MINI-SYS-PS-100-240AC/24DC/1.5 - Power supply

2866983

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Please use the following item in new systems: 2904614
Primary-switched MINI POWER power supply for DIN rail mounting, input: 1-phase, output: 24 V DC/1.5 A

Product description

MINI POWER power supplies for MCR technology
In measurement and control technology (MCR), modular electronics housing has become the industry standard. MINI POWER is the power supply unit to go with it. The devices are flexible, thanks to special voltages and special versions.

Your advantages

- Easy-maintenance connection technology thanks to keyed COMBICON connectors
- For supplying the supply voltage via the foot element (DIN rail connector) where AC voltages are available
- 100 V AC ... 240 V AC nominal input voltage range
- Output voltage: 24 V DC
- For up to 60 MINI Analog modules
- For up to 1.5 A, secondary
- Status and error indication via diagnostic LEDs

Commercial data

Item number	2866983
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	CMPM13
Product key	CMPM13
GTIN	4017918960650
Weight per piece (including packing)	288 g
Weight per piece (excluding packing)	250 g
Customs tariff number	85044095
Country of origin	CN

Technical data

Input data

Nominal input voltage range	100 V AC ... 240 V AC
Input voltage range	85 V AC ... 264 V AC
Input voltage range AC	85 V AC ... 264 V AC
Voltage type of supply voltage	AC
Inrush current	< 15 A (0.6 A^2s)
Inrush current integral (I^2t)	0.6 A^2s
AC frequency range	45 Hz ... 65 Hz
Mains buffering time	typ. 35 ms (120 V AC)
	typ. 150 ms (230 V AC)
Current consumption	0.75 A (120 V AC)
	0.45 A (230 V AC)
Nominal power consumption	90 VA
Protective circuit	Transient surge protection; Varistor
Typical response time	< 0.5 s
Input fuse	3.15 A (slow-blow, internal)
Permissible backup fuse	B6 B10 B16
Recommended breaker for input protection	6 A ... 16 A (Characteristics B, C, D, K)

Output data

Efficiency	> 84 % (for 230 V AC and nominal values)
Output characteristic	U/I
Nominal output voltage	24 V DC ±1 %
Nominal output current (I_N)	1.5 A (-25 °C ... 60 °C)
Output current limit	7 A (in the event of a short-circuit)
POWER BOOST (I_{Boost})	2 A (-25 °C ... 40 °C permanent)
Derating	60 °C ... 70 °C (2.5 %/K)
Feedback voltage resistance	35 V DC
Protection against overvoltage at the output (OVP)	< 30 V DC
Max. capacitive load	unlimited
Control deviation	< 1 % (change in load, static 10 % ... 90 %)
	< 3 % (change in load, dynamic 10 % ... 90 %)
	< 0.1 % (change in input voltage ±10 %)
Residual ripple	< 40 mV_{PP} (20 MHz)
Short-circuit-proof	yes
Output power	36 W
Peak switching voltages idling	< 20 mV_{PP} (20 MHz)
Peak switching voltages nominal load	< 20 mV_{PP} (20 MHz)
Maximum no-load power dissipation	1.5 W
Power loss nominal load max.	6.5 W
Rise time	< 2 ms

Connection in parallel	yes, for redundancy and increased capacity. Maximum of 2 devices for redundancy on DIN rail connector.
Connection in series	no

Signal: DC OK floating

Output description	U_{OUT} > 21.5 V: Contact closed
Maximum switching voltage	≤ 30 V AC/DC
Output voltage	30 V AC/DC
Continuous load current	≤ 1 A

Connection data

Input

Connection method	Pluggable screw connection
Conductor cross-section, rigid min.	0.2 mm²
Conductor cross-section, rigid max.	2.5 mm²
Conductor cross-section flexible min.	0.2 mm²
Conductor cross-section flexible max.	2.5 mm²
Conductor cross-section AWG min.	24
Conductor cross-section AWG max.	12
Stripping length	7 mm
Screw thread	M3
Tightening torque, min	0.5 Nm
Tightening torque max	0.6 Nm

Output

Connection method	Pluggable screw connection
Conductor cross-section, rigid min.	0.2 mm²
Conductor cross-section, rigid max.	2.5 mm²
Conductor cross-section flexible min.	0.2 mm²
Conductor cross-section flexible max.	2.5 mm²
Conductor cross-section AWG min.	24
Conductor cross-section AWG max.	12
Stripping length	7 mm
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Signal

Conductor cross-section, rigid min.	0.2 mm²
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Conductor cross-section flexible max.	2.5 mm²
Conductor cross-section AWG min.	24
Conductor cross-section AWG max.	12
Screw thread	M3

Tightening torque, min	0.5 Nm
Tightening torque max	0.6 Nm

Signaling

Types of signaling	LED
	Relay contact
Operating voltage display	Green LED

Signal output: DC OK floating

Status display	"DC OK" LED green
Note on status display	U_{OUT} > 21.5 V: LED lights up

Electrical properties

Insulation voltage input/output	4 kV (type test)
	3 kV (routine test)

Product properties

Product type	Power supply
Product family	MINI POWER
MTBF (IEC 61709, SN 29500)	> 2789000 h (40 °C)

Insulation characteristics

Protection class	II (in closed control cabinet)
Overvoltage category	III
Degree of pollution	2

Dimensions

Width	35 mm
Height	99 mm
Depth	95 mm

Installation dimensions

Installation distance right/left	0 mm / 0 mm
Installation distance top/bottom	50 mm / 50 mm

Mounting

Mounting type	DIN rail mounting
Assembly note	alignable: horizontally 0 mm, vertically 50 mm
Mounting position	horizontal DIN rail NS 35, EN 60715
With protective coating	no

Material specifications

Housing material	Plastic
Type of housing	Polyamide PA, color: green

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
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)	< 15 Hz, amplitude ±2.5 mm (according to IEC 60068-2-6)
	15 Hz ... 150 Hz, 2.3g, 90 min.
Temp code	T4A ≤ 70 °C

Standards and regulations

Rail applications	EN 50121-4
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	EN 60950-1/VDE 0805 (SELV)
Standard – Safety extra-low voltage	EN 60950-1 (SELV) and EN 60204 (PELV)
	EN 60204 (PELV)
Standard - Safe isolation	DIN VDE 0100-410

Approvals

UL approvals	UL/C-UL listed UL 508
	UL/C-UL Recognized UL 60950-1
	UL ANSI/ISA-12.12.01 Class I, Division 2, Groups A, B, C, D (Hazardous Location)

Conformity/Approvals

SIL in accordance with IEC 61508	0
Performance level according to ISO 13849	without

EMC data

Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
Low Voltage Directive	Conformance with Low Voltage Directive 2014/35/EC
EMC requirements for noise emission	EN 61000-6-3
	EN 61000-6-4
EMC requirements for noise immunity	EN 61000-6-1
	EN 61000-6-2

Noise emission

Standards/regulations	EN 55011 (EN 55022)

Electrostatic discharge

Standards/regulations	EN 61000-4-2
Housing	Level 3

Electrostatic discharge

Contact discharge	6 kV
Discharge in air	8 kV
Comments	Criterion B

Electromagnetic HF field

Standards/regulations	EN 61000-4-3

Electromagnetic HF field

Frequency range	80 MHz ... 2 GHz
Test field strength	10 V/m
Comments	Criterion A

Fast transients (burst)

Standards/regulations	EN 61000-4-4

Fast transients (burst)

Input	4 kV (level 4 - asymmetrical: conductor to ground)
Output	2 kV (level 3 - asymmetrical: conductor to ground)
Signal	1 kV (level 2 - asymmetrical: conductor to ground)
Comments	Criterion B

Surge voltage load (surge)

Standards/regulations	EN 61000-4-5

Surge voltage load (surge)

Input	4 kV (level 4 - asymmetrical: conductor to ground)
	2 kV (level 4 - symmetrical: conductor to conductor)
Output	0.5 kV (level 1 - asymmetrical: conductor to ground)
	0.5 kV (level 1 - symmetrical: conductor to conductor)
Signal	0.5 kV (level 1 - asymmetrical: conductor to ground)
Comments	Criterion B

Conducted interference

Standards/regulations	EN 61000-4-6

Conducted interference

Input/output/signal	Level 3 - asymmetrical
Frequency range	0.15 MHz ... 80 MHz
Comments	Criterion A
Voltage	10 V

Voltage dips

Standards/regulations	EN 61000-4-11

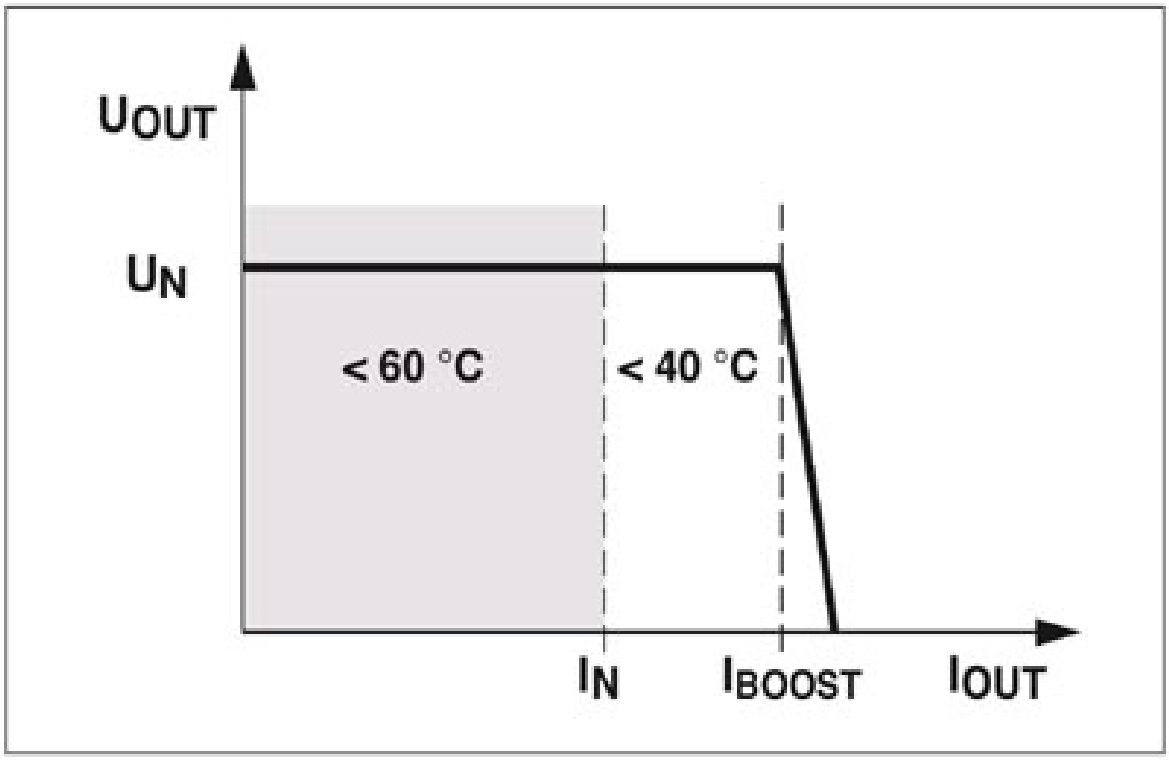
Emitted interference

Standards/regulations	EN 61000-6-3

Radio interference voltage in acc. with EN 55011	EN 55011 (EN 55022) Class B, area of application: Industry and residential
Emitted radio interference in acc. with EN 55011	EN 55011 (EN 55022) Class B, area of application: Industry and residential

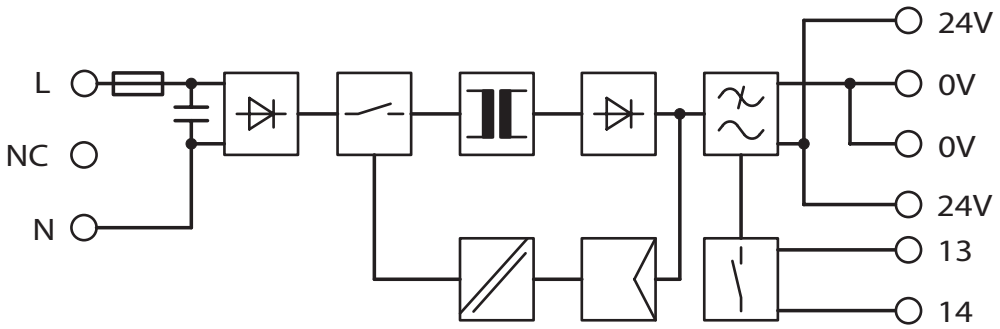
Drawings

Diagram



POWER BOOST

Block diagram



Classifications

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	1bfab962-b8da-4486-afcb-42d2144e8c76

EF3.1 Climate Change

CO2e kg	3.322 kg CO2e

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