

Rexroth IndraControl S20 power module for the U_{Bus} logic power (4 A)

R911342768

Edition 01

Data sheet S20-PWR

24 V DC

02 / 2015



1 Description

The module is designed for use within an IndraControl S20 station.

If the maximum load of the bus coupler for the local bus supply (communications power U_{Bus}) is reached, this module can be used to provide this voltage again. To this end, apply a 24 V DC voltage (U_L) to the module from which the (U_{Bus}) is generated.

Features

- Supply of the 24 V voltage U_L for generating the communications power U_{Bus}
- Diagnostic and status indicators



This module does not have a microprocessor and is therefore not a local bus device. It is not mapped to engineering tools.

NOTICE Malfunction

The power module only boosts the U_{Bus} voltage, if the corresponding red bus base module is snapped on and if the U_{Bus} voltage is present in the segment downstream of the power module.



This data sheet is only valid in association with the application description for the IndraControl S20 system, material number R911335988.



Make sure you always use the latest documentation.

It can be downloaded under www.boschrexroth.com/electrics.

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3 Ordering data

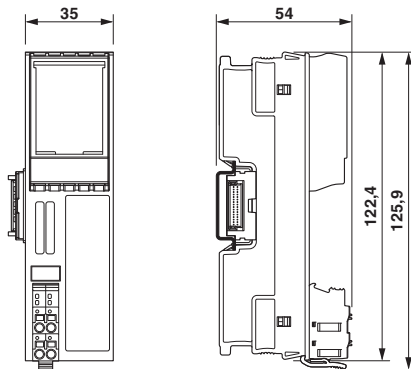
Description	Type	MNR	Pcs. / Pkt.
Rexroth IndraControl S20 power module for the U_{Bus} logic power supply (4 A)	S20-PWR	R911173345	1
Accessories	Type	MNR	Pcs. / Pkt.
Rexroth IndraControl S20 bus base module for power modules	S20-BS-PWR	R911173865	1
Documentation	Type	MNR	Pcs. / Pkt.
Application description for the Rexroth IndraControl S20: System and Installation	DOK-CONTRL- S20*SYS*INS-AP...-EN-P	R911335988	1
Application description for Rexroth IndraControl S20: Error Messages	DOK-CONTRL- S20*DIAG*ER-AP...-EN-P	R911344826	1

Additional ordering data

For additional ordering data (accessories), please refer to the product catalog at www.boschrexroth.com/electrics.

4 Technical data

Dimensions (nominal sizes in mm)



Width	35 mm
Height	126.1 mm
Depth	54 mm
Note on dimensions	The depth is valid when a TH 35-7.5 DIN rail is used (according to EN 60715).

General data

Color	gray
Weight	107 g (with connector and bus base module)
Ambient temperature (operation)	-25 °C ... 60 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Permissible humidity (operation)	5 % ... 95 % (non-condensing)
Permissible humidity (storage/transport)	5 % ... 95 % (non-condensing)
Air pressure (operation)	70 kPa ... 106 kPa (up to 3000 m above sea level)
Air pressure (storage/transport)	70 kPa ... 106 kPa (up to 3000 m above sea level)

General data

Degree of protection	IP20
Protection class	III, IEC 61140, EN 61140, VDE 0140-1
Mounting position	Any (no temperature derating)

Connection data

Designation	S20 connector
Connection method	Push-in technology
Conductor cross section solid / stranded	0.2 mm ² ... 1.5 mm ² / 0.2 mm ² ... 1.5 mm ²
Conductor cross section [AWG]	24 ... 16
Stripping length	8 mm

Interface Local bus

Connection method	Bus base module
Transmission speed	100 MBit/s

Supply of the bus coupler

Supply of communications power U_L	24 V DC
Maximum permissible voltage range	19.2 V DC ... 30 V DC (including all tolerances, including ripple)
Current supply at U_{Bus}	max. 4 A
Current consumption from U_L	max. 1.2 A ($I_{Bus} = 4$ A; $U_L = 19.2$ V)
Power consumption at U_L	max. 22 W ($I_{Bus} = 4$ A)

NOTICE Damage to the electronics

Provide the module with an external fuse to protect it against polarity reversal. The power supply unit must be able to supply four times the nominal current of the external fuse, to ensure that it trips in the event of an error.

Error messages to the higher level control or computer system

None

Mechanical tests

Vibration resistance in acc. with EN 60068-2-6/ IEC 60068-2-6	5g
Shock in acc. with EN 60068-2-27/IEC 60068-2-27	30g
Continuous shock according to EN 60068-2-27/ IEC 60068-2-27	10g

Conformance with EMC Directive 2004/108/EC**Noise immunity test in accordance with EN 61000-6-2**

Electrostatic discharge (ESD) EN 61000-4-2/IEC 61000-4-2	Criterion B; 6 kV contact discharge, 8 kV air discharge
Electromagnetic fields EN 61000-4-3/IEC 61000-4-3	Criterion A; Field intensity: 10 V/m
Fast transients (burst) EN 61000-4-4/IEC 61000-4-4	Criterion B, 2 kV
Transient surge voltage (surge) EN 61000-4-5/ IEC 61000-4-5	Criterion B; DC supply lines: ± 0.5 kV/ ± 0.5 kV (symmetrical/ asymmetrical)
Conducted interference EN 61000-4-6/IEC 61000-4-6	Criterion A; Test voltage 10 V

Noise emission test according to EN 61000-6-3

Radio interference properties EN 55022	Class B
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Approvals

For the latest approvals, please visit www.boschrexroth.com/electrics.

5 Internal circuit diagram

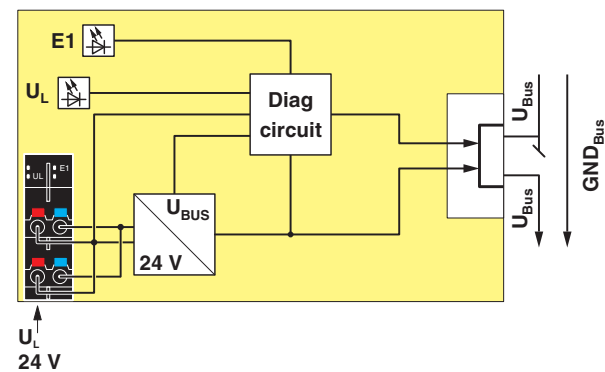


Fig. 1 Basic circuit diagram

Key:

Diag circuit	Diagnostics circuit
	Power supply unit
	LED
	Electrically isolated areas

The module disconnects the incoming voltage routing for U_{BUS} and re-establishes it for the subsequent modules.

6 Terminal point assignment

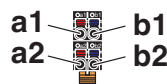


Fig. 2 Terminal point assignment

Terminal point	Color	Assignment	
Supply voltage input			
a1, a2	Red	24 V DC (U _L)	Supply of the logic voltage (internally jumpered)
b1, b2	Blue	GND	Reference potential of the supply voltage (internally jumpered)

7 Connection example

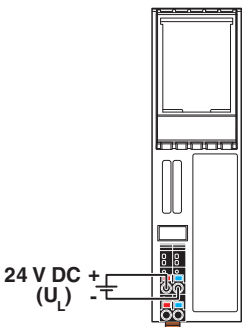


Fig. 3 Connection of the cables

8 Installation instructions

NOTICE Malfunction
Ensure you insert the power module into the associated bus base module!

If you use an incorrect bus base module both LEDs will illuminate red and the power module will be inoperative.

The bus base module belonging to the power module is red. As such, it differs from all other bus base modules.
The bus base module is coded in such a way that it cannot accommodate any other modules.

9 Local status and diagnostic indicators

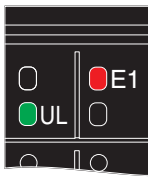


Fig. 4 Local status and diagnostic indicators

Designa- tion	Color	Meaning	State	Description
UL	Green/red	U _{Logic}	Green ON	Communications power U _{Bus} is present.
			Red ON	Communications power U _{Bus} is not present or overloaded. Communications power U _{Bus} downstream of the power module is not present.
			OFF	Communications power supply not present.
E1	Red	Error	Red ON	Module has been snapped on to the wrong bus base.
			OFF	Module has been snapped on to the right bus base.