

# CON-EURO

## DC-DC CONVERTER



POSITIVE PROBLEM SOLVING **+ =**

**This range of 19" plug-in DC-DC Converters are available with either 110VDC or 24VDC input and provides isolated and floating outputs of 5V, 24V, 48V, and 110V.**

The series have been designed for applications that demand high reliability when subjected to harsh operating conditions. The units have a >750,000 hour MTBF at 40°C and can operate in ambient temperatures of -40°C to +85°C. The converters can be further ruggedised with the addition of conformal coating and the securing of the larger components. The units are suitable for many applications including rail, industrial and telecoms.

- + Extended Operating Temperature Range**
- + Wide DC Input Voltage Range**
- + Reverse Polarity Protected**
- + Rugged Construction**
- + Zero Load Operation**
- + Remote ON/OFF**

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### SELECTION TABLE

Part Number	Input Voltage	Output Voltage	Output Current	Maximum Power	Dimensions / Weight
CON-50 24-5	24Vdc $\pm 30\%$ ( $\pm 40\%$ Dyn)	5VDC	10A	50W	3U $\times$ 7HP / 385g
CON-150 24-48	24Vdc $\pm 30\%$ ( $\pm 40\%$ Dyn)	48VDC	3.1A	150W	3U $\times$ 10HP / 570g
CON-150 24-110	24Vdc $\pm 30\%$ ( $\pm 40\%$ Dyn)	110VDC	1.35A	150W	3U $\times$ 10HP / 570g
CON-300 24-24	24Vdc $\pm 20\%$	24VDC	12.5A	300W	3U $\times$ 14HP / 1kg
CON-50 110-5	110Vdc $\pm 30\%$ ( $\pm 40\%$ Dyn)	5VDC	10A	50W	3U $\times$ 7HP / 385g
CON-50 110-24	110Vdc $\pm 30\%$ ( $\pm 40\%$ Dyn)	24VDC	2.1A	50W	3U $\times$ 7HP / 385g
CON-150 110-48	110Vdc $\pm 30\%$ ( $\pm 40\%$ Dyn)	48VDC	3.1A	150W	3U $\times$ 10HP / 570g
CON-300 110-110	110Vdc $\pm 30\%$ ( $\pm 40\%$ Dyn)	110VDC	2.7A	300W	3U $\times$ 14HP / 935g

### OPTIONS

CODE	DESCRIPTION
/CC	Conformal coating and additional fixing of components



## TECHNICAL DATA

### GENERAL

Protection	IP20
Connector	HI5 DIN 61612; rear side
Optical Signals	LEDs (green) for $V_{IN}$ ; $V_{OUT}$
Remote ON/OFF	Inhibit ON > 13V to $V_{IN}$ or Open; OFF < 5V to 0V
Test Point for $U_A$	2mm test contacts at the front panel
Warranty	2 Years
Electrical Safety	DIN EN 60950, VDE 0805 Overload and short circuit protected
Input Ripple	15%
Input Protection	Reverse polarity protected 6.3AT:{50-24-5, 300-110-110}    2AT:{50-110-5, 50-110-24}; 16AT:{150-24-48, 150-24-110};    3.15AT:{150-110-48}; 20AT:{300-24-24}

### OUTPUT

Voltage Tolerance	< $\pm 1\%$ , < $\pm 2\%$ 300-24-24
Voltage Protection	$V_{OUT} + 10\%$
Dynamic Regulation Tolerance	< $\pm 2\%$
Ripple	< 100mVpp (50MHz 50 $\Omega$ )
Noise	< 200mVpp (200MHz 50 $\Omega$ )
Start-up Delay Time	< 200ms, 3 Secs 300-24-24
Output Current	$I_A = 0 - 10A$
Current Limit	1.0 $I_{OMAX}$ (300-24-24), 1.1 $I_{OMAX}$ (50-24-5, 50-110-5), 1.2 $I_{OMAX}$ (All other units)
Overload Characteristic	Permanent short circuit operation
Parallel Operation	Yes for higher output power units
Redundant Operation	300-24-24
Efficiency	> 85% @ $V_{NOM}$

### AMBIENT CHARACTERISTICS

Ambient Temperature	-40 to +85°C (+60°C 300-24-24), class TX according to DIN EN 50155
Relative Humidity	Maximum 95%, non-condensing (option /CC for conformal coating)
Cooling	External forced cooling [e.g. Fan level below module carrier] (Internal fan for 300-24-24)
Derating	Without external cooling from +50°C/2.5% per 1°C

### EMC EMISSION & IMMUNITY

Emission: Conductive	According to DIN EN 50121-3-2
Emission: Radiated	According to DIN EN 50121-3-2
Immunity: Transient/Surge	1.8kV according to DIN EN 50121-3-2 (12 $\Omega$ )
Immunity: Burst	2kV according to DIN EN 50121-3-2
Immunity: Electro Magnetic Field	20V/m according to DIN EN 50121-3-2

### INSULATION TEST

Input to Ground	1500 $V_{eff}$ 1min, 500V 300-24-24
Output to Ground	1500 $V_{eff}$ 1min, 500V 300-24-24
Input to Output	1500 $V_{eff}$ 1min, 500V 300-24-24
Creeping Distance	> 2.5mm according to DIN EN 50124 PD3

### SHOCK & VIBRATION

Vibration Reliability	According to DIN EN 50155 and EN 61373
Frequency Range	5 - 150Hz
Transfer Frequency	8Hz
Amplitude Acceleration below trans. freq.	2mm
Amplitude Acceleration below trans. freq.	5m/s <sup>2</sup>
Shock Reliability	50m/s <sup>2</sup> all 3 axis according to DIN EN 61373 (extended)
MTBF	> 750,000 hours @ 40°C

Every effort is made to ensure that the information provided within this technical summary is accurate. However, ETPS Ltd must reserve the right to make changes to the published specifications without prior notice. Where certain operating parameters are critical for your application we advise that they be confirmed at the time of order. ETPS Ltd specialises in modifying its proven platforms to suit your needs. Please contact our office if your requirement is non-standard. Please note that your actual unit may differ from those shown.



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