QUINT-PS/2AC/1DC/24DC/20 - Power supply

2320830

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Primary-switched DIN rail power supply unit. AC input: suitable for operation between two phases (400 V AC). DC input: suitable for operation in an FI intermediate circuit. Output: 24 V DC/20 A.

Product description

QUINT POWER power supply units – Superior system availability with SFB technology
Compact power supply units of the new QUINT POWER generation maximize the availability of your system. With the SFB technology (Selective Fuse Breaking Technology), six times the nominal current for 12 ms, even the standard power circuit-breakers can now also be triggered reliably and quickly. Faulty current paths are switched off selectively, the fault is located and important system parts continue to operate. Comprehensive diagnostics are provided through constant monitoring of output voltage and current. This preventive function monitoring visualizes critical operating modes and reports them to the control unit before an error can occur.

Your advantages

- Compact buffer solution
- Fast tripping of standard circuit breakers
- Preventive function monitoring
- Reliable starting of difficult loads and easy system extension

Commercial data

Item number	2320830
Packing unit	1 pc
Sales key	CM11
Product key	CMPQ23
GTIN	4046356580915
Weight per piece (including packing)	2,026.7 g
Weight per piece (excluding packing)	2,000 g
Customs tariff number	85044095
Country of origin	CN

Technical data

Input data

AC operation

Nominal input voltage range	2x 400 V AC ... 500 V AC
Input voltage range	2x 360 V AC ... 575 V AC
Input voltage range AC	2x 360 V AC ... 575 V AC
Voltage type of supply voltage	AC/DC
Inrush current	< 45 A (typical)
Inrush current integral (I^2t)	< 1.5 A^2s
AC frequency range	45 Hz ... 65 Hz
Frequency range DC	0 Hz
Mains buffering time	typ. 20 ms (400 V AC)
Current consumption	2.5 A (400 V AC)
	2.1 A (500 V AC)
Nominal power consumption	888 VA
Protective circuit	Transient surge protection; Varistor
Input fuse	3.15 A (slow-blow, internal)
Recommended breaker for input protection	10 A ... 16 A (Characteristic B, C)

DC operation

Nominal input voltage range	600 V DC
Input voltage range	450 V DC ... 840 V DC
Input voltage range DC	450 V DC ... 840 V DC
Voltage type of supply voltage	AC/DC
Mains buffering time	< 28 ms (600 V DC)
Current consumption	0.9 A (600 V DC)
Protective circuit	Transient surge protection; Varistor
Permissible backup fuse	1000 V DC fuse 4 A 6 A

Output data

Efficiency	> 92 % (600 V DC)
	> 90.5 % (400 V AC)
Nominal output voltage	24 V DC ±1 %
Setting range of the output voltage (U_{Set})	18 V DC ... 29.5 V DC (U_{IN} ≥ 360 V AC / 480 V DC)
	18 V DC ... 26 V DC (< 480 V DC)
Nominal output current (I_N)	20 A (-25 °C ... 60 °C)
POWER BOOST (I_{Boost})	26 A (-25 °C ... 40 °C permanent, U_{OUT} = 24 V DC)
Selective Fuse Breaking (I_{SFB})	120 A (20 ms)
Magnetic circuit breaker tripping	C6 / B16
Derating	60 °C ... 70 °C (2.5 %/K)
Feedback voltage resistance	< 35 V DC
Protection against overvoltage at the output (OVP)	< 35 V DC

Max. capacitive load	unlimited
Active current limitation	Approx. 27 A
Control deviation	< 1 % (change in load, static 10 % ... 90 %)
	< 2 % (change in load, dynamic 10 % ... 90 %)
	< 0.1 % (change in input voltage ±10 %)
Residual ripple	< 50 mV_{PP} (with nominal values)
Output power	480 W
Peak switching voltages nominal load	< 50 mV_{PP} (20 MHz)
Maximum no-load power dissipation	11 W
Power loss nominal load max.	51 W
Rise time	< 2 ms (U_{OUT} (10 % ... 90 %))
Connection in parallel	yes, for redundancy and increased capacity
Connection in series	yes

Signal: DC OK floating

Output description	U_{OUT} >0.9 x U_N: Relays closed
Switching voltage range	≤ 30 V AC/DC
Maximum inrush current	≤ 100 mA (short-circuit-proof)

Signal: POWER BOOST, active

Output description	I_{OUT} < I_N: High signal
Switching voltage range	18 V DC ... 24 V DC
Maximum inrush current	< 20 mA (short-circuit-proof)

Signal: DC_{IN} OK, active

Output description	U_{IN} >450 V DC: high signal
Switching voltage range	18 V DC ... 24 V DC
Maximum inrush current	< 20 mA (short-circuit-proof)

Connection data

Input

Connection method	Screw connection
Conductor cross-section, rigid min.	0.2 mm²
Conductor cross-section, rigid max.	6 mm²
Conductor cross-section flexible min.	0.2 mm²
Conductor cross-section flexible max.	4 mm²
Conductor cross-section AWG min.	24
Conductor cross-section AWG max.	10
Stripping length	8 mm
Screw thread	M3
Tightening torque, min	0.5 Nm
Tightening torque max	0.6 Nm

Output

Connection method	Screw connection

Conductor cross-section, rigid min.	0.2 mm²
Conductor cross-section, rigid max.	6 mm²
Conductor cross-section flexible min.	0.2 mm²
Conductor cross-section flexible max.	4 mm²
Conductor cross-section AWG min.	12
Conductor cross-section AWG max.	10
Stripping length	8 mm
Screw thread	M3
Tightening torque, min	0.5 Nm
Tightening torque max	0.6 Nm

Signal

Conductor cross-section, rigid min.	0.2 mm²
Conductor cross-section, rigid max.	6 mm²
Conductor cross-section flexible min.	0.2 mm²
Conductor cross-section flexible max.	4 mm²
Conductor cross-section AWG min.	24
Conductor cross-section AWG max.	10
Screw thread	M3
Tightening torque, min	0.5 Nm
Tightening torque max	0.6 Nm

Signaling

Types of signaling	LED
	Relay contact

Signal output: DC OK floating

Status display	"DC OK" LED green
Color	green

Signal output: POWER BOOST, active

Status display	"BOOST" LED yellow/I_{OUT} > I_N : LED on
Color	yellow
Note on status display	LED on

Signal output: DC_{IN} OK, active

Status display	LED "DC_{IN} OK" green / U_{IN} > 450 V DC: LED on
Color	green
Note on status display	LED on

Electrical properties

Number of phases	2
Insulation voltage input/output	1.5 kV AC (type test)
	2 kV AC (routine test)
Insulation voltage output / PE	500 V DC (routine test)
Insulation voltage input / PE	4 kV AC (type test)

	1.5 kV AC (routine test)

Product properties

Product type	Power supply
Product family	QUINT POWER
MTBF (IEC 61709, SN 29500)	> 860000 h (40 °C)

Insulation characteristics

Protection class	I
Degree of pollution	2

Dimensions

Width	120 mm
Height	130 mm
Depth	125 mm

Installation dimensions

Installation distance right/left	5 mm / 5 mm
Installation distance top/bottom	50 mm / 50 mm

Mounting

Mounting type	DIN rail mounting
Assembly note	alignable: P_N ≥50%, 5 mm horizontally, 15 mm next to active components, 50 mm vertically alignable: P_N <50%, 0 mm horizontally, 40 mm vertically top, 20 mm vertically bottom
Mounting position	horizontal DIN rail NS 35, EN 60715
With protective coating	no

Material specifications

Housing material	Metal
Housing material	Steel sheet, zinc-plated
Type of housing	Steel sheet, zinc-plated

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	≤ 2000 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)	< 15 Hz, amplitude ±2.5 mm (according to IEC 60068-2-6)
	15 Hz ... 150 Hz, 2.3g, 90 min.

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 - Electrical safety	EN 60950-1/VDE 0805 (SELV)
	EN 61558-2-17
Standard - Safe isolation	DIN VDE 0100-410
Standard - Safety of transformers	EN 61558-2-17

Approvals

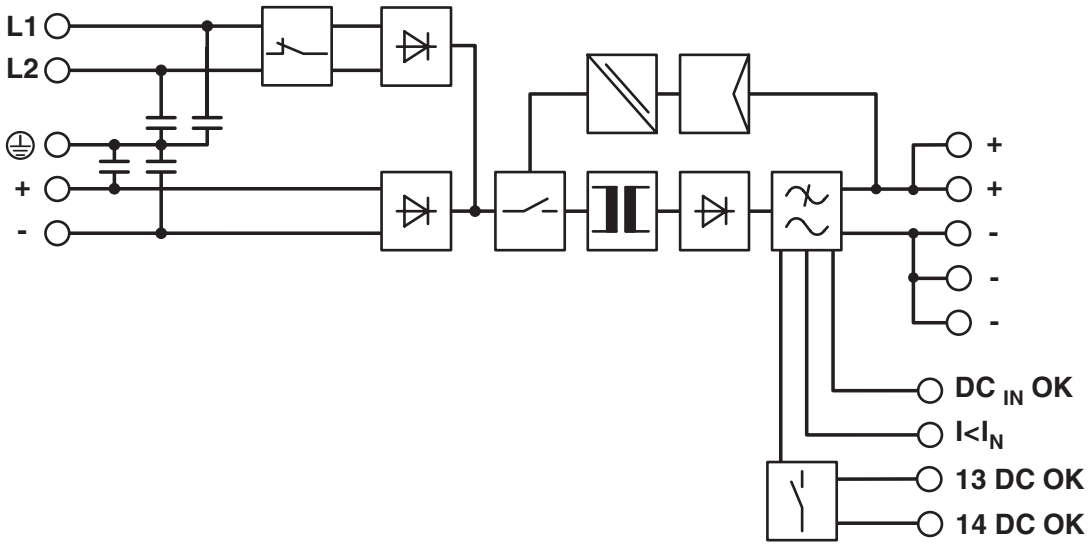
UL approvals	UL/C-UL listed UL 508
	UL/C-UL Recognized UL 60950-1

EMC data

Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU

Drawings

Block diagram



Classifications

ECLASS

ECLASS-13.0	27040701

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)

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