User Manual
ALFA 25 DP and
ALFANET 25 DP

Cool/Defrost
Thermostat

* Function.

The **ALFA(NET) 25 DP** is a digital thermostat for panel mounting. The thermostat controls the cooling and defrost. Defrost will be done by temporarily switching off the cooling (natural defrost). The defrost starts on intervals or on compressor runtime. The defrost stops on time. The **ALFA*NET* 25 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) 25 DP** is shown how the sensor, power supply and relay have to be connected.
After connecting the **ALFA(NET) 25 DP** to the power supply, a self-test function is started. As this test is finished, the measured temperature appears in the display. When the relay is activated, the led 'on' will light-up in the display.

* Control.

The **ALFA(NET) 25 DP** Thermostat can be controlled by three push buttons on the front. These keys are:

SET - view / change the set point.
UP - increase the set point.
DOWN - decrease the set point.

* Viewing set point.

By pushing the **SET** key the set point appears in the display. The led 'set' starts blinking. A few seconds after releasing the **SET** key the set point disappears and the measured temperature is shown in the display.

* <u>Changing set point.</u>

Push the **SET** key and the set point appears in the display. Release the at **SET** key. Now push 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 shows again in the display.

* <u>Starting/stopping defrost.</u>

The defrost cycle is automatically started and stopped. Programming by the internal parameters. During defrost the led 'defrost' will light-up.
If there is a defrost cycle, the defrost can be stopped by hand, pushing the **UP** key and then the **SET** key, while the **UP** key is held.
If there is no defrost cycle, the defrost can be started by hand, pushing the **UP** key and then the **SET** key, while the **UP** key is held.

* <u>Setting internal parameters.</u>

Next to the adjustment of the set point, some internal settings are possible like differential, sensor-offset, set point range and the function cooling or defrost.
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. 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** keys together with the **SET** key allows you to change the value of this parameter.
If after 20 seconds no key is pushed, the **ALFA(NET) 25 DP** changes to it's normal operation mode.

* <u>Adjustment sensor.</u>

The sensor can be adjusted by using the Sensor Offset (parameter 04).
Indicates the **ALFA(NET) 25 DP** e.g. 2˚C too much, the Sensor Offset has to de decreased with 2˚C.

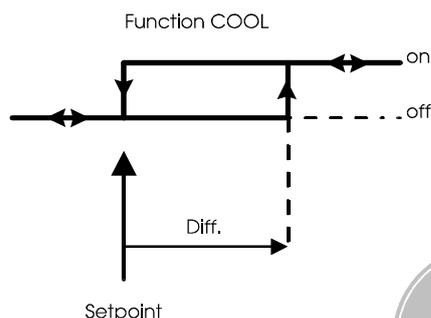## * <u>Error messages.</u>

In the display of the **ALFA(NET) 25 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:
           - Reprogram the settings.

* <u>Function Diagam.</u>

* Parameters ALFA(NET) 25 DP.

Para-meter	Description Parameter	Range	Standard Value
01	Switching differential	1..30˚C	3
02	Minimum set point	-10..+40˚C	-10
03	Maximum set point	-10..+40˚C	+40
04	Offset temperature sensor	-15..+15˚C	0

05	Compressor start-up protection
	  0 = start-up delay in seconds
	  1 = start-up delay in minutes
	  2 = delay between switch off and switch on minutes
	  3 = delay between switch on and switch on minutes
		0..3	0

06	Compressor start-up time belonging to parameter 05	0..99	10
07	Defrost cycle time	1..99 hours	12
08	Defrost time	0..99 minutes	15
09	Defrost delay after power failure (if Parm. 14 = 1)	0..99 minutes	0
10	Startup delay after power failure	0..99 minutes	0
11	Relay on at sensor failure	0 = no, 1 = yes	0
12	Defrost cycle time based on compressor on time	0 = no, 1 = yes	0
13	Temperature display locked during defrost cycle	0 = no, 1 = yes	0
14	After power failure starting with defrost cycle	0 = no, 1 = yes	0
15	Maximum time display locked after defrost (if parameter 13 = 1)	0..60 minutes	5
90	Network number	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	-

1) During delay time the LED 'on' is flashing.

* Technical details.

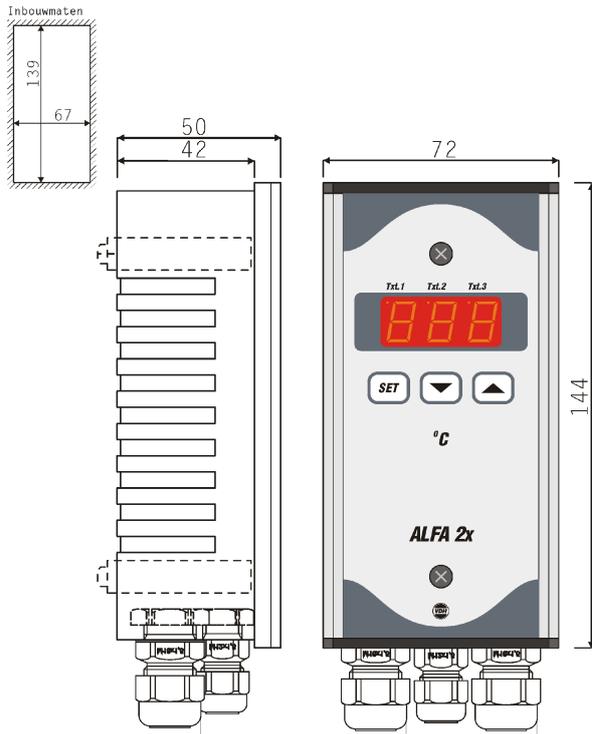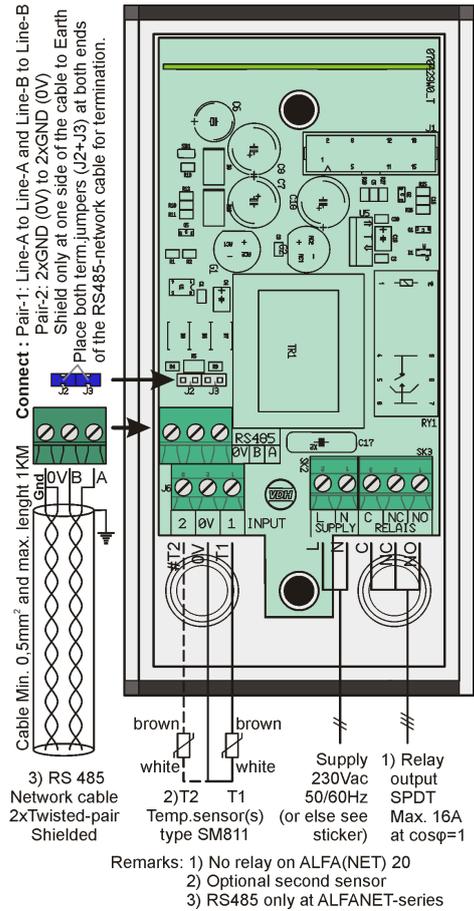|	
Model	: ALFA 25 DP Cool/Defrost Thermostat ALFANET 25 DP Cool/Defrost thermostat with Network
Range	: -10/+40˚C, readout per 0,1˚C
Supply	: 230 Vac 50/60Hz
Relay	: SPDT 250V/16A(C-NO), 8A(C-NC) (cos phi=1)
Control	: by push buttons on the front.
Communication	: RS485-Network (2x twisted-pair shielded, min. 0,5mm^2)
Front	: Polycarbonate
Sensor	: SM 811/2m (1000Ω at 25˚C)
Dimensions	: 144 x 72 x 50mm (hwd)
Panel hole	: 139 x 67mm (hb)

- Provided with memory protection during power failure.
- Connection with screw terminals on the back side.
- Equipped with self test function and sensor failure detection.
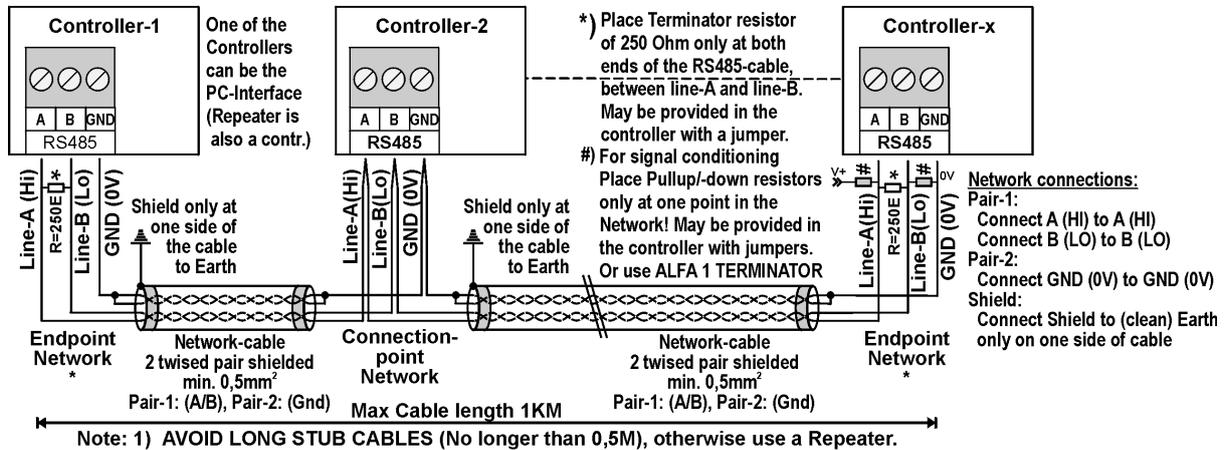- Special version on request available.

* <u>Dimensions.</u>　　　　　　* <u>Connections.</u>

Inbouwmaten

139 / 67

50 / 42 / 72 / 144

Txt.1　Txt.2　Txt.3

SET ▼ ▲

°C

ALFA 2x

Connect : Pair-1: Line-A to Line-A and Line-B to Line-B
Pair-2: 2xGND (0V) to 2xGND (0V)
Shield only at one side of the cable to Earth
Place both term.jumpers (J2+J3) at both ends
of the RS485-network cable for termination.

Cable Min. 0,5mm² and max. lenght 1KM

RS485　0V B A

0V B | A

2 0V 1 | INPUT | L N SUPPLY | C NC NO RELAIS

brown　brown
white　white

3) RS 485
Network cable
2xTwisted-pair
Shielded

2)T2　T1
Temp.sensor(s)
type SM811

Supply
230Vac
50/60Hz
(or else see
sticker)

1) Relay
output
SPDT
Max. 16A
at cosφ=1

Remarks: 1) No relay on ALFA(NET) 20
2) Optional second sensor
3) RS485 only at ALFANET-series

RS 485 NETWORK CONNECTIONS 2-twisted pair shielded cable:

Controller-1

A | B | GND
RS485

One of the
Controllers
can be the
PC-Interface
(Repeater is
also a contr.)

Line-A (Hi)
R=250E *
Line-B (Lo)
GND (0V)

Shield only at
one side of
the cable
to Earth

Controller-2

A | B | GND
RS485

Line-A(Hi)
Line-B(Lo)
GND (0V)

Shield only at
one side of
the cable
to Earth

*) Place Terminator resistor
of 250 Ohm only at both
ends of the RS485-cable,
between line-A and line-B.
May be provided in the
controller with a jumper.
#) For signal conditioning
Place Pullup/-down resistors
only at one point in the
Network! May be provided in
the controller with jumpers.
Or use ALFA 1 TERMINATOR

Controller-x

A | B | GND
RS485

V+ | # | * | # | 0V
Line-A(Hi)
R=250E *
Line-B(Lo)
GND (0V)

Network connections:
Pair-1:
Connect A (HI) to A (HI)
Connect B (LO) to B (LO)
Pair-2:
Connect GND (0V) to GND (0V)
Shield:
Connect Shield to (clean) Earth
only on one side of cable

Endpoint
Network
*

Network-cable
2 twised pair shielded
min. 0,5mm²
Pair-1: (A/B), Pair-2: (Gnd)

Connection-
point
Network

Network-cable
2 twised pair shielded
min. 0,5mm²
Pair-1: (A/B), Pair-2: (Gnd)

Endpoint
Network
*

Max Cable length 1KM

Note: 1) AVOID LONG STUB CABLES (No longer than 0,5M), otherwise use a Repeater.

* <u>Adresse.</u>

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