

# User Manual

## ALFA 23 DP and ALFANET 23 DP -10/+90°C (0,1)

### Minimum / Maximum Alarm Thermostat.



VDH doc: 072650

Version v1.2

Datum: 08-06-2012

Software: 072643\_ALFA 13/23/33 DP2

File: Do072650.wpd

Range: -10/+90°C per 0,1°C

#### \* Function.

The **ALFA(NET) 23 DP** is a digital alarm thermostat for wall and panel mounting. The temperature is readout in tenths of degrees Celsius. The thermostat watches the minimum and maximum temperature. To report a alarm the **ALFA(NET) 23 DP** has one relay for both alarms.

The **ALFANET 23 DP** has a RS 485 network connection so it can be read out and adjusted on the Alfanet.

#### \* Installation.

On the topside of the **ALFA(NET) 23 DP** is shown how the sensor, power supply and relay are connected. After connecting the **ALFA(NET) 23 DP** to the power supply, it takes a few seconds to show the measured temperature in the display.

The alarm relay is a multi functional combined minimum- and maximum-alarm, at alarm the LED 'set high' is lit in the display.

#### \* Control.

The **ALFA(NET) 23 DP** alarm thermostat can be controlled by three push buttons on the front;

**SET** - view / change setpoints and reset of alarm.

**UP** - increase a setpoint.

**DOWN** - decrease a setpoint.

#### \* Viewing setpoints.

Viewing set point of maximum alarm:

By pushing the **SET** key first and then the **UP** key together the maximum alarm set point appears in the display. The led 'set high' starts blinking.

Viewing set point of minimum alarm:

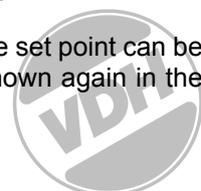
By pushing the **SET** key first and then the **DOWN** key together the maximum alarm set point appears in the display. The led 'set low' starts blinking.

A few seconds after releasing the keys the set point disappears and the measured temperature is shown in the display.

#### \* Changing set points.

Push the **SET** key together with the **UP** or **DOWN** key and the maximum alarm set point or minimum alarm set point appears in the display. Release both keys.

Now push and hold the **SET** key again and together with the **UP** or **DOWN** keys the set point can be changed. A few seconds after releasing the keys the measured temperature is shown again in the display.



### \* **Operation of the alarm functions.**

This alarm thermostat has two adjustable alarms namely, a minimum and a maximum alarm. Whereby can be chosen from watch or control alarms (Parameter 27):

- Watch Alarm: The relay is normally activated and LED 'set high' is off. At alarm the relay is deactivated and the LED 'set high' is lit. This is also the case at power failure.
- Control Alarm: The relay is normally deactivated and the LED 'set high' is off. At alarm the relay is activated and the LED 'set high' is lit.

Furthermore, an alarm can be hold or reset automatically (parameter 28).

- If alarms are hold (default), the alarms must be confirmed by pressing the **SET** button. Only when the alarm cause is solved and the alarm is confirmed, the relay is set to its normal position.
- If alarms are not hold and the alarm cause is solved, the alarm will automatically reset and the relay is set to its normal position.

Also, an offset (zone) and the differential for each alarm can be set. See the function diagram.

Furthermore, a delay time (Parameter 23 and 24) for each alarm can be set, during the delay time the led 'set high' flashes. If after ending the delay-time the alarm is still present, an alarm is given and the relay is set into the alarm position. If the temperature is recovered within the delay time, than there will be no alarm.

In the display is continuously shown **H** at maximum alarm and **L** at minimum alarm. Once the alarms are confirmed, the measured temperature is shown again alternating with any outstanding actual alarm indications.

With parameter 29 set to 1 (Yes), the relay of the controller can be set to its normal position by confirming the alarm, although the alarm is not being solved. Then the led 'set high' is switched off, the relay is set to its normal position and the display starts showing the measured temperature again, alternated with the outstanding alarm indications.

### \* **Sensor Fault Detection.**

If a sensor fault is detected, there is error message **Er** in the display and the relay works according to the setting of parameter 11.

The error remains in the display until it is manually confirmed by pressing the **SET** key. Once the sensor fault is confirmed by the measured temperature is displayed alternating with any outstanding actual error.

After the sensor fault is solved, the relay works again according to setting of parameter 27 as:

- the sensor fault is/shall be confirmed by hand, or
- an alarm is detected.

In most situations it will be logical to set Parameter 11 and 27 to the same value.

### \* **Sensor adjustment.**

The sensor can be adjusted by using the Sensor Offset (parameter 04). Indicates the **ALFA(NET) 23 DP** e.g. 0.2°C too much, the Sensor Offset has to be decreased by 0.2°C.

### \* **Error messages.**

In the display of the **ALFA(NET) 23 DP** the following error messages can appear:

- Er** - Sensor broken.  
Solution: - Check if the sensor is connected correctly.  
- Check the sensor (1000Ω at 25°C).  
- Replace the sensor.

- EE** - Settings are lost.  
Solution: - Settings must be reprogrammed.

### \* **Setting internal parameters.**

Next to the adjustment of the setpoint, some internal settings are possible like differential, sensor-offset, setpoint range and alarm settings.

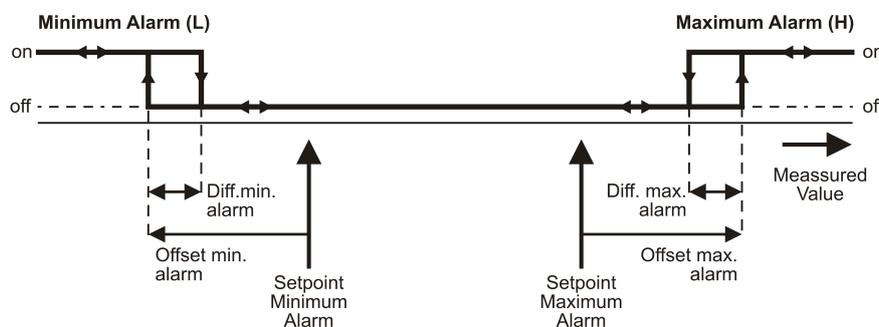
By pushing the **DOWN** key more than 10 seconds, you enter the 'internal programming menu'. In the left display the upper- and lower-segment are blinking. With the **UP** and **DOWN** keys the required parameter can be selected (see the parameter table). If the required parameter is selected, the value can be read-out by pushing the **SET** key. Pushing the **UP** or **DOWN** keys, allows you to change the value of this parameter. If no key is pushed for 20 seconds, the **ALFA(NET) 23 DP** changes to its normal operation mode.



\* **Parameter ALFA(NET) 23 DP.**

Parameter	Description Parameter	Range	Standard Value
02	Minimum setpoint setting	-10.0..+90.0°C	-10.0
03	Maximum setpoint setting	-10.0..+90.0°C	+90.0
04	Offset temperature sensor (sensor adjustment)	-15.0..+15.0°C	0.0
10	Startup delay after power failure	0..99 Minutes	0
11	Relay on at sensor failure	0 = No, 1 = Yes	0
21	Differential maximum alarm	-0.1..-15.0°C	-1.0
22	Differential minimum alarm	+0.1..+15.0°C	+1.0
23	Time delay maximum alarm	0..99 Minutes	0
24	Time delay minimum alarm	0..99 Minutes	0
25	Offset minimum alarm	-10.0/+10.0°C	0.0
26	Offset maximum alarm	-10.0/+10.0°C	0.0
27	Relay alarm function (0=watchdog 1=regulated alarm)	0..1	0
28	Auto reset alarm after temperature recovering (0=hold alarm, 1=don't hold alarm)	0 = No, 1 = Yes	0
29	Reset alarm after manual conformation, despite the alarm situation is not solved	0 = No, 1 = Yes	0
90	Network number (only at ALFANET)	1..250	1
95	Software version	0..255	-
96	Production year	00..99	-
97	Production week	1..52	-
98	Serial number (x1000)	0..255	-
99	Serial number (units)	0..999	-

\* **Funktion diagram.**

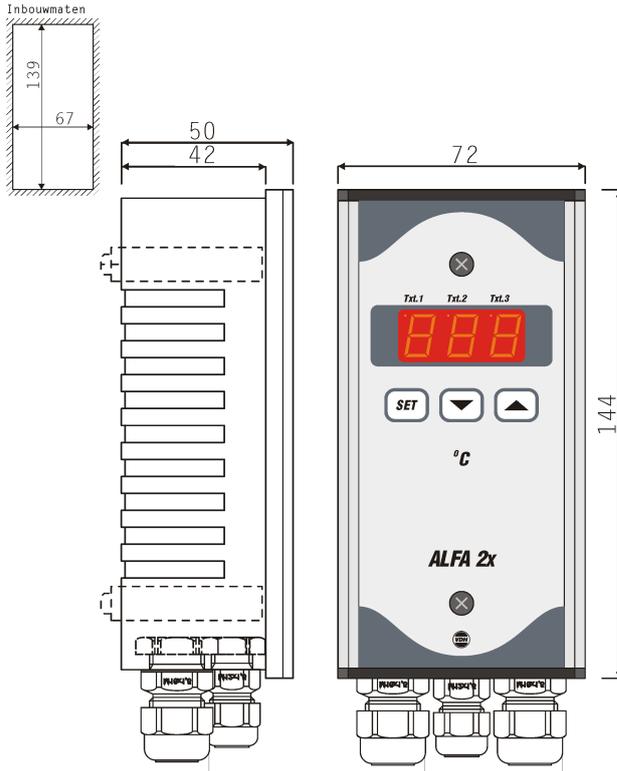


\* **Technical details.**

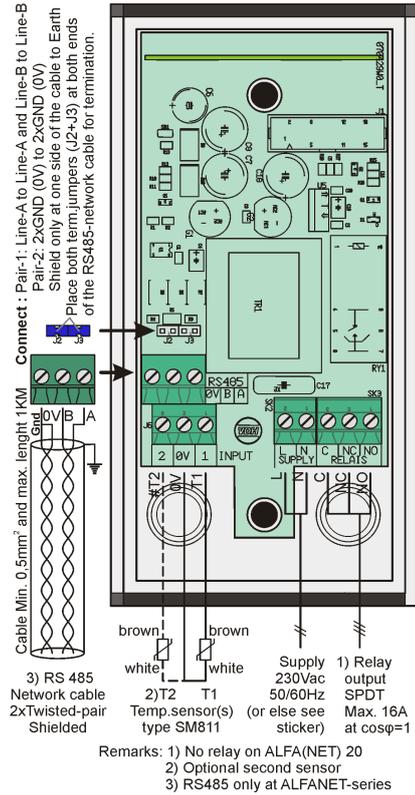
- Model : ALFA 23 DP Alarm Thermostat  
ALFANET 23 DP Alarm Thermostat with Network
- Range : -10/+90°C, readout per 0,1°C
- Supply : 230 Vac / 1,2VA 50/60Hz (or else see product sticker)
- Relay : 1x SPDT contact Max. 250V/16A(C-NO), 8A(C-NC) (cos phi=1)
- Communication : RS 485 Network (2x twisted-pair shielded) only at ALFANET model.
- Control : by pushbuttons on the front.
- Front : Polycarbonate IP65
- Sensor : SM 811 2-wire PTC-sensor (1000Ω at 25°C)
- Sizes : 144 x 72 x 50mm (hwd)
- Panel hole : 139 x 67mm (hw)
- Provided with memory protection during power failure.
  - Connection with screw terminals on the backside.
  - Equipped with self test function and sensor failure detection.
  - Special versions on request available.



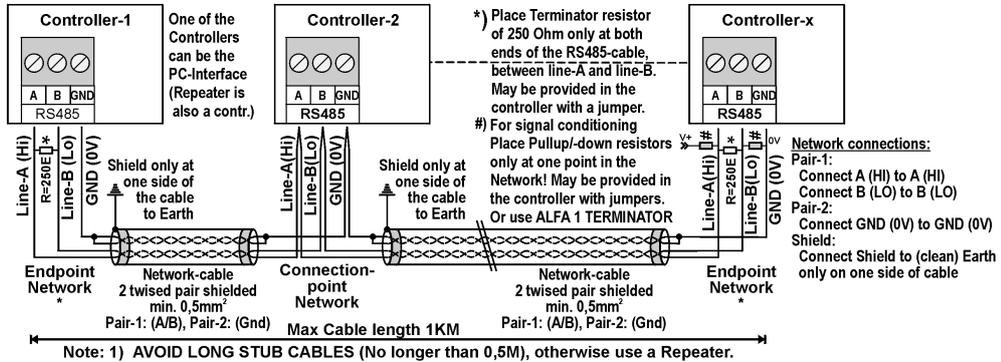
\* **Dimensions.**



\* **Connections.**



**RS 485 NETWORK CONNECTIONS 2-twisted pair shielded cable:**



\* **Address.**

VDH Products BV  
 Produktieweg 1  
 9301 ZR Roden  
 The Netherlands

Tel: +31 (0)50 - 30 28 900  
 Fax: +31 (0)50 - 30 28 980  
 Email: info@vdhproducts.nl  
 Internet: www.vdhproducts.nl

