# UNO-PS/350-900DC/24DC/60W - DC/DC converter

2906300

https://www.phoenixcontact.com/us/products/2906300

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Primary-switched UNO DC/DC converter with wide range input, for DIN rail mounting, input: 350 ... 900 V DC, output: 24 V DC/60 W

## Product description

UNO DC/DC converters with basic functionality
With the DC/DC converters from the UNO POWER range, the control cabinet is supplied directly from the photovoltaic system. This saves installation costs and increases the efficiency of the system.

## Your advantages

- Wide input voltage range
- Direct field installation
- Minimal space required in the control box
- Simplified startup
- UL 1741-certified DC/DC converter

## Commercial data

| | |
|---|---|
| Item number | 2906300 |
| Packing unit | 1 pc |
| Minimum order quantity | 1 pc |
| Sales key | CM06 |
| Product key | CMDU43 |
| GTIN | 4055626062648 |
| Weight per piece (including packing) | 324.4 g |
| Weight per piece (excluding packing) | 317 g |
| Customs tariff number | 85044095 |
| Country of origin | VN |

# Technical data

## Input data

DC operation

| | |
|---|---|
| Nominal input voltage range | 350 V DC ... 900 V DC |
| Input voltage range | 300 V DC ... 1000 V DC |
| Wide-range input | yes |
| Electric strength, max. | ≤ 1050 V DC |
| Voltage type of supply voltage | DC |
| Inrush current | < 1 A (typical) |
| Inrush current integral ($I^2t$) | < 0.38 $A^2s$ |
| Current consumption | 0.19 A (350 V DC) |
| | 0.07 A (1000 V DC) |
| Nominal power consumption | 69 VA |
| Typical response time | < 1 s |
| Recommended breaker for input protection | 1 A (Characteristic gPV or comparable) |
| Recommended fuse for input protection | 1000 V DC |

## Output data

| | |
|---|---|
| Efficiency | > 90 % |
| Output characteristic | U/I |
| Nominal output voltage | 24 V DC |
| Nominal output current ($I_N$) | 2.5 A (-25 °C ... 55 °C) |
| Derating | 55 °C ... 70 °C (2.5 %/K) |
| Feedback voltage resistance | < 35 V DC |
| Protection against overvoltage at the output (OVP) | < 35 V DC |
| Control deviation | < 1 % (change in load, static 10 % ... 90 %) |
| | < 3 % (Dynamic load change 10 % ... 90 %, 10 Hz) |
| | < 0.1 % (change in input voltage ±10 %) |
| Residual ripple | < 20 $mV_{PP}$ (with nominal values) |
| Output power | 60 W |
| Maximum no-load power dissipation | < 0.5 W |
| Power loss nominal load max. | < 6.5 W |
| Rise time | < 1 s ($U_{OUT}$ (10 % ... 90 %)) |
| Response time | < 2 ms |
| Connection in parallel | yes, for redundancy and increased capacity |
| Connection in series | no |
| Fuse protection (secondary side) | electronic |

Signal: DC OK active

| | |
|---|---|
| Output description | $U_{OUT}$ > 0.9 x $U_N$: High signal |

## Connection data

Input

| | |
|---|---|
| Connection method | Screw connection |
| Conductor cross-section, rigid min. | 0.2 mm² |
| Conductor cross-section, rigid max. | 2.5 mm² |
| Conductor cross-section flexible min. | 0.2 mm² |
| Conductor cross-section flexible max. | 2.5 mm² |
| Conductor cross-section AWG min. | 24 |
| Conductor cross-section AWG max. | 14 |
| 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. | 2.5 mm² |
| Conductor cross-section flexible min. | 0.2 mm² |
| Conductor cross-section flexible max. | 2.5 mm² |
| Conductor cross-section AWG min. | 24 |
| Conductor cross-section AWG max. | 14 |
| Stripping length | 8 mm |
| Screw thread | M3 |
| Tightening torque, min | 0.5 Nm |
| Tightening torque max | 0.6 Nm |

## Signaling

| | |
|---|---|
| Types of signaling | LED |

Signal output: DC OK active

| | |
|---|---|
| Status display | "DC OK" LED green |

## Electrical properties

| | |
|---|---|
| Number of phases | 1 |
| Insulation voltage input/output | 8 kV DC (type test) |
| | 3 kV DC (routine test) |
| | 8 kV |

## Product properties

| | |
|---|---|
| Product type | DC/DC converters |
| Product family | UNO POWER |
| MTBF (IEC 61709, SN 29500) | > 1160000 h (40 °C) |

Insulation characteristics

| | |
|---|---|
| Protection class | II |

| | |
|---|---|
| Overvoltage category (IEC 62109-1) | II |
| Degree of pollution | 2 |

## Dimensions

| | |
|---|---|
| Width | 55 mm |
| Height | 90 mm |
| Depth | 84 mm |

Installation dimensions

| | |
|---|---|
| Installation distance right/left | 0 mm / 0 mm (≤ 70 °C) |
| Installation distance top/bottom | 30 mm / 30 mm (≤ 70 °C) |

## Mounting

| | |
|---|---|
| Mounting type | DIN rail mounting |
| Assembly note | alignable: 0 mm horizontally, 30 mm vertically |
| Mounting position | horizontal DIN rail NS 35, EN 60715 |
| With protective coating | no |

## Material specifications

| | |
|---|---|
| Flammability rating according to UL 94 (housing / terminal blocks) | V0 |
| Housing material | Plastic |
| Housing material | PC |
| Foot latch material | POM (Polyoxymethylene) |

## Environmental and real-life conditions

Ambient conditions

| | |
|---|---|
| Degree of protection | IP20 |
| Ambient temperature (operation) | -25 °C ... 70 °C (> 55° C derating : 2.5%/K) |
| Ambient temperature (storage/transport) | -40 °C ... 85 °C |
| Ambient temperature (start-up type tested) | -40 °C |
| 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

| | |
|---|---|
| Standard – Limitation of mains harmonic currents | EN 61000-3-2 |
| Standard - Electrical safety | IEC 62109-1 |
| Standard – Safety extra-low voltage | IEC 60950-1 (SELV) and EN 60204-1 (PELV) |
| Standard - Safe isolation | DIN VDE 0100-410 |
| Standard - Safety of power converters for use in photovoltaic power systems | IEC 62109-1 |

| | |
|---|---|
| Approval - requirement of the semiconductor industry with regard to mains voltage dips | EN 61000-4-11 |

## Approvals

| | |
|---|---|
| UL approvals | UL 1741 |

Conformity/Approvals

| | |
|---|---|
| SIL in accordance with IEC 61508 | 0 |

## 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 |

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 | 10 V/m |
| Frequency range | 1 GHz ... 2 GHz |
| Test field strength | 10 V/m |
| Frequency range | 2 GHz ... 3 GHz |
| Test field strength | 10 V/m |
| Comments | Criterion A |

Fast transients (burst)

| | |
|---|---|
| Standards/regulations | EN 61000-4-4 |

Fast transients (burst)

| | |
|---|---|
| Input | 4 kV (Test Level 4 - asymmetrical) |
| Output | 2 kV (Test Level 3 - asymmetrical) |
| Comments | Criterion B |

Surge voltage load (surge)

| | |
|---|---|
| Standards/regulations | EN 61000-4-5 |

Surge voltage load (surge)

| | |
|---|---|
| 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) |
| Comments | Criterion B |

Conducted interference

| | |
|---|---|
| Standards/regulations | EN 61000-4-6 |

Conducted interference

| | |
|---|---|
| Frequency range | 10 kHz ... 80 MHz |
| Comments | Criterion A |
| Voltage | 10 V (Test Level 3) |

Voltage dips

| | |
|---|---|
| Standards/regulations | EN 61000-4-11 |

Emitted interference

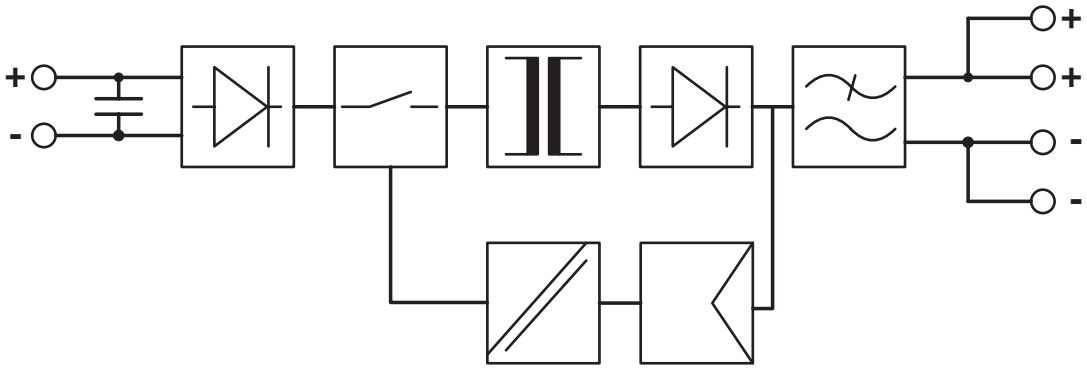
| | |
|---|---|
| Standards/regulations | EN 61000-6-3 |
| Radio interference voltage in acc. with EN 55011 | EN 55011 (EN 55022) Class B, area of application: Industry and residential |
| Emitted radio interference in acc. with EN 55011 | EN 55011 (EN 55022) Class B, area of application: Industry and 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. |

## Drawings

Block diagram



## Approvals

To download certificates, visit the product detail page: https://www.phoenixcontact.com/us/products/2906300

**cUL Recognized**
Approval ID: FILE E 476951

**UL Recognized**
Approval ID: FILE E 476951

**IECEE CB Scheme**
Approval ID: US-27376-M1-UL

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

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

## Classifications

### ECLASS

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

### ETIM

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

### UNSPSC

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

## Environmental product compliance

EU RoHS

| | |
|---|---|
| Fulfills EU RoHS substance requirements | Yes |
| Exemption | 6(c), 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 | 21ec55f9-c700-47d5-9399-546a8bea5814 |

EF3.1 Climate Change

| | |
|---|---|
| CO2e kg | 10.717 kg CO2e |

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