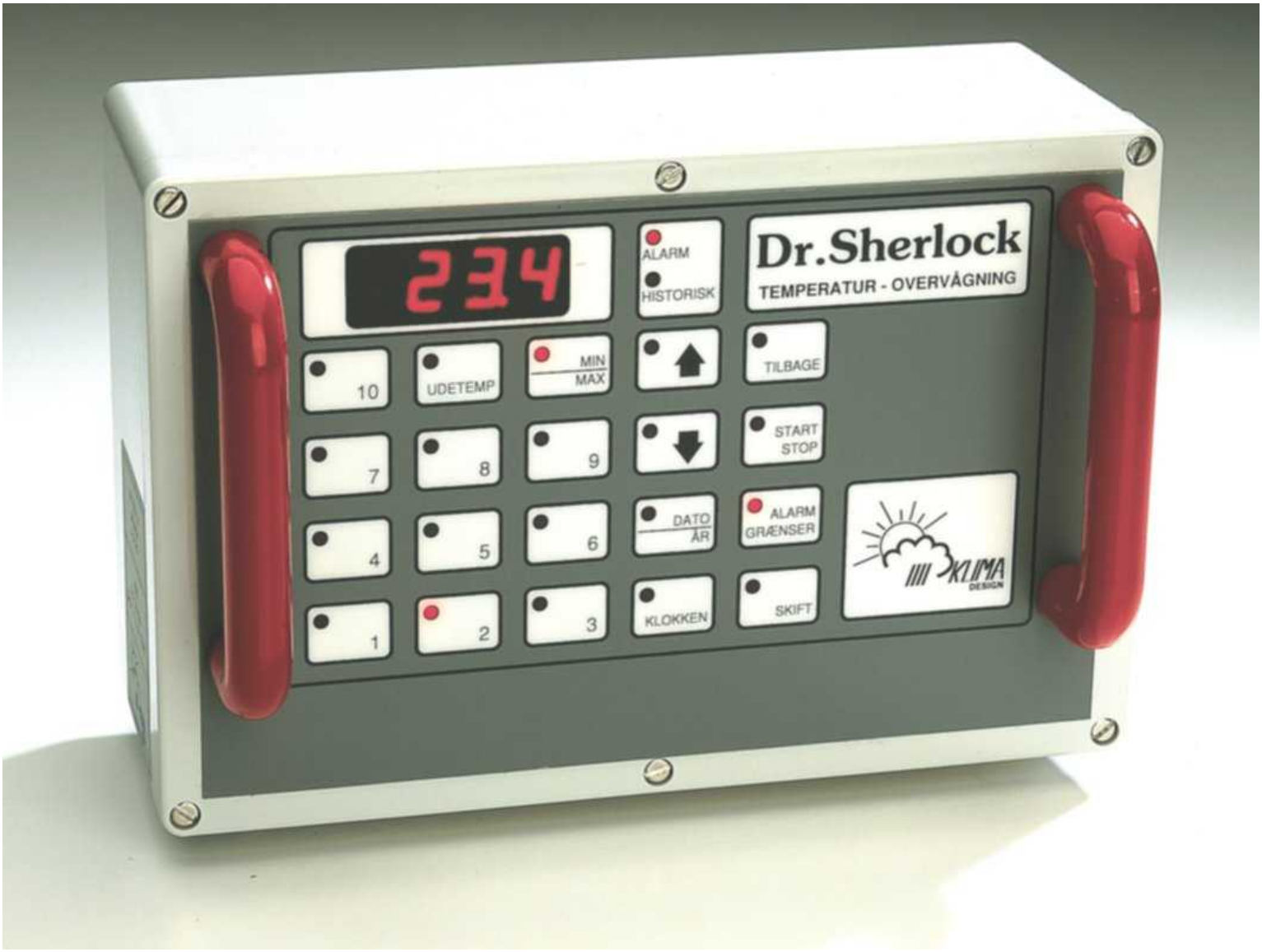
Dr.Sherlock

TEMPERATURE - MONITOR



USER MANUAL

VER. 3.51

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1.1 Keyboard

In this manual the keys are referred to in **bold** typesetting.

The keys labelled with numbers from **1-10** correspond to the 10 temperature sensor inputs. The key which is currently active, e.g. the corresponding value is displayed, has the light on.
SHIFT has a special function: When activated you may press another key and both keys have the light on, accessing special registers for use during installation. Please read special installation papers.
The key **RETURN** is used to return to normal displaying of temperatures.
The key **START STOP** is used to stop the siren, and to toggle the inputs **1-10** on and off.

1.2 Changing values

To change a value use **ARROW UP/DOWN**
If you hold the key down changing will speed up after 2 sec.
Values cannot be change beyond certain limits, e.g. + or - 40.0° C, where the system would not be able to function.

1.3 Lock keyboard

Its posible to lock the keyboard to prevent non- authorized people from operating.

Unlock by pressing **SHIFT** and then both ARROW keys at the same time.
When locking mode is activated the locking will lock automatically after the specified time.

Press **SHIFT** and then **MIN MAX**. Change the value from “0" (=off) to a value between 1-10 to activate locking mode with a triggering from 1-10 minutes.

1.4 Time, date and year

Time, date and year is used to stamp the logged data (temperatures etc.) with date and hour. When altered the stamping will onlý affect data from this moment.

2.1 Reading of temperatures

Press **RETURN** and one of the keys **1-10** to display the present temperature measuring at this input.

Temperature measuring goes from -40.0°C and +40.0°C

2.2 High and low values

Press **MIN MAX** once to show lowest value this date.
Press **MIN MAX** once more to show highest value this date.

You may now press **TIME** to se the corresponding hour for the measurement.

Note! The lamp **HISTORIC** flashes to indicate that the values displayed are not present.

Press **RETURN** to return to normal displaying.

4.0 Data logging

Every 10 minutes Dr.Sherlock saves in memory the measured values at the ten temperature inputs plus outdoor temperature together with a time stamp.
By alarm situation and when it changes back to “0" (OK) it saves too.

4.1 Displaying of saved data

RETURN should be engaged and then choose one of the inputs **1-10**.
Press **ARROW DOWN** to go back in time one step at a time. You may go forward by pressing **ARROW UP**.

Note! The lamp **HISTORIC** flashes to indicate that the values displayed are not present readings.

When the lamp **HISTORIC** flashes you may:
1. choose other inputs (**1-10**) to display corresponding values at this point.
2. Press TIME, DATE to display corresponding time
3. Press ALARM to display corresponding alarm code

Press **RETURN** to return to normal displaying.

5.0 Speech computer

Please also refer to "Dr.Bell OPERATION INSTRUCTIONS"
The Dr.Bell speech computer and Dr.Sherlock is working together by means of a RS485 communication network.

Key pressed	Function performed
RETURN	Stops talking
START **STOP**	Current alarm causes will be acknowledged and Dr.Bell will announce alarm cause: "error type and station number/name"
START STOP - **ARROW DOWN**	Disables alarm supervision for 60 minutes. When the intermission comes to an end, alarm supervision is automatically engaged.

Request value: station no. * register no. #
E.g.: 1 * 1 # requests current temperature from station 1

Remote control: station no. * register no. * value #
E.g.: 1* 3 * 280 # Changes maximum threshold temperature for station 1 to 28,0°C

Note that decimal digit must be entered, since a telephone don't have a decimal point on the keypad. In case a negative value is needed, enter a 0 a s the first digit.

Register no. for the 10 inputs	Digits	Description
1	1	Temperature
2	1	Minimum threshold temperature
3	1	Maximum threshold temperature
4	1	HOTCA: High-outdoor-temperature-compensation-addition
5	1	Maximum fluctuation within 10 minutes
6	1	Offset value for sensor
Register no. for **SYSTEM**	Digits	Description
1	1	Outdoor temperature
2	1	Minimum threshold, Outdoor temperature
3	1	Maximum threshold, Outdoor temperature
4	2	TIME
5	2	DATE
6	0	Year
12	2	Supply voltage, normally 13.8 V
13	0	Siren activation, minutes
14	1	Offset value for outdoor temperature sensor

6.0 Alarm threshold values

Press **RETURN**
Press **ALARM SETTINGS**. Alarm code will be displayed for the active input **1-10**.
Press once more to show minimum temperature threshold, e.g. 16.°C. Alarm code "1" indicates that this threshold has been exceeded.
There are 4 threshold values:

Press key **ALARM SETTINGS**	Alarm code, if exceeded	Threshold	Indication by lamp	Factory setting
1 time	1	minimum temperature threshold	**MIN MAX** on	16.0°C
2 times	2	maximum temperature threshold	**MIN MAX** flashes	32,0°C
3 times	3	High-outdoor-temperature-compensation-addition (HOTCA) There will be no alarm as long as temperature is below outdoor temperature + HOTCA	**OUTDOOR** on	2.0°C
4 times	4	Maximum fluctuation within 10 minutes	-	10.0°C

Note ! Feel free to access the threshold values for other inputs by pressing the key corresponding (**1-10**)

6.1 Outdoor temperature

The outdoor temperature is displayed by pressing **OUTDOOR**
The outdoor temperature has minimum and maximum threshold values to be engaged in the same way as the other inputs **1-10**. Factory setting is -40.0°C and +40.0°C meaning not engaged.
High-outdoor-temperature- compensation-addition (HOTCA). There will be no alarm (siren) as long as temperature is below outdoor temperature + HOTCA But alarm code will be "3"
To alter the value HOTCA, press ALARM SETTINGS (code) and then 3 times more.
Factory setting is 2.0°C, but you may increase it to 4-5.0°C to make it more efficient = fewer alarm by high outdoor temperatures.

Pressing **START STOP** and **OUTDOOR** may toggle HOTCA- function on and off for all inputs **1-10**. HOTCA is on when **OUTDOOR** light is on and off when light is off.

6.2 Maximum fluctuation within 10 minutes

To alter the value "maximum fluctuation within 10 minutes", press ALARM SETTINGS (code) and then 4 times more.
Factory setting is 10.0°C, but you may decrease it to 1.0-2.0°C to make it more sensitive.

It is off when value is set to 0.0°C

6.3 Monitoring of main power supply

Dr.Sherlock monitors its own 12 VDC supply and the accumulator.
If you want to monitor the supply of other equipment, then use a "main power monitoring relay" which connects to a special input, see installation papers.

If a fault occurs at the "main power monitoring relay"- input, the system alarm code will be "13" This alarm cannot be suspended/removed alone but only by switching monitoring of all inputs to off by pressing

START STOP in 2 sec.

- the display will show "-1" .

6.4 Start/stop monitoring

The monitoring of the inputs may be switched off and on individually:

1. Press **START STOP**
2. You may now toggle alarm monitoring off and on by pressing either of the inputs **1-10**. Monitoring on is by light on and monitoring off is by light off.

Note ! Switch monitoring of all inputs and the complete system to off may be done by pressing

START STOP in 2 sec.

- the display will show "-1" .

To activate system again: press **START STOP**

Note ! It may be convienient to leave Dr.Sherlock in "START STOP- mode" showing status of the 10 inputs, e.g.

Light on	= OK,
Flashing light	= Alarm
Light off	= OFF

6.5 When alarm occurs - stop siren

- Siren will sound for a limited time (1-10 minutes, see installation papers)
- Alarm situation shows by flashing lamp "ALARM"

PRESS	Function
START STOP	• Siren stops sounding • Inputs that are in alarm condition, shows flashing lamp

- Correct the faults by inputs in alarm condition and press **START STOP** again: the display should show " 0"
- Or, you may stop monitoring at the faulty inputs, se paragraph 6.4

6.7 Testing accumulator

To make sure the accumulator is OK, Dr.Sherlock may be setup to perform a 10 minutes test from 8.00 to 8.10

Alarm codes:

If the voltages drops below 11.7 a warning will occur and alarm code will be set to "9"
If the voltages drops below 11.5 an alarm situation will occur and alarm code will be set to "10", and the test will stop.

The lamp in the key **TIME** will flash as long as the test is going on.

BY ALARM

1. Press START STOP Siren stops. Notice the code in the display.

SYSTEM ALARM CODE	MEANING
-1	Complete system and inputs switched to monitoring off
0	OK, system OK and all the inputs that are set to monitoring on, is OK
1	Too low outdoor temperature
2	Too high outdoor temperature
5	Outdoor temperature input shortcircuit
6	Broken cable by outdoor temperature input
8	1. Alarm caused by an external unit. 2. alarm yet not cleared at Dr.Bell speech computer (clears within one minute), to be ignored.
9	Accumulator-test-warning: during test voltage has dropped below 11.7 V
10	Accumulator-test-alarm: during test voltage has dropped below 11.5 V
11	Power supply below 11.5 V
12	Power supply below 12.5 V, working on accumulator - mains off
13	Alarm by main power monitoring relay
14	Alarm by on or more inputs. See next table to detect fault "**INPUT ALARM CODE**"

2. INPUT ALARM CODE

Pres **RETURN** and then **ALARM SETTINGS**. Press any of the keys **1-10** to see the code for the this input.

INPUT ALARM CODE	MEANING
-1	Monitoring switched off for this input
0	OK, Monitoring on for this input and no fault detected
1	Too low temperature
2	Too high temperature
3	High outdoor temperature situation. High temperature threshold exceeded (code 2), but outdoor temperature +addition not exceeded. No siren sounds
4	Maximum fluctuation within 10 minutes exceeded
5	Temperature input short circuit
6	Broken cable by temperature input
15	Code for faulty ON/OFF input

3. Restart.

When faults have been corrected, press **START STOP**.
If OK, the display will show " 0" and the lamp "ALARM" will be on constantly.