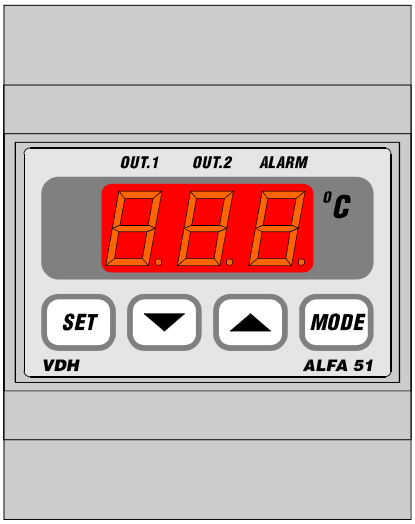
User manual
ALFA(NET) 51 PI

Rail-Thermostat.



VDH doc. 070031 **Version: v1.0** **Date: 27-09-2007**
Software: ALFANET51-PI **File: Do070031.WPD** **Range: -50/+50,0˚C**

* Installation.

On the connection diagram of the **ALFA(NET) 51 PI** is shown how the sensors, analogue output, power supply and relays are to be connected. After connecting the **ALFA(NET) 51 PI** to the power supply, a self test function is started. As this test is finished, the measured temperature appears in the display.
The ***ALFANET 51 PI*** is by use of the **ALFANET PC-INTERFACE** controllable on the PC.

* Control.

The **ALFA(NET) 51 PI** thermostat can be controlled by four pushbuttons on the front. These keys are:

SET - view / change the setpoint.
UP - increase the setpoint.
DOWN - decrease the setpoint.
MODE - relay status key.

* Viewing setpoint.

By pushing the **SET** key the setpoint appears in the display. The decimal point of the last display starts blinking. A few seconds after releasing the **SET** key the setpoint disappears and the measured temperature is shown again in the display.

* Changing setpoint.

Push the **SET** key and the setpoint appears in the display. Release the **SET** key. Now push the **SET** key again together with the **UP** or **DOWN** keys to change the setpoint. A few seconds after releasing the keys the measured temperature shows again in the display.

* Viewing the individual sensors.

By pressing the **UP** and **DOWN** key together, the individual sensors can be shown in the display. After releasing the keys, the measured temperature of sensor-1 can be shown by pushing the **UP** key or the measured temperature of sensor-2 can be shown by pushing the **DOWN** key. A few seconds after releasing the keys the (average) temperature shows again in the display.

* Status of the Relays.

By pushing the **MODE** key the display shows the status of the relays. Each display segment shows the status of the relay output, showing 0=off and 1=on. The code 110 means relay 1 and 2 are on and relay 3 is off.

* Setting internal parameters.

Next to the adjustment of the setpoint, internal settings can be made like differential, sensor offset, setpoint range and the functions of the thermostat.
Push the **DOWN** key for more than 10 seconds, to 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** key to change the value of this parameter.
If after 20 seconds no key is pushed, the **ALFA(NET) 51 PI** changes to the normal operation mode.

* Adjustment sensors.

Sensor-1 can be adjusted by using the Sensor Offset parameter 06 and Sensor-2 can be adjusted by using the Sensor Offset parameter 07. Indicates a Sensor e.g. 2˚C to much, the according Sensor Offset has to be decreased by 2˚C.

* Error messages.

In the display of the **ALFA(NET) 51 PI** the following error messages can appear:

LO	- Minimum alarm.	Solution E1,E2:
HI	- Maximum alarm.	- Check if the sensor is connected correctly.
E1	- Sensor-1 failure.	- Check sensor (1000Ω at 25˚C).
E2	- Sensor-2 failure.	- Replace sensor.
EEE	- Settings are lost.	Solution EEE:
		- Reprogram the settings.

-L- - In case of sensor short-circuit the display alternates between error-code **E..** and **-L-**, as indication for a short-circuit sensor.
-H- - In case of open-circuit sensor the display alternates between error-code **E..** and **-H-**, as indication for a open circuit sensor.

Reset Alarm. When a error-messages appears it can be resetted by pushing the **SET** key. The function of this key depends on parameter P37.

* Technical data.

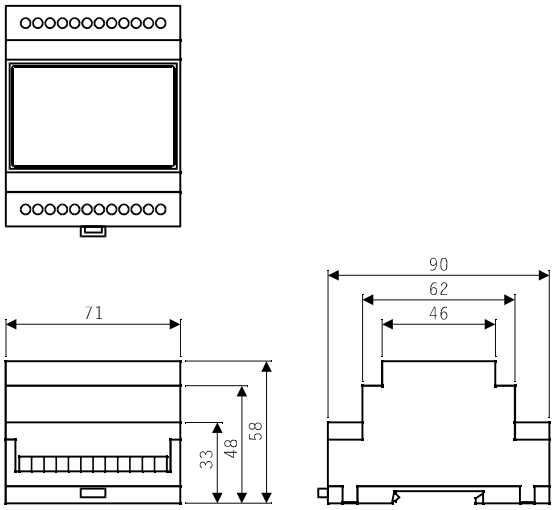
Type	: ALFA(NET) 51 PI rail thermostat	
Range	: -50/+50,0˚C, display per 0,1˚C	
Supply	: 12Vac 50/60Hz	(-5/+10%)
Display	: 3-digit 7-segment display	
Relays	: Ry1= SPST(NO)	250V/8A (cos ϕ=1) of 250V/5A (cos ϕ=0.4)
	Ry2= SPST(NO)	250V/8A (cos ϕ=1) of 250V/5A (cos ϕ=0.4)
	Ry3= SPDT(NO/NC)	250V/8A (cos ϕ=1) of 250V/5A (cos ϕ=0.4)
	Relays have one common (C).	
Control	: By push buttons on front.	
Front	: Polycarbonate IP65	
Sensors	: 2x SM 811/2m	(PTC 1000Ω/25˚C).
Analogue output	: 0..10Vdc PI output	(Rload = min. 10KOhm)
Communication	: RS485-Network	(2x twisted pair shielded cable min. 0,75mm^2)
Dimensions	: 90 x 71 x 58mm	(HWD)
Panel cut out	: 46 x 71mm (HW) for front mounting	
Accuracy	: ± 0,5% of the range.	

- Provided with memory protection during power failure.
- Connections with screw terminals on the back side.
- Equipped with sensor failure detection.
- Special versions are on request available.

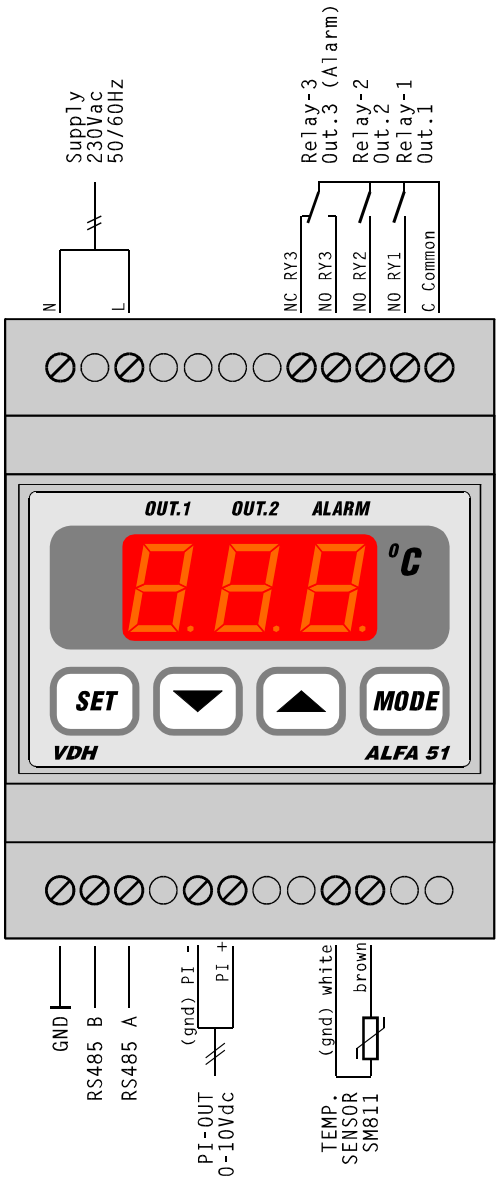
* Parameters ALFA(NET) 51 PI

Para-Meter	Description Parameter	Range	Standard value
01	Function Relay 1	1 = Cool 2 = Heat 3 = Alarm	1
02	Function Relay 2	1 = Cool 2 = Heat 3 = Alarm	2
03	Function Relay 3	1 = Cool 2 = Heat 3 = Alarm	3
04	Function PI-output	1 = Cool 2 = Heat	1
05	Offset temperature sensor	-15.0..+15.0˚C	0.0
06	Offset PI (zone)	-15.0..+15.0˚C	0.0
07	P-band setting	0.0..20.0˚C	5.0
08	I-time setting	0..99 minutes	0 (off)
10	Switch on relay 2 by	0 = Temperature 1 = Time	0
11	Switch on relay 3 by	0 = Temperature 1 = Time	0
12	Switch on delay relay 2	0.. 99 Minutes	15
13	Switch on delay relay 3	0..99 Minutes	15
14	Switching differential relay 1	0.1..15.0 ˚C	0.5
15	Setpoint offset relay 1	-15..+15 ˚C	0.0
16	Switching differential relay 2	0.1..15.0 ˚C	0.5
17	Setpoint offset relay 2	-15..+15 ˚C	0.0
18	Switching differential relay 3	0.1..15.0 ˚C	0.5
19	Setpoint offset relay 3	-15..+15 ˚C	0.0
20	Switch on delay cooling	0..99	0
21	Switch off delay cooling	0..99	0
22	Parameter 20/21 in Sec. or Min.	0 = Seconds 1 = Minutes	0
23	Minimum on-time cooling	0..99 Minutes	0
24	Minimum off-time cooling	0..99 Minutes	0
25	Minimum set point	-50.0..+50.0˚C	-50
26	Maximum set point	-50.0..+50.0˚C	+50
27	Read-out per 1˚C	0 = No 1 = Yes	0
30	Alarm type (to setpoint)	0 = None 1 = Absolute 2 = Relative	1
31	Minimum alarm setpoint	-50.0..+50.0˚C	-50
32	Maximum alarm setpoint	-50.0..+50.0˚C	+50
33	Time delay minimum alarm	0..99 Minutes	0
34	Time delay maximum alarm	0..99 Minutes	0
35	Relay function alarm relay	0 = Watch 1 = Control	0
36	Reset alarm relay after recovering alarm	0 = No 1 = Yes	0
37	Reset alarm relay after manual reset	0 = No 1 = Yes	0
40	Start up delay after power failure	0..99 Minutes	0
41	Forced relay function at sensor failure	0 = None 1 = Cool 2 = Heat	0
90	Network number	1..250	1
95	Software version	0..255	0
96	Production year	00..99	0
97	Production week	1..52	1
98	Serial number (x1000)	0..255	0
99	Serial number (units)	0..999	0

* Dimensions.



* Connections.



* Address.

VDH Products BV
Produktieweg 1
9301 ZS 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