

# Power supply unit - EM-CPS-PS/3AC/24DC/20/8C/IOL - 1067898

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Primary-switched power supply unit, TRIO POWER, Snap-on connection, Cross Power System - installation, input: 3-phase, output: 24 V DC / 20 A

## Product Description

The TRIO CROSS POWER power supply for the CrossPowerSystem power distribution board is perfectly adapted for use in machine building. All of the functions and space-saving design are tailored to the high requirements in this area. The push-in connection enables quick and easy connection of a 24 V DC control voltage.



## Key Commercial Data

Packing unit	1 pc
GTIN	 4 055626 738666
GTIN	4055626738666
Weight per Piece (excluding packing)	2,300.000 g
Custom tariff number	85044030
Country of origin	China

## Technical data

### Note

Utilization restriction	EMC: class A product, see manufacturer's declaration in the download area
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### Dimensions

Width	70.5 mm
Height	209.7 mm
Depth	170 mm
Installation distance right/left	0 mm / 0 mm
Installation distance right/left (active)	14 mm / 14 mm
Installation distance top/bottom	50 mm / 50 mm
Installation distance top/bottom (active)	50 mm / 50 mm

### Ambient conditions

# Power supply unit - EM-CPS-PS/3AC/24DC/20/8C/IOL - 1067898

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### Ambient conditions

Degree of protection	IP20
Inflammability class in acc. with UL 94 (housing / terminal blocks)	V0
Ambient temperature (operation)	-25 °C ... 70 °C (> 60 °C Derating: 2.5 %/K)
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Max. permissible relative humidity (operation)	≤ 95 % (at 25 °C, non-condensing)
Climatic class	3K3 (in acc. with EN 60721)
Degree of pollution	2
Installation height	≤ 4000 m (> 2000 m, Derating: 10 %/1000 m)

### Input data

Nominal input voltage range	3x 400 V AC ... 500 V AC
Input voltage range	3x 400 V AC ... 500 V AC -20 % ...+15 %
AC frequency range	50 Hz ... 60 Hz
Discharge current to PE	< 0.25 mA
Current consumption	3x 1.2 A (400 V AC) 3x 1 A (500 V AC)
Nominal power consumption	243.6 VA
Inrush current	≤ 22 A (typical)
Mains buffering time	typ. 10 ms (400 V AC) typ. 20 ms (500 V AC)
Input fuse	3.15 A (internal (device protection), slow-blow)
Recommended breaker for input protection	6 A ... 16 A (AC: Characteristics B, C, D, K)
Power factor (cos phi)	0.55
Type of protection	Transient surge protection
Protective circuit/component	Varistor

### Output data

Nominal output voltage	24 V DC ±1 %
Setting range of the output voltage ( $U_{Set}$ )	24 V DC ... 28 V DC (> 24 V DC, constant capacity restricted)
Nominal output current ( $I_N$ )	20 A
Dynamic Boost ( $I_{Dyn.Boost}$ )	30 A (5 s)
Derating	> 60 °C ... 70 °C (2.5%/K)
Connection in parallel	no
Connection in series	No
Protection against overvoltage at the output (OVP)	≤ 30 V DC
Control deviation	< 1 % (change in load, static 10 % ... 90 %) < 3 % (Dynamic load change 10 % ... 90 %, 10 Hz) < 0.1 % (change in input voltage ±10 %)
Residual ripple	≤ 20 mV <sub>PP</sub>
Output power	480 W
Typical response time	< 1 s

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### Output data

Maximum power dissipation in no-load condition	< 1 W (400 V AC)
Power loss nominal load max.	< 12 W (480 V AC)

### General

Net weight	2.1 kg
Efficiency	> 91 % (400 V AC)
MTBF (IEC 61709, SN 29500)	> 850000 h (25 °C)
	> 560000 h (40 °C)
	> 290000 h (60 °C)
Insulation voltage input/output	3 kV AC (type test)
	1.5 kV AC (routine test)
Degree of protection	IP20
Protection class	I
Inflammability class in acc. with UL 94 (housing / terminal blocks)	V0
Assembly instructions	Cross Power System

### Connection data, input

Connection method	Snap-on connection
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### Connection data, output

Connection method	Push-in connection
Conductor cross section solid min.	0.2 mm <sup>2</sup>
Conductor cross section solid max.	4 mm <sup>2</sup>
Conductor cross section flexible min.	0.2 mm <sup>2</sup>
Conductor cross section flexible max.	2.5 mm <sup>2</sup>
Conductor cross section AWG min.	24
Conductor cross section AWG max.	12
Stripping length	10 mm

### Connection data for signaling

Connection method	Push-in connection
Conductor cross section solid min.	0.2 mm <sup>2</sup>
Conductor cross section solid max.	1.5 mm <sup>2</sup>
Conductor cross section flexible min.	0.2 mm <sup>2</sup>
Conductor cross section flexible max.	1.5 mm <sup>2</sup>
Conductor cross section AWG min.	24
Conductor cross section AWG max.	16
Stripping length	8 mm

### Standards

EMC requirements for noise immunity	EN 61000-6-2
Standard - Safety of transformers	EN 61558-2-16 (air clearances and creepage distances only)
Standard - Electrical safety	IEC 61010-1 (SELV)

# Power supply unit - EM-CPS-PS/3AC/24DC/20/8C/IOL - 1067898

## Technical data

### Standards

Standard – Electronic equipment for use in electrical power installations and their assembly into electrical power installations	EN 50178/VDE 0160 (PELV)
Standard – Safety extra-low voltage	IEC 61010 (SELV) / (PELV)
Standard - Safe isolation	DIN VDE 0100-410
Standard – Limitation of mains harmonic currents	EN 61000-3-2

### Conformance/approvals

UL approvals	UL Listed UL 61010-2-201
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### EMC data

Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
Low Voltage Directive	Conformance with Low Voltage Directive 2014/35/EC
Conducted noise emission	EN 55016
	EN 61000-6-3 (Class B)
Noise emission	EN 55016
	EN 61000-6-3 (Class B)
Electrostatic discharge	EN 61000-4-2
Contact discharge	6 kV (Test Level 4)
Discharge in air	8 kV (Test Level 4)
Electromagnetic HF field	EN 61000-4-3
Frequency range	80 MHz ... 6 GHz
Test field strength	10 V/m (Test Level 3)
Comments	Criterion A
Fast transients (burst)	EN 61000-4-4
Input	4 kV (Test Level 4 - asymmetrical)
Output	2 kV (Test Level 3 - asymmetrical)
Signal	2 kV (Test Level 3 - asymmetrical)
Comments	Criterion B
Surge voltage load (surge)	EN 61000-4-5
Input	2 kV (Test Level 4 - symmetrical)
	4 kV (Test Level 4 - asymmetrical)
Output	1 kV (Test Level 3 - symmetrical)
	2 kV (Test Level 3 - asymmetrical)
Signal	1 kV (Test Level 2 - asymmetrical)
Comments	Criterion B
Conducted interference	EN 61000-4-6
Frequency range	0.15 MHz ... 80 MHz
Voltage	10 V (Test Level 3)
Comments	Criterion A
Voltage dips	EN 61000-4-11
Voltage	230 V AC
Frequency	50 Hz

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## Technical data

### EMC data

Voltage dip	70 %
Number of periods	25 periods
Additional text	Test Level 2
Comments	Criterion A
Voltage dip	40 %
Number of periods	10 periods
Additional text	Test Level 2
Comments	Criterion A
Voltage dip	0 %
Number of periods	1 period
Additional text	Test Level 2
Comments	Criterion A
Criterion A	Normal operating behavior within the specified limits.
Criterion B	Temporary impairment to operational behavior that is corrected by the device itself.

### Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
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## Classifications

### eCl@ss

eCl@ss 10.0.1	27040701
eCl@ss 9.0	27040701

## Approvals


### Approvals

#### Approvals

UL Listed / cUL Listed / cULus Listed

#### Ex Approvals

### Approval details

UL Listed		<a href="http://database.ul.com/cgi-bin/XYVV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYVV/template/LISEXT/1FRAME/index.htm</a>	FILE E 123528
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### Approvals

cUL Listed



<http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm> FILE E 123528

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