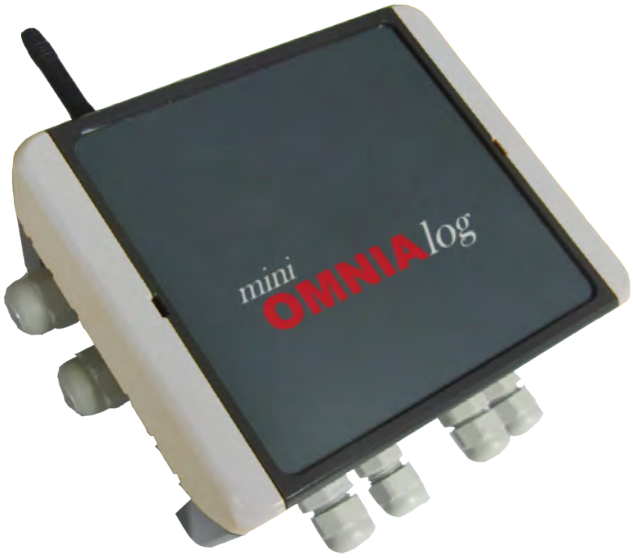
DATALOGGER

miniOMNIAlog-GPRS

NI-400-G



miniOMNIAlog-GPRS

Applications

INDUSTRY MONITORING

HVAC MONITORING

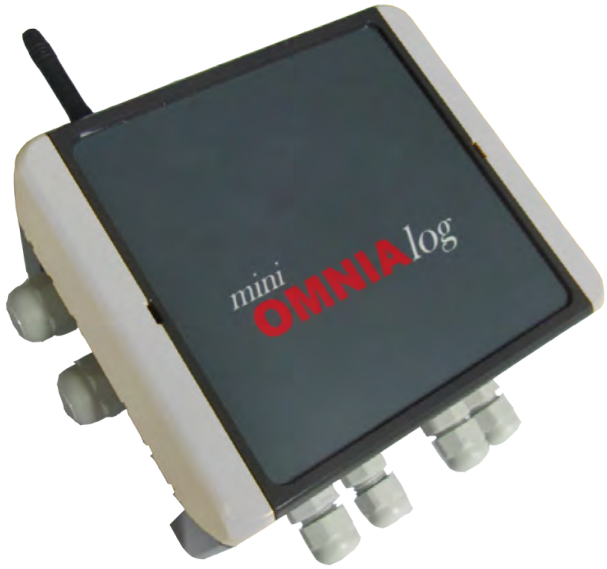
LOGISTIC MONITORING

OIL & GAS MONITORING

WATER QUALITY MONITORING

ENERGY MONITORING

BUILDING MONITORING



miniOMNIAlog

Technology skills of Next Industries plus 25 years of expertise in geotechnical instruments of Sisgeo srl have produced miniOMNIAlog - a versatile, high accurate "smart" data acquisition system - with 4 analog inputs.

With miniOMNIAlog no other configuration/analysis software package is needed as it is provided with webserver on board; just a browser and it is ready to use.
Logged data is ready to be showed in graphic "real time" mode or exported in CSV.

Features

- Available Measures: mV, mA, mV/V, PT100, NTC
- Available Webserver
- RS485 and two USB connections
- 0,05% F.S. Accuracy
- 2GB internal memory and real time data
- 4 differential analog channels
- Available GPRS version

Available Measure

voltage | temperature | current

Specifications

CPU AND MEMORY	
Processor	ARM Cortex - M3 MCU with 1 MB Flash, 20 MHz CPU, ART Accelerator, Ethernet
RAM Memory	128 Kbyte internal RAM
Mass storage	SD CARD 2 GB for data (about 5 Mega data points) and WEB pages
Clock accuracy	High precision RTC (real time clock with battery back-up) self compensated in temperature (3ppm @ 25°C, 10ppm @ -30..70°C)
On-board sensors	Temperature measured on the electronic board (accuracy ±1%)

INPUT	
Analog differential inputs	4 differentials channels, individually configured at factory. Each channel is able to acquire data from the following sensors: No.1 4-20 mA current loop (2 wires) No.1 4-20 mA (3-4 wires) No.1 Voltage (4 wires) No.½ Wheatston bridge (6 wires, utilize No.2 channels)
Modbus RTU sensor slave	max No.64 with RS-485

INTERFACES	
Display & Keyboard	7 segment LED display and two selection keys for the minimal local management without PC: device status, data download and FW/web pages update by USB pen drive
Serial port	Only for GSM/GPRS internal module connection
USB Host	USB 2.0 full speed (Type A connector) 5V, max 500 mA, pen drive only (FAT 16 or FAT 32)
USB Device	USB 2.0 full speed (Mini B connector) 5V, max 500 mA, PC connection only
RS485	5 screw clamp: DCE port for max. No.64 SISGEO digitized sensors. Communication interface: RS485 Communication protocol: MODBUS RTU The voltage 'V OUT' is switched on and off from the software. V OUT is the unregulated power supply input 'V IN' (1 A) Power supply management (always on or energy safe)
GSM/GPRS module (optional)	Quad-band EGSM 850/900/1800/1900 MHz, GPRS class 10, integrated SIM holder Extended temperature range (-40° to 85°C). Stubby antenna with SMA connector

ANALOG MEASUREMENTS	
Measurement rate (MR)	STANDARD SPEED Init. analog: 3.40 sec Instrument warm-up: depending on sensor configuration Measurement: 0.90 sec Accuracy : 0.05% FS
ADC	24-bit (22 true bit) differential Analog-to-Digital Converters, 5SPS, 0-24 Average Function, auto-calibration and auto-range
Measure type and power supply (configured at factory)	Current loop (2 wires): range 0÷25 mA Power supply: 24V DC, 12V DC (up to 25 mA), external Transmitter (3-4 wires): range 0÷25mA Power supply: 24V DC, 12V DC (up to 50 mA), external Voltage (4 wires): range ±10mV, ±100mV, ±1V, ±10V Power supply: 24V DC, 12V DC, 5 V DC (up to 50 mA), external Wheatstone bridge (6 wires, with sensing, 2 channels used): range ±10mV/V Max bridge resistance: 10 kΩ, min. bridge resistance: 200 Ω Power supply: 5 V DC (up to 50 mA) Thermistor (NTC 3KΩ): range -50°C to +150°C Power supply: 0.05mA / 0.1mA
Reading resolution	1 µA at FS 20 mA - 1 µV at FS ±10 mV - 10 µV at FS ±100 mV - 100 µV at FS ±1 V - 1 mV at FS ±10 V 0.1 °C for NTC - 0.1 Hz at FS 6000 Hz - 0.001 mV/V at FS ±10 mV/V
Measurement accuracy	< 0.05% FS (0.1% FS for NTC) - with Standard Measurement
Temperature drift	< 10ppm/°C, range -30°C to +70°C
Input noise voltage	5,42 µVpp
Input limits	±12V
Sustained input voltage w/o damage	±50V DC max
DC common mode rejection	>105dB
Normal mode rejection	>90dB
Input impedance	20 GΩ typical

OUTPUT	
Digital output	One relay output (for alarm, etc.): volt-free closure (low voltage 30V, 1A)

PROTECTIONS	Electro-mechanical relays for each measuring channel: Electrical endurance: min. $2.5x10^6$ operations, Mechanical endurance: $100x10^6$ operations. Circuit protection: Gas Discharge Tubes: DC Breakdown Voltage(@100v/s) 90; tolerance of DCBV ± 20%; impulse Breakdown Voltage (@100v/µs) 250. impulse Breakdown Voltage (@1kv/µs) 500. Overvoltage and reverse polarity protection. Short circuit protection on every outputs.

SYSTEM POWER REQUIREMENTS	
Voltage	7.2 to 14 V DC (reverse polarity protected), max 12 W
External rechargeable battery (i.e. solar panel system)	12V DC nominal
Internal non-rechargeable batteries (no external power supply)	6 batteries size AA, chemistry Lithium/ Iron disulfide (Life s2), nominal voltage 1.5 V, min 2 A continous current discharge, min 2 A pulse capability, min 3 Ah capacity
Operating time with internal batteries	> 2 months with 1 acquisition every 1 hour with no.4 instruments (24V DC @12 mA @25 °C, 5 sec warm up), data transmitted via FTP/email after every acquisition, datalogger configured in "Timed mode" > 6 months with 1 acquisition every 1 hour with no.4 instruments (24V DC @12 mA @25 °C, 5 sec warm up), data transmitted via FTP/email once a day, datalogger configured in "Timed mode". > 7 months with 1 acquisition every 1 hour with no.4 instruments (24V DC @12 mA @25 °C, 5 sec warm up), no data transmission, datalogger configured in "Timed mode".
Typical current drain (@9 V)	Sleep mode: 60µA On: 10 mA On with display on: 40 mA Analog initialisation: 27 mA Measurement: 70 mA (with 12 mA @ 24 V sensor consumption) On with GPRS module: 104 mA (typically), 350 mA peak

ENVIROMENTAL CONDITIONS	
Operating temperature	-30 to +70°C (batteries -20 to +60°C)
Storage temperature	-40 to +85°C (batteries 0 to +40°C)
Protection	IP67
Humidity	80%
Overvoltage category	II
Pollution degree	2
Sound levels	< 74dBA
Maximum height of use	3000m

SOFTWARE & FIRMWARE	Web server on board (independent OS platform) Live update (firmware and web pages) FTP client to sent data/alarms on a FTP server (SFTP not supported) MAIL to sent data/alarms to max 5 email address (SMTPS / SSL not supported) SMS to sent alarms to max 5 telephone numbers Data download (readings, logs) in .csv file (compatible with Microsoft Excel) Virtual channels management Languages: Italian, English and French

PHYSICAL CHARACTERISTICS

Weight	780 grams (batteries included)
Dimensions (L x W x H)	151 x 125 x 90 mm (without cable gland and antenna)
Material	Polycarbonate
Wiring	Spring-cage PCB termination blocks; it clamps solid and stranded conductors up to 0.5 mm^2 (20 AWG)
Calibration	Recommended every 2 years

We reserve the right to change our product without prior notice.