NI100
DATALOGGER

NI100

NI100 SERIES
4/6 CHANNELS ETHERNET DATA LOGGERS
with embedded webserver

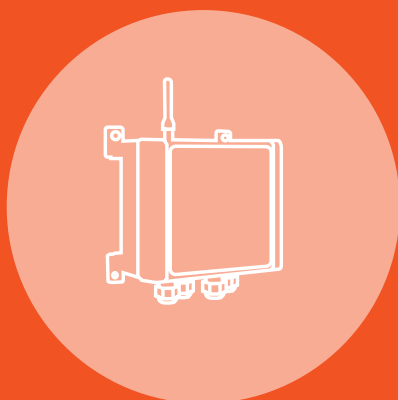NEXT
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SPECIFICATIONS

- NI101 : 4 Thermocouple input channels
- NI102 : 4 single ended voltage (0-30V) input channels and 2 thermocouple input channels
- NI103 : without internal analog input, expandable through external modules
- Thermocouple type: J,K,T,E,R,S,B,N
- Cold Junction Compensation
- GPRS Modem available
- Ethernet, RS485, RS232 and USB Host connections
- SMS and email alerts, Webserver on board
- Modbus sensors

PHYSICAL CHARACTERISTICS	
Weight	590 g (1.3 lb)
Dimensions (L x W x H)	231 L x 138 W x 75 mm H (9.09 x 5.43 x 2.9")
Material	Plastic
Wiring	Removable screw terminal connectors

CPU AND MEMORY	
Processor	ARM Cortex-M3 MCU with 1MB Flash, 120MHz CPU, ART Accelerator, Ethernet
RAM Memory	1Mbyte RAM
Mass storage	2GB SD Card for data (about 5 Mega data points) and Web pages

INTERNAL ANALOG INPUT (models NI101 and NI102 only)	
Input number	2 possible configurations:- 4 thermocouples - 2 thermocouples and 4 analog input (0-30V)
ADC	16bit analog to digital converters, 8SPS to 869SPS

RS485: N° 2 OPTO-ISOLATED	
Connection	5 screw clamp port for max. No.254 Modbus RS485 digital bus sensors
Communication Interface	RS485
Communication Protocol	MODBUS RTU
Voltage "V OUT"	Switched on and off under program control. V OUT is the unregulated input power supply 'V IN' (1 A).
Power Supply Management	Always on or energy safe

Thermocouple	Range	Accuracy	Resolution
(probes sold separately)			
Type J	-210° to 760°C (-346° to 1,400°F)	±0.6°C (±1.08°F) ± thermocouple probe accuracy	0.03°C (0.06°F)
Type K	-260° to 1,370°C (-436° to 2,498°F)	±0.7°C (±1.26°F) ± thermocouple probe accuracy	0.04°C (0.07°F)
Type T	-260° to 400°C (-436° to 752°F)	±0.6°C (±1.08°F) ± thermocouple probe accuracy	0.02°C (0.03°F)
Type E	-260° to 950°C (-436° to 1,742°F)	±0.6°C (±1.08°F) ± thermocouple probe accuracy	0.03°C at (0.05°F)
Type R	-50° to 1,550°C (-58° to 2,822°F)	±2.2°C (±3.96°F) ± thermocouple probe accuracy	0.08°C (0.15°F)
Type S	-50° to 1,720°C (-58° to 3,128°F)	±2.2°C (±3.96°F) ± thermocouple probe accuracy	0.08°C (0.15°F)
Type B	+60° to 1,820°C (1,022° to 3,308°F)	±2.5°C (±4.5°F) ± thermocouple probe accuracy	0.1°C (0.18F)
Type N	-260° to 1,300°C (-436° to 2,372°F)	±1.0°C (±1.8°F) ± thermocouple probe accuracy	0.06°C (0.11°F)
Cold Junction Compensation		Type: automatic (integrated Electronic Temperature Sensor) Accuracy +/- 0.5 °C	

DIGITAL INPUT & OUTPUT

Digital output	One relay output (for alarm, etc.): volt-free closure (low voltage 30V, 2A)
Digital Input	Two opto-isolated digital inputs individually selectable for switch closure. • Max Input Voltage: 24V (max current: 10mA) • Min Input Voltage: 5V (max current: 2mA) • Measurement Rate (MR): max frequency 1 kHz • Accuracy: 0.1 Hz

SYSTEM POWER REQUIREMENTS

Voltage (External Power Supply)	10 to 30 Vdc (reverse polarity protected),
Typical Current Drain (@12 Vdc, External Power Supply)	• Sleep Mode(MAX): 315 µA • ON: 62 mA - ON with ethernet connected: 87 mA - ON with display ON: 115 mA • ON with display ON and ethernet connected: 142 mA

INTERFACES

Display & Keyboard	Small backlight graphic LCD 128 x 64 dpi with membrane keyboard for the minimal local management without the PC. Keyboard for starting a data acquisition scan, sequential display of the last stored readings for each channel (sensor ID, converted unit reading, unit of measure), device status, data download and firmware/Web pages update by USB pen drive, safe mode (back-up/format/restore internal SD card)
LAN Ethernet Isolated	10/100 Mbps, RJ45
RS232	9-pin, DE9: DCE port for optional GSM/GPRS modem connection
USB	USB 2.0 pen drive only (FAT 32), 5 V 200 mA

SOFTWARE & FIRMWARE

• Web server on board (independent OS platform)

• Acquisition Time Interval: selectable from 1 second up to 1 week (depends on the number of channels acquired)

• FTP client to send data/alarms on an FTP server (SFTP not supported)

• MAIL to send data/alarms to max 5 email address (SMTPS / SSL not supported)

• SMS to send 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

ENVIROMENTAL CONDITIONS

Operating Temperature:	-20 to 60°C (-4 to 140°F)
Storage Temperature	-40 to 85°C (display -30 to 80°C)
Relative Humidity	80% RH non condensing

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INTERNET OF THINGS
SENSORS

WEB **SOFTWARE**

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