Datalogger DL3

Short manual

Mounting
Electrical connection
Operating controls

11200030

Thank you for buying this RESOL product.
Please read this manual carefully to get the best performance from this unit. Please keep this manual carefully.

en
Manual

www.resol.com

Safety advice

Please pay attention to the following safety advice in order to avoid danger and damage to people and property.

Instructions

Attention must be paid to the valid local standards, regulations and directives!

Target group

These instructions are exclusively addressed to authorised skilled personnel.

Only qualified electricians should carry out electrical works.

Description of symbols

WARNING! Warnings are indicated with a warning triangle!

➔ **They contain information on how to avoid the danger described.**

Signal words describe the danger that may occur, when it is not avoided.

- **WARNING** means that injury, possibly life-threatening injury, can occur.
- **ATTENTION** means that damage to the appliance can occur.

➔ Arrows indicate instruction steps that should be carried out.

Information about the product

Proper usage

The RESOL datalogger DL3 is connected to RESOL controllers via the VBus® interface. It enables logging of system data and parameterisation of a solar thermal system.

- Use in dry interior rooms only.
- Avoid ambient temperatures lower than 0 °C or higher than 40 °C.
- Do not expose to strong electromagnetic fields.

Improper use excludes all liability claims.

Note
Notes are indicated with an information symbol.

CE-Declaration of conformity

The product complies with the relevant directives and is therefore labelled with the CE mark. The Declaration of Conformity is available upon request, please contact RESOL.

Note
Strong electromagnetic fields can impair the function of the device.

➔ Make sure the device as well as the system are not exposed to strong electromagnetic fields.

Disposal

- Dispose of the packaging in an environmentally sound manner.
- Dispose of old appliances in an environmentally sound manner. Upon request we will take back your old appliances bought from us and guarantee an environmentally sound disposal of the devices.

Contents

Subject to technical change. Errors excepted.

1 Overview

Be it solar thermal, heating or DHW heat exchange controllers – with the RESOL DL3 you can easily and conveniently log system data of up to 6 RESOL controllers. Get a comprehensive overview of all controllers connected with the large full graphic display. Transfer data with an SD memory card, or use the LAN interface to view and process data on your PC. Data logging and parameterisation of up to 6 VBus® master devices

- Temperature measurements and logging via integrated sensor inputs possible
- Current loop interface 0(4)-20 mA
- BACnet functionality for BACnet-conform transmission and reception of data
- Data logging onto SD card

en

Technical data

Housing: Plastic, PC-ABS and PMMA
Protection type: IP 20 / EN 60529
Protection class: III
Ambient temperature: 0 ... 40 °C
Dimensions: 144 x 208 x 43 mm
Mounting: Wall mounting
Display: Full graphic display for status visualisation and operating control LED

Operation: Via three push buttons
Inputs: For 3 Pt1000 temperature sensors, 1 current loop interface 0(4)-20 mA
Interfaces: 6 x VBus® (slave), 1 x SD memory card slot, 1 x LAN (10/100), 1 x USB master
Power supply: 12 V / 1 A (external mains adapter)

2 Included

If one of the items mentioned below is missing or defective, please contact your distributor:

1	Datalogger DL3
2	Mains adapter
3	Interchangeable mains adapter plugs (EURO, UK, USA, AUS)
4	VBus® cable
5	Network cable (CAT5e, RJ45), 1 m
6	Wall plugs and screws
7	Terminal block for extending the VBus® cable
8	USB adapter cable
9	CD with ServiceCenter software and detailed manual
10	Short manual (picture similar to original product)
11	SD card

3 About this manual

This document is a short manual for the DL3 Datalogger. This short manual contains information about the following topics:

- Installation
- Electrical connection
- Operating controls
- Display screens
- Using the SD card

A detailed manual with the complete information about the web interface can be found on the included CD.

4 Installation

ATTENTION!

ESD damage!
Electrostatic discharge can lead to damage to electronic components!

➔ **Take care to discharge properly before touching the inside of the device. To do so, touch a grounded surface such as a radiator or tap!**

ATTENTION!

Short circuit!
A short circuit can lead to damage to electronic components!

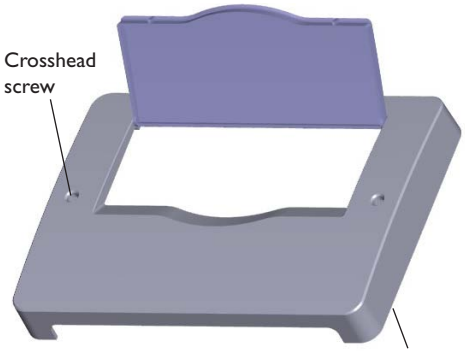
➔ **Close the housing before establishing the mains connection!**

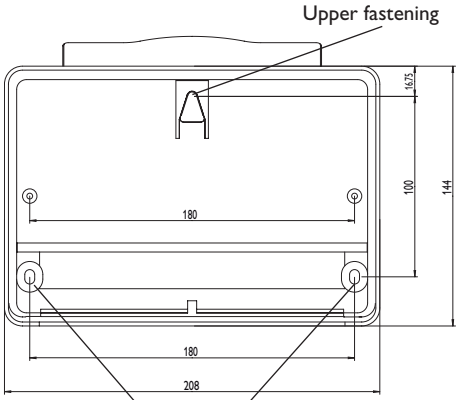
Initial installation must be effected by the system installer or qualified personnel named by the system installer.

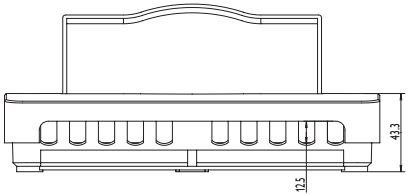
4.1 Wall mounting

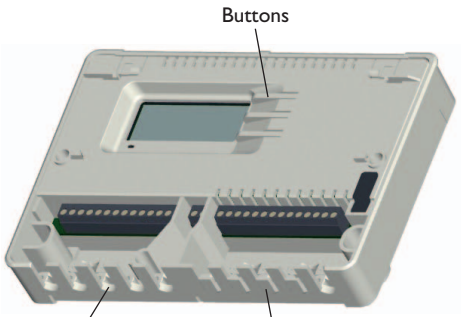
The unit must only be located in dry interior rooms. It is not suitable for installation in hazardous locations and should be protected against electromagnetic fields.
Please pay attention to separate routing of sensor cables and mains cables.

- ➔ Choose a mounting location.
- ➔ Unscrew the crosshead screw from the cover and remove the cover.
- ➔ Mark the upper fastening point on the wall. Drill and fasten the enclosed wall plug and screw leaving the head protruding.
- ➔ Hang the housing from the upper fastening point and mark the lower fastening points (centres 180 mm).
- ➔ Drill 2 holes (Ø 6 mm) and insert the wall plugs.
- ➔ Fasten the housing to the wall with the lower fastening screw and tighten.
- ➔ Carry out the electrical connection according to the terminal allocation.
- ➔ Reattach the cover and fasten it using the crosshead screws included.









en

4.2 Electrical connection

Note
Connecting the device to the power supply must always be the last step of the installation!

Carry out the connection of the Datalogger (pos. 1) to other modules in the order described below:

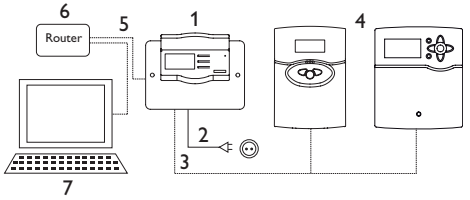
➔ Connect the data cable (RESOL VBus®, pos. 3) to the controller (pos. 4) and the DL3 (pos. 1). If necessary, extend the cable using the terminal block included and a common two-wire cable.

➔ Connect the mains adapter (pos. 2) to the DL3 and to a mains socket.

➔ For a direct connection to a router or a PC, connect the datalogger to a router (pos. 6) or a PC (pos. 7) using the network cable (included with the DL3, pos. 5).

Power supply is carried out via an external mains adapter. The supply voltage of the mains adapter must be 100 ... 240 V~ (50 ... 60 Hz).

The mains adapter and a VBus® cable are included with the DL3.



4.3 Connecting the VBus® cable

The DL3 Datalogger is connected to one or several controllers via VBus® cables. The corresponding terminal allocation is described in the controller manual. The VBus® cable can be extended using the terminal block included and a common two-wire cable.

VBus® connection at the terminals:

1 / 2 = VBus® connection 1 (slave)
3 / 4 = VBus® connection 2 (slave)
5 / 6 = VBus® connection 3 (slave)
7 / 8 = VBus® connection 4 (slave)
9 / 10 = VBus® connection 5 (slave)
11 / 12 = VBus® connection 6 (slave)

To the VBus® connections 1 ... 6, master devices (controllers) can be connected.

4.4 Connecting the sensors

Connect the Pt1000 temperature sensors to the following terminals with either polarity:

- ⊥ / S1 ... S3 = Temperature sensors S1 to S3

Connect the sensor using a 0(4)-20 mA signal as specified by the manufacturer to the following terminals:

- ⊥ / CL = Current loop interface 0(4)-20 mA

4.5 Connecting the network cable

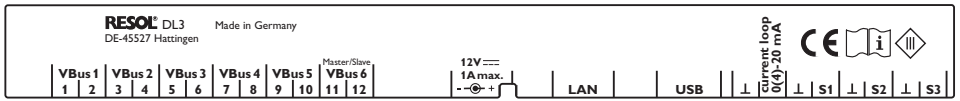
The DL3 Datalogger can be connected to a computer or a router by using a network cable (CAT5e, RJ45).

➔ Connect the network cable included to the network adapter of the computer or the router.

ATTENTION!

VBus® network malfunction!
Separating the device from the power supply while the VBus® is still connected will lead to a VBus® network malfunction!

➔ **Separate VBus® connections before separating the device from the power supply!**



5 Operating controls, display and connections

The following elements are featured on / in the housing of the DL3 datalogger:

3 push buttons (1)

1 SD memory card slot (2)

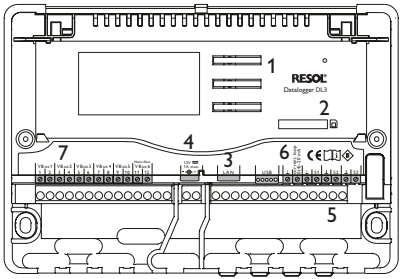
1 LAN socket (3)

1 power supply socket (4)

3 sensor inputs (Pt1000) (5)

1 current loop interface 0(4)-20 mA (6)

6 VBus® connections (7)



Positions of the operating controls and connections

5.1 Operating control LED

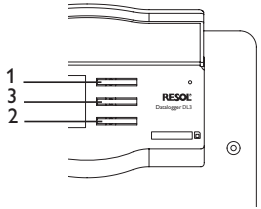
The operating control LED indicates the operating status of the DL3 datalogger by issuing flashing signals.

Red/green flashing:	The device is booting
Green:	The device is ready for operation / SD card can be removed
Green flashing:	Do not remove the SD card! Data are being copied onto the SD card
Red flashing:	An error has occured. The error will be indicated on the display
LED off:	No power supply

5.2 Buttons

The device is operated via the three push buttons next to the display. The push buttons have the following functions:

- Button 1: Scrolling upwards
- Button 3: Activating the display
- Button 2: Scrolling downwards



5.3 Display

During normal operation, the display of the DL3 Datalogger is in the status level (see fig.).

If no button has been pressed within a couple of minutes, the display illumination is switched off.

➔ Press any key to reactivate the display illumination.

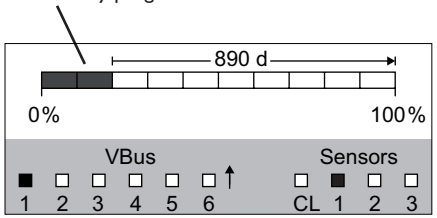
Status display

During normal operation, the display of the DL3 Datalogger is in the status level indicating the following information:

- Data memory progress bar (fill level)
- Remaining logging time in days
- VBus® devices connected
- Sensors connected

The data memory progress bar is divided into 10 segments. Each segment represents 10 % of the memory capacity.

Data memory progress bar



- Segment filled: The memory capacity of this segment is fully occupied.
- Segment flashing: The memory capacity of this segment is partly occupied.

The arrow above the data memory progress bar indicates the remaining logging time in days.

In the bottom left-hand area of the status display, each VBus® device connected with a functioning VBus® communication is indicated by a corresponding filled checkbox.

In the bottom right-hand area of the status display, each sensor connected is indicated by a corresponding filled checkbox.

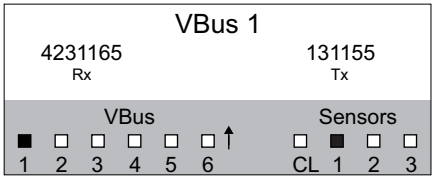
VBus® screen

In the VBus® screen, VBus® information about the VBus® devices connected is indicated.

In the left-hand area of the screen, the number of bytes received (Rx) is indicated. In the right-hand area of the screen, the number of bytes transmitted (Tx) is indicated.

A VBus® device connected with a functioning VBus® communication is indicated by a corresponding filled checkbox in the bottom area of the screen.

Each VBus® device has its own screen. The connections VBus® 1 to VBus® 6 are displayed each in their own screen.



➔ In order to leave the status level and access the VBus® screens, press button 2.

➔ The display indicates information about the VBus® device.

➔ In order to access information about further VBus® devices, scroll down by pressing button 3.

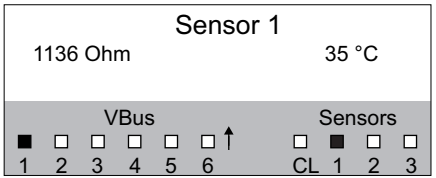
Sensor screen

In the sensor screen, information about the sensors connected is indicated.

In the left-hand area of the screen, the resistance value of the corresponding sensor is indicated. In the right-hand area of the screen, the temperature value of the corresponding sensor is indicated in °C.

A sensor connected is indicated by a corresponding filled checkbox in the bottom area of the screen.

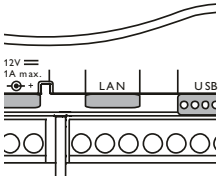
Each sensor has its own screen. The data of the inputs CL and S1 to S3 are displayed each in their own screen.



➔ In order to leave the status level and access the sensor screens, press button 2.

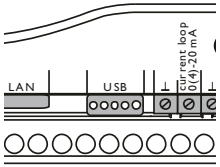
➔ Press button 2 to scroll down through the VBus® screens until the sensor screens appear.

5.4 LAN connector



The integrated LAN connector is located on the terminal strip of the device. The LAN connector supports transfer rates of up to 100 MBit per second.

5.5 USB interface



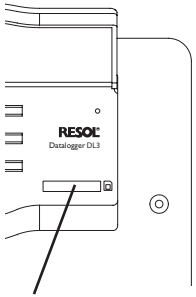
The DL3 is equipped with a USB interface to which the USB adapter cable can be connected.

In order to connect the USB adapter cable to the DL3, proceed as follows:

➔ Connect the USB adapter cable to the interface marked USB.

Presently, the firmware of the device does not support external USB devices. As soon as USB support becomes possible, it will be made available via an automatic DL3 Datalogger firmware update.

5.6 SD memory card slot



SD memory card slot

The SD memory card slot is located at the front of the device. By means of the SD memory card slot, logged data can be transferred onto an SD card of up to 2GB memory capacity.

The memory of an SD card in the slot is used for data transfer only. It will not enlarge the memory of the DL3 datalogger.

Do not use an SD-HC card!

5.7 Power supply connection

Power supply is carried out via an external mains adapter. The connection terminals are located inside the housing of the DL3 datalogger.

5.8 RESOL VBus® connection

The DL3 datalogger is connected to one or several RESOL controllers via VBus® cables. The connection terminals are located inside the housing of the DL3 datalogger.

6 Firmware update with SD card

New firmware versions extend the functional range and enhance the operation.

In order to run a firmware update over the SD memory card slot, proceed as follows:

➔ Format the SD card using the FAT 32 format

➔ Insert the SD card into the SD card slot of the DL3

The operating control LED starts flashing (green). Wait until the operating control LED is permamently green.

A folder is created on the SD card. Logged data are copied into the folder.

➔ Remove the SD card from the DL3

➔ Insert the SD card into an external SD card slot Copy the firmware update file into the folder created before

➔ Remove the SD card from the external SD card slot

➔ Insert the SD card into the SD card slot of the DL3

The operating control LED starts flashing (green). Wait until the operating control LED is permamently green.

A firmware update is being run.

When the firmware update is completed, the DL3 automatically reboots.

7 Data export

There are 2 different ways to export logged data from the DL3 datalogger:

1. Export logged data onto an SD memory card. The data are stored as a VBus format file and can be read out on a computer using the RESOL ServiceCenter software.
2. Export logged data onto a computer over the web interface. Different file formats can be selected.

Information about exporting data over the web interface can be found in the detailed manual on the included CD.

7.1 Data export over SD card

In order to copy data onto an SD card, proceed as follows:

➔ Insert the SD card into the SD card slot

The operating control LED flashes (green):

The card has been recognised and data are being transferred.

The operating control LED is permanently green:

The transfer is completed. The card can be removed.

8 Accessories

Temperature sensors

The product range includes high-precision platinum temperature sensors, flatscrew sensors, outdoor temperature sensors, indoor temperature sensors, cylindrical clip-on sensors, also as complete sensors with immersion sleeve.

Sensor-/VBus® extension cable, 100 m coil

Art. no.: 280 051 00

SD card

Art. no.: 180 007 40

9 Spare parts

Mains adapter 100 ... 240 V~ (12 V ⎓, 1A max)

Art. no.: 720 004 60

VBus® cable, 1.50 m

Art. no.: 750 012 15

USB cable with 5-pole port

Art. no.: 750 000 92

Notes

Distributed by:

RESOL – Elektronische Regelungen GmbH

Heiskampstraße 10
45527 Hattingen / Germany

Tel.: +49 (0) 23 24 / 96 48 - 0
Fax: +49 (0) 23 24 / 96 48 - 755

www.resol.com
info@resol.com

Important note

The texts and drawings in this manual are correct to the best of our knowledge. As faults can never be excluded, please note:

Your own calculations and plans, under consideration of the current standards and directions should only be basis for your projects. We do not offer a guarantee for the completeness of the drawings and texts of this manual - they only represent some examples. They can only be used at your own risk. No liability is assumed for incorrect, incomplete or false information and / or the resulting damages.

Note

The design and the specifications can be changed without notice.
The illustrations may differ from the original product.

Editor: RESOL – Elektronische Regelungen GmbH