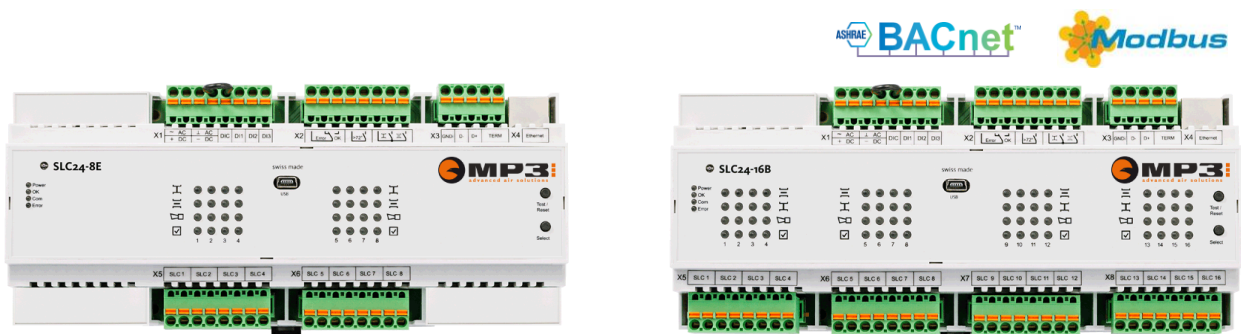SLC® Line → 8/16 x BC24 Master

ReCS SLC24-8B / ReCS SLC24-16B
Technical datasheet

Digital communication and control unit for the control and reliable monitoring of up to 8 / 16 motorized fire dampers in ventilation systems

Main characteristics

+ **Master for up to 8 / 16 BC24* units**
+ plug-in spring-loaded terminals for easy installation
+ tried and tested SLC® wiring principle, in star topology via 2 x 1.5 mm² cables to the fire dampers (known from the RECS SLC24-B/BC24 system)
+ conventional actuation via optically isolated control inputs
+ relay outputs for enabling ventilation
+ optional control and monitoring via
  Modbus RTU (RS-485) or **Modbus TCP/IP (Ethernet)**
  BACnet MS/TP or **BACnet IP**
+ optional monitoring via an external computer or control cabinet touchscreen (TCP/IP communication)
+ USB interface for optional configuration and on-site diagnostics via a computer
+ zoning (closing of the dampers in groups)

* The data sheet for the BC24 is contained in a separate document

Content

1 SUMMARY

The RECS SLC24-8B combines eight and the RECS SLC24-16B sixteen **RECS SLC24-Bs** in a single unit. Up to **8/16 x BC24s** (with fire damper actuator, thermoelectric tripping device and smoke detector) can be connected. Supply and communication with the motorized fire damper are via a two-wire line. Actuation can be potential-free as with the **RECS SLC24-B**, direct via digital signals (0, 24 V) or via **MODBUS (RTU or TCP/IP** or **BACnet MS/TP or IP)**

Individual dampers can be grouped into zones using the **configuration and diagnostic tool**. If a damper in a zone develops a fault, the other dampers in the same zone will close too. Connections which are not being used can also be deactivated again without a USB tool via the two operating button by pressing them simultaneously for more than 3 seconds.


RECS SLC24-8B: 8x BC24 + Actuator + Smoke detector
RECS SLC24-16B: 16x BC24 + Actuator + Smoke detector
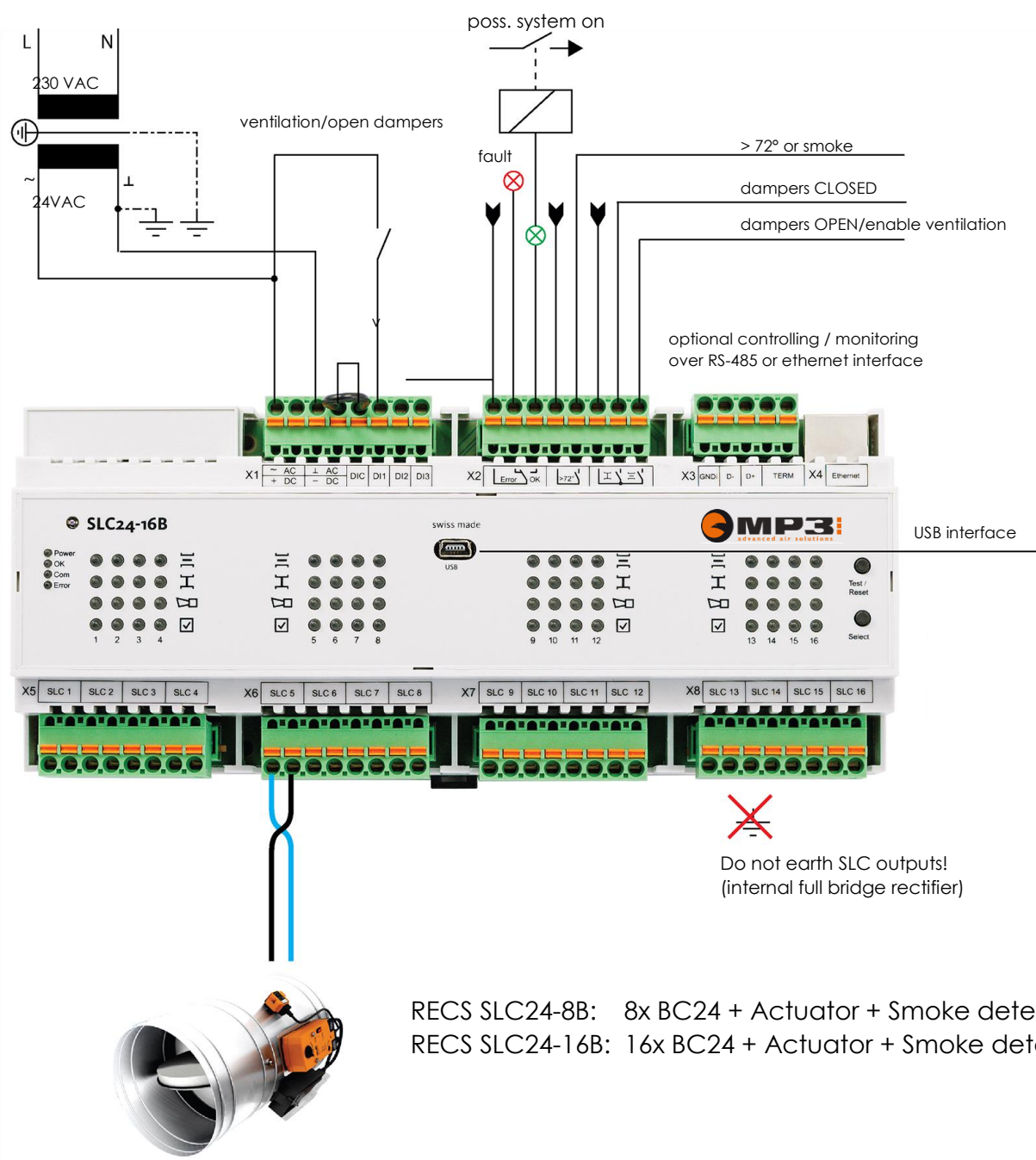
2 TECHNICAL DATA

Electrical data	Rated voltage	**24 VAC** **- 15% to + 20%, 50/60 Hz** **24 to 35 VDC**	
	Power consumption	6 VA 4 W	
	Connections	Plug-in spring-loaded terminals	
	Relay load	0.5 A @ 48 VAC; 1 A @ 24 VDC	
	Inputs	Type: optical coupler 10 mA @ 24 VDC (common reference point)	
Modbus RTU **BACnet MS/TP**	Medium	RS-485, galvanically **isolated**	
(default)	Transmission formats	1-8-N-2, 1-8-N-1, **1-8-E-1** and 1-8-O-1 (start bit, data bits, parity and stop bits)	
	Number of nodes	max. 64 (without a repeater)	
	Baud rates	9600, 19200, **38400** and 76800 baud	
	Addresses	Modbus 1…247 (0 reserved for broadcast) BACnet 0…127	
	Termination	120 Ω can be activated via jumper	
	Typical response time	< **10 ms** (delay can be added)	
Modbus TCP/IP	IP address assignment	**Static** or DHCP	
BACnet IP		**Default: 10.0.0.2**	
Safety	Protection class	**III (safety extra-low voltage)**	
	EMC	CE in accordance with 2014/30/EU	
	Mode of operation	Type 1 (EN 60730-1)	
	Ambient temperature	- 20 ˚C to + 50 ˚C	
	Storage temperature	- 20 ˚C to + 80 ˚C	
	Humidity test	95% rh, non-condensing (EN 60730-1)	
	Maintenance	maintenance-free	
Mechanical data	Dimensions	Installation width	212.1 mm
		Height	94 mm
		Depth	58 mm
	Weight	approximately 465 g	
	Installation	Clips onto 35 mm DIN rail.	

Table 1 Technical data

3 DISPLAY AND OPERATION

The unit has four status LEDs:

System power	**Lights up** when power is connected to the unit
Fan OK Relay 1, Relay 4	**Lights up** when there are no errors/faults **and** all dampers programmed as active are open
Communication	**Flashes** when Modbus / BACnet packages are sent/received
Error	**Lights up** when faults occur **Faults include the following:** • Operating voltage too low/high • Short circuit on at least one SLC line • Communication error affecting at least one damper • Present damper error
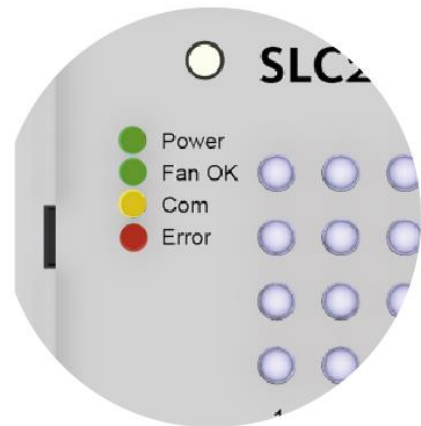
The unit has two damper position LEDs for each damper and an error LED. The fourth LED indicates the damper selected which can be tested directly via the unit. **Press both buttons for T > 3 s to start an automatic search. As a result, SLC connections not being used will be deactivated and removed from the relay logic.**

on: damper open
blinking: damper opening

on: damper closed
blinking: damper closing

on: saved error
blinking: error present

on: damper(s) selected

Button 1: manual damper tests/ reset errors

Button 2: select damper(s)
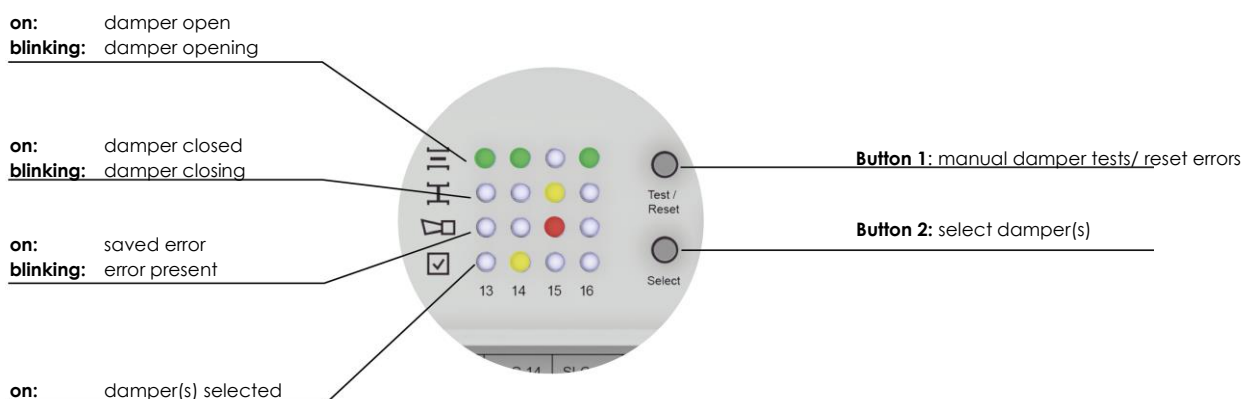
4 CONFIGURATION AND DIAGNOSTIC TOOL

The configuration and diagnostic tool offers the following functions:

Configuration functions:

- Selection and parameterization of the bus interface
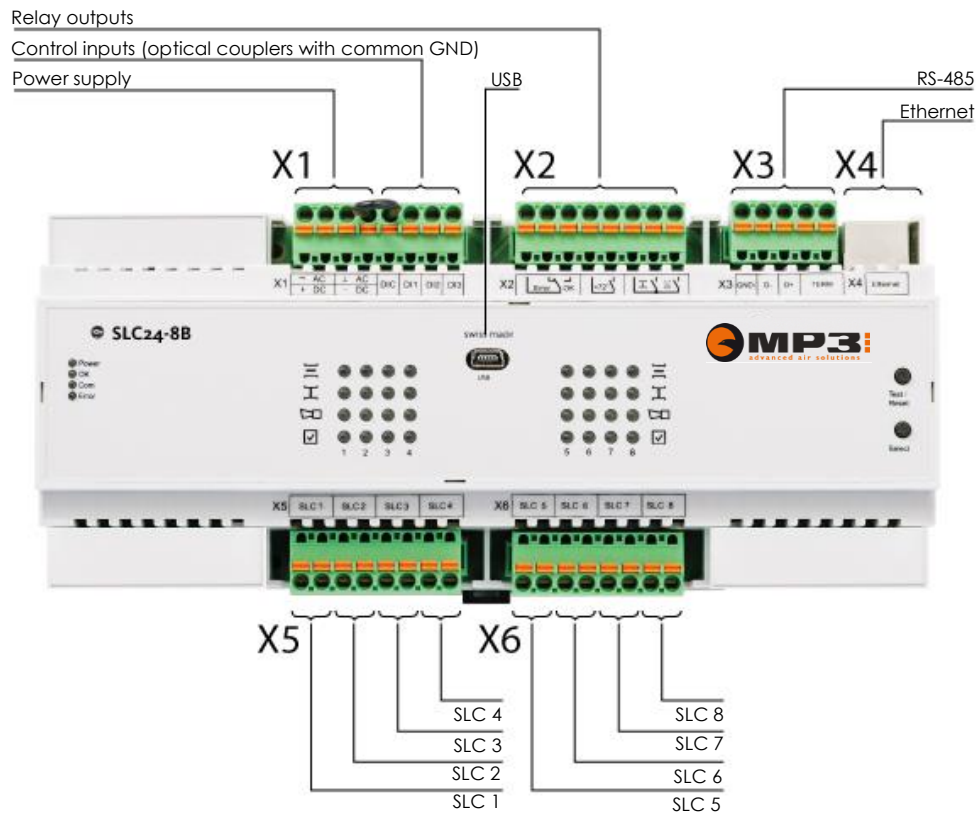- Addressing
- Zoning
- Firmware update

Diagnostic functions:

- Control command monitoring
- Overview of the damper positions
- Overview of actual/saved errors in the fire damper
- SLC communication check
- Manual damper tests
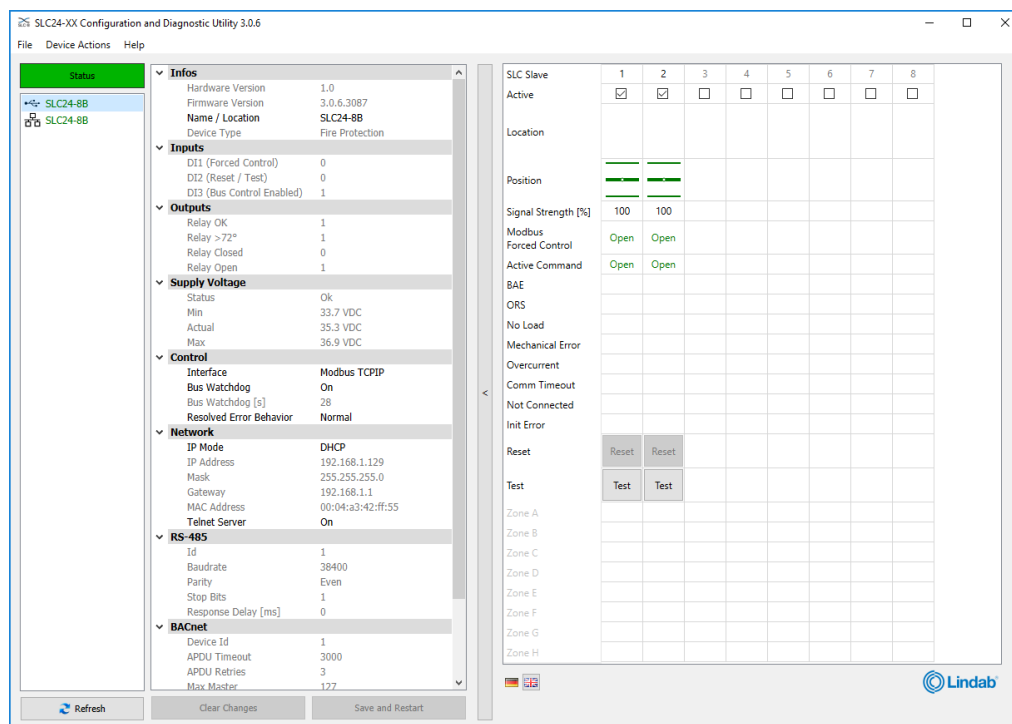
5 CONNECTIONS

5.1 RECS SLC24-8B

5.2 RECS SLC24-16B
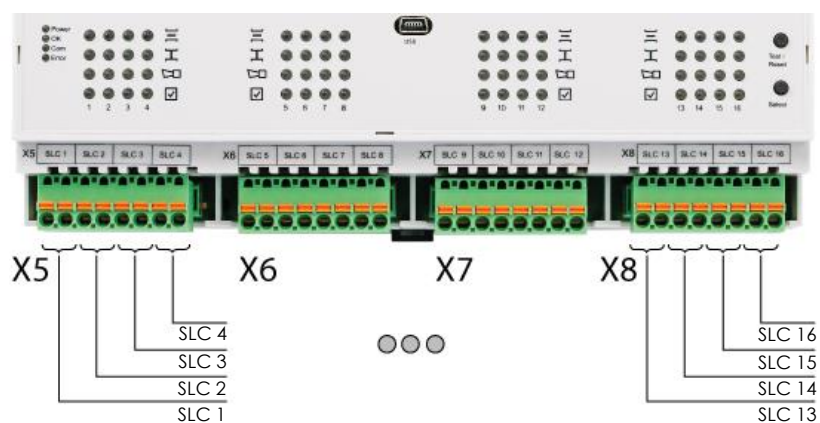
5.3 POWER SUPPLY (TERMINAL BLOCK X1 1..4)

The RECS SLC24-XXB can run on 24 VAC or 24 VDC (Internal active bridge rectification).
Power consumption max. 6 VA/4 W.

1	2	3	4
~ AC		$\perp$ AC	
+ DC		- DC	

Table 2 Terminal block X1 1..4
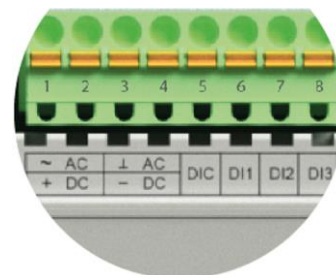
The output of the transformer or the power supply unit must be adequately dimensioned. The total output of the actuators is decisive for dimensioning.

5.3.1 Design example (maximum load scenario)

16 x BC24 with 10 VA/7 W BF24s and smoke detector are connected via a 300 m line length in each case.

Transformer:

1 x S(RECS SLC24-16B)	+ 16 x S(BF24,BC24,ORS142K)	=	S_{Tot}
6 VA	+ 16 x 12.5 VA	=	206VA
		$\rightarrow$	**250 VA**

DC power supply:

1x P(RECS SLC24-16B)	+ 16 x P(BF24,BC24,ORS142K)	=	P_{Tot}
4 W	+ 16 x 9 W	=	148 W
		$\rightarrow$	**200 W**

In particular, when using a DC power supply, the voltage drop across the lines has to be considered! A software (SLC-Planning-Tool) helps calculating the proper function of the actuator, taking account of given cable lengths and cross sections.

5.3.2 Fuses and SLC output monitoring

Faulty wiring can lead to high short-circuit currents.

Standard safety fuses are installed in order to protect the unit against destruction. The fuses can be replaced easily.

TYPE: **10 A fast-blow, FSF, 0034.1526, Schurter**

Individual SLC® outputs are limited to 700 mA by means of hardware and are also monitored by means of software. If a short circuit is detected, the output affected will be deactivated for 1 minute.
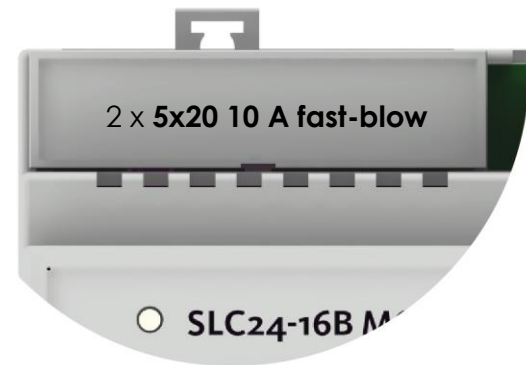
Wiring must not be carried out when the unit is live!!!

5.4 INPUTS (TERMINAL BLOCK X1 5..8)

The 3 control inputs are galvanically isolated from the system via **optical couplers** and have a **common reference point DIC**. External voltage can be used (24 VAC or 24 VDC)

Load 10 mA @ 24 VDC

5	6	7	8
Control inputs			
DIC	DI1	DI2	DI3
Common reference point	Locin (forced control)	Test/Reset	Bus-Control Enable

Table 3 Terminal block X1 5..8

5.4.1 Actuation by means of potential-free wiring

The RECS SLC24-XXB can be actuated by means of conventional potential-free wiring.

Bridge between X1.4 and X1.5
CLOSE Dampers: X1.2 and X1.6 open
OPEN Dampers: X1.2 and X1.6 connected

TEST and RESET dampers
CLOSE/ OPEN dampers

Bus-Control Enable

~24 VAC
or 24 VDC

Transformer/power supply
to be dimensioned correctly

X1.1 and X1.2 internally connected
X1.3 and X1.4 internally connected
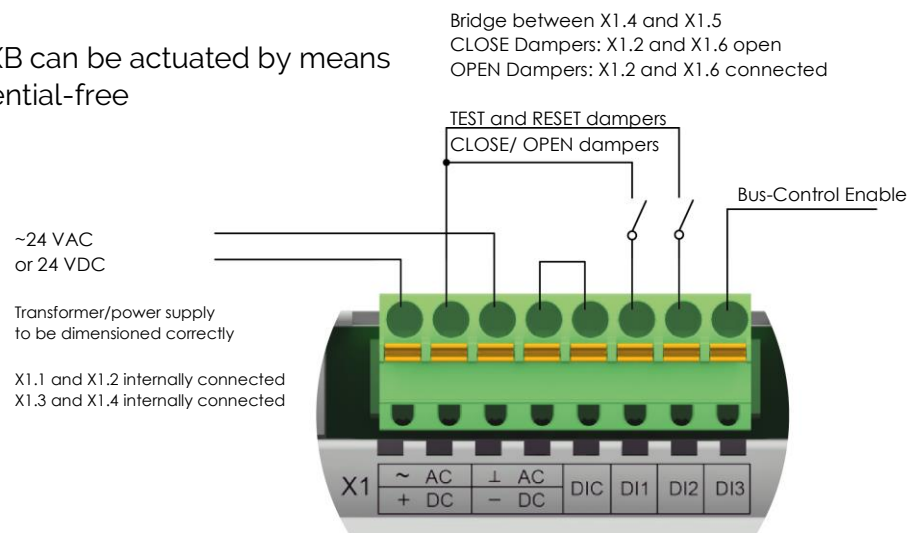
5.4.2 Direct digital controlling

Alternatively, it can be actuated directly via the digital outputs (0V/24 V) of an external controller.

CLOSE / OPEN   TEST and RESET
0 / 24V   24V

GND

Bus-Control Enable

~24 VAC
or 24 VDC

Transformer/power supply
to be dimensioned correctly

X1.1 and X1.2 internally connected
X1.3 and X1.4 internally connected

Optocoupler inputs with common GND
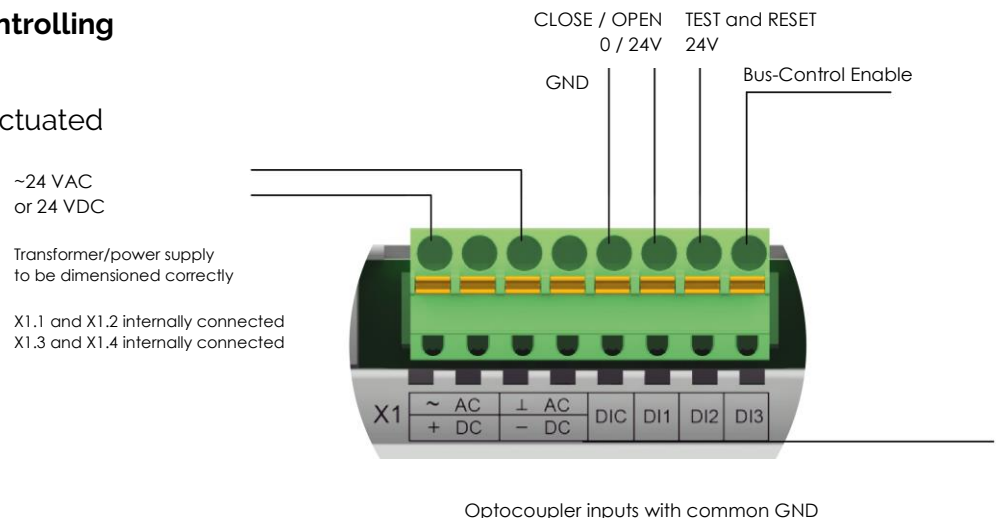
5.5 RELAY OUTPUTS (TERMINAL BLOCK X2)

The functions of the relay outputs are shown in the table below.

Max. contact load 48 VAC with 0.5 A or 24 VDC with 1 A.

Connections **6 and 8** are normally used for enabling ventilation.

Relay 1 Operating relay (changeover contact)
X2.1 COM
X2.2 NC Collective fault
X2.3 NO All OK (system ON)

Relay 2 Fire relay: thermoelectric tripping device / smoke detector of BC24 (NC)
X2.4 COM
X2.5 NC

Relays 3 + 4 Damper position (2 x NO)
X2.6 COM
X2.7 NO Dampers CLOSED
X2.8 NO Dampers OPEN (enable ventilation)

1	2	3	4	5	6	7	8
Collective fault			Thermoelectric tripping device*/smoke detector		Damper position		
COM	Fault	No fault	> 72˚		COM*	CLOSED	OPEN
Changeover			NC		2 x NO		
1 and 2 connected: Fault present or unit de-energized **1 and 3** connected: No fault present			**4 and 5** connected: Thermoelectric tripping device* and smoke detector of **BC24** OK **4 and 5** open: Thermoelectric tripping device* or smoke detector of **BC24** triggered or unit de-energized * of BC24 or actuator		**6 and 7** connected: All dampers closed **6 and 8** connected: All dampers open Unit de-energized: Contacts open		

Table 4 Terminal block X2

6 BUS MODE

The system can also be controlled and monitored by means of a **Modbus RTU (RS-485), Modbus TCP/IP** or **BACnet MS/TP, BACnet IP**. The configuration of the interfaces can be carried out by means of USB and the Windows configuration and diagnostic tool as an option. The default interface parameters can be found in the section entitled **"Technical data"**.

Bus-Control is only possible if 24V is applied at the digital input DI3. Bus-Monitoring is always possible.

6.1 MODBUS

The System can also be controlled by Modbus RTU or TCP/IP. The selection of the protocol and its configuration can be done with the Configuration and Software Tool.

Per default the unit has an activated bus watchdog of 120s. The time will be reset with each forced control command. If the watchdog counts to zero the control module will close all dampers.

6.1.1 Implemented commands

Default Commands	Read Holding Registers [3]
	Write Single Register [6]
Optional Commands	Read Input Registers [4]
	Write Multiple Registers [16]
Organization of the registers	Register No. 1 – 30
	Registers to control and monitor all dampers
	Register No. 101 – 109
	Service Registers

6.1.2 Register assignment

6.1.2.1 Operating registers

Unless specified otherwise, the following will apply:

Bit 0 = damper 1
Bit 1 = damper 2
Bit 2 = damper 3
Bit 3 = damper 4

…
Bit 15 = damper 16

No.	Addr.	Name	Description	Read	Write
1	0	Active dampers	Bit X: 0 = damper programmed as inactive 1 = damper programmed as active	X	
2	1	Forced control	Bit X: 0 = Close dampers 1 = Open dampers	X	X
3	2	Reset	Bit X: 1 = Reset (automatic reset on completion of Reset)	X	X
4	3	Unit code	1000	X	
5	4	Initialization	Bit X: 0 = Normal 1 = Initialization active	X	
6	5	Test run	Bit X: 0 = Normal 1 = Test run active	X	
7	6	Active error	Bit X: 0 = no active error 1 = at least one active error (concrete active errors can be read via register no. 16-23)	X	
8	7	Saved error	Bit X: 0 = no saved error 1 = at least one saved error (concrete saved errors can be read via register no. 24-30)	X	
9	8	Damper position OPEN	Bit X: 0 = damper not open 1 = damper open	X	
10	9	Damper position CLOSED	Bit X: 0 = damper not closed 1 = damper closed	X	
11	10	Damper position opening	Bit X: 0 = damper not opening 1 = damper opening	X	
12	11	Damper position closing	Bit X: 0 = damper not closing 1 = damper closing	X	
13	12	Relay outputs	Bit 0 1 = OK / 0 = Error Bit 1 1 = "< 72°" Bit 2 1 = dampers CLOSED Bit 3 1 = dampers OPEN	X	
14	13	Digital inputs	Bit 0 = DI1 Locin (forced control) Bit 1 = DI2 TEST/RESET Bit 2 = DI3 Bus control enable	X	
15	14	Local forced control	Bit 0: 1 = local forced control active 0 = bus control active	X	
16	15	Thermoelectric tripping device error	Bit X: 0 = no error 1 = device triggered	X	
17	16	Smoke detector error	Bit X: 0 = no error 1 = smoke detector triggered	X	
18	17	No Load	Bit X: 0 = no error	X	

No.	Addr.	Name	Description		Read	Write
			1 = no load detected: either no actuator is connected to the BC24 or the thermoelectric tripping device of the actuator has been triggered			
19	18	Mechanical error	Bit X: 0 = no error 1 = a mechanical error is present; the damper is blocked or is taking too long to reach the target position.			X
20	19	Overcurrent	Bit X: 0 = no error 1 = an overcurrent has been detected: Because of the overcurrent, the power supply to the BC24 was interrupted. With this error, self-resetting will take place after one minute.			X
21	20	No SLC communication	Bit X: 0 = no error 1 = no communication between the SLC unit and the BC24. With this error, self-resetting will take place as soon as communication is functioning again.			X
22	21	Not Connected	Bit X: 0 = no error 1 = no BC24 is connected to the corresponding port. With this error, self-resetting will take place as soon as a BC24 is connected.			X
23	22	Initialization Error	Bit X: 0 = no error 1 = an error restricting functionality occurred during initialization. This error is **not** self-resetting and must be acknowledged by means of a Reset (register no. 3).			X
24	23	Saved Thermoelectric tripping device error	Bit X: 0 = no saved error 1 = a thermoelectric tripping device error was active but has since been rectified. Saved errors are reset by means of a Reset (register no. 3).			X
25	24	Saved smoke detector error	Bit X: 0 = no saved error 1 = a smoke detector error was active but has since been rectified. Saved errors are reset by means of a Reset (register no. 3).			X
26	25	Saved "No Load" error	Bit X: 0 = no saved error 1 = a "No Load" error was active but has since been rectified. Saved errors are reset by means of a Reset (register no. 3).			X
27	26	Saved Mechanical error	Bit X: 0 = no saved error 1 = a mechanical error was active but has since been rectified. Saved errors are reset by means of a Reset (register no. 3).			X
28	27	Saved Overcurrent error	Bit X: 0 = no saved error 1 = an overcurrent error was active but has since been rectified. Saved errors are reset by means of a Reset (register no. 3).			X
29	28	Saved "No SLC communication" error	Bit X: 0 = no saved error 1 = a "No SLC communication" error was active but has since been rectified. Saved errors are reset by means of a Reset (register no. 3).			X
30	29	Saved "Not Connected" error	Bit X: 0 = no saved error 1 = a "Not Connected" error was active but has since been rectified. Saved errors are reset by means of a Reset (register no. 3).			X

6.1.2.2 Service Registers

No.	Addr.	Name	Description	Read	Write
101	100	-		X	
102	101	-		X	
103	102	-		X	

				X
104	103	Firmware Major		X
105	104	Firmware Minor		X
106	105	Firmware Revision		X
107	106	Build Number		X
108	107	Bus Watchdog Countdown	Counting down every second from 120 to 0. Reset to 120 with a force control command. If counted down to 0 and Bus-Control is enabled the System will close all dampers.	X
109	108	Bus Watchdog Enabled	1 = Bus watchdog is active 0 = Bus watchdog deactivated	X

6.2 BACNET

BACnet Device Profile

BACnet Application Specific Controller (B-ASC), protocol revision 12

Supported BIBBs

Supported BIBB	BIPP Name
DS-COV-B	Data Change of Value-B
DS-RP-B	Data Sharing-Read Property-B
DS-RPM-B	Data Sharing-Read Property Multiple-B
DS-WP-B	Data Sharing-Write Property-B
DM-DDB-B	Device Management-Dynamic Device Binding-B
DM-DOB-B	Device Management-Dynamic Object Binding-B
DM-DCC-B	Device Management-Device Communication Control-B
DM-RD-B	Device Management-Reinitialize Device-B

- Segmentation is not supported
- Static Device Binding is not supported

PICS

Object Type	Optional Properties	Writable Properties
Analog Input [AI]	Description COV Increment	COV Increment
Binary Input [BI]	Description Active Text Inactive Text	
BitString Value [BSV]	Description Bit Text	
Binary Value [BV]	Description Active Text Inactive Text	Present Value
Device	Description Location Active COV Subscriptions Max Master (only MS/TP) Max Info Frames (only MS/TP)	Description Object Name Location APDU Timeout (1000…60'000) Number of APDU Retries (0…10) Max Master (1…127) (only MS/TP) Max Info Frames (1…255) (only MS/TP)
Multi-state Input [MI]	Description State Text	
Multi-state Output [MO]	Description State Text	Present Value

- The Services CreateObject and DeleteObject are not supported
- Maximum length (Bytes) of the visible strings are
  - Object Name: 64
  - Location: 64
  - Description: 64

- „DeviceCommunicationControl" is supported, no Password needed

- 128 COV Subscriptions are allowed with a time span from 1…28800s (8 hours)

BACnet Object-List

Object Type / Instance(s)	Object Name	Values	Unit	COV Support	Description	Explanation	Access*
MO 0	Forced Control all Slaves	**1: None** 2: Open 3: Close Default: 1		Yes	Sets the given value/priority to all slaves and resets the bus watchdog	Forced Control for all slaves „None" is interpreted as „Close" A write command will reset the watchdog counter	C
MO 1-4	Forced Control Block x	**1: None** 2: Open 3: Close Default: 1		Yes	Sets the given value/priority to all slaves in block x (*) and resets the bus watchdog * x=1: slaves 1 – 4 x=2: slaves 5 – 8 x=3: slaves 9 – 12 x=4: slaves 13 - 16	Forced Control for the 4 blocks „None" is interpreted as „Close" A write command will reset the watchdog counter	C
MO 101-116	Forced Control Slave x	**1: None** 2: Open 3: Close Default: 1		Yes	Forced Control, resets the bus watchdog	Forced Control for every single damper „None" is interpreted as „Close" A write command will reset the watchdog counter	C
AI 0	Bus Watchdog Countdown	0…120	73 [seconds]	Yes COV Increment: 0.01…1000.0 Default COV Increment: 1	Current Timer Value of the Bus Watchdog Countdown (Communication Supervision)	Current Watchdog counter value	R
BI 0	Relay OK	0: Off 1: On		Yes	State of the local output relay 'Error/OK'		R
BI 1	Relay > 72 Degrees	0: Off 1: On		Yes	State of the local output relay '> 72 degrees'		R
BI 2	Relay All Closed	0: Off 1: On		Yes	State of the local output relay 'All Closed'		R
BI 3	Relay All Open	0: Off 1: On		Yes	State of the local output relay 'All Open'		R
BI 4	DI1 Local Forced Control	0: Off 1: On		Yes	State of the local digital input 1 (local forced control)		R
BI 5	DI2 Local Reset	0: Off 1: On		Yes	State of the local digital input 2 (local reset/test)		R
BI 6	DI3 Bus Control enabled	0: Off 1: On		Yes	State of the local digital input 3 (bus control enabled)		R
BI 7	Heartbeat	0: Off 1: On		Yes	Toggles every second to indicate that the device is running		R
BI 8	Heartbeat Slow	0: Off 1: On		Yes	Toggles every 15 seconds to indicate that the device is running		R
BV 0	Reset all Slaves	0: Off 1: On		Yes	Clears any mem errors of all slaves, resets the bus watchdog		W

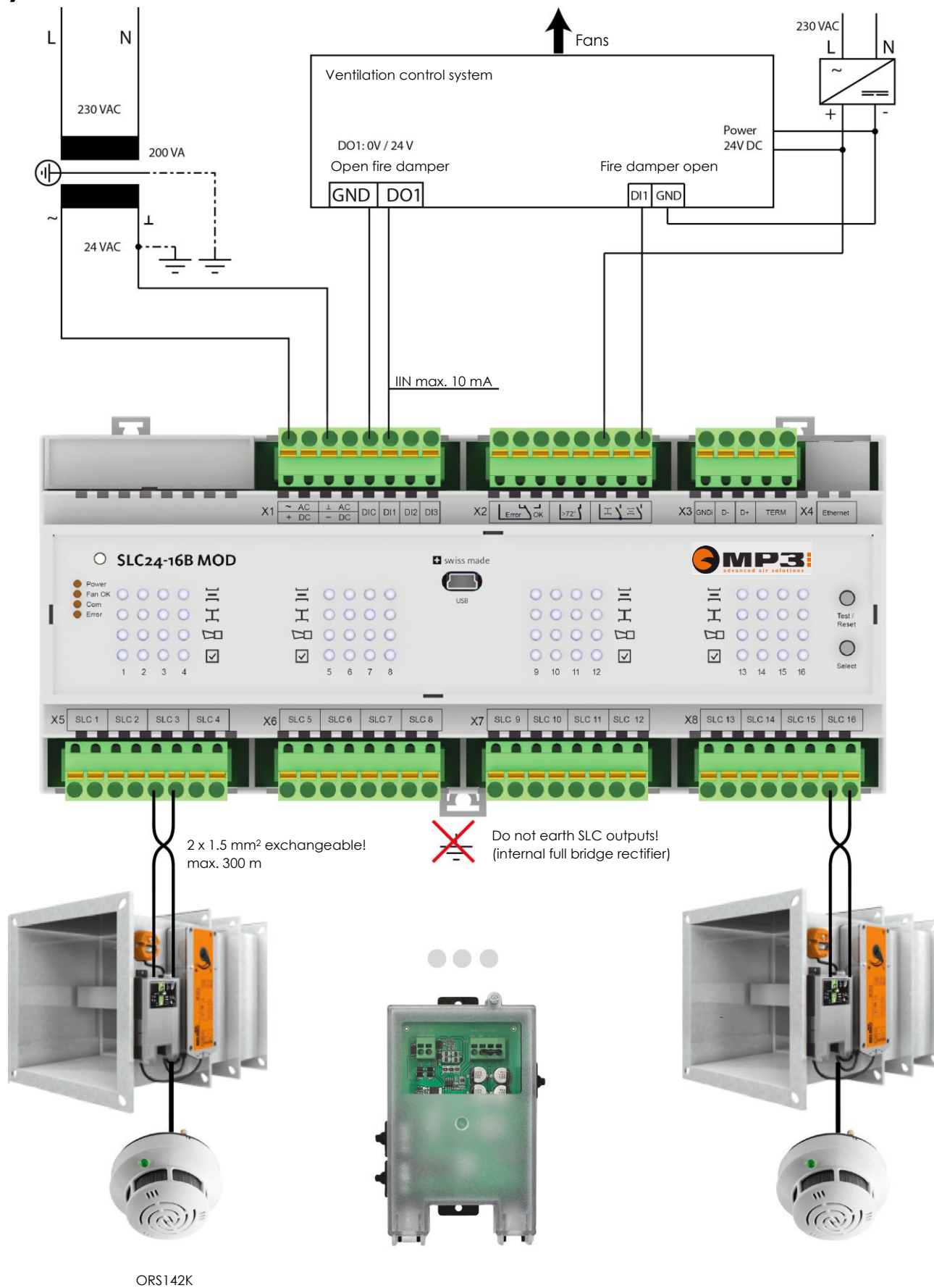|							
BV 1	Control Heartbeat	**0: Off** 1: On		Yes	Any write to the control heartbeat (ON or OFF) resets the bus watchdog	Heartbeat to keep the bus-control alive Any write to the control heartbeat (ON or OFF) resets the bus watchdog	W
BV 101-116	Slave Active x	0: Off **1: On**		Yes	Whether a slave is active		W
BV 201-216	Reset x	**0: Off** 1: On		Yes	Resets the slave if there is an active error, clears any 'Mem Errors', resets the bus watchdog		W
BSV 101-116	Status Flags Slave x	Bit 1: Init Bit 2: Test Bit 3: Damper Open Bit 4: Damper Closed Bit 5: Damper Opening Bit 6: Init Error Bit 7: Not Connected Bit 8: Comm Timeout Bit 9: Overcurrent Bit 10: Mechanical Error Bit 11: No Load Bit 12: BAE Bit 13: ORS Bit 14: Not Connected Mem Bit 15: Comm Timeout Mem Bit 16: Overcurrent Mem Bit 17: Mechanical Error Mem Bit 18: No Load Mem Bit 19: BAE Mem Bit 20: ORS Mem		Yes	Combined status, position and error information	The status flags hold the same information as the MI Objects and can be used to reduce data points.	R
MI 0	Summary Status all Slaves	1: Inactive 2: Unknown 3: Not Ok 4: Ok		Yes	Summary status of all active slaves	Status summary of all active slaves **Inactive**: no slave available **Unknown**: no connection to the slaves established **Not Ok**: at least one slave has an error **Ok**: all slaves are ok	R
MI 1-4	Summary Status Block x	1: Inactive 2: Unknown 3: Not Ok 4: Ok		Yes	Summary status of active slaves in block x (*) * x=1: slaves 1 – 4 x=2: slaves 5 – 8 x=3: slaves 9 – 12 x=4: slaves 13 - 16	Status summary of all active slaves in block x **Inactive**: no slave available **Unknown**: no connection to the slaves established **Not Ok**: at least one slave has an error **Ok**: all slaves are ok	R
MI 10	Summary Position all Slaves	1: Inactive 2: Unknown 3: Closed 4: Open 5: Other		Yes	Summary position of all active slaves	Position summary of all active slaves **Inactive**: no slave available **Unknown**: no connection to the slaves established **Closed**: Dampers of all slaves closed **Open**: Dampers of all slaves are open **Other**: positions are different among each damper or they are moving	R
MI 11-14	Summary Position Block x	1: Inactive 2: Unknown 3: Closed 4: Open 5: Other		Yes	Summary position of active slaves in block x (*) * x=1: slaves 1 – 4 x=2: slaves 5 – 8 x=3: slaves 9 – 12 x=4: slaves 13 - 16	Position summary of all active slaves in block x **Inactive**: no slave available **Unknown**: no connection to the slaves established **Closed**: Dampers of all slaves are closed **Open**: Dampers of all slaves are open **Other**: positions are different among each damper or they are moving	R

MI 101-116	Status Slave x	1: Inactive 2: Unknown 3: Init 4: Normal Operation 5: Test 6: Warning 7: Error 8: Error During Initialization		Yes	Detailed status information	Detailed status of slave x **Inactive**: slave not available **Unknown**: no connection to the slave established **Init**: slave is initializing **Normal Operation**: slave is working correctly **Test**: slave is doing a damper test **Warning**: at least one saved error exists **Error**: at least one present error exists **Error During Initialization**: Error during initialization, a reset is required	R
MI 201-216	Position Slave x	1: Unknown 2: Closed 3: Open 4: Closing 5: Opening		Yes	Detailed position information	Damper position of slave x **Unknown**: slave not available or no connection to slave **Closed**: damper is closed **Open**: damper is open **Closing**: damper is between its limit switches and closing **Opening**: damper is between its limit switches and opening	R
MI 301-316	Sensor Status Slave x	1: Unknown 2: OK 3: ORS 4: ORS & BAE 5: ORS & No Load 6: ORS & BAE & No Load 7: BAE 8: BAE & No Load 9: No Load		Yes	Indicates whether the smoke detector (ORS) and/or temperature sensor (BAE) got triggered	ORS (Smoke detector) and BAE (thermoelectric tripping device) Status of slave X **Unknown**: slave not available or no connection to slave **OK**: no error **ORS**: ORS has triggered **ORS & BAE**: ORS and BAE have triggered **ORS & No Load**: ORS and the BAE of the Actuator have triggered **ORS & BAE & No Load**: ORS, the BAE and the BAE of the Actuator have triggered **BAE**: BAE has triggered **BAE & No Load**: BAE and the BAE of the Actuator have triggered **No Load**: BAE of the Actuator has triggered	R
MI 401-416	Sensor Status Mem Slave x	1: Unknown 2: OK 3: ORS 4: ORS & BAE 5: ORS & No Load 6: ORS & BAE & No Load 7: BAE 8: BAE & No Load 9: No Load		Yes	An error that is not active anymore appears as 'Mem Error'	Saved ORS (Smoke detector) and BAE (thermoelectric tripping device) errors of slave x	R
MI 501-516	Actuator Status Slave x	1: Unknown 2: OK 3: Mechanical 4: Overload 5: Mechanical & Overload		Yes	Mechanical error or overload due to blocked damper	Actuator status of slave x **Unknown**: slave not available or no connection to slave **OK**: no error **Mechanical**: mechanical error **Overload**: too much current drawn **Mechanical & Overload**: mechanical error and too much current drawn	R
MI 601-616	Actuator Status Mem Slave x	1: Unknown 2: OK 3: Mechanical 4: Overload 5: Mechanical & Overload		Yes	An error that is not active anymore appears as 'Mem Error'	Saved actuator status errors of slave x	R

MI 701-716	Status Connection Slave x	1: Unknown 2: OK 3: Not Connected 4: Comm Timeout 5: Not Connected & Comm Timeout		Yes	Detailed connection status	Connection status of slave x **Unknown**: slave not available **OK**: no error **Not Connected**: no connection to slave **Comm Timeout**: communication to slave failed **Not Connected & Comm Timeout**: slave not connected and communication failed	R
MI 801-816	Status Connection Mem Slave x	1: Unknown 2: OK 3: Not Connected 4: Comm Timeout 5: Not Connected & Comm Timeout		Yes	An error that is not active anymore appears as 'Mem Error'	Saved connection status errors of slave x	R

* Access: R = Read, W = Write, C = Commandable with priority array

7 EXAMPLES OF APPLICATIONS

7.1 VENTILATION CONTROL SYSTEM WITH CONVENTIONAL WIRING

ORS142K

16 x BC24

2 x 1.5 mm² exchangeable!
max. 300 m

Do not earth SLC outputs!
(internal full bridge rectifier)

7.2 VENTILATION CONTROL SYSTEM WITH DIGITAL OUTPUT

L N

230 VAC

200 VA

~

24 VAC

⏚

Fans

Ventilation control system

DO1: 0V / 24 V

Open fire damper

| GND | DO1 |

Fire damper open

| DI1 | GND |

230 VAC

L N

Power
24V DC

+ −

IIN max. 10 mA

X1 ~ AC ⊥ AC DIC DI1 DI2 DI3
    + DC − DC

X2 Error / OK >72°

X3 GNDi D− D+ TERM   X4 Ethernet

○ SLC24-16B MOD

swiss made

USB

Power
Fan OK
Com
Error

1 2 3 4   5 6 7 8   9 10 11 12   13 14 15 16

Test / Reset

Select

MP3
advanced air solutions

X5 SLC 1 SLC 2 SLC 3 SLC 4   X6 SLC 5 SLC 6 SLC 7 SLC 8   X7 SLC 9 SLC 10 SLC 11 SLC 12   X8 SLC 13 SLC 14 SLC 15 SLC 16

2 x 1.5 mm² exchangeable!
max. 300 m

Do not earth SLC outputs!
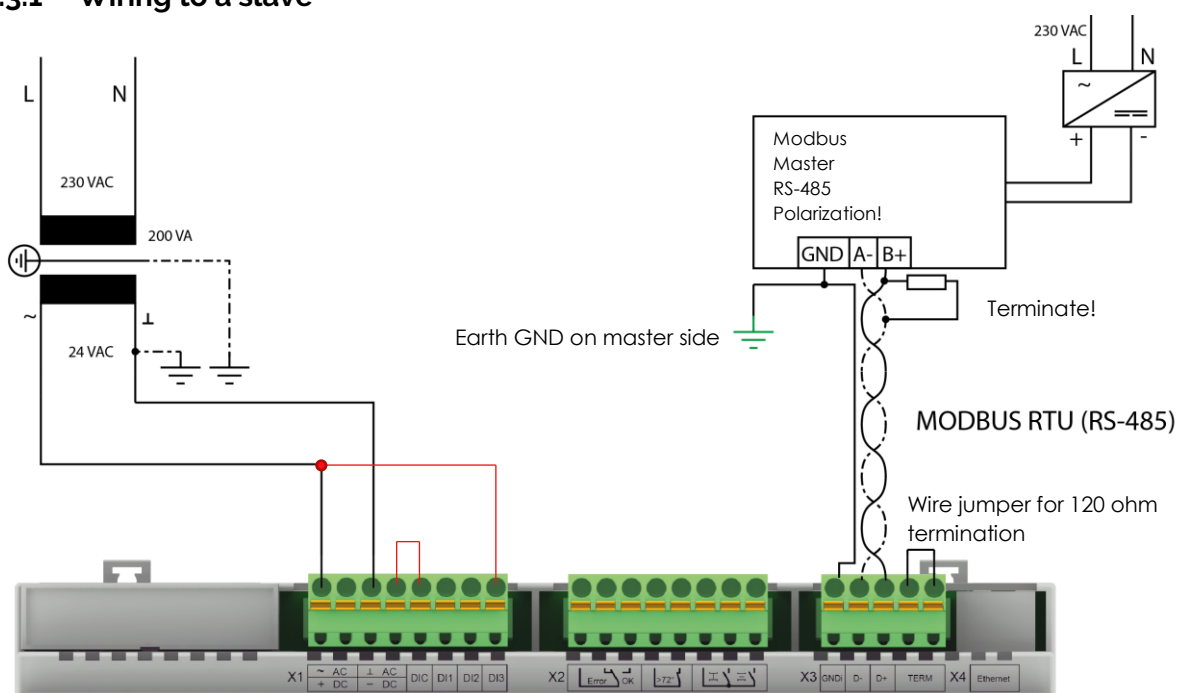(internal full bridge rectifier)

ORS142K

7.3 Control by means of Modbus master RTU

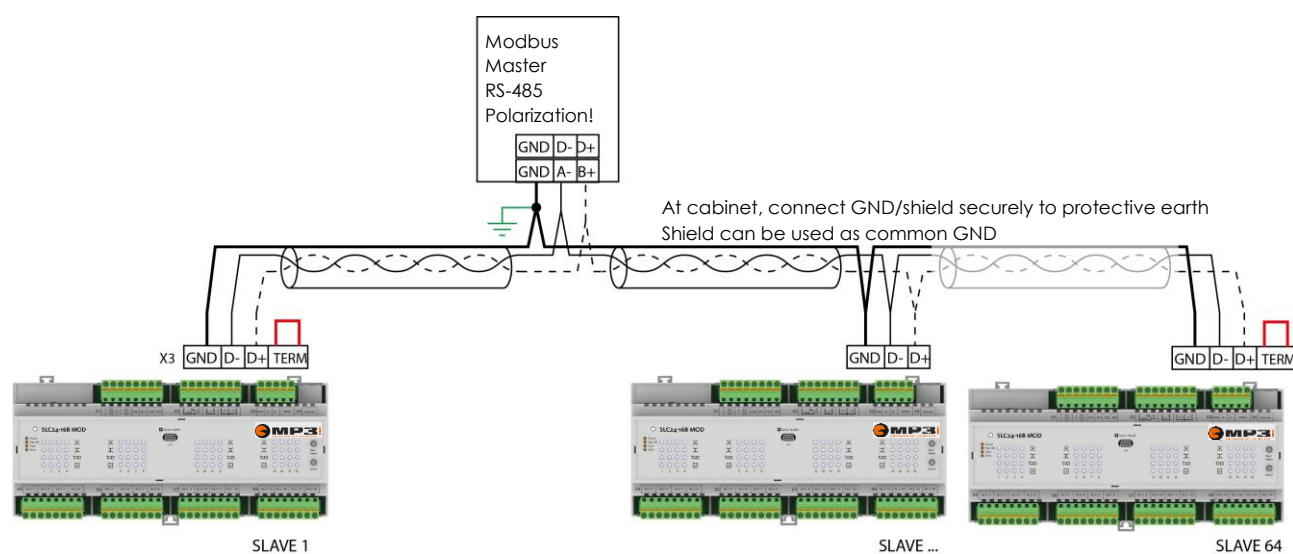The bus wiring is to be in accordance with the official Modbus specifications:

Modbus Serial Line Protocol and Implementation Guide V1.02

Addressing is carried out via a USB interface and the **configuration tool**.
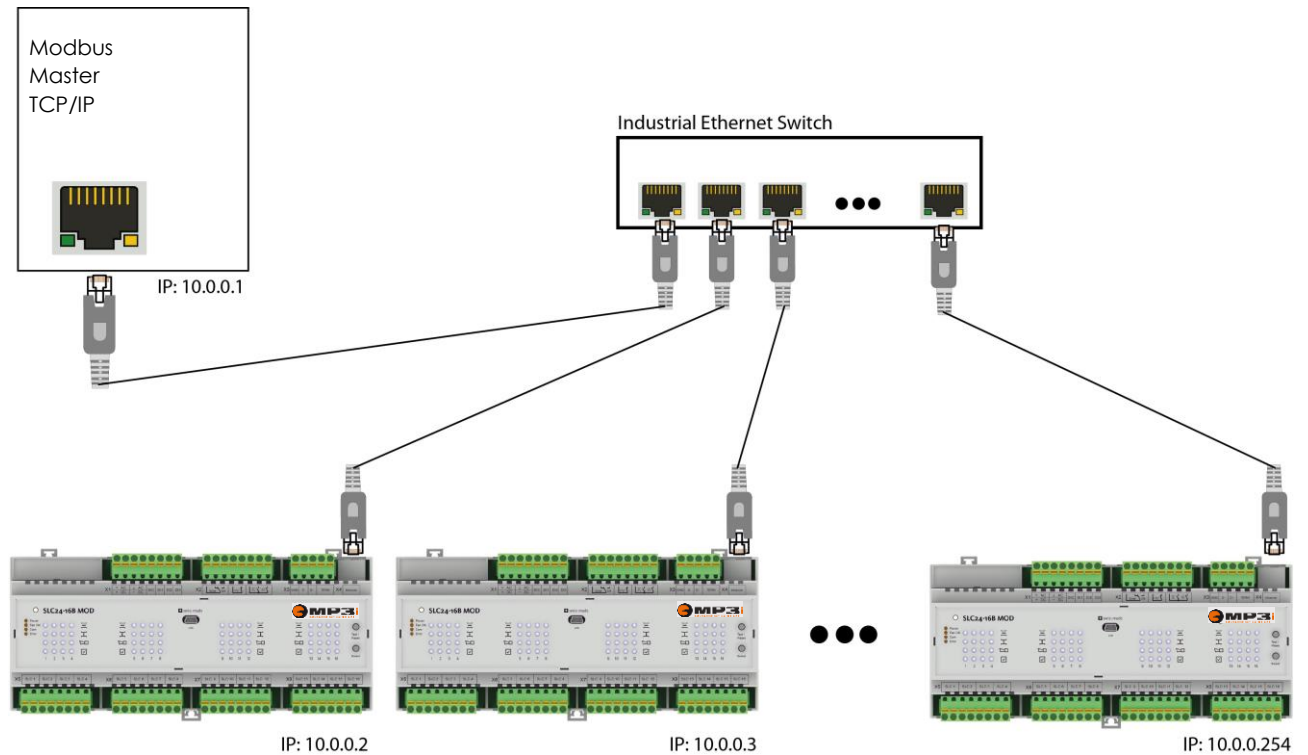
7.3.1 Wiring to a slave

7.3.2 Up to 64 slaves (1024 fire dampers)

7.4 MODBUS TCP/IP

The configuration tool can be used to set the IP addresses to static or activate assignment via DHCP.

8 DIMENSIONS

Dimensions in mm