MULTICHANNEL DATA RECORDERS

MultiLog

BASI

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Measure,
Control and Log Data

Introduction

- **universal inputs: RTD + TC or U + I (SRD-99)**
- **fixed inputs: RTD, TC, U, I (SRD-N16)**
- **2 relay outputs**
- **memory up to 3 000 000 records**
- **quick data transfer via ports: USB Host (USB flash drive),**
  USB PC (wire), RS-485 (Modbus RTU)
- **display measured values in °C or °F**
- **12V AC/DC (11-16V DC/10-13V AC) power supply** NEW
- **backlight: amber or white**
- **panel or wall mount version**

universal inputs

The **MultiLog** line instruments have been designed to display and record current values, as well as to present technological parameters in a graphical form. The devices are equipped with up to 8 measuring inputs. The panel mounted version, **BDL-99**, operates universal temperature or analogue inputs, which enables connecting different types of sensors to one device, while the wall mounted version, **BDL-N16**, operates fixed inputs. A USB flash drive enables a significant simplification of the unit application: it is no longer necessary to connect a PC and data logger via the RS-485 interface, data downloading can be completed 10 times sooner than in case of using the RS-485 port.

The **MultiLog** is equipped with 2 relay outputs. The main function of the outputs is to signal critical situations, but thanks to the expanded menu it is possible to use it in numerous control and regulation applications. Both outputs can be driven by a single measurement channel or by a group of channels (from 1 to 8 channels) with individually adjustable thresholds for every measurement channel. Signalising output states is displayed in two fields, R1 and R2, in the left upper corner of the LCD screen.

1, 4 or 8 universal inputs
RTD + TC or U + I

digital input 24V DC

2 relay outputs

USB Host port
USB PC

communication RS-485

IP 65 front protection

graphic LCD 2,9" display,
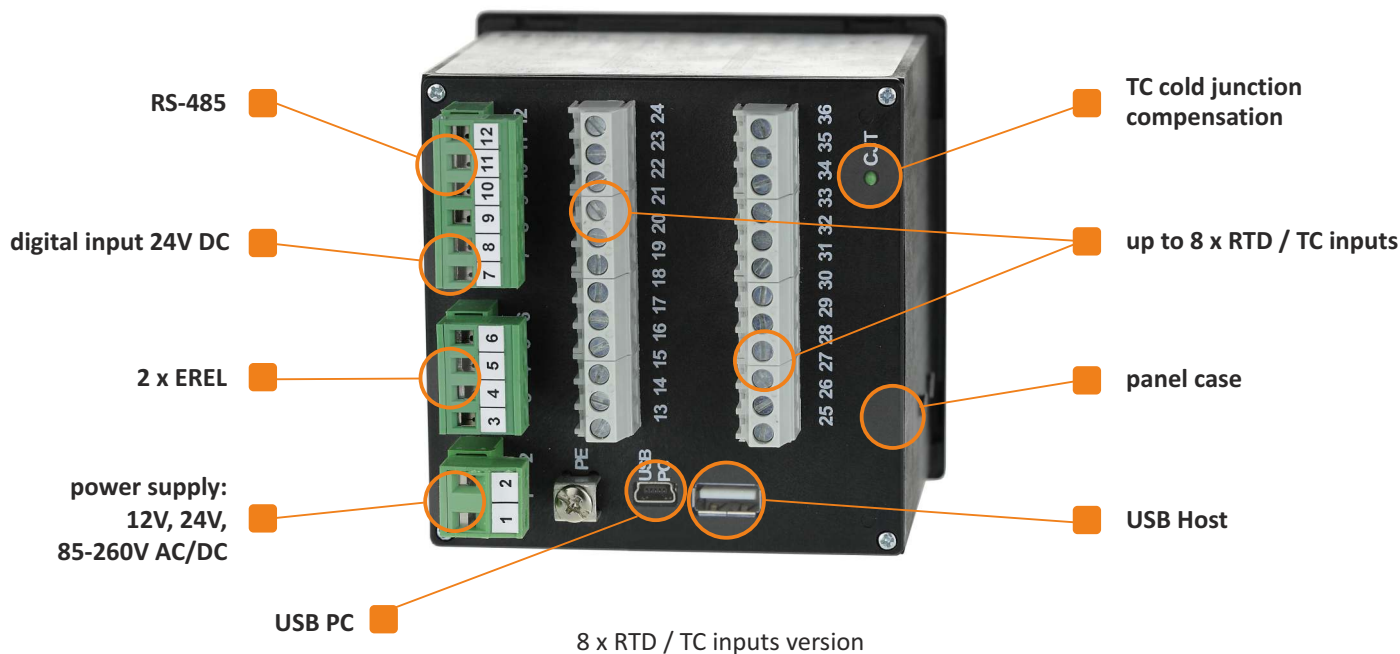**128 x 64 points**

display backlight: amber or white

up to 3 000 000 records

data recording period
1 s - 60 min

various methods
of data presentation

free configuration
and recording software

Sample configuration

RS-485

digital input 24V DC

2 x EREL

power supply:
12V, 24V,
85-260V AC/DC

USB PC

TC cold junction
compensation

up to 8 x RTD / TC inputs

panel case

USB Host

8 x RTD / TC inputs version

MultiLog line

The **BDL-99** is the first device in MultiLog line. It's equipped with a 2,9" monochrome graphic LCD display which makes user-friendly, easy and comfortable configuration and data presentation readable and attractive. It can integrate up to eight universal inputs: temperature (RTD + TC) or analogue (U + I), one digital input for controlling a recording process, 2 electronic relay outputs with max. load 24V AC (35V DC) 200 mA, USB PC port for direct (by cable) PC connection to share data and USB Host port (front or rear) for flash data storage and configuration transfer. Main function of outputs is a signalisation of critical situations, but thanks to expanded menu it is possible to use it in numerous control and regulation applications.

96 mm

96 mm

100 mm

As a result of extending the range of functional applications of the MultiLog line, the **BDL-N16** wall mounted model has been designed. The new IP 65 enclosure allows using the device in harsh environments, where safe installation of a typical controller / data recorder in a panel mounted enclosure is impossible. It's equipped with a 2,9" monochrome graphic LCD display which makes user-friendly, easy and comfortable configuration and data presentation readable and attractive. It can integrate up to eight fixed (RTD, TC, U or I) inputs, one digital input for the recording process control, 2 relays with max. load 1A/250V AC and one USB Host port (front or rear) for flash data storage and configuration transfer. Main function of outputs is a signalisation of critical situations, but thanks to expanded menu it is possible to use it in numerous control and regulation applications.
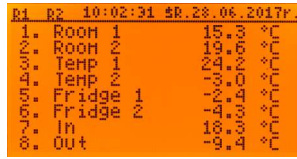
161 mm

166 mm

103 mm

Data presentation

The individual text description of each recorded channels is possible. The multi-language menu assisted with full text descriptions makes the unit configuration process fast and easy.
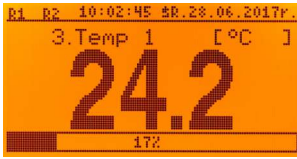
Real time measurement value
18 mm high digits

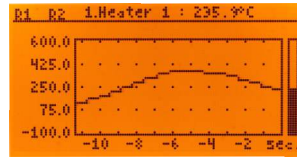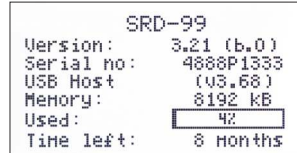Up to 8 channels displayed
on one screen

Chart view

Amber backlight

Main setting menu

Logging set-up

Device information

White backlight

Data recording

3 000 000 data records!

The MultiLog can record all 8 measurement channels at a speed of 1 sample per second. It has 8 MB built-in flash memory, what allows continuous data recording for over 9 months (8 measuring channels recorded every 1 min), enabling for data logging up to 3 000 000 records. However when a USB flash drive is plugged in the USB Host port permanently, it can significantly extend the recording time without a need of data transfering from MultiLog to a PC. The recording process is synchronized with the internal real time clock and can be stopped by a digital input of the unit at any moment.

■ Data download

The recorded data can be downloaded from the internal memory in a way which suits you best. Use a USB flashdrive or RS-485 port which allows you to perform the task wherever you are. To download data from the data logger connect it to PC via USB/RS-485 or RS-232/RS-485 serial converter and use Loggy Soft delivered with the device. If data logger is equipped with USB Host port, then the stored data can be downloaded from the data logger without PC connection.

recording mode	intense (every 1 sec.)	medium (every 10 sec.)	economy (every 1 min.)
1 channel	330 h	130 days	27 months
4 channels	170 h	70 days	15 months
8 channels	100 h	45 days	9 months

transfer data
USB / RS-485
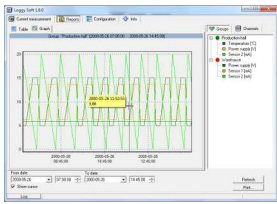
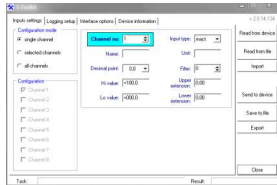# Software

To manage such vast amount of data we have designed the free of charge **Loggy Soft** software to help you. The software allows to:
- visualize data in the form of graphs and tables,
- group measurement results,
- create reports,
- export data into csv files,
- archiving and printing of measurements (e.g. temperature, humidity, pressure).

The **S-Toolkit** software enables configuration reading and writing operations, updating the device firmware and obtaining basic information on MultiLog line devices through RS-485 serial interface or flash-disk devices plugged into USB port. This application enables to quickly and easily define device parameters in one of three possible configuration models. The set of parameters can be transmitted directly to the device or stored in a file for future use.

Loggy Soft and **S-Toolkit** software can be free downloa**d**

Specification

	BDL-99	BDL-N16
Power supply **Power consumption**	12V AC/DC (11 ÷ 16V DC / 10 ÷ 13V AC); 24V AC/DC (19V ÷ 50V DC / 16V ÷ 35V AC) or 85 ÷ 260V AC/DC, all separated 7 VA typ., 12 VA max.	12V AC/DC (11 ÷ 16V DC / 10 ÷ 13V AC); 24V AC/DC (19V ÷ 50V DC / 16V ÷ 35V AC) or 85 ÷ 260V AC/DC, all separated 3 VA typ., 5 VA max.
Display	graphic LCD, 128 x 64 points, with backlight (amber or white)	
Measuring inputs **Digital input**	1, 4 or 8 universal U/I version: 0/4-20 mA, 0/1-5 V, 0/2-10V or mixed; RTD/TC version: Pt100, Pt500, Pt1000, TC (K, S, J, T, N, R, B, E), 0-60 mV, 0-75 mV, 0-100 mV, 0-150 mV or mixed; 1 x 24V DC, optocoupled	1, 4 or 8 fixed I version: 0/4-20 mA; U version: 0/1-5 V, 0/2-10V; RTD version: Pt100, Pt500, Pt1000; TC version: TC (K, S, J, T, N, R, B, E), -30-80 mV, -50-120 mV; 1 x 24V DC, optocoupled
Measuring range	I (0/4-20 mA), U (0-10V): ± 9999 + decimal point, resolution > 1mV RTD: -100.0°C ÷ +600.0°C with resolution 0,1°C; -148°F ÷ +999,9°F with resolution 0,1°F TC: -200°C ÷ +1370°C (K); -50°C ÷ +1768°C (S); -210°C ÷ +1200°C (J); -200°C ÷ +400°C (T); -200°C ÷ +1300°C (N); -50°C ÷ +1768°C (R); +250°C ÷ +1820°C (B); -200°C ÷ +1000°C (E)	
Outputs	2 electronic relays (ER1, ER2), max. load 24V AC (35V DC) / 200 mA	2 relays (R1, R2), I_{max}=1A, U_{max}=30VDC/250VAC (cosø=1)
Sensor supply output	only U/I version: 24 V DC ± 5%, max. 200 mA (24V and 85 ÷ 260V AC/DC), 24 V DC ± 5%, max. 50 mA (12V AC/DC)	
Data recording period	1 s / 2 s / 5 s / 10 s / 15 s / 20 s / 30 s / 1 min / 2 min / 5 min / 10 min / 15 min / 20 min / 30 min / 60 min	
Communication	RS-485 (Modbus RTU), galvanically isolated, 1200 ÷ 115200 bit/sec, 8N1/8N2, USB PC, USB Host port (front or rear)	RS-485 (Modbus RTU), galvanically isolated, 1200 ÷ 115200 bit/sec, 8N1/8N2, USB Host port
Memory capacity	8 MB internal (up to 3 000 000 data records)	
Operating temperature	0°C ÷ +50°C (standard), -20°C ÷ +50°C (option)	
Storage temperature	-10°C ÷ +70°C (standard), -20°C ÷ +70°C (depending on option)	
IP rate protection	IP 65 (device front side, rear USB version), optional IP 65 version including gasket for panel cut-out sealing or IP 54 transparent door with key. IP 40 (front USB version)	IP 65
Certificates	safety requirements: PN-EN 61010-1; EMC: PN-EN 61326-1; vibration immunity: 5-150 Hz @ 1g, EN-61131-2	safety requirements: PN-EN 61010-1; EMC: PN-EN 61326-1
Case	panel mount; material: NORYL - GFN2S E1	wall mount; material: ABS (case), polycarbonate (front panel)
Dimensions	case (WxHxD): 96 x 96 x 100 mm; panel cut-out dimensions: 90,5 x 90,5 mm; installation depth: min. 102 mm; board thickness: standard 7 mm, other depending on used board thickness brackets	166 x 161 x 103 mm (without glands); 166 x 191 x 103 mm (with glands)
Glands (depend on number of channels)	no glands	1 channel: 2 x M20 (multi hole inserts 2 x 5 mm), 1 x M16 4 channels: 3 x M20 (multi hole inserts 2 x 5 mm), 1 x M16 8 channels: 2 x M25 (multi hole inserts 4 x 5 mm), 1 x M20 (multi hole inserts 2 x 5 mm), 1 x M16

Pin assignment and Ordering

MultiLog

BDL-99X-XX28-5X-X-0XX

backlight colour:
A : amber
W : white

number and type of inputs:
18 : 1 x U/I
48 : 4 x U/I
88 : 8 x U/I
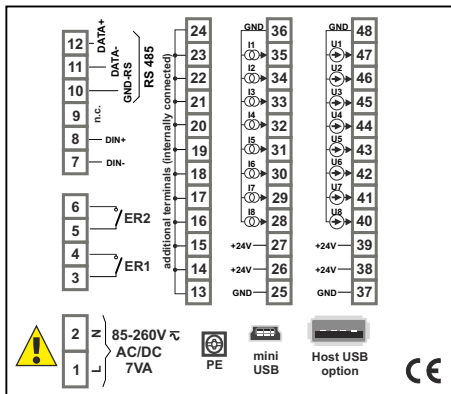1T : 1 x RTD/TC
4T : 4 x RTD/TC
8T : 8 x RTD/TC

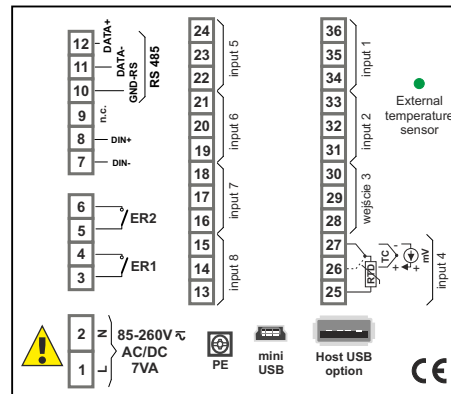**USB interface:**
1 : front USB Host
2 : rear USB Host

options:
01 : no options
11 : IP 65 gasket (rear USB Host port only)
81 : operating temp. -20°C ÷ +50°C + PCB conformal coating
P1 : IP 65 gasket + operating temp. -20°C ÷ +50°C
    + PCB conformal coating (rear USB Host port only)

power supply:
3 : 24V AC/DC
4 : 85V - 260V AC/DC
5 : 12V AC/DC

U/I version

RTD/TC version

BDL-N16X-XX21-1-X-XX1

backlight colour:
A : amber
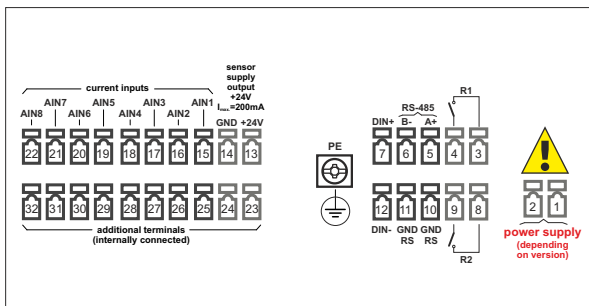W : white

number of inputs:
1
4
8

type of inputs:
1 : I (0/4-20 mA)
2 : U (0/1-5 V, 0/2-10V)
3 : RTD (Pt100, Pt500, Pt1000)
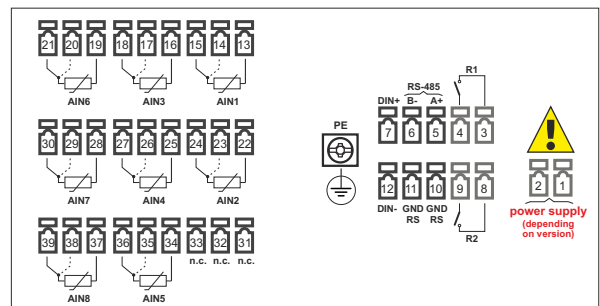A : TC (K, S, J, T, N, R, B, E)

options:
0B : USB Host (standard)
0K : USB Host + operating temp. -20°C ÷ +50°C
    + PCB conformal coating

power supply:
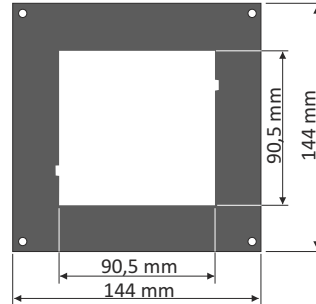3 : 24V AC/DC
4 : 85V - 260V AC/DC
5 : 12V AC/DC

I version

RTD version

Accessories

Security door with lock

BTD-99

A transparent door with IP 54 rate and lockable with security key, for 96 x 96 mm case

100 mm

98 mm

Mounting plate

BMP-1414/99
to mount 96 x 96 mm size unit in place of 144 x 144 mm cut-out

144 mm

90,5 mm

90,5 mm

144 mm

Board thickness brackets / adaptors

BPH-07
1 ÷ 7 mm board thickness brackets (2 pcs)
standard included with device

BPH-45
1 ÷ 45 mm board thickness brackets (2 pcs)

BPH-05
1 ÷ 5 mm board thickness brackets (2 pcs)

BRH-99
brackets for mounting devices on DIN 35/7.5 or 15 rail (2 pcs)

Pendrive

MF-8 mini pendrive / memory stick, **8 GB** + strap

An unusually small and light USB flashdrive has been designed with easy storage and transport in mind, fits perfectly in the case with closed IP 54 rate door.

Converters

The **BRS-U4** converter is designed to connect a USB host to slave devices equipped with RS-485 interface. The PC with special software can be used as a host. The **BRS-U4** unit guarantees full galvanic isolation between USB and RS-485 circuits. The converter can work with any devices equipped with RS-485 interface and contains integrated circuit which supports USB 1.1 and USB 2.0 standards. The main purpose is connection of PC host computer with industrial data acquisition and visualisation systems based on RS-485 interface. The **BRS-U4** can be also manufactured with DIN mounting adaptor.

Complementary accessories

BCL-N16
case lock

B130 portable case for **MultiLog**