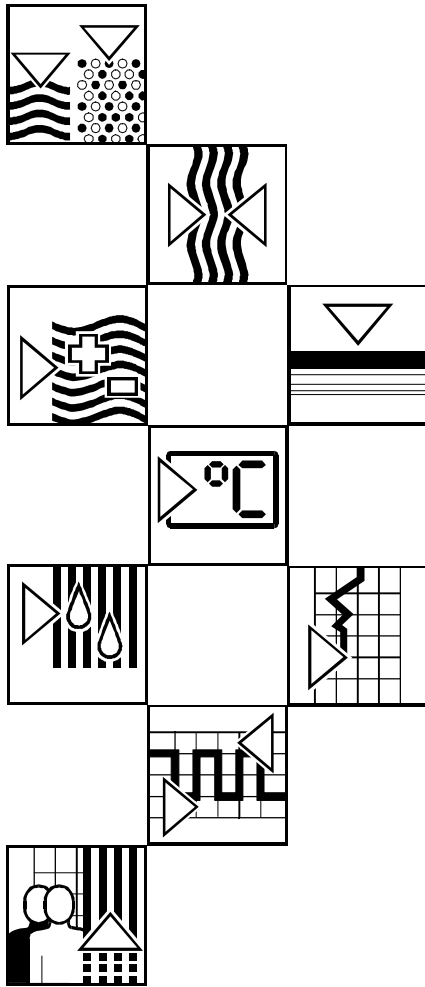


Service-Manual
SM 01/98

Data-logger

Mini-Log B



Endress + Hauser
Nothing beats know-how



Service-Manual Mini-Log

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Introduction

The Mini-Log B data-logger is a measured value collection system with 2 input channels (one analogue and one digital input) for recording and storage of analogue and digital signals. Because the Mini-Log B is powered by a **non**-rechargeable 3.6V lithium battery (operating time of approx. 2 years at a storage cycle of 1 hour) it can be used in applications where independent power supplies are not available. When the Mini-Log B is in storage it can be switched off using an integrated ON/OFF switch (see page 5). The battery is then saved from excess use. Before changing the battery please read out and save the recorded data, then switch the unit off using the ON/OFF switch. The date and time must be reset after switching the Mini-Log B on again.

The Mini-Log B can accept any of the following analogue signals: 0/4..20mA, 0..1V or Pt100 (-100°C..400°C). The Mini-Log B can be ordered with an integrated Pt100 sensor as an option. This means that measurements in areas having an ambient temperature range of (-25°C..+55°C) can be done. This sensor can also be retro-fitted into the PG cable gland of the Mini-Log B. The unit can also monitor 2 set points. Infringement of either of these set points is indicated in the display. A potential-free impulse signal with a maximum frequency of 25 Hz. can be connected to the digital input.

The Mini-Log B is constructed in a varnished aluminium casing (ingress protection IP65). The dimensions are W=100mm/H=100mm/D=60mm. The unit can be mounted either to a stand pipe or wall. Fixing kits for either are available as options. Always mount the unit vertically.

The LC display is a 7-segment display which also has a low battery display integrated. Signal cable connection is done via 2 x PG9 compression cable glands and 2.5mm² terminals. Setting up, transmission and data visualisation is done using the standard integrated RS232 serial interface. The software tool required is ReadWin (please note the optional special interface cable in the order code RDL10A-VK). The Mini-Log B can operate with preset storage cycles of 1 minute to 24 hours. The standard unit has a storage capacity of 4000 measured values (option 16000 measurements). All data is stored with date and time either as instantaneous values or min/max/averages.

Accuracy:	Base accuracy	+/- 0.25%	of F.S.D.
	Base accuracy Pt100	+/- 0.5%	of F.S.D.
	Temperature drift	+/- 0.25%	per 10K

Temperatures:	Ambient temperature	- 25°C...+ 55°C
	Storage temperature	- 25°C...+ 60°C

Your contacts at E+H Wetzer are:

Frau Hoppe	08361/308-443 (Service)
Herr Geil	08361/308-413 (Product manager)
Herr Nelson	08361/308-420 (Export)

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Mini-Log B data-logger order code

Certificates

- R Version for non-Ex areas
- Y Other

Measurement signal

- 1 0/4...20 mA, 0...1
- 2 Other

Internal memory

- A Internal memory 8K for max. 4000 measured values
- B Internal memory 32K for max. 16000 measured values
- Y Other

Temperature sensors

- 1 Unit without temperature sensors
- 2 Unit with Pt100 integrated in the PG cable gland
(measurement range -25°C...+55°C)
- 9 Other

Model

- A Unit without lead seal option
- B Unit with lead seal option
- Y Other

Accessories

- 1 Not required
- 2 Wall mounting kit
- 3 Stand pipe mounting kit
- 4 Interface cable with ReadWin read out software
- 5 Wall mounting kit and
Interface cable with ReadWin read out software
- 6 Stand pipe mounting kit and
Interface cable with ReadWin read out software
- 9 Other

RDL10-

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Operation matrix

Basic settings

110 Unit identifier	122 NT/ST change- over	131 Memory cycle
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Analogue input

210 Identifier	211 Input signal	212 Operating mode	213 Engineer- ing units	214 Decimal point	215 Scale	216 Power supply damping
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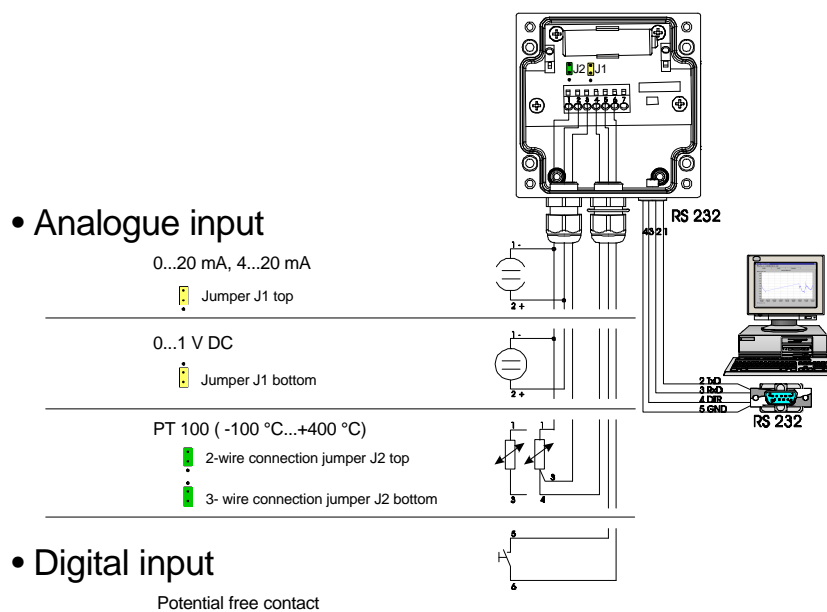
Set point monitor

310 Upper set point	311 Lower set point
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Digital input

410 Identifier	411 Operating mode	412 Engineer- ing units	413 Decimal point	414 Impulse factor
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Connection diagram

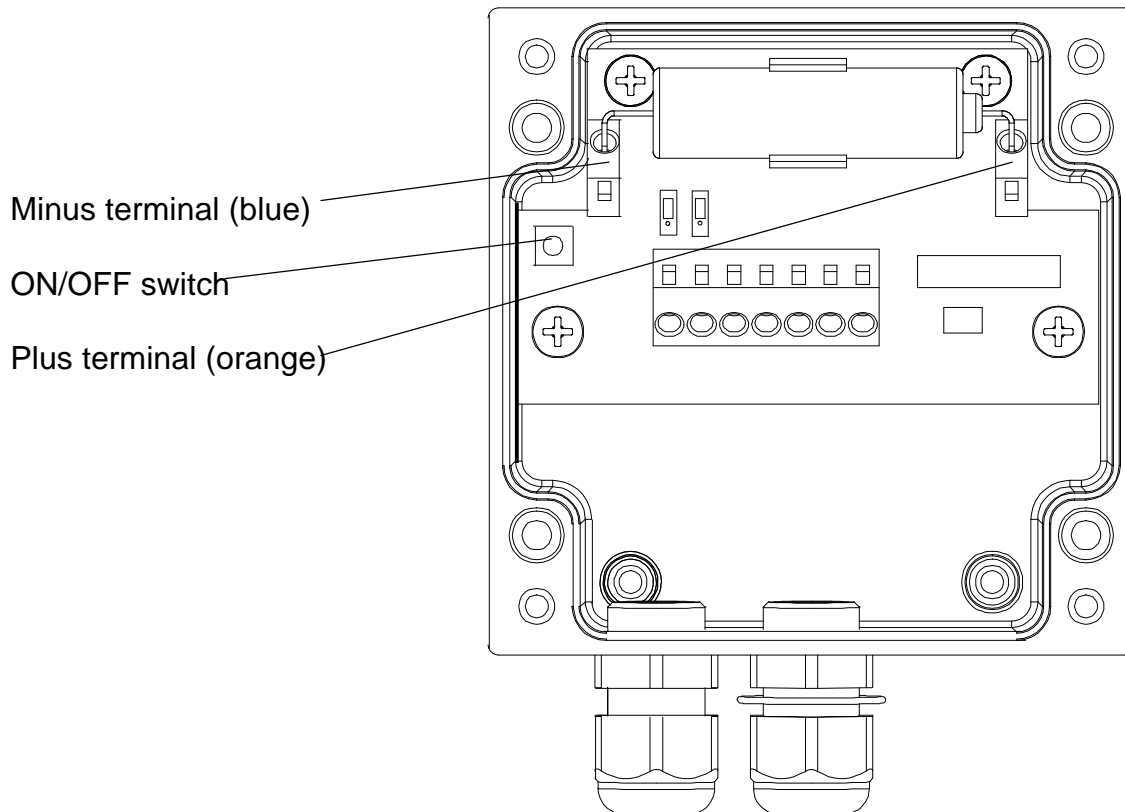


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Battery and battery change

If the battery capacity comes below the minimum requirement the low-bat display is activated. Once this has happened the unit still has enough power for approx. 30 days data recording.

In order to save the battery excess use when storing the unit it can be switched off. The unit is switched off when delivered.



Display

Low-bat display



Set point markings

Calibration

Mini-Log B calibration will only be possible using the ReadWin PC programme. For calibration a suitable calibration source is required (accuracy 3 times that of the Mini-Log B).

Mini-Log B repair concept

We request that all units that fail from now to 1.11.1998 should be sent to E+H Wetzler for repair and monitoring. After this date you can purchase all modules that are listed in the spare parts list and replace these if required.

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Fault finding

Fault	Cause	Cure
No communication between PC (ReadWin) and Mini-Log B	Configuration in the ReadWin Software is faulty	Please check configuration
	Interface cable not plugged in correctly	Please check that the interface cable is correctly connected
	CPU defective	Please renew the CPU
Display „dark“	The unit is switched off	Switch the unit on using the ON/OFF switch
	Battery is empty	Please renew battery
	CPU defective	Please renew CPU
Display update is slow	Temperature is <-15°C	This has no further influence on the unit function
	Battery defective/empty	Please renew battery
Measured value is above scaled range (120%)	Jumper is not in the correct current position	Please correct the jumper position
	Scaling is faulty	Please correct scale
	Incorrect input signal	Please check input signal
Incorrect time	NT/ST changeover is not switched on	Please switch on NT/ST changeover
Display: - - - - Storage: 0%	Signal is <4 mA	Please check wiring and signal
Pt100 (3 wire): Display: - - - -	Jumper J2 is in the upper position (2 wire connection)	Please plug jumper 2 in the lower position
Pt100 (2 wire) Pt100 measured value inaccurate	Jumper J2 is in the lower position (3 wire connection)	Please plug jumper 2 in the upper position

End test after repairs

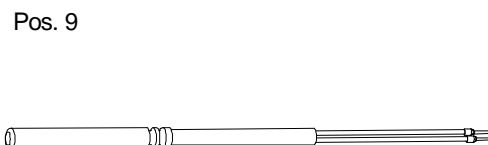
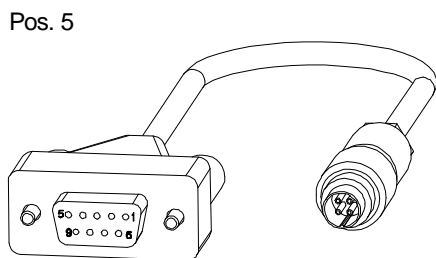
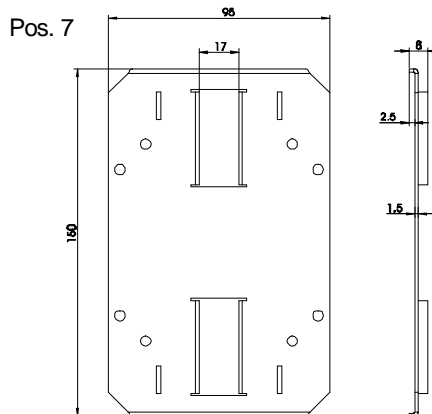
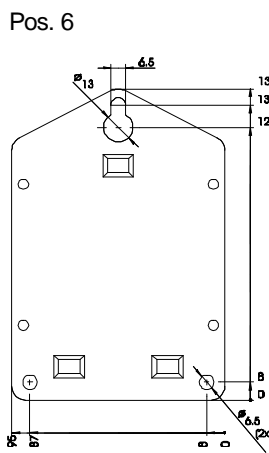
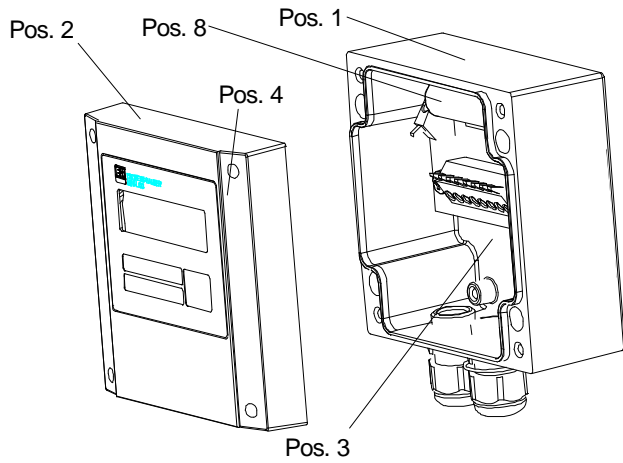
1. Check the Shunt resistance: Measure the shunt resistor value between terminals 1 and 2 (jumper in upper position). The value should be between $50 \Omega \pm 0.1 \Omega$.
2. Test analogue input: Check the accuracy of the analogue inputs (U,I,Pt100) using a calibration source. If there are inaccuracies the measured value can be digitally calibrated using a suitable calibration source (accuracy 3 x higher than the Mini-Log B) and the ReadWin software. See chapter calibration.
3. Digital input: Please set up the digital input as a counter input using ReadWin. In order to test the count input short circuit terminals 5 and 6. Then check the display to see if the counter is counting upwards.
4. Interface test: RS232: Connect the interface cable to both unit and PC and see if connection can be made using the ReadWin PC software package.
5. Safety test: Safety test to VDE 0701 or national regulations

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Software update

A software update is only possible by changing the soldered Flash EPROMs.

Mini-Log B spares diagram



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Mini-Log B spare parts list

Pos.	Component	Order No.
1	Lower casing	50086106
2	Casing cover	50086108
9	Temperature sensor with operating manual	RDL10X-TA
3	Terminal PCB with battery	RDL10X-KA
4	CPU (4000 measured values)	RDL-10X-CA
4	CPU (16000 measured values)	RDL-10X-CB
5	Interface cable with ReadWin	RDL10A-VK
6	Wall mounting plate	50086642
7	Stand pipe mounting kit	RDL10X-MA
8	Spare battery	50085928
9	Lead sealing kit	RDL10X-PA

Fault messages

If faults are recognised by the CPU fault messages are indicated in the display:

Display	Cause	Effect	Cure
Exxx1	There are no valid values in the memory (RAM) This condition can be caused through a battery change	Loss of stored measured values, counters as well as date and time	Please run a RESET
Exx1x	No valid operating parameters in the EEPROM	Loss of operating settings	Please set up the unit again
Ex1xx	No valid calibration values in the EEPROM	Unit is not ready for operation	Please re-calibrate the unit
E1xxx	I ² C-Bus fault, this means fault in the electronics	CPU defective	Please renew the CPU