



MPI-8E

PORTABLE 8-CHANNEL DATA LOGGER



- 8 analog channels
- Graphic LCD touch screen
- Internal memory 2 GB
- USB port on the front panel
- RS-485 communication port
- Power supply from internal battery, 230 VAC or 12 VDC (e. g. car lighter socket)
- Heavy-duty case

8 ANALOG INPUTS:

Independent setup for input sensors:

- **RTD** sensors (Pt100, Pt200, Pt500, Pt1000) 2- or 3-wire,
- **thermocouples** (J, K, T, E, N, B, R, S),
- transducers with 4-20mA (4-20mA current loop can be supplied from the device) or 0-20mA current loop output,
- transducers with linear resistance output **0...100 ohm, 0...1000 ohm**,
- transducers with linear voltage output **-1 V...+1 V**.

ALARMS & CONTROL, OUTPUT RELAYS:

- 4 alarm and control thresholds for each channel.
- The alarm mode is indicated by a LED on the front panel or an appropriate message on the display.
- An alarm threshold exceedance can be recorded in the event log.
- An alarm threshold can change data recording rates.

DATA RECORDING:

- Recording data to internal 2GB memory.
- Local access to recorded data through USB port on front panel.
- Protected files with the encrypted checksum.
- Recording frequency from 3 s to 24 h; possible to define two switched frequencies depending on alarm threshold state.

COMMUNICATION WITH THE MASTER SYSTEM:

- RS-485 port, ASCII or Modbus RTU protocol.

VIEWING THE RESULTS:

- Graphic LCD touch screen.
- 4 LEDs (ALARM, REC, TxD/RxD, BATT).





USE OF INTERNAL BATTERY:

- The battery operating time is rated for approximately from 70 hours (when RTD sensors are connected) to 8 hours of operation (when 4-20mA transducers are connected and supplied from the device)
- Charging the battery does not require a interruption of device operation.
- The battery is charged from an external source of 230 VAC or 12 VDC (e.g. from car cigarette lighter).

PORTABLE HOUSING:

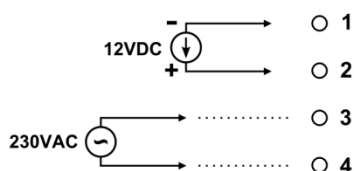
- The housing is made of plastic (polypropylene, ABS).
- With the reinforced and highly waterproof (IP67 when closed or IP54 when open) case cover, the device can be operated in adverse ambient conditions.
- Three types of sockets configuration, the ability to configure customized as per customer requirements.

VERSIONS:

		user demand version
MPI-8E	-0 all sockets M-12 on the front panel	-[xxx]
	-1 input signal and power supply sockets outside the case, RS485 socket on the front panel	-[xxx]
	-2 input signal sockets outside the case, power supply and RS485 sockets on the front panel	-[xxx]

MPI-8E

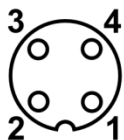
SUPPLY



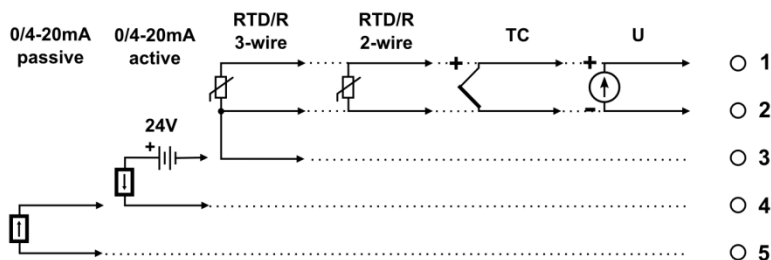
socket



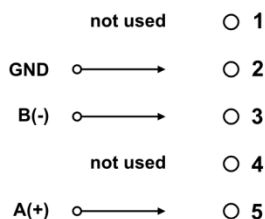
plug



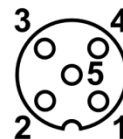
ANALOG INPUTS



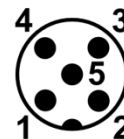
RS485 PORT



socket



plug



version: 2013-03-04

Device version MPI-8E v2.00 / Data sheet version: 2013-04-23



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Quality Management

We are certified

Voluntary participation in regular
monitoring according to ISO 9001:2008



TECHNICAL DATA

INPUTS	
Number of inputs:	8, electronically multiplexed
Galvanic separation between channels:	No
Galvanic separation from supply voltage:	No
Maximum input voltage:	12 VDC or 12 V _{p-p} (between any of 1, 2, 3, 4, 5 clamps)
Measurement accuracy:	As specified in the table for the given sensor type
RTD input configuration	
Current:	200 μ A
Connection:	3-wire or 2-wire
Wire resistance compensation in the 3-wire connection:	Automatic + constant within the range of $-9,99 \Omega$ to $9,99 \Omega$
Wire resistance compensation in the 2-wire connection:	Constant within the range of $-9,99 \Omega$ to $9,99 \Omega$
Maximum resistance of wires (to the sensor):	50 Ω
TC input configuration	
Cold junction compensation:	With PT100 sensor on IN8 (IN4 for MPI-8W/4) or constant value
Cold junction compensation range:	$-99,9^{\circ}\text{C}$ to $+99,9^{\circ}\text{C}$
Maximum input voltage:	15 VDC or 15 V _{p-p} (between any of 1, 2, 3, 4, 5 clamps)
Maximum resistance of wires (to the sensor):	2 x 300 Ω
R input configuration	
Transducer resistance range:	0-100 Ω ; 0-1000 Ω
Conversion characteristic:	Linear
Connection:	3-wire or 2-wire
Wire resistance compensation in the 3-wire connection:	Automatic + constant within the range of $-9,99 \Omega$ to $9,99 \Omega$
Wire resistance compensation in the 2-wire connection:	Constant within the range of $-9,99 \Omega$ to $9,99 \Omega$
Maximum resistance of wires (to the sensor):	50 Ω
Temperature drift (between 0 and 50°C):	0.025% of the range/ 10°C , internal compensation of temperature drift
Configuration of 0/4-20mA inputs:	
Input resistance:	10 Ω +/-2%
Conversion characteristic:	Linear
Transducer supplied from device:	Yes, 12VDC, 20mA max / channel
Thermal protection of 0/4-20mA inputs:	Yes, polymer fuse to disconnect the signal's current loop
Configuration of ± 1 V input	
Conversion characteristic:	Linear
Connection:	2-wire
Transducer supplied from device:	No
Thermal protection of ± 1 V inputs:	No
Input resistance:	< 100 k Ω
FRONT PANEL	
Type of display:	Graphical LCD 64x132 with touchscreen, white LED backlight (41mm x 94mm)
Indication:	4 double-colour LEDs
Signal connections:	M12



USB port connector:	USB type A
Power switch:	Standard switch on / off
RS-485 SERIAL PORT	
Signals output on terminal block:	A(+), B(-), GND
Galvanic separation:	No
Maximum load:	32 receivers / transmitters
Transmission protocol:	ASCII / MODBUS RTU (limited)
Maximum length of line:	1300 m
Transmission rate:	2.4, 4.8, 9.6, 19.2, 38.4, 57.6, 115.2, 230.4 kbps
Parity control:	Even, Odd, None
Frame:	1 start bit, 8 bits of data, 1 stop bit
Maximum differential voltage A(+) – B(-)	+/-14V
Maximum total voltage A(+) – B(-) – "neutral" or B(-) – "neutral":	-7V ... +12V
Minimum output signal of transmitter:	1.5V (at $R_0=27\ \Omega$)
Minimum sensitivity of receiver:	200mV / $R_{WE}=12\ k\Omega$
Minimum impedance of data transmission line:	27 Ω
Short-circuit / thermal protection:	Yes
INTERNAL MEMORY	
Capacity:	Flash 2GB
Maximum number of stored records:	248016 for 32MB, 1000144 for 128MB
Recorded format:	Text file, FAT 16
POWER SUPPLY	
Supply voltage:	230 VAC (+5% / -10%) / 50 Hz / 15 VA 12 VDC (10 .. 15 VDC) / 1 A
INTERNAL ACCUMULATOR	
Type:	Ni-MH 7,2 V / 3000 mAh
Working time:	max. 70h (depends on version and option)
Charging time:	ca. 6h max
WORKING CONDITIONS	
Ambient temperature during operation:	-10 ... +50 °C
Ambient temperature Turing accumulator charging:	0 ... +30 °C (recommended)
Storage temperature:	-20 ... +60 °C
Relative humidity during operation	5 ... 90 % without condensation
MECHANICAL DIMENSIONS - HOUSING	
Type of housing:	Polypropylene / ABS case
Dimensions (height X width X depth):	124mm X 246mm X 270mm
Weight:	approx. 2,6 kg
Protection class:	IP 67 – closed case IP-54 – opened case





Table of sensors type:

INPUT TYPE	RANGE	PITCH	PRECISION	CHARACTERISTIC
Pt100 / Pt1000	-200 do +850 °C	0,1 °C	+/-0,5 °C	IEC751
Pt100+ / Pt1000+	-50 do +150 °C	0,01 °C	+/-0,3 °C	IEC751
Ni100	-60 do +250 °C	0,1 °C	+/-0,5 °C	DIN43760
J (Fe - CuNi)	-200 do +1000 °C	0,1 °C	+/-0,5 °C	IEC584
K (NiCr - Ni)	-250 do +1300 °C	0,1 °C	+/-0,5 °C	IEC584
T (Cu - CuNi)	-270 do +400 °C	0,1 °C	+/-0,5 °C	IEC584
E (NiCr - CuNi)	-270 do +1000 °C	0,1 °C	+/-0,5 °C	IEC584
N (NiCrSi - NiSi)	-50 do +1300 °C	0,1 °C	+/-2 °C	IEC584
B (Pt30Rh -Pt6Rh)	300 do +1800 °C	0,1 °C	+/-2 °C	IEC584
R (Pt13Rh - Pt)	0 do +1750 °C	0,1 °C	+/-2 °C	IEC584
S (Pt10Rh - Pt)	0 do +1750 °C	0,1 °C	+/-2 °C	IEC584
4-20 / 0-20 mA	-9000 do +99 999	0,001 do 1	+/-0,1%	Linear
R	-9000 do +99 999	0,001 do 1	+/-0,1%	Linear

Device version MPI-8E v2.00 / Data sheet version: 2013-04-23

