INSTALLATION MANUAL

Manual Language	ENGLISH
Seneca line product	Z-PC
Product	**Z-TWS11**
Description	Multifunction and multiprotocol controller unit

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DOCUMENTATION



CE

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1 PRELIMINARY WARNINGS



Before performing any operation, it is mandatory to read and understood in full the contents of this installation manual. The module may only be used by qualified and skilled technicians in the field of electric installations. Specific documentation is available at website: www.seneca.it/products/z-tws11



Only the Manufacturer is authorized to repair the module or to replace damaged parts. The product is susceptible to electrostatic discharge, take appropriate countermeasures during any operation**.**



The user must comply of the safety instructions in this installation manual, the country-specific installation standards and all prevailing safety regulations and accident prevention rules. No warranty is guaranteed in connection with faults resulting from improper use, from modifications or repairs carried out by Manufacturer-unauthorized personnel on the device, or if the content of this user Manual is not followed.

2 PRELIMINARY INSTRUCTIONS



It is forbidden block the ventilation slots with any object.
It is forbidden to install the module near heat sources.



Warning: Do not turn off the Z-TWS 11 module while writing the micro SD card so as not to corrupt the file system.
For data logging applications on micro SD card, you must use an external UPS.

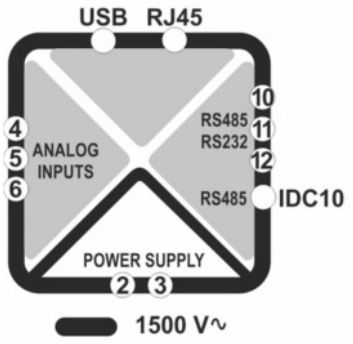
3 GENERAL SPECIFICATIONS

- Multifunction and multi-protocol control unit.
- Module configuration and firmware upgrade through Web-server
- Integrated Straton PLC.
- Insulation 1500 V∿ between power supply and other circuits
- Easy power supply and serial communication wiring through Seneca IEC EN 60715 DIN rail bus
- Removable terminals with section of 2.5 mm^2.
- LEDs signaling: power on, micro SD card access, Ethernet link and activity, RS485 Rx and Tx
- 2 analog inputs at 16 bit configurables for voltage or current.
- 1 Ethernet RJ45 front. 10/100 Mbps, 1 RS485 Port, 1 RS232/RS485 Port, 1 Micro USB
- Supported System Protocols: FTP client, SMTP client, http, ModBUS TCP, ModBUS RTU
- RAM retentive variables max.= 4 kByte (Fe-RAM technology with limitless writes)
- Micro SD additional storage memory up to 32 GB
- ARM Processor 120 MHz, 32 bit, Real Time multitasking O.S.

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4 TECHNICAL SPECIFICATIONS

Analog inputs	
2 channels: mA or V⎓ configurable, resolution: 16 bit, inputs protection: 40V 25mA, Voltage input: 0 – 30 V / accuracy 0,1% of the full scale Current input: 0 – 20 mA / accuracy 0,1% of the full scale	
Communication ports	
RS485	COM2 IDC10 rear port (Baud rate max.115k)
RS485 / RS232	COM4 removable screw terminal port, pitch 5 mm (Baud rate max.115k)
Ethernet	Ethernet 10/100 Base-T RJ45 frontal port with autoswitch
USB On The Go	Micro USB side port
Storage unit	
Micro SD	Micro SD or micro SHDC, max.= 32GByte
Power supply	
Voltage	11 – 40 V⎓; 19 – 28 V∿ 50 – 60 Hz
Power consumption	Typical: 1.5 W @ 24V~, max.= 2 W
Environmental conditions	
Temperature	From -10 to +50°C
Humidity	30 – 90% not condensing
Storage temperature	From -20 to +85°C
Protection degree	IP20
Overall dimensions / Case	
Dimensions / Weight	L: 100 mm; H: 111 mm; W: 17.5 mm / 104 gr.
Case	PA6, black

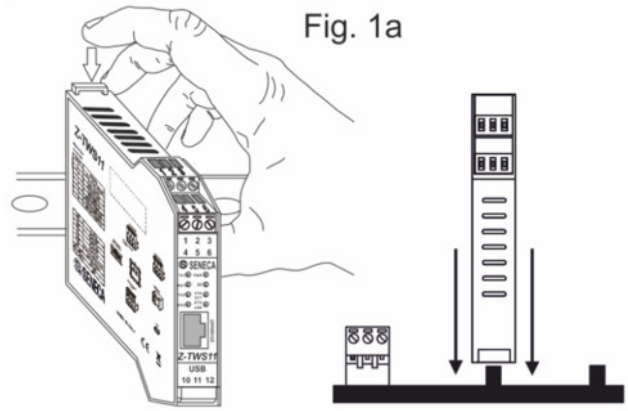
Insulations	*Standards*	
	CE	**The instrument complies with the following standards:** **EN61000-6-4** (electromagnetic emission, industrial environment) **EN61000-6-2** (electromagnetic immunity, industrial environment) **EN61010-1** (safety). **EN60950** (Information technology equipment safety).
		SUPPLEMENTARY NOTES ON USE: A 1 A, delayed fuse must be installed in series to the power supply connection, near to the module.

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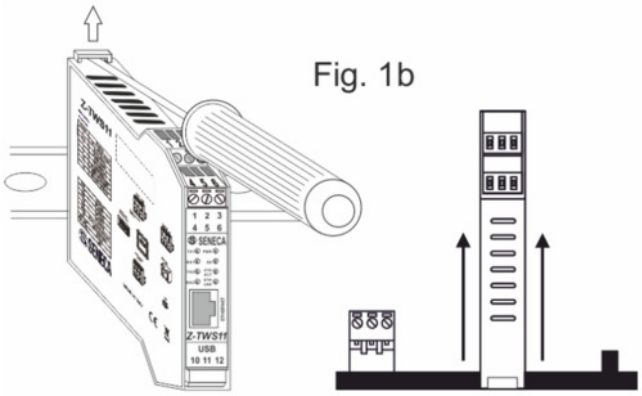
5 INSTALLATION STANDARDS

The module has been designed for vertical installation on an IEC EN 60715 DIN rail. For optimal operation and long working life, adequate ventilation must be provided. Avoid positioning cable ducts or other objects so that they obstruct the ventilation slots. Avoid mounting modules over equipment generating heat. Installation in the bottom part of the distribution board is recommended.

OMEGA IEC EN 60715 guide installation and removal.

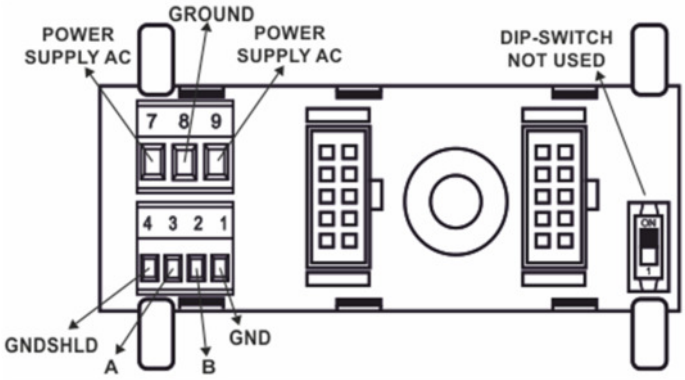


Insertion into the IEC EN 60715 guide:
1) Move the two hooks on the back of the module outwards as illustrated in fig. 1b.
2) Rest the module on the IEC EN 60715 DIN guide.
3) To secure the module to the IEC EN 60715 DIN rail, tighten the two hooks on the side of the IDC10 rear connector as shown in fig. 1a.



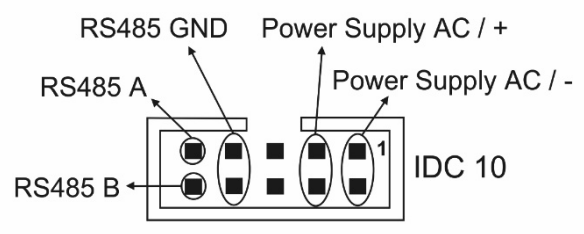
Removal from the IEC EN 60715 guide:
As shown in figure 1b:
1) Move outwards the two hooks on the side of the module, with the help of a screwdriver.
2) Extract the module from the guide.

Use of Z-PC-DINAL2-17.5 accessory



If Z-PC-DINAL2-17.5 accessory is used, the power supply and communication signals may be provided by the terminals block into the DIN rail support. The figure shows the meaning of the terminal blocks and the position of the DIP-switch in the Seneca IEC EN 60715 DIN rail accessory.
GNDSHLD: Shield to protect the connection cables against interference (recommended).

IDC10 rear connector



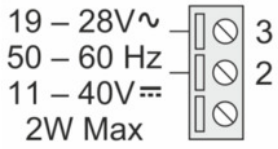
The IDC10 connector located on the rear of the module will be inserted on a free slot of Z-PC-DIN accessory. In the figure you can see the meaning of the IDC10 connector pins if you want to provide signals through them. The IDC10 connector provides the COM 2 RS485 port.

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6 ELECTRICAL CONNECTIONS

Power OFF the module before connecting the inputs and outputs.
In order to satisfy the electromagnetic compliance requirements:
- Use shielded cables for the signals transmission;
- Connect the shield to a preferential ground for devices;
- Space the shielded cables from other cables used for power installations (transformers, inverters, motors, induction ovens, etc...);

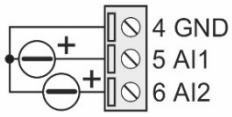
Power supply



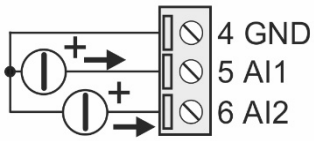
The power supply must be connected to terminals 2 and 3. The supply voltage must be between 11 and 40V⎓ (any polarity), or between 19 and 28 V∿.
The upper limits must not be exceeded in order to avoid serious damage to the module.
The power supply source must be protected from any malfunctions of the module through appropriately sized safety fuse.

Analog input 1 and 2

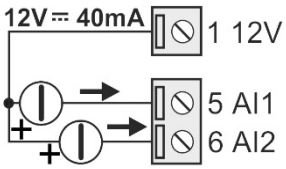
Voltage



Current active sensor (4 wires)

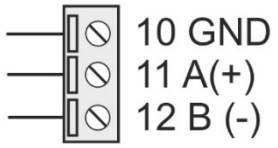


Current passive sensor (2 wires)



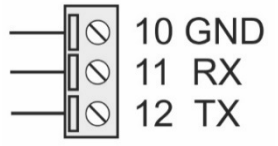
The Z-TWS11 module has two software voltage or current configurable analog inputs.
For the configuration software you can read the user manual

Connection of COM4 - RS485 serial port (SW2=OFF)



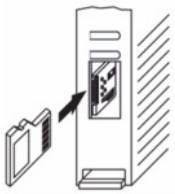
Z-TWS11 has a serial port configurable through the SW2 Switch.
If the switch SW2 is set to ↓ OFF position,
then the RS485 serial port (COM4) is available to terminals 10-11-12.
The picture shows how to make the connection.

Connection of COM4 - RS232 serial port (SW2=ON)



Z-TWS11 has a serial port configurable through the SW2 Switch.
If the switch SW2 is set to ↑ ON position,
then the RS232 serial port (COM4) is available to terminals 10-11-12.
The picture shows how to make the connection.

Inserting the micro SD card



Inserting the MicroSD or the microSHDC, into the side slot. max. 32 GB.
Push-push connector for insertion and removal.

RJ45 ETHERNET and USB On The Go connections



Ethernet, Inserting the RJ45 connector into the Ethernet socket RJ45 10/100 BaseT with autoswitch, make sure that the connector is securely latched, else remove before the RJ45 protective rubber.
For further information, refer to the USER MANUAL

USB, Insert the micro USB plug into the micro USB side socket

7 CONFIGURATIONS

SW1 DIP-switches configuration to load factory settings		
This procedure returns the IP address to the factory default: 192.168.90.101 and return the credentials for access to the web server to: User= admin and password= admin.	**SW1 KEY**	
Turn off the Z-TWS11 module and set to **ON** all eight DIP switches SW1. Turn on the Z- TWS11 module and then wait 10 seconds. Turn off the Z- TWS11 module and set to **OFF** all eight DIP switches SW1.	**ON** **OFF**	↑ ↓
SW2 Switch setting		
RS232 or RS485 configuration on terminals 10-11-12 (serial port COM 4)	**SW2 KEY**	
RS232	**ON**	↑
RS485	**OFF**	↓

8 LED SIGNALING ON THE FRONTAL PANEL

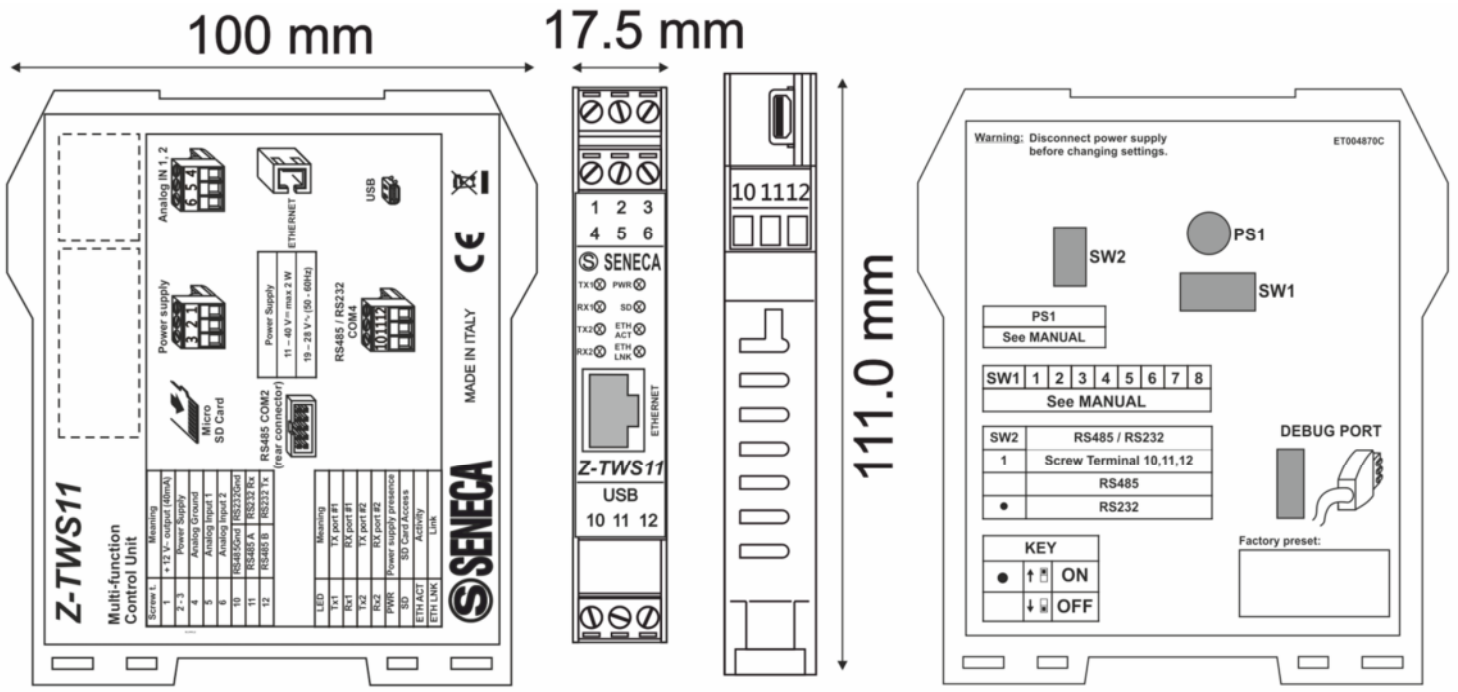
LED	*STATUS*	*LEDs meaning*
Tx1 Red	Blinking	Data transmission activity on COM4
	OFF	No data transmitting on COM4
Rx1 Red	Blinking	Data reception activity on COM4
	OFF	No data receiving on COM4
Tx2 Red	Blinking	Data transmission activity on COM2
	OFF	No data transmitting on COM2
Rx2 Red	Blinking	Data reception activity on COM2
	OFF	No data receiving on COM2
Tx1+Rx1+Tx2+Rx2	Blinking	PLC program not present
PWR Green	ON	Z-TWS11 ON
	OFF	Z-TWS11 OFF
SD Red	Blinking	Micro SD card access
ETH LNK Green	Blinking	RJ45 connection activated
ETH ACT Yellow	Blinking	Traffic on Ethernet port

9 PURCHASE ORDER CODES

CODE	*DESCRIPTION*
Z-PC-DINAL1-35	DIN rail support with screw terminals P= 35 mm
Z-PC-DINAL2-17,5	DIN rail support with screw terminals P= 17.5 mm
Z-PC-DIN1-35	DIN rail with one slot support for rear connector P= 35 mm
Z-PC-DIN2-17,5	DIN rail with two slots support for rear connector P= 17,5 mm
Z-PC-DIN4-35	DIN rail with four slots support for rear connector P= 35 mm
Z-PC-DIN8-17,5	DIN rail with eight slots support for rear connector P= 17,5 mm
CE-RJ45-RJ45-R	Ethernet cable 1,5 m

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10 FRONTAL PANEL / MODULE LAYOUT



For the Z-TWS11 configuration, use the **EASY SETUP** software available for download, at:
www.seneca.it/products/z-tws11
For further information on the product, refer to the **USER MANUAL** available for download, at:
www.seneca.it/products/z-tws11

11 DECOMMISSIONING AND DISPOSAL



Electrical and electronic waste disposal (applicable in the European Union and other countries with recycling). The symbol on the product or packaging indicates that the product cannot be discarded as domestic waste. It should be taken to an authorized recycling center for electrical and electronic waste. Ensuring that the product is suitably discarded will avoid potential negative impacts on the environment and human health, that could be caused by non compliant product disposal. Material recycling will contribute to the preservation of natural resources. To receive further information, please contact your local waste disposal service center or product dealer.

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