

QUINT-PS/1AC/24DC/40 - Power supply unit



2866789

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Primary-switched power supply unit QUINT POWER, Screw connection, DIN rail mounting, SFB Technology (Selective Fuse Breaking), input: 1-phase, output: 24 V DC / 40 A

Product Description

QUINT POWER power supplies with maximum functionality

QUINT POWER circuit breakers magnetically and therefore quickly trip at six times the nominal current, for selective and therefore cost-effective system protection. The high level of system availability is additionally ensured, thanks to preventive function monitoring, as it reports critical operating states before errors occur.

Reliable starting of heavy loads takes place via the static power reserve POWER BOOST. Thanks to the adjustable voltage, all ranges between 5 V DC ... 56 V DC are covered.

Your advantages

- Reliable starting of difficult loads with the static POWER BOOST power reserve with up to 1.5 times the nominal current permanently
- Fast tripping of standard circuit breakers with dynamic power reserve SFB (selective fuse breaking) technology with up to 6 times the nominal current for 12 ms
- For superior system availability
- Preventive function monitoring

Commercial Data

Item number	2866789
Packing unit	1 pc
Minimum order quantity	1 pc
Sales Key	CMP
Product Key	CMPQ13
Catalog Page	Page 210 (C-4-2017)
GTIN	4046356421720
Weight per Piece (including packing)	3,820 g
Weight per Piece (excluding packing)	3,445 g
Customs tariff number	85044083
Country of origin	TH

Technical Data

Input data

AC operation

Nominal input voltage range	100 V AC ... 240 V AC
Input voltage range	85 V AC ... 264 V AC
Derating	< 100 V AC (1 %/V)
Input voltage range AC	85 V AC ... 264 V AC
Input voltage range DC	90 V DC ... 300 V DC (UL 508: ≤ 250 V DC)
Electric strength, max.	300 V AC
Voltage type of supply voltage	AC
Inrush current	< 15 A (typical)
Inrush current integral (I^2t)	< 1.7 A ² s
AC frequency range	45 Hz ... 65 Hz
Frequency range DC	0 Hz
Mains buffering time	> 35 ms (120 V AC) > 35 ms (230 V AC)
Current consumption	8.8 A (120 V AC) 4.6 A (230 V AC) 9.5 A (110 V DC) 4.7 A (220 V DC)
Nominal power consumption	1157 VA
Protective circuit	Transient surge protection; Varistor, gas-filled surge arrester
Power factor (cos phi)	0.88
Typical response time	< 0.7 s
Input fuse	20 A (slow-blow, internal)
Permissible backup fuse	B16 B25 AC:
Permissible DC backup fuse	DC: Connect a suitable fuse upstream
Recommended breaker for input protection	16 A ... 20 A (AC: Characteristics B, C, D, K)
Discharge current to PE	< 3.5 mA

DC operation

Nominal input voltage range	120 V DC ... 300 V DC (UL 508: ≤ 250 V DC)
Input voltage range	90 V DC ... 300 V DC (UL 508: ≤ 250 V DC)
Derating	< 120 V DC (0.5 %/V)
Voltage type of supply voltage	DC

Output data

Efficiency	> 92 % (for 230 V AC and nominal values)
Output characteristic	U/I
Nominal output voltage	24 V DC ±1 %
Setting range of the output voltage (U_{Set})	18 V DC ... 29.5 V DC (> 24 V DC, constant capacity restricted)
Nominal output current (I_N)	40 A (-25 °C ... 60 °C, $U_{OUT} = 24$ V DC)

QUINT-PS/1AC/24DC/40 - Power supply unit



2866789

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POWER BOOST (I_{Boost})	45 A (-25 °C ... 40 °C permanent, $U_{OUT} = 24$ V DC)
Selective Fuse Breaking (I_{SFB})	215 A (12 ms)
Magnetic circuit breaker tripping	B2 / B4 / B6 / B10 / B16 / B25 / C2 / C4 / C6 / C13
Derating	60 °C ... 70 °C (2.5%/K)
Feedback voltage resistance	≤ 35 V DC
Protection against overvoltage at the output (OVP)	≤ 35 V DC
Residual ripple	< 30 mV _{PP} (with nominal values)
Short-circuit-proof	yes
Output power	960 W
Maximum no-load power dissipation	14 W
Power loss nominal load max.	80 W
Rise time	< 0.1 s (U_{OUT} (10 % ... 90 %))
Connection in parallel	yes, for redundancy and increased capacity
Connection in series	yes

Signal: DC OK active

Output description	$U_{OUT} > 0.9 \times U_N$: High signal
Switching voltage range	18 V DC ... 24 V DC
Output voltage	+ 24 V DC
Maximum inrush current	≤ 20 mA (short-circuit-proof)
Continuous load current	≤ 20 mA

Signal: DC OK floating

Output description	Relay contact, $U_{OUT} > 0.9 \times U_N$: Contact closed
Maximum switching voltage	30 V AC
	24 V DC
Maximum inrush current	0.5 A
	1 A
Continuous load current	1 A

Signal: POWER BOOST, active

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

Connection data

Input

Connection method	Screw connection
Conductor cross section, rigid min.	0.2 mm ²
Conductor cross section, rigid max.	6 mm ²
Conductor cross section flexible min.	0.2 mm ²
Conductor cross section flexible max.	4 mm ²
Conductor cross section AWG min.	14

QUINT-PS/1AC/24DC/40 - Power supply unit



2866789

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Conductor cross section AWG max.	10
Stripping length	7 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.	0.5 mm ²
Conductor cross section, rigid max.	16 mm ²
Conductor cross section flexible min.	0.5 mm ²
Conductor cross section flexible max.	16 mm ²
Conductor cross section AWG min.	8
Conductor cross section AWG max.	6
Stripping length	10 mm
Screw thread	M4
Tightening torque, min	1.2 Nm
Tightening torque max	1.5 Nm

Signal

Connection method	Screw connection
Conductor cross section, rigid min.	0.2 mm ²
Conductor cross section, rigid max.	6 mm ²
Conductor cross section flexible min.	0.2 mm ²
Conductor cross section flexible max.	4 mm ²
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
	Active switching output
	Relay contact

Signal output: DC OK active

Status display	$U_{OUT} > 0.9 \times U_N$: "DC OK" LED green
Note on status display	$U_{OUT} < 0.9 \times U_N$: Flashing "DC OK" LED
	$I_{OUT} < I_N$: LED ON

Signal output: DC OK floating

Status display	$U_{OUT} > 0.9 \times U_N$: "DC OK" LED green
Note on status display	$U_{OUT} < 0.9 \times U_N$: Flashing "DC OK" LED

Signal output: POWER BOOST, active

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Status display	I _{OUT} > I _N : LED "BOOST" yellow
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Electrical properties

Number of phases	1.00
Insulation voltage input/output	4 kV AC (type test)
	2 kV AC (routine test)
Insulation voltage output / PE	500 V DC (routine test)
Insulation voltage input / PE	3.5 kV AC (type test)
	2 kV AC (routine test)

Product properties

Product type	Power supply
Product family	QUINT POWER
MTBF (IEC 61709, SN 29500)	> 900000 h (25 °C)
	> 530000 h (40 °C)
	> 240000 h (60 °C)

Insulation characteristics

Protection class	I
Degree of pollution	2

Dimensions

Width	180 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

Alternative assembly

Width	122 mm
Height	130 mm
Depth	183 mm

Mounting

Mounting type	DIN rail mounting
Assembly instructions	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
Hood version	Galvanized sheet steel, free from chrome (VI)

QUINT-PS/1AC/24DC/40 - Power supply unit



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Side element version	Aluminum
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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
Ambient temperature (start-up type tested)	-40 °C
Maximum altitude	4000 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)	5 Hz ... 100 Hz resonance search 0.7g, 90 min., resonance frequency 0.7g, 90 min. (in accordance with DNV GL Class A)

Standards and regulations

Rail applications	EN 50121-4
	EN 50121-3-2
Standard – Limitation of mains harmonic currents	EN 61000-3-2
Standard - Electrical safety	IEC 61010-2-201 (SELV)
Standard - Equipment safety	BG (design tested)
Standard – Protection against shock currents, basic requirements for protective separation in electrical equipment	EN 50178
Standard – Safety extra-low voltage	IEC 61010-1 (SELV)
	IEC 61010-2-201 (PELV)
Standard - Safe isolation	IEC 61010-2-201
Standard - safety for equipment for measurement, control, and laboratory use	IEC 61010-1

Overvoltage category

EN 62477-1	III
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Approvals

CSA	CSA-C22.2 No. 107.1-01
Shipbuilding approval	DNV GL (EMC A), ABS, LR, RINA, NK, BV
UL approvals	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

Performance level according to ISO 13849	without
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EMC data

Low Voltage Directive	Conformance with Low Voltage Directive 2014/35/EC
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QUINT-PS/1AC/24DC/40 - Power supply unit



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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
Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
Noise emission	EN 55011 (EN 55022)

Electrostatic discharge

Standards/regulations	EN 61000-4-2
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Electrostatic discharge

Contact discharge	8 kV (Test Level 4)
Discharge in air	15 kV (Test Level 4)
Comments	Criterion A

Electromagnetic HF field

Standards/regulations	EN 61000-4-3
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Electromagnetic HF field

Frequency range	80 MHz ... 1 GHz
Test field strength	20 V/m (Test Level 3)
Frequency range	1 GHz ... 2 GHz
Test field strength	10 V/m (Test Level 3)
Frequency range	2 GHz ... 3 GHz
Test field strength	10 V/m (Test Level 3)
Comments	Criterion A

Fast transients (burst)

Standards/regulations	EN 61000-4-4
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Fast transients (burst)

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

Surge voltage load (surge)

Standards/regulations	EN 61000-4-5
Input	2 kV (Test Level 3 - symmetrical)
	4 kV (Test Level 4 - asymmetrical)
Output	1 kV (Test Level 2 - symmetrical)
	2 kV (Test Level 3 - asymmetrical)
Signal	1 kV (Test Level 2 - asymmetrical)
Comments	Criterion A

Conducted interference

Standards/regulations	EN 61000-4-6
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Conducted interference

I/O/S	asymmetrical
Frequency range	0.15 MHz ... 80 MHz
Comments	Criterion A
Voltage	10 V (Test Level 3)

Wireless telephone simulation

Standards/regulations	ENV 50204
Frequency	900 MHz 1800 MHz
Field intensity	20 V/m

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

Criteria

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

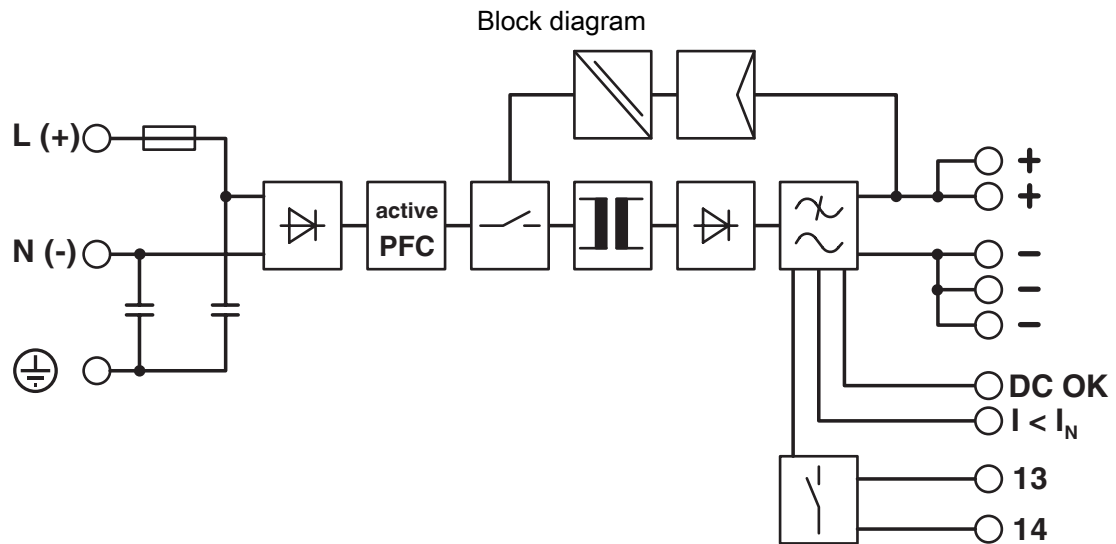
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Drawings



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Approvals



cUL Recognized
Approval ID: FILE E 211944



UL Recognized
Approval ID: FILE E 211944



IECEE CB Scheme
Approval ID: SI-5547



EAC
Approval ID: EAC-Zulassung



LR
Approval ID: LR22301698TA-02



NK
Approval ID: TA22564M



BV
Approval ID: 21004/C1 BV



EAC
Approval ID: EAC-Zulassung



UL Listed
Approval ID: FILE E 123528



cUL Listed
Approval ID: FILE E 123528



RINA
Approval ID: ELE333522XG



EAC
Approval ID: RU S-DE.BL08.W.00764

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UL Recognized

Approval ID: FILE E 211944



IECEE CB Scheme

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cUL Recognized

Approval ID: FILE E 211944



cUL Listed

Approval ID: FILE E 123528



UL Listed

Approval ID: FILE E 123528



BV

Approval ID: 21004/C1 BV



NK

Approval ID: TA22564M



RINA

Approval ID: ELE333522XG



LR

Approval ID: LR22301698TA-02



EAC

Approval ID: RU S-DE.BL08.W.00764



EAC

Approval ID: RU S-DE.BL08.W.00764



EAC

Approval ID: RU S-DE.BL08.W.00764

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cUL Listed

Approval ID: FILE E 199827



UL Listed

Approval ID: FILE E 199827



UL Listed

Approval ID: FILE E 199827



cUL Listed

Approval ID: FILE E 199827

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Classifications

ECLASS

ECLASS-11.0	27040701
ECLASS-12.0	27040701
ECLASS-13.0	27040701

ETIM

ETIM 8.0	EC002540
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UNSPSC

UNSPSC 21.0	39121000
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Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 25;
	For information on hazardous substances, refer to the manufacturer's declaration available under "Downloads"

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Accessories

UTA 107 - DIN rail adapter

2853983

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Universal DIN rail adapter, for screwing on switchgear



UWA 130 - Mounting adapter

2901664

<https://www.phoenixcontact.com/in/products/2901664>

2-piece universal wall adapter for securely mounting the device in the event of strong vibrations. The profiles that are screwed onto the side of the device are screwed directly onto the mounting surface. The universal wall adapter is attached on the left/right.



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QUINT-DIODE/12-24DC/2X20/1X40 - Redundancy module

2320157

<https://www.phoenixcontact.com/in/products/2320157>



DIN rail diode module 12-24 V DC/2x20 A or 1x40 A. Uniform redundancy up to the consumer.

QUINT-ORING/24DC/2X20/1X40 - Redundancy module, with protective coating

2320186

<https://www.phoenixcontact.com/in/products/2320186>



Active QUINT redundancy module for DIN rail mounting with ACB (Auto Current Balancing) Technology and monitoring functions, input: 24 V DC/2x 20 A, output: 24 V DC/1 x 40 A, including mounted UTA 107/30 universal DIN rail adapter

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CB TM1 1A SFB P - Thermomagnetic device circuit breaker

2800836

<https://www.phoenixcontact.com/in/products/2800836>



Thermomagnetic device circuit breaker, 1-pos., tripping characteristic SFB, 1 changeover contact, plug for base element.

CB TM1 2A SFB P - Thermomagnetic device circuit breaker

2800837

<https://www.phoenixcontact.com/in/products/2800837>



Thermomagnetic device circuit breaker, 1-pos., tripping characteristic SFB, 1 changeover contact, plug for base element.

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CB TM1 3A SFB P - Thermomagnetic device circuit breaker

2800838

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Thermomagnetic device circuit breaker, 1-pos., tripping characteristic SFB, 1 changeover contact, plug for base element.

CB TM1 4A SFB P - Thermomagnetic device circuit breaker

2800839

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Thermomagnetic device circuit breaker, 1-pos., tripping characteristic SFB, 1 changeover contact, plug for base element.

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CB TM1 5A SFB P - Thermomagnetic device circuit breaker

2800840

<https://www.phoenixcontact.com/in/products/2800840>



Thermomagnetic device circuit breaker, 1-pos., tripping characteristic SFB, 1 changeover contact, plug for base element.

CB TM1 6A SFB P - Thermomagnetic device circuit breaker

2800841

<https://www.phoenixcontact.com/in/products/2800841>



Thermomagnetic device circuit breaker, 1-pos., tripping characteristic SFB, 1 changeover contact, plug for base element.

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CB TM1 8A SFB P - Thermomagnetic device circuit breaker

2800842

<https://www.phoenixcontact.com/in/products/2800842>



Thermomagnetic device circuit breaker, 1-pos., tripping characteristic SFB, 1 changeover contact, plug for base element.

CB TM1 10A SFB P - Thermomagnetic device circuit breaker

2800843

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Thermomagnetic device circuit breaker, 1-pos., tripping characteristic SFB, 1 changeover contact, plug for base element.

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CB TM1 12A SFB P - Thermomagnetic device circuit breaker

2800844

<https://www.phoenixcontact.com/in/products/2800844>



Thermomagnetic device circuit breaker, 1-pos., tripping characteristic SFB, 1 changeover contact, plug for base element.

CB TM1 16A SFB P - Thermomagnetic device circuit breaker

2800845

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Thermomagnetic device circuit breaker, 1-pos., tripping characteristic SFB, 1 changeover contact, plug for base element.

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PLT-SEC-T3-230-FM-UT - Type 3 surge protection device

2907919

<https://www.phoenixcontact.com/in/products/2907919>



Type 2/3 surge protection, consisting of protective plug and base element with screw connection. For single-phase power supply network with integrated status indicator and remote signaling. Nominal voltage: 230 V AC/DC

PLT-SEC-T3-24-FM-UT - Type 3 surge protection device

2907916

<https://www.phoenixcontact.com/in/products/2907916>



Type 3 surge protection, consisting of protective plug and base element, with integrated status indicator and remote signaling for single-phase power supply networks. Nominal voltage: 24 V AC/DC

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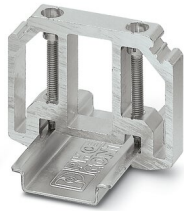
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E/AL-NS 35 - End clamp

1201662

<https://www.phoenixcontact.com/in/products/1201662>



End clamp, for end support of UKH 50 to UKH 240, is pushed onto DIN rail NS 35 and fixed with 2 screws, width: 10 mm, color: aluminum

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