GB

Electrical installation guide

DEX3060-3090-3120

EXcon control system

Original instructions

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Symbols, terms and warnings

1. Connection in a control system panel

2. Installing the DEX unit

Symbols, terms and warnings

Symbols, terms and warnings

Prohibition symbol

Failure to observe instructions marked with a prohibition symbol may result in serious or fatal injury.

Danger symbol

Failure to observe instructions marked with a danger symbol may result in personal injury and/or damage to the unit.

Terms

These instructions use the following names for airflows as specified in DS447-2013:

- Supply air
- Extract air
- Outdoor air
- Exhaust air

Scope of the instruction manual

These instructions apply to EXHAUSTO DEX series air handling units. This instruction manual deals with the electrical installation. For non-factory accessories, refer to the separate instructions for the product.

The instruction manual must be fully observed to ensure personal safety and the safety of others, and to protect equipment and ensure the correct operation of the DEX unit. EXHAUSTO A/S accepts no liability for accidents caused by a failure to use the product in accordance with the manual's instructions and specifications.

Warning

The work must be performed by an authorised electrician, in accordance with locally applicable regulations and legislation.

Opening the air handling unit

Do not open the service doors before the power has been disconnected at the isolation switch (installer delivery), and the fans have stopped.

Isolation switch

In accordance with The Machinery Directive*, an isolation switch must be permanently installed in the unit.

The isolation switch must:

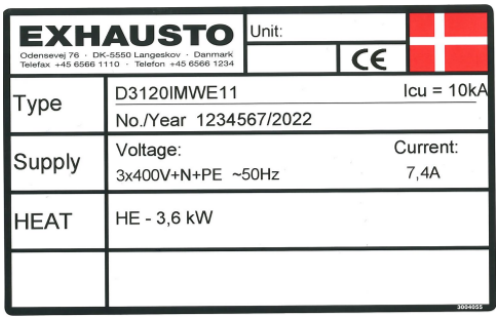
- be lockable or positioned in plain sight in the immediate vicinity of the unit
- disconnect all poles from the supply voltage
- Be constructed in accordance with EN 60204-1

The isolation switch is **not** supplied by EXHAUSTO.

Information plate

The DEX unit information plate shows:

- Which DEX variant the unit is
- Unit production order no.
- Unit supply voltage
- The unit's after-heating/cooling coil

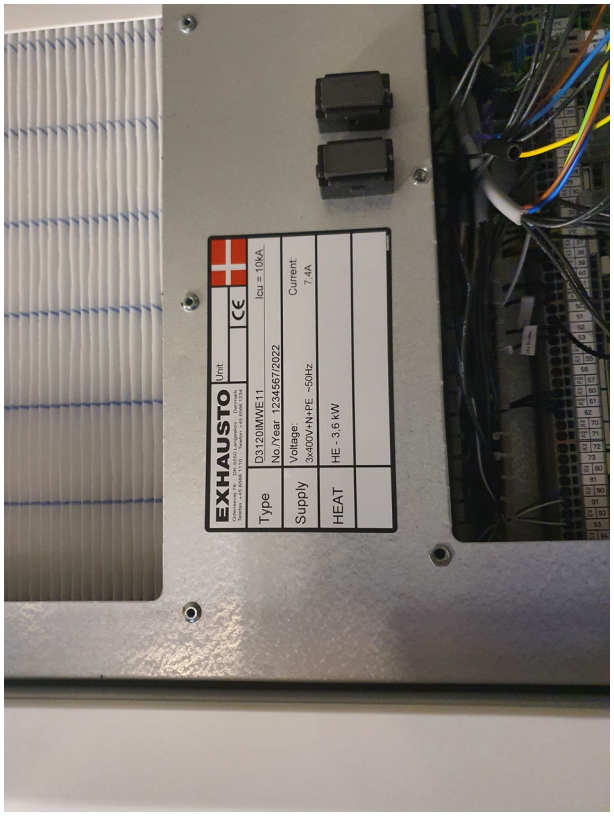


NB:

Always have the production number ready when contacting EXHAUSTO about the product.

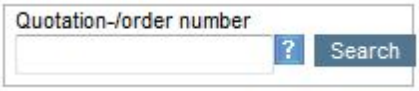
Location of identification plate

The type plate is located between the extract air filter and the control system panel.



Important!

Always check whether the latest version of the publication is available by searching for the order number on the EXHAUSTO website under Downloads



1. Connection in a control system panel

1.1 Explanation of wiring diagrams

Wiring diagram

The following wiring diagrams illustrate the connection of the power supply, HMI panels and various accessories that must be connected to the control system panel.

1.1.1 Designations used and key for wiring diagrams

Accessories are a direct customer choice, and the options may be generated from several factors.

Designation	Key	Standard	Accessories	Option	Supplied by:	
					EXHAUSTO	Customer
+A1	Control system panel	X			X	
+A2	DEX unit	X			X	
+A3	Customer accessory				X	
+A4	Customer's distribution board					X
-AT	Automatic overheating switch 75°C in the electric heating coil			X	X	
-B1	PIR sensor, in-built		X		X	
-B4	Smoke detector in the outdoor air (fire stop), integrated		X		X	
-B10	CO_2 sensor, in-built		X		X	
-E2	Electric heating coil (HE1/HE2) in supply air chamber		X		X	
-F0	Fuses in customer's distribution board					X
-F1.X	Fuse -M1 (4A slow) on -X3 terminal block	X			X	
-F2.X	Fuse -M2 (4A slow) on -X3 terminal block	X			X	
-F10.X	Fuse -M10 (1A slow) on -X3 terminal block	X			X	
-HE	Heating element in electric heating coil (-E2)			X	X	
-K1	EXcon Master	X			X	
-K1	Contactor in electric heating coil (-E2)			X	X	
-K2	EMC filter	X			X	
-K27	Extension module: Controls HW coil (position 1)			X	X	
-K27	Extension module: Controls HE coil (position 2)			X	X	
-K27	Extension module: Controls CW coil (position 3)			X	X	
-K27	Extension module: Controls CO coil (position 4)			X	X	
-K27	Extension module: No coil in supply air (position 5)			X	X	
-M1	Exhaust air fan	X			X	
-M2	Supply air fan	X			X	
-M3	Bypass damper motor	X			X	
-M4	LSFR, closing damper, outdoor air chamber ON-OFF with spring-return		X		X	
-M5	LSAR Exhaust air duct closing damper ON-OFF with spring-return		X		X	
-M9	Motor valve for HW/CW/CO coil			X	X	
-M10	Submersible Pump		X		X	
-MT	Manual overheating switch 120°C in the electric heating coil			X	X	
-P1	FanIO: Measures pressure over filters and temperatures	X			X	

Designation	Key	Standard	Accessories	Option	Supplied by:	
					EXHAUSTO	Customer
-P10	Air flow meter for release of electric heating coil (HE)			X	X	
-Q0	Isolation switch for the unit					X
R1:	4.7 kΩ resistor for Tacho signal (-M1)	X			X	
R2:	4.7 kΩ resistor for Tacho signal (-M2)	X			X	
-RG1	Control box in electric heating coil (-E2)			X	X	
-S10	Level monitor for condensation tray	X			X	
-T1	Power supply 230VAC/24VDC	X			X	
-TE-1.1	Temperature sensor in extract air chamber	X			X	
-TE-1.2	Temperature sensor in exhaust air chamber	X			X	
-TE-2.1	Temperature sensor in outdoor air chamber	X			X	
-TE-2.2	Temperature sensor in supply air chamber	X			X	
-TE-OUTDOOR	External outdoor air temperature sensor, Modbus		X		X	
-TE-RPT	Return water temperature sensor			X	X	
-UI1	HMI1-350-TOUCH (3,5" Touch panel)		X		X	
-V1	Triac in electric heating coil (-E2)			X	X	
-V2	Triac in electric heating coil (-E2)			X	X	
-X1	Terminal block, supply terminals	X			X	
-X2	Terminal block customer accessories	X			X	
-X3	Terminal block, internal terminals	X			X	
-X4	Terminal block, internal terminals for Modbus	X			X	
-X5	Terminal block, internal terminals for resistors	X			X	
-X10	Connector, internal connections	X			X	
-X11	Connector, internal connections	X			X	
-X20	Connector, electric heating coil	X			X	
-21	Connector, water heating coil/cooling coil/combination coil, HW/CW/CO coil	X			X	
-X30	Connector, RJ12 for Modbus	X			X	

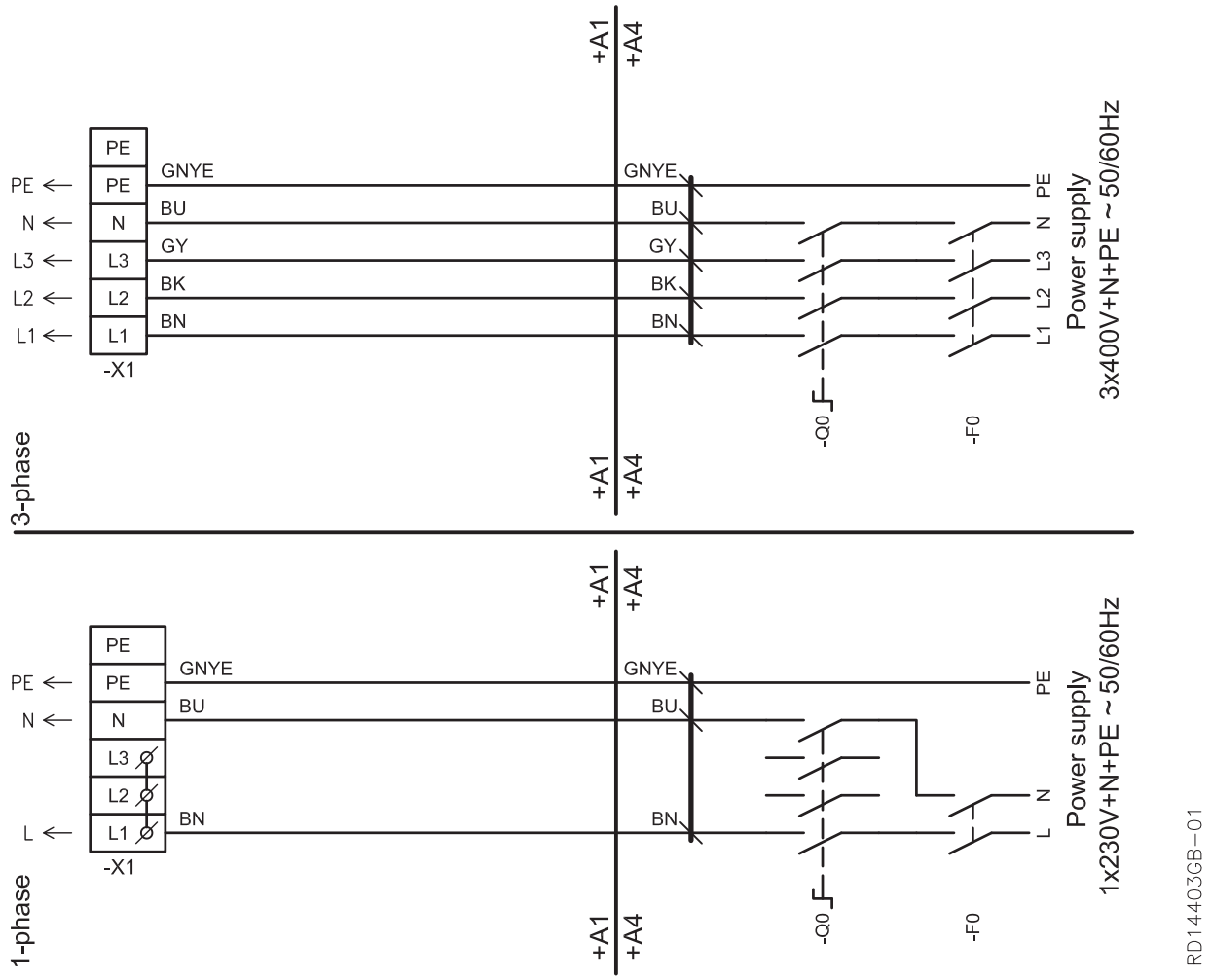
NB: Other parts, shown on the front page of the DEX instructions **"Assembly and installation"**, are supplied by EXHAUSTO

1.1.2 Description of coils

Coil	Description
HW	Water heating coil
HE1	Electric heating coil size 1
HE2	Electric heating coil size 2
CW	Cooling coil
CO	Combi-coil
NO	No coils

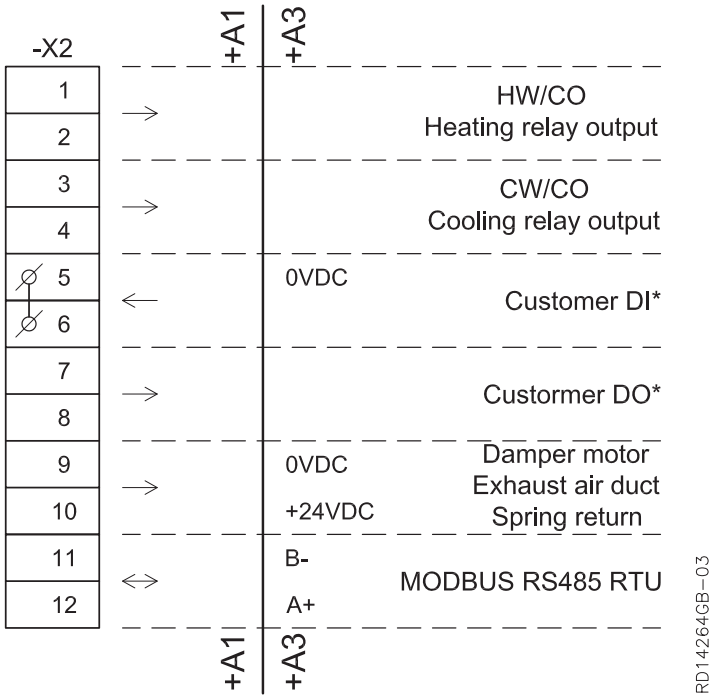
1.2 Customer connexion DEX3000

1.2.1 Main current



EXHAUSTO

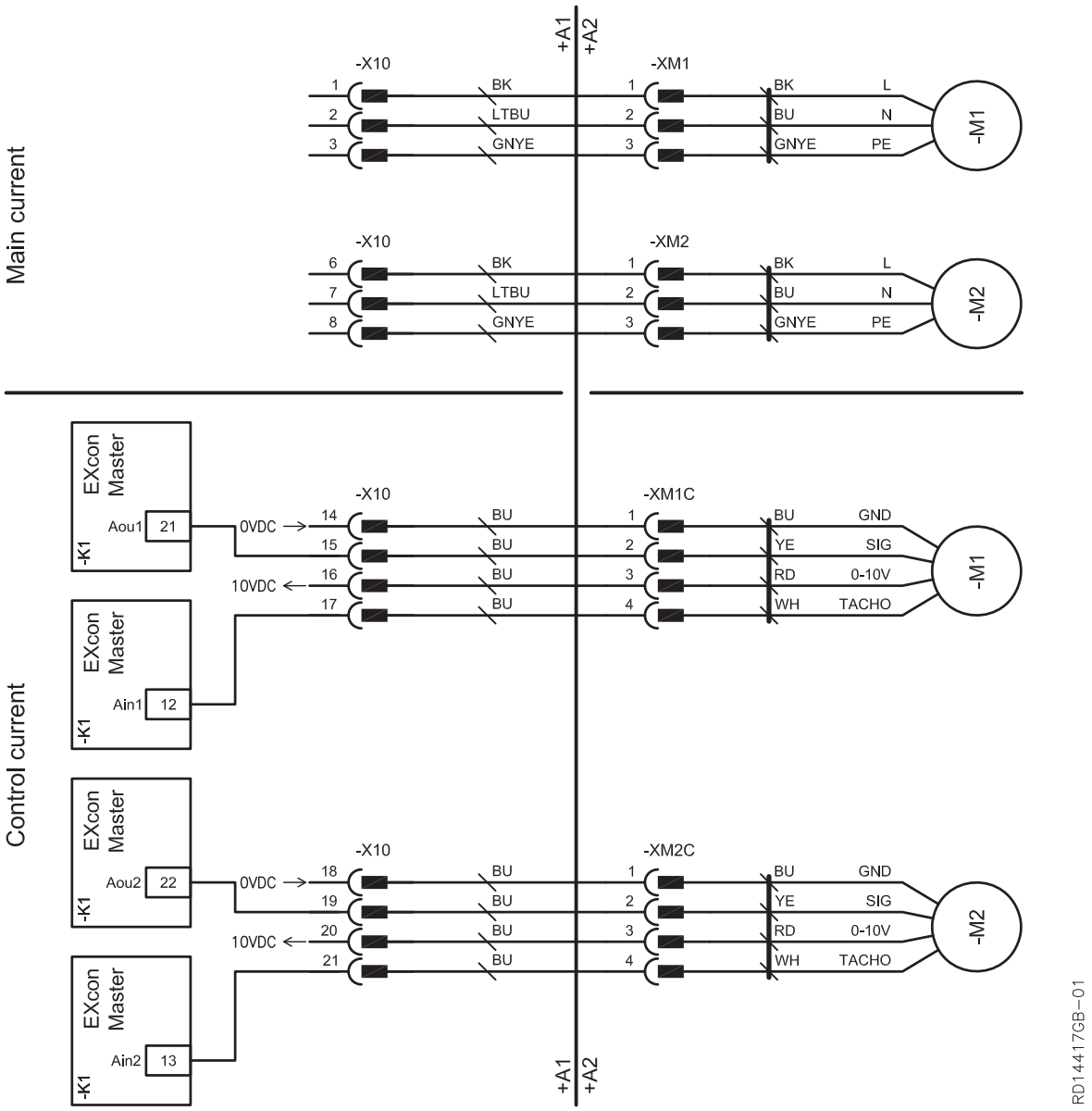
1.2.2 Control current



*Configuration of Customer DI/DO, see section 1.8
If Customer DI is used, remove the tab in -X2:5–6

1.3 Wiring diagrams - Standard equipment

1.3.1 Fan main current and control current DEX3060-3090



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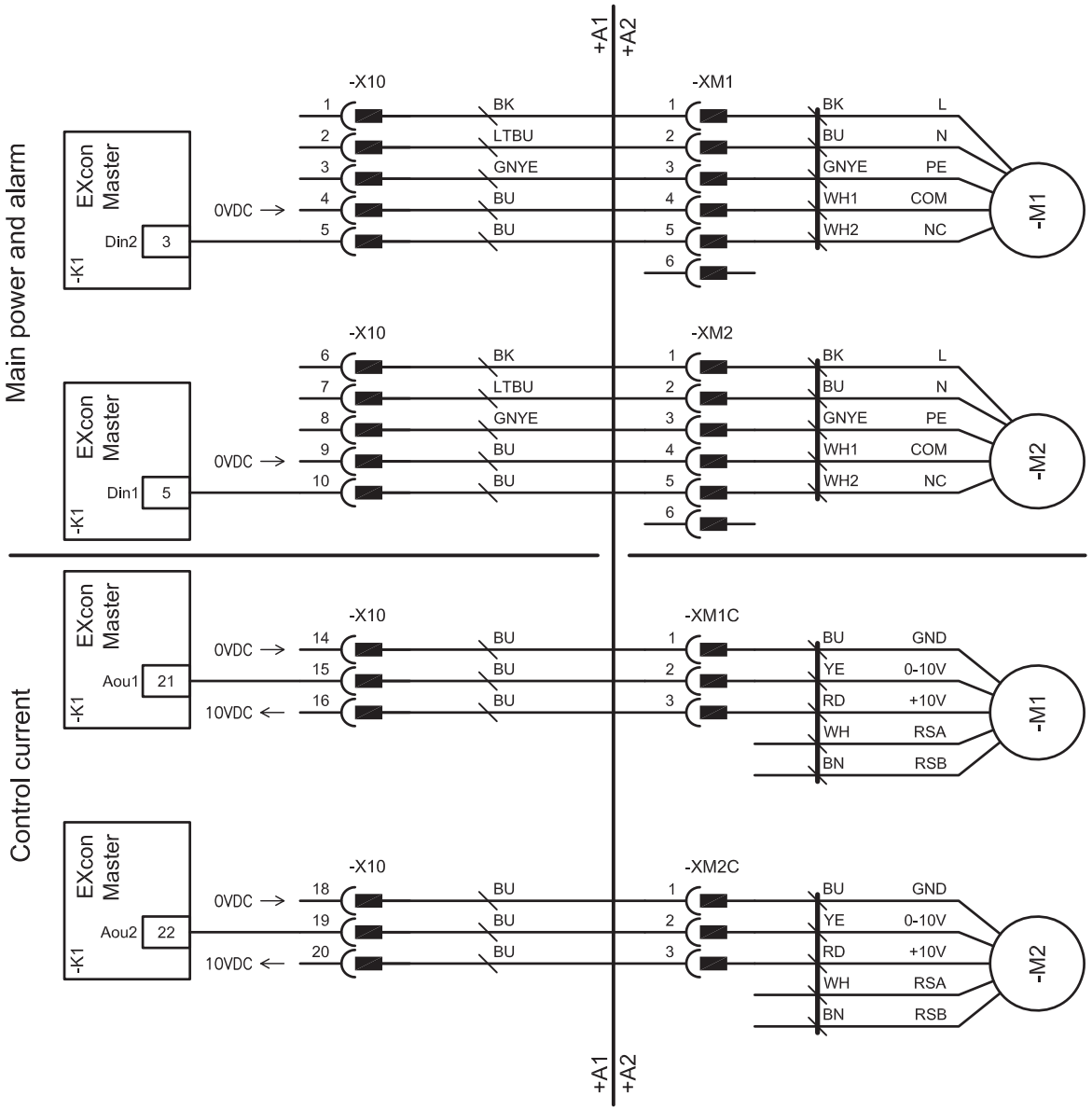
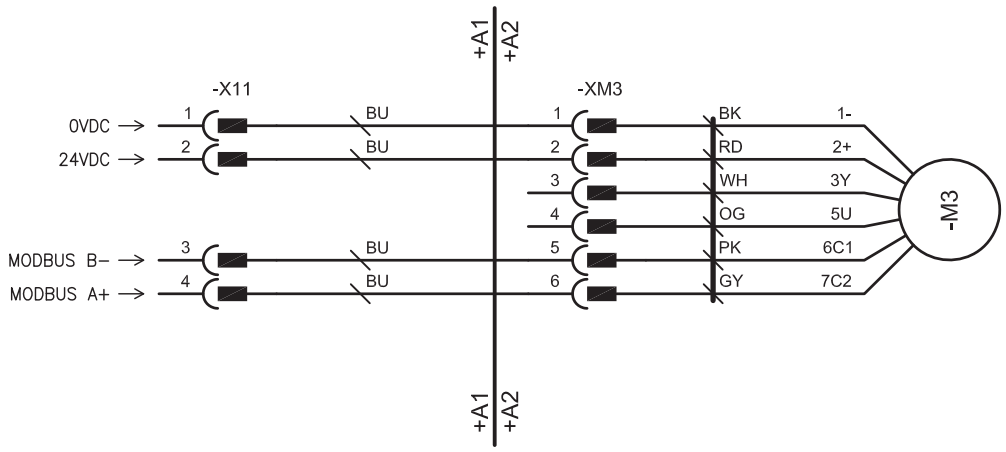
1.3.2 Fan main current and control current DEX3120



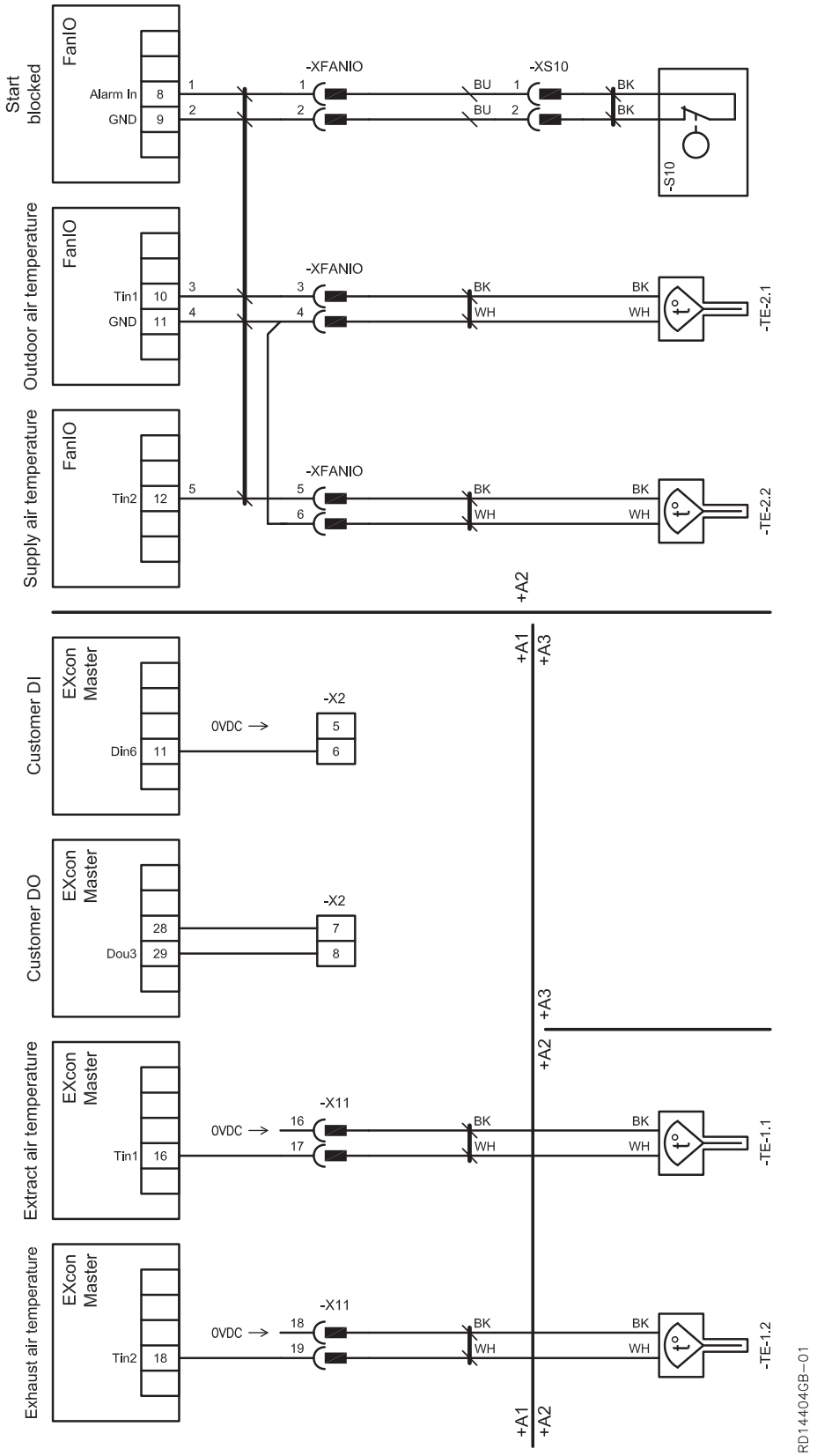
EXHAUSTO

1.3.3 Damper motor - Bypass



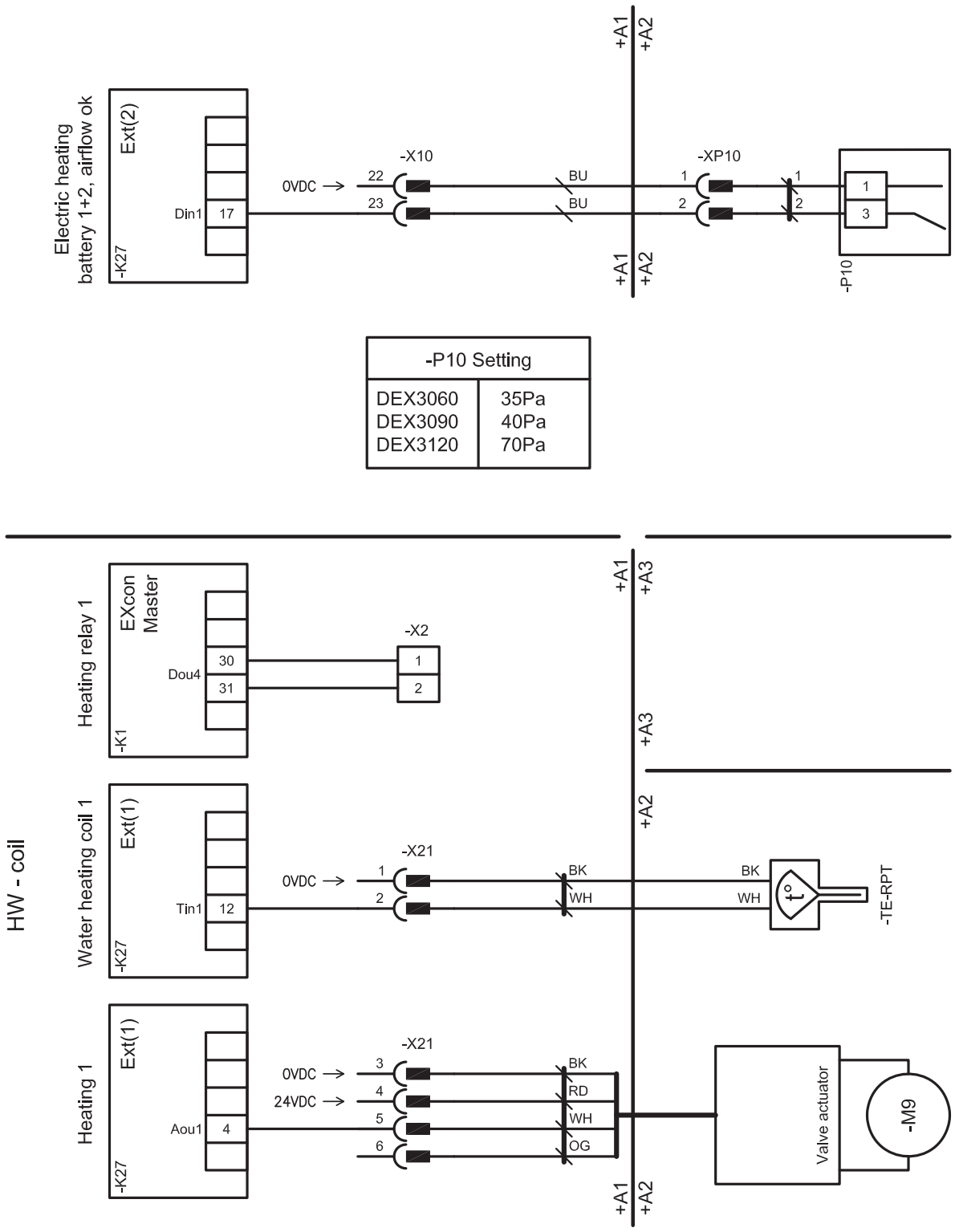
1.4 Wiring diagrams – Surface configurations

1.4.1 Standard I/O configuration



EXHAUSTO

1.4.2 Specific I/O configuration for HW, HE, CW and CO



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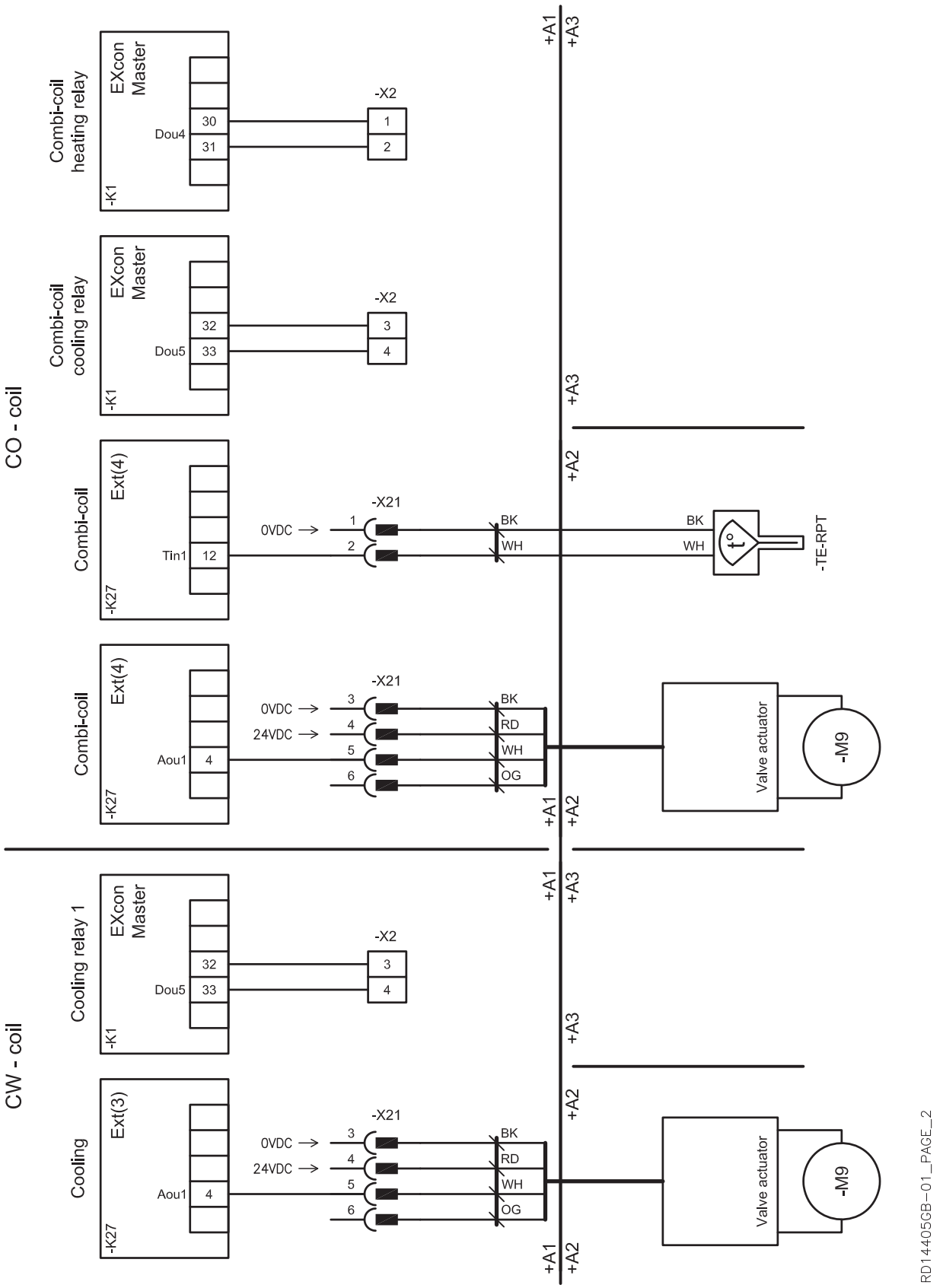
CO - coil
CW - coil
Combi-coil heating relay
Combi-coil cooling relay
Combi-coil
Cooling relay 1
Cooling
EXcon Master
Ext(4)
Ext(3)
-K1
-K27
Dou4
Dou5
Tin1
Aou1
30
31
32
33
12
4
-X2
-X21
1
2
3
4
5
6
0VDC
24VDC
BK
WH
RD
OG
-TE-RPT
Valve actuator
-M9
+A1
+A2
+A3
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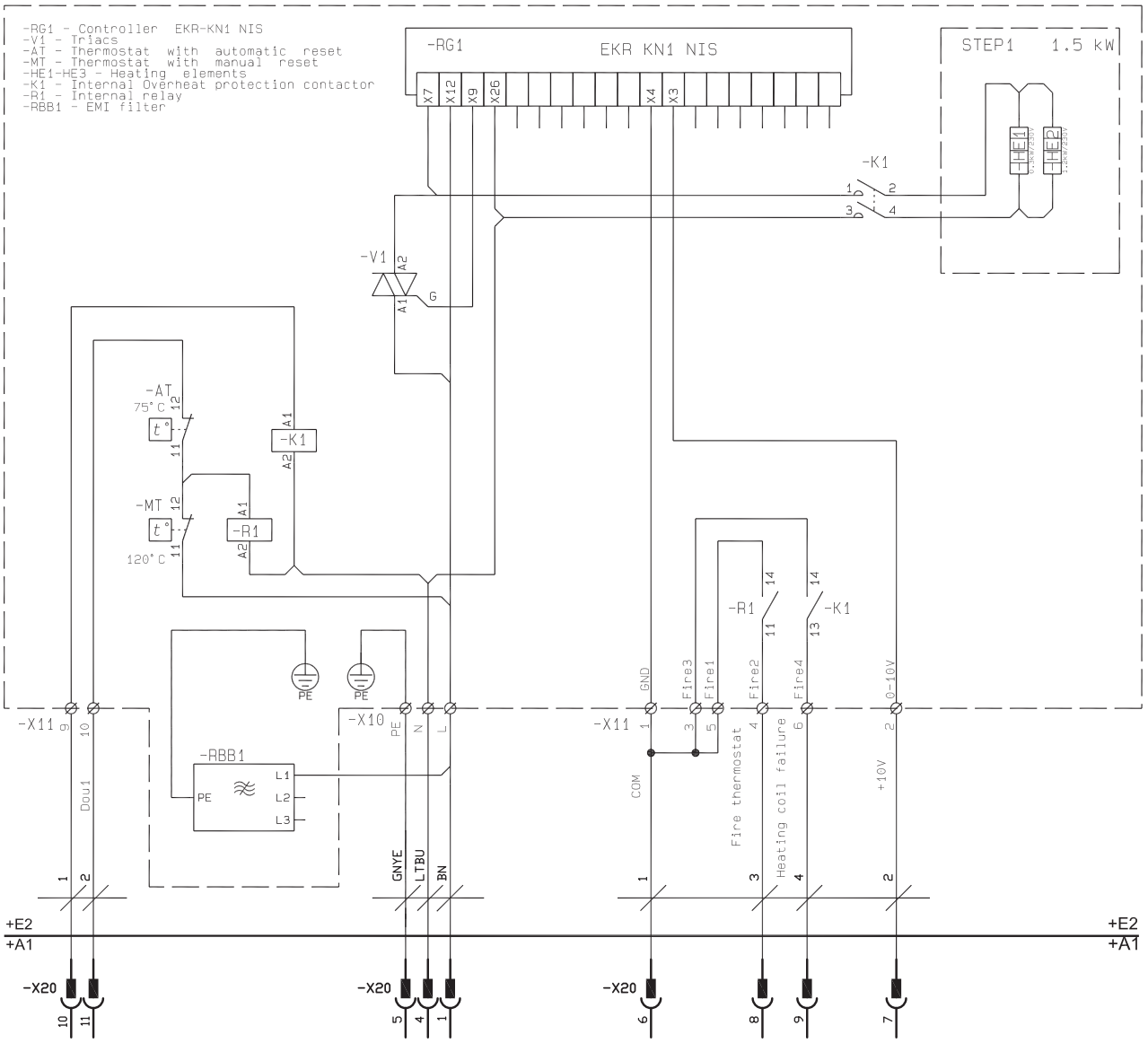
EXHAUSTO

1.4.3 Main current HE coil DEX3060 1.5 kW



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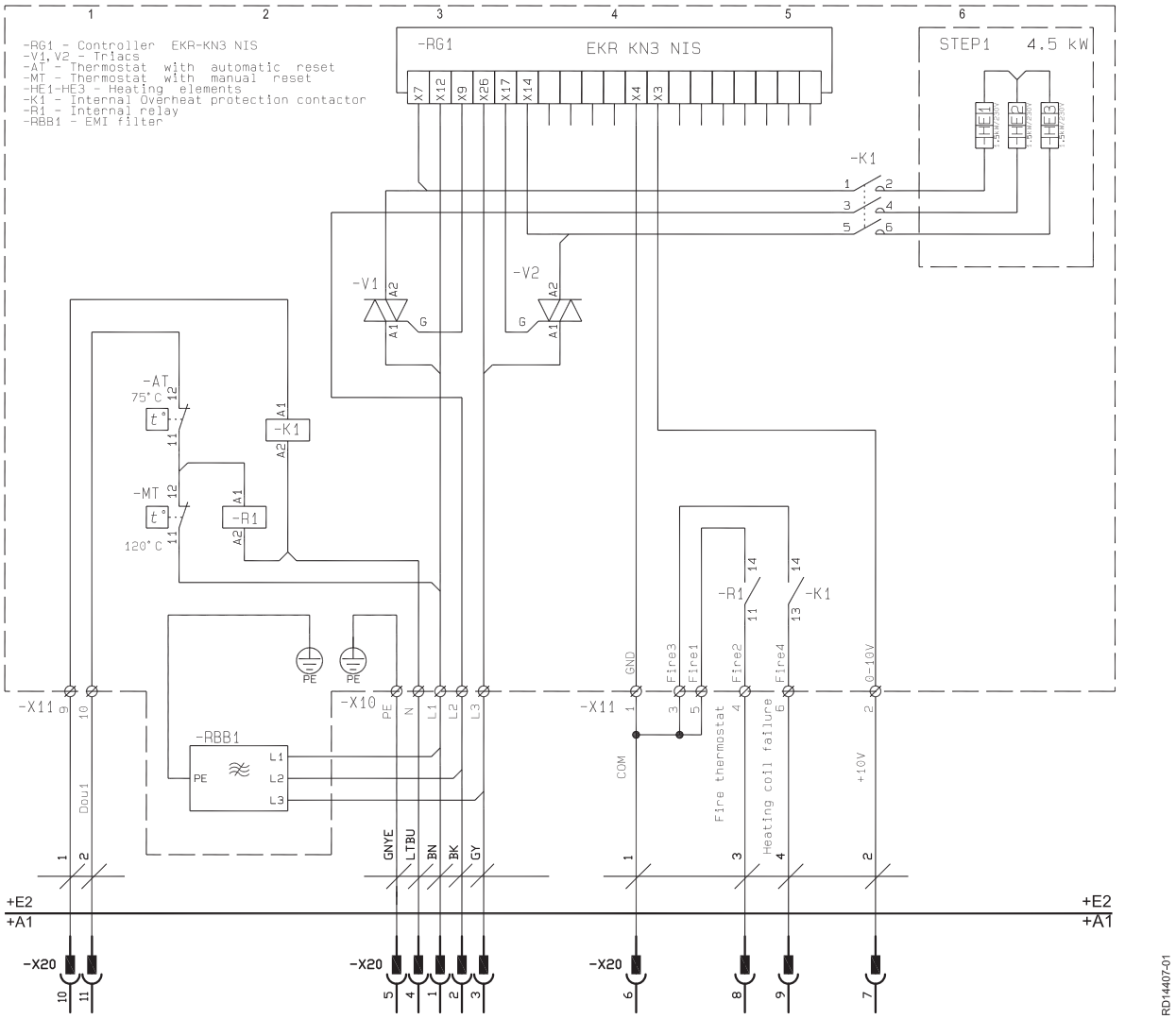
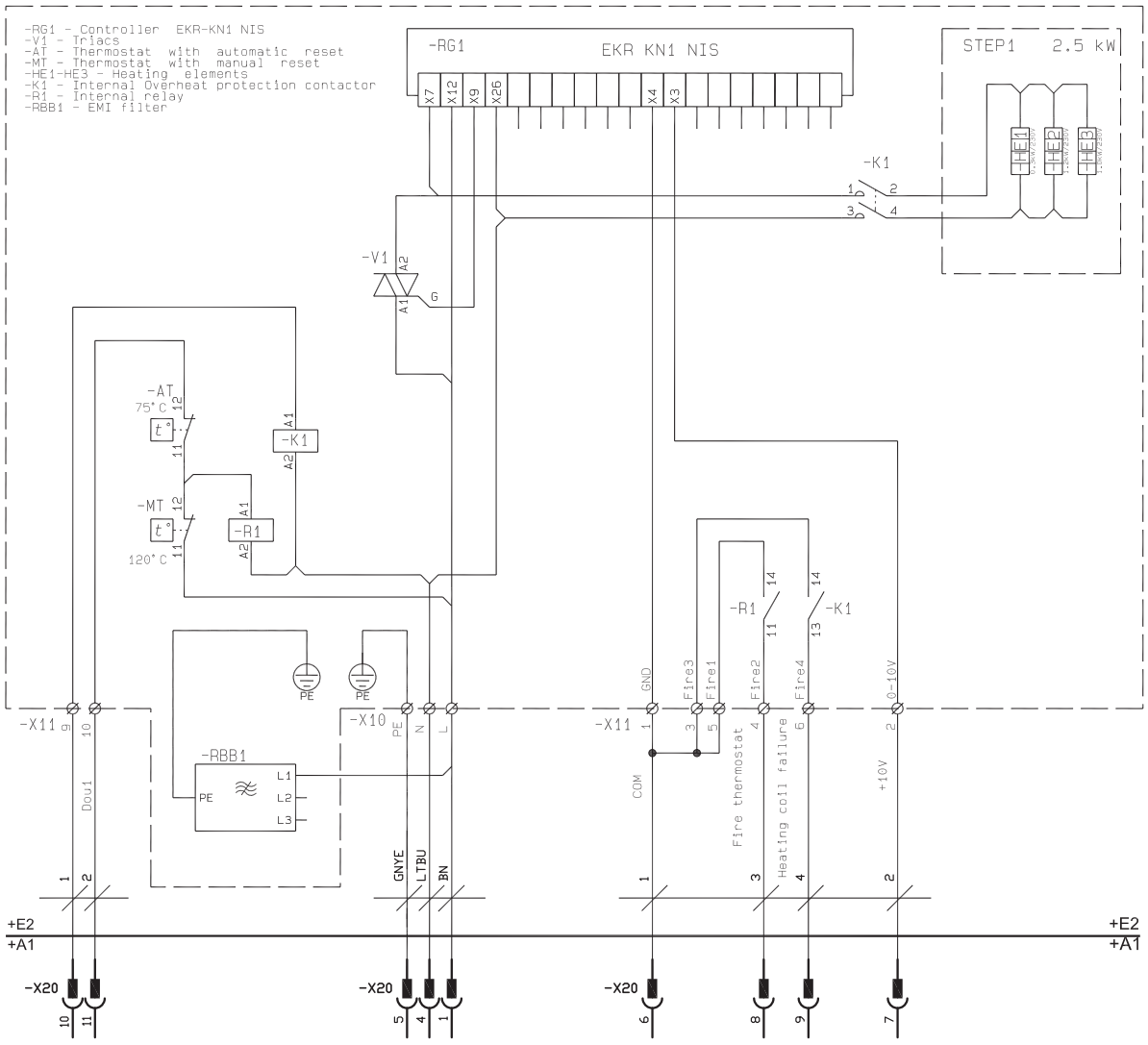
EXHAUSTO

1.4.4 Main current HE coil DEX3060 4.5 kW



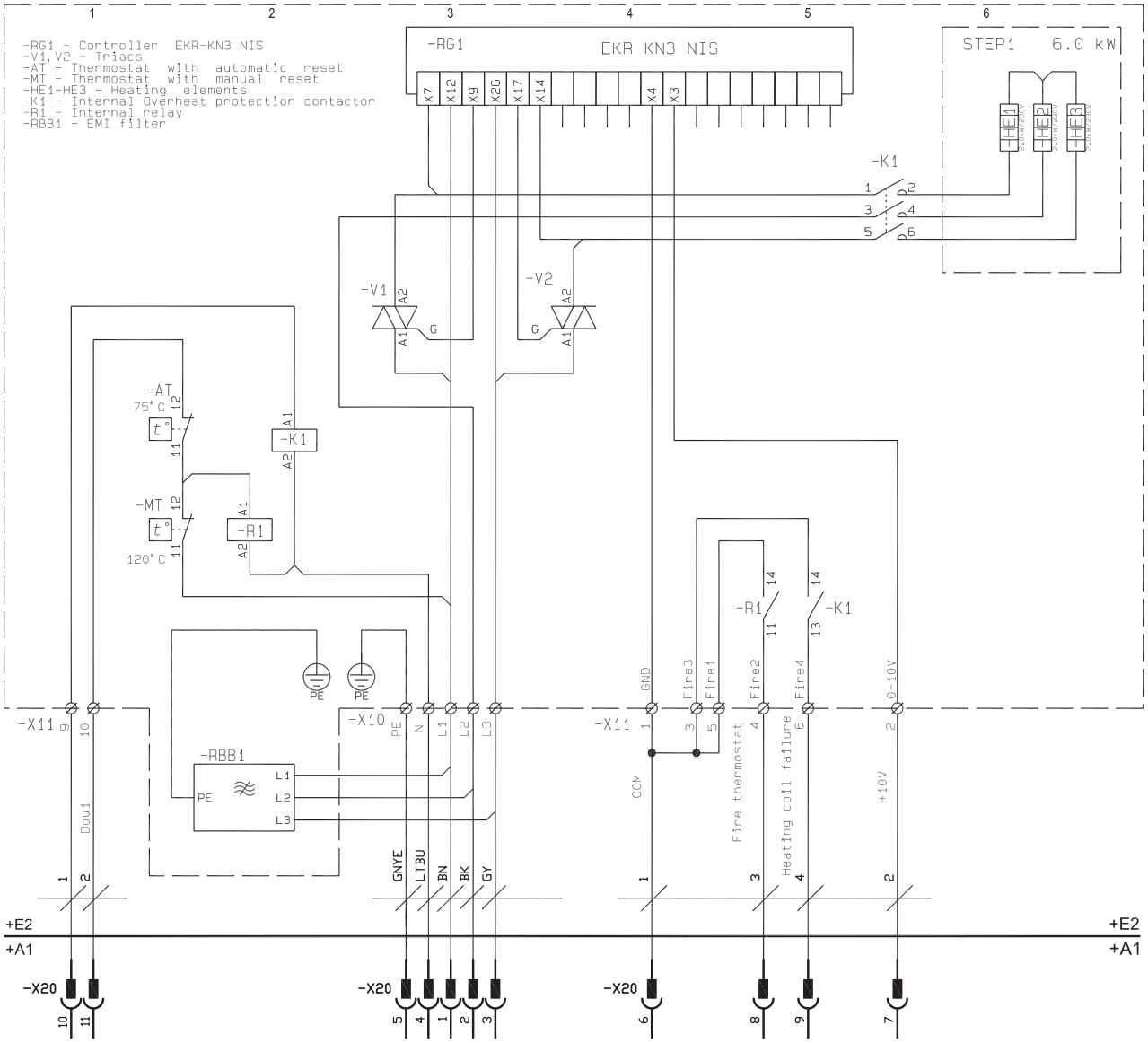
EXHAUSTO

1.4.5 Main current HE coil DEX3090 2.5 kW



EXHAUSTO

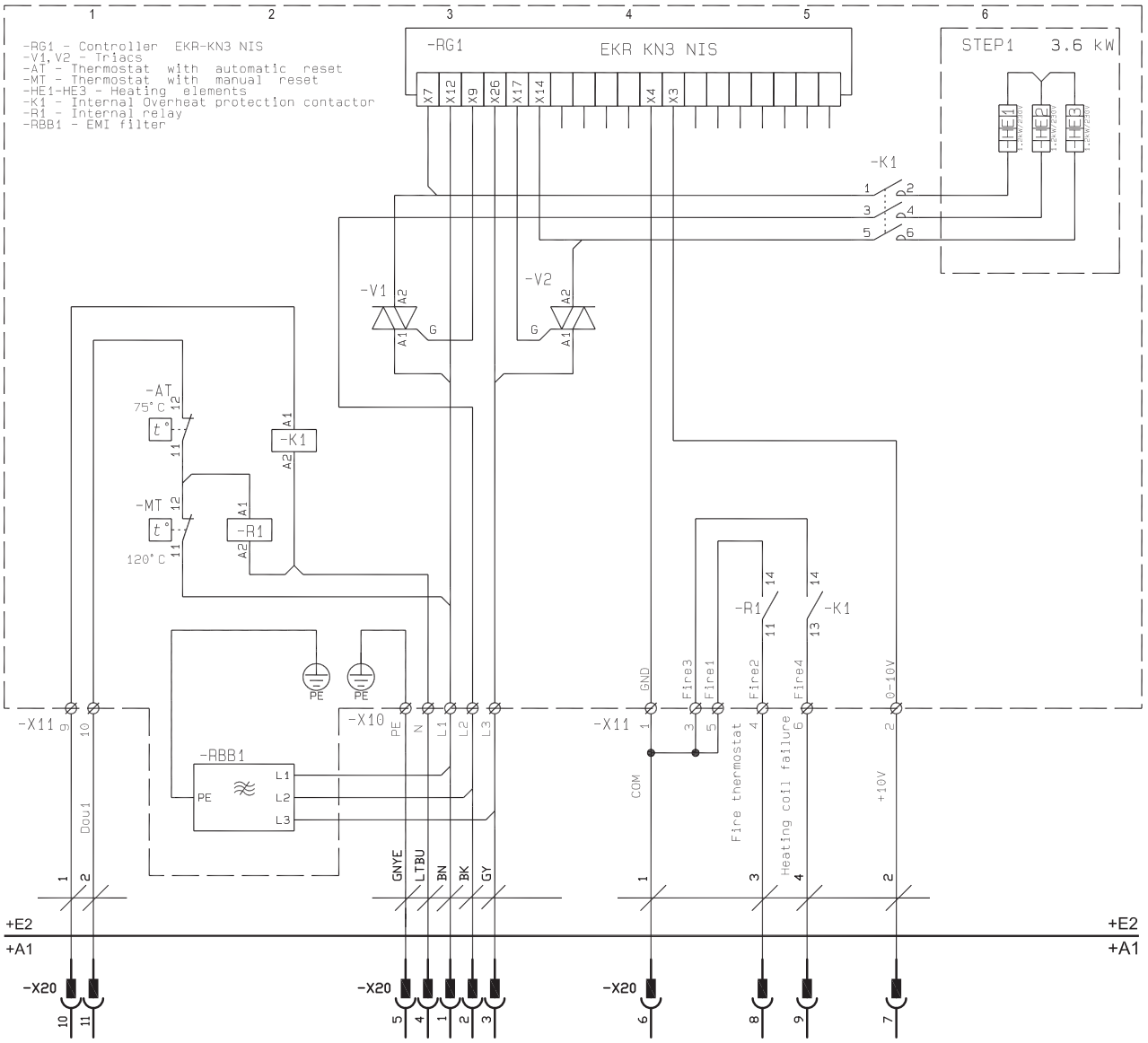
1.4.6 Main current HE coil DEX3090 6.0 kW



RD14409-01

EXHAUSTO

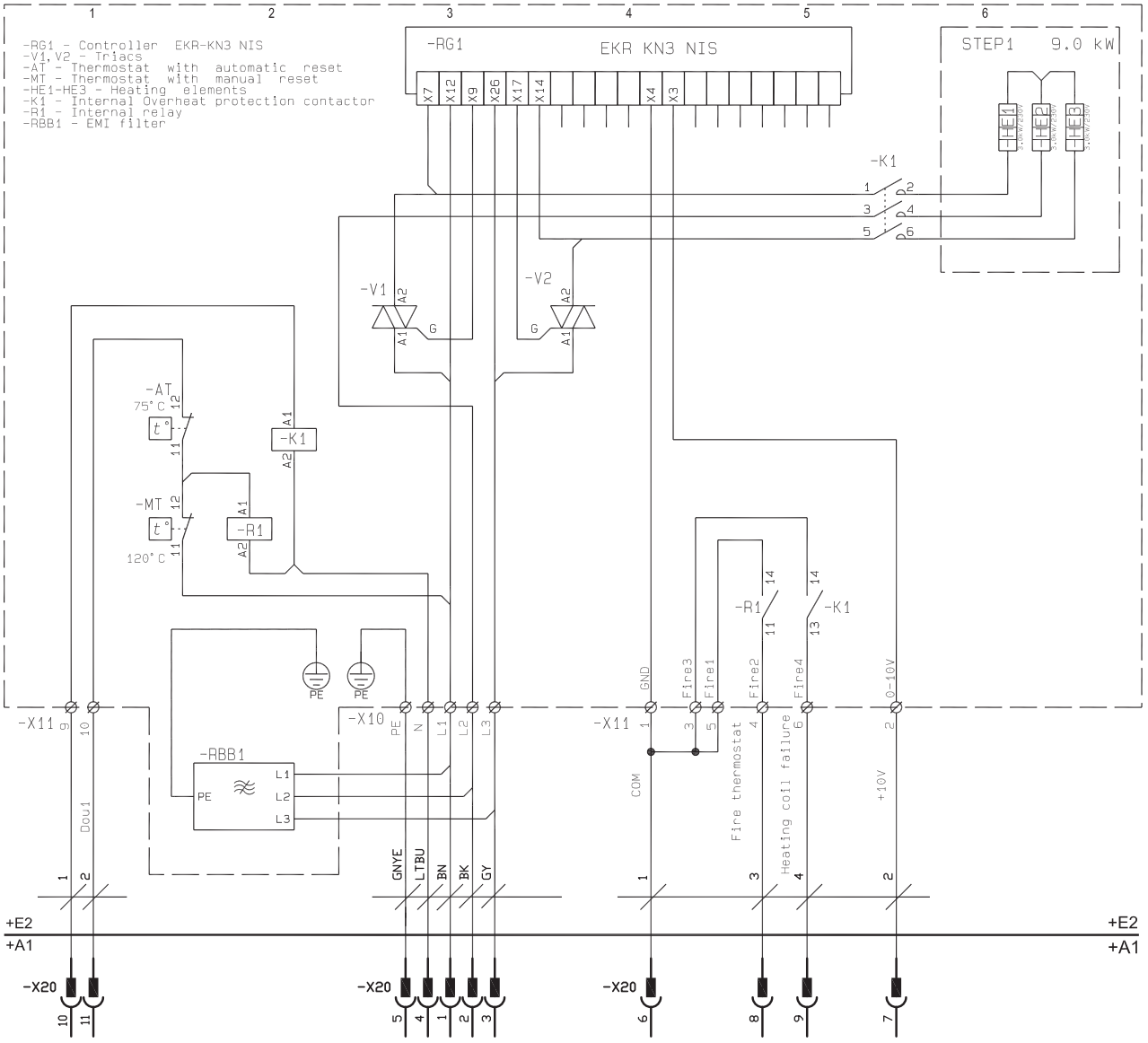
1.4.7 Main power HE coil DEX3120 3.6 kW



RD14410-01

EXHAUSTO

1.4.8 Main current HE coil DEX3120 9.0 kW

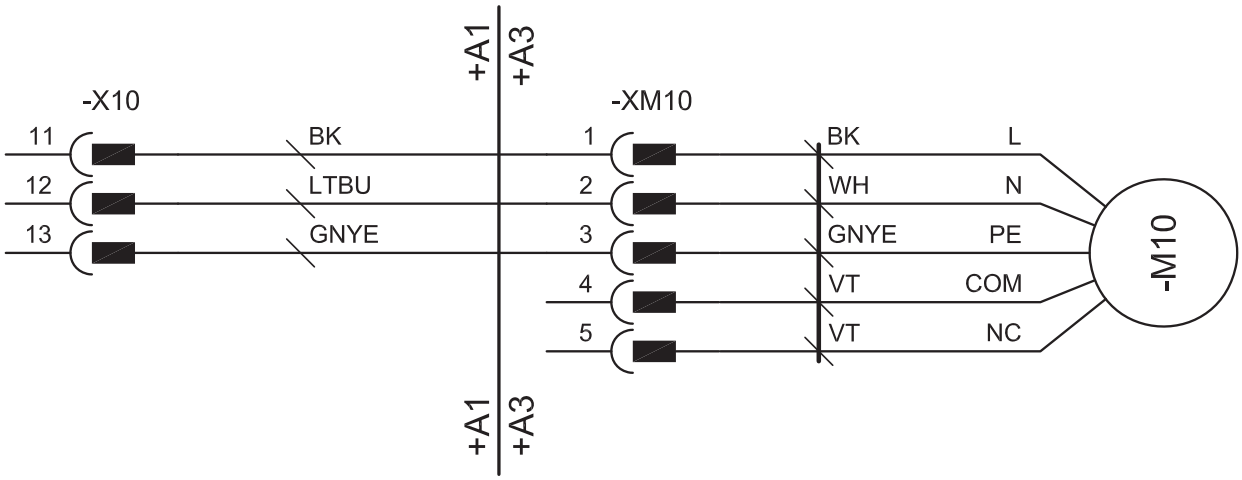


RD14411-01

EXHAUSTO

1.5 Wiring diagrams - Accessories

1.5.1 Main current – Condensate pump



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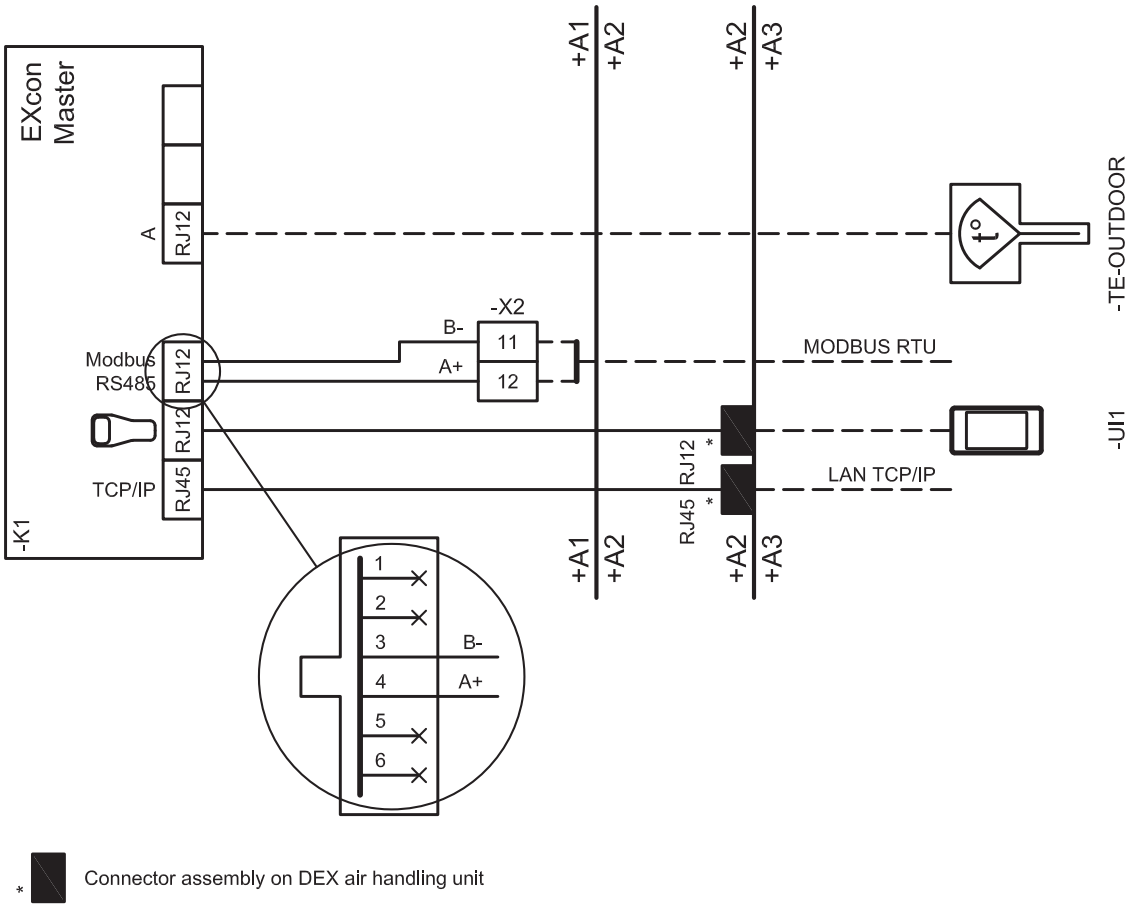
1.5.2 Digital communication



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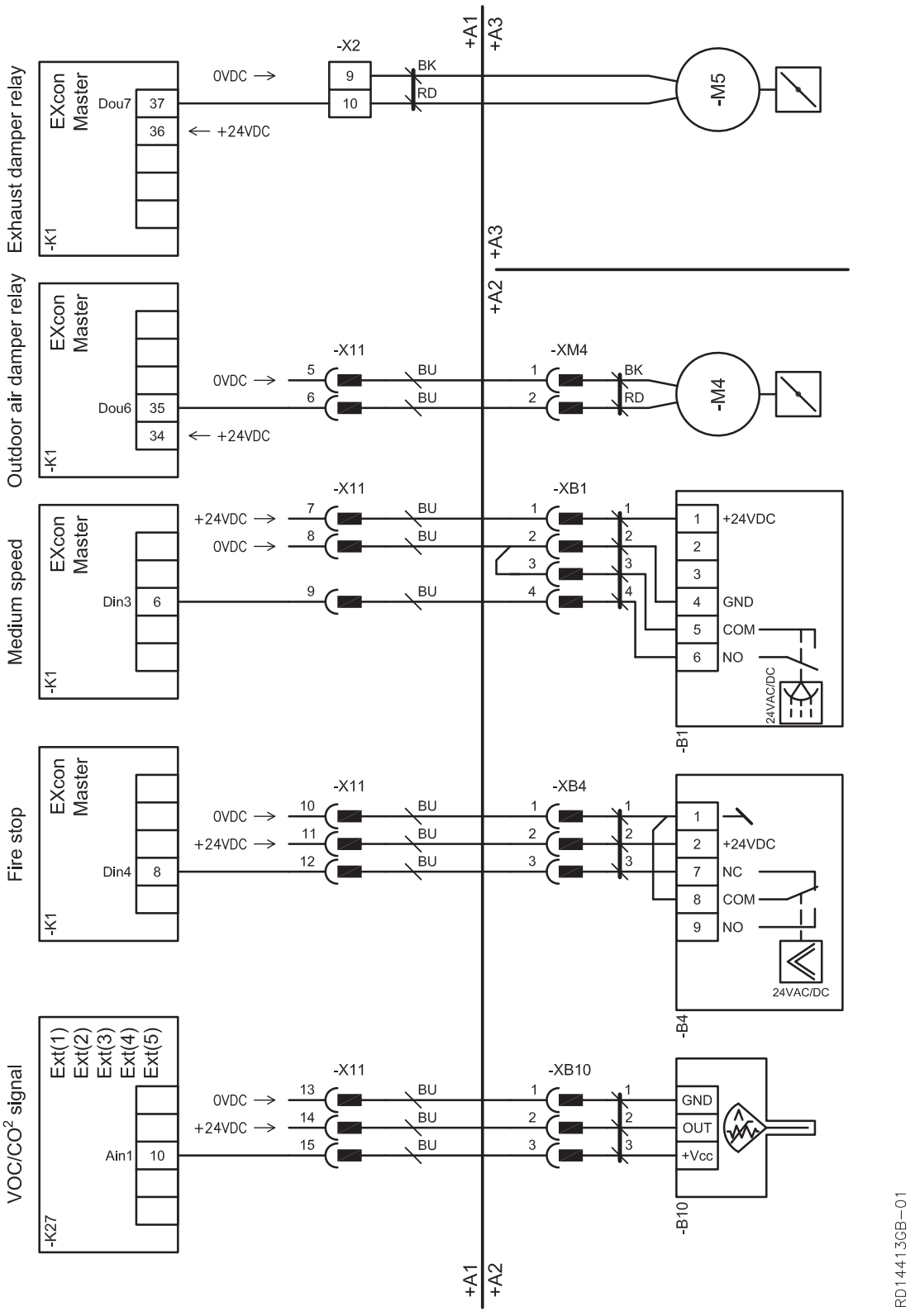
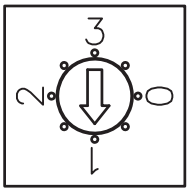
1.5.3 communication



The PIRB sensor has a built-in timer, which can be set as follows:

1.5.4 Setting the PIRB sensor



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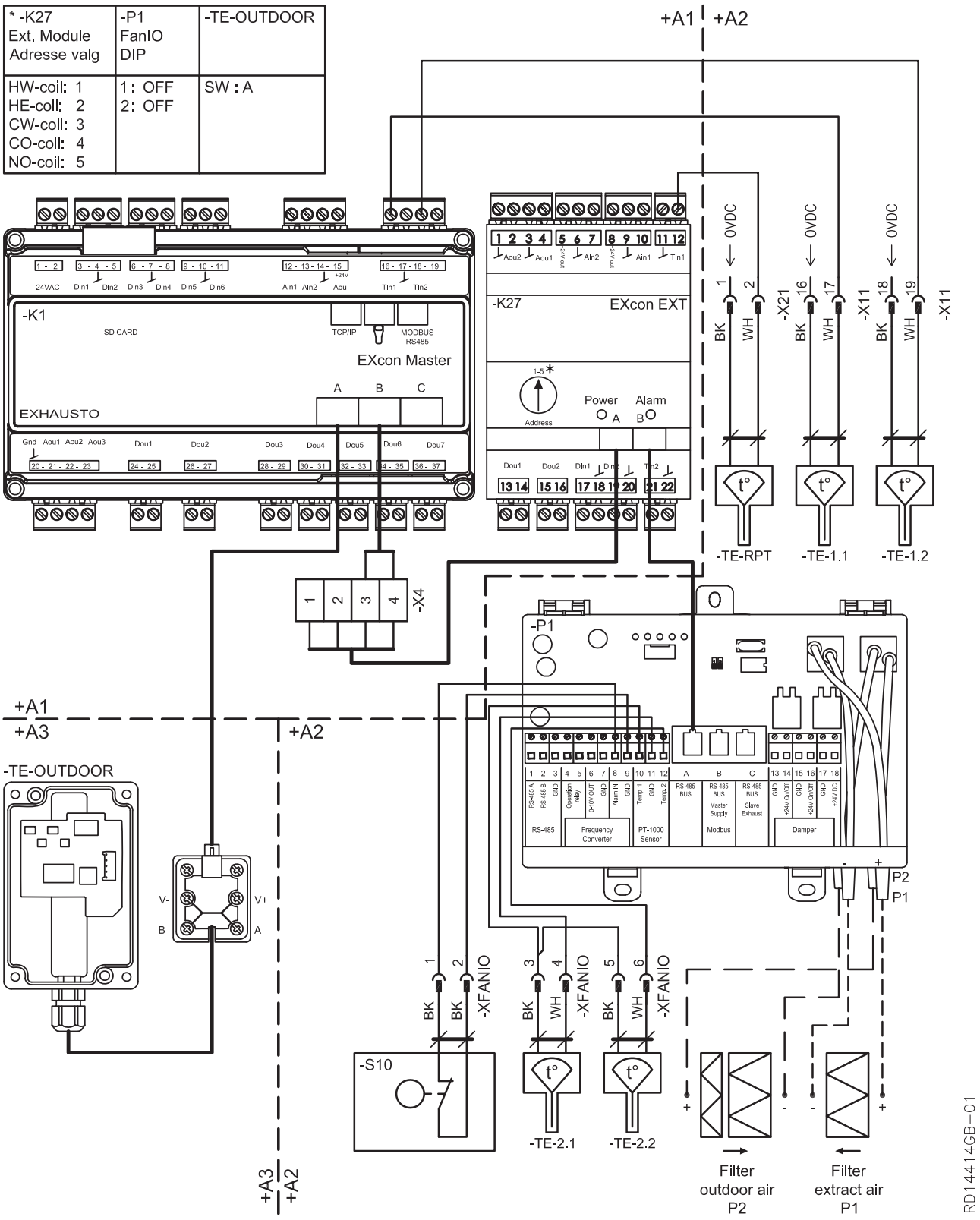
Position	Time interval [min]
0	10
1	30 (factory setting)
2	60
3	120

1.6 Wiring diagrams- Common components

1.6.1 EXcon components



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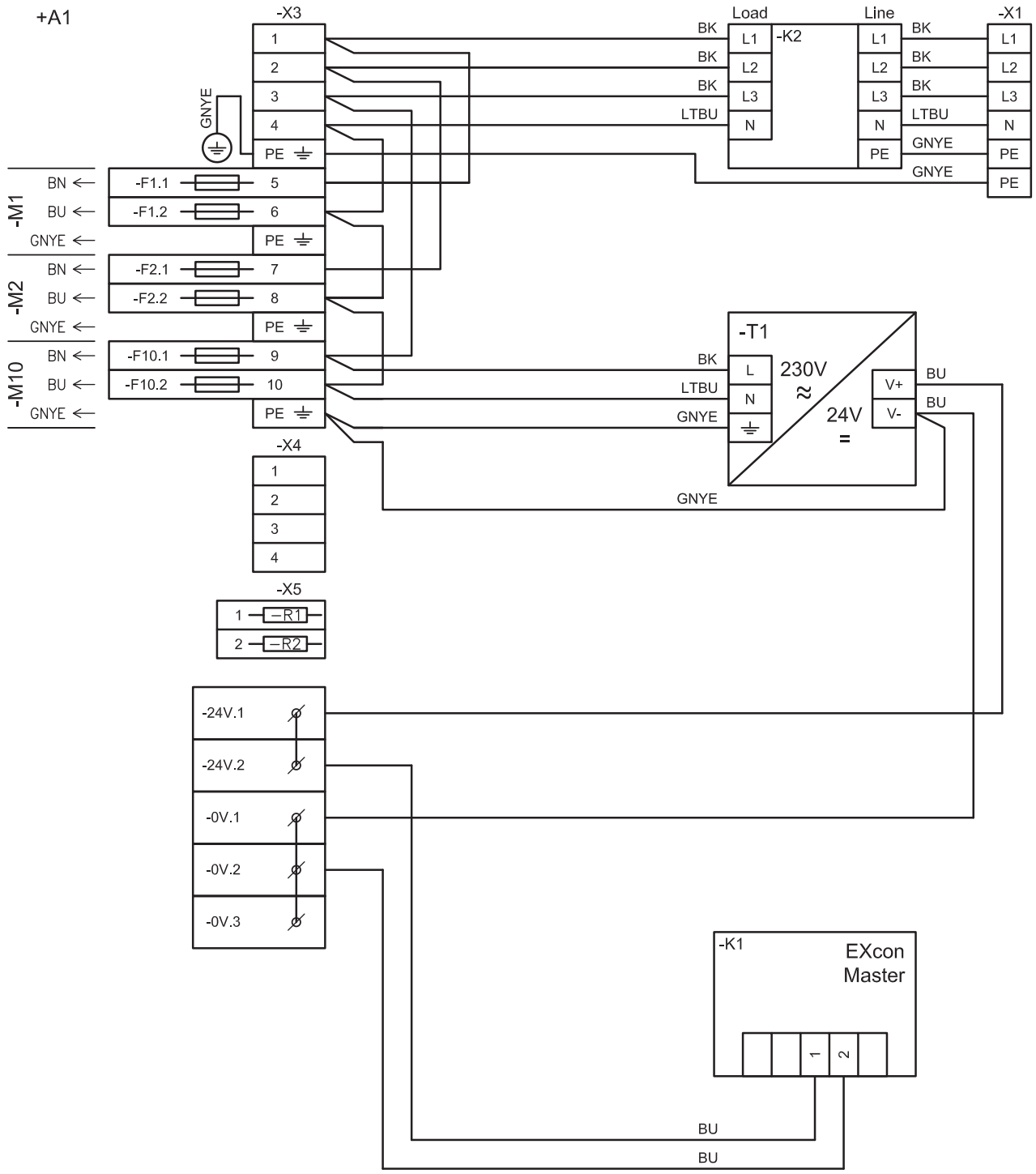
1.6.2 Terminal row -X1 and -X3, supply

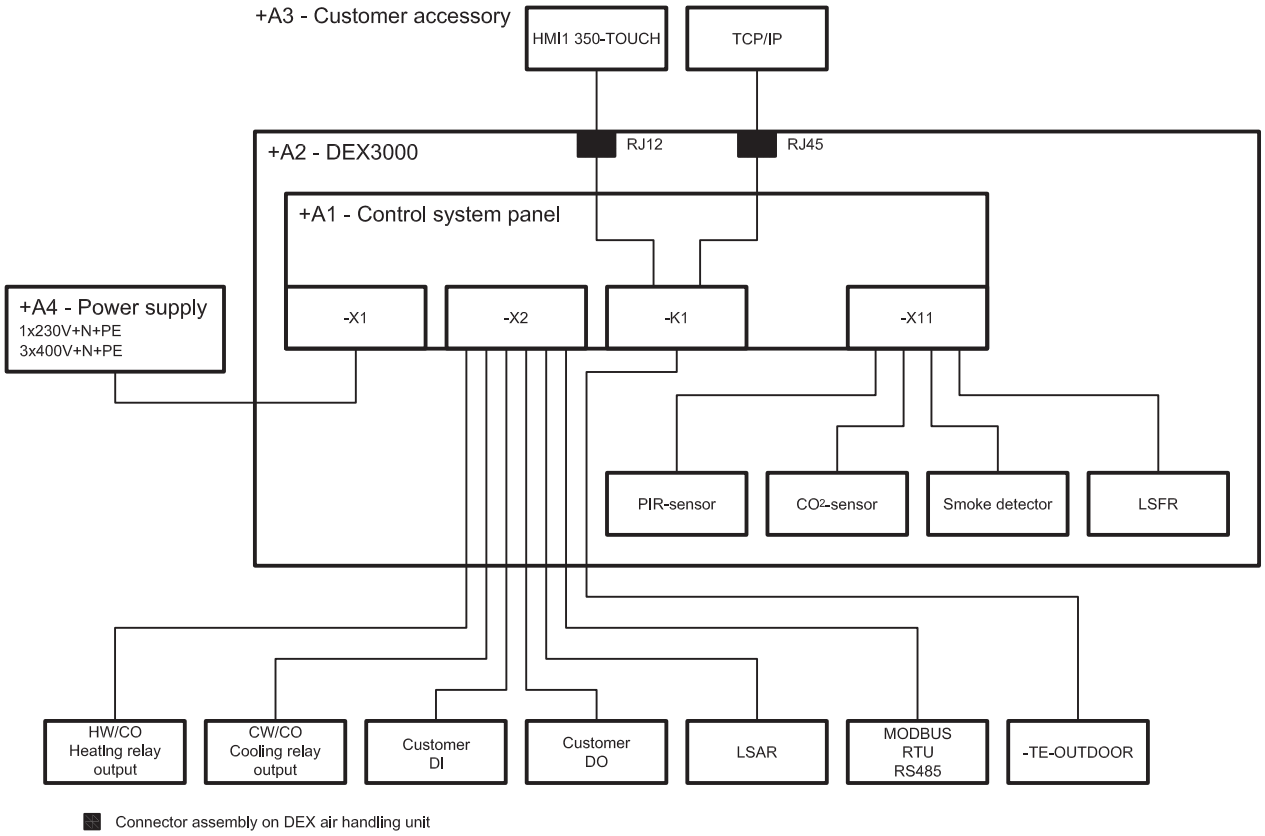


RD144415-01

EXHAUSTO

1.7 Wiring diagrams - Cable layout

The cable plan below shows the accessories that can be connected to the control system panel/EXcon Master.



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1.8 DEX3000 Smartlink Configuration

1.8.1 DEX3000 smartlink configuration of optional I/O

To configure optional I/Os, two available I/Os are provided to the customer:

- One digital input (customer DI)
- One digital output (customer DO)

The factory default setting for functions is:

Digital input (DI)	Digital output (potential-free relay) (DO)
Fire alarm (setpoint)	A alarm

See wiring diagram in section 1.2.2 Control current.

By following the link below to Exhausto's website, access is granted to configure the two I/Os:

https://www.exhausto.dk/produkter/Decentralisered/DEX3000

Customer DI	Customer DO
AHU STOP	OPERATION SIGNAL
LOW SPEED	B ALARM
MEDIUM SPEED	FIRE ALARM
HIGH SPEED	ALARM RESET
FROST ALARM	SUMMER OPERATION
OPERATION FROM BMS	SUMMER NIGHT COOLING
EXTERNAL START	
EXTERNAL RESET ALARMS	

1.8.2 DEX3000 Smartlink configuration via default or alternative IP address

If you want to use other functions, proceed as follows.

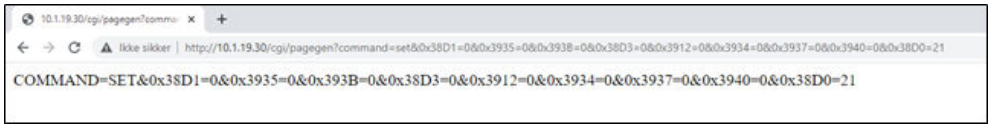
Default IP address

1. EXcon must be set to IP address 192,168.1.1 (default factory).
2. Check that there is a connection to the web server by opening it in a browser.
   - You only need to check that EXcon web servers open and you do not need to log in, as this is not relevant for Smart Link configuration. (If it is not possible to access the web server via IP address 192.168.1.1, e.g. due to setup in the PC, you can manually change the IP address in the opened link. See "Configuration via alternative IP address.)
3. Now press the link next to the function in the table that you want to use or the digital input and output and DEX3000 will then be automatically configured without having to change settings in the web server.
4. When the EXcon web server has received and made the change, a new window will open in the default browser.

Alternative IP address

If it is not possible via the default IP address 192.168.1.1, it is still possible to use Smart Link configuration by changing the IP address in the URL manually.
To do so, proceed as follows:

1. Press the link to the desired function.
2. As IP address 192,168.1.1 is not associated with an EXcon controller, the following window opens in the browser:



3. The default IP address 192,168.1.1 is located first in the configuration link.

- As an example, here it has been changed to 10.1.19.30

4. Now press ENTER and the link will configure the EXcon controller associated with the new IP address:

Digital inputs (DI)

Press the link next to the function you want to connect to the digital input (DI)

Link to option for digital input (DI)	Description
AHU STOP	Open input stops the unit immediately. Functions as an emergency stop! (NC function**) The unit stops with B alarm 4: **External stop activated**
LOW SPEED	Activated input overrides the unit to settings for Low Speed (NO function*)
MEDIUM SPEED	Activated input overrides the unit to Medium Speed settings (NO function*)
HIGH SPEED	Activated input overrides the unit to High Speed settings (NO function*)
FROST ALARM	Open input stops the unit with A alarm 180: **Frost alarm outdoor air.** (NC function**) NB! Works only with water heating coil or combi-coil.
OPERATION FROM BMS	Activated input enables control of operating mode via BMS ***, (NO function*)
EXTERNAL START	Open input blocks the start of the unit (NC function**) The input can be inverted by selecting the External rotary switch under the Installer tab.
EXTERNAL RESET OF ALARMS	Activated input resets alarms in EXcon (NO function*)
FIRE ALARM (SETPOINT) *default setting*	Open input activates fire alarm and operation in accordance with settings under Installer Fire (NC function**). Tripping device A alarm 1: **Fire alarm**

** NO function: When a signal is received at the input = 1, the function is activated.*
*** NC function: If the signal is removed from the input = 0, the function is activated.*

**** BMS state: Enables, via Modbus Holding Register or BACnet Analog Value, to switch between 5 predefined modes:*
• Modbus Holding Register: • BACnet Analogue Value: 244

- *11 BMS stop*
- 105 BMS low speed/setpoint
- *414 BMS medium speed/setpoint*
- *210 BMS high speed/setpoint*
- *211 BMS summer night cooling*
- *220 BMS night heating (Recirculation)*

Digital output (DO)

Press the link next to the function that you want to assign to the digital output (DO).

Link to option for digital output (DO)	**Description**
OPERATION SIGNAL	Relay is activated when the system is in operation.
B ALARM	Relay is activated when a B alarm is active.
FIRE ALARM	Relay is activated when internal fire alarm is triggered. A alarm 3: **Internal fire alarm**
ALARM RESET	Relay is activated for 10 sec. if alarms are reset via WEB, HMI or BMS.
SUMMER OPERATION	If “Summer/Winter” changeover is configured, the relay will be activated during summer operation
SUMMER NIGHT COOLING	Relay is activated when summer night cooling is starting
A ALARM *default setting*	Relay is activated when an A alarm is active.

2. Installing the DEX unit

2.1 Scope of installation

2.1.1 Connections in the control system panel

See following table for possible connection of accessories to the terminal block/EXcon Master in the control system panel.

Possible connections	See section...	Modbus	Terminal strip/plug
Supply voltage	2.2	-	-X1
Closing damper for vertical exhaust in duct LSAR	*	No	-X2
Outdoor air closing damper LSFR	*	No	-X11/-XM4
CO_2 sensor	*	No	--X11/XB10
PIR sensor	*	No	-X11/XB1
Smoke detector, outdoor air	*	No	-X11/-XB4
HMI1-350-TOUCH	*	Yes	RJ12 connectors on cabinet**
Modbus RTU	*	Yes	-X2
Ethernet (TCP/IP) LAN	*	No	RJ45 connectors on cabinet**
External outdoor air temperature sensor	*	Yes	-K1, port A

* 1.2 Wiring diagrams, 1.7 Cable plan or in the instructions for the component in question.

**The RJ12 and RJ45 ports are located on the cabinet, for easy connection of HMI and LAN connection.

2.2 Dimensioning and installation

- **The supply cable must be dimensioned and installed in accordance with applicable regulations and legislation.**
- **The earth terminal (PE) must always be connected.**

Diagram

The supply voltage is connected to the supply terminals (-X1) according to the diagram in section 1.

2.2.1 Installation requirements and recommendations

Isolation switch and control fuse

An isolation switch and control fuses have been integrated in the DEX unit.

The installer must install an isolation switch (-Q0) and an fuse (-F0) in accordance with locally applicable laws and regulations.

Fuse

The fuse must be suitable for:

- Short-circuit protection of the DEX unit
- Short-circuit protection of supply cable
- Overload protection of supply cable

Maximum fuse rating

DEX size	With electric heating coil HE1	With electric heating coil HE2	Without electric heating coil
3060	C-16A	C-16A	C-10A
3090	C-16A	C-16A	C-10A
3120	C-16A	C-20A	C-10A

For a DEX unit with short-circuit protection, the fuse rating must not be greater rating than stated in the table above.

NB:

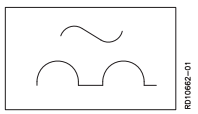
See table **"Outputs for electric heating coils in DEX3000" in** section 2.2.2.

RCCB

- **The installation of the unit must be carried out in such a way that people are protected against indirect contact with live parts.**

If circuit breakers are fitted in the installation, they must be of a type that meets the following requirements:

- **PFI type A breaker that breaks the circuit when a vagrant current with DC content (pulsating DC) in accordance with EN 61008 is registered.**
- **The circuit breakers must be marked with the following symbol:**



- **Disconnection time may be max. 0.3 s.**
- **Leakage current may be max. 300 mA.**

Current leakage

A leakage current of up to 10mA may occur in the DEX unit.

2.2.2 Outputs for electric heating coil HE1 and HE2

DEX size	Electric heating coil HE1, supply air [kW]	Electric heating coil HE2, supply air [kW]
3060	1.5	4.5
3090	2.5	6.0
3120	3.6	9.0

For additional information about the electric heating coil's technical data, see the DEX instructions **Assembly and installation**.

2.2.3 Electrical connection/data

With electric heating coil HE1 (supply air)

DEX size	Supply voltage (nominal)	Max. phase current [A]
3060	1x230V+N+PE ~ 50/60Hz	9.7
3090	1x230V+N+PE ~ 50/60Hz	13.7
3120	3x400V+N+PE ~ 50/60Hz	7.4

With electric heating coil HE2 (supply air)

DEX size	Supply voltage (nominal)	Max. phase current [A]
3060	3x400V+N+PE ~ 50/60Hz	7.8
3090	3x400V+N+PE ~ 50/60Hz	10.0
3120	3x400V+N+PE ~ 50/60Hz	15.2

With HW, CW, CO coil or without integral coil (supply air)

DEX size	Supply voltage (nominal)	Max. phase current [A]
3060	1x230V+N+PE ~ 50/60Hz	3.0
3090	1x230V+N+PE ~ 50/60Hz	3.0
3120	1x230V+N+PE ~ 50/60Hz	4.9

Short-circuit current

Maximum short-circuit current $I_{K,max}$ according to EN60947.2 is 10 kA

Minimum short-circuit current $I_{K,min}$ with control fuse, see table.

DEX size	With electric heating coil HE1 [kA]	With electric heating coil HE2 [kA]	Without electric heating coil [kA]
3060	0.24	0.24	0.15
3090	0.24	0.24	0.15
3120	0.24	0.3	0.15

Terminals in the control system panel on the DEX unit

Connexion terminals for 3x400V+N+PE.

Terminal	Power cable
-X1:L1	Phase conductor 1
-X1:L2	Phase conductor 2
-X1:L3	Phase conductor 3
-X1:N	Neutral conductor
-X1:PE	PE/earth conductor

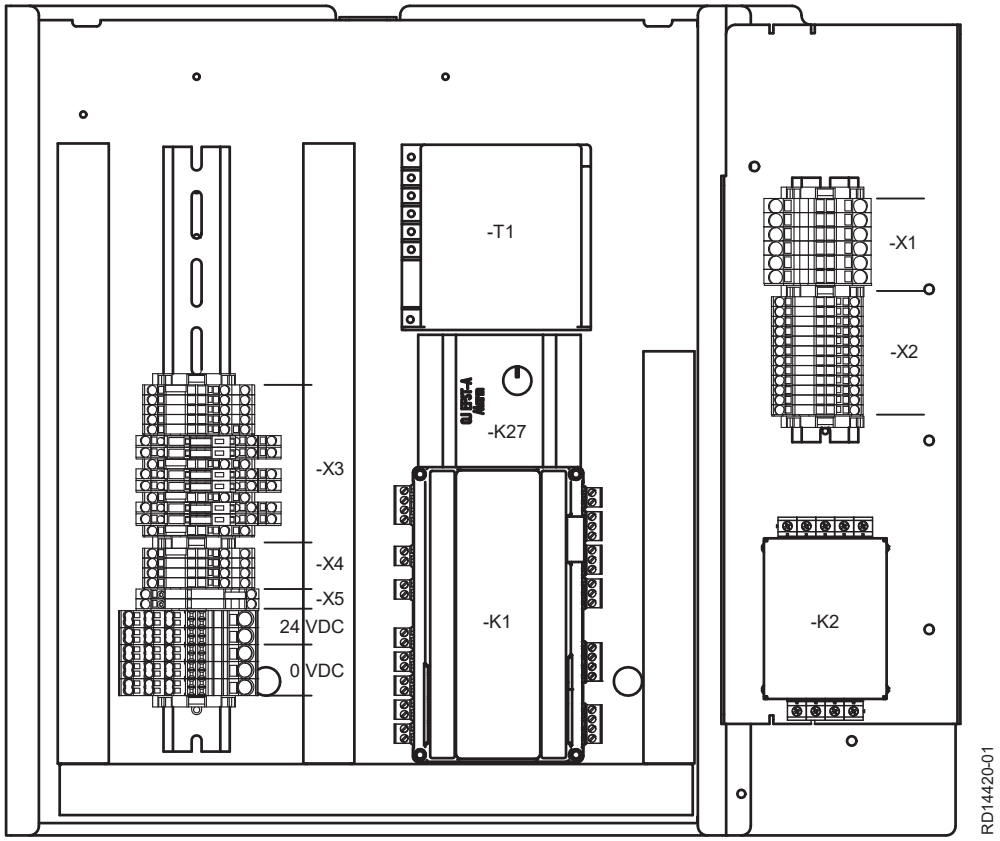
Connexion terminals for 1x230V+N+PE.

Terminal	Power cable
-X1:L1	Phase conductor
-X1:N	Neutral conductor
-X1:PE	PE/earth conductor

2.3 Electrical components

2.3.1 Control system panel

The illustration below shows the electrical components' positioning in the control system panel:



2.3.2 Component list

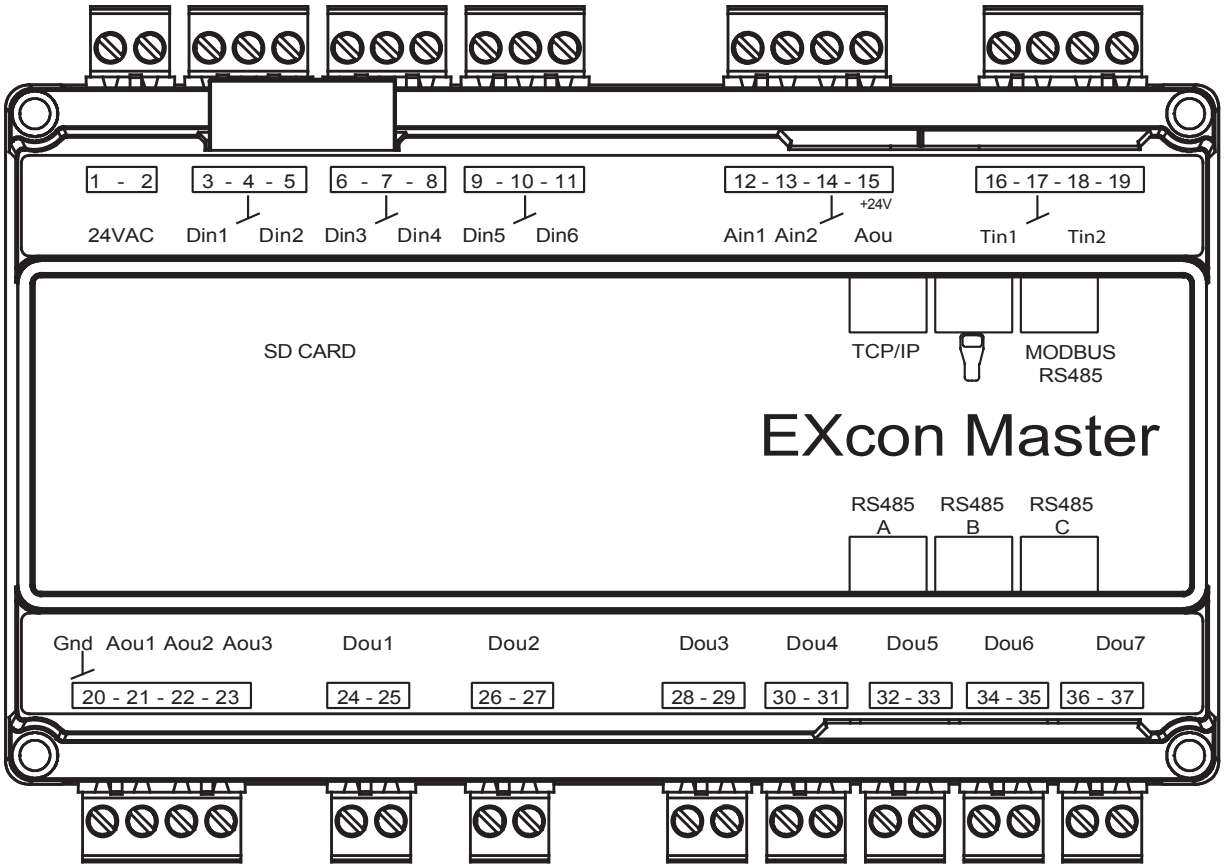
Code	Electrical component	Qty
-F1.X	Fuse -M1 (4A slow) on -X3 terminal block	2
-F2.X	Fuse -M2 (4A slow) on -X3 terminal block	2
-F10.X	Fuse -M10 (1A slow) on -X3 terminal block	2
-K1	EXcon Master	1
-K2	EMC filter	1
-K27	EXT module (HW coil) Rotary selector pos. 1	1
-K27	EXT module (HE coil in supply air) Rotary selector pos. 2	1
-K27	EXT module (CW coil in supply air) Rotary selector pos. 3	1
-K27	EXT module (CO coil) Rotary selector pos. 4	1
-K27	EXT module (no flat supply air) Rotary selector pos. 5	1
-P1	FanIO (filter monitoring)	1
R1:	Resistance in -X5 terminal row 4.7 KΩ	1

Code	Electrical component	Qty
R2:	Resistance in -X5 terminal row 4.7 KΩ	1
-T1	Power supply 230VAC/24VDC	1
-X1	Terminal block 6 mm2, with 2 terminals	1
-X2	Terminal block 2.5 mm2, with 2 terminals	1
-X3	Terminal block 2.5 mm2, with 2 terminals	1
-X4	Terminal block, Modbus internal terminals	1
-X5	Terminal block, Internal terminals for resistors	1
-X24V.1	Terminal block, 24VDC	1
-X24V.2	Terminal block, 24VDC	1
-X0V.1	Terminal block, 0VDC	1
-X0V.2	Terminal block, 0VDC	1
-X0V.3	Terminal block, 0VDC	1

For positioning of electrical components in the DEX unit, see the DEX instructions.

2.3.3 Terminals on EXcon Master (-K1)

The drawing and table below shows which components (standard + accessories) can be connected to the EXcon Master.



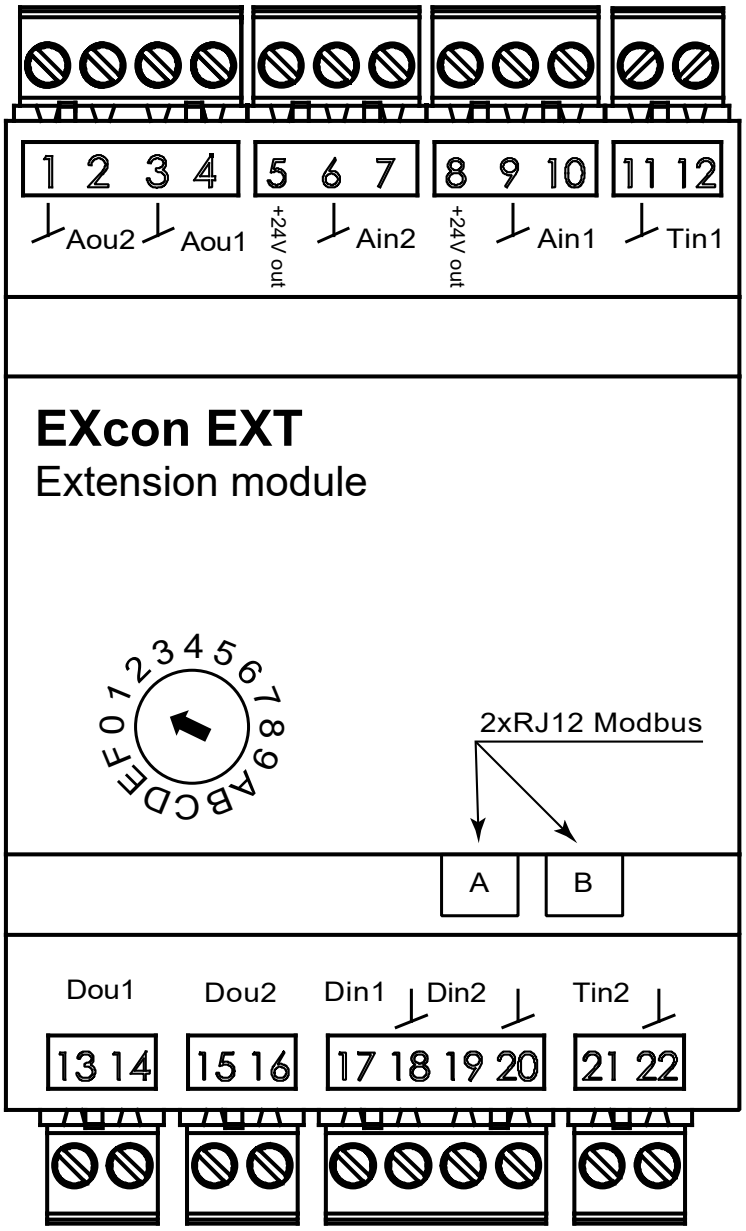
Terminal	Name	Description
1 - 2	24VAC	24 V DC power supply
3	Din1	Exhaust air/extract air fan, alarm (DEX3120)
4	GND	-
5	Din2	Supply air fan - alarm (DEX3120)
6	Din3	Medium speed (PIR sensor)
7	GND	-
8	Din4	Fire stop (smoke detector)
9	Din5	Heating coil 1 error (HE)
10	GND	-
11	Din6	Customer DI (default “Fire alarm setpoint”)*
12	Ain1	Tacho Extract air fan (DEX3060+3090)
13	Ain2	Tacho supply air fan (DEX3060+3090)
14	GND	-
15	Aou +24 V	N/A

Terminal	Name	Description
16	Tin1	Fraluftstemperatur
17	GND	-
18	Tin2	Exhaust air temperature
19	GND	-
20	GND	GND
21	Aou1	Extract air fan 0-10V
22	Aou2	Supply air fan 0-10V
23	Aou3	-
24 - 25	Dou1	Heating relay 21 (Start signal, HE)
26 - 27	Dou2	-
28 - 29	Dou3	Customer DO (default “An Alarm”) *
30 - 31	Dou4	Heating relay 1 (HW)/combi-coil heating relay (CO)
32 - 33	Dou5	Cooling relay 1 (CW)/combi-coil cooling relay (CO)
34 - 35	Dou6	Outdoor air flap relay (LSFR)
36 - 37	Dou7	Exhaust air flap, relay (LSAR)
-	TCP/IP	Network connector RJ45
-	Manual terminal	HMI1-350-TOUCH
-	Modbus RS485	External modbus communication -X2:11 and -X2:12
A	RS485 A	External outdoor air temperature sensor, Modbus
B	RS485 B	Internal modbus connexion to -X3
C	RS485 C	-

*See section 1.8 for a table of configurable Customer DI/DO.

2.3.4 Terminals on EXcon Extension module (-K27)

The drawing and tables below show which components (options) can be connected to the EXcon Extension module.
The arrow on the EXcon Extension module will be set to a position (Pos. 1-5) as a function of the DEX unit's configuration:



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- Pos. 1: for HW configuration -K27
- Pos. 2: for HE configuration -K27
- Pos. 3: for CW configuration -K27
- Pos. 4: for CO configuration -K27
- Pos. 5: for no coil in supply air configuration -K27

Position 1- HW option in supply air

Terminal	Designation	Description
1	GND	-
2	Aou2	-
3	GND	-
4	Aou1	Heating 1 (control of motor valve 0–10V water heating coil)
5	+24 V out	-
6	GND	-
7	Ain2	-
8	+24 V out	-
9	GND	-
10	Ain1	VOC/CO2 signal
11	GND	-
12	Tin1	Water heating coil 1 (return water temperature sensor)
13	Dou1	-
14	Dou1	-
15	Dou2	-
16	Dou2	-
17	Din1	N/A
18	GND	-
19	Din2	N/A
20	GND	-
21	Tin2	-
22	GND	-
A	RJ12	Internal modbus communication from -X3
B	RJ12	Internal modbus communication to FanIO

Position 2 – HE configuration in supply air -K27

Terminal	Designation	Description
1	GND	-
2	Aou2	-
3	GND	-
4	Aou1	Heating 2 (control of electric heating coil 0–10V)
5	+24 V out	-
6	GND	-
7	Ain2	-
8	+24 V out	-
9	GND	-
10	Ain1	VOC/CO2 signal
11	GND	-
12	Tin1	N/A
13	Dou1	Heating relay 21 (start electric heating coil)
14	Dou1	Heating relay 21 (start electric heating coil)
15	Dou2	-
16	Dou2	-
17	Din1	Electric heating battery 1 and 2, airflow OK
18	GND	-
19	Din2	External fire thermostat (stop)
20	GND	-
21	Tin2	-
22	GND	-
-	RJ12	Internal modbus communication from -X3
-	RJ12	Internal modbus communication to FanIO

Position 3 – CW option in supply air - K27

Terminal	Designation	Description
1	GND	-
2	Aou2	-
3	GND	-
4	Aou1	Cooling (control, motor valve 0–10V water cooling coil)
5	+24 V out	-
6	GND	-
7	Ain2	-
8	+24 V out	-
9	GND	-
10	Ain1	VOC/CO2 signal
11	GND	-
12	Tin1	-
13	Dou1	-
14	Dou1	-
15	Dou2	-
16	Dou2	-
17	Din1	N/A
18	GND	-
19	Din2	N/A
20	GND	-
21	Tin2	-
22	GND	-
A	RJ12	Internal modbus communication from -X3
B	RJ12	Internal modbus communication to FanIO

Position 4 – CO option in supply air - K27

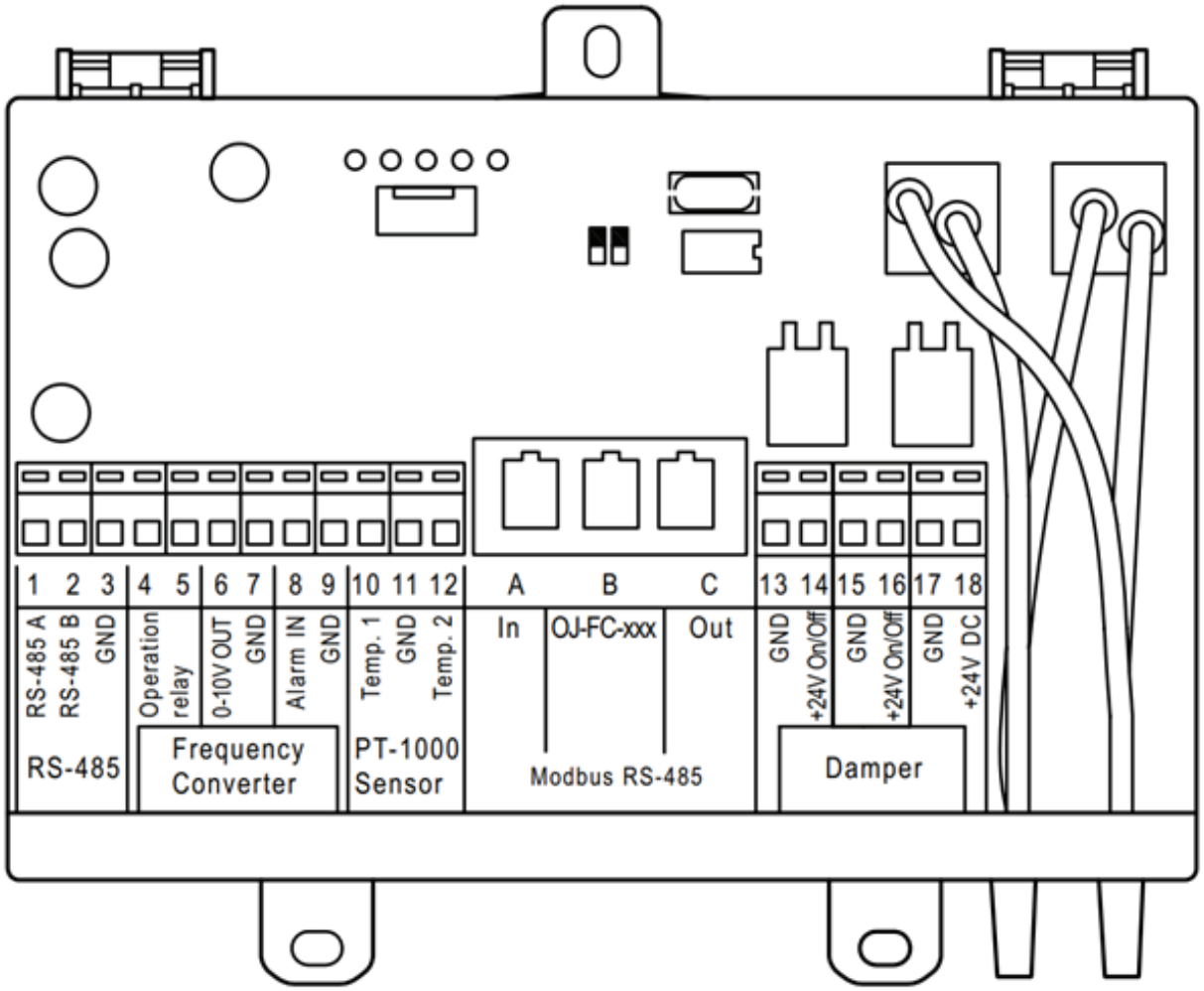
Terminal	Designation	Description
1	GND	-
2	Aou2	-
3	GND	-
4	Aou1	Cooling 2 (combination coil, control of motor valve 0–10V)
5	+24 V out	-
6	GND	-
7	Ain2	-
8	+24 V out	-
9	GND	-
10	Ain1	VOC/CO2 signal
11	GND	-
12	Tin1	Return water temperature sensor
13	Dou1	-
14	Dou1	-
15	Dou2	-
16	Dou2	-
17	Din1	N/A
18	GND	-
19	Din2	N/A
20	GND	-
21	Tin2	-
22	GND	-
A	RJ12	Internal modbus communication from -X3
B	RJ12	Internal modbus communication to FanIO

Position 5 – No coil in supply air -K27

Terminal	Designation	Description
1	GND	-
2	Aou2	-
3	GND	-
4	Aou1	N/A
5	+24 V out	-
6	GND	-
7	Ain2	-
8	+24 V out	-
9	GND	-
10	Ain1	VOC/CO2 signal
11	GND	-
12	Tin1	N/A
13	Dou1	-
14	Dou1	-
15	Dou2	-
16	Dou2	-
17	Din1	N/A
18	GND	-
19	Din2	N/A
20	GND	-
21	Tin2	-
22	GND	-
A	RJ12	Internal modbus communication from -X3
B	RJ12	Internal modbus communication to FanIO

2.3.5 Terminals on FanIO (-P1)

The drawing and diagram below show which components are connected to FanIO.



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Terminal	Designation	Description
1	RS-485 A	-
2	RS-485 B	-
3	GND	-
4	Operation relay	-
5	Operation relay	-
6	0–10V OUT	-
7	GND	-
8	Alarm IN	Start – external signal (Level monitor in the condensation tray under the exchanger)
9	GND	Start – external signal (Level monitor in the condensation tray under the exchanger)

Terminal	Designation	Description
10	Temp. 1	Outdoor air and supply air temperature sensor
11	GND	Outdoor air temperature sensor
12	Temp. 2	Supply air temperature sensor
13	GND	-
14	+24V On/Off	-
15	GND	-
16	+24V On/Off	-
17	GND	-
18	+24V DC	-
A	RS485	Internal modbus communication from EXcon Extension module
B	RS485	-
C	RS485	-

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