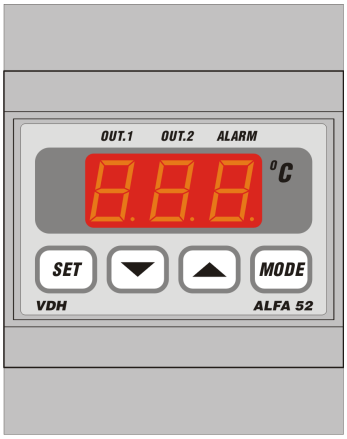
User manual
ALFA 52 VS 0-20°C
Differential Thermostat.



VDH doc. 080331	Versie: v1.2	Datum: 22-04-2010
Software;	File: Do080331.wpd	Static range (see sticker);
992903 ALFA 52/72 VS 20 -50..+50	Typenr.: 904.000806	-50/+50,0˚C
100320 ALFA 52/72 VS 20 -20..+80	Typenr.: 904.000929	-20/+80,0˚C
992901 ALFA 52/72 VS 20 0..+100	Typenr.: 904.000916	0/+100,0˚C

* Installation.

On the connection diagram of the **ALFA 52-VS** is shown how the sensors, power supply and relays has to be connected. After connecting the **ALFA 52-VS** to the power supply, a self test function is started. As this test is finished, the measured differential temperature of sensor-1 minus sensor-2 appears in the display.

* Control.

The **ALFA 52-VS** thermostat can be controlled by four pushbuttons on the front These keys are:

SET	- view / change set point and reset the alarm
▲ **(UP)**	- increase the set point.
▼ **(DOWN)**	- decrease the set point.
MODE	- relays status key.

* Viewing the temperature from sensor-1 and sensor-2.

By pressing the **UP** and **DOWN** keys simultaneously and after that the **UP** key, the measured value from sensor-1 can be read-out. If the down key is pressed, the measured value from sensor-2 is shown. If no key is pressed for a few seconds, the differential temperature is shown again.

* Viewing the delta-setpoint.

By pushing the **SET** key, the set point of delta thermostat appears in the display.
A few seconds after releasing the keys the setpoint disappears and the differential temperature is shown again in the display.

* Changing the delta-setpoint.

Push the **SET** key. The delta-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 set point. A few seconds after releasing the keys, the measured differential temperature is shown again in the display.

* Status of the Relays.

By pushing the **MODE** key the display shows the status of the relays.
Each digit shows the status of one relay output, showing 0 = off and 1 = on.
The code 110 means relay 1 and 2 are on and relay 3 is off.
Relays 1 and 2 are used for the differential thermostat (see function diagram).
Relay 3 is used as an alarm relay.

* Adjustment sensors.

Sensor-1 can be adjusted by using the Sensor Offset parameter 05 and Sensor-2 can be adjusted by using the Sensor Offset parameter 06. Indicates a Sensor e.g. 2˚C to much, the according Sensor Offset has to be decreased with 2˚C.

* Error messages.

On the display of the **ALFA 52-VS** the following error messages can appear:

E1	- Sensor-1 failure.	Solution E1, E2:
E2	- Sensor-2 failure.	- Check if sensor is connected correctly. - Check sensor (1000Ω at 25^{O}C) - Replace sensor
EEE	- Settings are lost.	Solution EEE: - Reprogram the settings.

Reset Alarm. When an error-messages appears it can be reset by pushing the **SET** key. The function of this key depends on parameter P42.

After reset alarm the differential temperature appears again in the display or the error-code **E..** alternates with extra indications as the temperature is out of measure range. These indications are;

'**L**' indicates a short-circuit sensor.
'**H**' indicates a open-circuit sensor.

Whereby the first segment is used to indicate these codes for Sensor-1 the second segment shows '-' and the last segment indicates the codes for Sensor-2.

F.i.;	**L - -**	Indicates a short circuit of Sensor-1 and Sensor-2 okay
	- - H	Indicates a open-circuit of Sensor-2 and Sensor-1 okay
	H - L	Indicates Sensor-1 with a open-circuit and Sensor-2 with a short-circuit

* Technical data ALFA 52-VS.

Type	: ALFA 52-VS Differential thermostat (Rail)	
Range	: Differential temperature in display 0/+20^{O}C (0,1)	
Static range sens.	: -50/+50,0˚C, above -10˚C read-out in 0,1˚C or -20/+80,0˚C, above -10˚C read-out in 0,1˚C or 0/+100,0˚C, read-out in 0,1˚C	
Supply	: 230Vac 50/60Hz (-5/+10%) or else see product sticker	
Read-out	: 3-digit 7-segments display	
Relays	: Ry1= SPST(NO)	250V/8A (cos ϕ=1) or 250V/5A (cos ϕ=0.4)
	Ry2= SPST(NO)	250V/8A (cos ϕ=1) or 250V/5A (cos ϕ=0.4)
	Ry3= SPDT(NO/NC)	250V/8A (cos ϕ=1) or 250V/5A (cos ϕ=0.4)
	Relays have one common (C).	
Control	: by push buttons on the front.	
Front	: Polycarbonate	
Sensor	: 2x SM 811/2m (PTC 1000Ω/25˚C).	
Dimensions	: 90 x 71 x 58mm (hwd)	
Panel cut out	: 46 x 71mm (HW) at panel mount	
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 on request available.

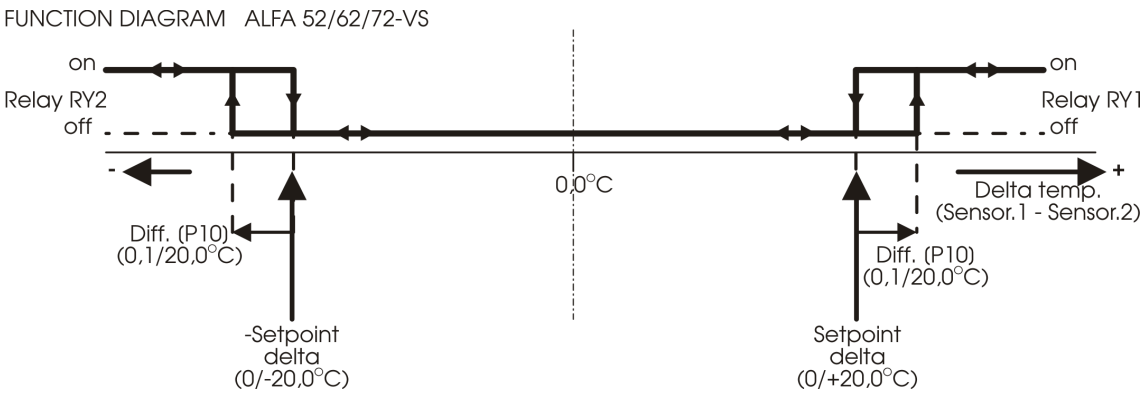
* Setting internal parameters.

Next to the adjustment of the set point, internal settings can be made like differential, sensor offset, set point 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. Over the **UP** and **DOWN** keys the required parameter can be selected (see table for the parameters).
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 20 seconds no key is pushed, the **ALFA 52-VS** changes to the normal operation mode.

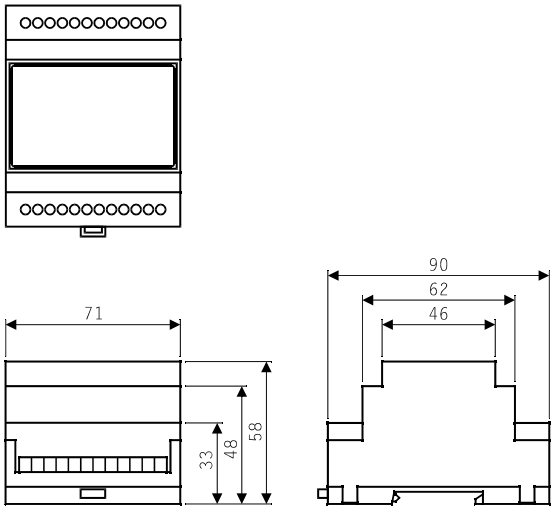
* Parameters ALFA 52-VS

Para-Meter	Description Parameter	Range	Default value
05	Offset temperature sensor 1	-15.0..+15.0˚C	0.0
06	Offset temperature sensor 2	-15.0..+15.0˚C	0.0
10	Switching differential	0.1..20.0	0.5
11	Switch on delay	0..99	0
12	Switch off delay	0..99	0
13	Parameter 11/12 in seconds or minutes	0 = seconds 1 = minutes	0
20	Minimum adjustable delta-setpoint	0.0..+20.0˚C	0.0
21	Maximum adjustable delta-setpoint	0.0..+20.0˚C	20.0
22	Read-out above -10˚C on whole degrees	0= No 1= Yes	0
40	Relay function alarm relay	0= fail safe alarm 1= control alarm	0
41	Reset alarm relay after recovered alarm	0= No 1= Yes	0
42	Reset alarm relay after manual reset	0= No 1= Yes	0
45	Control delay after power failure	0..99 min.	0
46	Relay active at error control sensor	0= Non 1= Relay 1 2= Relay 2	0
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

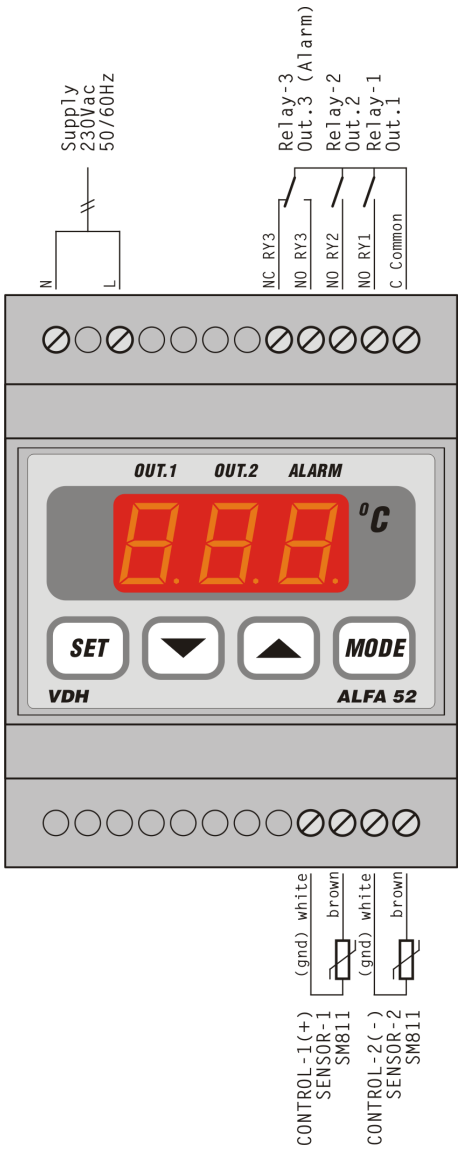
* Function diagram.



* Dimensions.



* Connections.



* Address.

VDH Products BV
Produktieweg 1
9301 ZS Roden
Nederland

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