

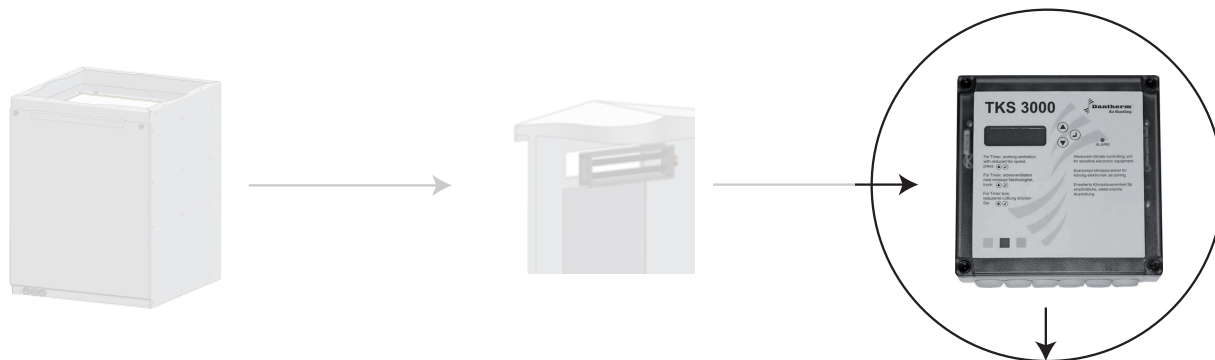


Flexibox controller

Quick setup guide

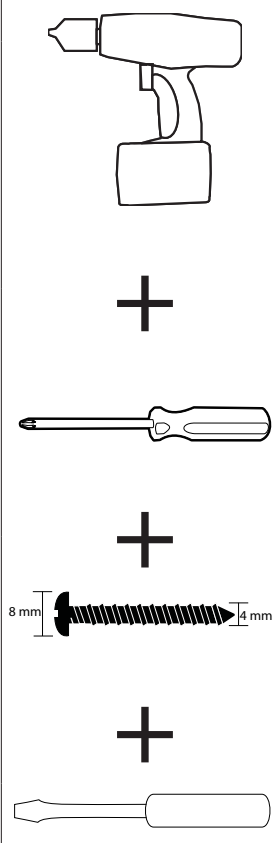
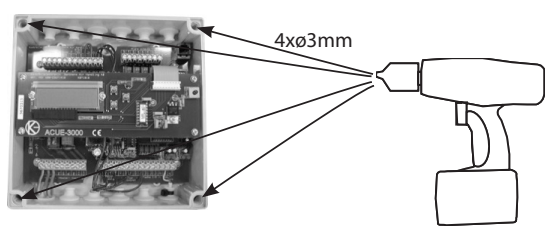
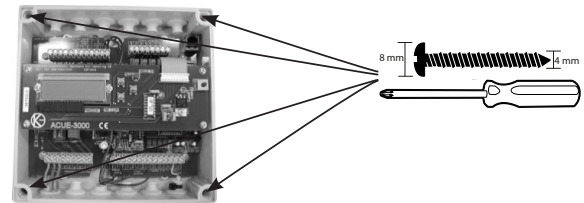
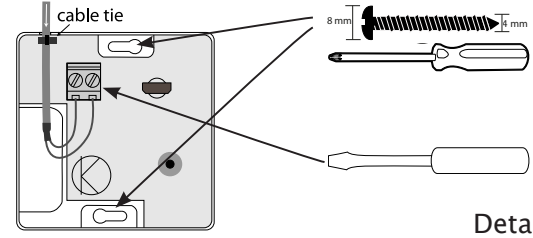
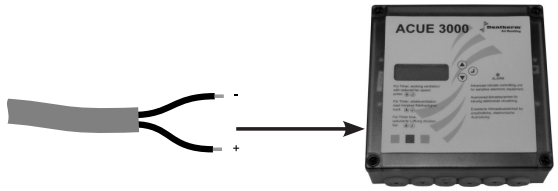
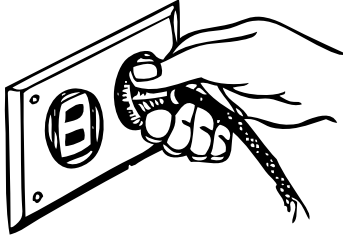
Rev. 1.1

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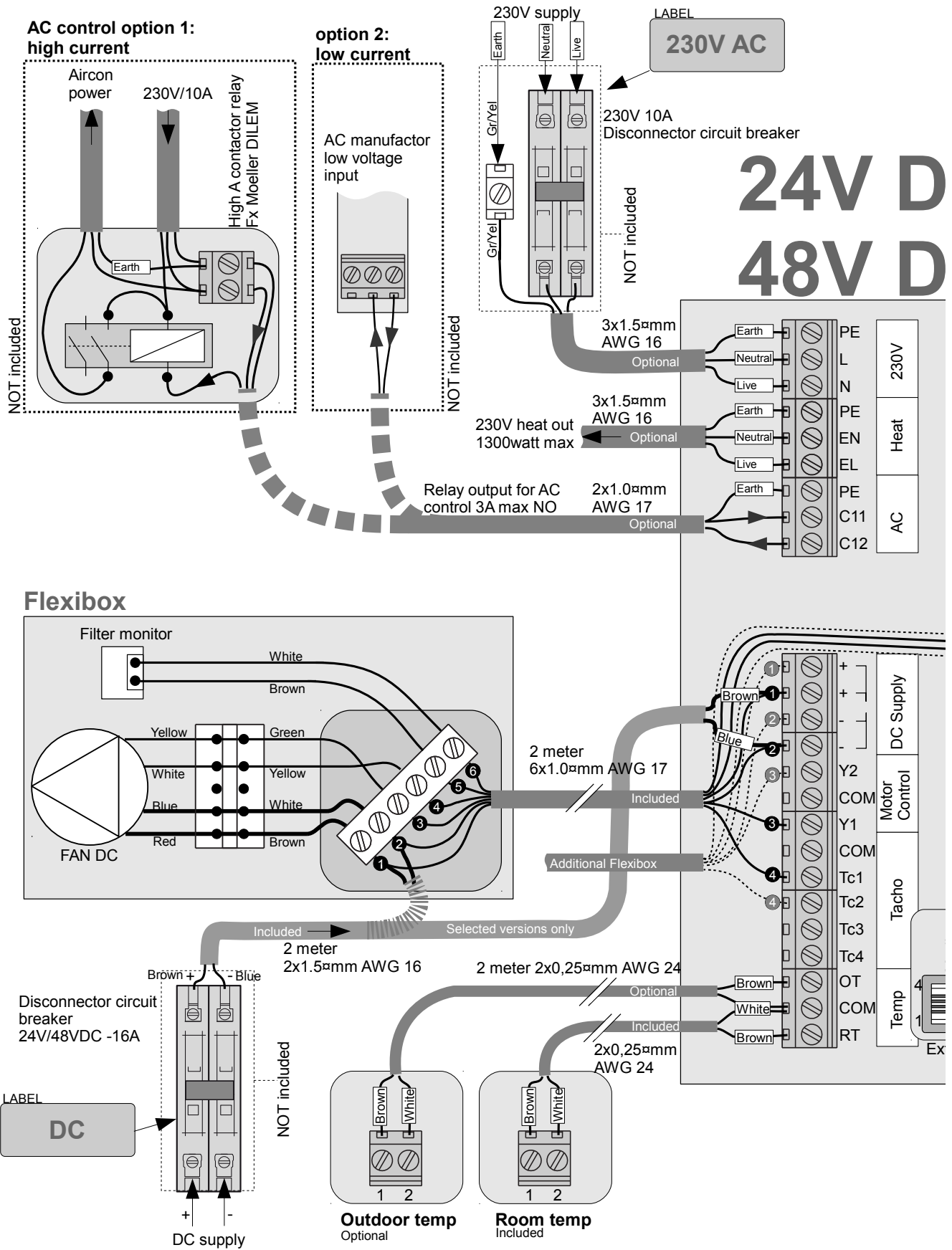


ACUE 3000	840012 (48VDC) - 840013 (24VDC)
TKS 3000A EC	840014 (230V AC)

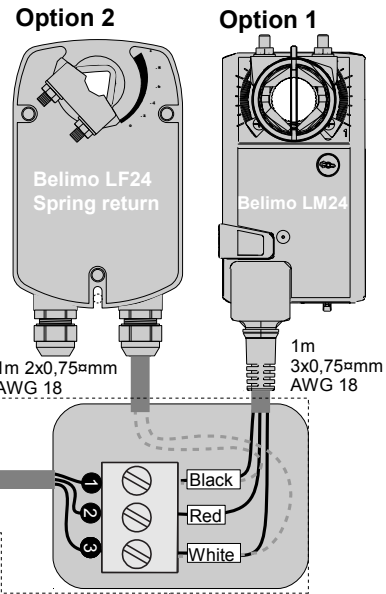
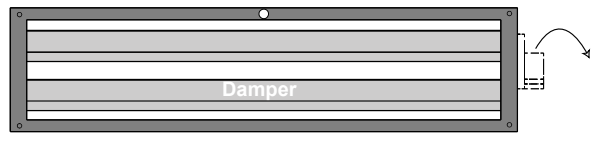
	<p>1 x</p>
	<p>1 x</p>
	<p>1 x</p>
	<p>4 x</p>
<p>1 x</p> <p>ø3 mm screw pre drilling</p>	

	<p>1</p> 
	<p>2</p> 
	<p>3</p>  <p>Details at page 17</p>
	<p>4</p>  <p>Diagram at page 4-7</p>
	<p>5</p> 
	<p>6</p> <h1>Configure</h1> <p>Parameters at page 8-9 Functional description at page 10 -15</p>
	<p>7</p> <h1>Selftest</h1> <p>Details at page 16</p>

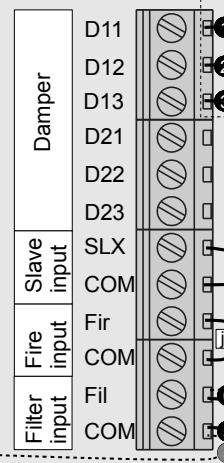
Connection diagram ACUE 3000



DC or
DC

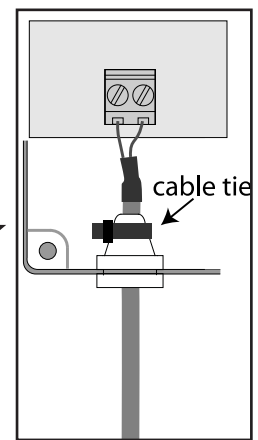


ACUE3000

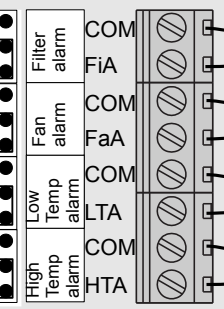


- 3x0,75mm AWG 18 Optional
- Optional 0-10V slave input 2x0,25mm AWG 24
- Optional Fire alarm input NC 2x0,25mm AWG 24

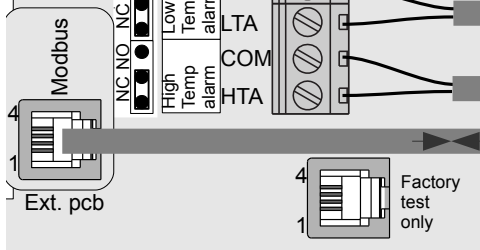
NOT included



Relay output max 24VDC/0,2A. NC/NC jumpers



- Optional Filter alarm out 2x0,25mm AWG 24
- Optional Fan alarm out 2x0,25mm AWG 24
- Optional Low temp alarm out 2x0,25mm AWG 24
- Optional High temp alarm out 2x0,25mm AWG 24

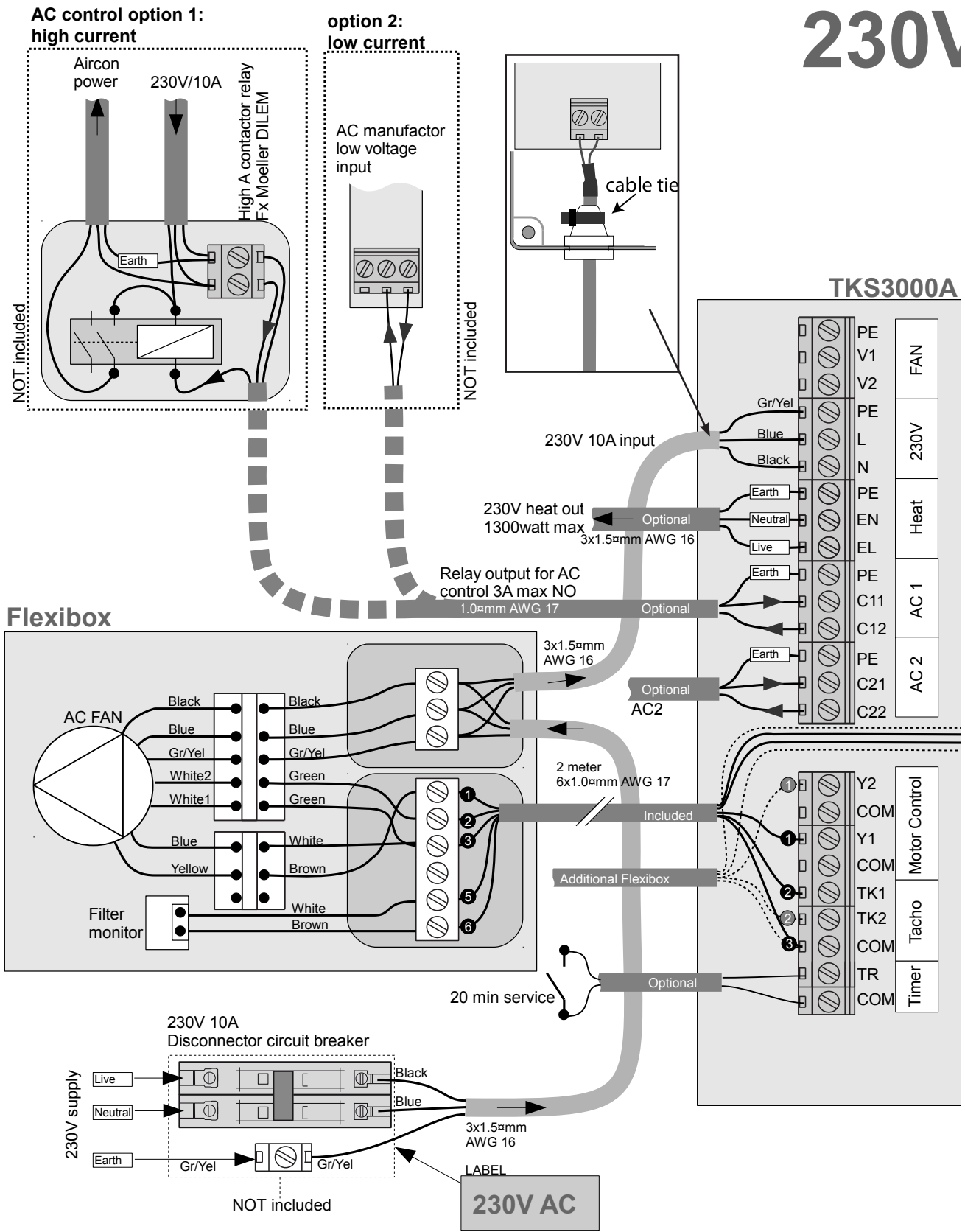


- Optional MODBUS RTU – see manual

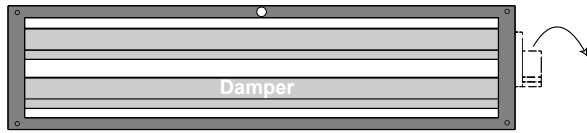
Product:	ACUE 3000 24VDC or 48VDC.
Drawing:	Cable connection diagram
Revision:	D – 22.09.2012

Connection diagram TKS 3000A EC

230V



V AC



Option 2



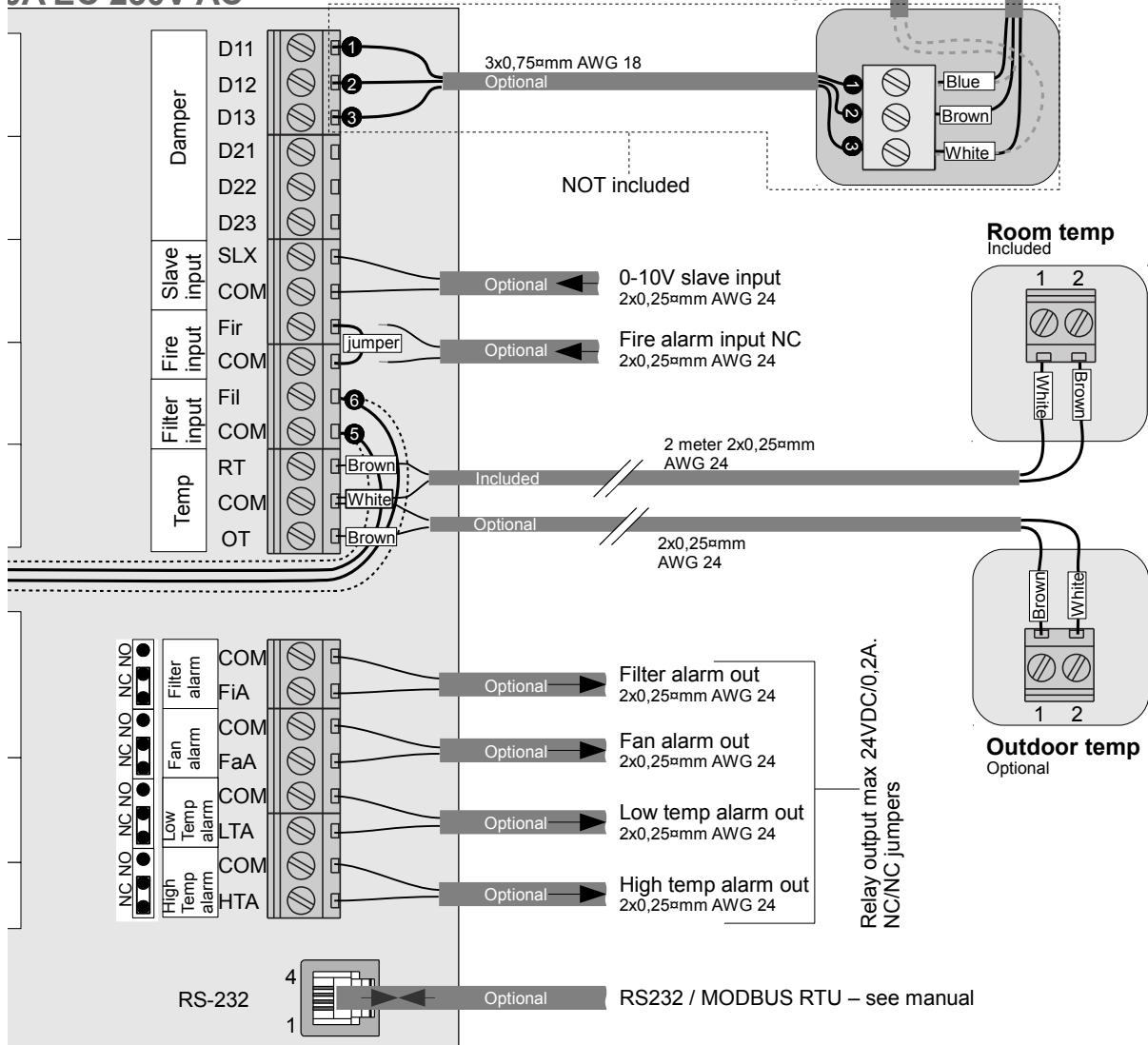
1m 2x0,75mm
AWG 18

Option 1



1m 3x0,75mm
AWG 18

0A EC 230V AC



Dantherm®

Product: TKS 3000A EC 230V AC

Drawing: Cable connection diagram

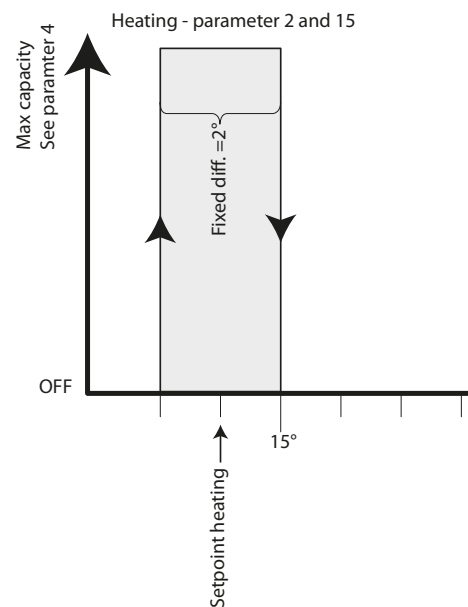
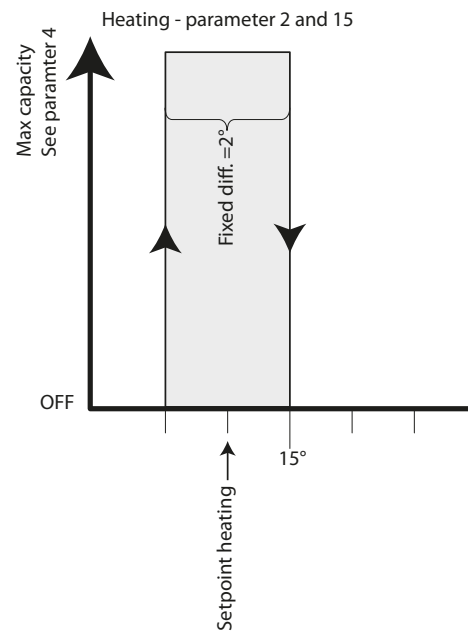
Revision: D - 22.09.2012

List of parameters available in menu

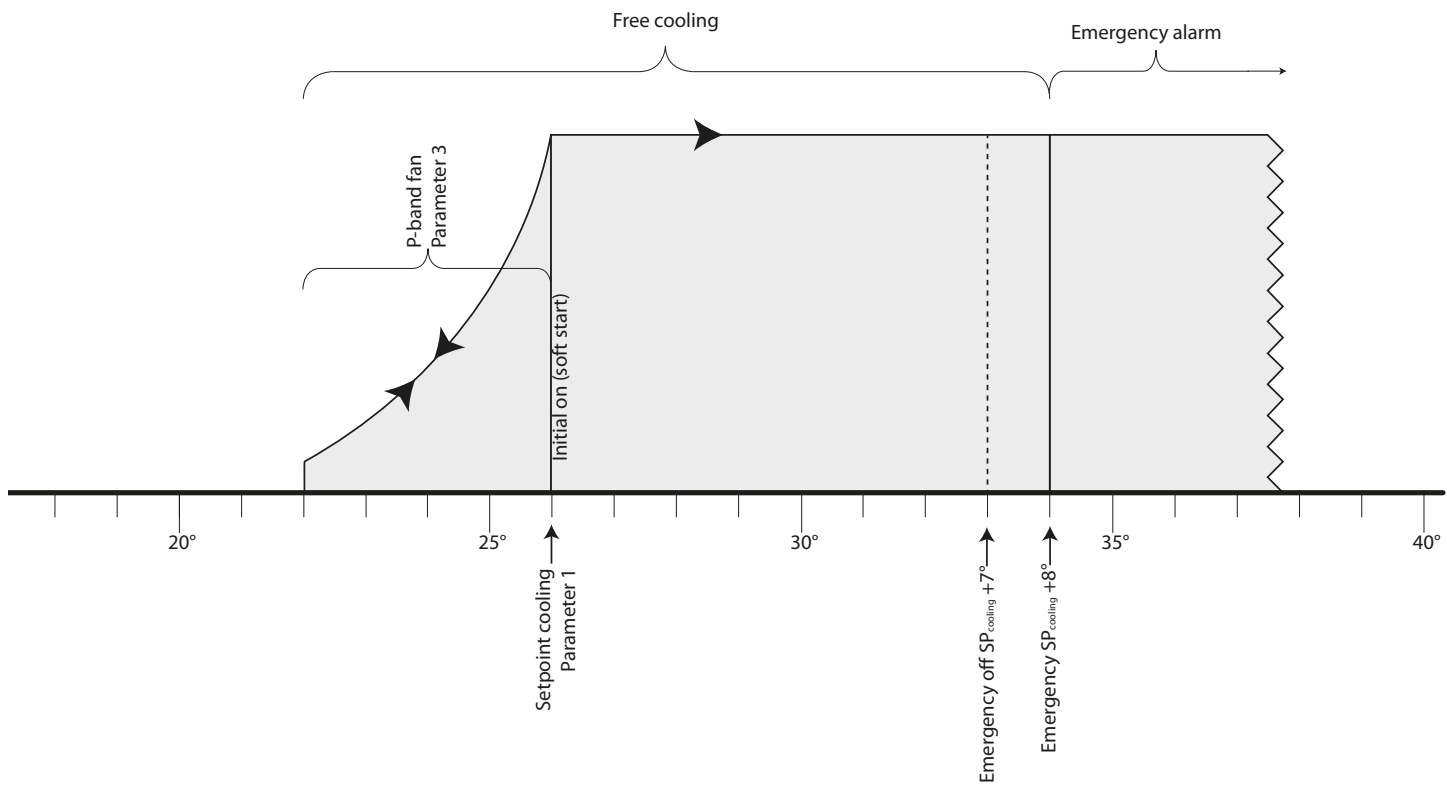
No.	Parameter	TKS 3000A EC	ACUE 3000 EC	Setting/range	Description
1	Setpoint cooling	✓	✓	18–60°C	The temperature set point in which cooling is
2	Setpoint heating	✓	✓	5–17°C	Center temperature setpoint for heater– ON/
3	P–band fan	✓	✓	1–10°C	P–factor fan regulator – Fan slow down temp
4	Max. speed fan	✓	✓	50–100%	Max. allowed fan speed – also in emergency
5	Low temp. alarm	✓	✓	5–45°C	Setpoint low temperature alarm – Alarms will
6	High temp. alarm	✓	✓	5–70°C	Setpoint high temperature alarm – Alarms will
7	Current detect detection	✓		Yes/No	Current detection or thermo–contact for fa
8	Stop at low voltage		✓	Yes/No	Stop operation when 24/48V supply voltage
9	Setpoint low voltage ¹		✓	42,0–52,0V (21,0–52,0V@24V)	Setpoint low supply voltage level to stop op
10	Hysteresis low voltage ¹		✓	0,5–9,9V	How much must the 24V or 48V supply volta
11	Line failure detection		✓	Yes/No	Enabling detection of AC Mains line failure:
12	Setup. at line failure		✓	28–70°C	Setpoint cooling during AC Mains Line failur
13	Number of fans	1–2	1–4		Total number of Flexibox fans connected
14	I/O damper type	✓	✓	Motorized/ Non–motorized	Are the I/O dampers motorized or not? “sp
15	El heater	✓	✓	External/Internal (stick)	External means connection of an auxiliary l TC–function must be installed to enable se
16	TC–function	✓	✓	Installed/Not installed	TC–function is used to circulate indoor air
17	Numb. of TC–fans	✓	✓	0–3	Number of fans that will be set up for TC–f
18	AC unit	off,1 or 2	On/off		AC unit installed? (needs outside temperat
19	Diff. temp. AC		✓	2–10°C	Temperature difference between start and str
20	Diff. temp. AC–1	✓		2–10°C	Temperature difference between start and str
21	Diff. temp. AC–2	✓		2–5°C	Temperature difference between start and str
22	Slave mode (PLC)	✓	✓	Installed/Not installed	Slave mode, the free cooling is controlled b
23	Modbus ID No	✓	✓	1–247	The units ID–number in serial communicati
24	Factory settings ENTER=Restore	✓	✓		Press ENTER to restore factory settings.
25	Factory settings New?	✓	✓		Press ENTER to save the current settings as
26	Language	✓	✓	English/Swedish/German	Menu language selection
27	Outdoor temp.	✓	✓		Measured temperature, from the outdoor ter
28	Room temp.	✓	✓		Measured temperature, from the Room temp
29	SELF TEST	✓	✓	ENTER=START	Press ENTER to start self–test
30	Alarm log	✓	✓	ENTER=SHOW	Press ENTER to study and reset the stored al
31	Timer	✓	✓	ENTER=START	Press ENTER to activate timer mode for servic

	Access
ing is switched on – free cooler and/or AC unit if installed.	
ON/OFF differential temp is fixed 2° C. Select heat type with parameter 15	
temperature range, from setpoint cooling to total off state	
ncy mode. Used to reduced noise	
; will show in display and activate the associated alarm output. Resets automatically when temp ok	
is will show in display and activate the associated alarm output. Resets automatically when temp ok	
or fan supervision	Admin (1973)
age gets low?	
o operation	
voltage increase from stop level, to allow return to normal operation?	
lure? – only valid if 230v is installed	Admin (1973).
ailure. – extend the battery lifetime, if setpoint is higher than regular setpoint cooling	
ed	Admin (1973).
’ “spring return” types are also motorized	Admin (1973).
ary heater. Internal means that the heater is mounted inside the free cooling unit. Note! Motorized dampers and e selecting internal heater.	Admin (1973).
air or to mix intake air with room tempered air during free cooling at low outdoor temperatures.	Admin (1973).
TC-function. They must be connected to fan group 2.	Admin (1973).
erature sensor)	Admin (1973)
id stop of the AC	
id stop of AC unit 1.	
id stop of AC unit 2.	
led by an external 0–10V signal	Admin (1973)
ation using MODBUS protocol	
gs as new factory settings	Admin (1973)
or temp sensor	
temp sensor	
d alarm log	
ervice personnel	

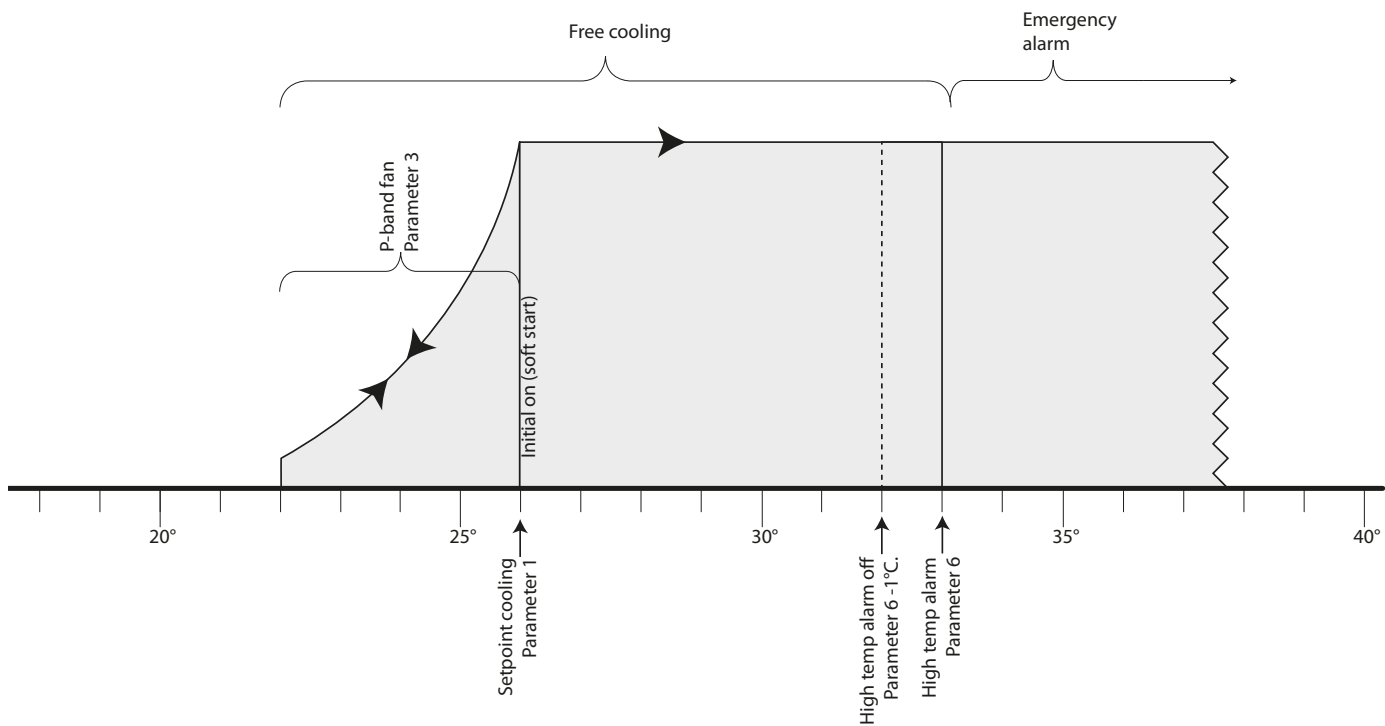
Flexibox without active cooling



TKS 3000A EC

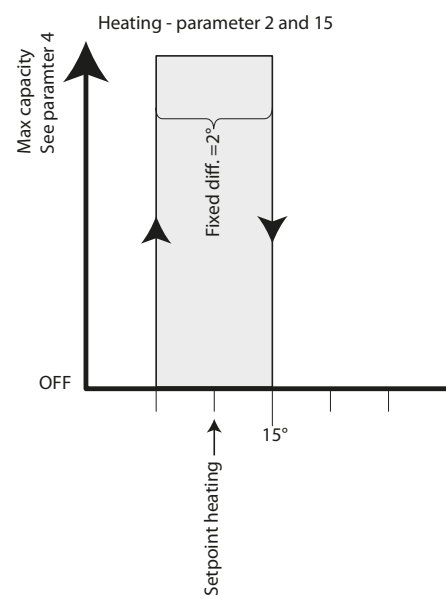
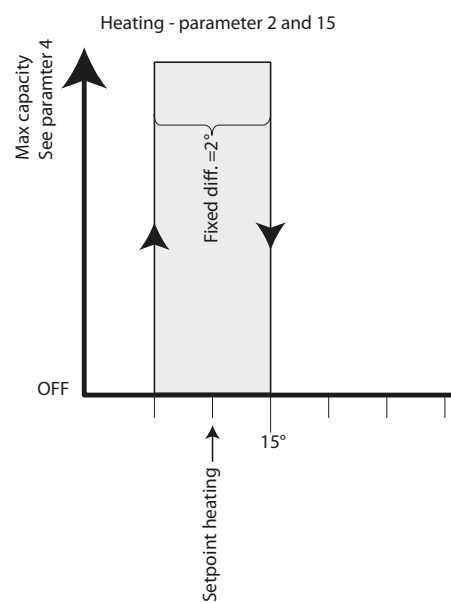
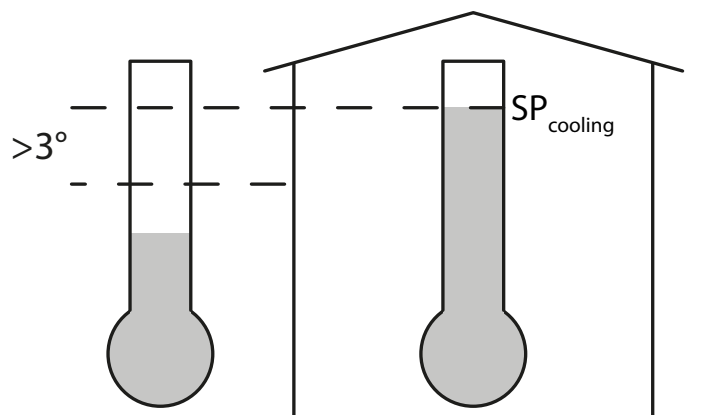


ACUE 3000

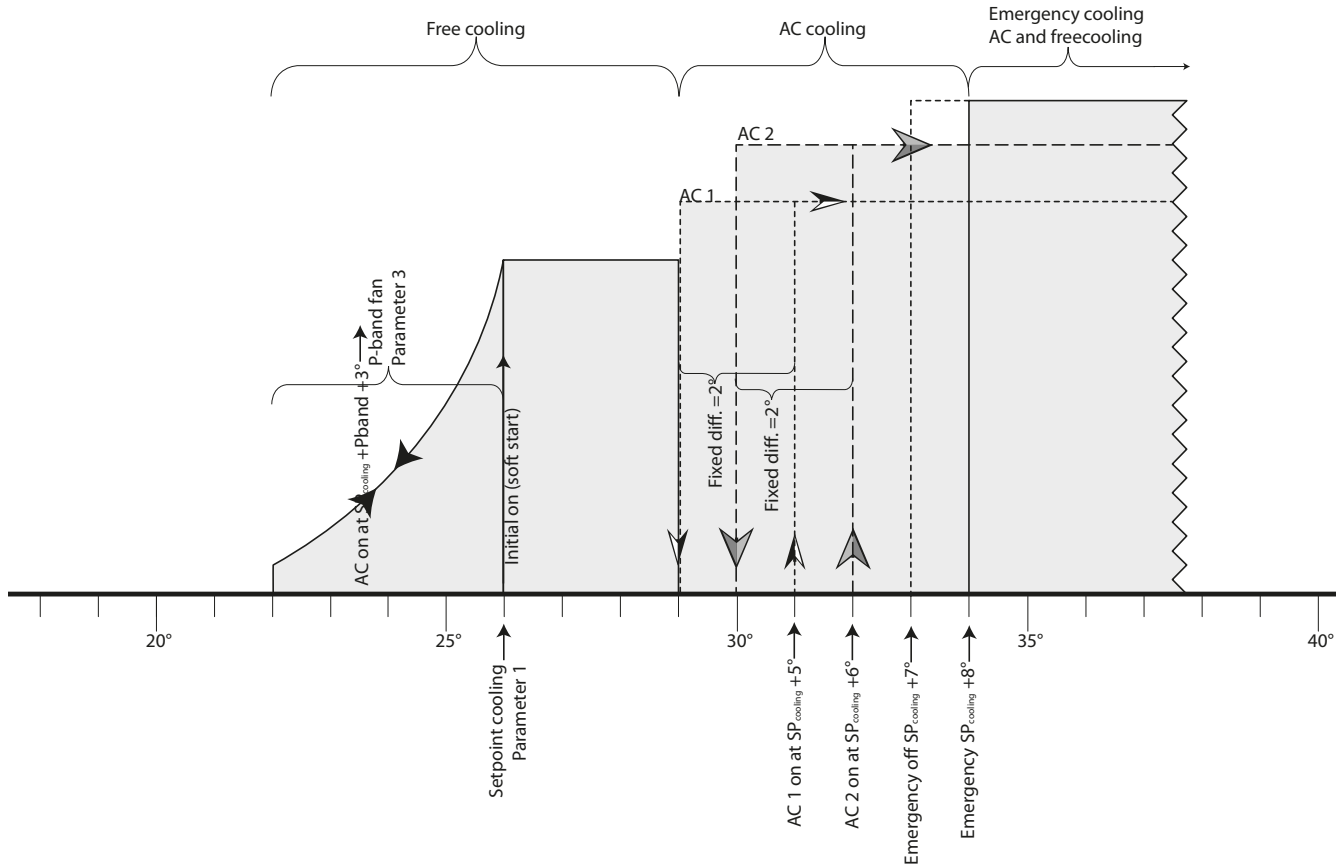


Flexibox with airconditioner

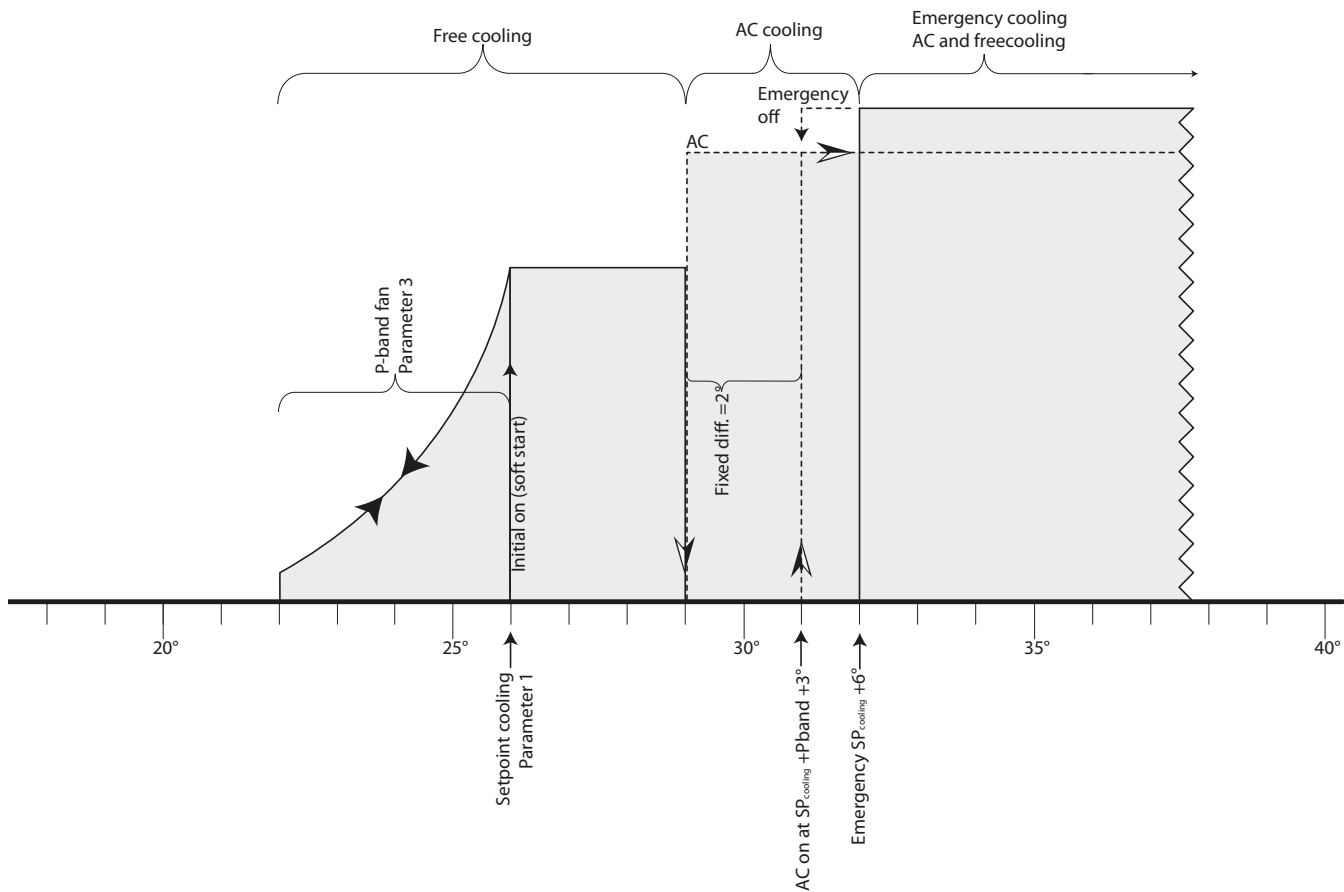
Cooling strategy if:



TKS 3000A EC

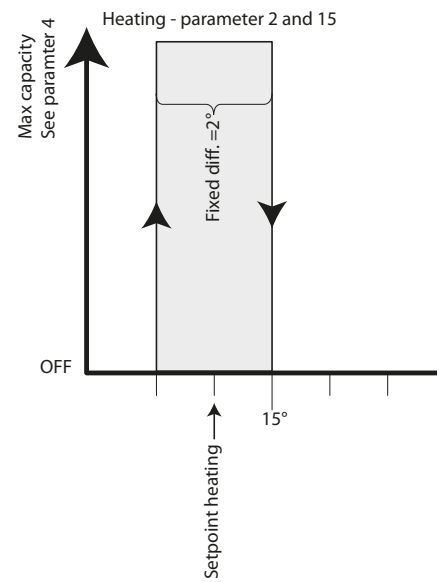
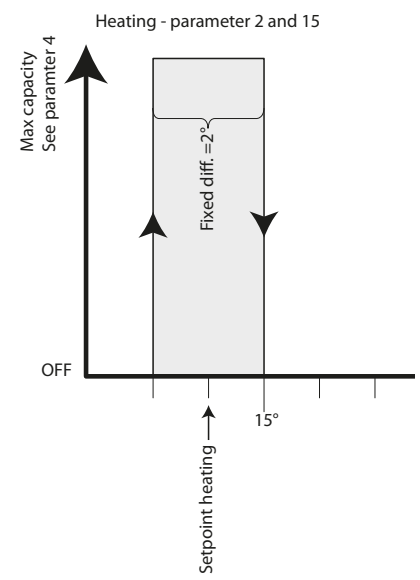
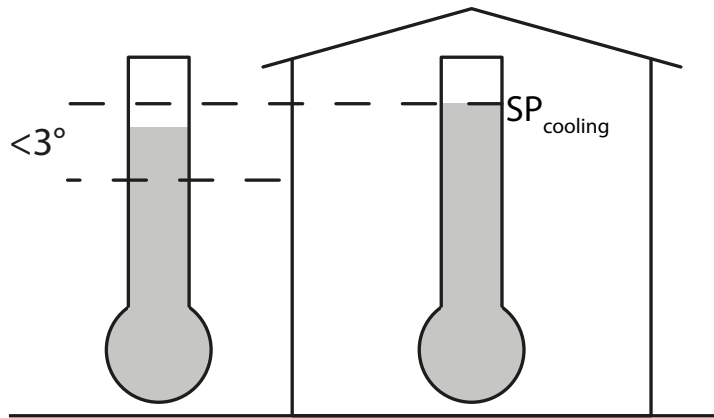


ACUE 3000

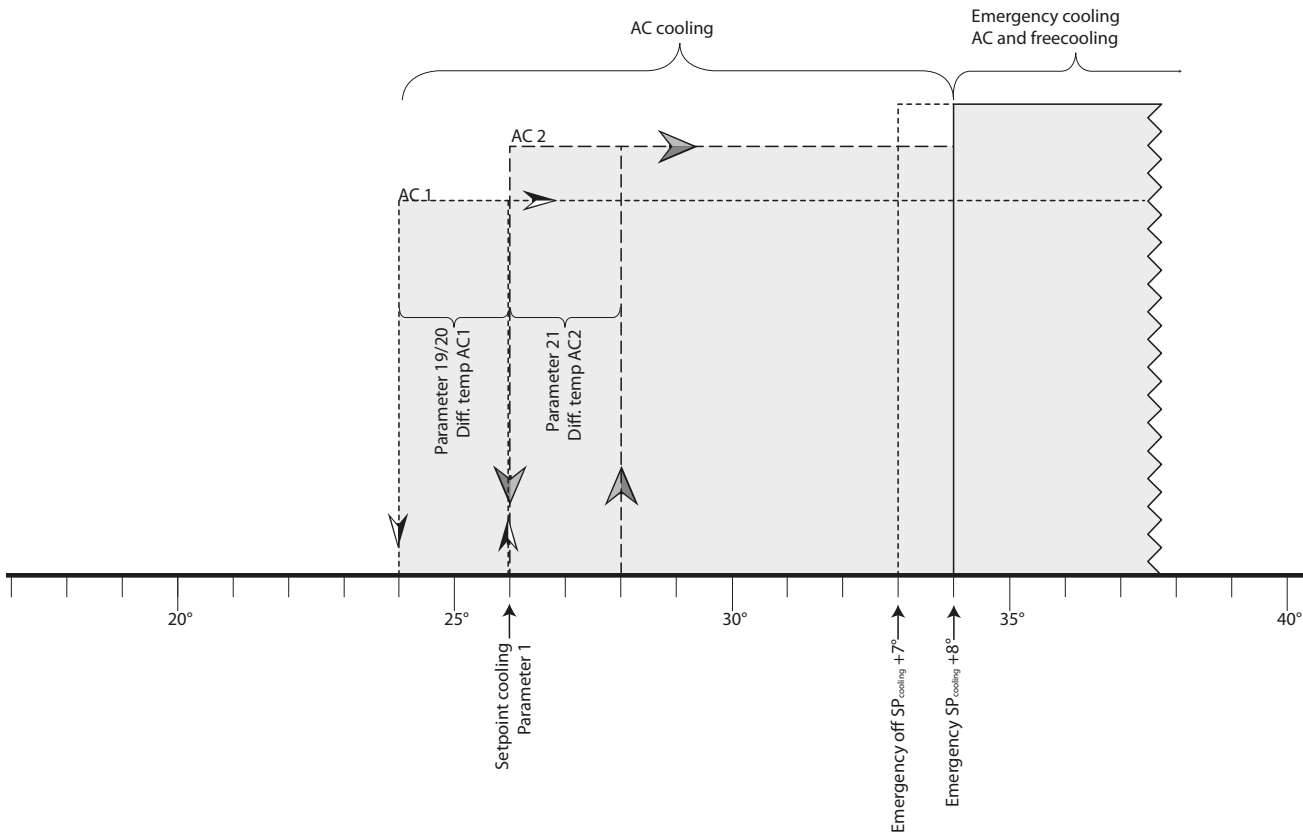


Flexibox with airconditioner

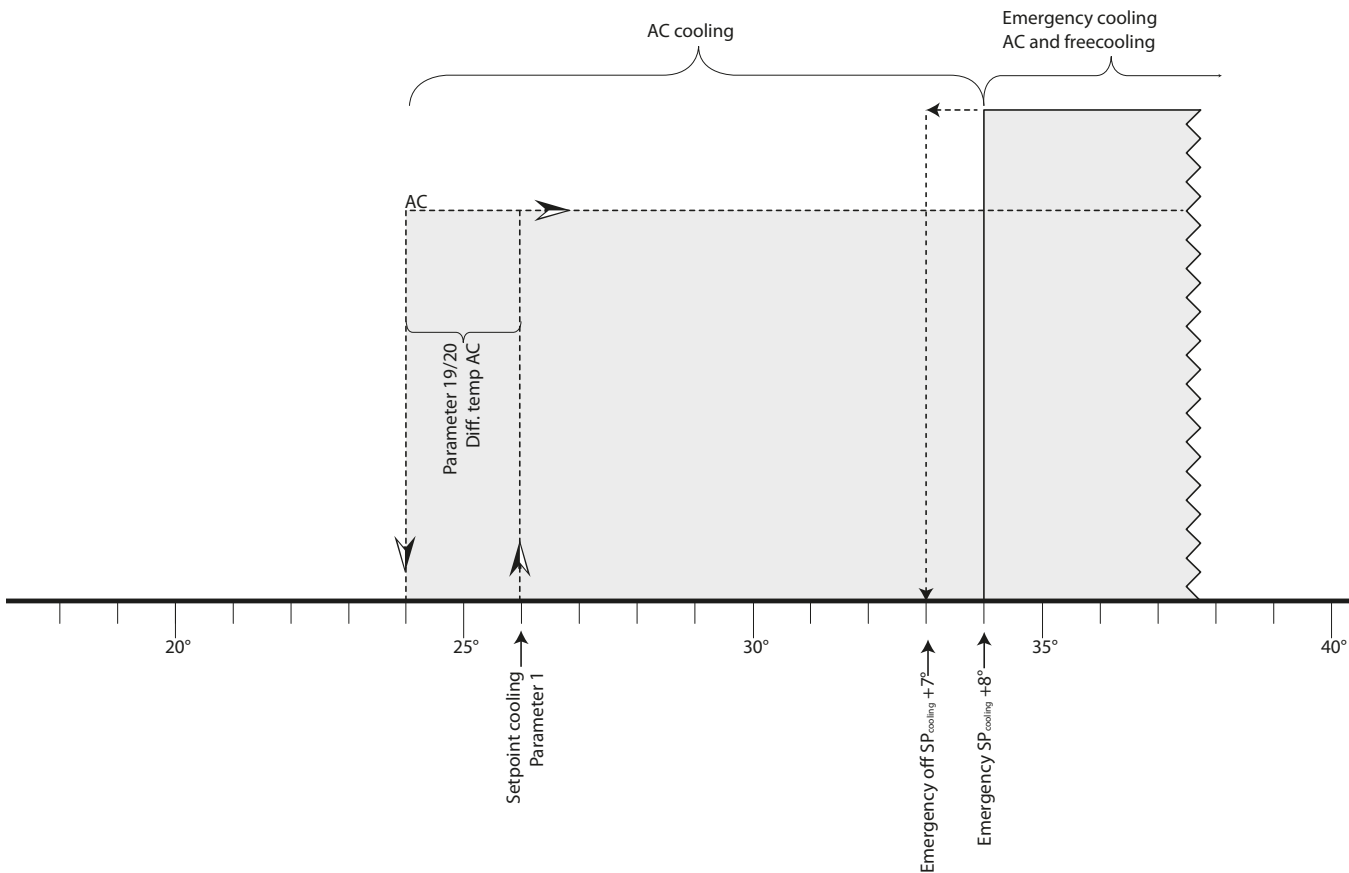
Cooling strategy if:



TKS 3000A EC



ACUE 3000



Functionality test

After setting up and calibrating Flexibox system to local recommendation, please run menu no. 29 – selftest.

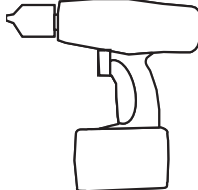
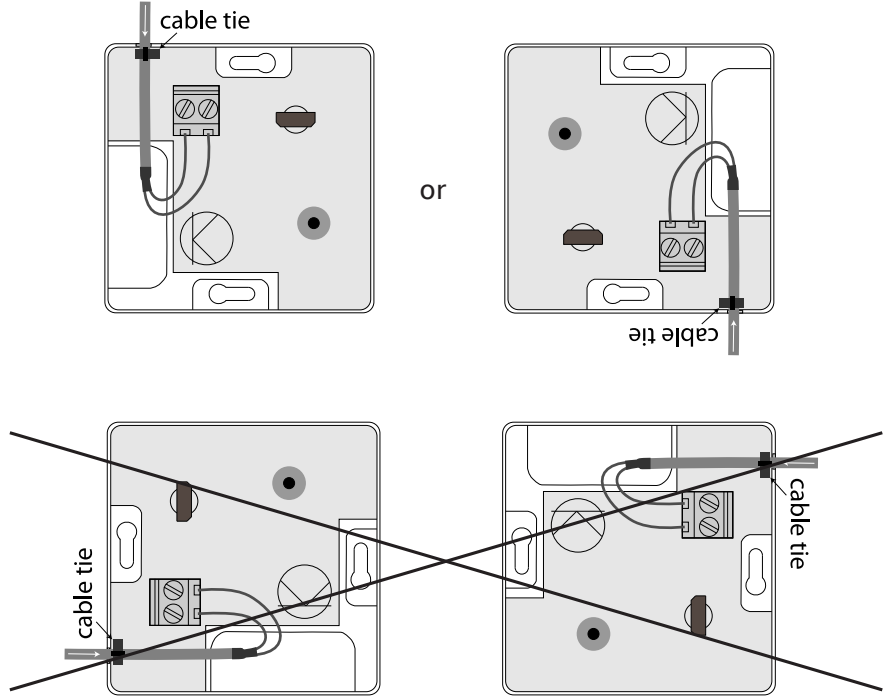
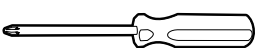
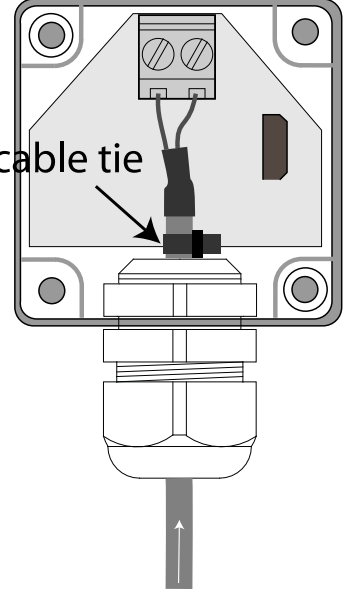
Observe at each phase that each part perform as expected.

Test phase	Time (s)	Action
1	60	Heater active
2	120	Exhaust damper opens (if non-motorized dampers are used this phase ends after 10s).
3	60	Fan signal ramps up, 0-100%
4	120	TC-function active (if installed). Fan signal ramps down to min. speed.
5	60	AC units active (if installed, if not phase ends after 10s). 0-25s: AC-1 active. 25-35s: AC units shut down. 35-60s: AC-2 active, if installed.(TKS version ONLY) Fan signal = 0%.
6	10	Relay output filter alarm active
7	10	Relay output fan alarm active
8	10	Relay output low temp. alarm active
9	10	Relay output high temp. alarm active
10	10	Room sensor is tested, result shown after 7s
11	10	Outdoor sensor tested, result shown after 7s

Sensor details

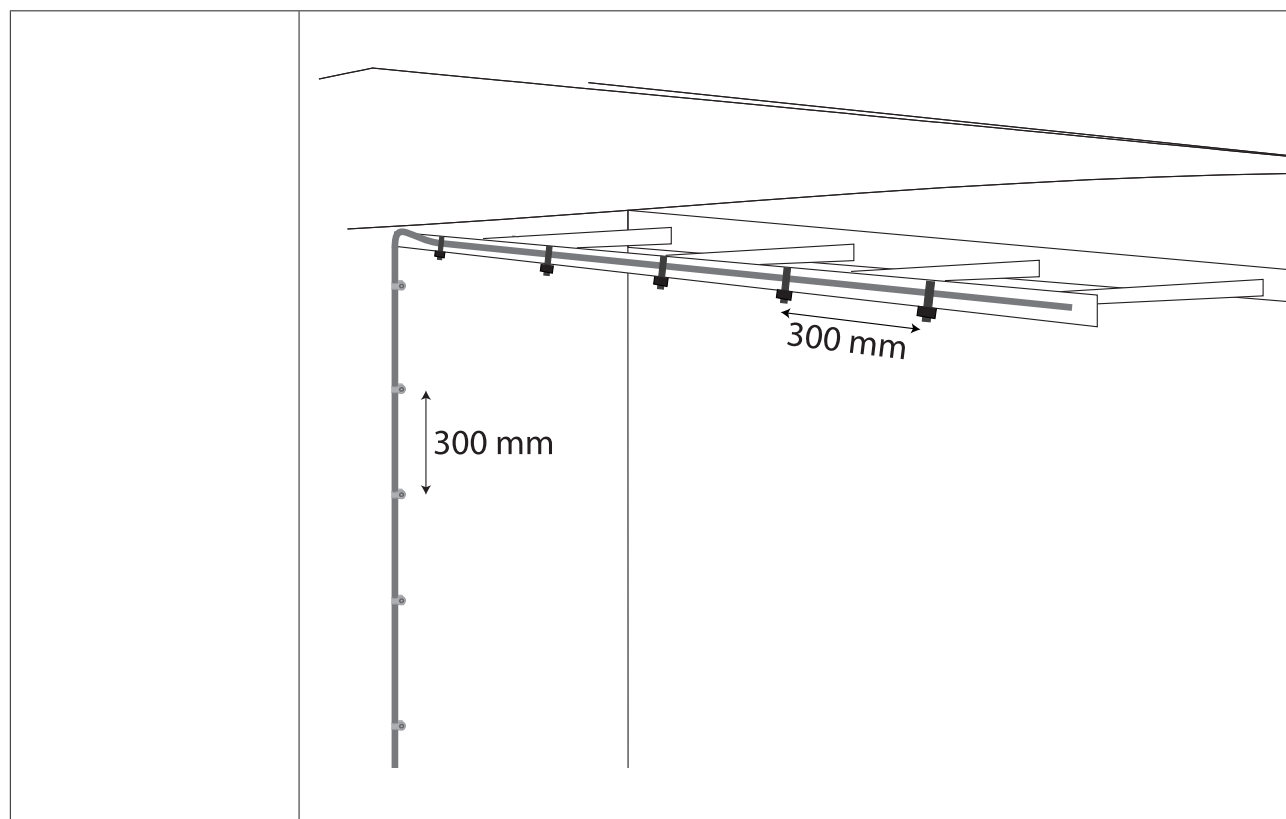
Indoor sensor included (mandatory)

Outside sensor mandatory if AC cooling connected

 +	<h3>Indoor sensor mounting</h3>  <p>Labels: cable tie, or, cable tie</p>
 +	<h3>Outdoor sensor mounting</h3>  <p>Labels: cable tie</p> <p>Cable downwards only</p>



Securing cables



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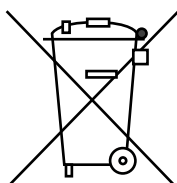
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