INSTALLATION MANUAL
Z-LTE

Datalogger 4G + with built-in I/O, remote control functions, embedded UPS,GPS and advanced programming

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MODULE LAYOUT

35 mm   **111 mm**

102,5 mm
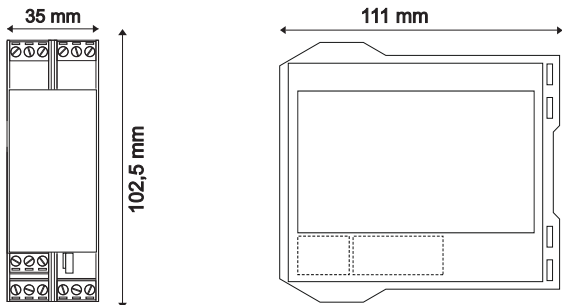
Dimensions (L×H×W)	35 x 102.5 x 111 mm
Weight	270 g.
Case	Material PA6, black.

LED SIGNALLING ON FRONT PANEL

LED	Status	LED meaning
GSM LEVEL **ıl** (Green)	ON ■	GSM level 4 ■ ■ ■ ■ ■ ■ ■ (maximum signal)
	Blinking 0.3s ON ■ 0.3s OFF □	GSM level 3 □■□■□■□□ 3 Flashes (good)
		GSM level 2 □■□■□□□□ 2 Flashes (medium)
		GSM level 1 □■□□□□□□ 1 Flash (low)
	OFF □	GSM level 0 □□□□□□□□ (no signal detected)
MOD (Yellow)	ON ■	Registered on 4G network
	OFF □	Others
GSM STATUS (Yellow)	Slow Blinking 0.2s ON ■ 1.8s OFF □	■□□□□□□□□□ (200ms High/1800ms Low) Network searching
	Slow Blinking 1.8s ON ■ 0.2s OFF □	■■■■■■■■■□ (1800ms High/200ms Low) Idle
	Fast Blinking 0.125s ON ■ 0.125s □ OFF	■□■□■□■□■□■□■□ (125ms High/125ms Low) Data transfer being performed
	ON ■	Voice call active

LED SIGNALLING ON FRONT PANEL

LED	Status	LED meaning
DO1 (Red)	ON	Digital output 1, relay energized
	OFF	Digital output 1, relay de-energized
DO2 (Red)	ON	Digital output 2, relay energized
	OFF	Digital output 2, relay de-energized
COM (Red)	Blinking Slow 2.8s ON ■ 0.4s OFF □	■■■■■■■■■■■■■■■□□ RS485 or RS232 serial interface active
	OFF	RS485 or RS232 serial interface not used
	Blinking Fast 0.2s ON ■ 0.2s OFF□	■□■□■□■□■□■□■□ RS485 or RS232 communication Timeout
DI1 (Red)	ON (NPN)	Digital input 1: Energized (GND contact closed)
	ON (PNP)	Digital input 1: Energized (+12V contact closed)
	OFF	Digital input 1: De-energized (contact open)
DI2 (Red)	ON (NPN)	Digital input 2: Energized (GND contact closed)
	ON (PNP)	Digital input 2: Energized (+12V contact closed)
	OFF	Digital input 2: De-energized (contact open)
DI3 (Red)	ON (NPN)	Digital input 3: Energized (GND contact closed)
	ON (PNP)	Digital input 3: Energized (+12V contact closed)
	OFF	Digital input 3: De-energized (contact open)
DI4 (Red)	ON (NPN)	Digital input 4: Energized (GND contact closed)
	ON (PNP)	Digital input 4: Energized (+12V contact closed)
	OFF	Digital input 4: De-energized (contact open)
PWR (Green)	ON	Inactive log and status ready to start
	Blinking Slow 2.8 sec ON 0.4 sec OFF	■■■■■■■■■■■■■□□ Active log and status normal operation
	Blinking Slow 1.6 sec ON 1.6 sec OFF	■■■■■■■□□□□□□□ Battery powered and status battery backup
	Medium Blinking 0.8 sec ON 0.8 sec OFF	■■■■□□□□■■■■□□□□ Low battery warning
	Blinking Fast 0.2 sec ON 0.2 sec OFF	■□■□■□■□■□■□■□ Initializing or shutting down
	Blinking Fast 0.6 sec ■□■ 1 sec OFF	■□■□□□□□□■□■□□□□□ Error, please refer to the webserver diagnostic
	OFF	Device OFF

LED SIGNALLING ON FRONT PANEL

LED	Status	LED meaning
SD (Red)	ON	SD card mounted correctly
	Medium Blinking 0.8 sec ON 0.8 sec OFF	∎∎∎∎☐☐☐☐∎∎∎∎☐☐☐☐ SD card activity
	Blinking Fast 0.2 sec ON 0.2 sec OFF	∎☐∎☐∎☐∎☐∎☐∎☐∎☐ SD card error
	OFF	SD card not found
ETH LNK (Green)	Blinking	RJ45 connection active
ETH ACT (Yellow)	Blinking	Traffic on Ethernet port

TECHNICAL SPECIFICATIONS

STANDARDS	**EN61000-6-4** Electromagnetic emissions, industrial environment. **EN61000-6-2** Electromagnetic immunity, industrial environment. **EN301 511** Harmonized standards for mobile stations. **EN301 489-1** Electromagnetic compatibility for mobile radio equipment. **EN301 489-7** Specific (EMC) conditions for mobile radio equipment. **EN60950** Safety of information Technology Equipment.
INSULATION	1500 Vac 3000 Vac
ENVIRONMENTAL CONDITIONS *Temperature* *Humidity* *Storage temperature* *Protection rating*	-10 – + 50°C / (-10 – + 40°C with internal UPS use). 30% – 90% not condensing. -20 – + 65°C / (-20 – + 45°C < 6 months with internal UPS use). IP20.
MOUNTING	35mm IEC EN60715 DIN Rail.
INTERNAL UPS	Rechargeable backup batteries. Duration: up to 1 hour.
CONNECTIONS	Removable three pole screw terminal pitch 5mm for cable up to 2.5 mm², rear IDC10 connector, RJ45 socket, Micro USB socket and 2 SMA connectors for 4G antenna and GPS antenna.

TECHNICAL SPECIFICATIONS

POWERSUPPLY	Voltage: 19 – 40 Vdc or 19 – 28 Vac 50 – 60 Hz,Power absorbed: < 6.5W.
DIGITAL INPUTS	Number of channels 4. PNP or NPN configurable. Input voltage OFF<4V ON>8V (Max. 24 Vdc). Max. frequency 30Hz. Absorbed Current 3mA at 12Vdc 10mA at 24Vdc.
TOTALIZERS	Four 32 bit totalizers on non-volatile memory.
COUNTERS	Four 32 bit resettable counters on non-volatile memory.
DIGITAL OUTPUTS	Number of channels 2. SPDT Relays with free contacts. Max. Voltage 250Vac. Max. Current 2A.
ANALOG INPUTS	Number of channels 2. mAdc or Vdc configurable. Voltage input 0 – 30V. accuracy 0.1% of the Full Scale, impedance 200 kohm. Current input 0 – 20mA. accuracy 0.1% of the Full Scale, impedance < 60 ohm. Inputs protection 40V / 25mA. Resolution 16 bit.
COMMUNICATION PORTS	RS485 COM1 port on rear IDC10 connector, RS485 or RS232 COM2 port on M10-M11-M12 screw terminals, Ethernet 10/100 baseT with autoswitch on RJ45 frontal socket and USB on MicroUSB side socket.
MODEM 4G	4G/LTE Model (Europe, Africa, Middle Est, Korea, Thailand, India) Contact Seneca for other countries.. GSM / GPRS/ EDGE Dual-band: 1800 / 900 Mhz UMTS / HSPA+, Tri-band: WCDMA 2100 / 850 / 900 Mhz 4G LTE Band 6- Band: 2100/1800/850/2600/900/800 MHz Certifications: CE/GCF/Vodafone (Europe), KC/SKT/KT/LGU+ (Korea)
SUPPORTED SYSTEM PROTOCOLS	FTP client, SMTP client, http rest (SSL), MQTT (SSL), ModBUS TCP server, ModBUS TCP client, ModBUS RTU master and ModBUS RTU slave. For more information, please refer to the **User Manual.**
GNSS	GPS / GLONASS / Beidou / Galileo / QZSS up to 55 channels
STORAGE UNIT	microSD and microSDHC Max. 32GB.
PROCESSOR	ARM 32bit
OPERATING SYSTEM	Real Time Multitasking
CHARACTERISTICS	Embedded Webserver and microSD Webserver

MODULE SHUT DOWN PROCEDURE

The module has an internal UPS that allows it to remain turned ON even without external power supply. To turn off the module, first of all, 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 in order to confirm that the module is switched off.

PRELIMINARY WARNINGS

⚠️ **WARNING: Before performing any operation it is mandatory to read the full contents of this manual.** The module may only be used by qualified and skilled electric installation technicians. Specific documentation is available for download at website: www.seneca.it/products/z-lte.

The symbol ⚠️ with the word **WARNING** identifies conditions and actions that pose hazard(s) to the user. The symbol ⚠️ with the word **CAUTION** identifies conditions and actions that may damage the device or the equipements connected.

The warranty is void in case of faults resulting from improper use, from modifications or repairs carried out on the device without the authorisation of the Manufacturer, or if the instructions of this user Manual are not followed.

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 use.

⚠️ **CAUTION: It is forbidden obstruct the ventilation slits in any way.
It is forbidden to install the module near heat sources.**

Disposal of electrical & electronic equipment (applicable within the EU and other countries implementing sorted waste disposal procedures). The symbol found on this product or on its packaging, indicates that this product it must be handed over to an authorised collection point for **the recycling of electrical and electronic equipments.**

INSTALLATION ON AND REMOVAL FROM IEC EN 60715 DIN RAIL
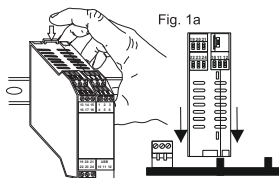
Fig. 1a

Insertion on the IEC EN 60715 DIN rail:
1) Move the two hooks on the back of the module outwards as shown in fig. 1b.
2) Insert the module rear IDC10 connector into a free slot of the DIN rail accessory as shown in fig 1a. (the insertion is only possible in one direction because the connectors are polarized).
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.
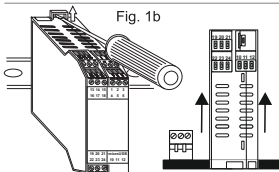

Fig. 1b

Removal from IEC EN 60715 DIN rail:
As shown in fig. 1b:
1) Using a screwdriver, move the two hooks on the side of the module outwards.
2) Carefully extract the module from the IEC EN 60715 DIN rail.

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USE OF Z-PC-DINAL ACCESSORY

Don't turn upside down the module and **don't force the insertion** of the IDC10 connector into the Z-PC-DIN bus. The IDC10 connector located on the rear of the module will be inserted in a free slot of the Z-PC-DIN accessory. In the figure, you can see the meaning of the various pins of the rear IDC10 connector, if you want to provide the signals directly through this connector. The pictures **Fig. 1 c** and **Fig.1 d** show how to connect the power supply and the RS485 COM1 port to the rear IDC10 connector.

Fig. 1c
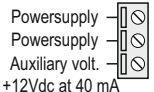

Fig. 1d
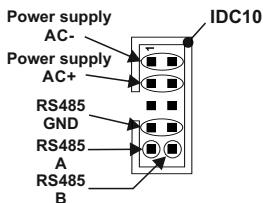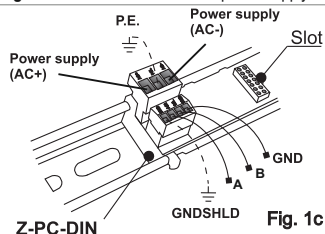
ELECTRICAL CONNECTIONS

CAUTION: When you turn On the module for the first time, the device must be powered without any interruptions for at least 72 hours in order to charge the internal batteries **Power off the module, using the PS1 button, 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.
- keep the shielded cables at a distance from other cables used for power installations.
(transformers, inverters, motors, induction ovens, etc...).

• POWERSUPPLY

19 – 28Vac 50 – 60 Hz 19 – 40Vdc 6.5W	The power supply must be connected to terminals 2 and 3. The supply voltage must be between: 19 and 40Vdc (any 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 malfunctions of the module by using an appropriately sized safety fuse.
Powersupply — ⦸ 3 Powersupply — ⦸ 2 Auxiliary volt. — ⦸ 1 +12Vdc at 40 mA	

• TWO ANALOG INPUTS

Voltage	Current active sensor	Current passive sensor	
⦸ 4 GND ⦸ 5 AI1 ⦸ 6 AI2	⦸ 4 GND ⦸ 5 AI1 ⦸ 6 AI2 4 wires	+12Vdc 40mA ⦸ 1 +12V **(*)** ⦸ 5 AI1 ⦸ 6 AI2 **(*) Not available without** 2 wires **external powersupply**	The module has two software voltage or current configurable analog inputs. For the configuration software refer to the **User manual**.

ELECTRICAL CONNECTIONS

• DIGITAL INPUTS

Internal power supply NPN	Internal power supply PNP	External power supply PNP

15 +12V	
14 DI2	
13 DI1	
18 DI4	
17 DI3	
16 GND	

0Vdc

12Vdc 20mA

Max 24Vdc

0Vdc

• DIGITAL OUTPUTS

N.O.1=19
CO.1=20
N.C.1=21

N.O.2=22
CO.2=23
N.C.2=24

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

• COM2 SERIAL PORT

10 GND	**RS485 SERIAL PORT**
11 A(+)	
12 B (-)	**(SW2=OFF↓)**

10 GND	**RS232 SERIAL PORT**
11 RX	
12 TX	**(SW2=ON↑)**

The module has a COM2 serial port available at terminals 10-11-12. This port can be configured through the SW2 switch.

SIM-CARD AND SD-CARD INSERTING

Inserting the SIM card into the rear slot at the side of the IDC10 connector.
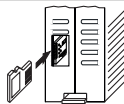
Inserting the MicroSD or the microSHDC card, into the side slot. Max 32 GB. Push-push connector for insertion and removal.

SETTINGS

DIP-SWITCHES

SW1	All the DIP-Switches to the **OFF** ▤↓ position. For further informations please refer to the: **USER MANUAL**	
SW2	RS232 or RS485 configuration on terminals 10-11-12 (serial port COM 2)	
	RS232	**ON**	▤↑
	RS485	**OFF**	▤↓

Warning: disconnect power supply before servicing device
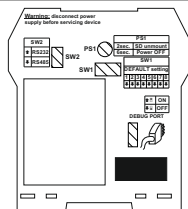
CONTACTS

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

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