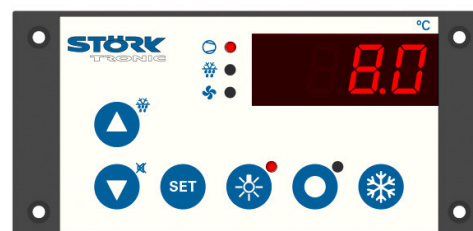


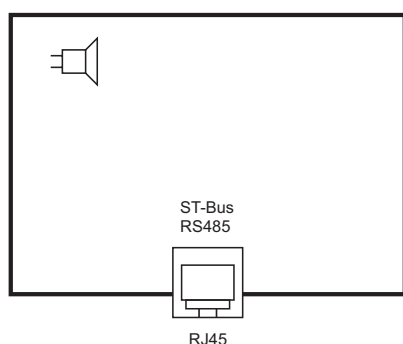
Operating unit

Order number: 900430.073

As of: 18.02.2026 V0.46



Wiring diagram

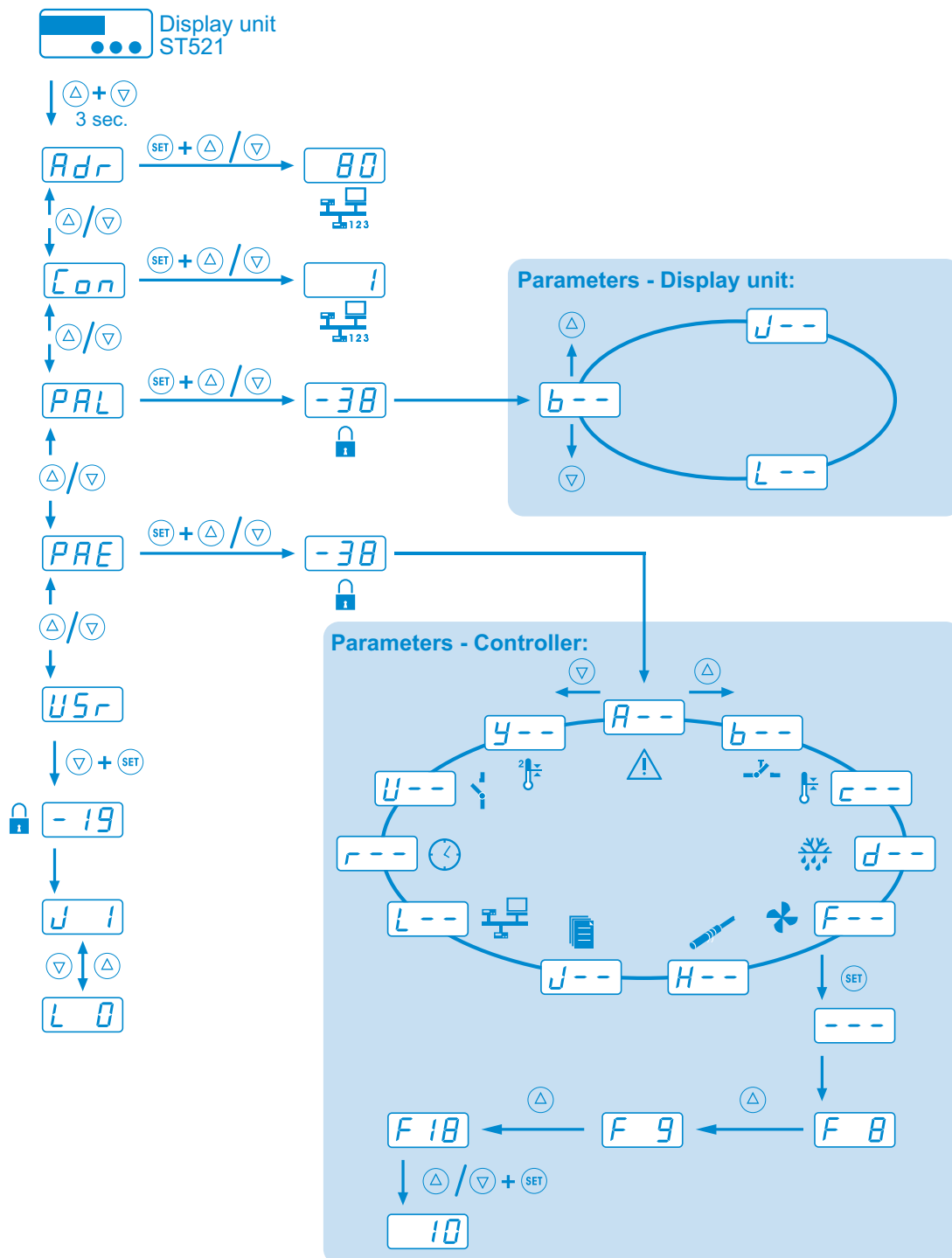


Product description

The ST521 control unit is equipped with an RJ45 plug and thus serves as a control unit for a remote ST-BOX. It has six keys and a three-digit LED display.

The operating unit is networked with the aid of the RJ45 interface..

Front size:	125x60 mm
Installation size:	102.2 mm x 52.5 mm
Tightness:	Front IP65
Connection:	RJ45



Control keys



Key 2: UP

By pressing this key the parameter or parameter value is increased. Another function of the key may be defined with [b 12/b 13](#).



Key 3: DOWN

By pressing this key the parameter or parameter value is decreased. Another function of the key may be defined with [b 14/b 15](#).



Key 4: SET

While SET key is pressed, the setpoint S1 is indicated.



Key 5: Light

Pressing the light button briefly switches the light on or off. Pressing and holding (3 seconds) the light button allows you to adjust the brightness. The light is switched on again for this purpose. There are two modes available, which can be selected using parameter [15](#).

Mode 0 – Manual

As long as the light button is pressed, the brightness can be adjusted in 5% increments using the up/down buttons.

Mode 1 – Sweep

After pressing the light button for 3 seconds, the brightness is increased until the maximum is reached. The brightness is then reduced until the minimum is reached and then increased again. The change rate is 5.0% / 500 ms. As soon as the button is released and pressed again for 3 seconds, the counting direction is inverted (INC ↔ DEC).



Key 6

The function of this key is defined with [b20/b21](#).



Key 7: StandBy

The function of the standby key is defined with [b22/b23](#). By pressing this key for at least 3 seconds the controller is completely switched off. Pressing the standby key again restarts the controller.

The unit is generally controlled using the buttons UP, DOWN and SET. The standard display indicates the temperature of the cold store (actual temperature value). Press SET button to switch over the display to the required cold store setpoint.

The setpoint temperature can only be changed by pressing buttons SET and UP or SET and DOWN at the same time. While pressing the buttons, the changing setpoint temperature is displayed. After changing the setpoint temperature and releasing the buttons, the actual temperature is displayed again. This is the standard setting method.

Parameterisation

Parameterisation is initiated by pressing the UP and DOWN buttons simultaneously. After approx. 3 seconds, the code word PA appears on the display. Pressing the UP or DOWN button allows you to switch between the code words PA and PAE.

Test mode

Test mode is activated by pressing the buttons (UP + DOWN + ON/OFF) for 10 seconds. The same button combination is used to exit test mode. The control unit then performs a system reset.

Use the UP/DOWN buttons to select the test step and execute it by pressing the SET button. Release the SET button to end the test step.

Display	Sensor/actuator	Description
U 1	Relay K1	The selected relay is switched on during the test.
...	...	
U 5	Relay K5	
U30	0-24VDC - output	The selected analogue output outputs 100% during the test, otherwise 0%.
U40	0-230VAC - Triac	
U50	0-10VDC - output	
E 1	Digital input	Digital input status 0: Open 1: Closed
F 1	Sensor F1	The measured value is displayed during the test. If the display flashes, an error code is shown. 401: Sensor is deactivated 103: Short circuit 203: Cable break or no sensor connected ...
F 1	Sensor F1	
F 2	Sensor F2	
F 3	Sensor F3	
F 4	Sensor F4	
F 5	Sensor F5	
F 6	Sensor F6	

Keyboard lock:

Lock in 'Loc' mode

If $\text{J04} \neq 0 \Rightarrow$ 'Loc' mode – PreLevels are ALWAYS locked.

Unlocking: UP/DOWN for 3 seconds (time as PreLevel)

If $\text{J04} \neq 0 \Rightarrow$ 'Loc' otherwise Prelevel 'Adr ...'

Enter password **J99** with (Set + Up/Down).

After releasing Set $\Rightarrow$ controller goes into 'Normal mode'

Right decimal point flashes '- - .'

EVERYTHING is possible for 60 seconds (parameter level, setpoints, etc.).

After 60 seconds without pressing a key, 'Loc' mode ($\text{J04} \neq 0$) is activated again.

b-- Key functions

Name	Function description	Setting range	J1=0
b 12	Key 2 Press briefly (TOGGLE) - UP	0: Deactivated 1: Standby 2: Defrost 3: Day/Night 4: Set 1 / Set 2 5: Superfrost 6: - 7: Error acknowledgment	0
b 13	Key 2 Press and hold (TOGGLE) - UP	see b 12	2
b 14	Key 3 Press briefly (TOGGLE) - DOWN	see b 12	7
b 15	Key 3 Press and hold (TOGGLE) - DOWN	see b 12	7
b 16	Key 4 Press briefly (TOGGLE) - SET	see b 12	0
b 17	Key 4 Press and hold (TOGGLE) - SET	see b 12	0
b 18	Key 5 Press briefly (TOGGLE) - LIGHT	see b 12	0
b 19	Key 5 Press and hold (TOGGLE) - LIGHT	see b 12	0
b 20	Key 6 Press briefly (TOGGLE) - FUNCTION 1	see b 12	0
b 21	Key 6 Press and hold (TOGGLE) - FUNCTION 1	see b 12	0
b 22	Key 7 Press briefly (TOGGLE) - STANDBY	see b 12	0
b 23	Key 7 Press and hold (TOGGLE) - STANDBY	see b 12	1
b 30	Compressor LED	0: Deactivated 1: Standby 2: Defrost 3: Day/Night 4: Set 1 / Set 2 5: Superfrost 6: Light 7: - (Acknowledgment - without display) 8: Compressor 9: Fan	8
b 31	Defrost LED Defrost	see b 30	2
b 32	Fan LED Fan	see b 30	9
b 33	Light LED Light	see b 30	6
b 34	Function 1 LED	see b 30	0
b 40	Compressor LED Blink mode	0: Deactivated 1: GET (actual status) 2: SET (target status) 3: (target status != actual status) flashing	3
b 41	Defrost LED Blink mode	see b 40	3
b 42	Fan LED Blink mode	see b 40	3
b 43	Light LED Blink mode	see b 40	3
b 44	Function 1 LED Blink mode	see b 40	3
b 51	Key 2 (UP) Delay of long key press	1...10 sec.	3
b 52	Key 3 (DOWN) Delay of long key press	1...10 sec.	1
b 53	Key 4 (SET) Delay of long key press	1...10 sec.	3
b 54	Key 5 (LIGHT) Delay of long key press	1...10 sec.	3
b 55	Key 6 (FUNCTION 1) Delay of long key press	1...10 sec.	3
b 56	Key 7 (STANDBY) Delay of long key press	1...10 sec.	3
b 99	Password b level	-99..999	0

Parameter sets

Name	Function	Setting range	J1=0	
J01	Parameter set selection	0: Störk-Tronic	0	
J02	Restore parameter set	0: Deactivated +1: Setpoints +2: Controller configuration +4: Operating hours +8: Passwords	0	
J04	Lock in "Loc" mode see page 4	0: Deactivated +1: Standby +2: Defrost +4: Day/Night +8: Set1/Set2 +16: Superfrost +32: Light on/off +64: Change brightness +128: Change setpoint	0	
J06	Start Pre-level	0: Adr 1: Con 2: PRL 3: PAE 4: USr	4	
J07	Pre-level operation mask	0: Menu locked +1: Adr +2: Con +4: PRL +8: PAE +16: USr	16	
J08	Pre-level Standby mask	0: PRL (Level always activated) +1: Adr +2: Con +8: PAE +16: USr	31	
J10	Display 1 (RAM_TAB_ADR of the controller)	0...65535	0	
J11	Display 1 'Decimal places' for value in J10	0: Integer 1: 0,5 2: 0,1 3: 0,01	1	
J12	Display 1 'Standby'	0: Deactivated 1: OFF 2: OFF 3: Decimal point right	1	
J13	Display 1 unit	0: °C 1: °F	0	
J14	Brightness display 1	5...100%	70,0	
J15	Brightness control mode	0: Light (>3s) + Up/Down 1: Light (>3s) + Auto increment	0	
Jr3	Version (release) display	x.yy		
PR	Password parameter level	-99..999	0	
J99	Password Level J and 'Loc'	-99..999	0	

L - - Networking

Name	Function description	Setting range	J1=0
L00	Own ST-Bus address	1...250	101
L01	Controller ST-Bus address	1...250	1
L80	Query interval 'ReadRAM'	1...60s	5s
L81	Query interval 'ReadStatus STATUS'	1...60s	1s *
L82	Query interval 'ReadStatus ERROR'	1...60s	5s
L99	Password Level L	-99..999	0

Status messages

Message	Cause	Measure
Decimal point	Assigned controller is switched off	
F90	Data transfer error, controller not found	Check the interface cabling. Check the address. The controller may also be de-energised.
F9c	Another device has the same address as this satellite display.	To change the address, disconnect the ST-Bus (pin 1) first.
[r]	Internal flash error display	Repair of the display
EP	Error in parameter memory	Check all parameters

Display	Three digit LED display, height 13 mm, color red Five LEDs, diameter 2.2 mm, red, for status display
Power supply	12V=, provided by the controller
Connection	RJ45 for CAT5 cable (4x Twisted Pair) ATTENTION: do not use for ETHERNET
Ambient conditions	Storage temperature: -20 °C ... +70 °C Working temperature: 0 ... 55 °C Relative humidity: max. 75 %, no condensation
Protection class	Protection class III (Unit carries low voltage)
Enclosure	Front IP65, IP00 from back
Interface	ST-Bus with RS485 interface, galvanically not separated, 56kBaud, max, length 1000m
Installation data	Front size: 120 x 42 mm Panel cutout: 102.5 x 35 mm Installation depth max. 47mm

