



Level



Pressure



Flow



Temperature



Liquid  
Analysis



Registration



Systems  
Components



Services



Solutions

## Technical Information

# Minilog B, Version II

## Data-logger

Collects measured values with 2 input channels for storing analog and digital values



### Features and benefits

- Variable sensor connections using 0/4 to 20 mA, 0 to 1V or Pt100, as well as relay contact for event or pulse counting
- Instantaneous value or min./max./average value recording
- Measured value storage always includes time and date
- Stores up to 64,000 measured values
- Presettable storage cycle from 1 minute to 24 hours
- Stand-alone battery powered unit, or version suitable for external power supply available
- Small, economical, maintenance free, NEMA 4 (IP 65)
- User friendly data analysis using the ReadWin® 2000 software package
- Selectable display function
- Certifications



### Application

- Independent data storage for temperature, humidity, pressure, flow, level, and analysis values
- Temperature monitoring: Store temperatures and transport temperature measurement
- Event and operation time recording
- Access monitoring
- Piece part and quantity recording
- Quantity recording by totalizing the analog signal
- Measured values can be automatically recorded and stored independently from main power supply
- Start analog value recording using an external digital control signal
- ON/OFF signals are stored using date and time and displayed in ReadWin® 2000 software

## Function and system design

### Function

The battery-powered Minilog B version II data-logger records analog and digital measured values. The analog input signals can be 0/4 to 20 mA, 0 to 1 Volt and Pt100 resistive thermometers. In addition to the analog input, a digital input is available. A potential free relay contact (or TTL signal) can be connected to this input. This input records, for example, count impulses with a maximum frequency of 25 Hz and 1 s at events.

Alternatively, this input can be used to calculate the running time of a particular piece of equipment or machine. The input reads these values every second. From values, it calculates the instantaneous values or min., max., and averages. The internal memory capacity is a maximum of 64,000 measured values. This allows up to 24 hours of recording using a storage cycle of 1 minute.

### Principle operation

Measured value recording using analog/digital conversion. The measured values are updated every second and, after a selectable storage cycle time, are stored in an internal memory, which can store 64,000 measured values.

Number of events: approximately 4000 events (128 K) can be stored. Simultaneous recording of integrated values is not possible.

Selectable operating modes: continuously or only on set point infringement.

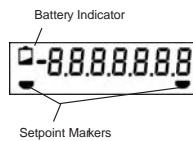
Data can be transferred to a PC using the ReadWin® 2000 PC software package. This means the data can then be processed further.

### Measurement system

Analog: Data-logger Minilog B, Version II and separate 0/4 to 20 mA, 0 to 1V and Pt100 transmitter

Digital: Data-logger Minilog B, Version II and SPDT relay contact

### Set points



In addition to recording the data, the data-logger also monitors two set points. These set points can be set up using the ReadWin® 2000 PC software package. Any infringement of these values is indicated on the display. A choice of whether to record continuously or only in the case of a set point infringement (in the preset storage cycle) is available and can be set up.

### Interface

RS 232, maximum cable length, 25 feet (8 m), a complete RS 232 interface cable, 5 feet long (1.5 m), and PC software package ReadWin® 2000.

The Mini-log B, Version II data-logger can be easily set up using the RS 232 interface. Simple setup is made possible by using the on-line help text.

The ReadWin® 2000 PC software package is delivered with the Minilog B free of charge. Interface cables for connection to a PC or modem can be purchased as accessories.

The recorded data can be viewed, transmitted and displayed using the ReadWin® 2000 software. ReadWin® 2000 provides:

- Single PC operating system using Windows 95/98/2000/NT4/XP/ME
- Saving the settings in a data bank
- Instantaneous value display
- Quantities
- Events
- Readout of the values stored in memory
- Measured value display in the form of traces, columns and tables
- Data export onto spread sheets (e.g. Excel, Lotus, etc.)
- Printout of graphics, tables and unit parameters

## Inputs / Accuracy

### Input

Universal application

Analog: Transmitter must have 0/4 to 20 mA, 0 to 1 V output signal or direct Pt100.

Digital: SPDT relay contact or 5 VDC TTL peak.



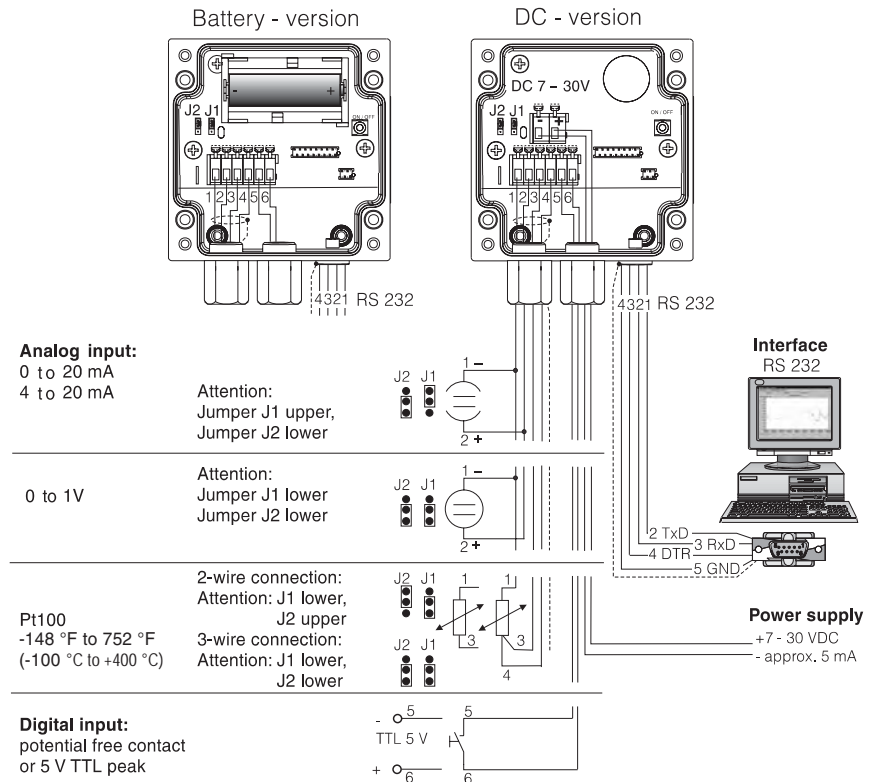
Note!

Minilog B does not have loop power supply. Power supply minus GND connection (pin 4) of the interface, analog input minus (terminal 1) and terminal 5 of the digital input are internally connected.

<b>Number of inputs</b>	Analog input: 1 Digital input: 1
<b>Analog input</b>	0 to 1 V, $R_i \geq 1 \text{ M}\Omega$ , $\pm 0.25\%$ FSD accuracy 0/4 to 20 mA, via shunt, $R_i = 50\Omega$ Cable open circuit monitor < 2 mA (on 4 to 20 mA), $\pm 0.25\%$ FSD accuracy Pt100, -148 to +752°F (-100 to +400°C), shielded cable, $\pm 0.9^\circ\text{F}$ (0.5°C) accuracy
<b>Digital (discrete)</b>	Single input using two terminals, $f_{\text{max}} = 25 \text{ Hz}$ , 1 second on events; for SPDT relay contact
<b>Temperature drift</b>	$\pm 0.25\% / 10\text{K}$
<b>Time drift</b>	$\pm 50 \text{ ppm}$ ( $\leq 30 \text{ min/year}$ )

## Power supply

### Electrical connection



2-wire connection (3-wire with Pt100) through two (2) 1/2" NPT cable entries. Optional PG 9 cable entries. Termination on 14 AWG (2.5 mm<sup>2</sup>) terminals, 16 AWG (1.5 mm<sup>2</sup>) core with ferrule.

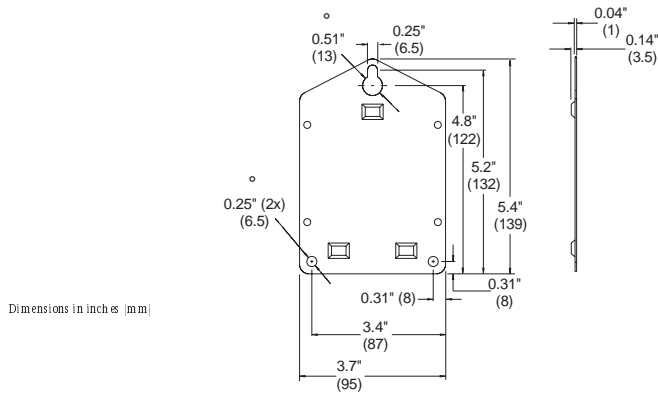
<b>Power supply</b>	Lithium battery, 3.5 V, Type AA, optional Type C or external power supply (7 to 30 VDC), approximately 5 mA
<b>Battery life cycle</b>	Type AA (2.1 yr): monthly readout, min. 2 years; continuous readout, min. 1 month Type C (7.2 yr): monthly readout, min. 5 years; continuous readout, min. 2 months

## Environmental conditions

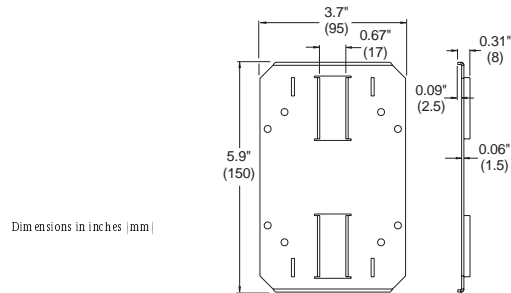
### Installation

The unit should be mounted vertically, Endress+Hauser offers a wall or pipe mounting kit.

#### Wall mounting



#### Stand pipe mounting



<b>Ambient temperature</b>	-10 to +130°F (-25 to +55°C)
<b>Storage temperature</b>	-10 to +140°F (-25 to +60°C)
<b>Climate class</b>	IEC 654 Part 1 Class C1
<b>Degree of protection</b>	NEMA 4 (IP 65) with closed cover
<b>Vibration security</b>	IEC 654-3, v < 3mm/s, 1<f<150 Hz
<b>RF protection</b>	To EN 55011 Group 1, Class B
<b>Electromagnetic compatibility (EMC)</b>	<ul style="list-style-type: none"> <li>- ESD (electrostatic discharge): EN 61 000-4-2 Level 3 (6/8 kV)</li> <li>- Electromagnetic interference fields: EN 61 000-4-3: Level 3 (10 V/m)</li> <li>- Burst (supply circuit): EN 61 000-4-4 Level 3 (1 kV/2 kV)</li> <li>- Burst (signal circuit): EN 61 000-4-4 Level 3 (1 kV)</li> <li>- Surge HF discharge, to EN 61 000-4-6, 10 V, additional measurement accuracy ≤ 0.5%</li> <li>- Normal mode noise rejection 26 dB at input range/10, f = 50/60 Hz, not on resistance measurement</li> </ul>

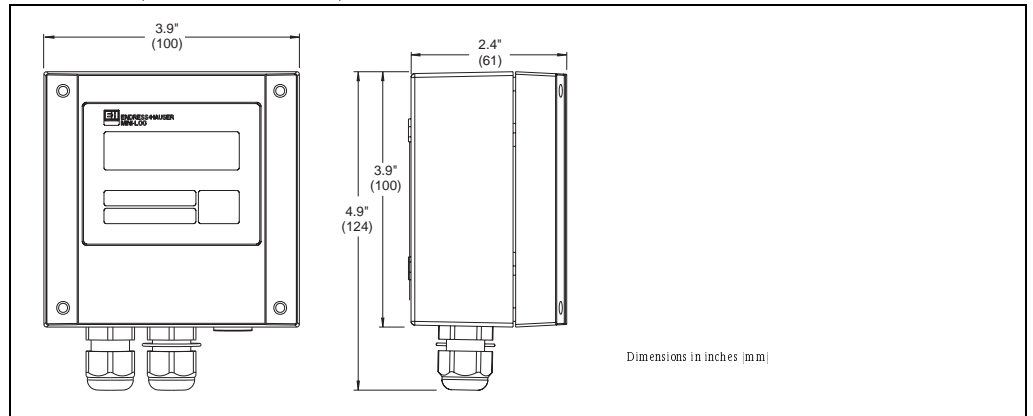
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## Mechanical construction

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### Design, dimensions

4" x 4" x 2.4" (100 x 100 x 60 mm) nominal size



#### Note!

The unit should be mounted vertically. A wall or pipe mounting kit is available, refer to installation diagrams above.

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### Weight

1.1 to 1.5 lbs (0.5 to 0.7 kg), depending on model

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### Materials

Aluminum die cast, surface glavanized with clear Lexan viewing cover  
Wall/pipe stand mounting bracket and strap, 304 SS

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## Display and operating level

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### Display

7-segment LCD, decimal point, limit symbols and battery status symbol

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### Operating level

ReadWin<sup>®</sup> 2000 software package for setup, transmission, and display of measured data. Software runs under Windows<sup>®</sup> 95/98/2000/NT4/XP/ME

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## Certificates and approvals

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### CE mark

The measuring system meets the legal requirements of the EC directives. The manufacturer confirms successful testing of the device by affixing the CE mark

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### Ex approval

Information about currently available Ex versions (ATEX, FM, CSA) can be supplied by your Sales Center on request. All explosion protection data is given in separate documentation which is available upon request.

## Ordering information

### Product structure

<b>RDL10</b>	<b>Minilog B RDL10 Data-logger</b> 1 Analog input 1 Digital input RS 232 interface Plug: 4 pole LC display: 7-character Housing: NEMA 4 (IP 65) PC software package ReadWin® 2000		
<b>1</b>	<b>Power supply</b>		
<b>R</b>	Battery 3.6 V; 2.1 yr		
<b>S</b>	Battery 3.6 V 7.2 yr		
<b>T</b>	External power supply version, 7 to 30 VDC, without battery		
<b>2</b>	<b>Measured signal input</b>		
<b>1</b>	0/4 to 20 mA, 0 to 1 V DC, Pt100 range -148 to +752°F (-100 to +400°C) standard version		
<b>2</b>	0/4 to 20 mA, 0 to 1 V DC, Pt100 range -148 to +752°F (-100 to +400°C) neutral version, without E+H logo		
<b>3</b>	Telealarm + GSM cable, 0/4 to 20 mA, 0 to 1 V DC, Pt100, no digital input, 24 V DC version only (only with external power supply)		
<b>4</b>	Without E+H label, Telealarm + GSM cable, 0/4 to 20 mA, 0 to 1 V DC, Pt100, no digital input, 24 V DC version only (only with external power supply)		
<b>3</b>	<b>Internal memory</b>		
<b>B</b>	32K, maximum 16000 measured values		
<b>C</b>	128K, maximum 64000 measured values		
<b>F</b>	Factory calibration certificate, 32K		
<b>G</b>	Factory calibration certificate, 128K		
<b>4</b>	<b>Temperature sensor</b>		
<b>1</b>	Unit without temperature sensor		
<b>1</b>	Unit with Pt100 temperature sensor fitted in cable gland with measurement range of -13 to +131°F (-25 to +55°C)		
<b>5</b>	<b>Model</b>		
<b>A</b>	Unit without security lead seal, PG 9 cable gland		
<b>B</b>	Unit with security lead seal, PG 9 cable gland		
<b>C</b>	Unit without security lead seal, ½" NPT threaded cable entry		
<b>D</b>	Unit with security lead seal, ½" NPT threaded cable entry		
<b>6</b>	<b>Accessories</b>		
<b>1</b>	Basic version, no accessories required		
<b>2</b>	Wall mounting bracket		
<b>3</b>	Stand pipe mounting bracket		
<b>4</b>	RS 232 interface cable with ReadWin® 2000 software		
<b>5</b>	Wall mounting bracket and RS 232 interface cable with ReadWin® 2000 software		
<b>6</b>	Stand pipe mounting bracket and RS 232 interface cable with ReadWin® 2000 software		
<b>RDL10-</b>			← Order code

## Documentation

Minilog B Operating Instructions (BA123R/09/)

## Accessories

RS 232 interface cable for PCs: part number 50086167

Interface cable for modems (includes adapter): part number RDL 10A-VL

Wall mounting bracket: part number 51000946

Stand pipe mounting bracket: part number 51000924

Spare lithium battery, 3.6 V, Type AA, 2.1 yr: part number 51000981

Spare lithium battery, 3.6 V, Type C 7.2 yr: part number 51000982

**United States**

Endress+Hauser, Inc.  
2350 Endress Place  
Greenwood, IN 46143  
Tel. 317-535-7138  
Sales 888-ENDRESS  
Service 800-642-8737  
fax 317-535-8498  
inquiry@us.endress.com  
www.us.endress.com

**Canada**

Endress+Hauser Canada  
1075 Sutton Drive  
Burlington, ON L7L 5Z8  
Tel. 905-681-9292  
800-668-3199  
Fax 905-681-9444  
www.ca.endress.com

**Mexico**

Endress+Hauser México, S.A. de C.V.  
Av. Gustavo Baz No. 43  
Fracc. Bosques de Echegaray  
Naucalpan de Juárez, C.P. 53310,  
Estado de México  
México  
Tel: [52]-55-5371-1110  
Fax: [52]-55-5371-1128  
E-mail: eh.mexico@mx.endress.com