INSTALLATION MANUAL

Z-LTE

(Z-LTE / Z-LTE - ww)

4G + worldwide Datalogger with integrated I/O, remote control functions, integrated UPS, GPS and advanced programming

EN

CE

SENECA

ISO 9001:2015

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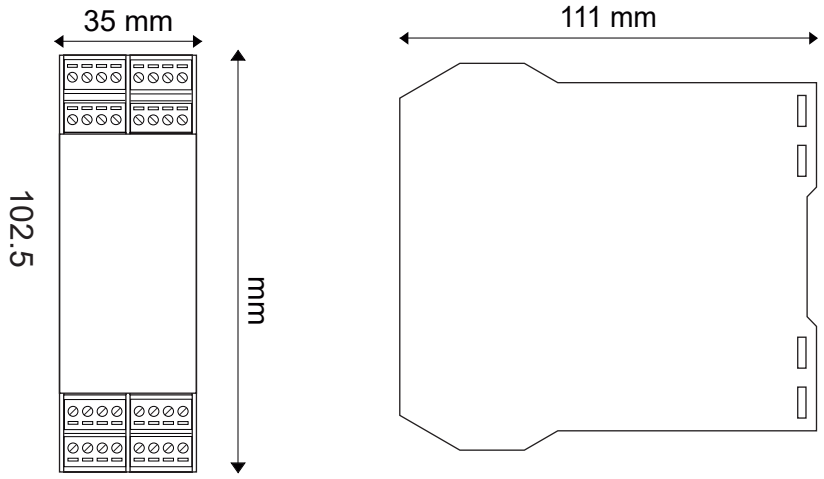
For manuals in other languages and the configuration software, visit www.seneca.it/products/z-lte

MODULE LAYOUT



Weight: 270 g;
Container: PA6, Black

SIGNALS VIA LED ON FRONT PANEL

LED	STATUS	LED meaning
PWR (Green)	ON	Log not active and status waiting for startup
	Slow flashing	Log active and status in normal operation
	Flashing intermittently	Status in operation from backup battery (battery life 1 hour)
	Fast flashing	Error, see Webserver diagnostics
	Off	Device OFF
(GSM LEVEL) (Green)	ON	Maximum signal (Level 4)
	Flashing	3 flashes (Level 3)
		2 flashes (Level 2)
		1 flash (Level 1)
	Off	Minimum signal
GSM (STATUS) (Yellow)	Short flash	Network search (200ms High / 1800 ms Low)
	Long flash	Connected (1800 ms High / 200ms Low)
	Fast flashing	Data transfer in progress (125ms High / 125ms Low)
	On	Voice call
MOD (Yellow)	On	Recorded on 4G network
	Off	Connected to another network
DO (1 and 2) (Red)	On	Digital output, relay energised
	Off	Digital output, relay de-energised
DI (from 1 to 4) (Red)	ON (NPN)	Digital input energised (GND closed contact)
	ON (PNP)	Digital input energised (contact closed to +12 V)
	Off	Digital input not energised
COM (Red)	Slow flashing	Activity in the RS485 or RS232 serial interface
	Off	RS485 or RS232 serial interfaced not used
	Fast flashing	Timeout in the RS485 or RS232 communication
SD (Red)	On	SD card inserted correctly
	Slow flashing	Activity on SD card
	Fast flashing	SD card error
	Off	No SD card
ETH LNK	Flashing	Connection on RJ45 active
ETH ACT	Flashing	Packet transit on Ethernet port

PRELIMINARY WARNINGS

The word **WARNING** preceded by the symbol ⚠ indicates conditions or actions that put the user's safety at risk. The word **ATTENTION** 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.

⚠	**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-lte
	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 the product must be surrendered to a collection centre authorized to recycle electrical and electronic waste.

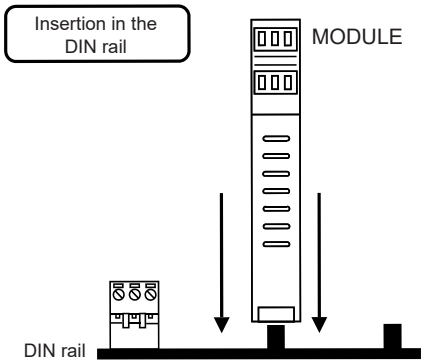
INSTALLATION REGULATIONS

The module has been designed for vertical installation on a DIN 46277 rail. For optimal operation and long life, adequate ventilation must be provided. Avoid positioning ducting or other objects that obstruct the ventilation slots. Avoid mounting modules over heat-generating equipment. Installation in the bottom part of the electrical panel is recommended.

Insertion in the DIN rail

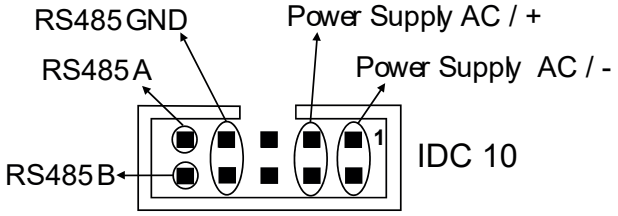
As shown in figure:

1. Insert the IDC10 rear connector of the module on a free slot of the DIN rail
   (the insertion is univocal since the connectors are polarized).
2. To secure the module to the DIN rail, tighten the two hooks on the sides of the IDC10 rear connector.



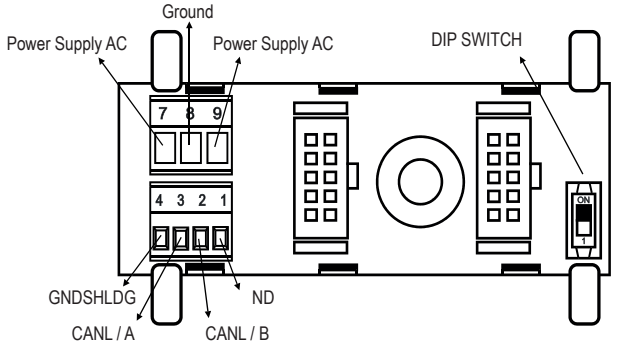
USE OF THE Z-PC-DINAL ACCESSORY

Power supply and Modbus interface are available using the Seneca DIN rail bus, via the IDC10 rear connector, or the Z-PC-DINAL-17.5 accessory.



Back connector (IDC 10)

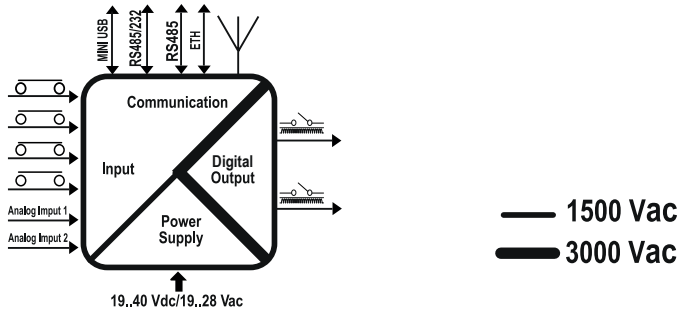
The illustration shows the meanings of the various IDC10 connector pins if signals are to be sent via them directly.



Z-PC-DINAL2-17.5 accessory use

If the Z-PC-DINAL2-17.5 accessory is used, signals can be sent via terminal boards. The illustration shows the meaning of the various terminals and DIP-switch position (found in all supports for the DIN rail listed in Accessories) for the termination of the CAN network (not used for the Modbus network).
GNDSHLD:
Connection cable signal protection shield (recommended).

TECHNICAL SPECIFICATIONS

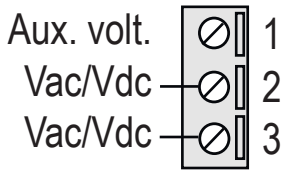
STANDARDS	**EN61000-6-4** Electromagnetic emissions, industrial environment. **EN61000-6-2** Electromagnetic immunity, industrial environment. **EN301 511** Global standards for mobile communications. **EN301 489-1** Electromagnetic compatibility for mobile radio equipment. **EN301 489-7** Specific conditions (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	IEC EN60715, 35mm DIN rail in vertical position.
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 mm², Rear IDC10, RJ45 socket, Micro USB socket and 2 SMA for 4G antenna and GPS antenna.
POWER SUPPLY	Voltage: 19 ÷ 40 Vdc or 19 ÷ 28 Vac 50 ÷ 60 Hz. Absorption: < 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 base T with autoswitch on front RJ45 socket and micro USB on 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)
4G / LTE WORLD WIDE MODEM (Z-LTE-WW)	LTE-FDD: B1/B2/B3/B4/B5/B7/B8/B12/B13/B18/ B19/B20/B25/B26/B28 LTE-TDD: B38/B39/B40/ B41 - WCDMA: B1/B2/B4/B5/B6/B8/B19 GSM: B2/B3/B5/B For further information, refer to the User Manual. Certifications: Deutsche Telekom (Europe) Verizon*/AT&T*/T-Mobile*/Sprint* (North America)
GNSS	GPS / GLONASS / BeiDou(compass) / Galileo / QZSS
STORAGE UNIT	microSD and microSDHC 32GB max.
CPU / S.O.	ARM 32bit, operating system: Real Time Multitasking, built-in Webserver and on microSD.

ELECTRICAL CONNECTIONS

CAUTION

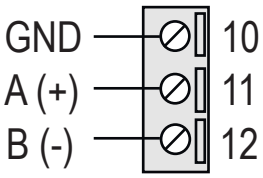
On first start-up the module must be supplied without any interruptions for at least 72 hours to charge the internal batteries. Switch the module off with the PS1 button before connecting inputs and outputs.
To meet the electromagnetic immunity requirements:

- 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, etc...).



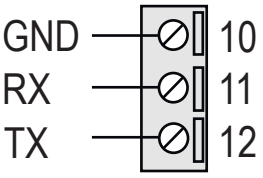
Power supply

Terminals 2 and 3 can be used to provide the module with power supply as an alternative to the connection using the Z-PC-DINx bus.
The power supply voltage must remain in the range of either 19 and 40V DC (any polarity), or 19 and 28V AC.
The upper limits must not be exceeded as this can seriously damage the module.
If the power supply source is not protected against overload, a safety fuse with a 1 A max permissible value must be installed in the power supply line.



Serial port 2: RS485 SW2 = OFF

Z-LTE has a serial port that can be set with the SW2 switch.
If switch SW2 is in the OFF position, the RS485 COM 2 port is available at terminals 10-11-12. The illustration shows how to complete connections.
N.B.: the indication of the RS485 connection polarity is not standardised and in some devices may be inverted.

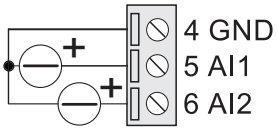


Serial port 2: RS232 SW2 = ON

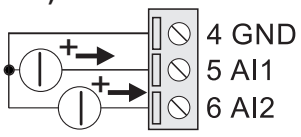
Z-LTE has a serial port that can be set with the SW2 switch.
If switch SW2 is in the ON position, the RS232 COM 2 port is available at terminals 10-11-12.
The illustration shows how to complete connections.
The RS232 interface is fully settable.

ANALOGUE INPUTS

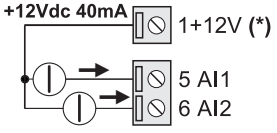
Voltage



Active sensor current (4 wires)



Passive sensor current (2 wires)

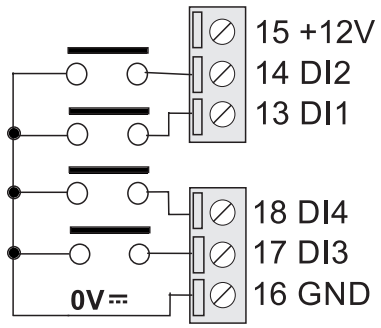


(*) Not available without external power supply

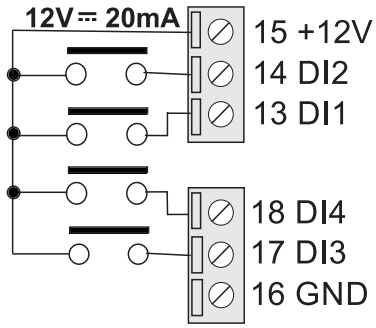
The module has two analogue inputs that can be configured via software as voltage or current. For the configuration software, see the user manual.

DIGITAL INPUTS

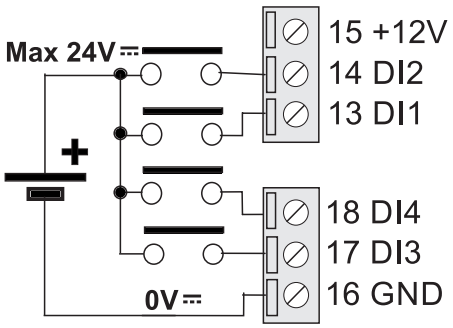
NPN with internal power



PNP with internal power

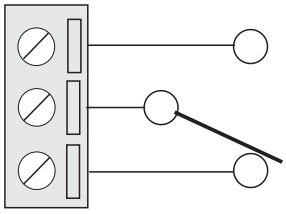


PNP with external power

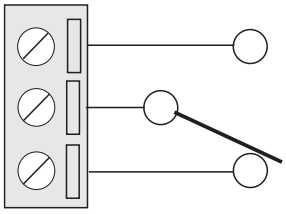


DIGITAL OUTPUTS

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

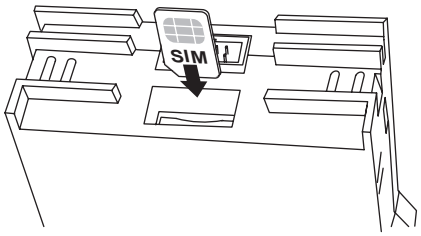


N.A.2=22
CO.2=23
N.C.2=24

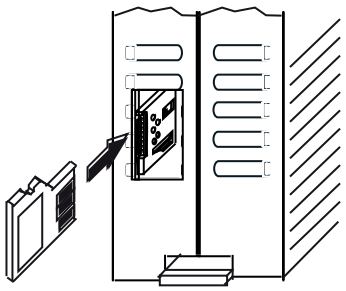


The module has two digital outputs with free contacts. The figures show the internal relay contacts available.

ANALOGUE INPUTS



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.

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 6 seconds.
When the button is released, the PWR LED turns off to indicate that the module is turned off.

DIP - SWITCH SETTINGS

DIP-SWITCHES			
SW1	Default settings: all DIP switches in OFF position. For more information see the **USER MANUAL**.		
SW2	RS232 or RS485 settings on terminals 10-11-12 (COM2 serial port)		
	RS232	**ON**	
	RS485	**OFF**	

CONTACT INFORMATION

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