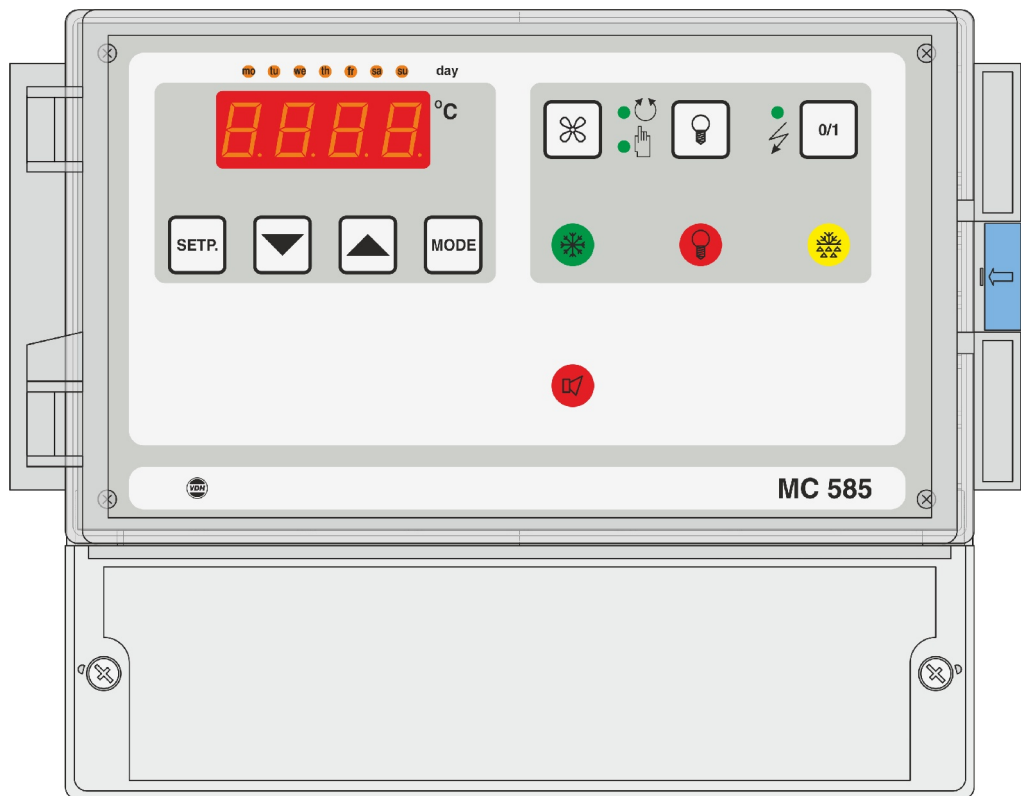


MC 585 MC 585 Alfabet

Wall and panel mounting

Operating Manual



Description :		MC 585, MC 585 Alfabet thermostat Wall-mounted model with or without door, screws above or below and panel model		Doc.no.:	053304
Type:	MANUAL	Number of pages:	16	Version:	V3.0
File:	Do053304 MC 585 v30 EN.wpd	By:	BJB	Date:	24-08-2016
Software:	MC775 Version: V3.00				
VDH Products BV - Roden - Holland		Signed:		File:	Doc'05

Operating manual	Document no. : 053304	Version : V3.0
MC 585, MC 585 Alfabet	Client : General	Page : 2 of 16

Table of contents

1.	Technical specifications	3
2.	Functional specifications	4
2.1	Installation	4
3.	Operation	5
3.1	Switching the controller on or off	5
3.2	Switching the lighting on or off	5
3.3	Viewing and/or changing the set point.	5
3.4	Starting/stopping the defrost cycle.	5
3.5	Operation of the fan.	5
3.6	Setting the clock.	6
3.7	Start and stop freezing.	6
4.	Programming internal settings	6
4.1	Table of parameters	7
5.	Operational control possibilities	10
5.1	Compressor control possibilities.	10
5.2	Fan control possibilities.	10
5.3	Defrost control possibilities.	11
6.	Sensor calibration	11
7.	Alarms	12
8.	Front	13
9.	Connection diagram	14
10.	Dimensions	16

This document has been prepared with the utmost care and the information it contains is assumed to be correct. However, VDH Products BV accepts no liability for any mistakes or errors, and retains the right to adapt or change the document without notice.



Operating manual	Document no. : 053304	Version : V3.0
MC 585, MC 585 Alfabet	Client : General	Page : 3 of 16







1. Technical specifications








General

Types	: MC 585, MC 585 Alfabet
Wall mounting:	
Housing	: Grey plastic, available with or without door
Connection	: Screws above or below
Material	: Polystyrol 45h KG 2 natur BASF
Dimensions	: 240 x 185 x 120mm (bhd)
Panel mounting:	
Housing	: Steel plate panel
Connection	: At rear, on coded screws
Material	: Steel plate sprayed silver grey
Dimensions	: 217 x 155 x 85mm (bhd)
Panel cutout	: min. 208 x 146mm (bh)
Front	: Polycarbonate
Range	: -40/+50°C per 0.1°C
Supply	: 230 VAC; 50/60 Hz (-10/+5%).
Used power	: 9 VA
Operating temp.	: -20/+50°C
Store temperature	: -20/+60°C
Operating rel.humidity	: 10/+90 % RH not condensing
Accuracy	: ± 0.5 % of the range

Front

Display	: 7 day LED's
	 day
	4-number digital display for temperature read-out
	 °C

Leds	:  = LED cooling active
	 = LED lighting active
	 = LED defrosting active
	 = LED alarm relay active
	 = LED fan in automatic mode
	 = LED ventilator in continual (manual) mode

Keys	:  = On/off key controller with LED indication
	 = Lamp key to switch lighting on/off
	 = Fan selection key continual/automatic with LED indications
	 = Set point key (read-out set point on display)
	 = Up key (raise value)
	 = Down key (lower value)
	 = Mode key

Operating manual	Document no. : 053304	Version : V3.0
MC 585, MC 585 Alfabet	Client : General	Page : 4 of 16

Inputs and Outputs

Sensors	: A1/G1 A2/G2	Product temperature sensor (KTY81) (SM 811 sensor-1, 2-wire) Defrost temperature sensor (KTY81) (SM 811 sensor-2, 2-wire)
Digital inputs	: IN1/GND IN2/GND IN3/GND	External lighting on/off (potential free input contact) Door contact (potential free input contact) External failure contact (potential free input contact)
Communication	: A/B/GND	RS485-Network (2x Twisted-pair shielded, A+B, (2x)GND)
Supply	: PE/L/N 2x	Supply 230VAC 50/60Hz (L, N and PE, 2x carried out)
Relays	: NO RY5 (L) NO RY4 (L) NO RY2 (L) L/N RY3 Lamp C/NC/NO RY1	Compressor 230VAC output (RY5) (Max. 16A, cos phi=0.4) Fan 230VAC output (RY4) (Max. 5A, cos phi=0.4) Defrost 230VAC output (RY2) (Max. 5A, cos phi=0.4) Lighting 230VAC output (RY3) (Max. 5A, cos phi=0.4) Secured with 5AT fuse on PCB Alarm relays output (RY1) (C/NO/NC, 250Vac/10A not ind.)
Failure input	: Lin alarm	External failure 230VAC input (230VAC)

2. Functional specifications

The **MC 585** is a complete cooling/freezing control unit with a number of compressor, defrost and fan control possibilities.

The controller is also able to switch the lighting on/off manually on front or automatic, in case the door contact is used.

The **MC 585** can show failures, both from internal or external sources, with error codes on the display and it also activates the alarm relay.

2.1 Installation

On the connection diagram of the **MC 585** is shown how this unit must be connected.

A few seconds after the power supply has been turned on the measured temperature of the product sensor (Sensor-1) will be shown in the display.

Operating manual	Document no. : 053304	Version : V3.0
MC 585, MC 585 Alfabet	Client : General	Page : 5 of 16


3. Operation

Normally the display shows the temperature of the product sensor (Sensor-1).

3.1 Switching the controller on or off

By pressing the **ON/OFF** key for longer than 5 seconds the control unit is switched on or off, as the case may be. If the control is on, the LED next to the **ON/OFF** key lights up.

3.2 Switching the lighting on or off

By pressing the **LAMP** key the lighting is turned on or off. The LED  lights up to indicate that the lighting is on. This can even be done as the control unit is off.

It is also possible to switch the lighting on/off automatic by controlling an external pushbutton pulse contact (P61=1) or an external normally closed contact (P61=0) which is connected to terminals S5/S6.

3.3 Viewing and/or changing the set point.

The set point is shown in the display by pressing the **SETP** key.

The LED 'set' starts to flash. Release the **SETP** key.

If the **SETP** key is pressed again and at the same time the **UP** or **DOWN** keys is pressed, it is possible to change the set point.

A few seconds after the **SETP** key has been released the set point will disappear and the measured value will be shown again.

3.4 Starting/stopping the defrost cycle.

The defrost cycle can be started and stopped automatically.

The adjustment for this is made through the internal parameters.


The LED  lights up while defrost is taking place.


Start: When no defrost is taking place the process can be started manually by pressing the **UP** key and then the **SETP** key, while pressing the **UP** key at the same time.

Stop: During defrost the process can be stopped manually by pressing the **UP** key and then the **SETP** key, while pressing the **UP** key at the same time.

3.5 Operation of the fan.

By pressing the **FAN** key it is possible to change from manual to automatic fan mode.

In the manual mode the fan works continuously and the LED  lights up to indicate this.

In the automatic mode the fan only switches on during cooling and the LED  will light up.

See paragraph 5.2 for a description of the fan control options.

Operating manual	Document no. : 053304	Version : V3.0
MC 585, MC 585 Alfabet	Client : General	Page : 6 of 16

3.6 Setting the clock.

The clock can be set by first pressing the **MODE** key and then pressing the **SETP.** key at the same time. The time will appear in the display.

By now pressing the **MODE** key the time can be adjusted as follows:

Minutes: The minutes flash, by pressing the **UP** and/or **DOWN** keys the correct time in minutes can be set. Press the **MODE** key to confirm the value.

Hours: Now the hours flash and can be adjusted using the **UP** and/or **DOWN** keys. Then press the **MODE** key to confirm.

Day: Now the current day Led will flash, the day can now be adjusted by using the **UP** and/or **DOWN** keys.

Press the **MODE** key once more to confirm the last value and "OK" will appear briefly in the display. After this the control will return to normal operation.

3.7 Start and stop freezing.

The control unit has a freezing function which enables the compressor (with its parameter settings) to regulate cooling during the adjustable freeze time (P65).

Start: The freezing function is started by pressing the **MODE + FAN + ON/OFF** keys at the same time for at least 5 seconds while the control unit is switched off.
If P66=1 (start with defrost) then first a defrost cycle is started before freezing takes place. This defrost takes place in accordance with the set defrost parameters.
While defrosting the controller shows "**defr**" in its display.
During freezing the remaining freezing time (hrs.min) is shown in the display.
At the end of the freezing time the control unit reverts to the normal control mode.

Stop: The freezing function can be stopped by pressing the **ON/OFF** key for 5 seconds, than the controller will go to it's off position.

4. Programming internal settings

By pressing the **DOWN** key for longer than 10 seconds it is possible to enter the 'internal programming menu'. The upper and lower segments of the left-hand display will start to flash.

The desired parameter can now be selected using the **UP** and/or **DOWN** keys.

When the desired parameter has been selected, the value of the parameter can be read by pressing the **SETP** key. The value of this parameter can now be changed by pressing the **UP** and/or **DOWN** keys.

If no key is pressed for more than 20 seconds the **MC 585** will return to the normal operating position.

Operating manual	Document no. : 053304	Version : V3.0
MC 585, MC 585 Alfabet	Client : General	Page : 7 of 16

Password

If a password is set (P69), than before viewing and changing the parameters a 4-digit password is asked to enter. The display shows "CodE" and after pressing the **MODE** key it shows "0 - - -" in the display.

By pressing the **UP** and/or **DOWN** key the first digit can be entered. After pressing the **MODE** key the next digit can be entered.

If all four digit are entered correctly the parameters can be viewed and changed.

The password is valid until a certain time (P68) no keys are pressed. After this password timeout, the password must be entered again to view and modify the parameters.

4.1 Table of parameters

PARAMETER	DESCRIPTION OF PARAMETER	RANGE	UNIT	DEFAULT VALUE
01	Offset product sensor (Sensor-1)	-15.0..+15.0	°C	0.0
02	Defrost sensor present	0 = no, 1 = yes	-	1
* 03	Offset defrost sensor (Sensor-2)	-15.0..+15.0	°C	0.0
* 04	Read out defrost sensor (Sensor-2)	-	°C	-
05	View E2 alarm	0 = no, 1 = yes	-	1
10	Minimum adjustable set point	-40.0..+50.0	°C	-40.0
11	Maximum adjustable set point	-40.0..+50.0	°C	+50.0
20	Switch differentiation cooling	0.1..15.0	°C	3.0
21	Switch delay compressor 0 = switching on delay in seconds 1 = switching on delay in minutes 2 = delay between switching off and on in minutes 3 = delay between switching-on times in minutes	0..3	-	0
22	Compressor commuter time of parameter P21	0..99	-	10
23	Control delay after switching on	0..99	minutes	0
* 30	Fan switch differential active 0 = not active 1 = active, switching on delta between the product sensor and the defrost sensor 2 = active, switching on delta between the defrost sensor and set point P37 (also see par. 5.2)	0..2	-	0
* 31	Switch differential fan (P30=1)	0..99.0	°C	2.0
32	Fan off during defrost	0 = no, 1 = yes	-	0
33	Compressor off -> Fan off	0 = no, 1 = yes	-	0
* 34	Switching-on temperature of fan (P32=1)	-40.0..+50.0	°C	2.0
35	Switching-on delay of fan (P32=1)	0..99	minutes	0
36	Switching-off delay of fan (P33=1)	0..99	minutes	0
37	Set point fan thermostat	-40.0..+50.0	°C	2.0
40	Defrost on basis of 1 = Defrost interval time (P42) 2 = Compressor running time (P48) 3 = Defrost timer (P82..P89)	1..3	-	1
41	Compressor on during defrost	0 = no, 1 = yes	-	0
42	Defrost interval time	1..99	hour	12
43	Maximal defrost time	0..99	minutes	15
* 44	End of defrost temperature	-40.0..+50.0	°C	2.0
45	Draining time in minutes	0..99	minutes	0
46	Defrost delay after switching on if parameter P47=1	0..99	minutes	0
47	Start defrost	0=no, 1=yes	-	0
48	Compressor running time	0..99	hour	15
49	Display fixed during defrost	0=no, 1=yes	-	0

Operating manual	Document no. : 053304	Version : V3.0
MC 585, MC 585 Alfabet	Client : General	Page : 8 of 16

PARAMETER	DESCRIPTION OF PARAMETER	RANGE	UNIT	DEFAULT VALUE
50	Compressor on during malfunction product sensor (E1)	0 = no, 1 = yes	-	0
51	Function External alarm (digital contact input) 0 = none 1 = only alarm relay and LED alarm 2 = alarm relay, warning 'EA' in display +LED alarm 3 = alarm relay, LED alarm and everything off 4 = alarm relay, 'EA' in display, LED alarm and everything off	0..4	-	0
52	Alarm repeat time (0=do not repeat)	0..240	minutes	0
53	Alarm relay mode 0 = control alarm (relay activates at alarm) 1 = watch alarm (relay deactivates at alarm)	0..1	-	0
55	Temperature alarm mode 0 = no alarm 1 = absolute alarm 2 = relative alarm (in respect of set point)	0..2	-	0
56	Minimum alarm temperature setting	-40.0..+50.0	°C	-40.0
57	Maximum alarm temperature setting	-40.0..+50.0	°C	+50.0
58	Minimum alarm time delay	0..240	minutes	0
59	Maximum alarm time delay	0..240	minutes	0
60	Function door contact input (break contact) 0 = none 1 = lighting on when contact open 2 = lighting on and compressor + fan off when contact is opened 3 = compressor + fan off when contact is opened	0..3	-	0
61	Function lighting contact input 0 = none 1 = lighting on/off pulsating contact 2 = lighting on when contact closed	0..2	-	0
62	Maximum time door open (alarm then follows) (0 = no alarm)	0..120	minutes	0
63	Light off delay after closing door	0..300	seconds	3
64 **	Switch-on delay cooling after switching on light (0 = not active)	0..120	minutes	0
65	Freezing time (0= no freezing)	0..24	hour	0
66	Begin with defrost	0 = no, 1 = yes	-	0
68	Password timeout	30..600	seconds	120
69	Password (000 = not active)	0000..9999	-	0
70	Night-shift 1	-40.0..+50.0	°C	0.0
71	Night-shift 2	-40.0..+50.0	°C	0.0
72	Night shift function 0 = not active 1 = relative night-shift (Set point + night-shift) 2 = absolute night-shift (Night-shift is the set point)	0..2	-	0
73	Night-shift time Monday (hours.quarters)	OFF, 0..23.3	hour.quat	OFF
74	Night-shift time Tuesday (hours.quarters)	OFF, 0..23.3	hour.quat	OFF
75	Night-shift time Wednesday (hours.quarters)	OFF, 0..23.3	hour.quat	OFF
76	Night-shift time Thursday (hours.quarters)	OFF, 0..23.3	hour.quat	OFF
77	Night-shift time Friday (hours.quarters)	OFF, 0..23.3	hour.quat	OFF
78	Night-shift time Saturday (hours.quarters)	OFF, 0..23.3	hour.quat	OFF
79	Night-shift time Sunday (hours.quarters)	OFF, 0..23.3	hour.quat	OFF

Operating manual	Document no. : 053304	Version : V3.0
MC 585, MC 585 Alfabet	Client : General	Page : 9 of 16

PARA-METER	DESCRIPTION OF PARAMETER	RANGE	UNIT	DEFAULT VALUE
82	Start defrost 1 (OFF is skipped)	00.00..23.59, OFF	hour.min	OFF
83	Start defrost 2 (OFF is skipped)	00.00..23.59, OFF	hour.min	OFF
84	Start defrost 3 (OFF is skipped)	00.00..23.59, OFF	hour.min	OFF
85	Start defrost 4 (OFF is skipped)	00.00..23.59, OFF	hour.min	OFF
86	Start defrost 5 (OFF is skipped)	00.00..23.59, OFF	hour.min	OFF
87	Start defrost 6 (OFF is skipped)	00.00..23.59, OFF	hour.min	OFF
88	Start defrost 7 (OFF is skipped)	00.00..23.59, OFF	hour.min	OFF
89	Start defrost 8 (OFF is skipped)	00.00..23.59, OFF	hour.min	OFF
90	Network number	1..250	-	1
92	Network protocol 0 = Alfabet 1 = Modbus RTU (9600 8N1)	0..1	-	0
95	Software version	-	-	-
96	Series number	-	-	-
97	Production date	-	year/wk	-

- *) These parameters will be skipped if parameter P02 = 0.
**) Mind the compressor switch-off delay setting.

Adjusting night offset:

For each day an start time for the day period and an start time for the night period can be installed .

For each night period there can be chosen for night offset 1 (P70) or night offset 2 (P71).

With P73 - P79 the start times for the day periods can be adjusted. The times can be adjusted per quarter of an hour. Here by will be indicated if it is the first, second, firth or forth quarter.

P.e. $\overline{8} \overline{8} \overline{2} \overline{8}$ (d12.1) + dayLED means that this day start time is at 12.15 hour.

By keeping the **setp.** key pushed and than pushing the the **mode** key, the start time for the night can be adjusted.

P.e. $\overline{8} \overline{2} \overline{2} \overline{3}$ (n.22.3) + dayLED means that this night start time is at 22.45 hour.

During the adjusting from the night time, the type of night offset can be adjusted by pushing the **mode** key. It is important that the **setp.** key is pushed continuously.

The type of night offset is shown by the dot after the \overline{n} (n.).

If the dot is not on, night offset 1 is active and when the dot is on, night offset 2 is active.

Operating manual	Document no. : 053304	Version : V3.0
MC 585, MC 585 Alfabet	Client : General	Page : 10 of 16

5. Operational control possibilities

5.1 Compressor control possibilities.

The compressor relay switches on when the product sensor measures a temperature that is higher than the selected set point plus the switch differential (P20), and switches off again when the temperature falls below the selected set point.

In this connection it is possible to introduce 4 different switch delays with P21:

- P21 = 0: The compressor relay switches on with a switch-on delay of P22 seconds.
- P21 = 1: The compressor relay switches on with a switch-on delay of P22 minutes.
- P21 = 2: The compressor waits to switch on for at least P22 minutes between the switching on and switching off.
- P21 = 3: The compressor waits to switch on for at least P22 minutes between the switching on times.

Furthermore, the following options can be chosen for the compressor operation:

- P23: A control delay of P23 minutes after switching on the power supply.
- P50 = 1: The compressor is turned on when there is a malfunction of the product sensor.

5.2 Fan control possibilities.

The **MC 585** has extensive possibilities for the fan control.

At continue (Manuel) mode the fan is always working except during defrost or drip off-time, as parameter P32=1.

At automatic-mode the fan is always working, except when one of the functions listed below is active.

P30 = 1 Fan switching on delta between product sensor and defrost sensor:

The fan operates only when the defrost sensor measures P31 °C lower than the product sensor. Provided there are no other conditions for letting the fan switch off. (For example, if P31 = 2°C and the product sensor measures 10°C then the fan will only operate if the defrost sensor measures 10°-2°=8°C or less.)

P30 = 2 Fan switching on delta between defrost sensor and set point P37:

The fan operates only when the defrost sensor P31 measures °C lower than the product sensor, provided there are no other conditions for letting the fan switch off.

P32 = 1 Fan off during defrost:

To ensure that the fan does not begin to operate immediately after defrost and draining of the evaporator and thus blowing warm air into the cell, the two following provisions can be made:

- 1: The fan is blocked until the defrost sensor measures a temperature that is lower than the set temperature of P34.
- 2: The fan will now be blocked until the end of the defrost delay time selected in P35. Unless the defrost sensor reaches the switching-on temperature of P34.

If the defrost sensor is not present (P2=0) or is defective (malfunction E2) then the **MC 585** will run for the time set in P35.

P33 = 1 Compressor off -> Fan off:

The fan is switched off when the compressor is off.

This happens with a delay of P36 minutes.

Unless there are other conditions which will enable the fan to switch off.

Operating manual	Document no. : 053304	Version : V3.0
MC 585, MC 585 Alfabet	Client : General	Page : 11 of 16

5.3 Defrost control possibilities.

The **MC 585** has several possibilities for automatic defrost. These can be set by the following parameters:

- P40 = 1: Defrost with fixed defrost time intervals.
In this case the selected interval time is set with P42.
- P40 = 2: Defrost on the basis of the total compressor running time.
In this case defrost starts when the compressor has run for the time set in P48.
- P40 = 3: Defrost on the basis of the defrost timer.
In this case defrost starts at fixed times (the same times every day) which can be set with P82 to P89.

- P49 = 1: Display is fixed during defrost.
During defrost the temperature readout is hold at the last measured control temperature.

- P47 = 1: Starting with defrost.
The **MC 585** starts with defrost at power-up, after the defrost switching delay (P46) is completed. During the switching delay time of P46 cooling will first take place, after which the defrost process is started.

- P41 = 1: Compressor on during defrost (hot gas).
In hot gas defrost systems the compressor is switched on during the defrost process. The drainage time (P45) is started after defrost. During this time the defrost relay is not active and the evaporator can be drained. A compressor cannot be started during this time either.

What happens after defrost.

After defrost the draining time (P45) starts.

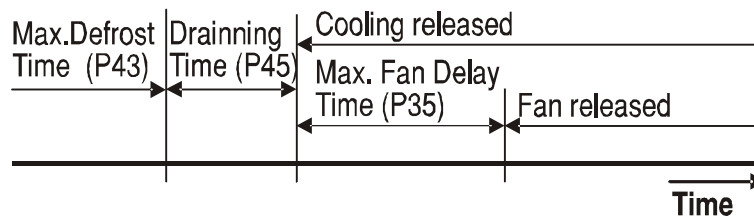
During draining the defrost LED flashes.

The compressor is released after draining time.

The fan is released after draining time + fan startup delay (P35) time or after draining time the switch-on temperature (P34) is reached.

See also diagram below:

What happens after defrost:



6. Sensor calibration

The sensors can be calibrated by means of the Sensor Offset parameters:

P 01 = product sensor (sensor-2) and

P 03 = defrost sensor (sensor-1).

(Value of defrost sensor can be read with parameter P04)

Should a sensor show 2°C too much, for example, then the appropriate Offset parameter must be decreased by 2°C.

Operating manual	Document no. : 053304	Version : V3.0
MC 585, MC 585 Alfabet	Client : General	Page : 12 of 16

7. Alarms

Alarm operation:

During an alarm the alarm LED on the front is illuminated.

Depending on the setting of the internal parameters the control will either stop or continue.

At control alarm (P53=0) The alarm relay is normally not activated and in the case of alarm the relay is activated.

At watch alarm (P53=1) The alarm relay is normally activated and is deactivated in the event of an alarm.

Reset alarm:

Press **MODE** key to reset an alarm.

The alarm relay and buzzer switches off, the error code starts flashing until the problem solved.

If after P52 minutes the alarm warning is still present the alarm relay and buzzer activates again.

Error warnings:

The following error warnings may appear in the display of the **MC 585**:

E1	Product sensor defect	Fatal error of controller; in this case 'E1' appears in the display and all the functions switch off, except when P 50 is set at 1, in which case the compressor and possibly the fan are turned on.
E2	Defrost sensor defect	No Fatal error, the control continues to regulate and 'E2' appears in the display.(Defrost now stops on max. defrost time) If P05 = 0, the detection for a defective defrost sensor will be disabled.
EE	Settings are lost	Fatal error, the settings have been lost and 'EE' will appear in the display
EA	External alarm	Active via digital input; depending on P 51 action is or is not taken
EA2	Extern alarm	230VAC External alarm on Lin input; in this case the alarm relay is raised and the LED alarm lights up.
door	Door open too long	Door has been open for longer than the maximum time set (P62); alarm warning only
HI	Maximum alarm	Product sensor temperature above maximum alarm temperature setting (P57) longer than maximum alarm delay time (P59)
LO	Minimum alarm	Product sensor temperature lower than the minimum alarm temperature setting (P56) for longer than the minimum alarm delay time (P58)

Solution for E1 and/or E2:

- Check whether the relevant sensor has been properly connected.
- Check the relevant sensor (1000Ω/25°C).
- Replace relevant sensor.

Solution for EE:

- Check all settings (parameters, set points, lightings position (on or off))
And after the last made correction wait at least 1 minuit before removing the power supply.

Other display warnings:

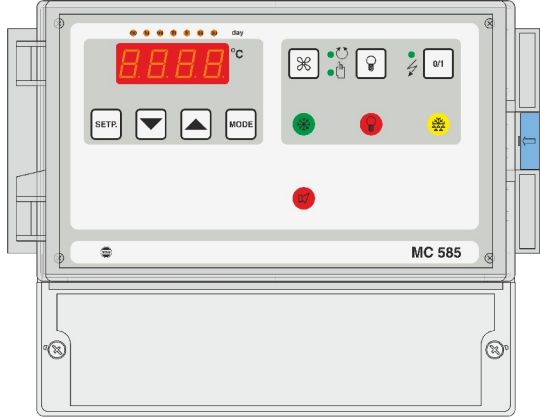
- **dEFr** Controller is started with defrost prior to freezing.

Operating manual	Document no. : 053304	Version : V3.0
MC 585, MC 585 Alfabet	Client : General	Page : 13 of 16

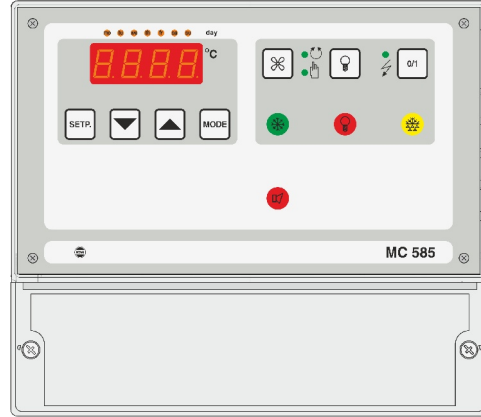
8. Front

Wall-mounted model:

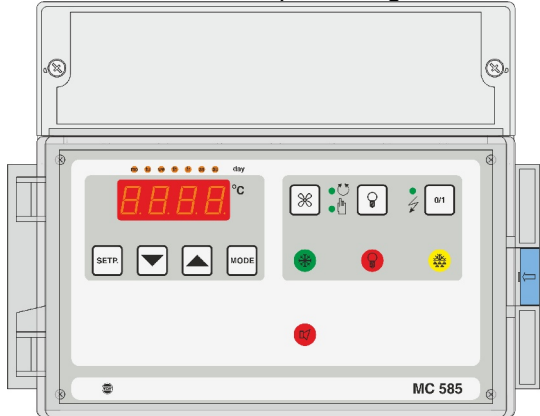
With door, terminals under, drawing.050091w1



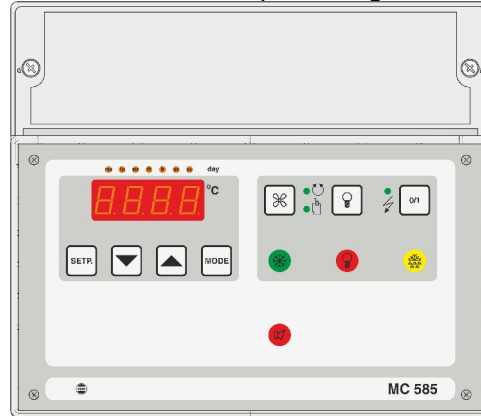
No door, terminals under, drawing 050377w1



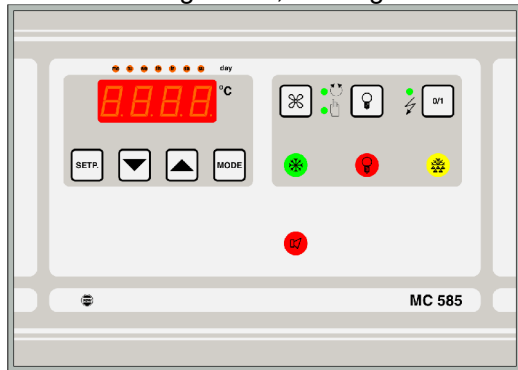
With door, terminals top, drawing 050376w1



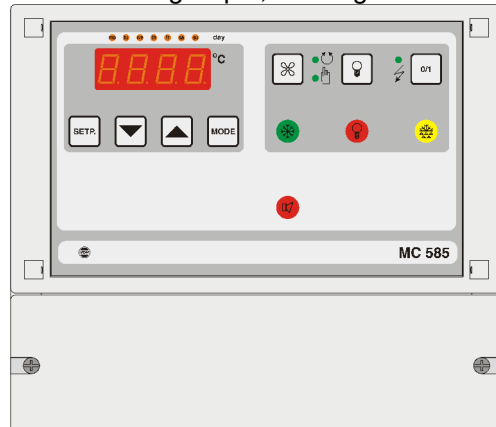
No door, terminals top, drawing 050378w1



Panel mounting model, drawing 050379w0



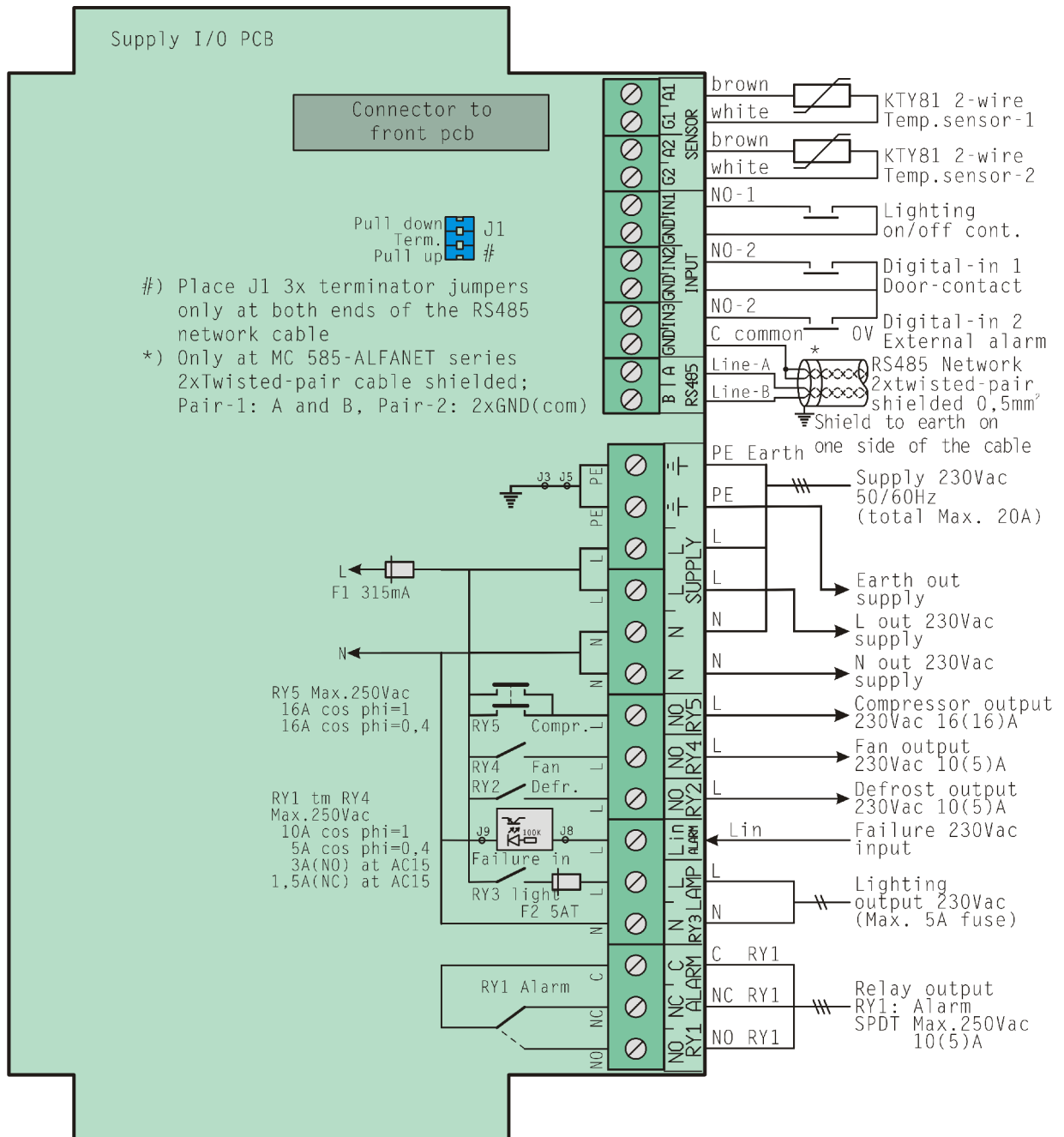
Wall mounting Bopla, drawing 060059w0



Operating manual	Document no. : 053304	Version : V3.0
MC 585, MC 585 Alfanet	Client : General	Page : 14 of 16

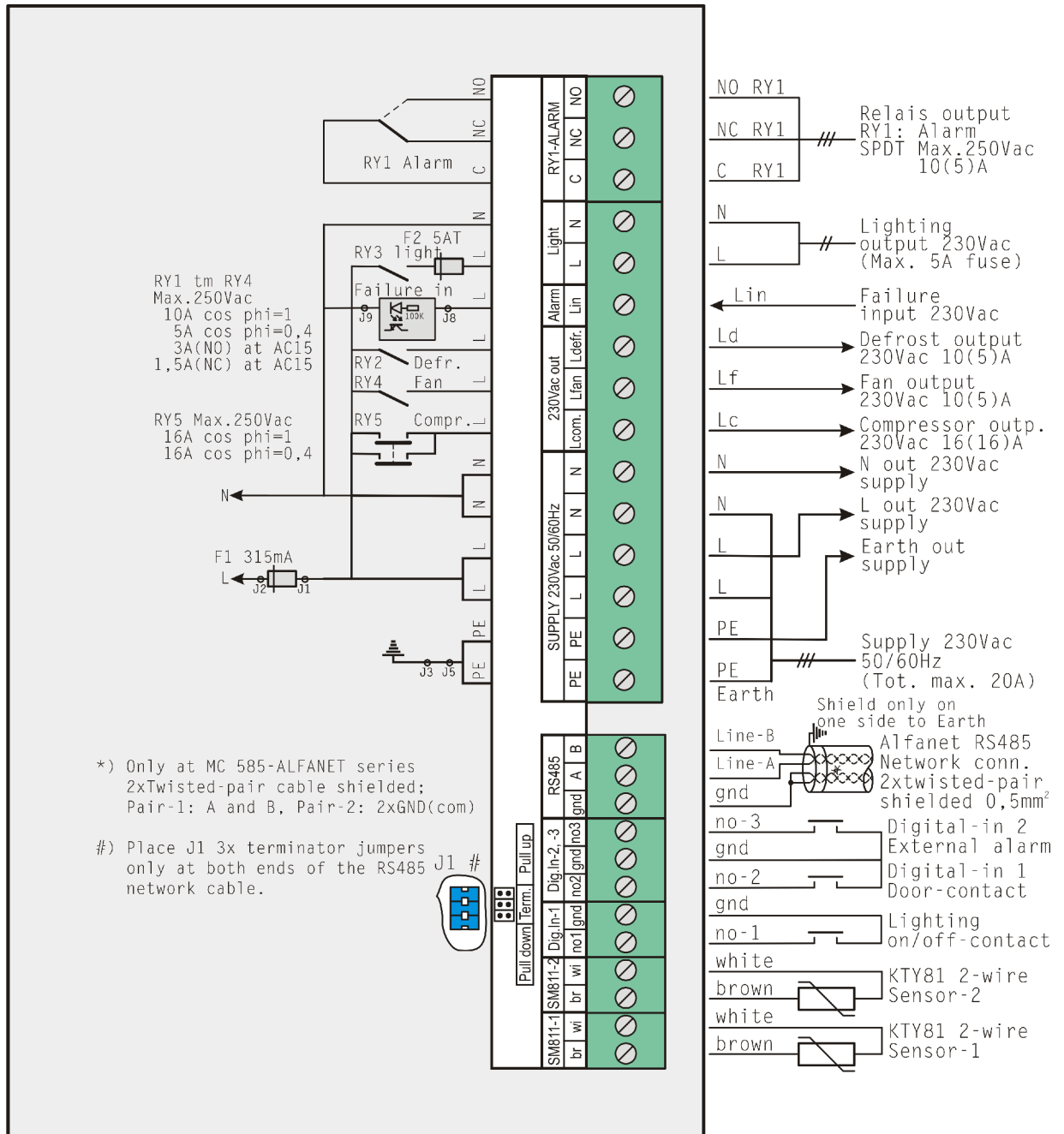
9. Connection diagram

Connection data for wall model, drawing 050093w5



Operating manual	Document no. : 053304	Version : V3.0
MC 585, MC 585 Alfabet	Client : General	Page : 15 of 16

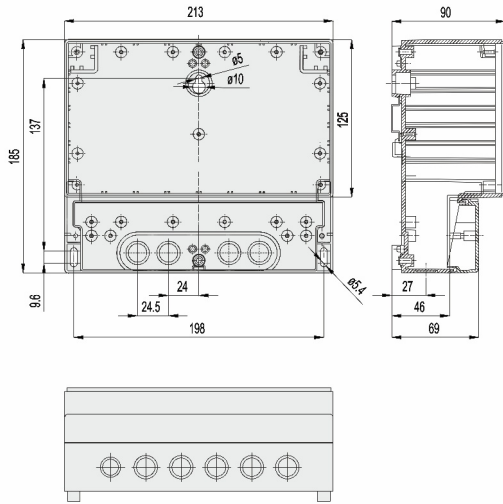
Connection data for panel model, drawing 050391w4



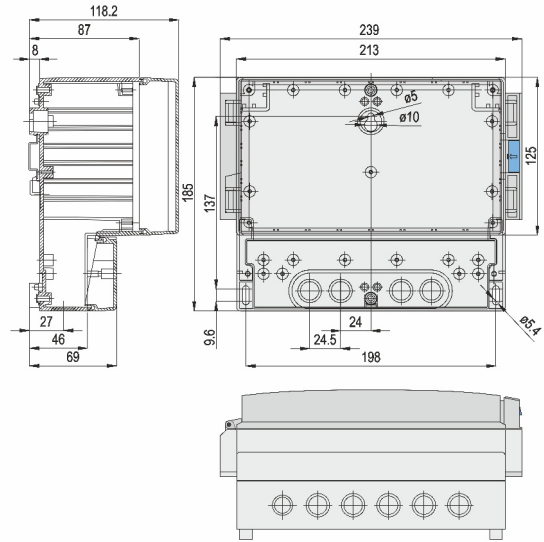
Operating manual	Document no. : 053304	Version : V3.0
MC 585, MC 585 Alfabet	Client : General	Page : 16 of 16

10. Dimensions

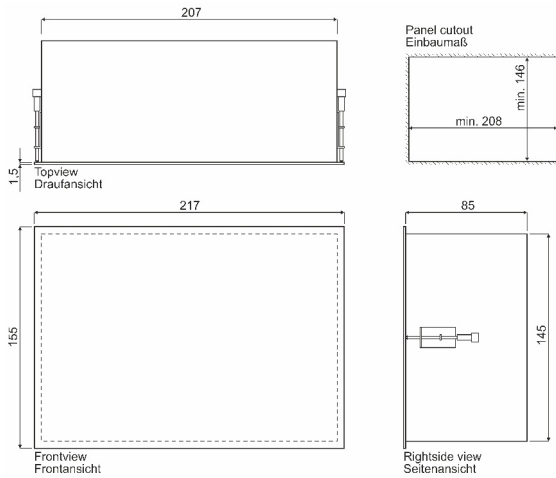
Wall mounting, without door



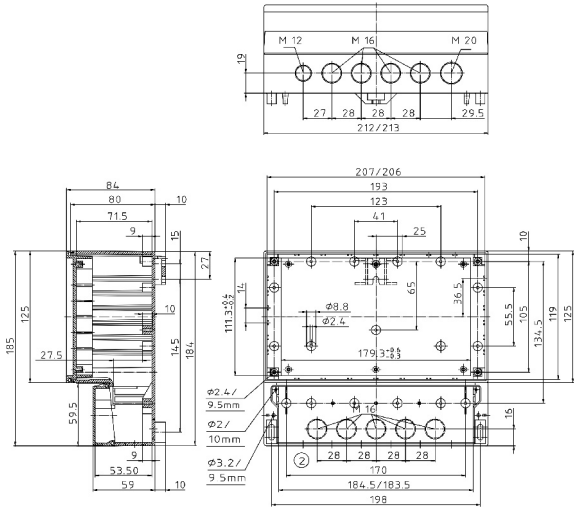
Wall mounting with door



Panel mounting, drawing 961271



Wall mounting Bopla housing



@