DLOG-20(i) / DLOG-40(i)

DATALOGGER
FOR 20 AND 40 INPUTS, RESPECTIVELY

DLOG-20 (DLOG-20i is the built-in version)

DLOG-40 (DLOG-40i is the built-in version)

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1 General introduction

The manual is intended for the user of this device. It contains all the information necessary for operating and cleaning this product. Please read all information and instructions carefully before using the product.

Symbols mark warnings, important notes, tips, etc. in this manual.

Stienen has compiled this manual with all due care. If you find any errors, please let us know.

1.1 Symbols and definitions

Risk of injury by dangerous electric shock. Danger to people and animals.

Warning indicating danger to product, people and animals if procedures are not strictly complied with.

Warning indicating damage to products if procedures are not strictly complied with.

Pressure cleaning is not allowed.

Collect as separate flows

Important note

Additional information

Example of a concrete application of the functionality described.

Example calculation

Manual control

Tips and advice

Screenshot

Application note

1.2 Customer service

If you have any questions, please contact your installer. Be sure to have all the necessary data handy. You should also always write down the cause of a fault and the circumstances that occurred during the fault. This will enable you to avoid any ambiguities and it will enable your installer to deal with any faults quickly and effectively.

2 Safety instructions and warnings

Read the general safety instructions in this chapter carefully before using the device. A certified installer must install the device and resolve any faults, in accordance with the applicable guidelines. If this product is installed and used in any other way, the warranty will not apply.

2.1 Sound, independent alarm system

Although we have designed and built our control equipment with the greatest care possible, technical faults can never be ruled out. Insurance requirements in many countries are becoming increasingly stringent. This requires the alarm contacts of the various control computers to be connected a central alarm unit.

⚠ We recommend also installing a sound independent alarm system, for example a min/max thermostat.

❗ We advise you to manually test the alarm at least once a week.

2.2 During use

The people who operate the device have read the manual carefully. They are aware of potential hazards that may arise from improper use and maintenance of the product.

⚡ The device must only be opened by authorized personnel.

⚠ Do not switch off the control computer while the house is empty, but switch it to *Off* mode. This will prevent condensation caused by the equipment cooling down.

⚠ Check the device for any damage at regular intervals. A damaged device is unsafe. Always report any damage to your installer.

⊗ Electronic equipment is splash-proof and must not be cleaned using a pressure cleaner.

❗ If any emergency has occurred, write down: the circumstances under which the emergency occurred, installation settings, software date, software version number and possible causes.

2.3 Disposal

The EU has set up systems for the separate collection of waste electrical and electronic equipment and batteries (Directive 20212/19/EU). If you do not dispose of the device properly, you risk a fine.

♻ Electrical and electronic equipment must be collected separately at the end of its life.

3 About the DLOG-20/DLOG-40

In combination with *FarmConnect*, the DLOG-20/DLOG-40 records temperatures, analog signals (adjustable via jumper for 0-10V or 0-20mA), and digital signals (pulses per time unit, counters, statuses) at fixed time intervals.

Input type	Number of inputs for DLOG-20	Number of inputs for DLOG-40
Temperature input	5	10
Analog input	5	10
Digital input	10	20

You can expand the number of inputs using modules connected to the MODULE bus.

A maximum of 80 inputs can be assigned, including:
- 10 temperature inputs
- 10 analog inputs
- 20 counters (counter reading + current value)
- 20 hour counters
- 20 pulse counters

The DLOG-20/DLOG-40 has up to ten input fields, enabling you to record events on specific dates, such as 10 litres of acid consumption on dd-mm-yyyy. The data logger stores this data in memory.

ⓘ The data logger features a memory chip that retains all settings, even during a power outage. If the power has been off for several days, simply reset the date and time.

4 Display and keyboard

4.1 Screen layout

screen number + title bar ———
```
xxx xxxxxxxxxxxxxxxxxxxx    ⬍
```
——— scrolling up/down

Time, date and year ———
```
xx:xx xx xxxxxx 20xx    ◀◀ ▶▶
```
——— scrolling to previous/next screen

⬍ Indication that you can access the remaining settings and measurements using keys ▲ and ▼ .
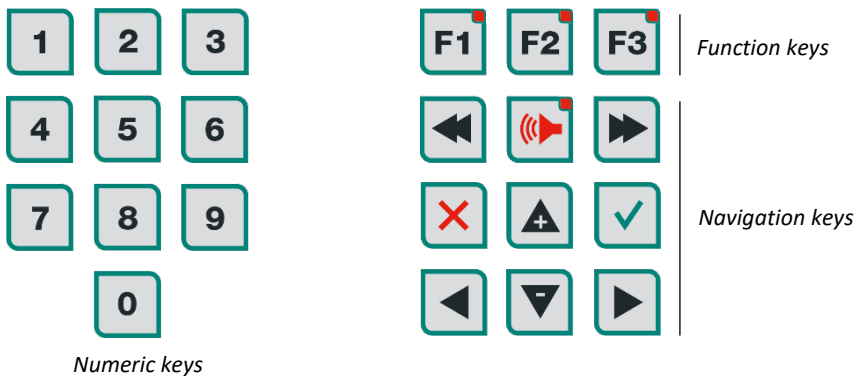
◀▶ Indication that you can access the remaining settings and measurements using keys ◀ and ▶ .

◀◀ ▶▶ Indication that you can select the previous/next screen using ◀◀ / ▶▶ .

4.2 Keyboard

1	2	3
4	5	6
7	8	9
	0	

Numeric keys

| F1 | F2 | F3 | *Function keys*
| ◀◀ | 🔊 | ▶▶ |
| ✗ | ▲ | ✓ | *Navigation keys*
| ◀ | ▼ | ▶ |

⚠ Do not use sharp objects, such as a pen or screwdriver, to operate the keys.

4.3 Function keys

F1 Press and hold this key and use ◄ ► to select the previous/next language.

F2 No function for the user.

F3 No function for the user.

4.4 Numeric keys (0..9)

Use the numeric keys to enter a screen number, value or text. Select menu item 10 using **0** .

Button	Character
0	_0
1	.,1'-:+
2	abcäáàâç2ABCÄÁÀÂÇ
3	defëéèê3DEFËÉÈÊ
4	ghïíìî4GHÏÍÌÎ
5	jkl5JKL
6	mnoöóòô6MNOÖÓÒÔ
7	pqrs7PQRS
8	tuvüúùû8TUVÜÚÙÛ
9	wxyz9WXYZ

Text input

2 ... **9** allows you to change names; max 15 characters including spaces. The character appears in a rectangle. Press the number key as many times until the desired character appears. For a punctuation mark, press **1** repeatedly. Use **0** to insert spaces.

2 : Press 1× for a, 2× for b etc.
Use ◄ ► to move the text cursor left/right.

For menu choices, for example, the text automatically starts with a capital letter.

4.5 Navigation buttons

✕ Cancel menu selection or change.
Press and hold to return to the main menu

◄ ► In control mode, press and hold to move cursor left/right.
In edit mode, move cursor left/right.

▲ ▼ In control mode, move cursor up/down.
In edit mode, decrease/increase the value.

✓ Confirm menu selection, start change mode and confirm change.
In edit mode, the value to be changed appears in a black rectangle: **19.5**°C.
During change, the cursor changes to a black box: 19.5°C.

4.6 Alarm button

Shortcut key for alarm screen. The LED in this key lights up in case of an alarm situation.

```
Alarm status

Main alarm     on           Test  yes  10s
  🕐 off        yes          30m00s


Alarm code        Input already assigned
Control           Sensor 2
Terminal          00K01
Control           Sensor 1


1 Latest alarms

```

*Rese*t   *yes* = clear all alarms. After a reset, the active alarms then reappear on the screen.

*Tes*t   *yes* = test alarm relay (siren) for 10 seconds.
no = to clear the alarm test time.

🕐 *off*   Option for temporarily disabling the alarm (siren). This does not apply to hardware alarms. The main alarm is turned off for 30 minutes, during which the LED flashes unevenly. After 30 minutes, the main alarm reactivates. If the cause of the alarm is not resolved, the alarm relay triggers again. Set 🕐 *off* to *no* to clear the temporary alarm deactivation time.

Once the alarm relay de-energizes (after the alarm delay time has elapsed), the cause appears on the screen. You can turn the main alarm on and off. If the main alarm is off, the LED on the alarm key flashes. The LED is on when there is an alarm in one of the houses. In addition to the cause of the alarm, the display shows the specific control where the fault has occurred.

If the alarm concerns an input that has been assigned twice, it also shows the control to which you have assigned the same input for the second time. The terminal number related to the alarm is also displayed. For example, if input 00K01 is double assigned, the terminal number will be shown, preceded by the relevant module address.

Alarm external house If a message arrives via the communication loop indicating that the alarm relay of a connected controller has de-energized, *Alarm external house* will display the relevant house number.

⚠   After clearing the fault, do not forget to switch the alarm back on. Preferably use the "off" function to clear the fault. In case of any emergencies, document the circumstances under which the event occurred, including installation settings, software date, software version number, and any identified causes.

❗   Installation errors such as *Input already assigned, Incorrect input type, Input already assigned* and other similar issues should be resolved before commissioning.

4.7 Installation error

To avoid continuous errors during installation, first install the modules. Then, check whether the installed modules are detected by the control software of the data logger (code 0). Only when all modules respond should you start installing the controls, ensuring no installation errors occur due to missing inputs.

❗   Since the controls and module detection operate cyclically, it may take several tens of seconds for a fault message to disappear from the screen after you change an input or module number.

5 Main menu

5.1 Access code

```
Main menu

1 Temperature sensors
2 0-10V inputs
3 Counters
4 Hour counters
5 Pulse counters
6 Manual input

7 Alarm

8 System
Access code 0000
```

```
Main menu

1 Temperature sensors
2 0-10V inputs
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8 System
```

! If you use an access code, write it down and keep it in a safe place. Without the access code, you will not be able to change any settings. Once an access code is active, you can only change the settings after entering the correct access code.

The access code is cleared as soon as you press ☒ in the *Main menu* or automatically 10 minutes after the last key press. After that, you must enter the access code again to change any settings

With an access code, you can prevent unauthorized persons from changing settings on your data logger. Your installer can set a maximum of two access codes (each a four-digit combination) for you.

5.2 Rotating screens

10 minutes after the last key press, the rotating information screens will appear on the display. Use the ◀ / ▶ keys to navigate to the previous or next rotating screen.

5.3 Temperature sensors

```
1 Temperature sensors

Sensor 1          24,6°C
Sensor 2          25.4°C
Sensor 3          25.5°C
Sensor 4          25.5°C
Sensor 5          25.4°C
Sensor 6          27.3°C
Sensor 7          29.4°C
Sensor 8          29.4°C
Sensor 9          29.4°C
Sensor 10         24.4°C
```

This overview shows the *Actual temperature* measured by sensors 1 thru 10.

Use the ▲ and ▼ keys to select the desired sensor. Press the ✓ key to request an overview of the selected temperature sensor.

ⓘ The displayed sensor names may differ from the example provided. Your installer may have customized the sensor names; refer to section 4.4 for details.

```
10 Temperature sensor 1

Current temperature    24.6°C

Day        Min.°C | Time  | Max.°C | Time
Interval    24.6  | 18:23 | 25.1   | 17:53
Today       20.2  | 6:36  | 28.3   | 15:04
Yesterday   13.6  | 6:28  | 27.2   | 15:55
```
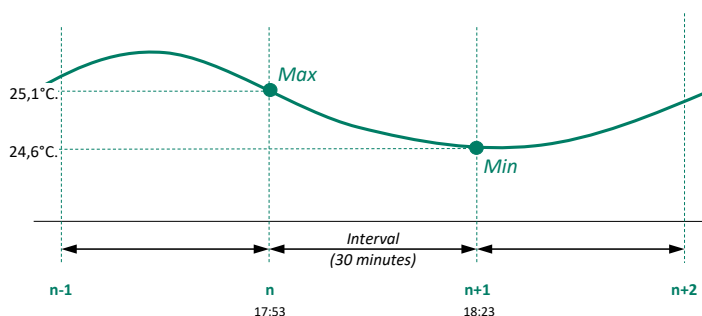

Under *Current temperature*, you will see the temperature currently measured by the selected sensor. Below this, there is a min/max table showing the minimum and maximum temperatures recorded during the current interval, as well as for today and yesterday. Additionally, the table displays the times when these minimum and maximum temperatures were measured.

A reading of *-99.9°C* indicates that the temperature sensor is defective.

5.4   0-10V inputs

```
2 0-10V inputs

0-10V input 1                +....V
0-10V input 2                +....V
0-10V input 3                +....V
0-10V input 4                +....V
0-10V input 5                +....V
0-10V input 6                +....V
0-10V input 7                +....V
0-10V input 8                +....V
0-10V input 9                +....V
0-10V input 10               +....V
```

This overview shows the *Current values* of inputs 1 to 10.

Use the ▲ and ▼ keys to select the desired input.
Use ✓ to request the overview of this 0-10V input.

ⓘ The names of the 0-10V inputs displayed may differ from the example provided. Your installer might have customized the input names; refer to section 4.4. Additionally, the units and display format are based on the settings configured by your installer.

```
20 Overview 0-10V input 1

Current value              +....V

Day        Min.  | Time  | Max.  | Time
Interval   +.,.  | uu:mm | +.,.  | uu:mm
Today      +.,.  | uu:mm | +.,.  | uu:mm
Yesterday  +.,.  | uu:mm | +.,.  | uu:mm
```

Current value displays the currently measured value of the selected 0-10V input.

Below that, you will see a min/max table displaying the minimum and maximum values for the current interval, as well as for today and yesterday. Additionally, the table includes the times when these minimum and maximum values were recorded.

5.5 Counters

```
3 Counters

                Today      Total
Counter 1       ...        ......kWh
Counter 2       ...        ......kWh
Counter 3       ...        ......kWh
Counter 4       ...        ......m³
Counter 5       ...        ......m³
Counter 6       ...        ......m³
Counter 7       ...        ......m³
Counter 8       ...        ......m³
Counter 9       ...        ......m³
Counter 10      ...        ......m³
Counters 11-20
```

In this overview, you can see today's counter readings as well as the total readings.

Use the ▲ and ▼ keys to select the desired counter.

If the counter has a *current* position, its name will be underlined (indicating a link to the overview). Press the ✓ key to request the overview of this counter.

ⓘ The counter names displayed may differ from the example provided, as your installer may have customized them. For details, refer to section 4.4. Additionally, the units and display format are determined by the settings configured by your installer.

```
30 Overview counter 1


Current state           .....KWh

Day        | Min. | Time  | Max. | Time
Interval   | .....| hh:mm | .....| hh:mm
Today      | .....| hh:mm | .....| hh:mm
Yesterday  | .....| hh:mm | .....| hh:mm
```

At *Current state,* you will see the current reading of the selected counter.

Below that, a min/max table will display the minimum and maximum positions for the current interval, today, and yesterday. Additionally, the table will show the times when these minimum and maximum positions were recorded.

5.6 Hour counters

```
4 Hour counters

                    Status   Today   Total
Hour counter 1      off      3:00m   120h
Hour counter 2      off      1:01m   202h
Hour counter 3      off      2:01m   212h
Hour counter 4      off      2:01m   217h
Hour counter 5      off      2:01m   212h
Hour counter 6      off      2:01m   212h
Hour counter 7      off      12:01m  2014h
Hour counter 8      off      12:15m  2017h
Hour counter 9      off      12:11m  2012h
Hour counter 10     off      12:12m  2015h
```

The *Status* column lists the current statuses of the hour counters.

Today displays the total time the input has been closed (enabled) today.
Total shows the total number of hours the input has been closed (enabled) since the DLOG-20/DLOG-40 was commissioned.

5.7 Pulse counters

```
5 Pulse counters
Pulse counter          29%
Pulse counter 2        14%
Pulse counter 3        20%
Pulse counter 4        22%
Pulse counter 5        27%
Pulse counter 6        29%
Pulse counter 7        19%
Pulse counter 8        24%
Pulse counter 9        22%
Pulse counter 10       27%
Pulse counter 11       22%
Pulse counter 12       17%
```

This overview displays the current *Pulse counter readings*.

Use the ▲ and ▼ keys to select the desired pulse counter.

Press the ✓ key to request an overview of the selected pulse counter.

```
50 Overview pulse counter 1

Current value ...%

Day       | Min. | Time  | Max. | Time
Interval  | ...  | hh:mm | ...  | hh:mm
Today     | ...  | hh:mm | ...  | hh:mm
Yesterday | ...  | hh:mm | ...  | hh:mm
```

Current value displays the current value of the selected pulse counter.

Below that, you will see a min/max table displaying the minimum and maximum values for the current interval, as well as for today and yesterday. Additionally, the table will show the times when these minimum and maximum values were recorded.

ⓘ The names of the pulse counters displayed may differ from the example provided, as your installer may have customized them. For details, refer to section 4.4. Additionally, the units and display format are determined by the settings configured by your installer

5.8 Manual entry

```
6 Manual input

Manual 1     03-06-2024 000001
Manual 2     03-06-2024 000001
Manual 3     03-06-2024 000001
Manual 4     03-06-2024 000001
Manual 5     03-06-2024 000001
Manual 6     03-06-2024 000001
Manual 7     03-06-2024 000001
Manual 8     03-06-2024 000001
Manual 9     03-06-2024 000001
Manual 10    03-06-2024 000001
```

Sometimes, it is necessary to enter additional data manually. The DLOG-20/DLOG-40 provides up to 10 manual input fields for this purpose.

```
6 Manual input

Acid consumption xx-xx-xxxx 00xxxkg
```

Once you have entered the quantity, it is stored in the internal memory. If you only change the date, the entered quantity is not saved. At the start of the next interval cycle (date automatically gets today*'s day*), the input fields are deleted.

6 Alarm

6.1 General

```
Alarm status

Main alarm      on          Test no
  🕐 Off         no


Alarm code      No alarm
Control




1 Latest alarms

```

> **!** Installation errors such as *Input already assigned, Incorrect input type, Input already assigned* and other similar issues should be resolved before commissioning

6.2 Latest alarms

```
1 Latest alarms                 ⬍

Alarm 0     Mon 1 January 2024    0:00
Alarm code  No alarm
Control

Alarm 1     Mon 1 January 2024    0:00
Alarm code  No alarm
Control

Alarm 2     Mon 1 January 2024    0:00
Alarm code  No alarm
Control

```

The last 5 alarm causes that triggered the alarm relay are stored in the DLOG-20/DLOG-40 data logger and displayed on the screen. In addition to the cause of each alarm, the date and time when the alarm occurred are also recorded.

Alarm 0   Displays the cause of the most recent alarm along with the time until which the alarm was or is active.

Use the ▲ and ▼ keys to navigate to the data for previous or next alarms

6.3   Alarm codes

Alarm code	Description		
Alarm unknown (xxx)	An unknown undocumented alarm code has occurred. Please note the number displayed and contact your supplier for assistance.		
Communications	*Master station*		The main station has not received data from any device that is part of the same RS-485 data communication loop.
	PC-485		The main station cannot send data to the PC-485: ▪ The connection to the PC-485 is disconnected. ▪ The PC-485 is turned off or faulty. To resolve the issue: 1. Check the connection: Ensure that the connection between the DLOG-20/40 and the PC-485 is secure. 2. Verify power: Make sure the PC-485 is powered on. 3. Inspect the fuse: Check the fuse in the PC-485 to ensure it is not blown.
	Gateway		▪ There has been no connection between the PC-485 and the remote server for the set time (default 1 hour, configurable on screen 911). To resolve this issue: 1. Check internet connection: Ensure that you have an active Internet connection. 2. Inspect ethernet connection: Verify that the ethernet connection is properly established and functioning.
Configuration changed	Module configuration (type) changed. Read the module number again		
Wrong input type	The configured input type does not match the type that the control can handle.		
Wrong output type	The configured output type does not match the type that the control can handle.		
Wrong terminal setting	Wrong assignment: The function you assigned to the terminal is not supported by the module.		
No communication address	The device address KL-6000 is missing.		
Invalid input	The input number does not appear on the module.		
Invalid output	The output number does not appear on the module.		
No input assigned	No input terminal number has been entered.		
No output assigned	No output terminal number has been entered.		
Memory full alarm	The saved log data has exceeded the set data limit (installer setting on screen 911). Check the connection to the server.		
Input already assigned	The input is assigned to two or more controls.		
Module not found	The set module number at the terminal does not exist.		
Module not responding	Module address could not be found, check settings on the module.		
Module reset alarm	Module keeps resetting due to a fault, check the module.		
Unknown terminal type	The type of terminal does not exist.		
Temperature sensor faulty	Measurement temperature sensor is < -50.0°C or > +100.0°C.		
Output already assigned	The output is assigned to two or more controls.		

7 System

7.1 Language

```
8 System

Device                   D-Log
Programme version         ....
Programme date      ..-..-....

Language / Taal
Sprache / Langue           ENG

Fahrenheit                 yes

1 Date/Time
2 Display
```

Under *Language,* select the language in which the texts should appear on the screen.
You can also change the language by holding down the function key F1 and pressing ◀ or ▶ at the same time.

By default, the temperature is displayed in °C. To switch to Fahrenheit, change the temperature display to °F.

The conversion formula between °F and °C is:
°F = 32 + (°C × 9/5)

7.2 Date/Time

```
81 Date/Time

Time                     10:59h
Year                       2024
Month                        06
Day                          03
```

In this window, you can set the date and/or time.

! Be cautious when changing the date and time, as adjustments will impact the display in the database.

7.3 Display

```
82 Display

Contrast                     48
Brightness                 100%
   On-time                  300s

   Cursor left              yes
```

Contrast   Adjusts the ratio of white to black colours on the display.

Brightness   Sets the backlight brightness of the display.

On-time   Specifies the number of seconds the display remains lit after the last key press. Setting it to 0 seconds turns off the display immediately.

Cursor left Yes: Places the cursor at the beginning of the field when you are about to change a setting.
No: Places the cursor at the end of the field when you are about to change a setting.