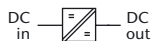


Features

- DC input: 18 - 320 V
- AC input: 100 - 240 V, wide range with PFC, 47 - 65 Hz
- DC output: 5 / ... / 250 V
- Continuous short circuit protection
- Overvoltage protection
- Thermal shutdown with auto restart
- EMI acc. to EN 55022, class B
- Industrial grade components
- High power density
- Efficiency up to 91%



DC / DC Converters

▶ 150 W

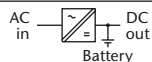
Input VDC					Output VDC		
18–36 VDC	36–75 VDC	45–90 VDC	80–160 VDC	160–320 VDC	Output Amps	Adj.	Range
CH 220	CH 230	CH 240	CH 250	CH 270	20	5	4.5– 5.5
CH 221	CH 231	CH 241	CH 251	CH 271	15	9	8– 10
CH 222	CH 232	CH 242	CH 252	CH 272	12	12	11– 13
CH 223	CH 233	CH 243	CH 253	CH 273	10	15	14– 16
CH 224	CH 234	CH 244	CH 254	CH 274	6	24	23– 26
CH 225	CH 235	CH 245	CH 255	CH 275	5	28	26– 30
CH 229	CH 239	CH 249	CH 259	CH 279	3	48	45– 55
CH 226	CH 236	CH 246	CH 256	CH 276	2.3	60	58– 68
CH 227	CH 237	CH 247	CH 257	CH 277	1.2	110	100– 130
CH 228	CH 238	CH 248	CH 258	CH 278	0.6	220	200– 250



AC / DC Converters with PFC

▶ 150 W

Input VAC, 1-Phase		Output VDC	
100–240 V ±10 %	Output Amps	Adj.	Range
CP 290	20	5	4.5– 5.5
CP 291	15	9	8– 10
CP 292	12	12	11– 13
CP 293	10	15	14– 16
CP 294	6	24	23– 26
CP 295	5	28	26– 30
CP 299	3	48	45– 55
CP 296	2.3	60	58– 68
CP 297	1.2	110	100– 130
CP 298	0.6	220	200– 250



Battery Chargers with PFC

▶ 150 W

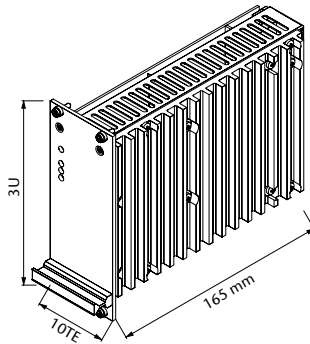
Input VAC, 1-Phase		Output VDC	
100–240 V ±10 %	Output Amps	Nom. Battery Voltage	Range
BP 291	10	12	12– 16
BP 292	5	24	24– 32
BP 294	2.6	48	48– 64
BP 296	2	60	60– 80
BP 297	1.1	110	110– 145
BP 298	0.55	220	220– 290

Assistance in table use:

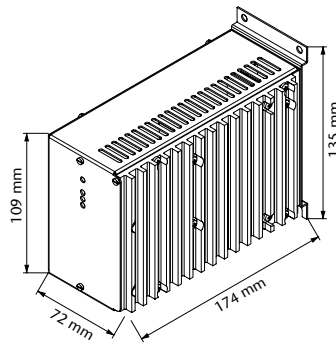
- 1 Select the column for input voltage range.
- 2 Select the row for the appropriate output voltage.
- 3 The intersection of both results in the module required.

For example:

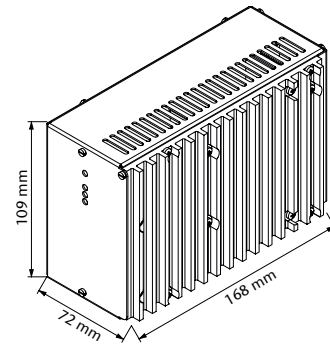
- 1 input voltage = 230 VAC
- 2 output voltage = 15 VDC @ 10 A
- 3 results in a CP 293 module.



Eurocassette / approx. 0.7 kg
(pluggable module for 19" sub-rack)



Chassis mount / approx. 1.05 kg



DIN rail mount / approx. 1.0 kg

Specifications

Input

Voltage range see table, unit switches off at under- and overvoltage
 Protection by internal fuse
 No-load input power 6 W typical
 Switch-on time 250 ms typical
 Inrush current limited by thermistor
 Hold-up time AC input: 10 ms typical
 Power factor correction for CP and BP series acc. to EN 61000-3-2, class D

Immunity

- ESD acc. to DIN / EN 61000-4-2 level 3
 - Fast transients acc. to DIN / EN 61000-4-4 level 3
 - Surges acc. to DIN / EN 61000-4-5 level 3

Output

Line regulation ($\pm 10\%$) 0.1 %
 Load regulation (10 - 90 %) 0.2 %
 Load transient (10-90-10 %) 6 % typical
 Response time to $\pm 1\%$ 1 ms typical
 Turn-on rise time Soft-start, 100 ms typical
 Ripple $\leq 1\% + 30\text{ mV}_{p-p}$
 Overload protection current limited to 105 % of I_{nom}
 Overvoltage protection OVP switches off module with automatic return to operation
 Remote sense standard for CH and CP series, up to 10 % of U_{nom} for output < 40 VDC, up to 4 V for output > 40 VDC
 Parallel operation with active current sharing
 Charger control acc. to IU characteristic

General

Efficiency 80 - 91 %
 Operating temperature -20 to +75 °C
 Load derating 2.5% / °C from +55 °C
 Storage temperature -40 to +85 °C
 Humidity up to 95 % RH, non-condensing
 Cooling natural convection
 Temperature coefficient 0.02 % / °C typical
 Safety / Construction acc. to DIN / EN 60950-1: 2003
 Protection category IP 20, others or NEMA upon request
 EMI acc. to EN 55022, class B
 MTBF approx. 140,000 h @ 40 °C acc. to MIL-HDBK-217 E (notice 1)

Connector for eurocassette - std. design H15
 Marking CE

Options

Input

- Reverse polarity protection for DC input

Output

- Redundant operation

Signals

- DC ok (output) via open collector or relay contacts

Charger Programming

- Temperature compensated charging voltage

Mechanics / environment:

- 19" sub-rack for eurocassette
- Chassis mount
- DIN rail mount
- Increased mechanical strength
- Tropical protection
- Extended temperature range to -40 °C