

BPR1nn Backplane for DIN-Rail Mounting

The backplane combines the node adapter and the I/O modules into a mechanically robust, EMC compliant unit that can be fitted on a standard DIN mounting rail and also removed in an instant. Fully assembled I/O stations can thus be pre-tested after mounting and transferred to the application without further modification. This assembly enables individual modules to be exchanged and retro-fitted without having to remove the unaffected modules.

The backplane enables real-time communication between modules as well as with the node adapter, provides the power supply to the logic side of the modules and enables module-to-module communication.

Features

- M100 system backplane for DIN-rail mounting
- 4 to 32 slots
- Mechanically robust, self-supporting base for modules
- Module exchange without the removal of other modules
- Enables complete pre-assembly and testing
- Any slots possible as reserve (gaps)


Part type designation	Part number
BPR1nn	00039235-nn
BPR1nn EC	00039236-nn

Common properties	
Basic function	Active backplane system for DIN-rail mounting for mechanical, electrical and data connection of I/O and function modules and a head module
System	Bachmann system M100
Module bus interface	
System	M100
Slot type	1x 0/C, 1x 1/E, m x IO (m = number of slots nn - 2)
Module data rate	33.6 Mbit/s per slot and direction (full duplex) ¹⁾
Bus cycle time, min.	4.5 μ s ¹⁾
¹⁾ Depending on the fieldbus used and the respective configuration, lower data rates and longer cycle times can be expected.	
Diagnostics	
Electronic type plate	Yes (application interface and in the engineering tool)
Machine readable type plate	Yes (QR code with type and part information and internet link)
Diagnostics interface	Yes via head module (USB-C socket)
Diagnostics interface, protocol	Yes via head module (SSH via Serial Port Emulation (COM))
Energy supply	
Supply voltage, nominal	12 V DC internal via head module or power supply module(s) PSI135
Power consumption, continuous, max.	0.97 W internal consumption
Power dissipation	4 to 16 slots: 0.97 W ≥ 20 slots: 1.03 W
Product safety	
Degree of protection acc. IEC 60529	IP40, terminal block IP30
Protection class acc. IEC 61010-1, IEC 61010-2-201	III
Keying of backplane slots	Mechanical keying slot 0/C versus slot 1 to nn
Environmental conditions	
Temperature, operating	-30 °C to +70 °C (standard mounting position)
Temperature, transport and storage	-40 °C to +85 °C
Installation altitude, max.	Up to 2000 m without temperature derating 2000 m to 4500 m: Reduction of the max. ambient temperature by 0.5 °C per 100 m elevation
Air pressure	106 kPa to 58 kPa (0 m to 4500 m)
Relative humidity, operation	Standard: 0 % to 100 % noncondensing Extended Climate: 0 % to 100 % with temporary condensation
Pollution degree acc. IEC 61010-1	Standard: 2, noncondensing Extended Climate: 2
Vibration	4 g (IACS E10, IEC 61131-2)
Shock	30 g max. (test scope 18 shocks) 10 g permanently (test scope 6000 shocks)
Approvals/certificates	
Product safety	CE, UKCA cULus (NRAQ, NRAQ7)
Hazard area operation	ATEX in preparation
Maritime	ABS, BV, DNV, KR, LR, NK, RINA: in preparation
Hazardous substances and waste treatment	RoHS, RoHS China, REACH, WEEE
Quality management	ISO 9001 for development and production

Mounting/installation	
Mounting type	Snap in the backplane on the DIN mounting rail TH35-7.5 or TH35-15 in accordance with IEC 60715
Number of fixings	1 DIN rail adapter (groove)
Ground connection for protection class I	No
Dimensions	
Number of slots	BPR1nn with nn = 04 to 16 in increments of 1; and 20, 24, 28, 32
Size unpacked W × H × D	$2 \cdot 23.5 + 24 \cdot (nn - 2) \times 146.5 \times 32.8 \text{ mm}^{1)}$
Mass unpacked	approx. $nn \cdot 75 \text{ g}^{1)}$

¹⁾ nn stands for the number of slots (incl. slot 0/C), all lengths from 4 to 16 slots are available, as well as 20, 24, 28 and 32 slots.

Order data

Part type designation	Part number	Description
BPR1nn	00039235-nn	Backplane for DIN-rail mounting Active backplane system M100: BPR1nn with nn = 04 to 16 slots in increments of 1, as well as 20, 24, 28, 32 slots, for DIN-rail mounting; delivery without backplane slot covers and without mounting rail
BPR1nn EC	00039236-nn	Like BPR1nn with Extended Climate Range 

Accessories

Part type designation	Part number	Description
BPC101	00035559-00	Backplane slot cover Backplane slot cover for 1 slot of backplanes BPR1nn and BPS1nn for system M100, plastic, module housing color, IP40, incl. M4 Phillips PH1 screw