INSTALLATION MANUAL

Z-UMTS HW2

HSPA datalogger + with built-in I/O, remote control functions
built-in UPS, GPS and advanced programming

EN



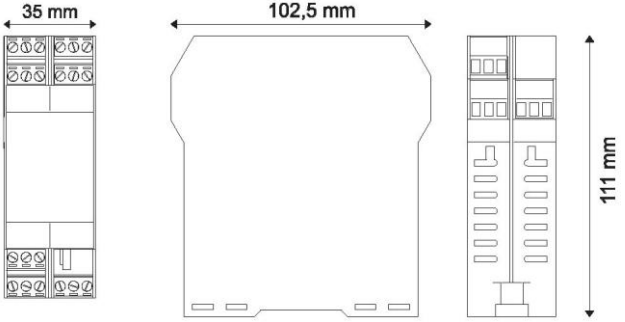
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For manuals and configuration software, go to www.seneca.it/products/z-umts

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MODULE LAYOUT



Dimensions (LxHxD)	35 x 102.5 x 111 mm
Weight	220 g
Case	PA6 material, black.

LED SIGNALS ON THE FRONT PANEL

LED	Status	LED meaning
GSM LEVEL (Green)	On ■	GSM level 4 ■■■■■■■■ (maximum signal)
	Flashing 0.3s ON ■ 0.3s OFF □	GSM level 3 □■□■□■□□ 3 flashes (good)
		GSM level 2 □■□■□□□□ 2 flashes (medium)
		GSM level 1 □■□□□□□□ 1 flash (poor)
	Off □	GSM level 0 □□□□□□□□ (no signal)
MOD (Yellow)	On ■	Registered on 3G / 3G + network
	Off □	Other
GSM STATUS (Yellow)	Slow flashing 0.2s ON ■ 1.8s OFF □	■□□□□□□□□ (200ms High/1800ms Low) Network search
	Slow flashing 1.8s ON ■ 0.2s OFF □	■■■■■■■■□ (1800ms High/200ms Low) Connected
	Fast flashing 0.125s ON ■0.125s □ OFF	■□■□■□■□■□■□■□■□ (125ms High/125ms Low) Data transfer in p[rogress
	On ■	Voice call

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LED SIGNALS ON THE FRONT PANEL

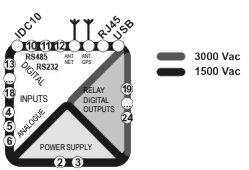
LED	Status	LED meaning
DO1 (Red)	On	Digital output 1, relay energised
	Off	Digital output 1, relay de-energised
DO2 (Red)	On	Digital output 2, relay energised
	Off	Digital output 2, relay de-energised
COM (Red)	Slow flashing 2.8s ON ■ 0.4s OFF □	■■■■■■■■■■■■■□□ Activity in the RS485 or RS232 serial interface
	Off	RS485 or RS232 serial interfaced not used
	Fast flashing 0.2s ON ■ 0.2s OFF □	■□■□■□■□■□■□■□■□■ Timeout in the RS485 or RS232 communication
DI1 (Red)	ON (NPN)	Digital Input 1: Energised (contact closed to GND)
	ON (PNP)	Digital Input 1: Energised (contact closed to +12V)
	Off	Digital Input 1: Not energised (contact open)
DI2 (Red)	ON (NPN)	Digital Input 2: Energised (contact closed to GND)
	ON (PNP)	Digital Input 2: Energised (contact closed to +12V)
	Off	Digital Input 2: Not energised (contact open)
DI3 (Red)	ON (NPN)	Digital Input 3: Energised (contact closed to GND)
	ON (PNP)	Digital Input 3: Energised (contact closed to +12V)
	Off	Digital Input 3: Not energised (contact open)
DI4 (Red)	ON (NPN)	Digital Input 4: Energised (contact closed to GND)
	ON (PNP)	Digital Input 4: Energised (contact closed to +12V)
	Off	Digital Input 4: Not energised (contact open)
PWR (Green)	On	Z-UMTS log inactive or waiting to start
	Slow flashing 2.8 sec ON 0.4 sec OFF	■■■■■■■■■■■■■□□ Z-UMTS log active normal operation
	Slow flashing 1.6 sec ON 1.6 sec OFF	■■■■■■■■□□□□□□□□ Operation with backup battery
	Medium flashing 0.8 sec ON 0.8 sec OFF	■■■■□□□□■■■■□□□□ Low battery warning
	Fast flashing 0.2 sec ON 0.2 sec OFF	■□■□■□■□■□■□■□■□■ Low battery switching OFF in progress
	Fast flashing 0.6 sec ■ □ ■ 1 sec OFF	■□■□□□□□■□■□□□□□ Error, see diagnostics on Webserver
	Off	Z-UMTS OFF

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LED SIGNALS ON THE FRONT PANEL

LED	Status	LED meaning
SD (Red)	ON	SD card mounted correctly
	Medium flashing ■ 0.8 sec ON 0.8 sec OFF	■■■■□□□□■■■■□□□□ Activity on SD card
	Fast flashing 0.2 sec ON 0.2 sec OFF	■□■□■□■□■□■□■□■□ SD card error
	OFF	No SD card
ETH LNK (Green)	Flashing	Connection on RJ45 activate
ETH ACT (Yellow)	Flashing	Packet transit on Ethernet port

TECHNICAL SPECIFICATIONS

STANDARDS	**EN61000-6-4** Electromagnetic emissions, industrial environment. **EN61000-6-2**. Electromagnetic immunity, industrial environment. **EN301 511** Global standards for mobile communications. **EN301 489-1** Electromagnetic compatibility for mobile radio equipment. **EN301 489-7** Specific conditions (EMC) for mobile radio equipment. **EN60950** Security in information processing equipment.
INSULATION	
ENVIRONMENTAL CONDITIONS	
Temperature	-10 - + 50°C / (-10 - + 40°C if the internal UPS is used).
Humidity	30%– 90% non condensing.
Storage temperature	-20 - + 65°C / (-20 - + 45°C < 6 months if the internal UPS is used).
Protection rating	IP20.
ASSEMBLY	25Mm DIN rail IEC EN60715
INTERNAL UPS	Rechargeable backup batteries. Duration: up to 1 hour.
CONNECTIONS	Removable 3-way screw terminals, 5 mm pitch for cable up to 2.5 mm^2, IDC10 Rear, RJ45 and micro USB and 2 SMA sockets for 3G and GPS antennas.

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TECHNICAL SPECIFICATIONS

POWER SUPPLY *Voltage* *Absorption*	 19 – 40 Vdc or 19 – 28 Vac 50 – 60 Hz. < 6.5W.
DIGITAL INPUTS	Number of channels 4. Configurable PNP or NPN. Voltage OFF<4V, ON>8V (Max. 24Vdc). Max frequency 30Hz. Absorbed current 3mA @ 12Vdc 10mA @ 24Vdc.
TOTALIZERS	4 x 32-bit totalizers on non-volatile memory
COUNTERS:	4 x 32-bit resettable counters on non-volatile memory.
DIGITAL OUTPUTS	Number of channels 2. SPDT free contact relay. Max. voltage 250Vac. Max. current 2A.
ANALOGUE INPUTS	Number of channels 2. Configurable mAdc or Vdc. Voltage input 0 – 30V. precision 0.1% of Full Scale, impedance 200 kohm. Current input 0 - 20mA precision 0.1% of Full Scale, impedance < 60 ohm. Input protection 40V / 25mA. Resolution 16 bit.
COMMUNICATION PORTS	RS485 COM1 on rear IDC10 connector, RS485 or RS232 on terminals M10-M11-M12, Ethernet 10/100 baseT with autoswitch on front RJ45 socket and USB on microB side socket.
3G+ WORLD WIDE PENTABAND MODEM	GSM / GPRS / EDGE / WCDMA / HSDPA / HSUPA / HSPA+ / DC-HSPA.
SUPPORTED PROTOCOLS	FTP client, SMTP client, http rest (SSL), MQTT (SSL), ModBUS TCP server, ModBUS TCP client, ModBUS RTU master, ModBUS RTU slave, For further information, refer to the **User Manual**.
GNSS	8th generation: 16 GPS channels, 14 GLONASS channels Precision <1.5m CEP-50.
STORAGE UNIT	microSD and microSDHC, 32GB max.
PROCESSOR	ARM 32bit.
OPERATING SYSTEM	Real Time Multitasking
FEATURES	Webserver built-in and on microSD

PROCEDURE FOR MODULE SWITCH-OFF

The module is equipped with an integrated UPS that allows it to remain on even in the absence of external power. To turn off the module, first disconnect the external power supply and then press the PS1 button on the right side of the module for at least 10 seconds.
When the button is released, the PWR LED turns off to indicate that the module is turned off.

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PRELIMINARY WARNINGS

WARNING: The full content of this manual must be read before any operation. The module must only be used by qualified electricians.
Specific documentation is available at www.seneca.it/products/z-umts.

The word **WARNING** preceded by the ⚠ symbol indicates conditions or actions that put the user's safety at risk. The ward **CAUTION** preceded by the ⚠ symbol indicates conditions or actions that might damage the instrument or the **connected** equipment.

The warranty shall become null and void in the event of improper use or tampering with the module or devices supplied by the manufacturer as necessary for its correct operation, and if the instructions contained in this manual are not followed.

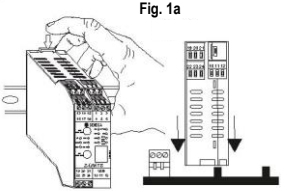
The module must be repaired and damaged parts replaced by the Manufacturer. The product is sensitive to electrostatic discharges. Take appropriate measures during any operation.

Important: Obstructing ventilation slots with any object is prohibited. Installing the module next to devices that generate heat is prohibited.

Electrical and electronic waste disposal (applicable in the European Union and other countries with recycling). The symbol on the product or its packaging shows that the product must be disposed of at a collection centre authorised to recycle **electrical and electronic waste**.

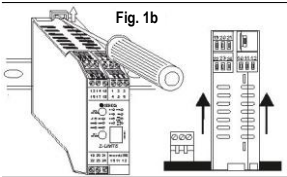
INSTALLATION ON AND REMOVAL FROM THE IEC EN 60715 RAIL

Fig. 1a



Insertion onto the OMEGA IEC EN 60715 rail:
1) Move the two hooks on the back of the module outward as illustrated in fig. 1 b.
2) Insert the rear IDC10 connector of the module into a free slot of the OMEGA rail accessory as shown in fig. 1a. (insertion is univocal as connectors are polarised).
3) To secure the module to the OMEGA rail, tighten the two hooks on the side of the IDC10 rear connector as illustrated in Fig. 1a.

Fig. 1b



Removal from the OMEGA IEC EN 60715 rail:
As shown in figure 1 b:
1) With the help of a screwdriver, pull the two hooks on the side of the module outwards.
2) Slowly extract the module from the rail.

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USE OF THE Z-PC-DINAL ACCESSORY

Do not turn the module upside down and **do not force the insertion** of the IDC10 connector on the Z-PC-DIN bus.

The rear IDC10 connector of the module must be inserted on a free slot of the Z-PC-DIN bus.

The illustration shows the meanings of the various IDC10 connector pins if signals are to be sent via them directly.

Fig. 1 c and **Fig. 1 d** show the power connection and RS485 COM1 port on the IDC10.

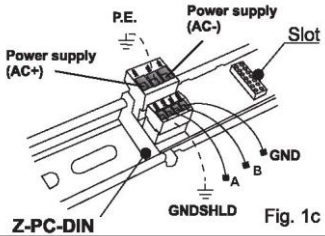


Fig. 1c

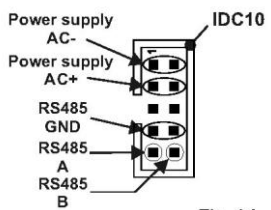


Fig. 1d

ELECTRICAL CONNECTIONS

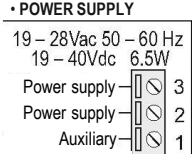
CAUTION: On first start-up the module must be supplied without any interruptions for at least 72 hours to charge the internal batteries.

Switch the module off with the PS1 button before connecting inputs and outputs.

To meet the electromagnetic immunity requirements:

- use shielded signal cables;
- connect the shield to a preferential instrumentation earth system;
- separate shielded cables from other cables used for power installations (transformers, inverters, motors, induction ovens, etc...)

• POWER SUPPLY

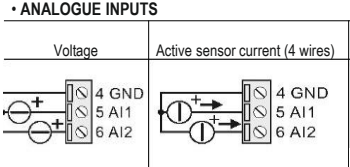


The power supply must be connected to terminals 2 and 3. The supply voltage must be between: 19 and 40Vdc (indifferent polarity), or between 19 and 28 Vac.

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 module malfunctions using appropriately-sized safety fuses.

• ANALOGUE INPUTS

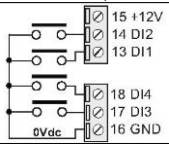
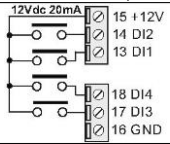
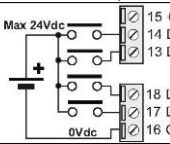


The module has two analogue inputs that can be configured via software as voltage or current. For the configuration software, see the user manual.

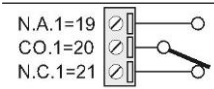
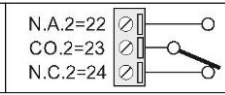
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ELECTRICAL CONNECTIONS

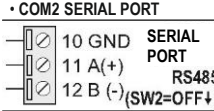
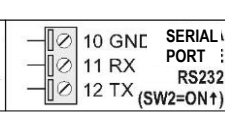
• DIGITAL INPUTS

NPN with internal power	PNP with internal power	PNP with external power
		

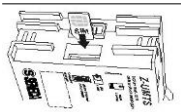
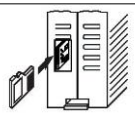
• DIGITAL OUTPUTS

		The module has two **digital outputs with free contacts.** The figures show the internal relay contacts available.

• COM2 SERIAL PORT

		The module has a COM2 serial port configurable via the SW2 switch on terminals 10-11-12.

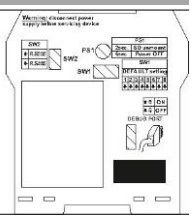
INSERTING THE SIM CARD AND SD CARD

	Inserting the SIM into the rear slot next to the IDC10 connector.		Inserting the microSD or microSHDC card, into the side slot. MAX 32 GB. Push-push connector.

SETTINGS

DIP-SWITCHES

SW1	All DIP switches in **OFF** position. ↓.		
	For further information, refer to the USER MANUAL.		
SW2	RS232 or RS485 configuration on terminals 10-11-12 (COM 2 serial port)		
	RS232	**ON**	↑
	RS485	**OFF**	↓



CONTACT INFORMATION

Technical support	support@seneca.it	Product information	sales@seneca.it

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