QUINT4-ORING/12-24DC/2X20/2X20 - Redundancy module

1088207

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Active redundancy module QUINT ORING with decoupling MOSFET, ACB Technology, DIN rail mounting, 12 V DC ... 24 V DC, 2x 20 A, 2x 20 A

Product description

The new fourth-generation QUINT ORING modules feature application-specific surge protection, as well as two outputs that ensure maximum system availability. The ACB Technology (Auto Current Balancing) also doubles the service life of the redundantly operated power supplies, and thus contributes to minimizing your system costs.

Your advantages

- Service life of the redundant solution is doubled, thanks to uniform distribution of the load
- Save energy
- Permanent monitoring of redundancy
- Consistent redundancy up to the load

Commercial data

Item number	1088207
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	CM16
Product key	CMRI43
GTIN	4055626887753
Weight per piece (including packing)	650.6 g
Weight per piece (excluding packing)	470 g
Customs tariff number	85371091
Country of origin	CN

Technical data

Input data

Nominal input voltage range	12 V DC ... 24 V DC
Input voltage range	8 V DC ... 29.5 V DC
Voltage type of supply voltage	DC
Nominal input current (I_N)	2x 20 A
Static Boost ($I_{Stat.Boost}$)	2x 25 A
Dynamic Boost ($I_{Dyn.Boost}$)	2x 30 A (5 s)
Selective Fuse Breaking (I_{SFB})	2x 120 A (15 ms)
Reverse polarity protection	yes, < 60 V DC
Intended listed circuit breaker for input protection	60 V DC
	16 A (Characteristic B, C)
Voltage drop, input/output	typ. 0.1 V (I_{OUT} = 20 A)

Output data

Efficiency	typ. 98.5 % (12 V DC)
	typ. 99 % (24 V DC)
Nominal output voltage	U_{In} - 0.1 V
Nominal output current (I_N)	2x 20 A
	1x 40 A
Static Boost ($I_{Stat.Boost}$)	2x 25 A
	1x 50 A
Dynamic Boost ($I_{Dyn.Boost}$)	2x 30 A (5 s)
	1x 60 A (5 s)
Selective Fuse Breaking (I_{SFB})	2x 120 A (15 ms)
	1x 240 A (15 ms)
Connection in series	no
Feedback voltage resistance	≤ 32 V DC
Protection against overvoltage at the output (OVP)	≤ 32 V DC
Power loss nominal load max.	11.7 W (I_{OUT} = 40 A)
	12.7 W (I_{OUT} = 40 A)

Connection data

Input

Position	1.x

Conductor connection

Connection method	Screw connection
rigid	0.5 mm² ... 16 mm²
flexible	0.5 mm² ... 16 mm²
flexible with ferrule without plastic sleeve	0.5 mm² ... 16 mm²
flexible with ferrule with plastic sleeve	0.5 mm² ... 16 mm²

AWG	20 ... 6
Stripping length	10 mm
Tightening torque	1.2 Nm ... 1.6 Nm
Drive form screw head	Slotted L

Output

Position	2.x

Conductor connection

Connection method	Screw connection
rigid	0.5 mm² ... 16 mm²
flexible	0.5 mm² ... 16 mm²
flexible with ferrule without plastic sleeve	0.5 mm² ... 16 mm²
flexible with ferrule with plastic sleeve	0.5 mm² ... 16 mm²
AWG	20 ... 6
Stripping length	10 mm
Tightening torque	1.2 Nm ... 1.6 Nm
Drive form screw head	Slotted L

Signal

Position	3.x

Conductor connection

Connection method	Push-in connection
rigid	0.2 mm² ... 1.5 mm²
flexible	0.2 mm² ... 1.5 mm²
flexible with ferrule without plastic sleeve	0.2 mm² ... 1.5 mm²
flexible with ferrule with plastic sleeve	0.2 mm² ... 0.75 mm²
rigid (AWG)	24 ... 16
Stripping length	8 mm

Signaling

LED signaling

Types of signaling	DC OK (green)
Signal threshold	Redundancy OK (LED lights up green)
	$I < I_n$ (LED lights up green)
	ACB OK (LED lights up green)
	ACB OK (sources are slightly asymmetrical) (LED lights up green and yellow)
	Sources are asymmetrical (LED flashing red)

Signal output Relay 13/14

Connection labeling	3.1, 3.2
Signalization designation	Relais 13/14
Switch contact (floating)	floating
Digital	30 V DC

	100 mA
Signal option	Redundancy OK

Signal output Relay 23/24

Connection labeling	3.3, 3.4
Signalization designation	Relais 23/24
Switch contact (floating)	floating
Digital	30 V DC
	100 mA
Signal option	ACB OK

Electrical properties

Insulation voltage input, output / housing	600 V AC
	850 V DC

Product properties

Product type	Redundancy module
Product family	QUINT ORING
MTBF (IEC 61709, SN 29500)	> 1792000 h (25 °C)
	> 1007000 h (40 °C)
	> 460000 h (60 °C)
Environmental protection directive	RoHS Directive 2011/65/EU
	WEEE
	Reach
LED	yes

Insulation characteristics

Protection class	III
Degree of pollution	2

Life expectancy (electrolytic capacitors)

Current	40 A
Temperature	40 °C
Time	224000 h
Additional text	12 V DC

Life expectancy (electrolytic capacitors)

Current	40 A
Temperature	40 °C
Time	182000 h
Additional text	24 V DC

Dimensions

Item dimensions

Width	46 mm
Height	130 mm

Depth	132 mm
Depth (Device depth (DIN rail mounting))	125 mm (Device depth (DIN rail mounting))

Item dimensions with alternative mounting

Width	122 mm
Height	130 mm
Depth	49 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

Material specifications

Flammability rating according to UL 94 (housing / terminal blocks)	V0
Housing material	Metal
Type of housing	Aluminum (AlMg3)
Hood version	Galvanized sheet steel, free from chrome (VI)
Side element version	Aluminum

Environmental and real-life conditions

Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	-40 °C ... 70 °C (> 60 °C Derating: 2,5 %/K)
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Maximum altitude	5000 m
Max. permissible relative humidity (operation)	≤ 100 % (at 25 °C, non-condensing)
Shock (operation)	18 ms, 30g, per spatial direction (IEC 60068-2-27)
Vibration (operation)	< 15 Hz, amplitude ±2.5 mm (IEC 60068-2-6)
	15 Hz ... 150 Hz, 2.3g, 90 min.
Temp code	T4 (-25 ... +70 °C; > 60 °C, Derating: 2,5 %/K)

Standards and regulations

Electrical safety

Standard designation	Electrical safety (of control and regulation devices)
Standards/specifications	IEC 61010-1

Protective extra-low voltage

Standard designation	Protective extra-low voltage
Standards/specifications	EN 61010-1 (SELV)

Protective extra-low voltage

Standard designation	Protective extra-low voltage
Standards/specifications	IEC 61010-2-201 (PELV)

Approvals

Shipbuilding

Identification	DNV
	NK

UL

Identification	UL Listed UL 61010-1

UL

Identification	UL Listed UL 61010-2-201

UL

Identification	UL 121201 & CSA C22.2 No. 213-17 Class I, Division 2, Groups A, B, C, D T4 (Hazardous Location)

CSA

Identification	CAN/CSA-C22.2 No. 61010-1-12
Identification	CAN/CSA C22.2 No. 61010-2-201:18

ATEX

Identification	Ⓔx II 3 G Ex ec nC IIC T4 Gc
	DEKRA 22ATEX0104 X

IECEx

Identification	Ex ec nC IIC T4 Gc
	IECEx DEK 22.0089X

UKEX

Identification	Ⓔx II 3 G Ex ec nC IIC T4 Gc
	DEKRA 22UKEX6029X

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

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 power station)

Noise emission

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

DNV GL conducted noise emissions

DNV	Class B
Additional text	Bridge and deck area

DNV GL noise radiation

DNV	Class B
Additional text	Bridge and deck area

Electrostatic discharge

Standards/regulations	EN 61000-4-2

Electrostatic discharge

Contact discharge	6 kV (Test Level 3)
Discharge in air	8 kV (Test Level 3)
Comments	Criterion B

Electromagnetic HF field

Standards/regulations	EN 61000-4-3

Electromagnetic HF field

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

Fast transients (burst)

Input	2 kV (Test Level 3 - 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

Surge voltage load (surge)

Input	0.5 kV (Test Level 2 - symmetrical)

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

Conducted interference

Standards/regulations	EN 61000-4-6

Conducted interference

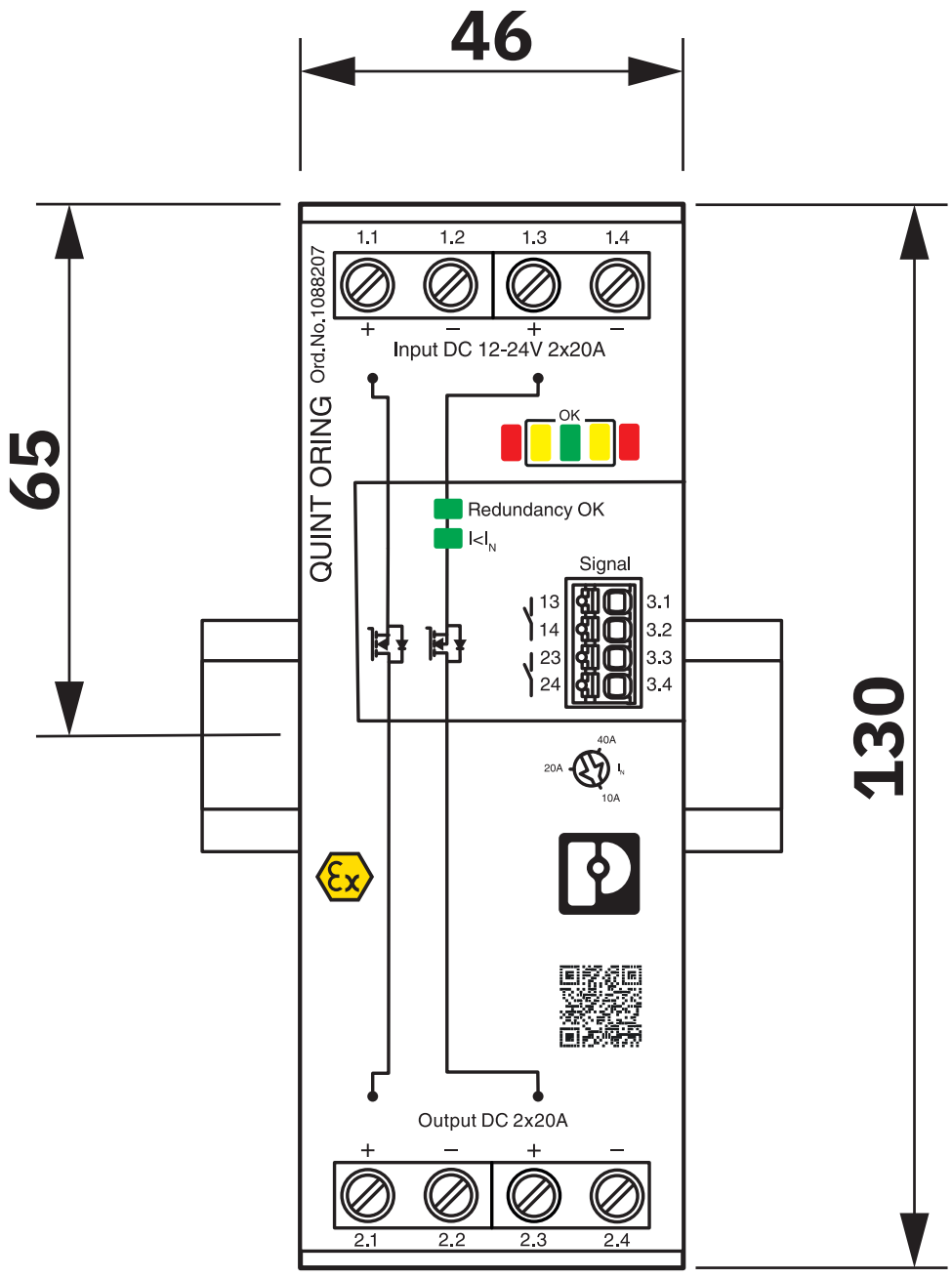
Input/output/signal	asymmetrical
Frequency range	0.15 MHz ... 80 MHz
Comments	Criterion A
Voltage	10 V (Test Level 3)

Criteria

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

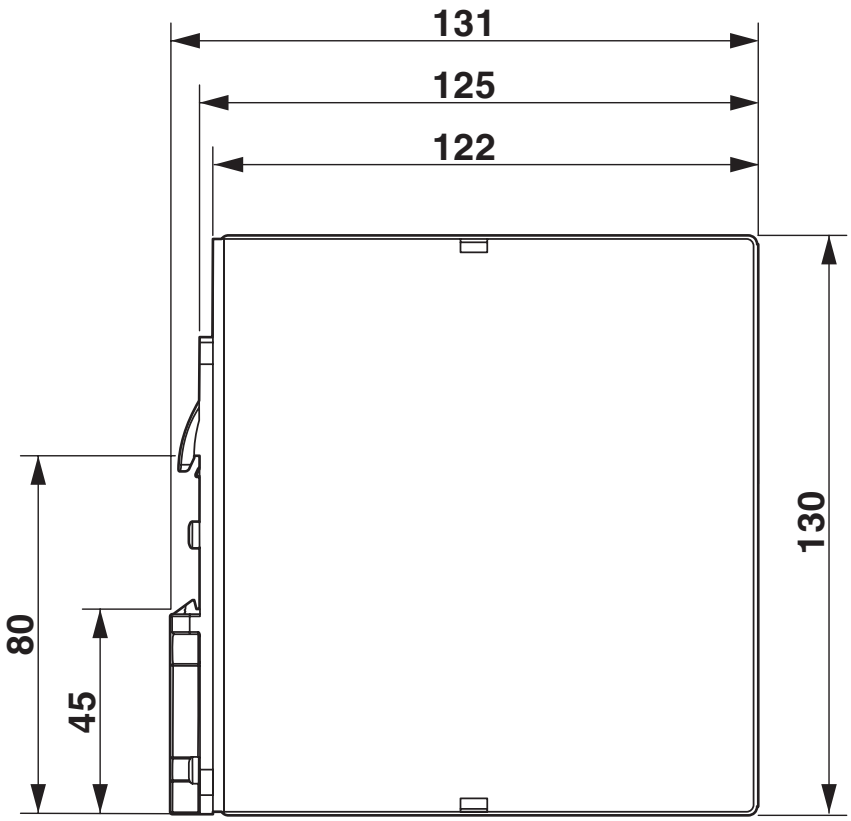
Drawings

Dimensional drawing



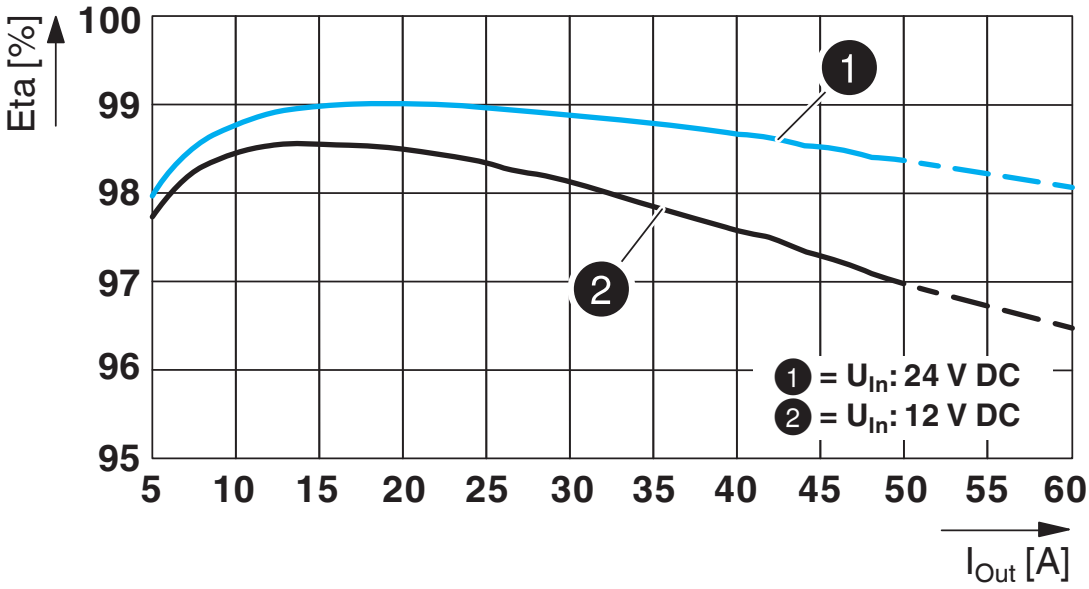
Device dimensions (dimensions in mm)

Dimensional drawing

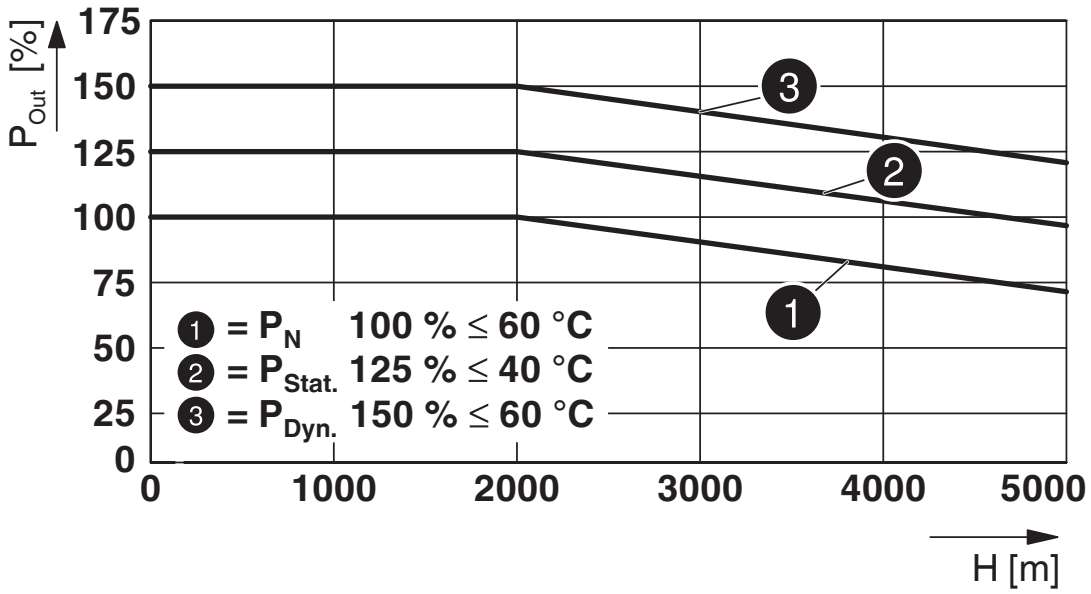


Device dimensions (dimensions in mm)

Diagram

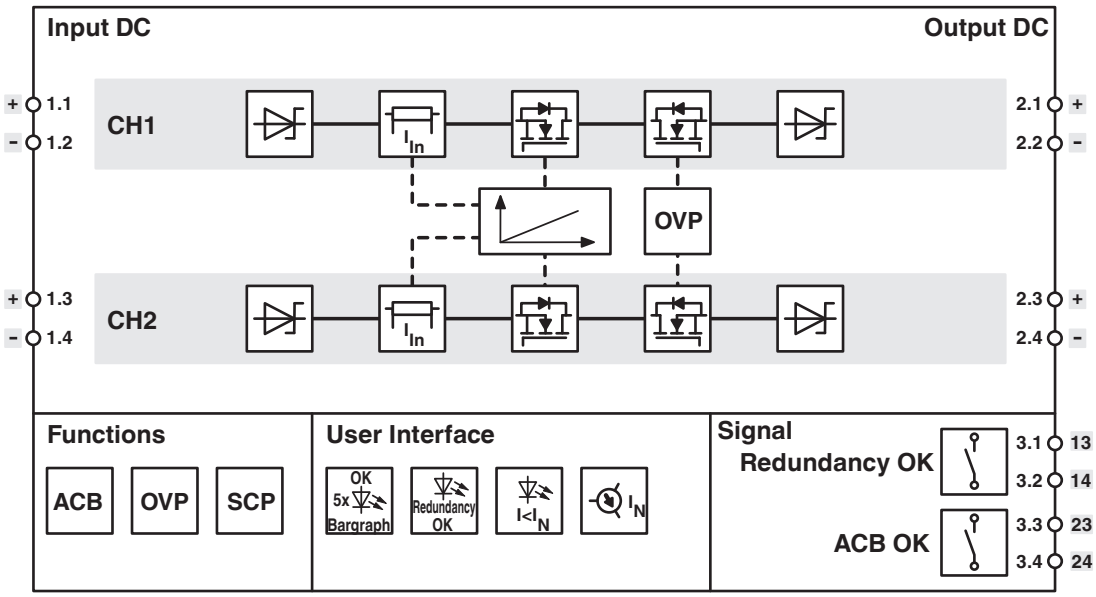


Diagram



Output power/installation altitude

Block diagram



Block diagram

Approvals

To download certificates, visit the product detail page: https://www.phoenixcontact.com/us/products/1088207

IECEE CB Scheme
Approval ID: DK-114506-UL

cULus Listed
Approval ID: FILE E 123528

DNV
Approval ID: TAA000011F

NK
Approval ID: TA25015M

IECEE CB Scheme
Approval ID: DK-114506-UL

NK
Approval ID: TA25015M

cULus Listed
Approval ID: FILE E 123528

DNV
Approval ID: TAA000011F

cULus Listed
Approval ID: FILE E 199827

ATEX
Approval ID: DEKRA 22ATEX0104 X

IECEx
Approval ID: IECEx DEK 22.0089X

CCC
Approval ID: 2023322303005535

UKCA-EX
Approval ID: DEKRA 22UKEX6029X

NEPSI-EX
Approval ID: GYJ23.1282X

EAC Ex
Approval ID: KZ 7500525010102095

cULus Listed
Approval ID: FILE E 199827

CCC
Approval ID: 2023322303005535

IECEx
Approval ID: IECEx DEK 22.0089X

ATEX
Approval ID: DEKRA 22ATEX0104 X

UKCA-EX
Approval ID: DEKRA 22UKEX6029X

NEPSI-EX
Approval ID: GYJ23.1282X

Classifications

ECLASS

ECLASS-13.0	27371010
ECLASS-15.0	27371010

ETIM

ETIM 10.0	EC000683

UNSPSC

UNSPSC 21.0	32151500

Environmental product compliance

EU RoHS

Fulfills EU RoHS substance requirements	Yes
Exemption	6(a)-I, 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)
	Lead(CAS: 7439-92-1)
SCIP	f5592357-816c-4903-b5ef-957dbc72b1ce

EF3.1 Climate Change

CO2e kg	25.87 kg CO2e

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