

# QUINT4-PS/1AC/24DC/1.3/SC - Power supply



2904597

<https://www.phoenixcontact.com/fi/tuotteet/2904597>

Huomioi, että tässä ilmoitetut tiedot ovat peräisin online-luettelosta. Täydelliset tiedot löydät käyttöohjeesta. Internet-latausten yleiset käyttöehdot ovat voimassa.



Primary-switched power supply unit QUINT POWER, Screw connection, DIN rail mounting, input: 1-phase, output: 24 V DC / 1.3 A, adjustable from 24 V DC ... 28 V DC

## Tuotokuvaus

In the power range of up to 100 W, QUINT POWER provides superior system availability in the smallest size. Preventative function monitoring and exceptional power reserves are available for applications in the low-power range.

## Edut

- Starting of heavy loads with dynamic boost
- Preventive function monitoring indicates critical operating states before errors occur
- High efficiency and long service life, with low power dissipation and low heating
- Space savings in the control cabinet, thanks to a narrow, slim-line design
- Free selection between Push-in and screw connection

## Tekniset tiedot

### Input data

#### AC operation

Input voltage range	100 V AC ... 240 V AC -15 % ... +10 %
Electric strength, max.	300 V AC 30 s
Typical national grid voltage	120 V AC
	230 V AC
Voltage type of supply voltage	AC
Inrush current	typ. 5.9 A (at 25 °C)
Inrush current integral ( $I^2t$ )	< 0.1 A <sup>2</sup> s
Inrush current limitation	5.9 A
	< 14 A
Frequency range ( $f_N$ )	50 Hz ... 60 Hz -10 % ... +10 %
Mains buffering time	typ. 43 ms (120 V AC)
	typ. 43 ms (230 V AC)
Current consumption	0.46 A (100 V AC)
	0.37 A (120 V AC)
	0.2 A (230 V AC)
	0.2 A (240 V AC)
Nominal power consumption	37 VA
Protective circuit	Transient surge protection; Varistor
Typical response time	500 ms
Input fuse	3.15 A (slow-blow, internal)
Recommended breaker for input protection	6 A ... 16 A (Characteristic B, C or comparable)
Discharge current to PE	< 0.25 mA (264 V AC, 60 Hz)
	0.18 mA (264 V AC, 60 Hz)

#### DC operation

Input voltage range	110 V DC ... 250 V DC -20 % ... +40 %
Voltage type of supply voltage	DC
Current consumption	0.4 A (110 V DC)
	0.17 A (250 V DC)

### Output data

Efficiency	typ. 89.2 % (120 V AC)
	typ. 90.7 % (230 V AC)
Output characteristic	U/I Advanced
Nominal output voltage	24 V DC
Setting range of the output voltage ( $U_{Set}$ )	24 V DC ... 28 V DC (constant capacity)
Nominal output current ( $I_N$ )	1.3 A
Static Boost ( $I_{Stat.Boost}$ )	1.625 A ( $\leq 40$ °C)
Dynamic Boost ( $I_{Dyn.Boost}$ )	2.6 A ( $\leq 60$ °C (5 s))

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Derating	> 60 °C (2.5 %/K)
Feedback voltage resistance	≤ 35 V DC
Protection against overvoltage at the output (OVP)	≤ 32 V DC
Control deviation	< 0.5 % (Static load change 10 % ... 90 %)
	< 2 % (Dynamic load change 10 % ... 90 %, (10 Hz))
	< 0.1 % (change in input voltage ±10 %)
Residual ripple	< 40 mV <sub>PP</sub> (with nominal values)
Short-circuit-proof	yes
No-load proof	yes
Output power	30 W
	38 W
	60 W
Maximum no-load power dissipation	< 0.4 W (230 V AC)
	< 0.4 W (120 V AC)
Power loss nominal load max.	< 3.7 W (120 V AC)
	< 3.1 W (230 V AC)
Crest factor	typ. 1.71 (120 V AC)
	typ. 1.94 (230 V AC)
Rise time	50 ms (U <sub>Out</sub> = 10 % ... 90 %)
Connection in parallel	yes, for redundancy and increased capacity
Connection in series	yes

## Signal (configurable)

Digital	0 V DC 24 V DC 30 mA
Default	24 V DC 30 mA 24 V DC for U <sub>Out</sub> > 0.9 x U <sub>Set</sub>

## Connection data

### Input

Connection method	Screw connection
Conductor cross-section, rigid min.	0.14 mm <sup>2</sup>
Conductor cross-section, rigid max.	2.5 mm <sup>2</sup>
Conductor cross-section flexible min.	0.14 mm <sup>2</sup>
Conductor cross-section flexible max.	2.5 mm <sup>2</sup>
Single conductor/terminal point, stranded, with ferrule, min.	0.25 mm <sup>2</sup>
Single conductor/terminal point, stranded, with ferrule, max.	2.5 mm <sup>2</sup>
Conductor cross-section AWG min.	26
Conductor cross-section AWG max.	14
Stripping length	8 mm
Tightening torque, min	0.5 Nm
Tightening torque max	0.6 Nm

### Output

Connection method	Screw connection
Conductor cross-section, rigid min.	0.14 mm <sup>2</sup>

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## Signaling

Types of signaling	LED
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## Signal output

$P_{Out}$	$> P_{Thr}$ (LED lights up yellow, output power $> P_{Thr}$ , depending on the rotary selector switch setting)
$U_{Out}$	$> 0.9 \times U_{Set}$ (LED lights up green)
	$< 0.9 \times U_{Set}$ (LED flashes green)

## Electrical properties

Number of phases	1
Insulation voltage input/output	4 kV AC (type test)
	3 kV AC (routine test)
Switching frequency	2.00 kHz ... 35.00 kHz (Auxiliary converter stage)
	30.00 kHz ... 150.00 kHz (PFC stage)
	80.00 kHz ... 150.00 kHz (Main converter stage)

## Product properties

Product type	Power supply
Product family	QUINT POWER

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MTBF (IEC 61709, SN 29500)	> 1904000 h (25 °C)
	> 1107000 h (40 °C)
	> 486000 h (60 °C)
Environmental protection directive	RoHS Directive 2011/65/EU
	WEEE
	Reach

## Insulation characteristics

Protection class	II
Degree of pollution	2

## Life expectancy (electrolytic capacitors)

Current	1.3 A
Temperature	40 °C
Time	150000 h
Additional text	120 V AC

## Life expectancy (electrolytic capacitors)

Current	1.3 A
Temperature	40 °C
Time	215000 h
Additional text	230 V AC

## Life expectancy (electrolytic capacitors)

Current	1.3 A
Temperature	25 °C
Time	424000 h
Additional text	120 V AC

## Life expectancy (electrolytic capacitors)

Current	1.3 A
Temperature	25 °C
Time	609000 h
Additional text	230 V AC

## Dimensions

Dimensional drawing	
Width	22.5 mm
Height	99 mm

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Depth	90 mm
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## Installation dimensions

Installation distance right/left (active)	15 mm / 15 mm ( $P_{Out} \geq 50\%$ )
Installation distance right/left (passive)	5 mm / 5 mm ( $P_{Out} \geq 50\%$ )
Installation distance top/bottom (active)	30 mm / 30 mm ( $P_{Out} \geq 50\%$ )
Installation distance top/bottom (passive)	30 mm / 30 mm ( $P_{Out} \geq 50\%$ )
Installation distance top/bottom (active, passive)	30 mm / 30 mm ( $P_{Out} \leq 50\%$ )

## Mounting

Mounting type	DIN rail mounting
Assembly note	DIN rail mounting
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
Ambient temperature (start-up type tested)	-40 °C
Maximum altitude	≤ 5000 m (> 2000 m, observe derating)
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, ±2.5 mm amplitude; 15 Hz ... 100 Hz: 2.3 g 90 Min. (in accordance with IEC 60068-2-6)
Temp code	T4 (-25 ... +70 °C; > 60 °C, Derating: 2,5 %/K)

## Standards and regulations

Standard – Limitation of mains harmonic currents	EN 61000-3-2
Standard - Electrical safety	IEC 61010-2-201 (SELV)
Standard – Safety extra-low voltage	IEC 61010-1 (SELV) IEC 61010-2-201 (PELV)
Standard - Safe isolation	IEC 61558-2-16 IEC 61010-2-201
Standard - safety for equipment for measurement, control, and laboratory use	IEC 61010-1
Standard - Safety of transformers	EN 61558-2-16

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Standard - power supply devices for low voltage with DC output	EN 61204-3
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## Approvals

SIQ	CB-Scheme (IEC 61010-1, IEC 61010-2-201)
UL approvals	UL Listed UL 61010-1
	UL Listed UL 61010-2-201
	UL 1310 Class 2 Power Units
	UL 121201 & CSA C22.2 No. 213-17 Class I, Division 2, Groups A, B, C, D T4 (Hazardous Location)

## EMC data

Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
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
EMC requirements for power supply	IEC 61850-3 (G,H)
	EN 61000-6-5 (switching devices)

### Conducted noise emission

Standards/regulations	EN 55016
	EN 61000-6-3 (Class B)

### Noise emission

Standards/regulations	Additional basic standard EN 61000-6-5 (immunity in switching devices), IEC/EN 61850-3 (power supply)
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### Noise emission

Standards/regulations	EN 55016
	EN 61000-6-3 (Class B)

### Harmonic currents

Frequency range	0 kHz ... 2 kHz
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### Flicker

Frequency range	0 kHz ... 2 kHz
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### Electrostatic discharge

Standards/regulations	EN 61000-4-2
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### Electrostatic discharge

Contact discharge	8 kV (Test Level 4)
Discharge in air	8 kV (Test Level 3)
Comments	Criterion A

### Electromagnetic HF field

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

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Frequency range	80 MHz ... 1 GHz
Test field strength	20 V/m (Test Level 3)
Frequency range	1 GHz ... 6 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	4 kV (Test Level X - asymmetrical)
Signal	4 kV (Test Level X - asymmetrical)
Comments	Criterion A

## Surge voltage load (surge)

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	0.5 kV (Test Level 2 - symmetrical)
	1 kV (Test Level 2 - asymmetrical)
Comments	Criterion A

## Conducted interference

Standards/regulations	EN 61000-4-6
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## Conducted interference

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

## Power frequency magnetic field

Standards/regulations	EN 61000-4-8
Frequency	16.67 Hz
	50 Hz
	60 Hz
Test field strength	100 A/m
Additional text	60 s
Comments	Criterion A
Frequency	50 Hz
	60 Hz
Frequency range	50 Hz ... 60 Hz
Test field strength	1 kA/m
Additional text	3 s
Frequency	0 Hz

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Test field strength	300 A/m
Additional text	DC, 60 s

## Voltage dips

Standards/regulations	EN 61000-4-11
Voltage	100 V AC
Frequency	60 Hz
Voltage dip	70 %
Number of periods	0.5 / 1 / 30 periods
Additional text	Test Level 2
Comments	Criterion A
Voltage dip	40 %
Number of periods	5 / 10 / 50 periods
Additional text	Test Level 2
Comments	Criterion B
Voltage dip	0 %
Number of periods	0.5 / 1 / 5 / 50 periods
Additional text	Test Level 2
Comments	Criterion B

## Pulse-shape magnetic field

Standards/regulations	EN 61000-4-9
Test field strength	1000 A/m
Comments	Criterion A

## Attenuated sinusoidal oscillations (ring wave)

Standards/regulations	EN 61000-4-12
Input	2 kV (symmetrical) 4 kV (asymmetrical)
Comments	Criterion A

## Asymmetrical conducted disturbance variables

Standards/regulations	EN 61000-4-16
Test level 1	16.67 Hz 50 Hz 60 Hz (Test Level 2)
Voltage	30 V (10 s)
Test level 2	16.67 Hz 50 Hz 60 Hz (Test Level 4)
Voltage	300 V (1 s)
Comments	Criterion A

## Attenuated oscillating wave

Input/Output/Signal	1 kV (symmetrical) 2.5 kV (asymmetrical)
Comments	Criterion A

## Criteria

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

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	by the device itself.
Criterion C	Temporary adverse effects on the operating behavior, which the device corrects automatically or which can be restored by actuating the operating elements.

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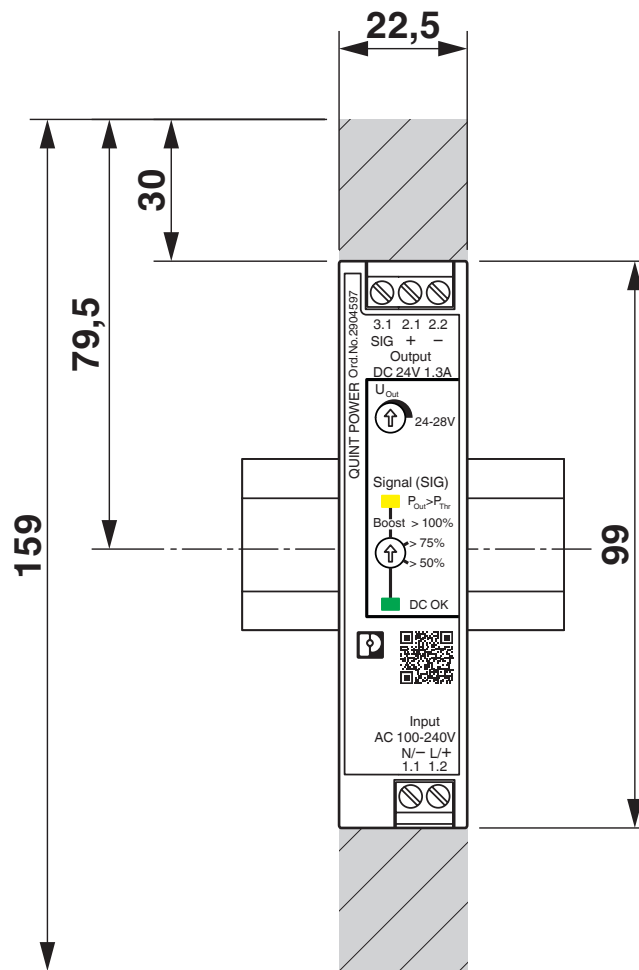
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## Piirustukset

Dimensional drawing

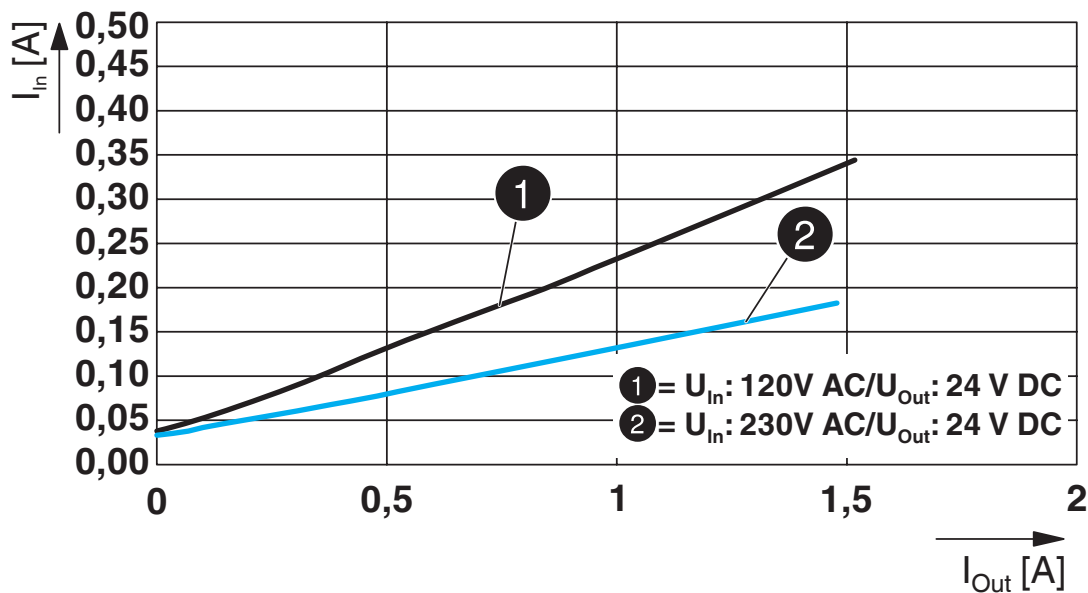


Schematic diagram

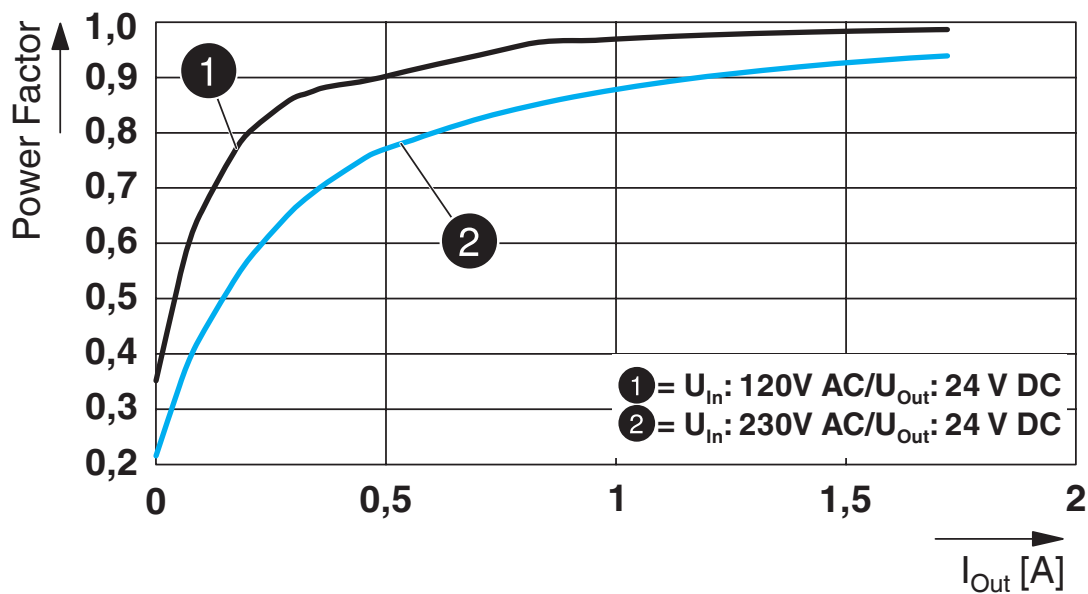
## Housing



Diagram



Diagram



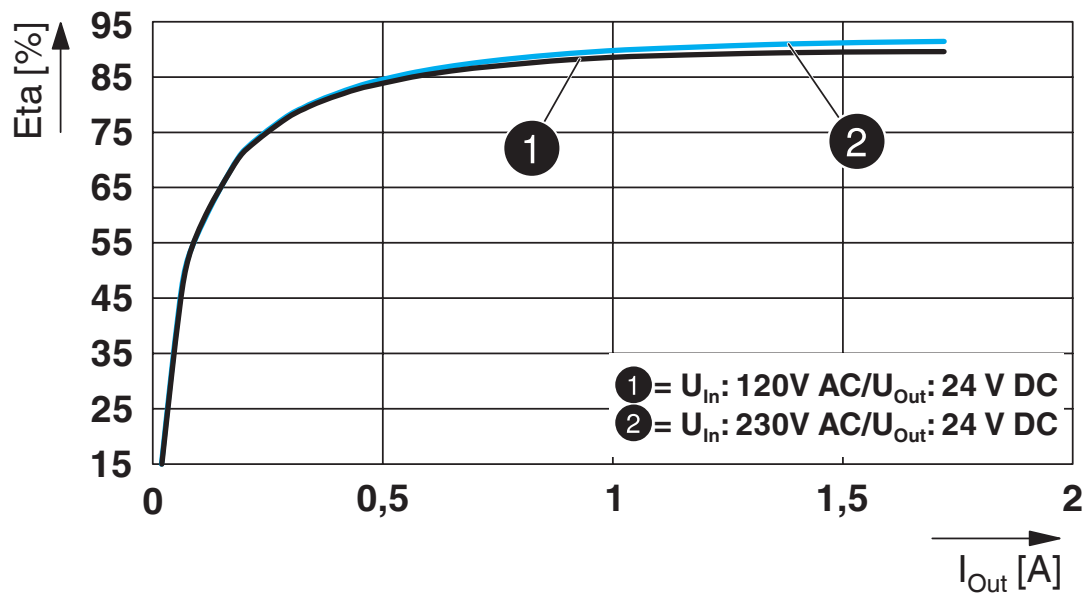
# QUINT4-PS/1AC/24DC/1.3/SC - Power supply



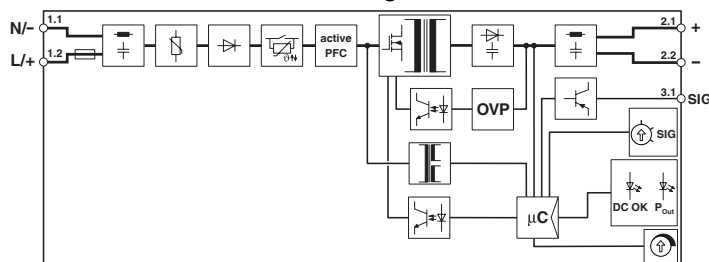
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Diagram



Block diagram



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## Hyväksynät

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**IECEE CB Scheme**

Hyväksyntätunnus: SI-8861



**EAC**

Hyväksyntätunnus: RU S-DE.BL08.W.00764



**UL Listed**

Hyväksyntätunnus: E123528



**cUL Listed**

Hyväksyntätunnus: E123528



**EAC**

Hyväksyntätunnus: RU S-DE.BL08.W.00764

**DNV**

Hyväksyntätunnus: TAA00001YD



**BV**

Hyväksyntätunnus: 44621/B1 BV



**cUL Listed**

Hyväksyntätunnus: E199827



**UL Listed**

Hyväksyntätunnus: E199827

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## Luokitukset

### ECLASS

ECLASS-13.0	27040701
ECLASS-15.0	27040701

### ETIM

ETIM 10.0	EC002540
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### UNSPSC

UNSPSC 21.0	39121000
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## Environmental product compliance

### EU RoHS

Täyttää RoHS-direktiivin vaatimukset	Kyllä, Ei poikkeussäännöksiä
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### China RoHS

Environment friendly use period (EFUP)	EFUP-25
	Löydät tuotekohtaisen Kiinan RoHS-ilmoitusluettelon kunkin tuotteen latausalueelta Valmistajan ilmoitus -kohdasta. EFUP-E-merkinnän sisältäville tuotteille ei tarvita Kiinan RoHS-ilmoitusluettelo, eikä sitä tarvitse siksi laatia.

### EU REACH SVHC

Huomautus REACH-kandidaattaineesta (CAS-nro)	Aineen pitoisuus ei ole yli 0,1 %.
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### EF3.1 Ilmastonmuutos

CO2e kg	4,879 kg CO2e
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