

## BED

60–480 Watt

- DIN Rail Power Supplies for industrial applications
- Universal power input 85...264 V<sub>AC</sub>
- Adjustable output voltage 23...28 V<sub>DC</sub>
- Very robust and corrosion-resistant aluminum housing (IP20 compliant)
- Extended temperature range -25...+75 °C
- Cold start from -40 °C
- High efficiency up to 93 %
- PowerBoost with 150% power for 5 seconds
- Certified according to international safety standards EN/UL 60950-1 and UL 508
- Protective coating according to ATEX and HazLoc



DIN Rail PSU

### DIN Rail Power Supply Series BED

The **IP20-compliant switching power supplies** of the BED series are designed for **industrial applications** in the control, process and automation technology, as well as for applications in energy and environmental technology. The compact DIN Rail power supplies features a **PowerBoost** which provides a **power output of 150 %** for 5 seconds. This function safely handles

high starting currents and peak loads. Due to the **high efficiency** of up to 93 %, the heat build-up is reduced to a minimum. This will extend the **lifetime** of the power supply units and all other components in the cabinet. High-quality electronic components, a very **robust and corrosion-resistant aluminum housing** and the rugged design round off the profile of the **shock and**

**vibration tested** BED power supply series. The **100 % burn-In tested** devices start from -40°C and fulfill the standard **SEMI F47** (Immunity to voltage dips). Due to the conformal **protective coating**, the power supplies are also suitable for use in potentially explosive areas **according to ATEX (EU) and HazLoc (US, Canada)**.



BED-06024  
60 Watt



BED-12024  
120 Watt



BED-24024  
240 Watt



BED-48024  
480 Watt

Article No.	Output Power	Output voltage Nominal	Output voltage Adjustment range	Output current (max)	Ripple & Noise (typ)	Efficiency (typ)
BED-06024	60 W	24 V <sub>DC</sub>	23...28 V <sub>DC</sub>	2.5 A	<50 mV <sub>SS</sub>	90 %
BED-12024	120 W	24 V <sub>DC</sub>	23...28 V <sub>DC</sub>	5 A	<50 mV <sub>SS</sub>	90 %
BED-24024	240 W	24 V <sub>DC</sub>	23...28 V <sub>DC</sub>	10 A	<50 mV <sub>SS</sub>	92 %
BED-48024	480 W	24 V <sub>DC</sub>	23...28 V <sub>DC</sub>	20 A	<50 mV <sub>SS</sub>	93 %

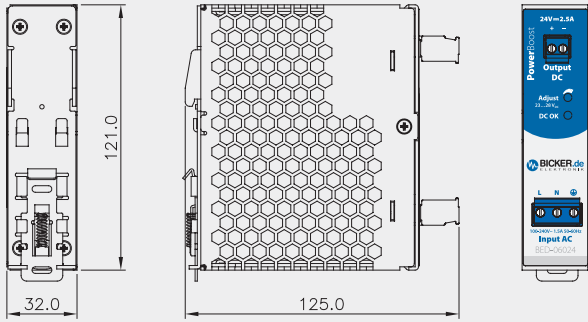
Technical data			
Input voltage	100...240 VAC (-15 % / +10 %), 120...375 VDC		
Power factor correction (PFC)	Active PFC (240 W, 480 W), passive PFC (120 W), no PFC (60 W)		
Input frequency	50...60 Hz		
Input current		<b>115 VAC</b>	<b>230 VAC</b>
	60 Watt	<1.4 A	<0.8 A
	120 Watt	<2.2 A	<1.2 A
	240 Watt	<2.5 A	<1.3 A
	480 Watt	<5.0 A	<3.0 A
Inrush current		<b>115 VAC</b>	<b>230 VAC</b>
	60 Watt	<20 A	<35 A
	120 Watt	<35 A	<35 A
	240 Watt	<35 A	<35 A
	480 Watt	<35 A	<35 A
Nominal output voltage	24 VDC		
Output voltage adjustment range	23...28 VDC		
Line regulation	<0,5 % typ.		
Load regulation	<1 % typ.		
Hold up time	>20 ms (100 % load, +25 °C)		
Rise time	<100 ms at rated voltage (100 % load, +25 °C)		
Start-up time	60 W: <2000 ms at rated voltage (100 % load, +25 °C)		
	120 W, 240 W, 480 W: <1000 ms at rated voltage (100 % load, +25 °C)		
Protection	Short circuit protection:	Hicc-up-Mode (with auto recovery after error correction)	
	Overload/-current protection:	>150 % of rated current, Hicc-up-Mode (with auto recovery)	
	Overtemperature protection:	+80 °C (depending on load and while operating in the derating range, the over-temperature protection can trigger already below +80 °C), Hicc-up-Mode (with auto recovery)	
	Oversvoltage protection:	>28.8 V, SELV-Output, Hicc-up-Mode (with auto recovery)	
Insulation voltage	Input/Output	4000 VAC	
	Input/FG	1500 VAC	
	Output/FG	1500 VAC	
Safety	EN60950-1, UL60950-1, UL 508, CE Designed according to CSA C22.2 No. 60950-1		
EMC	CISPR22, EN55022, EN55011, FCC: Class B IEC 61204-3 (Low-voltage power supply devices, DC output) Designed according to SEMI F47		
Oversvoltage category	III (according to EN50178:1997 / EN60204-1:2006)		
Explosion protection ATEX	Designed according to EN60079-0, EN60079-15 (II 3G Ex nA nC IIc T4 Gc)		
Explosion protection HazLoc	Designed according to CSA C22.2 No. 231-M1987 Designed according to ANSI/ISA 12.12.01:2007 (Class I, Division 2, Group A, B, C, D, T4)		
Earth leakage current	60 W, 120 W, 240 W: <1 mA (240 VAC) 480 W: <3 mA (240 VAC)		
Temperature	Operating: -25 °C...+75 °C (Cold start from -40 °C) / Storage: -40 °C...+85 °C		
Derating	60 W, 120 W, 240 W: +50...+75 °C: 2.5 % / °C		
	480 W: +50...+75 °C: 2.5 % / °C, +70...+75 °C: 5 % / °C		
MTBF according to Telcordia SR-332 (at 25 °C)	60 W: >1 000 000 h, 120 W: >800 000 h, 240 and 480 W: >500 000 h		
Max. operating altitude	60, 120, 240 W: 2500 m, 480 W: 2000 m		
Humidity	Operating: 10...85 % RH, non-condensing / Storage: 10...90 % RH, non-condensing		
Vibration test (non-operating)	Designed according to IEC60068-2-6, 10...500 Hz at 30 m/s <sup>2</sup> (max. 3G); 60 min per axis (X, Y, Z)		
Shock test (non-operating)	Designed according to IEC60068-2-27, 30G (300m/s <sup>2</sup> ) for 18 ms		
Protection class	IP20		
Dimensions (WxDxH)	See drawing		
Weight (net)	60 W: 0.37 kg, 120 W: 0.72 kg, 240 W: 1.1 kg, 480 W: 1.37 kg		

ATEX certified PSUs are available on request.

Ripple and Noise was measured with parallel cables. All data was measured at +25 °C, operating humidity <75 %, nominal input voltage. After the PowerBoost, the device must not be operated over the max. output power for at least 60 seconds. The final assembly has to comply with the valid EMC and safety standards. As a power component this PSU is for assembly purposes only and must not be operated in unassembled condition.

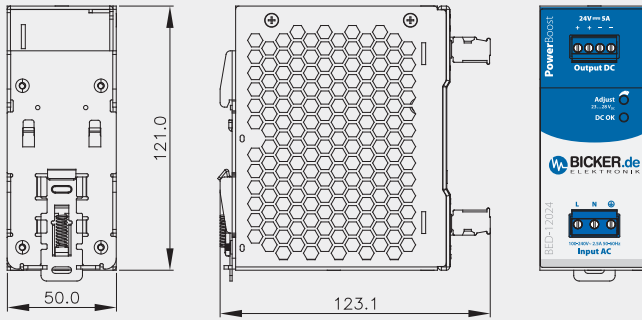
## Drawing

**BED-06024**



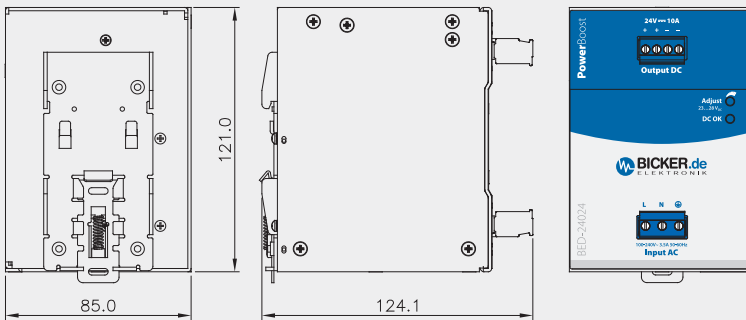
Tolerance  $\pm 0.5$  mm

**BED-12024**



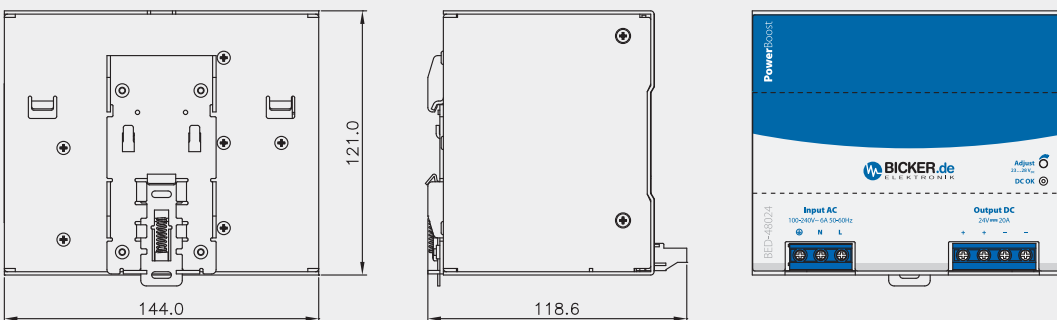
Tolerance  $\pm 0.5$  mm

**BED-24024**



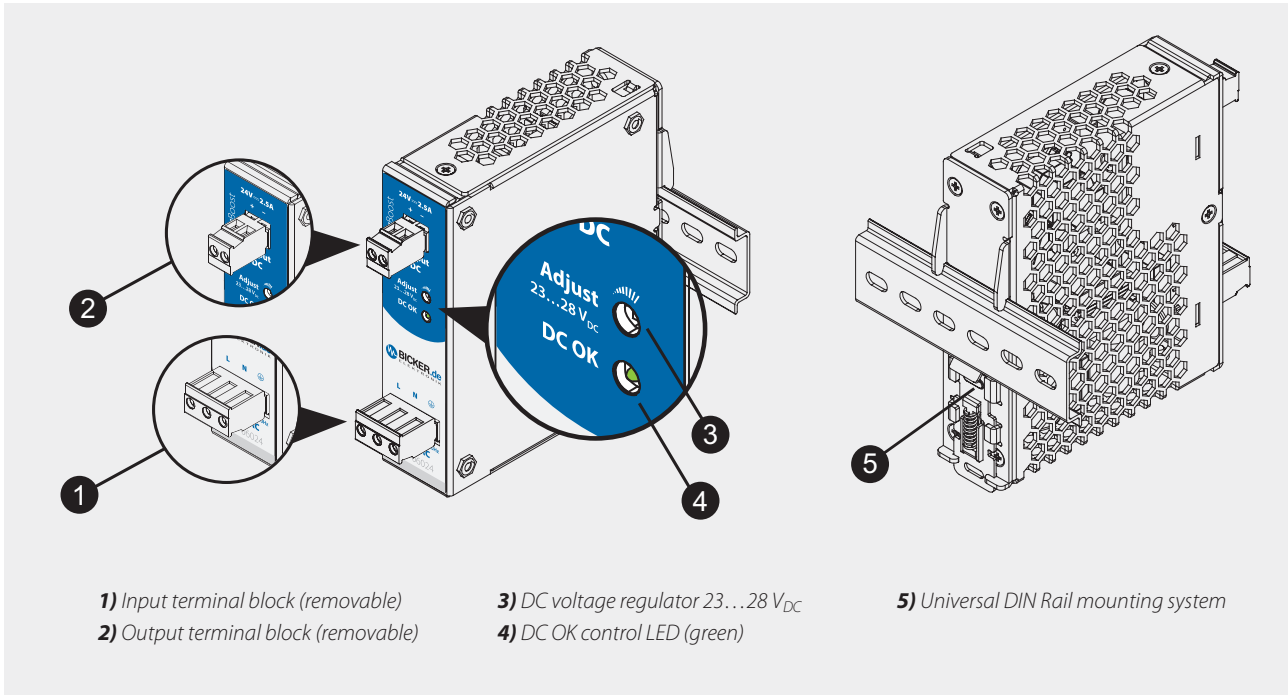
Tolerance  $\pm 0.5$  mm

**BED-48024**



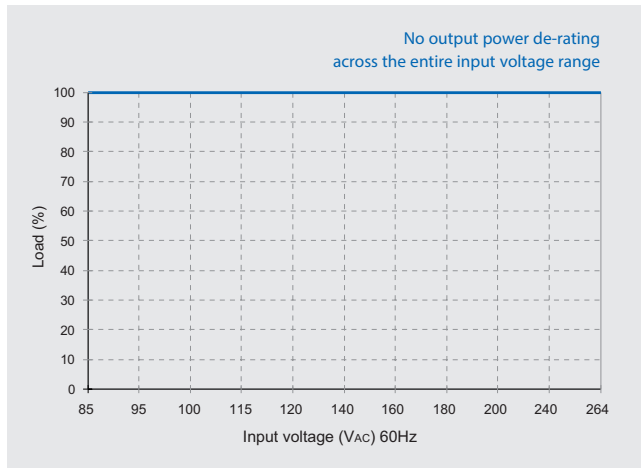
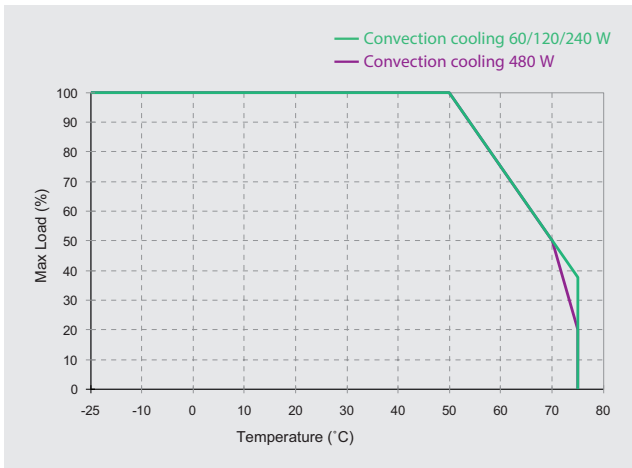
Tolerance  $\pm 0.5$  mm

## Device description on the example of BED-06024



Article No.	Output Power	Input Connector	Output Connector	Input cable	Output cable
BED-06024	60 W	3-pin connector (300 V/15 A)	2-pin connector (300 V/15 A)	0.32-3.31 mm <sup>2</sup> AWG 22-12 Torque 4.67 Kg/cm / 4.05 lb/in	0.32-3.31 mm <sup>2</sup> AWG 22-12 Torque 4.67 Kg/cm / 4.05 lb/in
BED-12024	120 W	3-pin connector (300 V/15 A)	4-pin connector (300 V/15 A)	0.52-3.31 mm <sup>2</sup> AWG 20-12 Torque 4.67 Kg/cm / 4.05 lb/in	0.52-3.31 mm <sup>2</sup> AWG 20-12 Torque 4.67 Kg/cm / 4.05 lb/in
BED-24024	240 W	3-pin connector (300 V/15 A)	4-pin connector (300 V/15 A)	1.31-2.08 mm <sup>2</sup> AWG 16-14 Torque 4.67 Kg/cm / 4.05 lb/in	1.31-2.08 mm <sup>2</sup> AWG 16-14 Torque 4.67 Kg/cm / 4.05 lb/in
BED-48024	480 W	3-pin terminal block (300 V/30 A)	4-pin terminal block (300 V/30 A)	0.82-5.27 mm <sup>2</sup> AWG 18-10 Torque 4.5 Kg/cm / 3.9 lb/in	3.31-5.27 mm <sup>2</sup> AWG 12-10 Torque 4.5 Kg/cm / 3.9 lb/in

## Derating



Specification is subject to change without notice. Errors excepted. Status as at: 19.06.2017