

# 8B0C0320HW00.00A-1

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## 1 General information

- Input for connecting an external 24 VDC source (e.g. UPS)
- Connections for supplying external 24 V devices
- Extensive protective measures

### **Danger!**

**ACOPOSmulti auxiliary supply modules (8B0C0320Hx00.00A-1) are not permitted to be used in combination with ACOPOSmulti SafeMOTION inverter modules!**

### **Information:**

**Up to five auxiliary supply modules with any power rating can be connected in parallel.**

#### **Limitation:**

**If 8B0C0320Hx00.00A-1 auxiliary supply modules are connected in parallel, the total output power is not permitted to exceed 80% of the sum of the output powers of the 8B0C0320Hx00.00A-1 modules connected in parallel.**

ACOPOSmulti 8B0C0320Hx00.00A-1 auxiliary supply modules are used for the internal 24 VDC power supply of ACOPOSmulti drive systems.

In addition, the user has two 24 VDC outputs (one of which can be switched) and an input for supplying feeding 24 VDC via an external voltage source (e.g. UPS).

ACOPOSmulti drive systems detect a power failure and are able to initiate immediate shutdown of the connected motors.

The braking energy that occurs during braking is returned to the DC bus and can be used via the auxiliary supply module for the 24 VDC power supply of the ACOPOSmulti drive system. During braking, the ACOPOSmulti drive system as well as connected encoders, sensors, control and HMI systems and safety systems can be supplied with 24 VDC.

There are use cases in which the braking energy occurring is not sufficient for the 24 VDC power supply until the motors come to a standstill or in which the 24 VDC power supply is still required for a short time after the motors have come to a standstill in order to properly shut down connected control and HMI systems or to back up data from the ACOPOSmulti drive system.

In these cases, an external 24 VDC source (e.g. UPS) connected to the input of ACOPOSmulti auxiliary supply module 8B0C0320Hx00.00A-1 can ensure the 24 VDC power supply of the ACOPOSmulti drive system and connected external 24 VDC loads for a sufficiently long period of time. B&R recommends switching off unnecessary 24 VDC loads. This can be done using the switchable 24 VDC output of the auxiliary supply module, for example. <sup>1)</sup>

In addition, ACOPOSmulti auxiliary supply module 8B0C0320Hx00.00A-1 offers the possibility of operating ACOPOSmulti drive systems using only an external 24 VDC supply without having to supply the DC bus. In this way, partial commissioning of the drive system can be easily carried out.

<sup>1)</sup> B&R recommends switching off unnecessary 24 VDC loads. This can be done using the switchable 24 VDC output of the auxiliary supply module, for example.

## 2 Order data

Model number	Short description	Figure
	<b>Wall mounting</b>	
8B0C0320HW00.00A-1	ACOPOSmulti auxiliary supply module, 32 A, HV, wall mounting, 24 V In 1x 30 A, 24 V Out 1x 30 A, 1x 5 A	
	<b>Required accessories</b>	
	<b>Terminal block sets</b>	
8BZ0C032000.00A-1A	Screw clamp set for ACOPOSmulti 8B0C0320Hx00.00A-1 modules: 1x 8TB3104.201M-11, 1x 8TB2104.2010-00, 1x 8TB2106.2010-00	
	<b>Optional accessories</b>	
	<b>Fan modules</b>	
8BXF001.0000-00	ACOPOSmulti fan module, replacement fan for ACOPOSmulti modules (8BxP/8B0C/8BVI/8BVE/8B0K)	
	<b>Terminal blocks</b>	
8TB2104.2010-00	4-pin screw clamp, single row, spacing: 5.08 mm, label 1: numbered serially	
8TB2106.2010-00	6-pin screw clamp, single row, spacing: 5.08 mm, label 1: numbered serially	
8TB2106.2210-00	Push-in terminal block 6-pin, 1-row, spacing: 5.08 mm, label 1: numbered consecutively	
8TB3104.201M-11	Screw clamp 4-pin, single-row, spacing: 7.62 mm, label 1: numbered serially, M keying: 1011	

Table 1: 8B0C0320HW00.00A-1 - Order data

## 3 Technical data

Model number	8B0C0320HW00.00A-1
<b>General information</b>	
Cooling and mounting method	Wall mounting
Certifications	
CE	Yes
KC	Yes
UL	cULus E225616 Power conversion equipment
<b>DC bus connection</b>	
Voltage	
Nominal	750 VDC
Operating range in continuous operation	260 to 800 VDC
Full continuous power	315 to 800 VDC
Continuous power consumption	Max. 880 W
Power dissipation with continuous power <sup>1)</sup>	22 W (0% continuous power) 35 W (50% continuous power) 80 W (100% continuous power)
DC bus capacitance	220 nF
Design	ACOPOSmulti backplane
<b>24 VDC output</b>	
Continuous power <sup>2)</sup>	800 W
Output voltage	
DC bus voltage (U <sub>DC</sub> ): 260 to 315 VDC	25 VDC * (U <sub>DC</sub> / 315)
DC bus voltage (U <sub>DC</sub> ): 315 to 800 VDC	24 VDC ±6%
Continuous current	
Normal mode (via DC bus)	32 ADC
Supply mode (via +24 Vin)	30 ADC
Reduction of continuous power at ambient temperatures starting at 40°C	No reduction
Reduction of continuous power depending on installation elevation	
Starting at 500 m above sea level	80 W per 1000 m
Reduction of continuous power depending on cooling method	No reduction
Startup delay	Max. 1 s
Startup time	Approx. 5 to 20 ms
Residual ripple	Typ. 50 mV <sub>SS</sub>
<b>24 VDC internal system voltage supply</b>	
Output voltage <sup>3)</sup>	25 VDC ±1.6%
Peak current (<4 s)	
DC bus voltage (U <sub>DC</sub> ): 350 to 800 VDC	42 ADC

Table 2: 8B0C0320HW00.00A-1 - Technical data

Model number	8B0C0320HW00.00A-1
Protective measures	
Open circuit protection	Yes
Overload protection	Yes
Short circuit protection	Yes
Feedback protection	Max. 26 VDC (also when switched off)
Overtemperature protection	Yes
Dielectric strength to ground	±50 VDC
Output/Input isolation	SELV/PELV requirements
Design	ACOPOS multi backplane
<b>24 VDC Out</b>	
Output voltage <sup>3)</sup>	
DC bus voltage (U <sub>DC</sub> ): 260 to 315 VDC	25 VDC * (U <sub>DC</sub> / 315)
DC bus voltage (U <sub>DC</sub> ): 315 to 800 VDC	24 VDC ±6%
Protection of 24 VDC Out 1 output	30 A (slow-blow) electronic, automatic reset
Protection of 24 VDC Out 2 output	5 A (slow-blow) electronic, automatic reset
Protective measures	
Open circuit protection	Yes
Overload protection	Yes
Short circuit protection	Yes
Feedback protection	Max. 35 VDC (also when switched off)
Overtemperature protection	Yes
Dielectric strength to ground	±50 VDC
Output/Input isolation	SELV/PELV requirements
Design	
24 VDC, COM	Male connector
Terminal connection cross section of 24 VDC Out 1 output	
Flexible and fine wire lines	
With wire end sleeves	0.25 to 6 mm <sup>2</sup>
Approbation data	
UL/C-UL-US	22 to 10 AWG
CSA	22 to 10 AWG
Terminal connection cross section of 24 VDC Out 2 output	
Flexible and fine wire lines	
With wire end sleeves	0.25 to 2.5 mm <sup>2</sup>
Approbation data	
UL/C-UL-US	22 to 12 AWG
CSA	22 to 12 AWG
<b>24 VDC Out 1 controller input</b>	
Wiring	Sink
Electrical isolation	
Input - 24 VDC	Yes
Modulation compared to ground potential	Max. ±50 V
Input voltage <sup>4)</sup>	
Nominal	24 VDC
Maximum	30 VDC
Switching threshold	
Low (24 VDC Out 1 is switched on)	<5 V
High (24 VDC Out 1 is switched off)	>15 V
Input current at nominal voltage	Approx. 10 mA
Switching delay	
ON (24 VDC Out 1 is switched on)	Max. 25 ms
OFF (24 VDC Out 1 is switched off) <sup>5)</sup>	Max. 0.25 ms
Design	Male connector
Terminal connection cross sections	
Flexible and fine wire lines	
With wire end sleeves	0.25 to 2.5 mm <sup>2</sup>
Approbation data	
UL/C-UL-US	30 to 12 AWG
CSA	22 to 12 AWG
<b>24 VDC In</b>	
Input voltage <sup>6)</sup>	
Minimum	23 VDC
Nominal	24 VDC
Maximum	26 VDC
Voltage drop between input and internal 24 VDC system voltage supply	<0.5 V
Switch-on threshold	+24 VDC internal system power supply <21.5 VDC
Max. continuous current	30 A
Switching delay	
When switching to supply mode	Typ. 5 ms
When starting up via 24 Vin	Typ. 2 s

Table 2: 8B0C0320HW00.00A-1 - Technical data

Model number	8B0C0320HW00.00A-1
Status indicators	24Vi LED ERRi LED
Undervoltage detection	Yes (<20 VDC)
Overvoltage detection	Yes (>26 VDC)
Protective measures	
Open circuit protection	Yes
Overload protection	Yes, ticker operation on overload ( $T_{ON} = 1 \text{ s}$ , $T_{OFF} = 2.4 \text{ s}$ )
Short circuit protection	Yes
Overtemperature protection	Yes
Design	
24 VDC In, COM	Male connector
Terminal connection cross section of input "24 VDC In"	
Flexible and fine wire lines	
With wire end sleeves	0.5 to 6 mm <sup>2</sup>
Approbation data	
UL/C-UL-US	22 to 10 AWG
CSA	22 to 10 AWG
<b>Operating conditions</b>	
Permissible mounting orientations	
Hanging vertically	Yes
Lying horizontally	Yes
Standing horizontally	No
Installation at elevations above sea level	
Nominal	0 to 500 m
Maximum <sup>7)</sup>	4000 m
Pollution degree per EN 61800-5-1	2 (non-conductive pollution)
Overvoltage category per EN 61800-5-1	III
Degree of protection per EN 60529	IP20
<b>Environmental conditions</b>	
Temperature	
Operation	
Nominal	5 to 40°C
Maximum	55°C
Storage	-25 to 55°C
Transport	-25 to 70°C
Relative humidity	
Operation	5 to 85%
Storage	5 to 95%
Transport	Max. 95% at 40°C
<b>Mechanical characteristics</b>	
Dimensions <sup>8)</sup>	
Width	53 mm
Height	317 mm
Depth	
Wall mounting	263 mm
Weight	Approx. 3.3 kg
Module width	1

Table 2: 8B0C0320HW00.00A-1 - Technical data

- 1) Continuous power on the 24 VDC output
- 2) Valid under the following conditions: 750 VDC DC bus voltage, 55°C ambient temperature, installation elevation <500 m above sea level, no derating due to cooling type.
- 3) The output voltage is limited to max. 60 VDC in the event of error.
- 4) The +24 Vin input of the module is non-destructive in a voltage range from -32 VDC to +32 VDC.
- 5) When switching off, there is no active discharge of the output and the loads connected to it.
- 6) The +24 Vin input of the module is non-destructive in a voltage range from -32 VDC to +32 VDC.  
If a voltage outside this voltage range is applied to input +24 V In, this voltage may be switched through directly to the 24 VDC outputs of the module without voltage limitation.
- 7) Continuous operation at an installation elevation of 500 m to 4,000 m above sea level is possible taking the specified reduction of continuous power into account. Requirements that go beyond this must be arranged with B&R.
- 8) These dimensions refer to the actual device dimensions including the respective mounting plate. Make sure to leave additional space above and below the devices for mounting, connections and air circulation.

## 4 Status indicators

Status indicators are located on the black cover of each module.

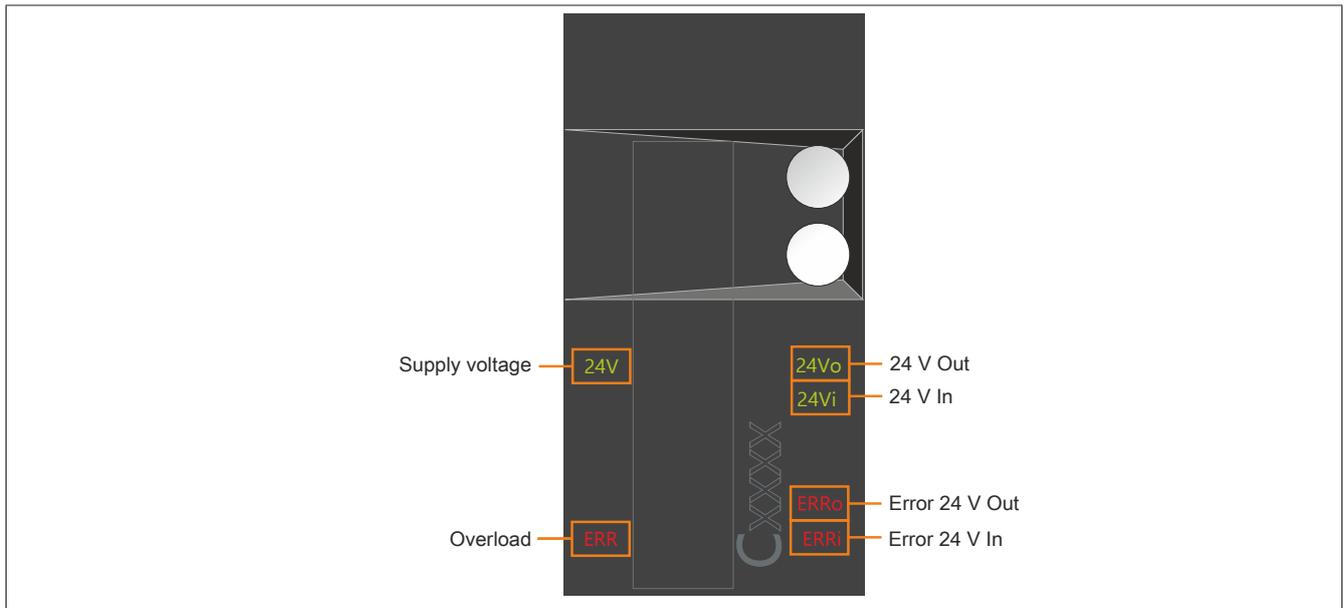


Figure 1: Auxiliary supply modules with 24 V Out and 24 V In (8B0C0320Hx00.00A-1) - Status indicator groups

### 4.1 Auxiliary supply modules with 24 V Out and 24 V In - LED status indicators

Status indicator group	Label	Color	Function	Description
Power supply	24 V	Green	24 V OK	The 24 VDC internal system power supply is within the permissible tolerance.
Overload	ERR	Red	Overload	The module is not supplied via the DC bus. <sup>1)</sup> The 24 VDC internal system power supply or 42 VDC power supply is outside of the permissible tolerance (overload, overtemperature, short circuit, etc.).
24 V Out	24Vo	Green	24 V Out OK	One of the switchable 24 VDC outputs is enabled; the output voltage overshoots the minimum permissible value. The 24 VDC internal system power supply overshoots the minimum permissible value.
24 V In	24Vi	Green	24 V In OK	The 24 VDC external system power supply is within the permissible tolerance.
Error 24 V Out	ERRo	Red	24 V Out error	The 24 VDC internal system power supply undershoots the minimum permissible value (overload, overtemperature, short circuit, etc.). At least one of the switchable outputs is enabled, <b>and</b> one or more switchable outputs has tripped the electronic fuse.
Error 24 V In	ERRi	Red	24 V In error	The 24 VDC external system power supply is outside the permissible tolerance. The 24 VDC external system power supply is within the permissible tolerance, <b>and</b> the electronic fuse has been tripped (overload, short circuit, etc.) The 24 VDC external system power supply is within the permissible tolerance, <b>and</b> temperature monitoring has been triggered.

Table 3: 8B0C auxiliary supply modules with 24 V Out and 24 V In - LED status indicators

1) The module is enabled via input CR-OK, no electrical contact to the backplane module - check the lower mounting screw.

## 5 Dimension diagram and installation dimensions

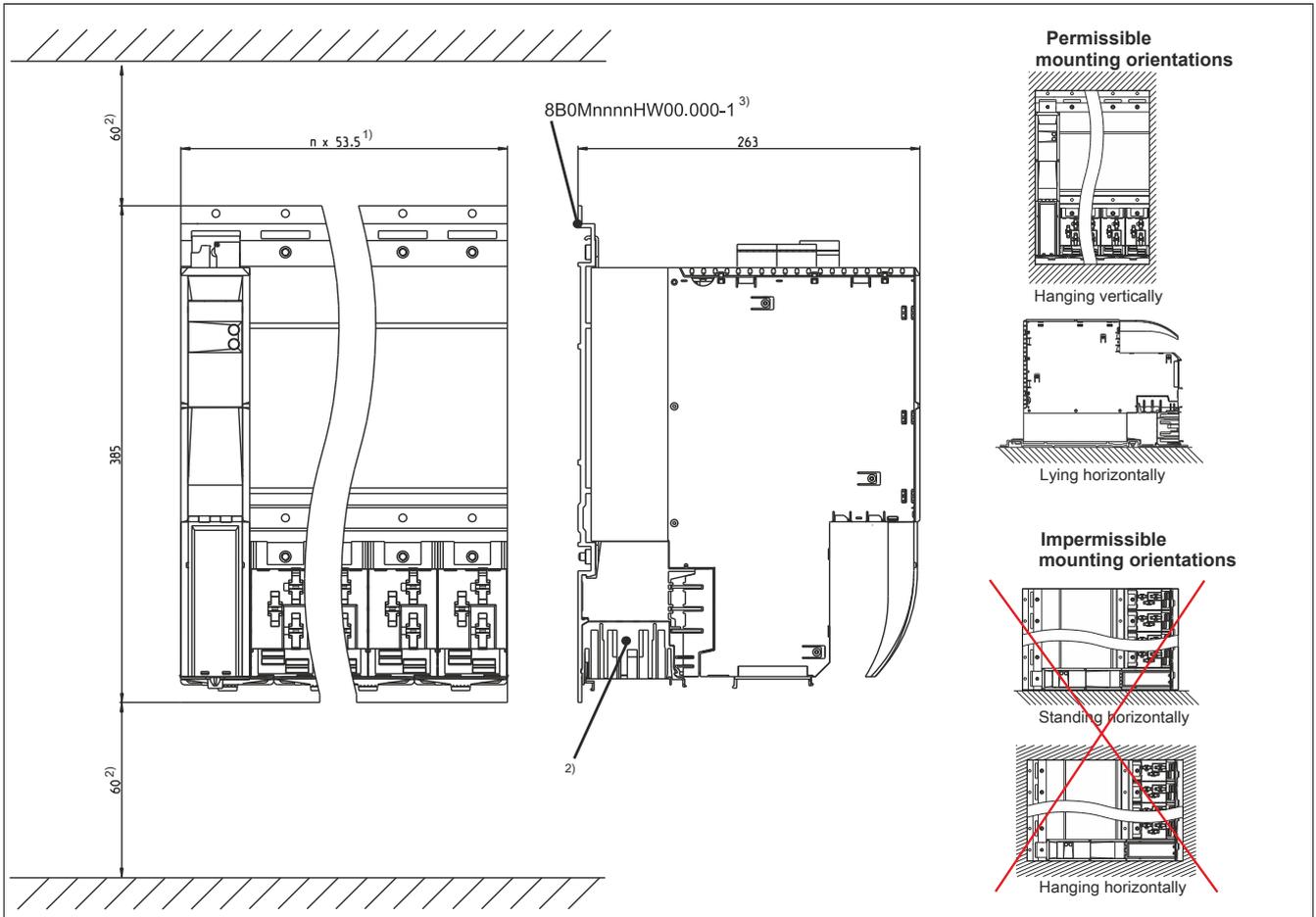


Figure 2: Dimension diagram and installation dimensions

- 1) n... Number of width units on the mounting plate
- 2) For sufficient air circulation, a clearance of at least 60 mm must be provided above the mounting plate and below the module.  
**To ensure that the fan modules in the mounting plate can be replaced easily, at least 250 mm clearance must be available below the module.**
- 3) nnnn indicates the number of slots (e.g. 0160 refers to 16 slots).

## 6 Wiring

### 6.1 8B0C0320Hx00.00A-1 - Pinout overview

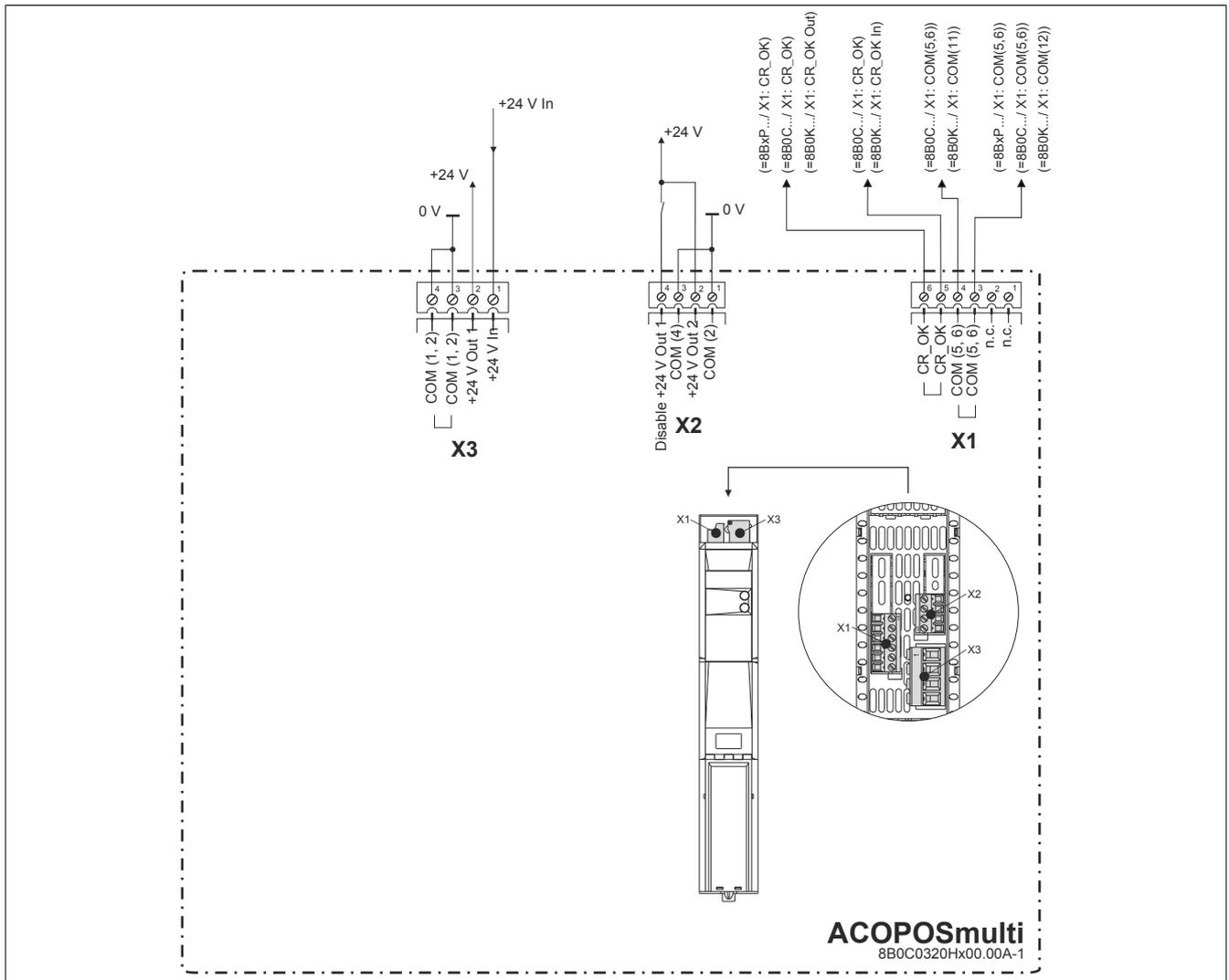


Figure 3: 8B0C0320Hx00.00A-1 - Pinout overview

### 6.2 Connector X1 - Pinout

X1		Pin	Description	Function
1		1	---	---
2		2	---	---
3		3	COM (5, 6)	DC bus ready 0 V
4		4	COM (5, 6)	DC bus ready 0 V
5		5	CR_OK	DC bus ready
6		6	CR_OK	DC bus ready

Table 4: Connector X1 - Pinout

### 6.3 Connector X2 - Pinout

X2		Pin	Description	Function
1		1	COM (2)	+24 V output 2 0 V
2		2	+24 V Out 2	+24 V output 2
3		3	COM (4)	Disable +24 V output 1 0 V
4		4	Disable +24 V Out 1	Disable +24 V output 1

Table 5: Connector X2 - Pinout

## 6.4 Connector X3 - Pinout

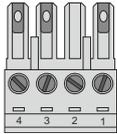
X3	Pin	Description	Function
	1	+24 V In	+24 V feed
	2	+24 V Out 1	+24 V output 1
	3	COM (1, 2) <sup>1)</sup>	+24 V output 1 0 V
	4	COM (1, 2) <sup>1)</sup>	+24 V output 1 0 V

Table 6: Connector X3 - Pinout

1) Connectors X3/3 and X3/4 are internally connected.

### Information:

To obtain a defined reference of ground to ground potential, B&R recommends grounding the two COM connections (1, 2) on connector X3. Alternatively, grounding of the COM (2) connection is possible on connector X2.

## 6.5 Input/Output circuit diagram

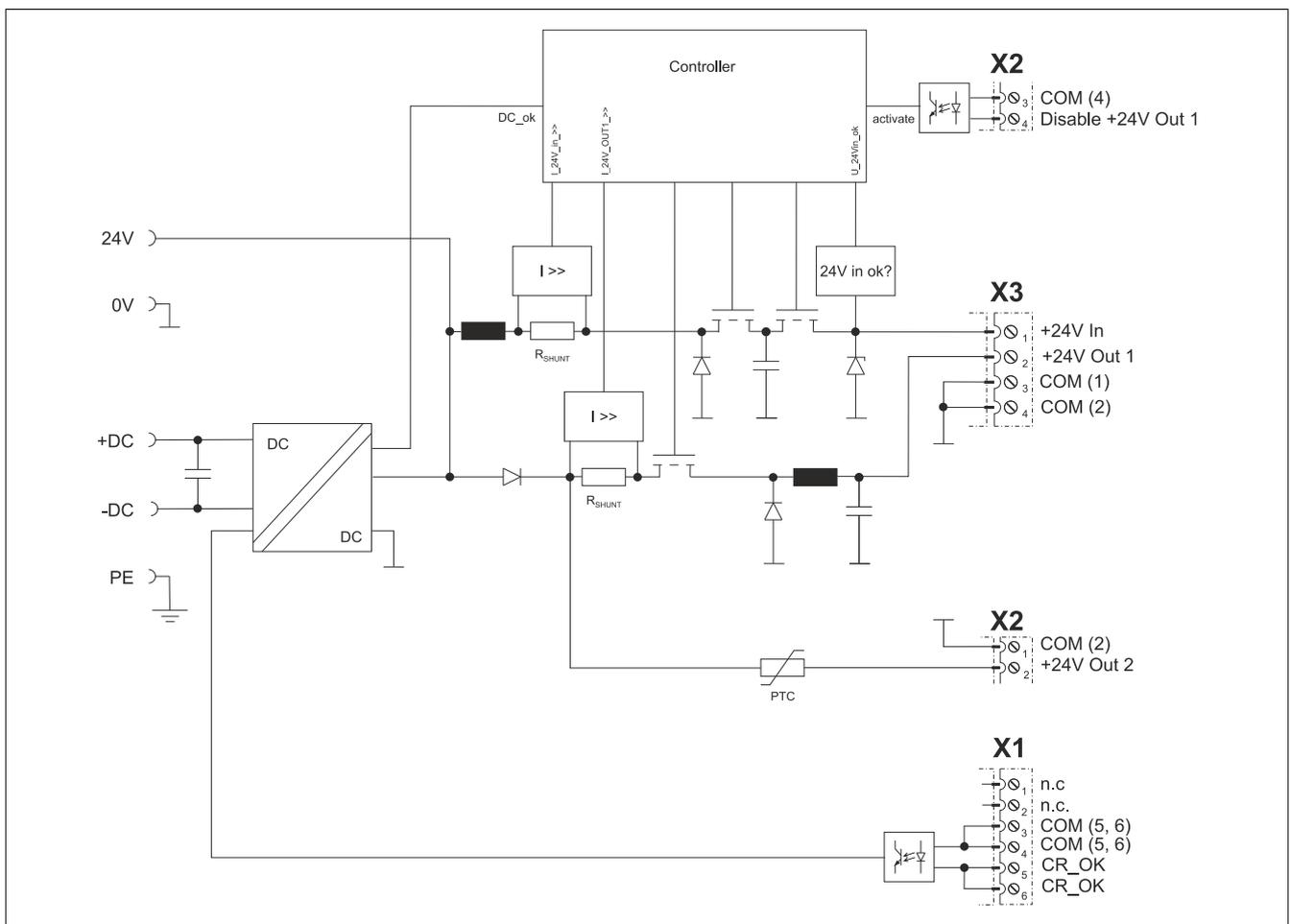


Figure 4: 8B0C0320Hx00.00A-1 - Input/Output circuit diagram

## 6.6 Parallel connection of multiple 8B0C auxiliary supply modules

### Warning!

When connecting external 24 V outputs (24 V Out 1, 24 V Out 2) in parallel, the corresponding COM connections must also be connected in parallel!