EM-CPS-PS/3AC/24DC/5 - Power supply

1064922

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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 / 5 A, adjustable from 24 V DC ... 28 V DC

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.

Your advantages

- Push-in connections for easy 24 V DC control voltage connection
- Fast startup: Tool-free mounting and automatic contacting in just one step (CrossPowerSystem)
- Reliable startup of high loads, thanks to the dynamic boost
- Electrically robust, thanks to high electric strength
- Maximum flexibility, thanks to the temperature range of -25°C … +70°C and device startup at -40°C

Commercial data

Item number	1064922
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	CMPO33
Product key	CMPO33
GTIN	4055626725222
Weight per piece (including packing)	746 g
Weight per piece (excluding packing)	510 g
Customs tariff number	85044095
Country of origin	CN

Technical data

Input data

AC operation

Network type	Star network
Nominal input voltage range	3x 400 V AC ... 500 V AC
	2x 400 V AC ... 500 V AC
Input voltage range	3x 400 V AC ... 500 V AC -20 % ... +15 %
	2x 400 V AC ... 500 V AC -10 % ... +15 %
Input voltage range AC	3x 320 V AC ... 575 V AC
Typical national grid voltage	3x 400 V AC
	3x 480 V AC
Voltage type of supply voltage	AC
Inrush current integral (I^2t)	≤ 0.25 A^2s
Inrush current limitation	≤ 22 A
AC frequency range	50 Hz ... 60 Hz
Mains buffering time	typ. 20 ms (400 V AC)
	typ. 20 ms (500 V AC)
Current consumption	3x 0.4 A (400 V AC)
	3x 0.3 A (500 V AC)
	2x 0.6 A (400 V AC)
	2x 0.5 A (500 V AC)
Nominal power consumption	243.6 VA
Protective circuit	Transient surge protection; Varistor
Power factor	0.55
Typical response time	< 1 s
Input fuse	3.15 A (internal (device protection), slow-blow)
Discharge current to PE	< 0.25 mA
	< (550 V AC, 60 Hz)

Output data

Efficiency	typ. 91 % (400 V AC)
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)	5 A
Dynamic Boost ($I_{Dyn.Boost}$)	7.5 A (5 s)
Derating	> 60 °C ... 70 °C (2.5 %/K)
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_{PP}
Short-circuit-proof	yes

No-load proof	yes
Output power	120 W
	180 W
Maximum no-load power dissipation	< 1 W (400 V AC)
Power loss nominal load max.	< 12 W (480 V AC)
Rise time	≤ 120 ms (U_{OUT} (10 % ... 90 %))
Connection in parallel	yes, for redundancy and increased capacity
Connection in series	yes

Signal: DC OK

Continuous load current	100 mA

Signal relay 13/14

Default	closed
Digital	30 V AC 30 V DC 100 mA

Connection data

Input

Connection method	Snap-on connection

Output

Connection method	Push-in connection
Conductor cross-section, rigid min.	0.2 mm²
Conductor cross-section, rigid max.	4 mm²
Conductor cross-section flexible min.	0.2 mm²
Conductor cross-section flexible max.	2.5 mm²
Single conductor/terminal point, stranded, with ferrule, min.	0.2 mm²
Single conductor/terminal point, stranded, with ferrule, max.	2.5 mm²
Conductor cross-section AWG min.	24
Conductor cross-section AWG max.	12
Stripping length	10 mm

Signal

Connection method	Push-in connection
Conductor cross-section, rigid min.	0.2 mm²
Conductor cross-section, rigid max.	1.5 mm²
Conductor cross-section flexible min.	0.2 mm²
Conductor cross-section flexible max.	1.5 mm²
Single conductor/terminal point, stranded, with ferrule, min.	0.2 mm²
Single conductor/terminal point, stranded, with ferrule, max.	1.5 mm²
Conductor cross-section AWG min.	24
Conductor cross-section AWG max.	16
Stripping length	8 mm

Signaling

Types of signaling	LED
	Floating signal contact

Signal output: LED status indicator

Signalization designation	DC OK
Status display	LED
Color	green
DC OK	U_{OUT} > 0.9 x U_N (U_N = 24 V DC)
13/14	U_{OUT} > 0.9 x U_N (U_N = 24 V DC)

Electrical properties

Number of phases	3
Insulation voltage input/output	3 kV AC (type test)
	1.5 kV AC (routine test)

Product properties

Product type	Power supply
Product family	TRIO POWER
MTBF (IEC 61709, SN 29500)	> 2300000 h (25 °C)
	> 1300000 h (40 °C)
	> 620000 h (60 °C)

Insulation characteristics

Protection class	II (in closed control cabinet)
Overvoltage category (EN 61010-1)	II
Degree of pollution	2

Dimensions

Width	36 mm
Height	160 mm
Depth	159 mm

Installation dimensions

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

Mounting

Mounting type	Cross Power System - installation
Assembly note	Cross Power System
With protective coating	no

Material specifications

Flammability rating according to UL 94 (housing / terminal blocks)	V0

Housing material	Plastic
Type of housing	Polycarbonate
Hood version	Polycarbonate

Environmental and real-life conditions

Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	-25 °C ... 70 °C (> 60 °C Derating: 2,5 %/K)
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Maximum altitude	≤ 4000 m (> 2000 m, Derating: 10 %/1000 m)
Climatic class	3K3 (in acc. with EN 60721)
Max. permissible relative humidity (operation)	≤ 95 % (at 25 °C, non-condensing)
Shock	18 ms, 30g, in each space direction (according to IEC 60068-2-27)
Vibration (operation)	10 ... 150 Hz, amplitude ±0.35 mm, 5g, 90 min. (in accordance with IEC 60068-2-6)
	2 Hz ... 15 Hz, amplitude ±1 mm, > 15 Hz, 0.7g (in accordance with DNV GL Class A)

Standards and regulations

Standard – Electronic equipment for use in electrical power installations and their assembly into electrical power installations	EN 50178/VDE 0160 (PELV)
Standard – Limitation of mains harmonic currents	EN 61000-3-2
Standard - Electrical safety	IEC 61010-1 (SELV)
Standard – Safety extra-low voltage	IEC 61010 (SELV) / (PELV)
Standard - Safe isolation	DIN VDE 0100-410
Standard - Safety of transformers	EN 61558-2-16 (air clearances and creepage distances only)

Approvals

UL approvals	UL Listed UL 61010-2-201

Conformity/Approvals

SIL in accordance with IEC 61508	0

EMC data

Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
Low Voltage Directive	Conformance with Low Voltage Directive 2014/35/EC
Interference emission	Interference emission in accordance with EN 61000-6-2 (industrial)
EMC requirements for noise immunity	EN 61000-6-2

Conducted noise emission

Standards/regulations	EN 55016
	EN 61000-6-4 (Class A)

Noise emission

Standards/regulations	EN 55011 (EN 55022)

Noise emission

Standards/regulations	EN 55016
	EN 61000-6-4 (Class A)

Harmonic currents

Frequency range	Class A, B

Flicker

Frequency range	0 kHz ... 2 kHz

Electrostatic discharge

Standards/regulations	EN 61000-4-2

Electrostatic discharge

Contact discharge	6 kV (Test Level 4)
Discharge in air	8 kV (Test Level 4)
Comments	Criterion A

Electromagnetic HF field

Standards/regulations	EN 61000-4-3

Electromagnetic HF field

Frequency range	80 MHz ... 6 GHz
Test field strength	10 V/m (Test Level 3)
Comments	Criterion A

Fast transients (burst)

Standards/regulations	EN 61000-4-4

Fast transients (burst)

Input	4 kV (Test Level 4 - asymmetrical)
Output	2 kV (Test Level 3 - asymmetrical)
Signal	1 kV (Test Level 2 - asymmetrical)
Comments	Criterion A

Surge voltage load (surge)

Input	3 kV (Test Level 3 - symmetrical)
	6 kV (Test Level 4 - asymmetrical)
Output	1 kV (Test Level 2 - symmetrical)
	2 kV (Test Level 1 - asymmetrical)
Signal	1 kV (Test Level 1 - symmetrical)
Comments	Criterion B

Conducted interference

Standards/regulations	EN 61000-6-2

Voltage dips

Standards/regulations	EN 61000-4-11

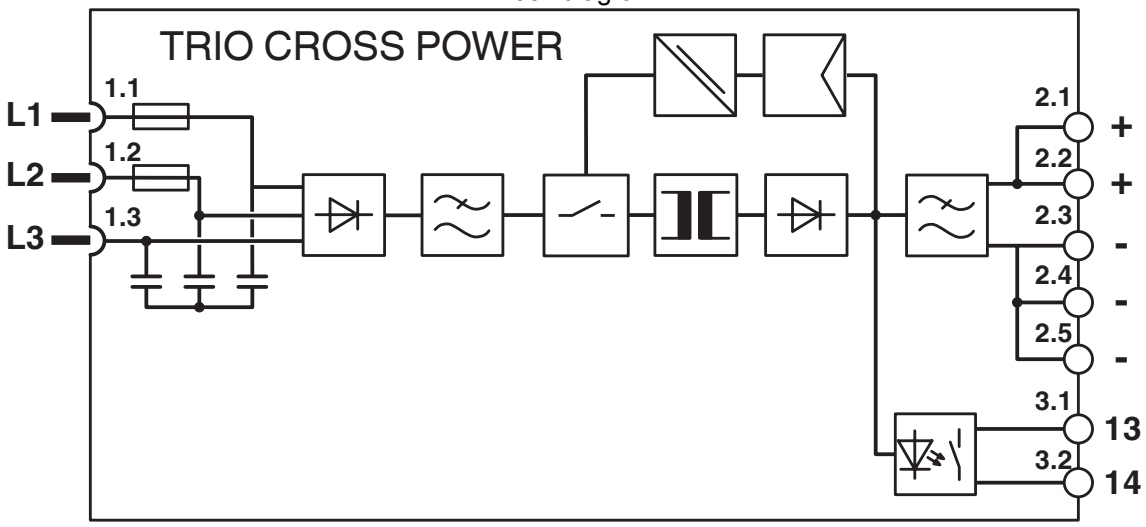
Voltage	230 V AC
Frequency	50 Hz
Voltage dip	70 %
Number of periods	25 periods
Additional text	Test Level 2
Comments	Criterion A
Voltage dip	40 %
Number of periods	10 periods
Additional text	Test Level 2
Comments	Criterion A
Voltage dip	0 %
Number of periods	1 period
Additional text	Test Level 2
Comments	Criterion A

Criteria

Criterion A	Normal operating behavior within the specified limits.
Criterion B	Temporary impairment to operational behavior that is corrected by the device itself.

Drawings

Block diagram



Classifications

ECLASS

ECLASS-13.0	27040701

ETIM

ETIM 9.0	EC002540

UNSPSC

UNSPSC 21.0	39121000

Environmental product compliance

EU RoHS

Fulfills EU RoHS substance requirements	Yes
Exemption	7(a), 7(c)-I

China RoHS

Environment friendly use period (EFUP)	EFUP-25
	An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required.

EU REACH SVHC

REACH candidate substance (CAS No.)	Lead(CAS: 7439-92-1)
SCIP	091f5110-1578-4bf5-b4c0-0d51f2f79492

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