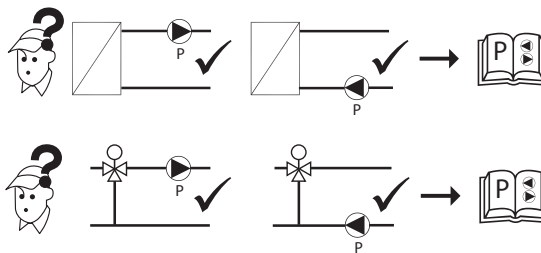
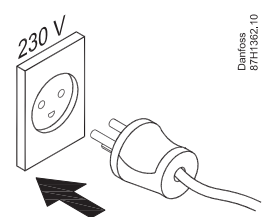
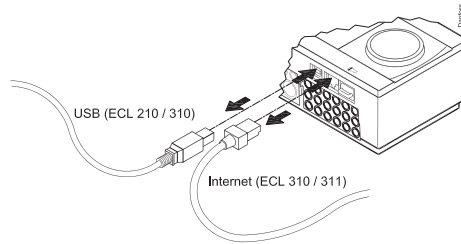
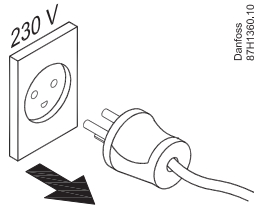
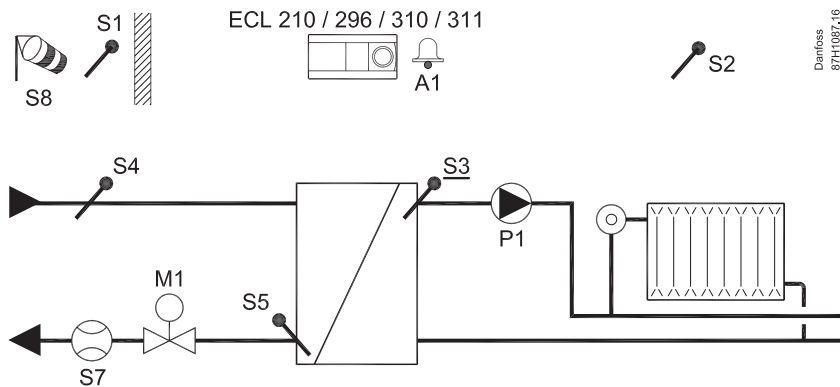


Installation Guide

# ECL Comfort 210 / 296 / 310, A230 (code no. 087H3802) (A230.1, A230.2, A230.3, A230.4, A230.5)

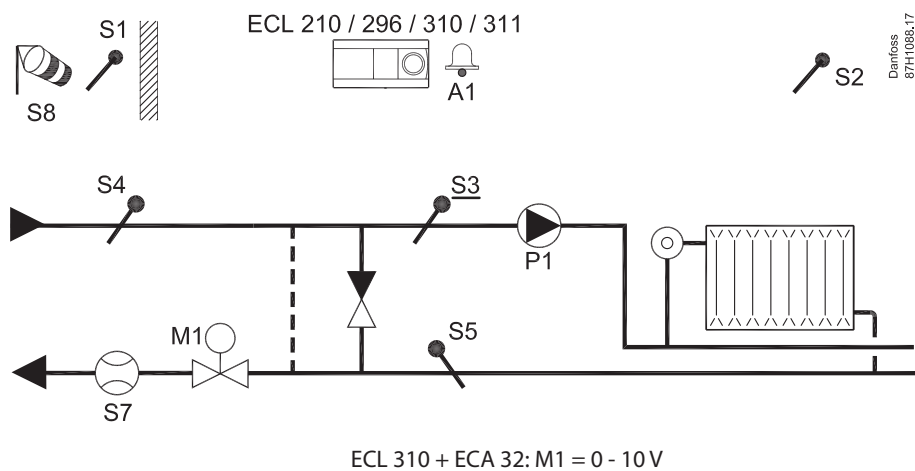


## A230.1 ex. a

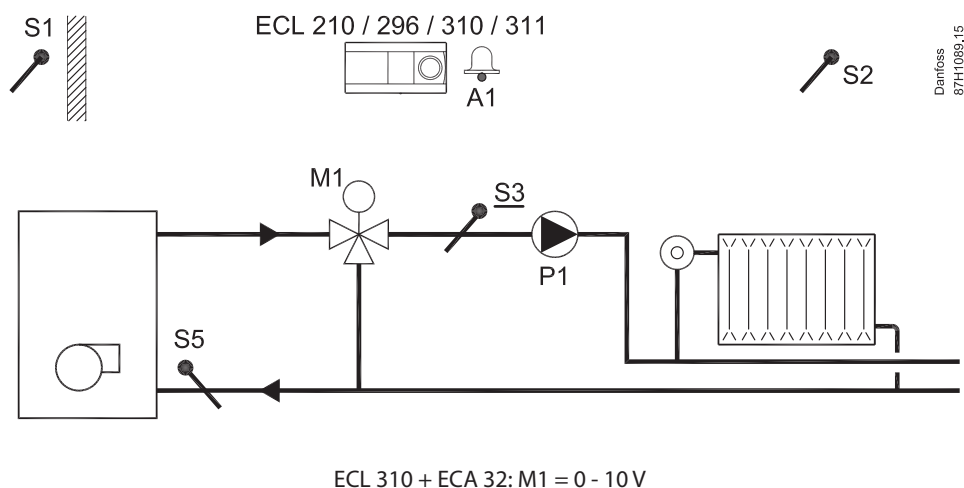


ECL 310 + ECA 32: M1 = 0 - 10 V

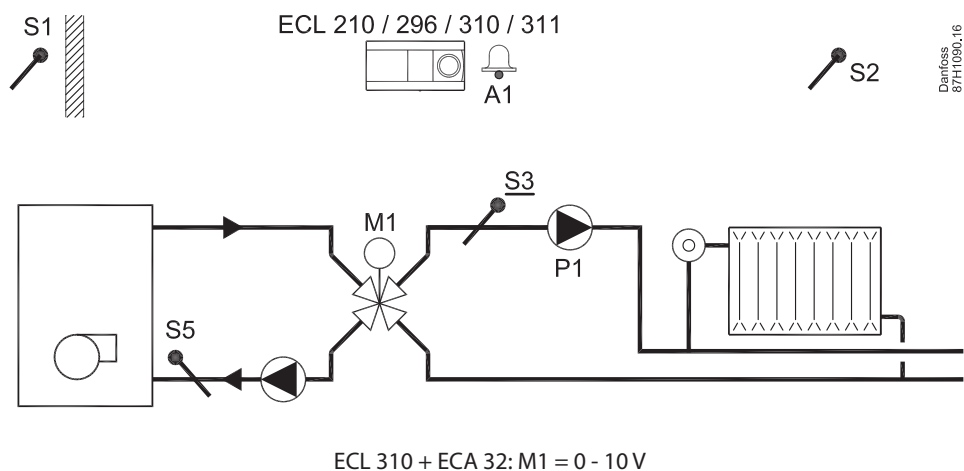
A230.1 ex. b:



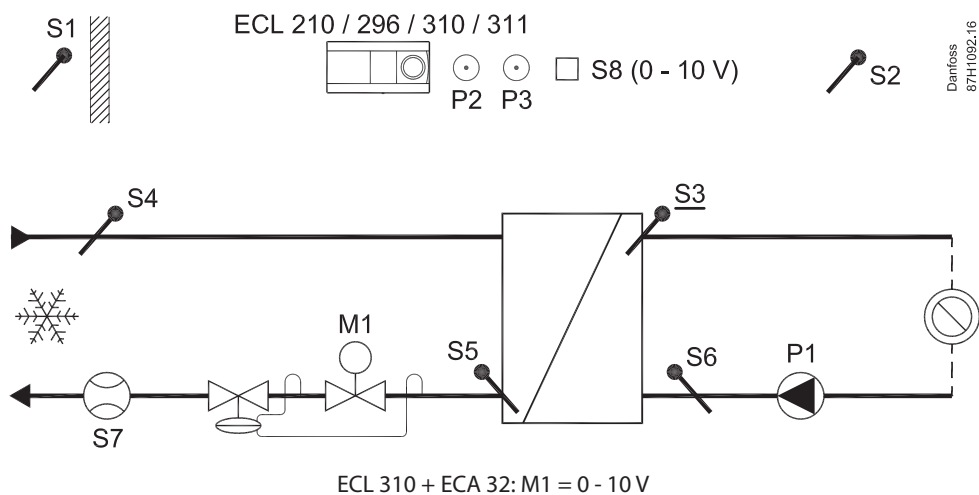
A230.1 ex. c:



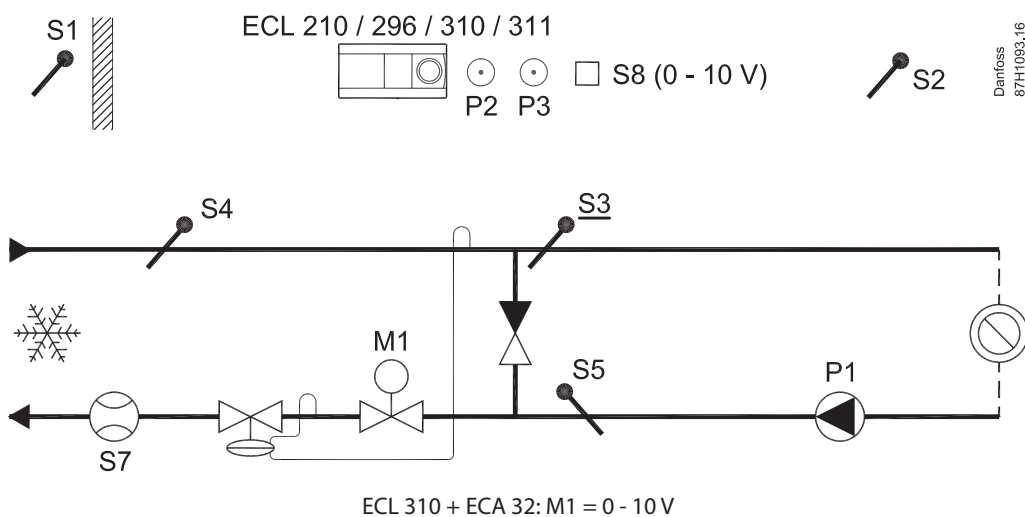
A230.1 ex. d:



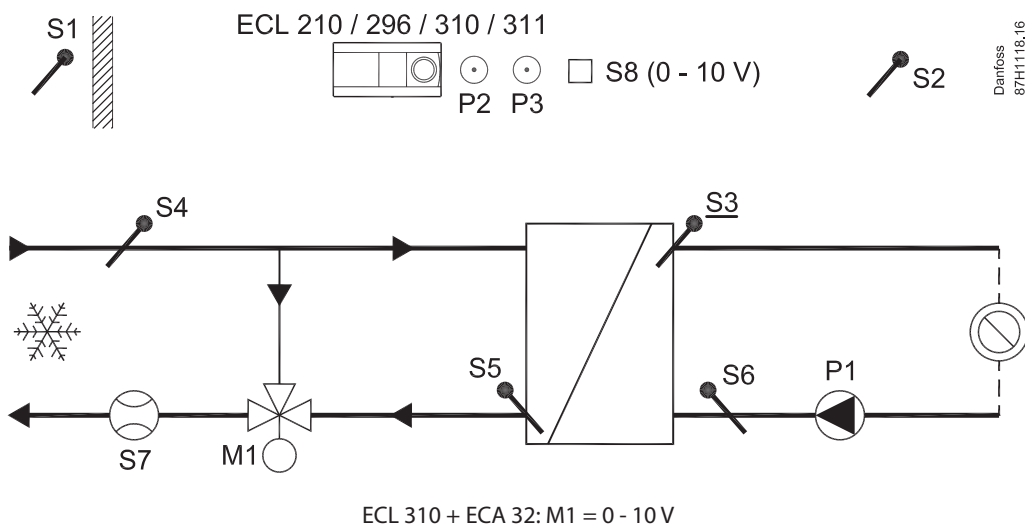
**A230.2 ex. a:**



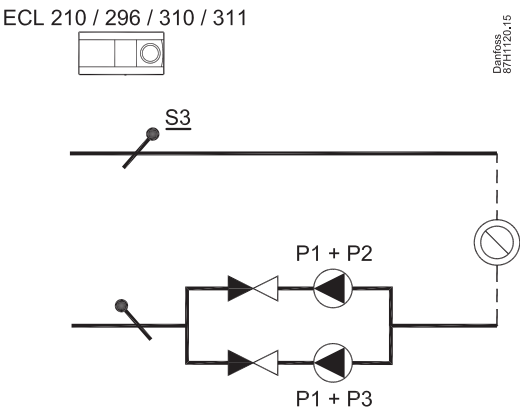
**A230.2 ex. b:**



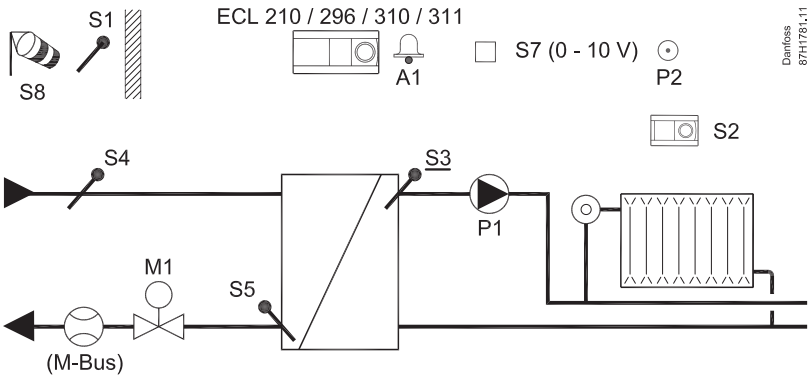
**A230.2 ex. c:**



A230.2 ex. d:

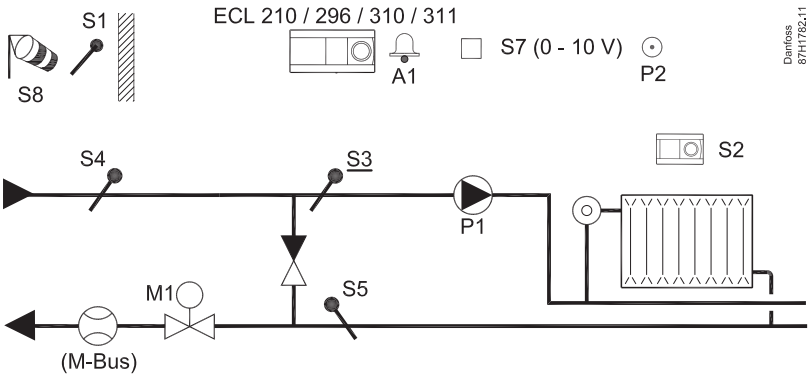


A230.3, ex. a



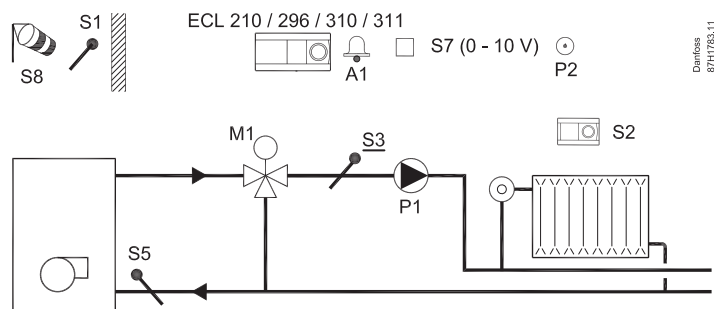
ECL 310 + ECA 32: M1 = 0 - 10 V

A230.3, ex. b



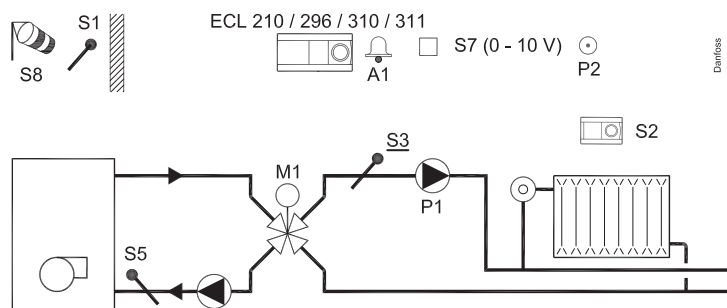
ECL 310 + ECA 32: M1 = 0 - 10 V

**A230.3, ex. c**



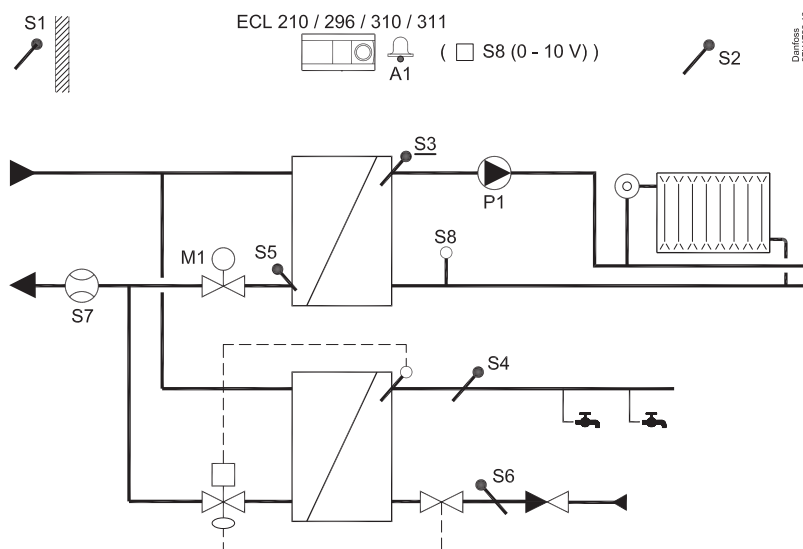
ECL 310 + ECA 32: M1 = 0 - 10 V

**A230.3, ex. d**



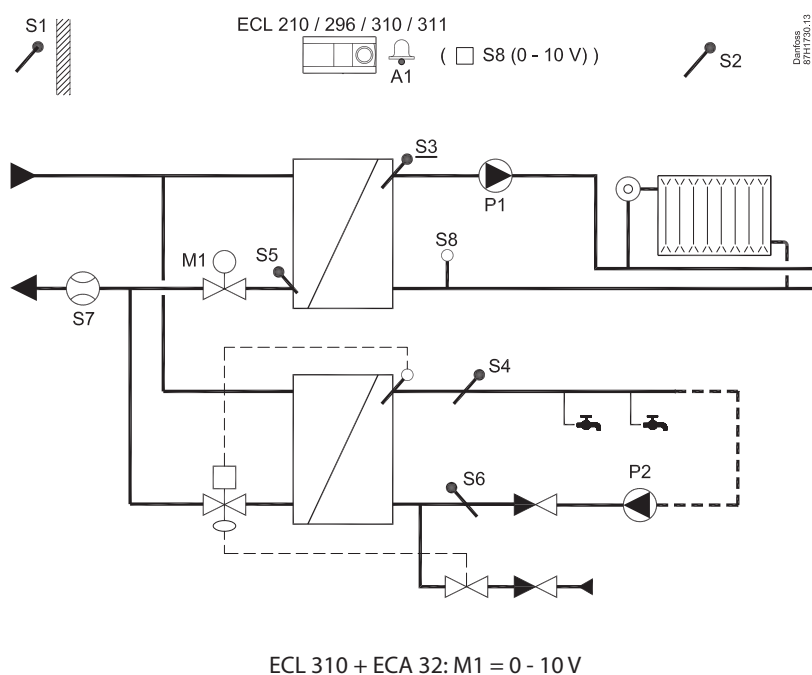
ECL 310 + ECA 32: M1 = 0 - 10 V

**A230.4, ex. a**

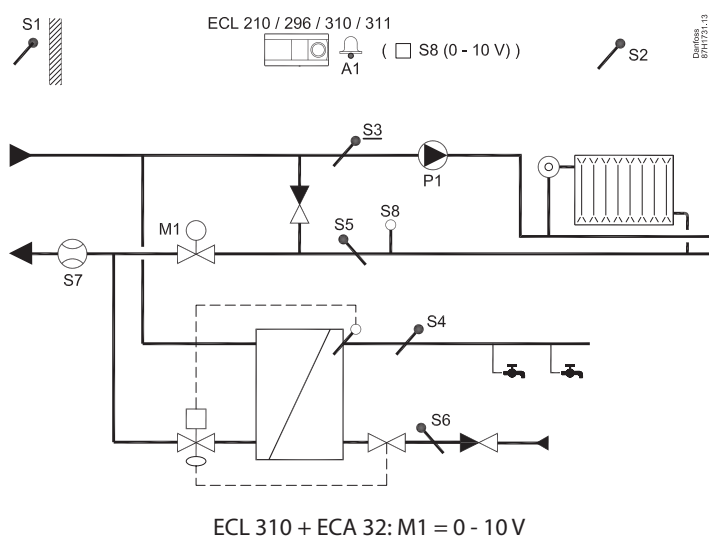


ECL 310 + ECA 32: M1 = 0 - 10 V

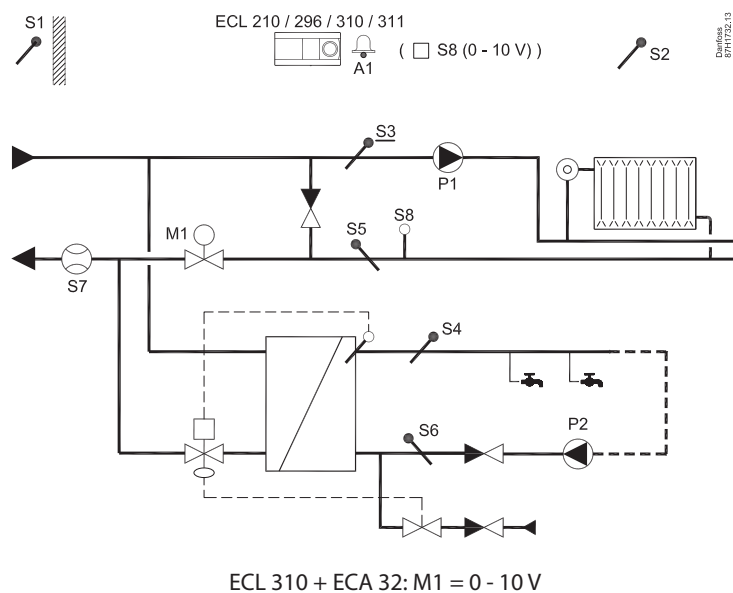
**A230.4, ex. b**



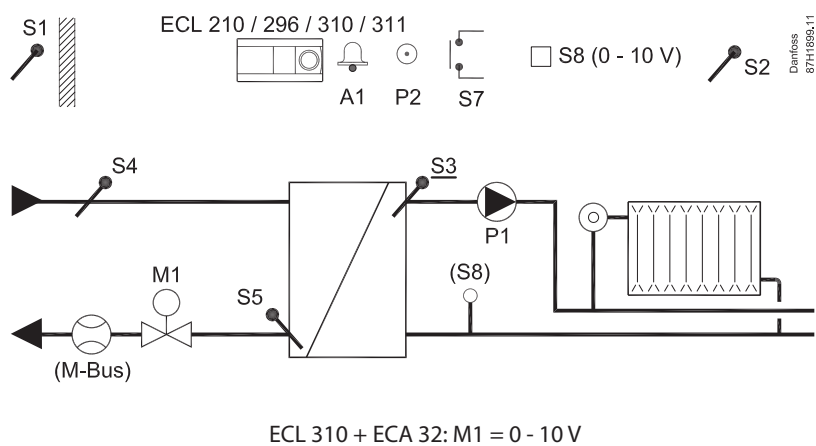
**A230.4, ex. c**



**A230.4, ex. d**



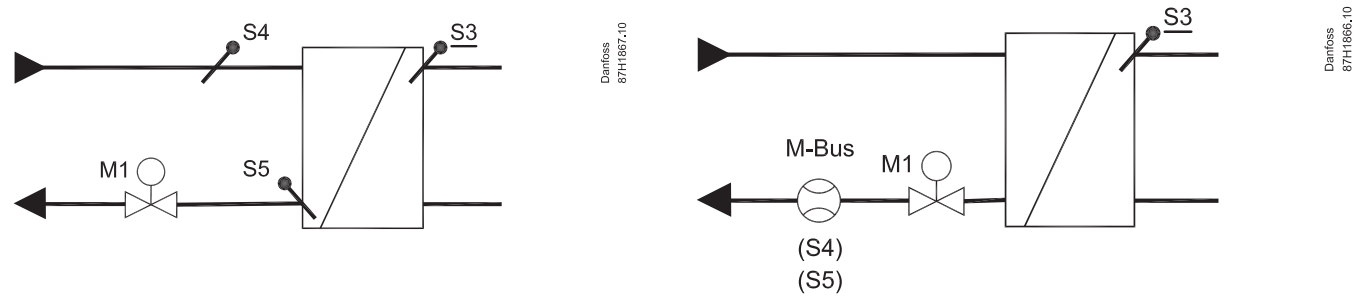
**A230.5, ex. a**



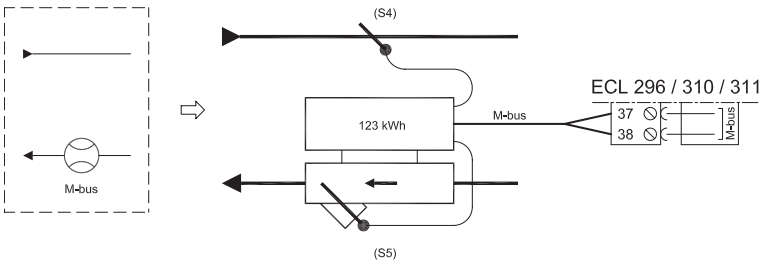
A230.1, A230.3, A230.5  
S4, S5



A:



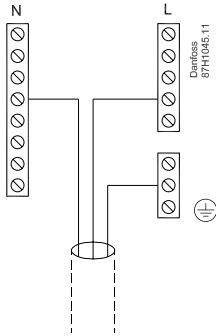
B:



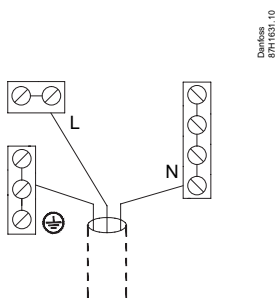
ECL Comfort 210 / 296 / 310:  
230 V a.c.

|    |                      |
|----|----------------------|
| R  | 4 (2) A / 230 V a.c. |
| R  |                      |
| Tr | 0,2 A / 230 V a.c.   |

ECL 210 / 310:

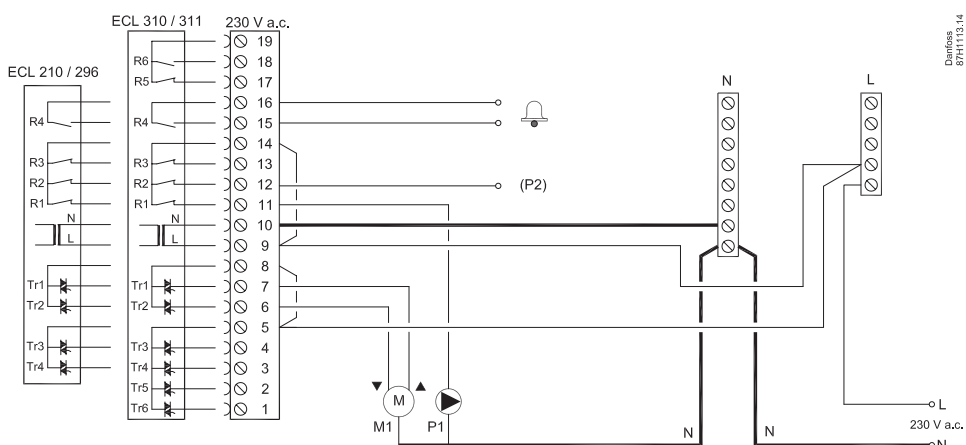


**ECL 296:**



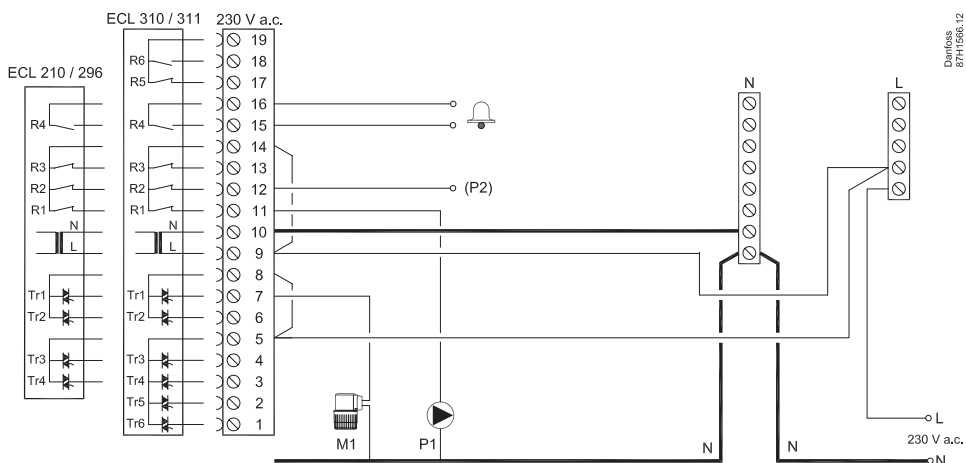
|               | R1 | R2   | R3   | R4     |
|---------------|----|------|------|--------|
| <b>A230.1</b> | P1 | (P2) |      | A1 (🔔) |
| <b>A230.2</b> | P1 | (P2) | (P3) |        |
| <b>A230.3</b> | P1 | (P2) |      | A1 (🔔) |
| <b>A230.4</b> | P1 | (P2) |      | A1 (🔔) |
| <b>A230.5</b> | P1 | (P2) |      | A1 (🔔) |

**230 V a.c.**



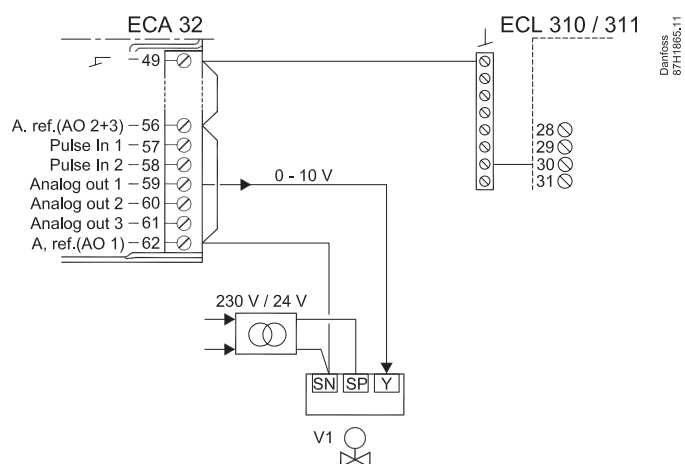
**230 V a.c.**

**(Danfoss thermo-actuator ABV)**

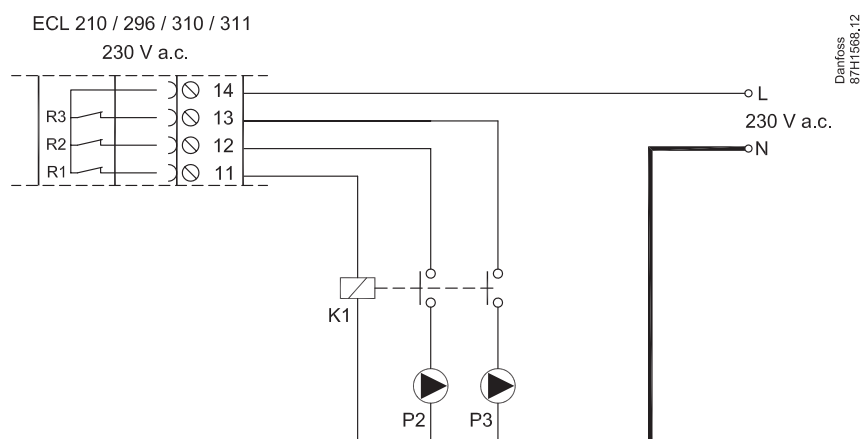


# **ECL 310 + ECA 32**

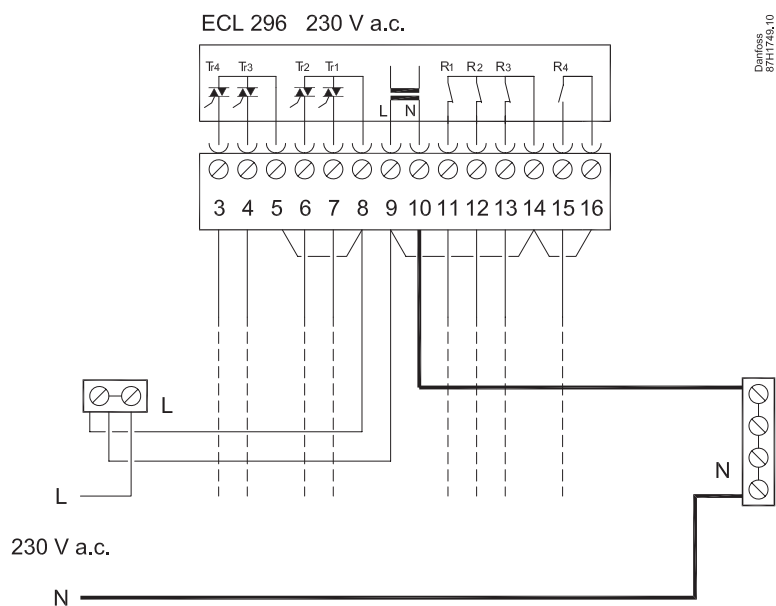
**M1 = V1 (0 - 10 V)**



# **A230.2, P2 + P3**



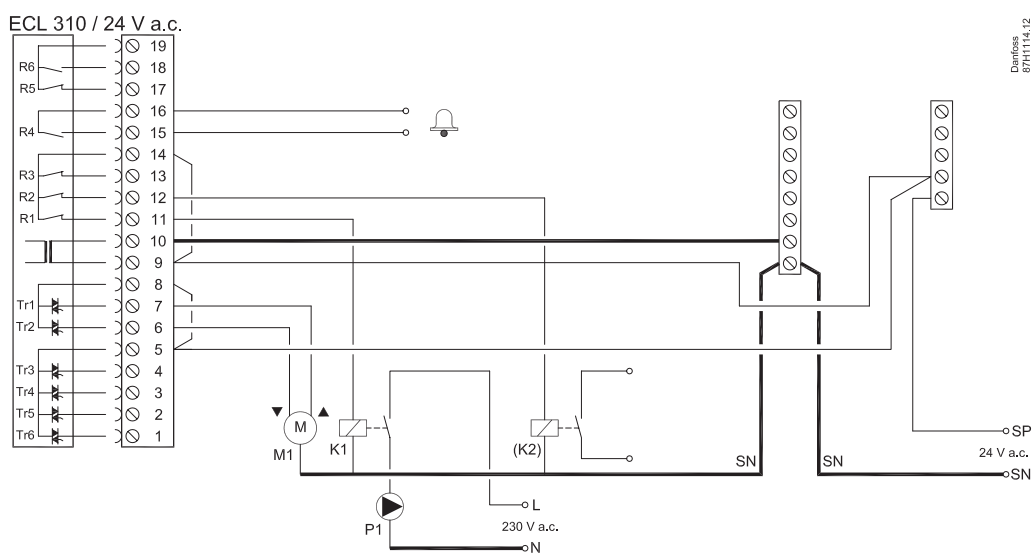
**ECL Comfort 296:**  
**230 V a.c.**



**ECL Comfort 310:**  
**24 V a.c.**

|    |                     |
|----|---------------------|
| R  | 4 (2) A / 24 V a.c. |
| Tr | 1 A / 24 V a.c.     |

**24 V a.c.**

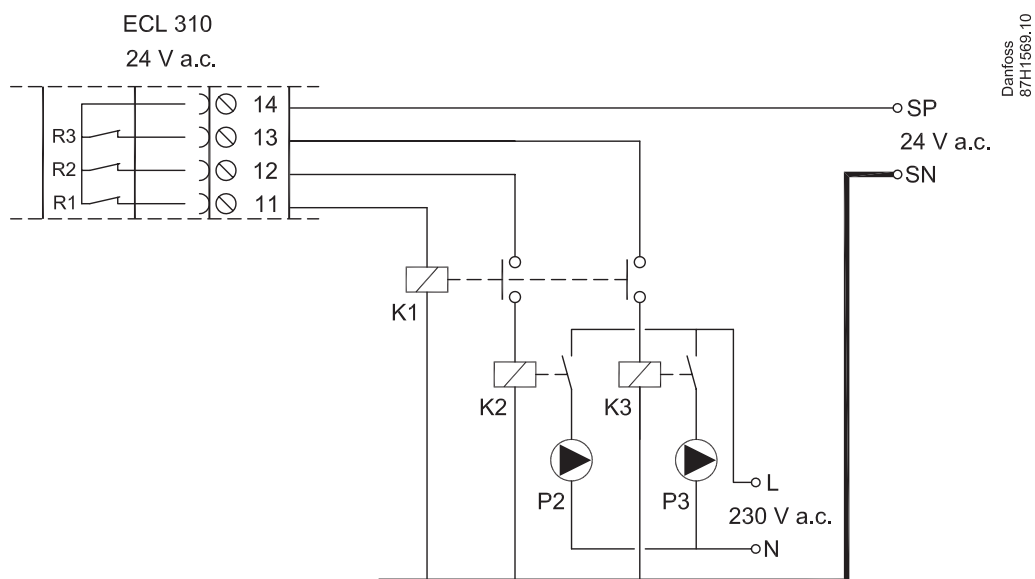


The diagram shows the following components and their connections:

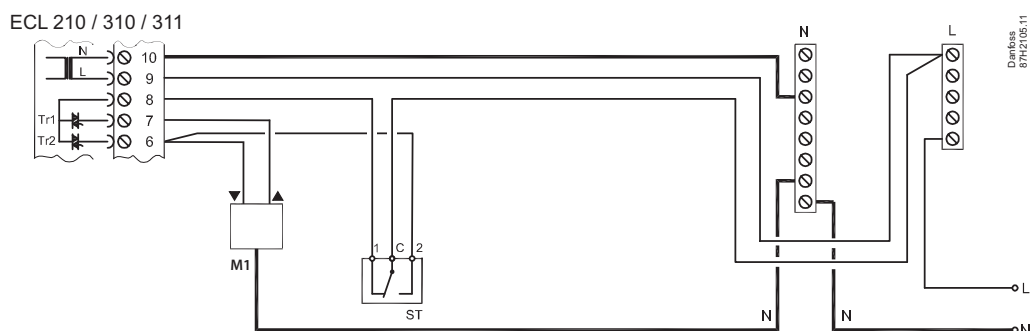
- 230 V a.c. Supply:** Connected to a pump (P1) and a terminal block (SN).
- 24 V a.c. Supply:** Connected to a terminal block (SN) and a bell (A1).
- Relay (K1):** Connected to the 230 V a.c. supply and the 24 V a.c. supply.
- Switch (K2):** Connected to the 230 V a.c. supply and the 24 V a.c. supply.
- Motor (M1):** Connected to the 230 V a.c. supply.
- Bell (A1):** Connected to the 24 V a.c. supply.
- Terminal Block (SN):** A common terminal block for the 24 V a.c. supply, connected to the bell (A1) and the relay (K1).

Wiring diagram for the ECA 32 and ECL 310 / 311 modules. The ECA 32 module has terminals for A. ref. (AO 2+3) - 56, Pulse In 1 - 57, Pulse In 2 - 58, Analog out 1 - 59, Analog out 2 - 60, Analog out 3 - 61, and A. ref. (AO 1) - 62. The ECL 310 / 311 module has terminals for 28, 29, 30, and 31. A 230 V / 24 V transformer is connected to the ECA 32 module, with its secondary winding connected to the SN and SP terminals of a terminal block. The Y terminal of the terminal block is connected to the 0 - 10 V output of the ECA 32 module. A ground symbol is connected to the A. ref. (AO 1) - 62 terminal.

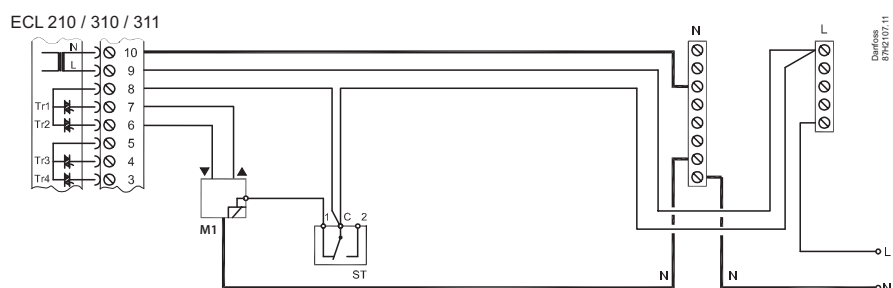
**A230.2, P2 + P3**



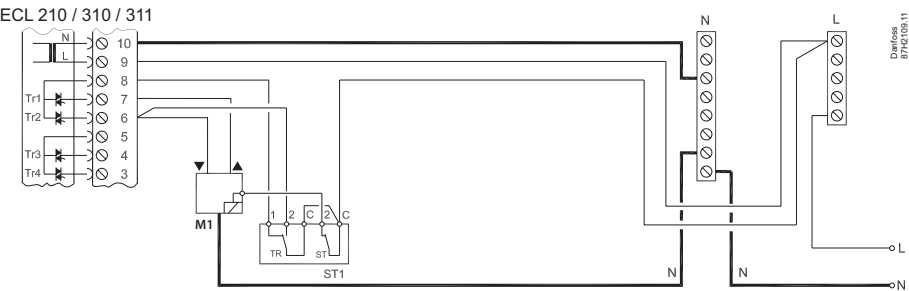
**230 V a.c. / 24 V a.c. , safety thermostat  
1-step closing**



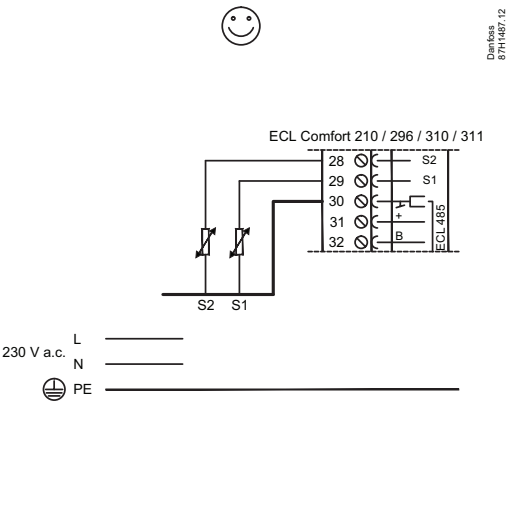
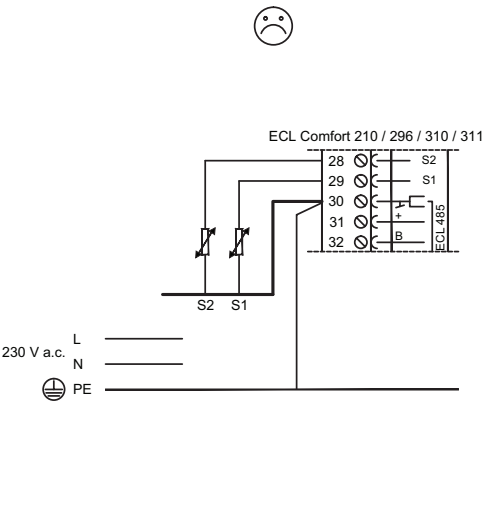
**230 V a.c. / 24 V a.c. , safety thermostat  
1-step closing**



230 V a.c. / 24 V a.c. , safety thermostat  
2-step closing



 Pt 1000 (1000 Ω / 0 °C)



 Pt 1000 (1000 Ω / 0 °C)  
ECL 210 / 296 / 310

|        | S1 | S2  | S3 | S4 | S5 | S6 | S7 | S8 |
|--------|----|-----|----|----|----|----|----|----|
| A230.1 | x  | x   | x  | x  | x  |    |    |    |
| A230.2 | x  | x   | x  | x  | x  | x  |    |    |
| A230.3 | x  | (x) | x  | x  | x  |    |    |    |
| A230.4 | x  | x   | x  | x  | x  | x  |    |    |
| A230.5 | x  | x   | x  | x  | x  |    |    |    |

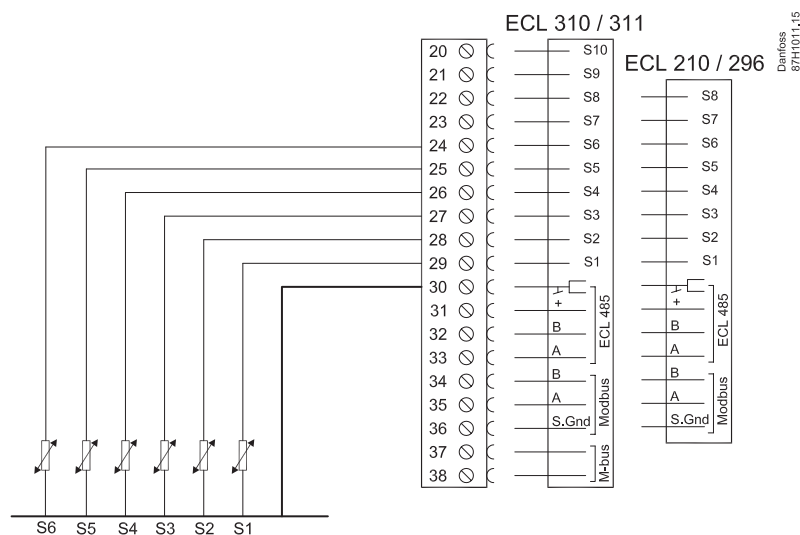
Pulse 

|        | S7 |
|--------|----|
| A230.1 | x  |
| A230.2 | x  |
| A230.3 |    |
| A230.4 | x  |
| A230.5 |    |

0 - 10 V

|        | S7              | S8                                                                                                                                                                                             |
|--------|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A230.1 |                 | 0 - 10 V ⇒                                                                                                    |
| A230.2 |                 | 0 - 10 V ⇒  S3 (x °C!)                                                                                        |
| A230.3 | 0 - 10 V ⇒ % RH | 0 - 10 V ⇒                                                                                                    |
| A230.4 |                 |  /<br>0 - 10 V ⇒  S3 (x °C!) |
| A230.5 |                 |  /<br>0 - 10 V ⇒  S3 (x °C!) |

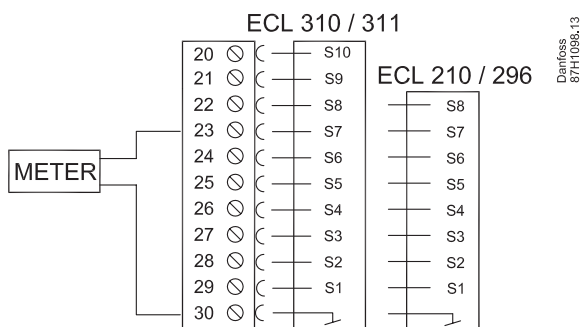
A230



A230.1, A230.2, A230.4



S7



A230.1, A230.2, A230.4

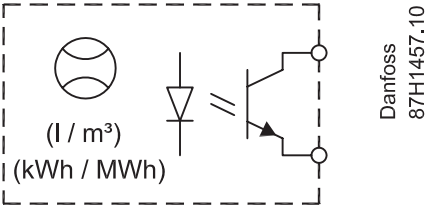


S7

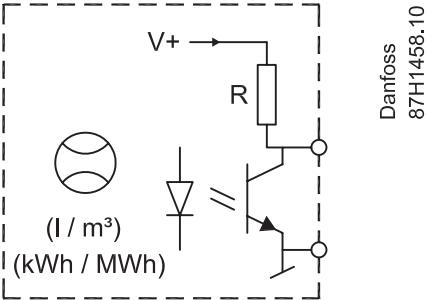


A / B ?

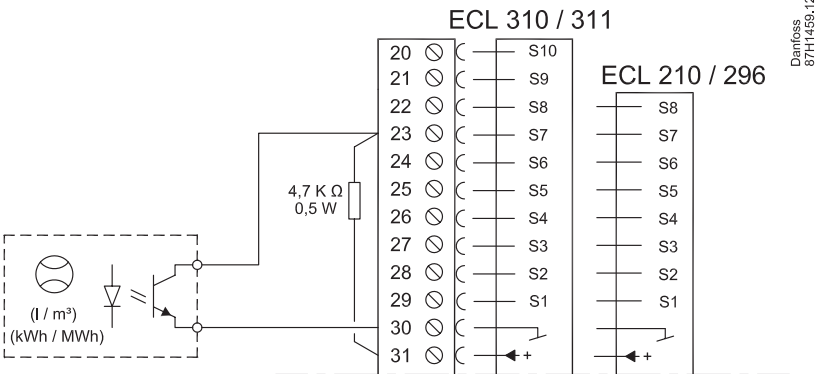
A:



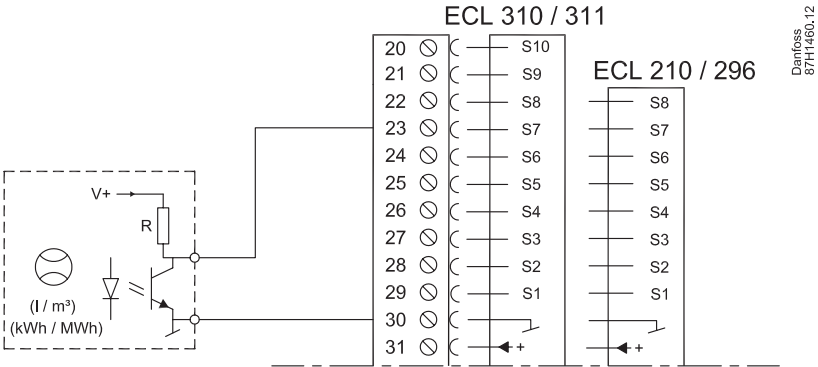
B:



A:

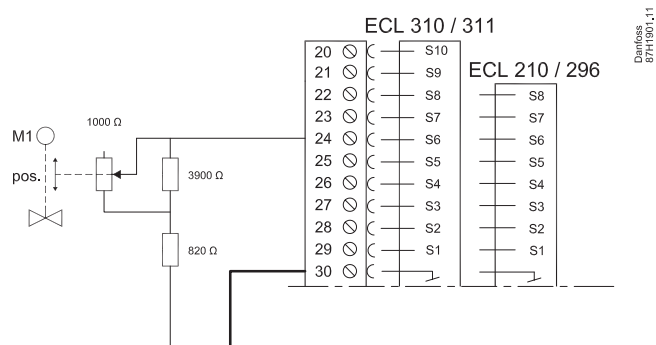


B:



## A230.5

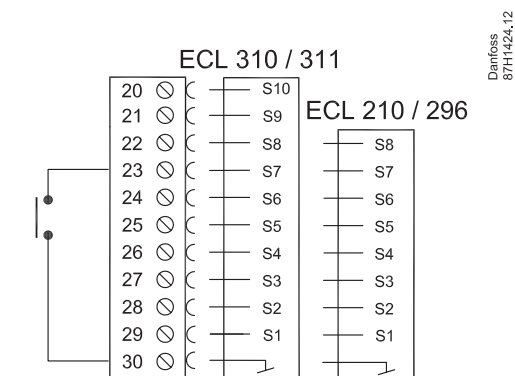
### S6



## A230.5



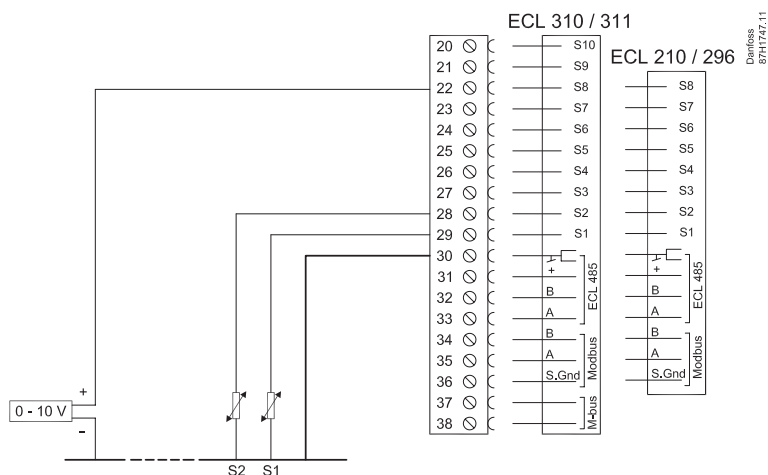
### S7



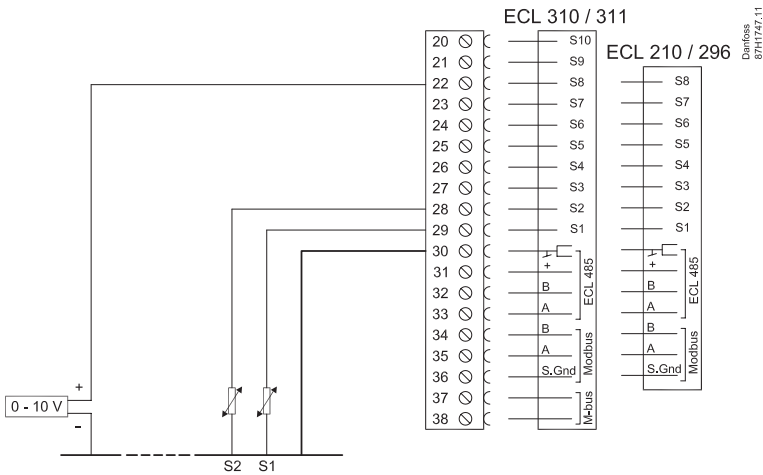
## A230.1, A230.3



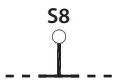
### S8



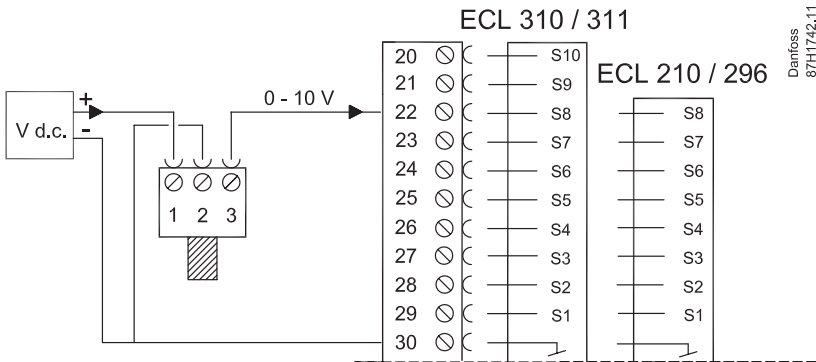
A230.2  
0 – 10 V



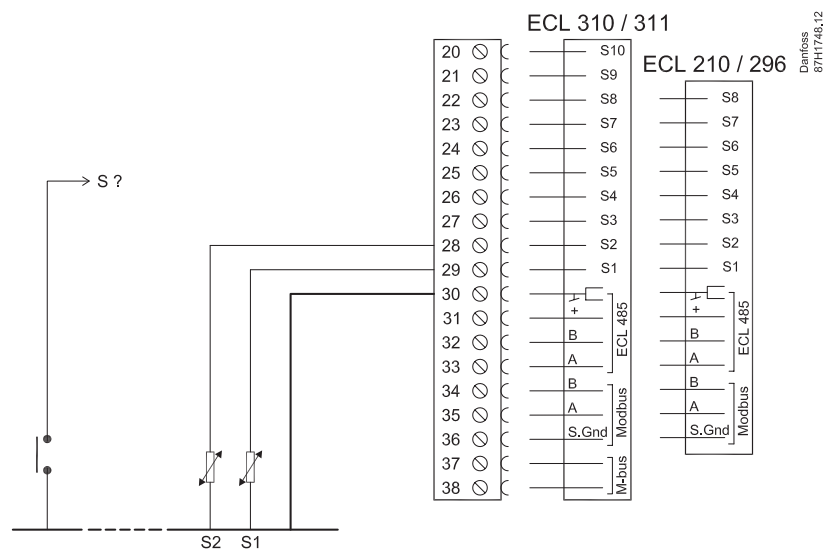
A230.4, A230.5



S8

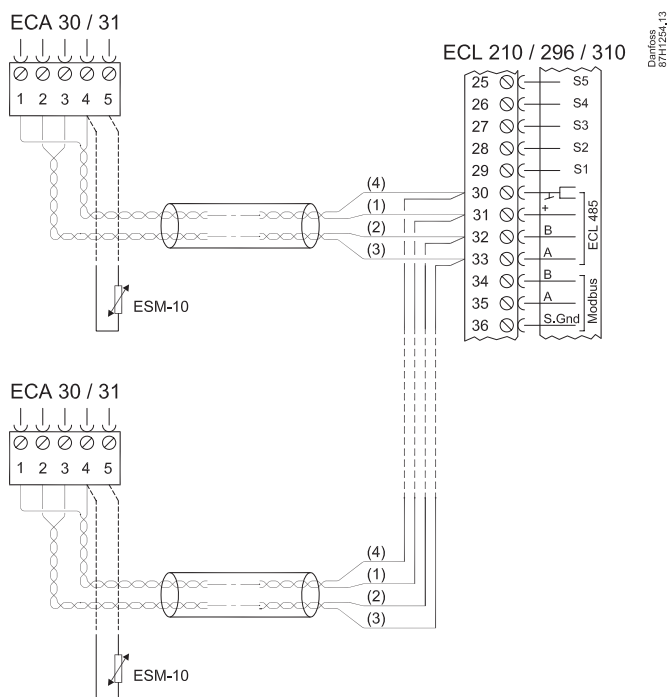


**A230.1, A230.2, A230.3, A230.4, A230.5**

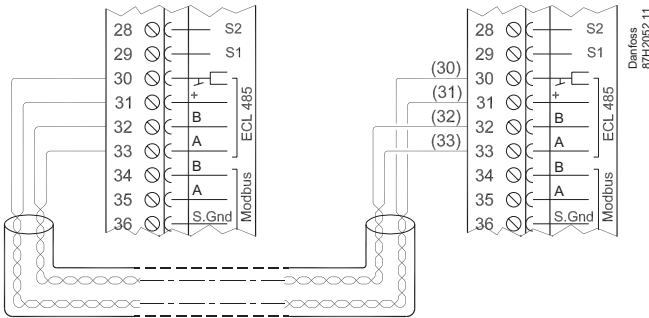


?  
 ECL 210 / 296: S7 - S8  
 ECL 310: S7 - S10  
 ECL 310 + ECA 32: S7 - S16

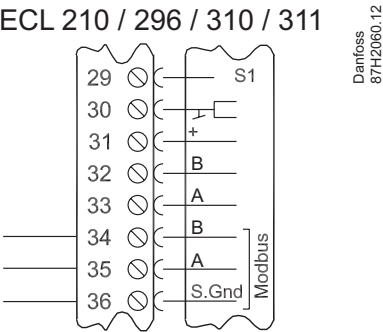
**ECA 30 / 31**



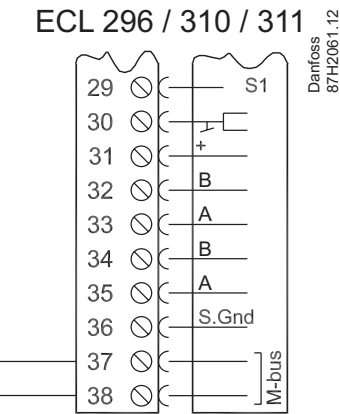
Master / slave



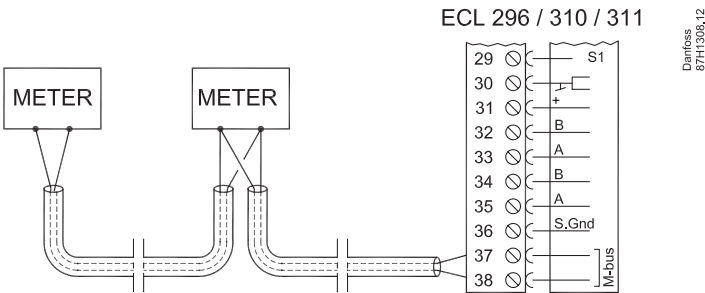
Modbus



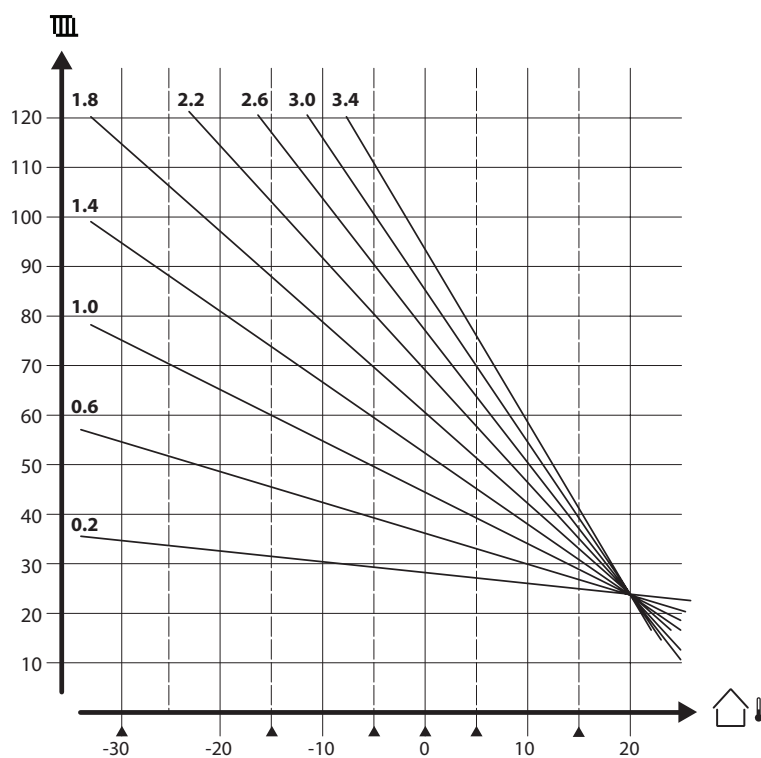
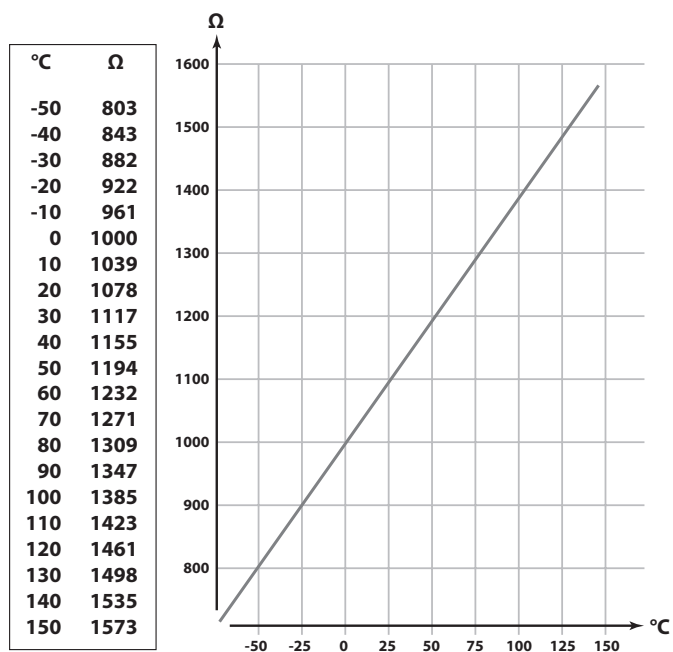
M-bus



M-bus

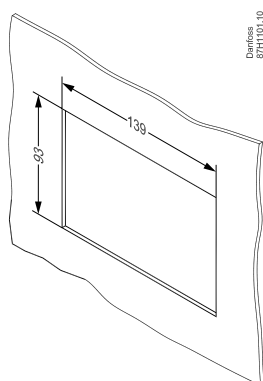


Pt 1000 (IEC 751B, 1000  $\Omega$  / 0 °C)

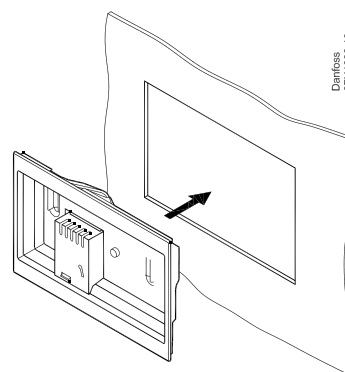


ECA 30

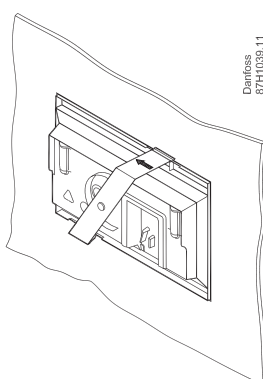
1



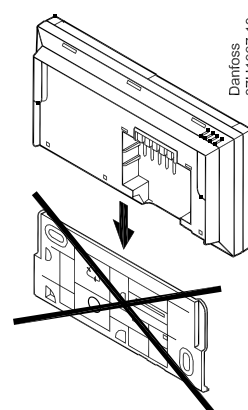
2



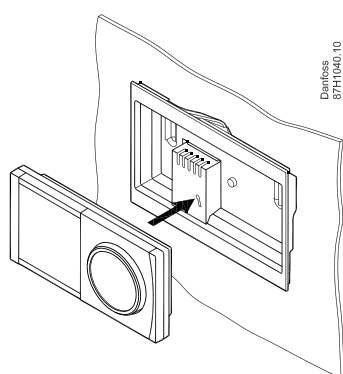
3



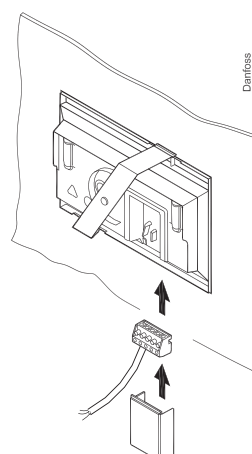
4



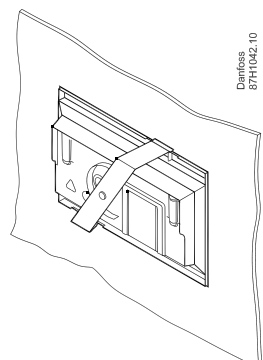
5



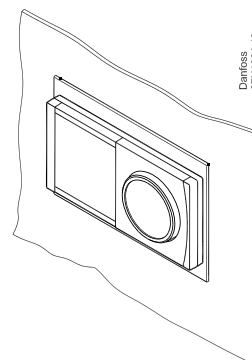
6



7



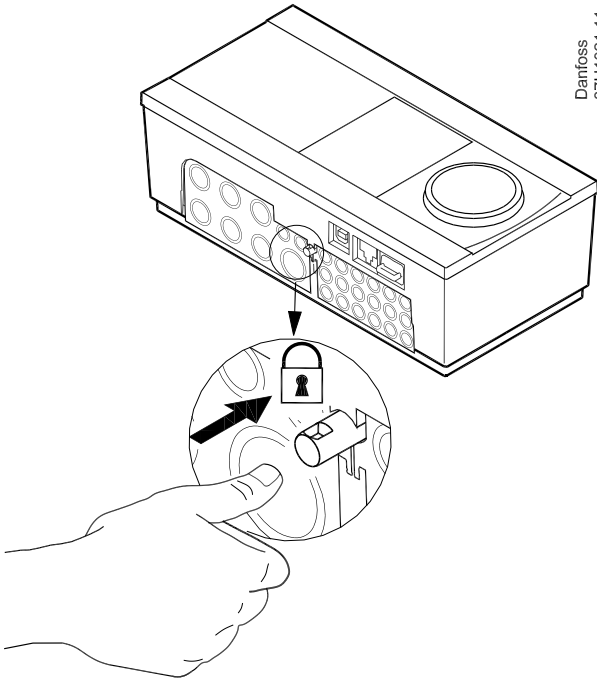
8



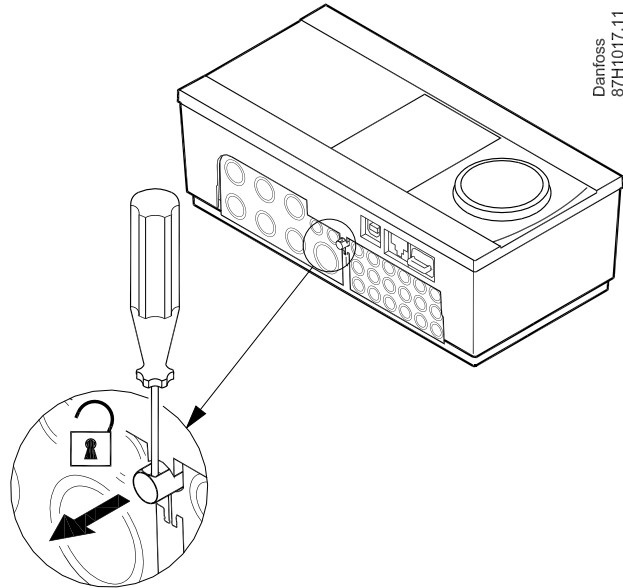


# Installation Guide, ECL Comfort 210 / 296 / 310, A230

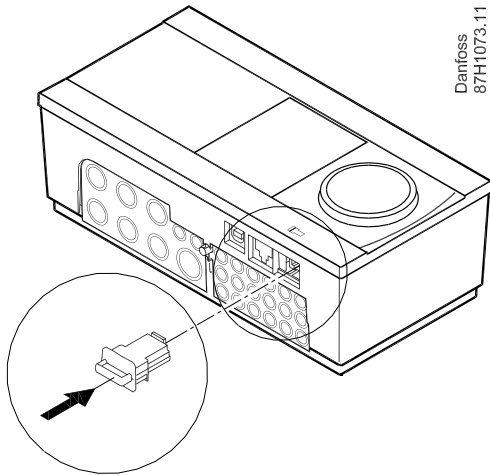
Danfoss  
87H1021.11



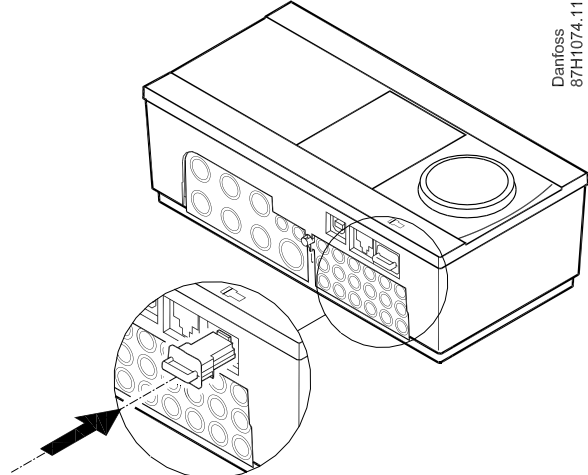
Danfoss  
87H1017.11



Danfoss  
87H1073.11



Danfoss  
87H1074.11



?  **ECL Comfort 210 / 296 / 310, A230: [www.danfoss.com](http://www.danfoss.com) or [store.danfoss.com](http://store.danfoss.com)**

?  **<https://www.youtube.com/user/DanfossHeating>  
-> Playlists -> How-to Videos -> District Energy installation videos**



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