Accessories for decentralised ventilation systems
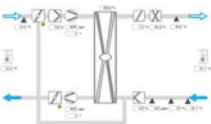
FSL-CONTROL III

100% outdoor air can be set using control panel, X-TAIRMINAL or BACS

Digital control panel including temperature sensor and CO_2 traffic light

Control panel for flush mounting, switches from the Busch Jäger Future linear range, for example

Operation and parameter setting by means of integral web server
① Stage

Pressure-independent control valve

Stand-alone single room control system, optional communication to a building automation and control system

Easy-to-operate single room control system as a plug and play solution for decentralised ventilation units: can be combined with façade ventilation units to provide demand-based ventilation and enable the control of the water-side components of the heating and cooling circuits or of an electric air heater

- Variable heat recovery all year round – for maximum fresh air volume, even in winter
- Demand-based CO_2 or VOC led outdoor air supply and temperature control for each room
- 100% fresh air at the touch of a button
- Low-noise operation at the touch of a button
- Purge at the push of a button (boost)
- Individual indoor air quality adjustment
- Integration of secondary systems, e.g. heated or chilled ceilings
- Room temperature control or isothermal fresh air supply
- Electric reheating for selected variants
- Comfortable configuration of devices via the web server – no operating software required
- Parallel operation with fume cupboards
- Optional connection to BACS or X-TAIRMINAL

General information

Application

▪ Single room control system for decentralised TROX ventilation units
▪ Ready to operate, factory wired single room control system, either built into the unit or in a separate control equipment box
▪ Factory wired and tested before shipping
▪ Controls all functions of a decentralised ventilation unit
▪ Choice of control strategies
▪ Setup – connect – fresh air: no external peripheral systems required
▪ Either with 100% fresh air or with energy-efficient secondary air operation based on air quality
▪ Economical integration with the central BMS
▪ Factory configured web server provides additional information and allows for adjustments
▪ Use many different decentralised units with the same controller and the same data points

Special features

▪ Simple integration with the central BMS by means of RS485 or Ethernet interface
▪ Comfortable device configuration with the web server – no operating software required
▪ Master-slave combinations are available (up to 10 slaves per master)
▪ Automatic, energy-efficient switching between fresh air mode and secondary air mode (based on air quality, depending on unit)
▪ Permanent fresh air operation can be activated with a control panel, X-TAIRMINAL or BACS
▪ Variable bypass damper for heat recovery control
▪ Heat recovery all year round
▪ Economical integration with the central BMS – excellent overview and usability thanks to reduced number of data points
▪ Read out slave data using the master's BACS interface – significantly reduced number of bus devices
▪ One system for all devices in a room: all devices work in the same way with only one connection point to the central BMS
▪ 13 digital switch contacts for the connection of peripheral systems (by others), for simple higher-level control functions and for monitoring
▪ Continuous internal data logging – retrospective monitoring, error analysis and operational optimisation
▪ Software update and parameter setting or adjustment for all devices from a central point by means of an IP connection
▪ Remote diagnosis by means of IP connection

Variants

Optional equipment and accessories
▪ Various sensors, e.g. for temperature, humidity or indoor air quality
▪ Real Time Clock (RTC) allows for operating modes based on time (7 different profiles, 10 switching points per profile)
▪ Bus communication by means of
  ▪ Modbus RTU
  ▪ Modbus TCP
  ▪ BACnet MS/TP
  ▪ BACnet/IP
▪ Digital control panel with project-specific software
▪ Analogue control panels (can be integrated with various switch frames)
▪ Electric valve actuators
▪ Balancing and control valves (independent of pressure)
▪ Electric reheater (only with SCHOOLAIR-V-HV-EH, SCHOOLAIR-D-HV-EH, SCHOOLAIR-S-HV-EH)
▪ Display with TROX X-TAIRMINAL

Standards and guidelines

▪ EN 547-2:1996+A1
▪ EN 547-3:1996+A1
▪ EN 1005-3:2002+A1
▪ EN 1005-2:2003+A1
▪ EN 1005-1:2001+A1
▪ EN ISO 13732-1:2008
▪ EN ISO 12100:2010-11
▪ EN ISO 14118:2018
▪ EN ISO 13854:2019
▪ EN ISO 13857:2019
▪ EN 60204-1:2018

Construction

▪ Depending on the unit variant, the control components are either fitted inside the unit or in a separate box

Materials and surfaces

▪ Casing made of sheet steel, powder-coated RAL 9005 (unless already integrated into the decentralised ventilation unit)

Function

Each decentralised ventilation unit has its own controller. The controller controls all functions that are necessary for operation, e.g. providing the control signal for fans and actuators. With dedicated software and hardware the controller can be configured as a master controller; one master controller is required for each room. Additional inputs and interfaces allow for the connection of components that are required for room control. The RTC interface on the master PCB allows for adding a timer; the Modbus-RTU, Modbus/TCP, BACnet/MS/TP or BACnet/IP interface allows for establishing a connection to BACS (by others). Also, TROX X-TAIRMINAL is a powerful visualisation tool.

Schematic illustration
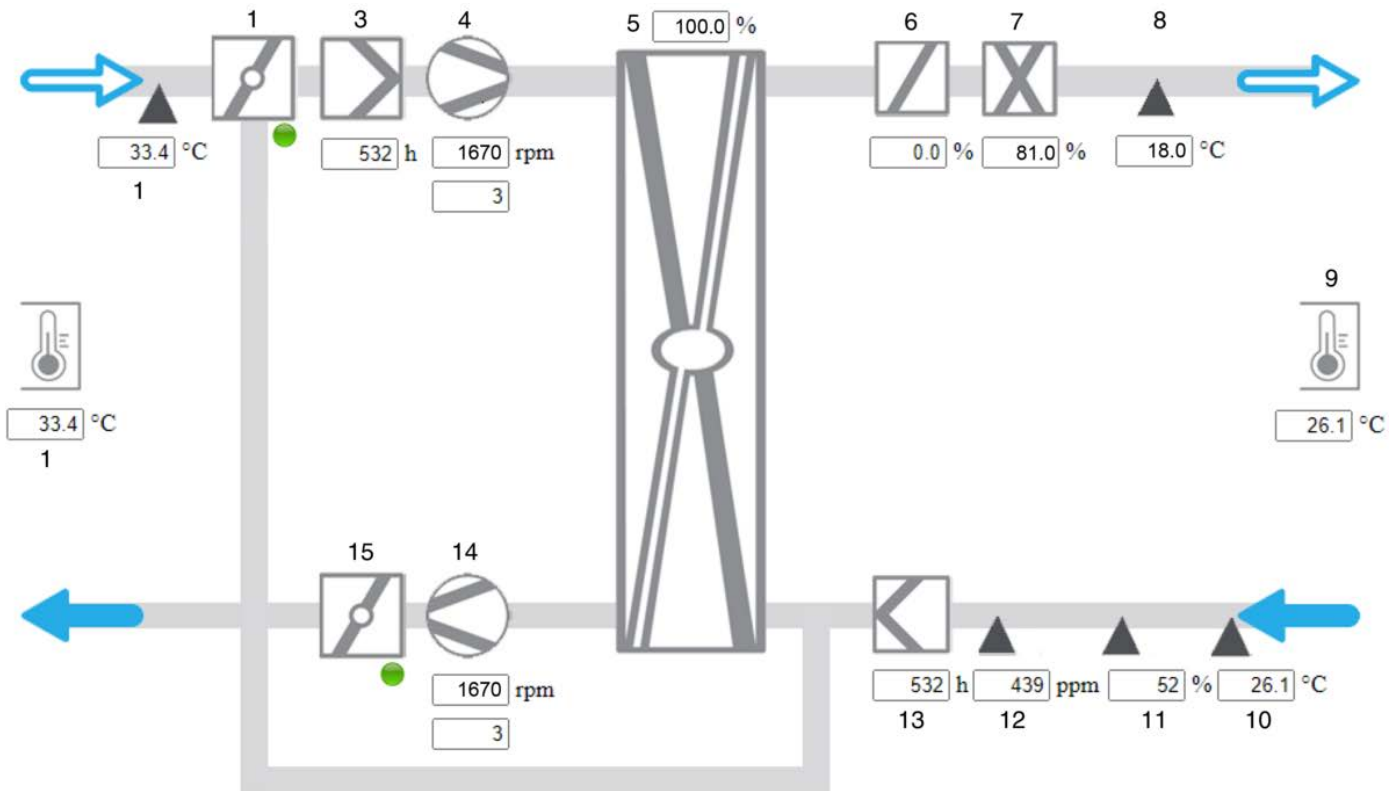
Operation and parameter setting by means of integral web server
1 Outdoor air temperature
2 Shut-off damper outside air
3 Operating hours filter outside air
4 Speed/step fan supply air
5 Control signal bypass damper/circulating heat recoverer
6 Control signal heating valve
7 Control signal cooling valve
8 Supply air temperatur
9 Room temperature
10 Extract air temperature
11 Extract air humidity (optional)
12 Air quality
13 Operating hours filter extract air
14 Fan speed/step extract air
15 Shut-off damper outside air

Technical data

Operating temperature	-20 – 60 °C
Relative humidity	5 – 95%, no condensation
Air pressure	> 700 hPa
Storage temperature	-30 to 70 °C
Power consumption (depending on equipment)	14 W max.

Specification text

This specification text describes the general characteristics of the product. Texts for variants can be generated with our Easy Product Finder design program.

Specification text
FSL-CONTROL III is a stand-alone single room control system with a simple timer. Optional expansions, e.g. connection to the BACS with Modbus TCP/RTU, humidity sensors, return temperature sensors, electric valve actuators or pressure-independent control valves, are part of the supply package, but will have to replace the standard components in the following description. A room temperature signal is also required. Various room control panels and sensors are available to provide this signal. Suitable optional equipment is described in the appendix to the following standard equipment for stand-alone operation. We recommend commissioning by our technical service. You will find related text modules below.

TROX control module FSL-CONTROL III (order code ... -C3-MA ...):
Single room controller that can be mounted on a DIN mounting rail in the ventilation unit or in a separate control equipment box

- 42 digital or analogue inputs and outputs
- Integral MicroSD card with up to 2 GB storage space (flash storage medium). Trend data is stored on the SD card and can be accessed via the RJ45 service socket or optionally with Modbus TCP
- Factory installed software package for master units, specially developed for decentralised ventilation units. The software allows for simple master-slave communication with Modbus RTU
- Up to 10 slave devices can be connected to one master device
- 3 types of operation (Off, Automatic and Manual), 3 operating modes (Occupied, Unoccupied and Standby) and 4 operating mode overrides (Boost, Class, Night Ventilation and Fan Forced Circuit)
- Two strategies, either room temperature control by controlling heating and cooling valves or modulating bypass damper, or supply air temperature control for isothermal ventilation
- CO_2- guided air quality control
- Heat recovery all year round
- Filter monitoring
- Configurable digital inputs, e.g. for the connection (by others) of PIR sensors, window contacts or holiday mode
- Two types of alarms, A (=switch-off) and B (=warning)

Real Time Clock (RTC), order code ...-T/...
- Part of the master software package
- Includes a simple timer
  - 7 days with 10 switching points each
  - Automatic switching between summer and winter time
  - Night purge schedules

CO_2sensor (order code…/C/…):
- Sensor in the extract air intake of the master unit, for recording the indoor air quality and for controlling the outdoor air flow rate accordingly

- NDIR sensor that compensates for contamination thanks to two infrared beams
- Measuring range 0 – 2000 ppm

Supply air temperature sensor (order code .../Z/...):
- Supply air temperature sensor with NTC thermistor, 10 kΩ at 25 °C, measuring range 0 – 50 °C
- Very short response time due to perforated measuring tip

Outdoor air temperature sensor (order code .../A/...)
- Outdoor air temperature sensor with NTC thermistor, 10 kΩ at 25 °C, measuring range -30 – 50 °C

Water-side components (order code .../HV-R- .../KV-R- …)
Valve actuators:
- 1 ×/2 × thermoelectric actuator for opening and closing valves, with position indicator, including pluggable connecting cable, supply voltage 24 V DC, control voltage 0 – 10 V DC, power consumption 1 W, degree of protection: IP 54

Straight-way valves:
- 1 ×/2 × straight-way valve 1/2" as standard, mounted (finger-tight), PN 16, DN10, k_{vs} 0.4 (alternatively: 0.25, 0.63 or 1.0 m³/h – please specify the required K_{vs} value), threaded connection G 1/2B, fluid temperature 1 to 110 °C

Lockshields:
- 1 ×/2 × lockshield on both sides 1/2", mounted (finger-tight), nominal width DN 15; 1/2", straight through valve with male thread on both sides, flat sealing, for control and shut-off, operating temperature 120 °C max.

TROX control panels for FSL-CONTROL III
- At least one room temperature signal is required per room. There are a number of variants of TROX control panels available, optionally with or without selector switch. Additionally we offer a room temperature sensor RTF without control elements. Alternative on site room control units provided must be connected via bus communication.

Digital control panel for surface mounting
- For operation and adjustment of the ventilation units. Supplied loose as an accessory. Project-specific software including setpoint value adjuster, various status displays, selector switch, CO_2 traffic light. Touch-sensitive colour display 3.5" 320 × 240 pixels. Sensor: NTC 10 kΩ; IP protection: IP 20; installation: surface mounting or with a standard junction box
- Type Schneider TM172DCLWT: dimensions (H × B × T): 120 × 86 × 25 mm, weight: 340 g, colour: white. Other design frames optionally available. Power supply: 24 V DC; power consumption: 3.2 VA/1.3 W; connection to master devices by means of a Modbus serial connection

Control panel with selector switch for surface mounting
- For the manual control of ventilation units
- Supplied loosely as an accessory, push button and setpoint adjuster, status LED, 5-step switch (off, 1, 2, 3, automatic); NTC thermistor as sensor, 20 kΩ, protection level IP 20; for

surface mounting or flush mounting with a standard junction box

▪ Type Thermokon: dimensions (H × W × D): 84.5 × 84.5 × 25 mm, colour: pure white

Control panel without selector switch for surface mounting

▪ For the manual control of ventilation units
▪ Supplied loosely as an accessory, push button, setpoint adjuster, status LED, IP 20 protection
▪ Thermokon: Sensor: NTC 20 kΩ, 84.5 × 84.5 × 25 mm (B × W × D)

Room temperature sensor TROX RTF3 for surface mounting

▪ Supplied loosely as an accessory.
▪ Room sensor without control elements
▪ Sensor: NTC 10 kΩ
▪ Protection level: IP 20
▪ Installation: Surface mounting or on a 70 mm flush box.
▪ Dimensions (B × W × D): 85 × 85 × 30 mm
▪ Colour: RAL 9010

Control panel without fan stage selector for flush mounting

▪ For manual operation High-quality look and matching design frame from a wide range, ideal for design interiors
▪ Supplied loosely as an accessory.
▪ Mode display with LED, push button, setpoint adjuster; sensor: NTC 20 kΩ
▪ Protection level: IP 20
▪ Flush Installation with standard junction box
▪ Available ranges of switches: Berker S.1, Berker Q.3, Busch Jäger Future linear (other switches upon request)

Control panel without fan stage selector and without setpoint value adjuster for flush mounting

▪ For manual operation High-quality look and matching design frame from a wide range, ideal for design interiors
▪ Supplied loosely as an accessory.
▪ Mode display with LED, push button, setpoint adjuster; sensor: NTC 20 kΩ, IP 20 protection
▪ Flush Installation with standard junction box

▪ Available ranges of switches: Gira E2 (other switches upon request)

Optional equipment to increase the comfort of the FSL-CONTROL III

Electromotive valve actuator

▪ As an alternative to the standard thermoelectric actuator
▪ 1 ×/2 × electromotive actuator for valve opening and closure
▪ Supply voltage 24 V AC/DC
▪ Power consumption 2.5 VA max.
▪ Control signal 0 – 10 V DC
▪ Fluid temperature 1 – 110 °C

Pressure-independent control valve

▪ As an alternative to the standard small straight-way valve
▪ 1 ×/2 × pressure-independent control valve
▪ Mounted (finger-tight)
▪ Modulating open/close control combined with an externally adjustable dynamic volume flow controller, with full valve authority
▪ Nominal width DN 10, 1/2"
▪ Straight through valve casing with male thread on both ends, flat seal
▪ Fluid temperature 0 – 120 °C

Interface for connection to BACS

To increase comfort, we recommend integration with a BACS (by others).Available interfaces:

▪ Modbus TCP (Ethernet) including web server (order code .../ MT/...)
▪ Modbus RTU (RS 485) including web server (order code .../ MR/...)
▪ BACnet IP (Ethernet) including web server (order code .../ BI/...)
▪ BACnet MS/TP (RS 485) including web server (order code .../ BM/...)

Commissioning

▪ We recommend commissioning by our technical service.

Order code

This product can only be ordered together with a ventilation unit.

C3 / MA – T / MT / C / Z / A / HV – R – 0,25 / KV – R – 0,4
| | | | | | | | | | | | |
1   2   3   4   5 6 7   8   9   10   11   12   13

1 Product
C3 with FSL-CONTROL III

2 Variant
MA Master
SL Slave

3 Real time clock
Only with variant MA
No entry: without real time clock
T with real time clock

4 Interface
No entry: without interface
MR with Modbus RTU
MT with Modbus TCP
BI with BACnet IP
BM with BACnet MS/TP

5 Air quality sensor
Only with variant MA
No entry: without air quality sensor
C with CO_2 sensor
V with VOC sensor

6 Supply air temperature sensor
No entry: without supply air temperature sensor
Z With supply air temperature sensor

7 Outdoor air temperature sensor
Only with variant MA

No entry: without outdoor air temperature sensor
A with outdoor air temperature sensor

8 Valve – heating circuit
No entry: without heating valve
HV with heating valve

9 Lockshield – heating circuit
No entry: without lockshield
R with lockshield

10 k_{vs} value – heating valve
0.25 Straight-way valve
0.40 Straight-way valve
0.63 Straight-way valve
1.00 Straight-way valve
F0.50 Pressure-independent control valve

11 Cooling valve
KV with cooling valve

12 Lockshield – cooling circuit
R with lockshield

13 k_{vs} value – cooling valve
0.25 Straight-way valve
0.40 Straight-way valve
0.63 Straight-way valve
1.00 Straight-way valve
F0.50 Pressure-independent control valve

Order example: C3/MA-T/MT/C/Z/A/HZ-R-0.25/KV-R-0.40

Control	With FSL-CONTROL III
Control function	Master
Real time clock	With real time clock
Interface	With Modbus TCP
Air quality sensor	With CO_2 sensor
Supply air temperature sensor	With supply air temperature sensor
Outdoor air temperature sensor	With outdoor air temperature sensor
Heating valve	With heating valve
Lockshield – heating circuit	With lockshield
k_{vs} value – heating valve	0.25 Straight-way valve
Cooling valve	With cooling valve
Lockshield – cooling circuit	With lockshield
k_{vs} value – cooling valve	0.40 Straight-way valve

Wiring

General information

Use only cables that are designed for the supply voltage for which they will be used. The length and cross section as well as any contact resistance may increase voltage losses. The power rating of each decentralised ventilation unit in accordance with the following table must also be considered.
A skilled qualified electrician has to select the correct cable types and sizes. This job must only be carried out by specialist electrical companies. The power ratings are listed below.

Power rating
Under a sill (horizontal installation)

Unit type	Apparent power [VA]
FSL-B-ZAB/SEK	234
FSL-B-ZAB+SEK	255
SCHOOLAIR-B	238
SCHOOLAIR-B-HE	547
SCHOOLAIR-B-HV	617

Note: Please also note the rating plate on the decentralised ventilation unit.

Next to a window (vertical installation)

Unit type	Apparent power [VA]
FSL-V-ZAB/SEK	240
SCHOOLAIR-V-2L	226
SCHOOLAIR-V-4L	226
SCHOOLAIR-V-1800	217
SCHOOLAIR-V-HE	592
SCHOOLAIR-V-HV	647
SCHOOLAIR-V-HV-EH	2247

Note: Please also note the rating plate on the decentralised ventilation unit.

Ceiling installation

Unit type	Apparent power [VA]
SCHOOLAIR-D-2L	197
SCHOOLAIR-D-HV-2L	640
SCHOOLAIR-D-HV-EH	3680

Note: Please also note the rating plate on the decentralised ventilation unit.

On an internal wall

Unit type	Apparent power [VA]
SCHOOLAIR-S-HV-EH	3640

Note: Please also note the rating plate on the decentralised ventilation unit.

Underfloor installation

Unit type	Apparent power [VA]
FSL-U-ZAS	326

Note: Please also note the rating plate on the decentralised ventilation unit.

Supply voltage

- 230 V AC ± 10 %
- A connecting cable, 3 × 1.5 mm² (L, N, PE) or 3 × 2.5 mm² (L, N, PE, only SCHOOLAIR-D-HV-EH and SCHOOLAIR-S-HV-EH), at least 1 m long, is routed out of the casing

Power supply connection
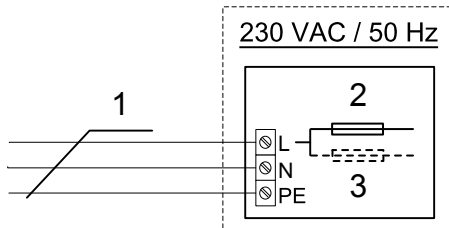
1 Ölflex classic 100 3G 1.5 mm², min. length 1 m
(TROX supply package)
SCHOOOLAIR-D-HV-EH: Ölflex classic 3G 2.5 mm², min.
length 1 m
(TROX supply package)
SCHOOOLAIR-S-HV-EH: Ölflex classic 3G 2.5 mm², min.
length 1 m
(TROX supply package)
2 3.15 A fuse
3 SCHOOLAIR-V-HV-EH only: 10.0 A fuse
SCHOOLAIR-D -HV-EH only: 13.0 A fuse
SCHOOLAIR-S -HV-EH only: 13.0 A fuse

Connection to the BACS

Master unit

▪ Modbus/TCP // BACnet/IP with standard network cable with RJ45 connector
▪ Modbus/RTU // BACnet MS/TP with a shielded cable, e.g. Unitronic BUS LD 2 × 2 × 0.22 mm² (or equivalent)

Terminal connections X1 + X7 for the connection to the BACS
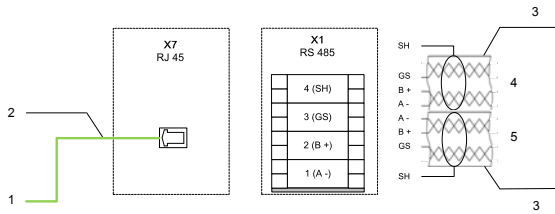
1 From the BACS
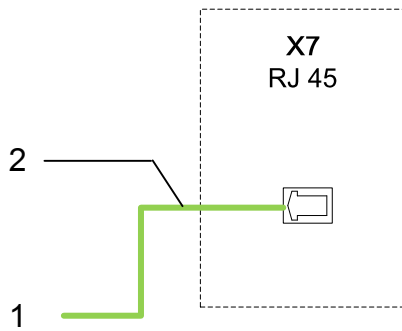2 E.g. network cable, at least Cat 5e RJ45 (or equivalent, by others)
3 E.g. Unitronic BUS LD 2 × 2 × 0.22 mm² (or equivalent, by others)
4 From the BACS
5 To the next device on the BACS bus

Slave device

▪ If a slave is connected to the BACS with a standard cable with RJ45 connector, parameters can be displayed and adjusted by means of the IP address and browser
▪ If no slaves are connected to the BACS, some data points can be retrieved by means of the connected master

X7 for the connection to the BACS

1 From the BACS
2 E.g. network cable, at least Cat 5e RJ45 (or equivalent, by others)

Connection of TROX - Peripherals

Room control panel

To prevent any disturbances, shielded cables are required, e.g. LiYCY 5 × 0.5 mm² (or equivalent)

Master/slave communication

▪ The devices have to be connected (by others) with a shielded cable, e.g. Unitronic BUS LD 2 × 2 × 0.22 mm² (or equivalent)
▪ Also, 120 Ω terminal resistors are required on the first and last device on the bus
▪ The supply package includes a 120 Ω terminal resistor each on terminal X1 of the master and on terminal X2 of the slave

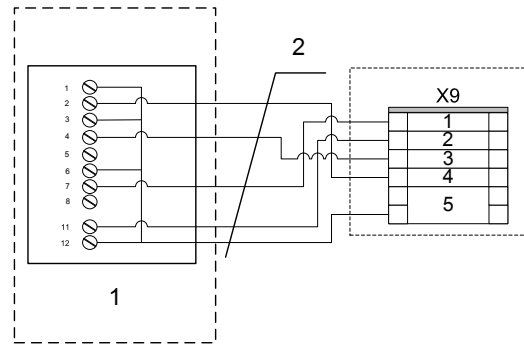Connection of digital switch contacts (inputs and outputs)

▪ To prevent any disturbances, shielded cables are required, e.g. LiYCY 2 × 0.5 mm² (or equivalent)

Control panel

### Digital control panel
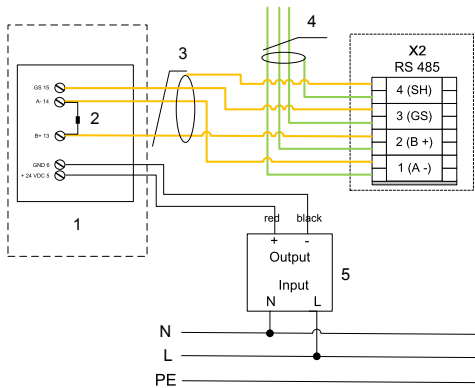
Thermokon, 5 settings (0, 1, 2, 3, AUTO)

1 Digital control panel type TM172DCLWT, part number: A00000086157
2 Terminal resistor 120 Ω
3 Bus cable to control panel, e.g. Unitronic BUS LD 2 × 2 × 0.22 (or equivalent, by others)
4 Bus cable to slave (only if number of slaves > 0), e.g. Unitronic BUS LD 2 × 2 × 0.22 (or equivalent, by others)
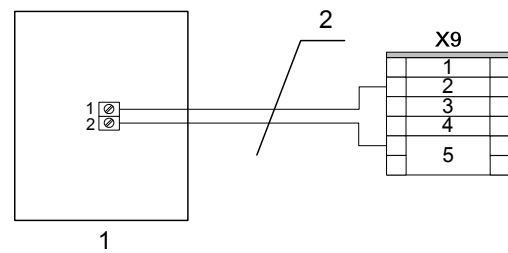5 Power supply unit, Traco Power, type TIW24-124, part number: A00000033832

1 Control panel with selector switch for surface mounting, WRF04 PSTD NTC 20k 5k FS5 gn 5V SA, part no. A00000082515
2 For example, LiYCY 5 × 0.5 mm² (by others)

Thermokon, without selector switch
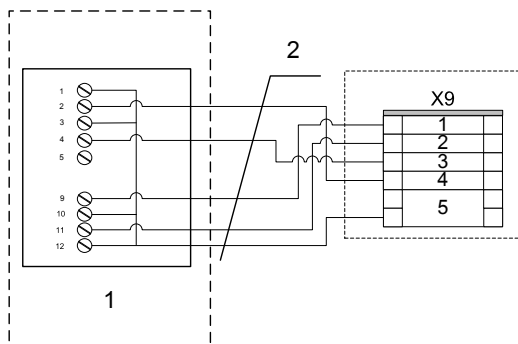
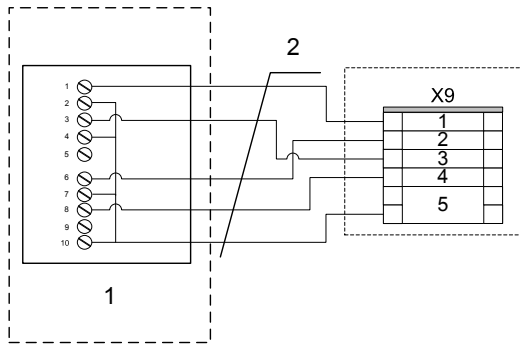### TiTEC, room temperature sensor

1 Control panel without selector switch for surface mounting, type WRF04 PTD NTC20k 5k gn, article number: A00000079777
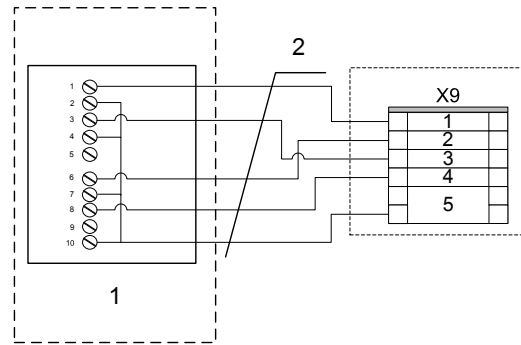2 For example, LiYCY 5 × 0.5 mm² (by others)

1 Room temperature sensor for surface mounting, type RTF3-NTC10k, part number A00000059069
2 For example, LiYCY 2 × 0.5 mm² (by others)

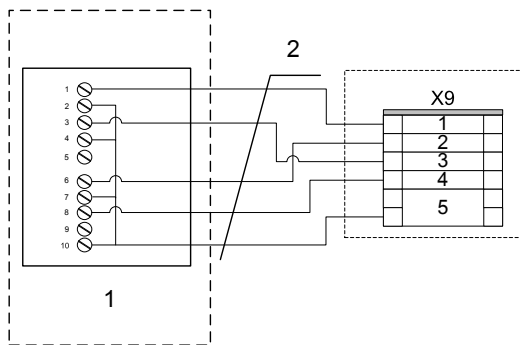**Thermokon, without selector switch, Berker S.1**

1 Control panel without selector switch, for flush mounting, suitable for Berker S.1 switches, type WRF07 PTD NTC20k BType6 5k gn SA, part no. A00000079778
2 For example LiYCY 5 × 0.5 mm² (by others)

**Thermokon, without selector switch, Busch Jäger Futura**

1 Control panel without selector switch for flush mounting, suitable for switch programme Busch Jäger future, type WRF07 PTD NTC20k BType6 5k gn, part number A00000079779
2 For example, LiYCY 5 × 0.5 mm² (by others)

Thermokon, without selector switch, Berker Q.3

1 Control panel without selector switch for flush mounting, suitable for switch programme Berker Q.3, type WRF07 PTD NTC20k BType6 5k gn, part number A00000081579
2 For example, LiYCY 5 × 0.5 mm² (by others)

Thermokon, without selector switch, without setpoint value adjuster, Gira E2
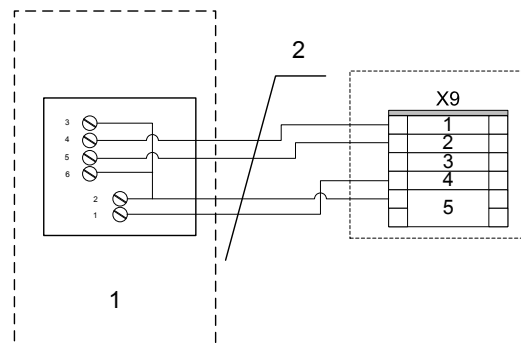
1 Control panel without selector switch and without setpoint value adjuster, for flush mounting, suitable for Gira E2 switches, type WRF06-TD-NTC20k SA, part no. A00000081503
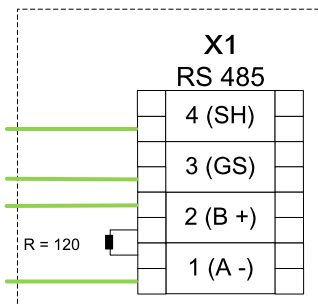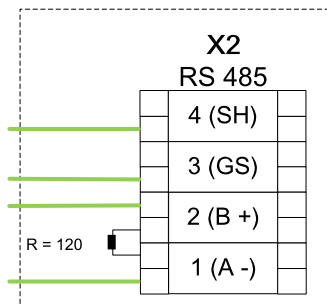2 For example LiYCY 5 × 0.5 mm² (by others)

Communication of master/slave

▪ The ventilation units can be operated within a control zone as master and slave in the network
▪ The master transfers the most important measured values to the slave devices
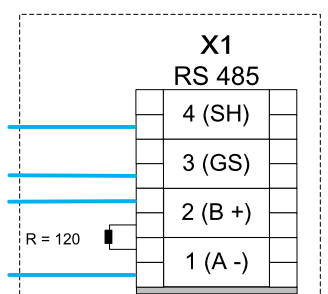▪ Up to a maximum of 10 slave devices can be connected to one master device
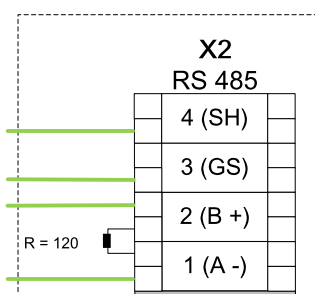
Digital switch contacts (inputs and outputs)

- ▪ Using digital inputs and outputs, information can be sent to the central building management system without a connection.
- ▪ 6 inputs and 7 outputs are available.
- ▪ All contacts can be configured as NO or NC contacts.
- ▪ Digital switch contacts can be used for various functions.

Digital inputs

```
        X3
      ┌─────┐
      │  6  │
      │  5  │
      │  4  │
      │  3  │
      │  2  │
      │  1  │
      └─────┘

        X4
   ┌──────────┐
   │ + 24 VDC │        1
   │ + 24 VDC │
   │ + 24 VDC │
   │ + 24 VDC │
   │ + 24 VDC │
   │ + 24 VDC │
   └──────────┘
```
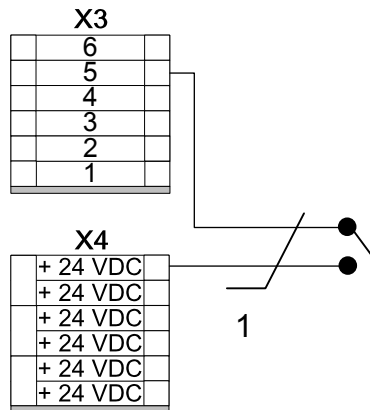
1 For example, window contact, LiYCY 2 × 0.5 mm² (by others)

X3-6 PIR sensor

X3-5 Window contact

X3-4 Fire emergency stop

X3-3 Enable operation

X3-2 Changeover

X3-1 Fume cupboard switch

X3	Function	Open	Closed	Cable break safety device
6	PIR sensor	Current operating mode	Occupied	
5	Window contact	Off	Automatic	Yes
4	Fire emergency stop	Off	Automatic	Yes
3	Start operation	Off	Automatic	
2	Change-over	Heating	Cooling	Yes
1	Fume cupboard switching	Inactive	Active	

TROX ® TECHNIK

Digital outputs
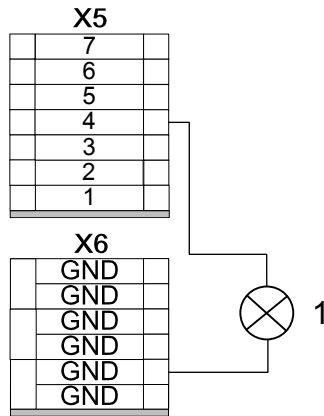
1 For example, B-Alarm, LiYCY 2 × 0.5 mm² (by others)

X5-7 Enable chilled ceiling

X5-6 Enable heated ceiling

X5-5 A-Alarm

X5-4 B-Alarm

X5-3 Operational readiness

X5-2 Requirement of heat transfer fluid/heating

X5-1 Requirement of heat transfer fluid/cooling

X5	Function	Open	Closed	Cable break safety device
7	Enable cooling (room)	Not enabled	Enabled	
6	Enable heating (room)	Not enabled	Enabled	
5	A alarm	No alarm	Alarm	
4	B alarm	No alarm	Alarm	
3	Operational readiness	Device inactive	Device active	
2	Heat transfer fluid request	Inactive	Active	
1	Coolant request	Inactive	Active	

BACS

From the unit

FSL-CONTROL III data points	Modbus Register	BACnet	Recommended
Output operating mode	9100	Multistate Input Value (7) Instance 0	Yes
Output operating mode	9101	Multistate Input Value (7) Instance 1	Yes
Output operating mode override	9102	Analogue Input Value (0) Instance 27	Yes
Operating state	9103	Analogue Input Value (0) Instance 28	
Output type of ventilation	9104	Multistate Input Value (7) Instance 2	
Output of current supply air temperature	9105	Analogue Input Value (0) Instance 0	Yes
Output current outdoor temperature	9106	Analogue Input Value (0) Instance 1	Yes
Output current room temperature	9107	Analogue Input Value (0) Instance 2	Yes
Output current return temperature	9108	Analogue Input Value (0) Instance 3	
Output current flow temperature	9109	Analogue Input Value (0) Instance 4	
Output current room/supply air temperature offset	9110	Analogue Input Value (0) Instance 5	
Output overtime activation	9111	Binary Value (5) Instance 7	
Output temperature upper limit	9112	Analogue Input Value (0) Instance 6	Yes
Output temperature lower limit	9113	Analogue Input Value (0) Instance 7	Yes
Output supply air setpoint temperature	9114	Analogue Input Value (0) Instance 8	Yes
Output fan stage	9115	Analogue Input Value (0) Instance 29	Yes
Output current room humidity	9116	Analogue Input Value (0) Instance 9	
Output current indoor air quality	9117	Analogue Input Value (0) Instance 10	Yes
Output volume flow rate outdoor air	9118	Analogue Input Value (0) Instance 11	
Output volume flow extract air	9119	Analogue Input Value (0) Instance 12	
Alarm A consolidated alarm	9120	Analogue Input Value (0) Instance 16	
Alarm B consolidated alarm	9121	Analogue Input Value (0) Instance 17	
Output window contact	9123	Binary Value (5) Instance 6	
Output fire alarm	9124	Binary Value (5) Instance 5	Yes
Number of connected devices	9125	Analogue Input Value (0) Instance 13	
Output requirement room	9126	Multistate Input Value (7) Instance 3	
Output requirement valve	9127	Multistate Input Value (7) Instance 4	
Output control of master heating valve	9128	Analogue Input Value (0) Instance 14	Yes
Output control of master cooling valve	9129	Analogue Input Value (0) Instance 15	Yes
Output window contact	9159	Analogue Input Value (0) Instance 50	
Output supply air temperature slave 1	9130	Analogue Input Value (0) Instance 18	Yes
Output supply air temperature slave 2	9131	Analogue Input Value (0) Instance 23	
Output supply air temperature slave 3	9132	Analogue Input Value (0) Instance 24	
Output supply air temperature slave 4	9133	Analogue Input Value (0) Instance 44	
Output supply air temperature slave 5	9134	Analogue Input Value (0) Instance 45	
Output supply air temperature slave 6	9135	Analogue Input Value (0) Instance 46	
Output supply air temperature slave 7	9136	Analogue Input Value (0) Instance 47	
Output supply air temperature slave 8	9137	Analogue Input Value (0) Instance 48	
Output supply air temperature slave 9	9138	Analogue Input Value (0) Instance 49	
Output supply air temperature slave 10	9139	Analogue Input Value (0) Instance 50	
Output control of heating valve slave 1	9140	Analogue Input Value (0) Instance 19	Yes
Output control of heating valve slave 2	9141	Analogue Input Value (0) Instance 22	
Output control of heating valve slave 3	9142	Analogue Input Value (0) Instance 25	
Output control of heating valve slave 4	9143	Analogue Input Value (0) Instance 30	
Output control of heating valve slave 5	9144	Analogue Input Value (0) Instance 31	
Output control of heating valve slave 6	9145	Analogue Input Value (0) Instance 32	
Output control of heating valve slave 7	9146	Analogue Input Value (0) Instance 33	
Output control of heating valve slave 8	9147	Analogue Input Value (0) Instance 34	
Output control of heating valve slave 9	9148	Analogue Input Value (0) Instance 35	
Output control of heating valve slave 10	9149	Analogue Input Value (0) Instance 36	
Output control of cooling valve slave 1	9150	Analogue Input Value (0) Instance 20	Yes
Output control of cooling valve slave 2	9151	Analogue Input Value (0) Instance 21	

Output control of cooling valve slave 3	9152	Analogue Input Value (0) Instance 26	
Output control of cooling valve slave 4	9153	Analogue Input Value (0) Instance 37	
Output control of cooling valve slave 5	9154	Analogue Input Value (0) Instance 38	
Output control of cooling valve slave 6	9155	Analogue Input Value (0) Instance 39	
Output control of cooling valve slave 7	9156	Analogue Input Value (0) Instance 40	
Output control of cooling valve slave 8	9157	Analogue Input Value (0) Instance 41	
Output control of cooling valve slave 9	9158	Analogue Input Value (0) Instance 42	
Output control of cooling valve slave 10	9159	Analogue Input Value (0) Instance 43	

To the unit

FSL-CONTROL III data points	Modbus Register	BACnet	Recommended
Default operating mode	9000	Multi State Value (9) Instance 0	Yes
Default operating mode	9001	Multi State Value (9) Instance 1	Yes
Default operating mode override	9002	Analogue Value (2) Instance 13	Yes
Default current outdoor temperature	9003	Analogue Value (2) Instance 0	Yes
Default temperature limit cooling	9004	Analogue Value (2) Instance 1	Yes
Default temperature limit heating	9005	Analogue Value (2) Instance 2	Yes
Default current room temperature	9006	Analogue Value (2) Instance 3	Yes
Default room air temperature setpoint	9007	Analogue Value (2) Instance 4	
Default offset to the room temperature setpoint	9008	Analogue Value (2) Instance 5	Yes
Default supply air temperature setpoint	9009	Analogue Value (2) Instance 6	
Default offset to the supply air temperature setpoint	9010	Analogue Value (2) Instance 7	
Default current relative room air humidity	9011	Analogue Value (2) Instance 8	
Default change over operation	9012	Multi State Value (9) Instance 2	
Default fan stage	9013	Analogue Value (2) Instance 9	
Default room air quality (internal)	9014	Analogue Value (2) Instance 10	
Default outdoor air quality (external)	9015	Analogue Value (2) Instance 11	
Default volume flow rate difference	9016	Analogue Value (2) Instance 12	
Default fire emergency stop	9017	Binary Value (5) Instance 0	Yes
Default window contact	9018	Binary Value (5) Instance 1	
Default overtime	9020	Binary Value (5) Instance 2	
Default filter reset	9021	Binary Value (5) Instance 3	Yes
Default automatic fresh air system	9022	Multi State Value (9) Instance 4	Yes
Default automatic fresh air system	9022	Binary Value (5) Instance 3	

Control panels

Digital control panel for surface mounting, type Schneider

Part number: A00000086157

Control panel with selector switch for surface mounting, type Thermokon

Part number: A00000082515

Control panel without selector switch, for surface mounting, type Thermokon

Part number: A00000079777

Room temperature sensor for surface mounting, type TiTEC

Part no.: A00000059069

Control panel without selector switch for flush mounting, type Thermokon,

Switch program Berker S.1

Part number: A00000079778

Control panel without selector switch for flush mounting, type Thermokon,

Switch program Busch Jäger future linear

Part number: A00000079779

Control panel without selector switch for flush mounting, type Thermokon, Switch program Berker Q.3

Part number: A00000081579

Control panel without selector switch and without setpoint value adjuster, for flush mounting, type Thermokon,

Switch program Gira E2

Part number: A00000081503