 mm DIN 46277 rail

COMMUNICATION PORTS

Ethernet 10/100 (RJ45)	2
Serial 0 (RS232)	1
Serial 1 (RS485)	1
ModBus RS485	1
CANbus 2.0	1
Mini USB OT G	1
Mini USB HOST	1
Supported protocols	ModBUS TCP-IP, ModBUS RTU, CANopen, PPP, HTTP, FTP, SMTP, IEC 60870-101/104, IEC 61850

CPU AND MEMORY

PLC	Straton
Processor	ARM9 @ 450 MHz
Flash Memory (dati)	1 GB
RAM	64 MB
FeRAM	64 kB
Micro SD card (ext. memory)	Max 32 GB

SETTINGS AND NORMS

System software	Z-NET3, OPC Server, Straton, Linux
Web server	Yes, integrated
Datalogger	Yes, integrated
PLC Programming	IEC 61131 (Straton, CoDeSys) and dedicated libraries
Homologation and norms	EN 61000-6-4, EN 61000-6-2, EN 61010-1