LDLOG

LD Data Logger

Functional Specifications

Read carefully

GENERAL SAFETY GUIDELINES

Danger!

In emergencies the instrument should be switched off immediately! Disconnect the power cable from the power supply!

When installing always observe local regulations!

Manufacturer is not liable for any unauthorized use or misuse of this product that may cause injury, damage to persons and / or materials.

Caution!

Instrument must be accessible at all times for both operating and servicing. Access must not be obstructed in any way!

Feeder should be interlocked with a no-flow protection device to automatically shut-off the pumps when there is no flow!

Pumps and accessories must be serviced and repaired by qualified and authorized personnel only!

Always discharge the liquid end before servicing the instrument!

Empty and rinse the liquid end before work on a pump which has been used with hazardous or unknown chemicals!

Always read chemical safety datasheet!

Always wear protective clothing when handling hazardous or unknown chemicals!

Instrument must be operated / serviced by trained technicians only!

All connection operations must be performed while the instrument is not connected to main supply!

Missed activation for Min/Max alarm and Maximum Dosing Alarm may cause hazardous overdosing!

1. Hardware specification

The Controller "LDLOG" records on a USB device (i.e.: *pendrive*) the quantities of water dosed of up to 4 dosing pumps and 4 water meters usually used in a cooling water system. The collected data are stored in a USB-pen and **secured against unauthorized access!** It uses a standard USB-PENDRIVE on which it records a CSV and EMC (encrypted) compatible file. Controller is housed into an IP64 box.
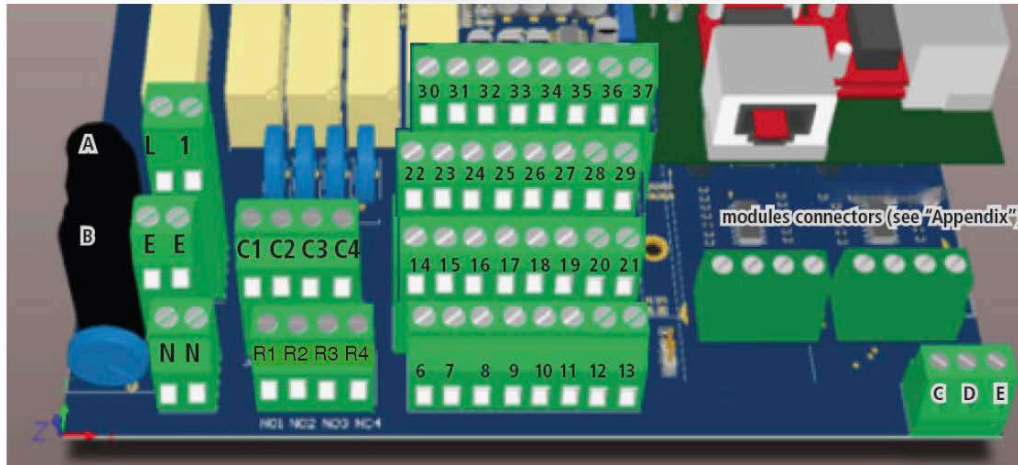
A: Main fuse (6AT)

B: instrument fuse (3.15A T)

C – D: +5V

E: GND

Main power supply: L(Live) - E(Earth) - N(Neutral) 85÷264 VAC – 50/60 Hz

C1; R1: Relay contact. If instrument is "OFF" is a N.C. contact; when instrument is powered it switches to N.O.

C3; R3: Alarm relay. (not in use)

Pump1: block n.7
Pump2: block n.8
Pump3: block n.10
Pump4: block n. 12
GND: block n. 6 – 11 – 19 – 21
28(+); 29(-): RS485 port

Pulse sender water meter 1: block n. 20
Pulse sender water meter 2: block n. 22
Pulse sender water meter 3: block n. 24
Pulse sender water meter 4: block n. 26

30, 32, 34, 36: +5V
31, 33, 35, 37: GND

SYMBOL FIXED = USB DEVICE READY
SYMBOL BLINKING = USB DEVICE WRITING

Using a terminal (e.g.: hyper terminal) LDLOG can export logging activity using "READ" command

6. Start- und Main Display

6.1 Start display

Cillit

LDLOG

Rel. 1.0

Abb. 6.1

After 3-5 seconds go on to the first main display

6.2 Main display

06-12-13		15:43
Inhibitor M 312	L:	999.9
Biocide TB 210	L:	999.9
Biocide PB 555	L:	999.9
↵		↓

Abb. 6.2.1

1. Main display:

Actual dosing quantities.
"L" = quantity in liter

Push Encoder = Open passcode display for main menu
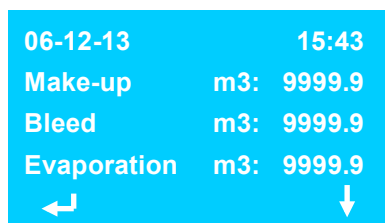
Turn Encoder = Scroll in the main display

06-12-13		15:43
Make-up	m3:	9999.9
Bleed	m3:	9999.9
Evaporation	m3:	9999.9
↵		↓

Abb. 6.2.2

2. Main display:

Actual water quantities.
"m3" = Cubic meter

06-12-13	15:43
Diffrential	m3000000
Delta Percent	%000000

Abb. 6.2.3

Differential between WMx and WMx (water meter)
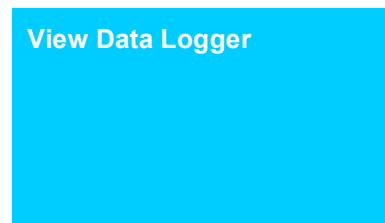Delta Percent (diference in % between two water meter)

View Data Logger

Abb. 6.2.3

3. Main display:

Opening of data logger

Push Encoder = Open passcode - display for data logger
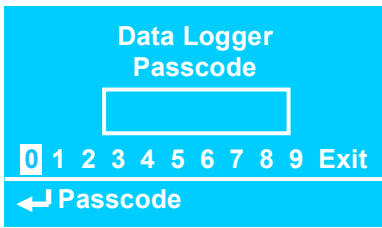
6.3   Main display Data Logger

```
Data Logger
Passcode
[        ]

[0] 1 2 3 4 5 6 7 8 9  Exit
↵ Passcode
```
Abb. 6.3.2

Open with **data logger passcode**

```
Data Logger Menu
Day
Month
Year

↵ Menu Month
```
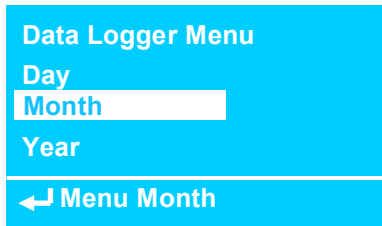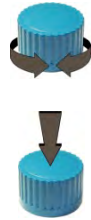Abb. 6.3.3

Turn Encoder = Scroll in the menu

Push Encoder = Open selected log-section

1. Data Logger display:

View of the dosing quantities depending to the selected log-section.

```
Date:               05-12-13
Inhibitor M 312  L:     12.3
Biocide TB 210  L:       8.7
Biocide PB 555  L:       2.0
```

```
Month:              12-13
Inhibitor M 312  L:    456.3
Biocide TB 210  L:     242.7
Biocide PB 555  L:      60.0
```

```
Year:               2013
Inhibitor M 312  L:   7537.3
Biocide TB 210  L:    2887.7
Biocide PB 555  L:     720.0
```

Abb. 6.3.4

2. Data Logger display:

View of the water quantities depending to the selected log-section.

```
Date:               05-12-13
Make-up      m3:    195.1
Bleed        m3:     65.4
Evaporation  m3:    129.7
```

```
Month:              12-13
Make-up      m3:   5850.2
Bleed        m3:   1950.7
Evaporation  m3:   3891.6
```

```
Year:               2013
Make-up      m3: 70123.4
Bleed        m3: 23338.7
Evaporation  m3: 46692.1
```
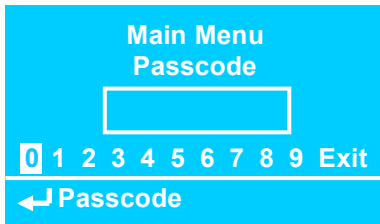
Abb. 6.3.5

Turn Encoder = Scroll in log file

Push Encoder = Exit log file

6.4   Main menu

Main Menu
Passcode

0 1 2 3 4 5 6 7 8 9 Exit
↵ Passcode

Ab. 6.4.1

Open with **main menu passcode**

Turn Encoder = Scroll in the menu

Push Encoder = Open selected log-section

Main Menu

Pump 1
Pump 2
Pump 3

Pump x: edit name, scale and enable or disable it

Water Meter 1

Water Meter 2

Water Meter 3

Water Meter x: name and scale (Pulses per liter or Liter per pulses) and enable or disable it

Delta

Reset Totalizer
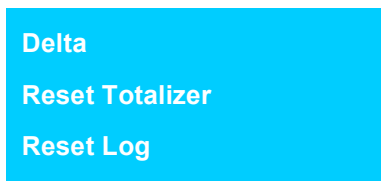
Reset Log

Delta: edit name and activate differential between two water meters

Reset Totalizer: reset total counted values

Reset Log: delete all log values

Name

Data Logger
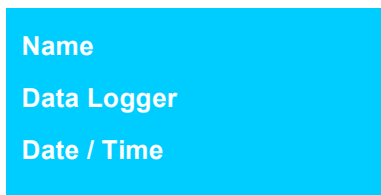
Date / Time

Name: edit name of controller

Data Logger: set data sampling interval

Passcodes

Exit
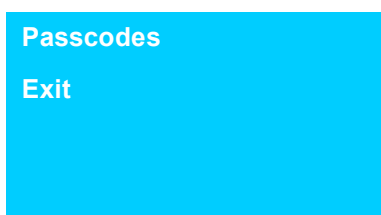
Date/Time: set controller date and time

Passcodes: passcodes management

Ab. 6.4.2

7.1   Menus Pump 1, 2, 3…

```
Menu Pump 1
Name▶  Abcdefghij123456
Scale:              01.00
                    ml/Imp.

↵ Set Name            ↓
```
Abb. 7.1.1

```
Menu Pump 1
Name:  Abcdefghij123456
Scale      ▶        01.00
                    ml/Imp.

↵ Set Scale           ↓
```
Abb. 7.1.2

```
Menu Pump 1
Enable     ▶          Yes
Exit


↵ Set Function        ↑
```
Abb. 7.1.3

```
06-12-13            15:43
Inhibitor M 312  L:  999.9
Biocide TB 210  L:   999.9


↵                     ↓
```
Abb. 7.1.4

```
Month:              12-13
Inhibitor M 312  L:  456.3
Biocide TB 210  L:   242.7
```
Abb. 7.1.5

Name:

Description of the digital inputs of the dosing pumps 1 – 3.
Alphanumeric input with capitals, small letters and special characters.
Size: 16 characters.
Default: „Pump 1", "Pump 2" and „Pump 3".

Notice:

In the main menu the names still remain as „Pump 1",
"Pump 2" and „Pump 3".

Scale:

Input of quantity in milliliter per pulse.
Range: 00.01 – 99.00 ml/Imp.
Default: 1.00 ml/Imp.

Enable:

Enabling or disabling of the display of the selected pump in the first main
display and in the first data logger display.
Selection:
Yes = Enabled
No = Disabled
Default: „Yes"

Example for 1. Main Display and Data Logger View Display:

- The first dosing pump input is named "Inhibitor M 312".
- The second dosing pump input is named "Biocide TB 210"
- The third dosing pump input is disabled.
  Therefore nothing is shown on the display

7.2   Menus Water Meter 1, 2, 3…

Menu Water Meter 1
Name ▶ Abcdefghij123456
Scale: P/L   001.0
Exit
↵ Set Name   ↓

Abb. 7.2.1

Menu Water Meter 1
Name: Abcdefghij123456
Scale ▶   P/L   001.0

↵ Set Scale   ↓

Abb. 7.2.2

Menu Water Meter 1
Enable   ▶   Ja
Exit

↵ Set Function   ↑

Abb. 7.2.3

06-12-13   15:43
Make-up   m3:   999.9
Bleed   m3:   999.9

↵   ↓

Abb. 7.2.4

Month: 12-13
Make-up   m3:   5850.2
Bleed   m3:   1950.7
Evaporation m3:   3891.6

Abb. 7.2.5

Name:

Description of the digital inputs of the water meters 1 – 3.
Alphanumeric input with capitals, small letters and special characters.
Size: 16 characters.
Default: „Water Meter 1", „Water Meter 2" and „ Water Meter 3"

Notice:
In the main menu the names still remain as „Water Meter 1",
„Water Meter 2" and „ Water Meter 3"

Scaling:

Selection of the dimension:
P/L = Pulse per Liter
L/P = Liter per Pulse

Input of quantity in pulse per liter or liter per pulse.
Range: 000.1 – 999.9
Default: „P/L" and 001.0

Enable:

Enabling or disabling of the display of the selected pump in the first main display and in the first data logger display.
Selection:
Yes = Enabled
No = Disabled
Default: „Yes"

Example for 2. Main Display and Data Logger View Display:
- The first water meter input is named "Make-up".
- The second water meter input is named "Bleed"
- The third water meter input is disabled.
  Therefore nothing is shown on the display (see chapter 7.2.1).

7.2.1   Menu Water Meter 3

```
Menu Water Meter 3
Name▶   Abcdefghij123456
Scale:        P/L    001.0
WM1 – WM2:   Yes
↵ Set Name                    ↓
```
Abb. 7.2.6

```
Menu Water Meter 3
Name:   Abcdefghij123456
Scale:        P/L    001.0
WM1 – WM2    Yes
↵ Set WM1 – WM2               ↓
```
Abb. 7.2.7

WZ1 – WZ2:

The menu for the third water meter has an additional feature.
The function of the counter can be selected as a sum counter or differential counter for the calculation of the amount of evaporation of a cooling tower.

Selection:

Yes = Differential counter

No = Sum Counter

Default: „Yes"

```
Menu Water Meter 3
Enable      ▶            Yes
Exit

↵ Set Function               ↑
```
Abb. 7.2.8

Enable:

Enabling or disabling of the display of the selected water meter in the second main display and in the second data logger display.

Selection:

Yes = Enabled

No = Disabled

Default: „Yes"

```
06-12-13              15:43
Make-up        m3:  999.9
Bleed          m3:  999.9

↵                            ↓
```
Abb. 7.2.9

Example for 2. Main Display:

- The first water meter input is named "Make-up".
- The second water meter input is named "Bleed"
- The third water meter input is disabled.
  Therefore nothing is shown on the display
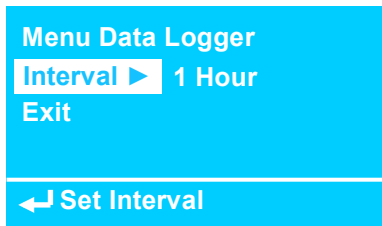
7.3   Menu Data Logger

Menu Data Logger
Interval ▶   1 Hour
Exit

↵ Set Interval

Abb. 7.3

Interval:

Selection of the logging interval

- 15 minutes (log at xx:00, xx:15, xx:30 and xx:45)
- 1 hour (log every full hour)
- 6 hours (log at 6, 12, 18 or 24 o´clock)
- 12 Stunden (1. Datensatz um 12 oder 24 Uhr*)
- 1 day (log at 23:59:59)

Default: „1 hour"

Log files on the USB-Pen:

Table 1: Controller identification and names of the inputs

SN (serial number)	13136330100000021	17 char
P1	Abcdefghij123456	14 char
P2	Abcdefghij123456	14 char
P3	Abcdefghij123456	14 char
WM1	Abcdefghij123456	14 char
WM2	Abcdefghij123456	14 char
WM3	Abcdefghij123456	14 char
ID Name	Abcdefghijklmnopqr1234567890	16 char

Table 2: Calendar day (example with 15 minutes interval)

Date	Time	P1	P2	P3	WM 1	WM2	WM3
13/12/06	06:00	8.2	0.0	0.0	81.7	3.2	78.5
13/12/06	06:15	8.4	0.4	0.0	82.1	3.2	78.9
13/12/06	…..	9.9	14.3	0.0	101.2	3.2	98
13/12/06	08:00	12.1	14.3	0.0	120.9	0.7	120.2
13/12/06	……	13.2	14.3	0.0	123.8	5.8	118.0
13/12/06	08:30	14.9	14.3	0.0	135.1	5.8	129.3
13/12/06	……	21.3	14.3	0.0	210.9	70.3	140.6
13/12/06	14:00	22.2	14.3	0.4	212.2	71.2	141.0
13/12/06	…	22.9	14.3	12.0	214.3	71.2	143.1
13/12/06	16:45	26.2	14.3	12.0	258.7	72.6	186.1

Table 3: Calendar Month

Date	P1	P2	P3	WM 1	WM2	WM3
13/12	951.7	114.4	96.0	10267	3115	7152
13/11	843.1	114.4	96.0	8022	2674	5348
13/10	905.2	114.4	96.0	8866	2955	5911
…						

Table 4: Calendar Year

Date	P1	P2	P3	WM 1	WM2	WM3
2013	10950	5183	4380	109567	36502	73065
2012	10220	5183	4380	97455	32485	64970
2010	10585	5183	4380	104390	34796	69594
…						

7.4   Menu Date/Time

```
Menu Date/Time
Date      ▶      06-12-13
Time             15:43:25
Exit
↵ Set Date
```
Abb. 7.4

7.5   Menu Passcodes

```
Menu Passcodes
Data Logger   ▶   0 0 0 0
Main Menu         0 0 0 0
Exit
↵ Set Passcode 1
```
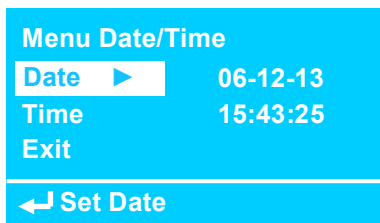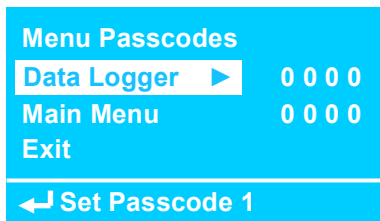Abb. 7.5

Data Logger:

Entrance to the data logger view displays.

Default: „0 0 0 0"

Main menu:

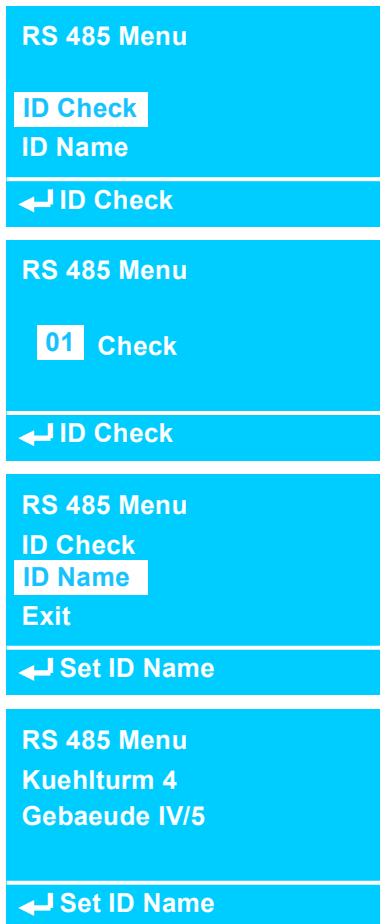Entrance to the main menu

Default: „0 0 0 0"

Caution!

A universal service passcode must be implemented for the case that the user has lost the passcode for the main menu!

Cillit Universal Passcode: .＿＿＿＿＿＿.

7.6 Menu RS 485

For remote control with a BT USB.

R4-07-14

RS 485 Menu

ID Check
ID Name

↵ ID Check

RS 485 Menu

01 Check

↵ ID Check

RS 485 Menu

ID Check
ID Name
Exit

↵ Set ID Name

RS 485 Menu

Kuehlturm 4
Gebaeude IV/5

↵ Set ID Name

Notice:

If you are downloading data from rs485 please remove USB device prior to start

7.8 Menu Language

Menu Language
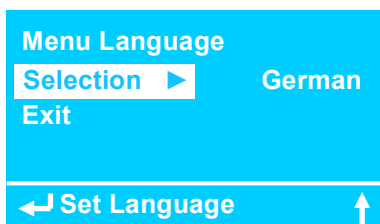
Selection ▶ German
Exit

↵ Set Language ↑

Abb. 7.8

Selection:

German – Deutsch
English – Englisch
Default: „German"

Disposal of end-of-life equipment by users

This symbol warns you not to dispose of the product with normal waste. Respect human health and the environment by giving the discarded equipment to a designated collection center for the recycling of electronic and electrical equipment. For more information visit the online site.

When dismantling a pump please separate material types and send them according to local recycling disposal requirements. We appreciate your efforts in supporting your local Recycle Environmental Program. Working together we'll form an active union to assure the world's invaluable resources are conserved.