

# QUINT4-PS/24DC/12DC/8/PT - DC/DC converter



2910122

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Primary-switched DC/DC converter, QUINT POWER, DIN rail mounting, SFB Technology (Selective Fuse Breaking), input: 24 V DC, output: 12 V DC / 8 A

## Product description

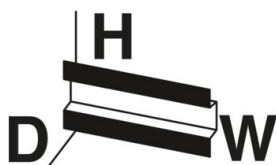
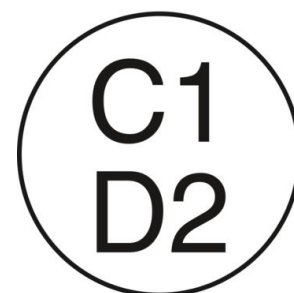
QUINT DC/DC converter with maximum functionality

DC/DC converters alter the voltage level, regenerate the voltage at the end of long cables or enable the creation of independent supply systems by means of electrical isolation.

QUINT DC/DC converters magnetically and therefore quickly trip circuit breakers with 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.

## Your advantages

- Most powerful output side: easy system expansion, reliable heavy load startup and miniature circuit breaker tripping
- Most comprehensive signaling: preventive function monitoring reports critical operating states before errors occur
- Free selection between Push-in and screw connection



## Commercial data

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|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 2910122       |
| Packing unit                         | 1 pc          |
| Minimum order quantity               | 1 pc          |
| Sales key                            | CM01          |
| Product key                          | CMDI43        |
| GTIN                                 | 4055626537474 |
| Weight per piece (including packing) | 833 g         |
| Weight per piece (excluding packing) | 835 g         |
| Customs tariff number                | 85044095      |
| Country of origin                    | TH            |

## Technical data

### Input data

|                                          |                                                         |
|------------------------------------------|---------------------------------------------------------|
| Nominal input voltage range              | 24 V DC                                                 |
| Input voltage range                      | 24 V DC -25 % ... +40 %                                 |
| Wide-range input                         | no                                                      |
| Electric strength, max.                  | 35 V DC (60 s)                                          |
| Inrush current                           | typ. 3 A                                                |
| Inrush current integral ( $I^2t$ )       | < 0.02 A <sup>2</sup> s                                 |
| Inrush current limitation                | 1 A                                                     |
| Mains buffering time                     | typ. 17 ms (24 V DC)                                    |
| Current consumption                      | 5.5 A (24 V DC)                                         |
| Typical response time                    | 300 ms (from SLEEP MODE)                                |
| Switch-on time                           | < 1 s                                                   |
| Input fuse                               | 15 A (slow-blow, internal)                              |
| Recommended breaker for input protection | 10 A ... 16 A (Characteristic B, C, D, K or comparable) |

### Output data

|                                                    |                                                    |
|----------------------------------------------------|----------------------------------------------------|
| Efficiency                                         | typ. 91 % (24 V DC)                                |
| Output characteristic                              | U/I Advanced                                       |
|                                                    | Smart HICCUP                                       |
|                                                    | FUSE MODE                                          |
| Nominal output voltage                             | 12 V DC                                            |
| Setting range of the output voltage ( $U_{Set}$ )  | 12 V DC ... 15 V DC (> 12 V DC, constant capacity) |
| Nominal output current ( $I_N$ )                   | 8 A                                                |
| Static Boost ( $I_{Stat.Boost}$ )                  | 10 A                                               |
| Dynamic Boost ( $I_{Dyn.Boost}$ )                  | 16 A (5 s)                                         |
| Selective Fuse Breaking ( $I_{SFB}$ )              | 48 A (15 ms)                                       |
| Magnetic circuit breaker tripping                  | A1 ... A6 / B2 ... B6 / Z1 ... Z6                  |
| Short-circuit-proof                                | yes                                                |
| No-load proof                                      | yes                                                |
| Output power ( $P_N$ )                             | 96 W                                               |
| Output power ( $P_{Stat. Boost}$ )                 | 120 W                                              |
| Output power ( $P_{Dyn. Boost}$ )                  | 192 W (5 s)                                        |
| Feedback voltage resistance                        | ≤ 25 V DC                                          |
| Protection against overvoltage at the output (OVP) | ≤ 18 V DC                                          |
| Residual ripple                                    | < 13 mV <sub>PP</sub>                              |
| Control deviation static                           | < 1 % (change in load, static 10 % ... 90 %)       |
| Control deviation dynamic                          | < 1 % (change in load, static 10 % ... 90 %)       |
| Control deviation Input voltage change             | < 1 % (change in load, static 10 % ... 90 %)       |
| Rise time                                          | < 100 ms ( $U_{OUT}$ (10 % ... 90 %))              |
| Connection in series                               | yes                                                |
| Maximum no-load power dissipation                  | < 2 W                                              |

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|                                  |                                            |
|----------------------------------|--------------------------------------------|
| Power loss nominal load max.     | < 9 W                                      |
| Power dissipation SLEEP MODE     | < 1 W                                      |
| Connection in parallel           | yes, for redundancy and increased capacity |
| Fuse protection (secondary side) | electronic                                 |
|                                  | thermal-magnetic                           |
|                                  | thermal                                    |

## Connection data

### Input

|          |     |
|----------|-----|
| Position | 1.x |
|----------|-----|

### Conductor connection

|                                              |                                           |
|----------------------------------------------|-------------------------------------------|
| Connection method                            | Push-in connection                        |
| rigid                                        | 0.2 mm <sup>2</sup> ... 6 mm <sup>2</sup> |
| flexible                                     | 0.2 mm <sup>2</sup> ... 6 mm <sup>2</sup> |
| flexible with ferrule without plastic sleeve | 0.2 mm <sup>2</sup> ... 4 mm <sup>2</sup> |
| flexible with ferrule with plastic sleeve    | 0.2 mm <sup>2</sup> ... 4 mm <sup>2</sup> |
| rigid (AWG)                                  | 24 ... 10                                 |
| Stripping length                             | 10 mm                                     |

### Output

|          |     |
|----------|-----|
| Position | 2.x |
|----------|-----|

### Conductor connection

|                                              |                                           |
|----------------------------------------------|-------------------------------------------|
| Connection method                            | Push-in connection                        |
| rigid                                        | 0.2 mm <sup>2</sup> ... 6 mm <sup>2</sup> |
| flexible                                     | 0.2 mm <sup>2</sup> ... 6 mm <sup>2</sup> |
| flexible with ferrule without plastic sleeve | 0.2 mm <sup>2</sup> ... 4 mm <sup>2</sup> |
| flexible with ferrule with plastic sleeve    | 0.2 mm <sup>2</sup> ... 4 mm <sup>2</sup> |
| rigid (AWG)                                  | 24 ... 10                                 |
| Stripping length                             | 10 mm                                     |

### Signal

|          |     |
|----------|-----|
| Position | 3.x |
|----------|-----|

### Conductor connection

|                                              |                                              |
|----------------------------------------------|----------------------------------------------|
| Connection method                            | Push-in connection                           |
| rigid                                        | 0.2 mm <sup>2</sup> ... 1 mm <sup>2</sup>    |
| flexible                                     | 0.2 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>  |
| flexible with ferrule without plastic sleeve | 0.2 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>  |
| flexible with ferrule with plastic sleeve    | 0.2 mm <sup>2</sup> ... 0.75 mm <sup>2</sup> |
| rigid (AWG)                                  | 24 ... 16                                    |
| Stripping length                             | 8 mm                                         |

## Signaling

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## LED signaling

|                    |                                                     |
|--------------------|-----------------------------------------------------|
| Types of signaling | LED                                                 |
|                    | Floating signal contact                             |
|                    | Active signal output Out1 (digital, configurable)   |
|                    | Active signal output Out2 (analog, configurable)    |
|                    | Remote contact                                      |
|                    | Signal ground SGnd                                  |
| Signal threshold   | > 100 % (LED lights up yellow, output power > 96 W) |
|                    | > 75 % (LED lights up green, output power > 72 W)   |
|                    | > 50 % (LED lights up green, output power > 48 W)   |
|                    | > 0.9 x U <sub>Set</sub> (LED lights up green)      |
|                    | < 0.9 x U <sub>Set</sub> (LED flashes green)        |
|                    | > 0.8 x U <sub>InNom</sub> (LED off)                |
|                    | < 0.8 x U <sub>InNom</sub> (LED lights up yellow)   |

## Signal input Remote (configurable)

|                     |                                                                   |
|---------------------|-------------------------------------------------------------------|
| Connection labeling | 3.3 +                                                             |
| Function            | Output power ON/OFF (remote)                                      |
| Default             | Output power ON (>40 kΩ/24 V DC/open bridge between REM and SGnd) |

## Signal output Out 1 (configurable)

|                     |                                    |
|---------------------|------------------------------------|
| Connection labeling | 3.5 +                              |
| Digital             | 0 V DC                             |
|                     | 24 V DC                            |
|                     | 20 mA                              |
| Default             | U <sub>IN</sub> input voltage OK   |
| Signal option       | Output voltage                     |
|                     | Output current                     |
|                     | Output power                       |
|                     | Operating hours                    |
|                     | Early warning of high temperatures |
|                     | OVP voltage limitation active      |

## Signal output Out 2 (configurable)

|                     |                                    |
|---------------------|------------------------------------|
| Connection labeling | 3.6 +                              |
| Digital             | 0 V DC                             |
|                     | 24 V DC                            |
|                     | 20 mA                              |
| Default             | Output power                       |
| Signal option       | Output voltage                     |
|                     | Output current                     |
|                     | Operating hours                    |
|                     | Early warning of high temperatures |
|                     | OVP voltage limitation active      |

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|               |                                                     |
|---------------|-----------------------------------------------------|
| Analog        | 4 mA ... 20 mA $\pm 5\%$ (Load $\leq 400\ \Omega$ ) |
| Signal option | Output voltage                                      |
|               | Output current                                      |
|               | Output power                                        |

## Signal output Relay 13/14 (configurable)

|                           |                                    |
|---------------------------|------------------------------------|
| Connection labeling       | 3.1, 3.2                           |
| Switch contact (floating) | floating                           |
| Digital                   | 24 V DC                            |
|                           | 1 A                                |
|                           | 30 V AC                            |
|                           | 0.5 A                              |
| Default                   | Output voltage                     |
| Signal option             | Output current                     |
|                           | Output power                       |
|                           | Operating hours                    |
|                           | Early warning of high temperatures |
|                           | OVP voltage limitation active      |
|                           | $U_{IN}$ input voltage OK          |

## Signal ground SGnd

|                     |                    |
|---------------------|--------------------|
| Connection labeling | 3.4 +              |
| Function            | Signal ground      |
| Reference potential | to OUT1, OUT2, REM |

## Electrical properties

|                                 |                                                       |
|---------------------------------|-------------------------------------------------------|
| Number of phases                | 1.00                                                  |
| Insulation voltage input/output | 4 kV DC (type test)                                   |
|                                 | 2 kV DC (routine test)                                |
| Switching frequency             | 190.00 kHz ... 220.00 kHz (Auxiliary converter stage) |
|                                 | 50.00 kHz ... 350.00 kHz (Main converter stage)       |

## Product properties

|                            |                    |
|----------------------------|--------------------|
| Product family             | QUINT POWER        |
| MTBF (IEC 61709, SN 29500) | > (25 °C)          |
|                            | > 970000 h (40 °C) |
|                            | > (60 °C)          |

## Insulation characteristics

|                     |                                    |
|---------------------|------------------------------------|
| Protection class    | Special with SELV input and output |
| Degree of pollution | 2                                  |

## Life expectancy (electrolytic capacitors)

|             |          |
|-------------|----------|
| Current     | 4 A      |
| Temperature | 40 °C    |
| Time        | 452000 h |

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|                 |         |
|-----------------|---------|
| Additional text | 12 V DC |
|-----------------|---------|

## Life expectancy (electrolytic capacitors)

|                 |          |
|-----------------|----------|
| Current         | 8 A      |
| Temperature     | 40 °C    |
| Time            | 211000 h |
| Additional text | 12 V DC  |

## Life expectancy (electrolytic capacitors)

|                 |          |
|-----------------|----------|
| Current         | 8 A      |
| Temperature     | 30 °C    |
| Time            | 422000 h |
| Additional text | 12 V DC  |

## Dimensions

### Item dimensions

|        |        |
|--------|--------|
| Width  | 36 mm  |
| Height | 130 mm |
| Depth  | 125 mm |

### Item dimensions with alternative mounting

|        |        |
|--------|--------|
| Width  | 122 mm |
| Height | 130 mm |
| Depth  | 39 mm  |

### Installation dimensions

|                                            |                               |
|--------------------------------------------|-------------------------------|
| Installation distance right/left (active)  | 15 mm / 15 mm ( $\leq 70$ °C) |
| Installation distance right/left (passive) | 0 mm / 0 mm ( $\leq 70$ °C)   |
| Installation distance top/bottom (active)  | 50 mm / 50 mm ( $\leq 70$ °C) |
| Installation distance top/bottom (passive) | 50 mm / 50 mm ( $\leq 70$ °C) |

## Mounting

|                         |                                                                                                                                                                                                 |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Mounting type           | DIN rail mounting                                                                                                                                                                               |
| Assembly note           | alignable: $P_N \geq 50\%$ , 5 mm horizontally, 15 mm next to active components, 50 mm vertically<br>alignable: $P_N < 50\%$ , 0 mm horizontally, 40 mm vertically top, 20 mm vertically bottom |
| With protective coating | no                                                                                                                                                                                              |

## Material specifications

|                                                                    |                        |
|--------------------------------------------------------------------|------------------------|
| Flammability rating according to UL 94 (housing / terminal blocks) | V0                     |
| Housing material                                                   | Metal                  |
| Hood version                                                       | Stainless steel X6Cr17 |
| Side element version                                               | Aluminum               |

## Environmental and real-life conditions

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## 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                                 | 3K22 (in accordance with EN 60721-3-3)                                                                          |
| 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 2.3g, 90 min., resonance frequency 2.3g, 90 min. (according to DNV GL Class C) |
| Temp code                                      | T4 (-25 ... +70 °C; > 60 °C, Derating: 2,5 %/K)                                                                 |

## Standards and regulations

### Overvoltage category

|            |                |
|------------|----------------|
| EN 61010-1 | II (≤ 5000 m)  |
| EN 62477-1 | III (≤ 5000 m) |

### Safety for measurement, control, and laboratory equipment

|                          |                                                       |
|--------------------------|-------------------------------------------------------|
| 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)<br>IEC 61010-2-201 (PELV) |

### Mains voltage dips

|                          |                              |
|--------------------------|------------------------------|
| Standard designation     | Mains variation/undervoltage |
| Standards/specifications | EN 61000-4-29                |

### Railway applications

|                          |                               |
|--------------------------|-------------------------------|
| Standard designation     | Railway applications          |
| Standards/specifications | EN 50121-3-2<br>IEC 62236-3-2 |

## Approvals

### UL

|                |                      |
|----------------|----------------------|
| Identification | UL Listed UL 61010-1 |
|----------------|----------------------|

### UL

|                |                          |
|----------------|--------------------------|
| Identification | UL Listed UL 61010-2-201 |
|----------------|--------------------------|

### UL

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|                |                                                                                                 |
|----------------|-------------------------------------------------------------------------------------------------|
| 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 |
|----------------|------------------------------|

## CSA

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

## SIQ

|                |                             |
|----------------|-----------------------------|
| Identification | Type tested (type approved) |
|----------------|-----------------------------|

## SIQ

|                |                                          |
|----------------|------------------------------------------|
| Identification | CB scheme (IEC 61010-1, IEC 61010-2-201) |
|----------------|------------------------------------------|

## Shipbuilding

|                |     |
|----------------|-----|
| Identification | DNV |
|----------------|-----|

## Shipbuilding

|                |     |
|----------------|-----|
| Identification | ABS |
|----------------|-----|

## Shipbuilding

|                |    |
|----------------|----|
| Identification | BV |
|----------------|----|

## Shipbuilding

|                |    |
|----------------|----|
| Identification | NK |
|----------------|----|

## Shipbuilding

|                |    |
|----------------|----|
| Identification | LR |
|----------------|----|

## 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                                      |
| EMC requirements, power plant       | IEC 61850-3                                       |
|                                     | EN 61000-6-5                                      |

## 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) |
|-----------------------|-------------------------------------------------------------------------------------------------------|

## Noise emission

|                       |          |
|-----------------------|----------|
| Standards/regulations | EN 55016 |
|-----------------------|----------|

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|                                  |                                    |
|----------------------------------|------------------------------------|
|                                  | 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                | 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                       |
| 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                            | 1 kV (Test Level 3 - symmetrical)  |
|                                  | 2 kV (Test Level 3 - asymmetrical) |
| Output                           | 1 kV (Test Level 3 - symmetrical)  |
|                                  | 2 kV (Test Level 3 - asymmetrical) |
| Signal                           | 2 kV (Test Level 3 - asymmetrical) |
| Comments                         | Criterion A                        |
| Conducted interference           |                                    |

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|                       |              |
|-----------------------|--------------|
| 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) |

## Power frequency magnetic field

|                       |                 |
|-----------------------|-----------------|
| Standards/regulations | EN 61000-4-8    |
| Frequency             | 16.7 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             |
| Comments              | Criterion A     |
| Frequency             | 0 Hz            |
| Test field strength   | 300 A/m         |
| Additional text       | DC, 60 s        |
| Comments              | Criterion A     |

## Voltage dips

|                       |               |
|-----------------------|---------------|
| Standards/regulations | EN 61000-4-29 |
| Voltage               | 24 V DC       |
| Voltage dip           | 70 %          |
| Time                  | 100 ms        |
| Additional text       | Test Level 2  |
| Comments              | Criterion A   |
| Voltage dip           | 40 %          |
| Time                  | 100 ms        |
| Additional text       | Test Level 2  |
| Comments              | Criterion A   |
| Voltage dip           | 0 %           |
| Time                  | 50 ms         |
| Additional text       | Test Level 2  |
| Comments              | Criterion B   |

## Pulse-shape magnetic field

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

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| Comments                                            | Criterion A                                      |
|-----------------------------------------------------|--------------------------------------------------|
| <b>Asymmetrical conducted disturbance variables</b> |                                                  |
| Standards/regulations                               | EN 61000-4-16                                    |
| Test level 1                                        | 15 Hz 150 Hz (Test Level 3)                      |
| Voltage                                             | 10 V 1 V                                         |
| Test level 2                                        | 150 Hz 1.5 kHz (Test Level 3)                    |
| Voltage                                             | 1 V                                              |
| Test level 3                                        | 1.5 kHz 15 kHz (Test Level 3)                    |
| Voltage                                             | 1 V 10 V                                         |
| Test level 4                                        | 15 kHz 150 kHz (Test Level 3)                    |
| Voltage                                             | 10 V                                             |
| Test level 5                                        | 16.7 Hz 50 Hz 60 Hz 150 Hz 180 Hz (Test Level 3) |
| Voltage                                             | 10 V (Permanent)                                 |
| Test level 6                                        | 0 Hz 16.7 Hz 50 Hz 60 Hz (Test Level 3)          |
| Voltage                                             | 100 V (1 s)                                      |
| Comments                                            | Criterion A                                      |

|                                                |                |
|------------------------------------------------|----------------|
| <b>Alternating component of direct voltage</b> |                |
| Standards/regulations                          | EN 61000-4-17  |
| Alternating component                          | 15 % ( $U_N$ ) |
| Frequency                                      | 50 Hz          |
|                                                | 100 Hz         |
|                                                | 150 Hz         |
| Comments                                       | Criterion A    |
| Alternating component                          | 14 % ( $U_N$ ) |
| Frequency                                      | 300 Hz         |
| Comments                                       | Criterion A    |

|                                    |                                             |
|------------------------------------|---------------------------------------------|
| <b>Attenuated oscillating wave</b> |                                             |
| Standards/regulations              | EN 61000-4-18                               |
| Input, output (test level 1)       | 100 kHz 1 MHz (Test Level 3 - symmetrical)  |
| Voltage                            | 1 kV                                        |
| Input, output (test level 2)       | 100 kHz 1 MHz (Test Level 2 - asymmetrical) |
| Voltage                            | 1 kV                                        |
| Input, output (test level 3)       | 10 MHz (Test Level 2 - asymmetrical)        |
| Voltage                            | 0.5 kV                                      |
| Signals (test level 1)             | 100 kHz 1 MHz (Test Level 2 - symmetrical)  |
| Voltage                            | 0.5 kV                                      |
| Signals (test level 2)             | 100 kHz 1 MHz (Test Level 2 - asymmetrical) |
| Voltage                            | 1 kV                                        |
| Comments                           | Criterion A                                 |

|                                              |               |
|----------------------------------------------|---------------|
| <b>Attenuated oscillating magnetic field</b> |               |
| Standards/regulations                        | EN 61000-4-10 |
| Test field strength                          | 100 A/m       |

# QUINT4-PS/24DC/12DC/8/PT - DC/DC converter



2910122

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|                     |             |
|---------------------|-------------|
| Test level 1        | 100 kHz     |
| Test field strength | 100 A/m     |
| Test level 2        | 1 MHz       |
| Comments            | Criterion A |

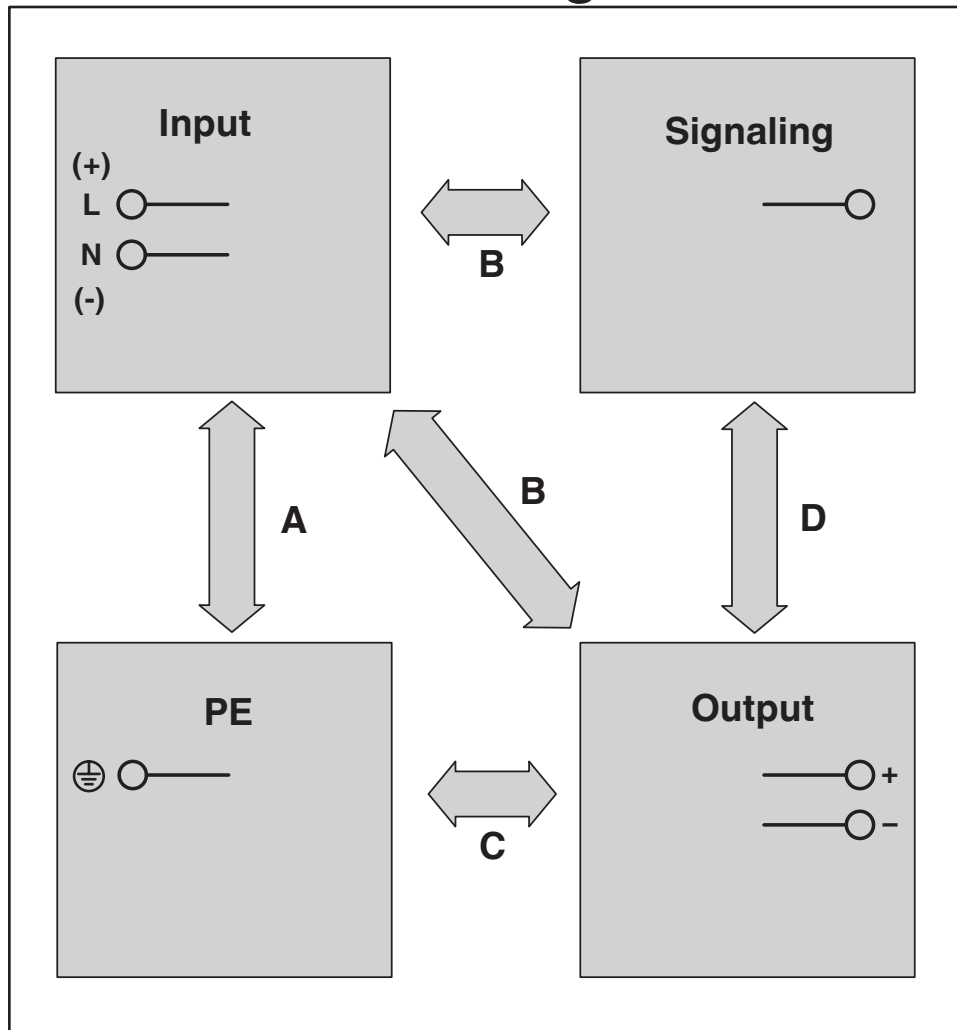
## Criteria

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

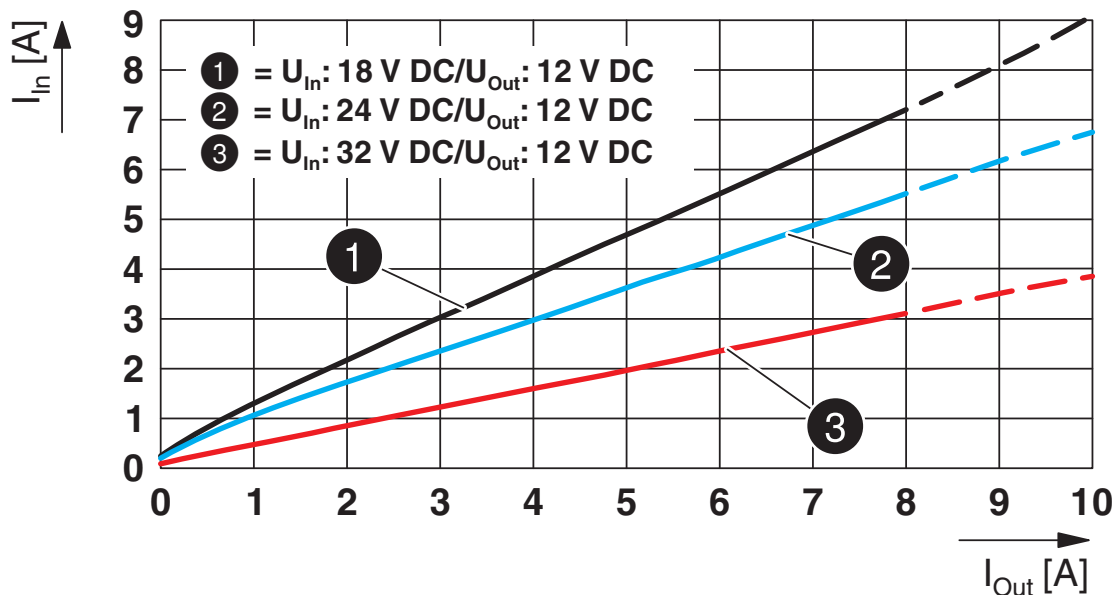
Drawings

Schematic diagram

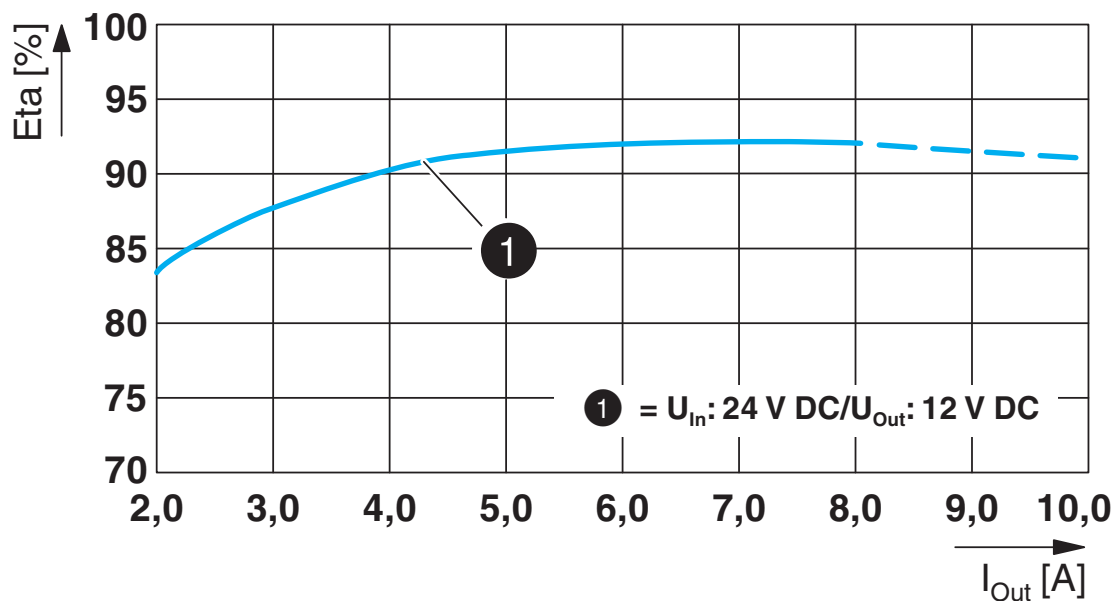
# Housing



Diagram



Diagram



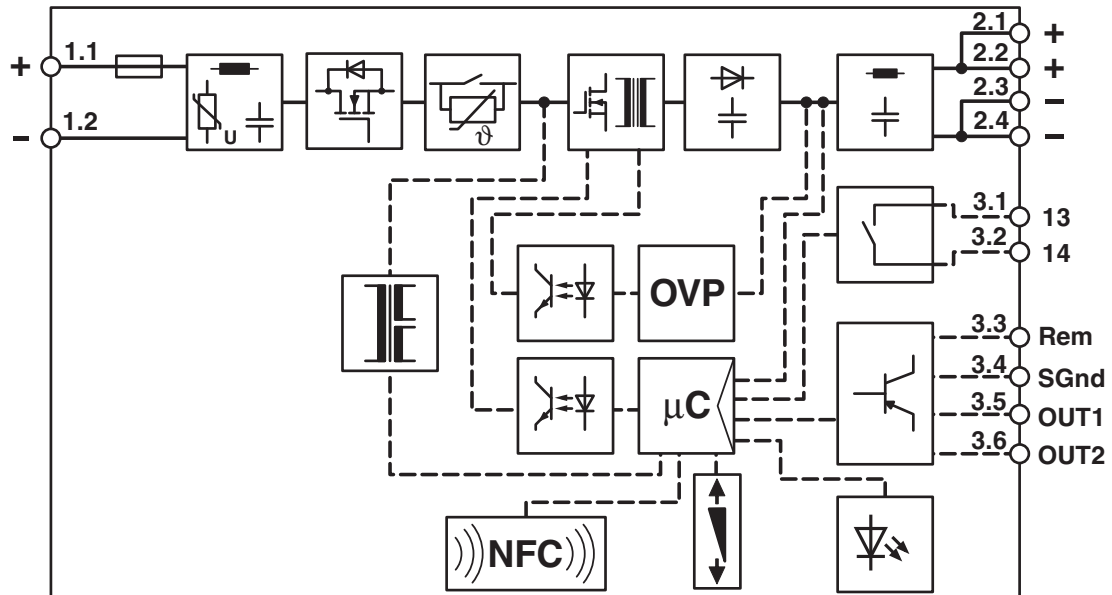
# QUINT4-PS/24DC/12DC/8/PT - DC/DC converter



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Block diagram



# QUINT4-PS/24DC/12DC/8/PT - DC/DC converter



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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2910122>



**LR**

Approval ID: LR22472797TA



**NK**

Approval ID: TA21182M



**BV**

Approval ID: 57060/B0 BV



**UL Listed**

Approval ID: E123528



**cUL Listed**

Approval ID: E123528

**ABS**

Approval ID: 21-2073195-PDA



**Type approved**

Approval ID: SI-SIQ BG 005/059

**DNV**

Approval ID: TAA00000BV

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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-13.0 | 27040701 |
| ECLASS-15.0 | 27040701 |

### ETIM

|           |          |
|-----------|----------|
| ETIM 10.0 | EC002540 |
|-----------|----------|

### UNSPSC

|             |          |
|-------------|----------|
| UNSPSC 21.0 | 39121000 |
|-------------|----------|

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## 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                                | 9c1e6ba7-b194-4027-bba3-8b87b941211f |

### EF3.1 Climate Change

|         |                |
|---------|----------------|
| CO2e kg | 16.193 kg CO2e |
|---------|----------------|

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