# DC-DC Converter
## URD_S(D)_(ZD)(K)-30WH2 Series

# HenLv

## Features

- Wide voltage input 4:1
- DIP,Din-rail series
- Operating temperature range: -40℃～+85℃
- Isolation voltage 1500VDC 0.5mA 1Minute
- Internal SMD design
- Metal shell, highly flame-retardant plastic shell
- Heat dissipation mode: natural air cooling
- It has good shielding anti-interference performance and electromagnetic compatibility, lightning protection, output overcurrent, short circuit protection, overheat protection, self-recovery and other functions
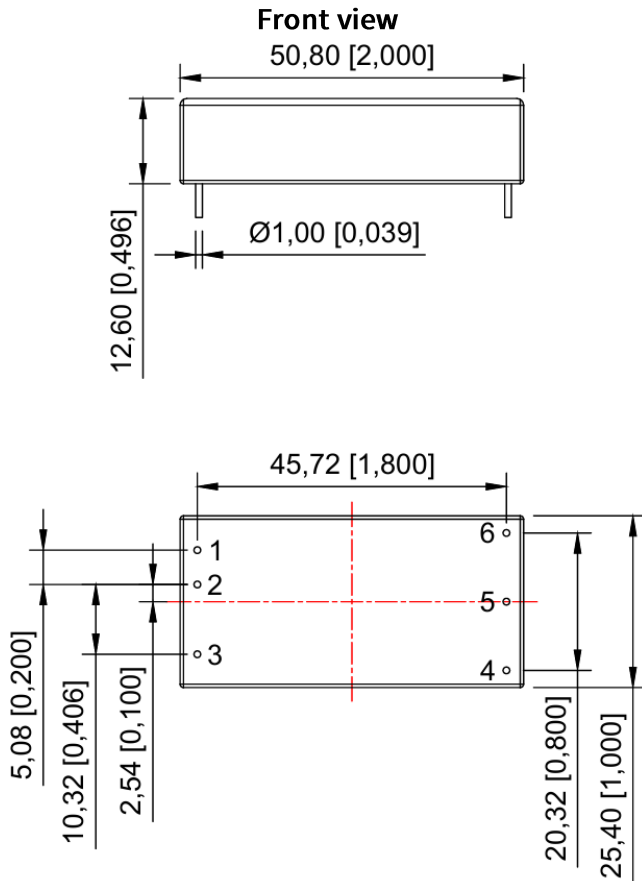
## Product Picture

CE  RoHS COMPLIANT  3 Year WARRANTY

EMC-EN55032
EN55035
LVD-EN62368

## Dimensions

### URD_S(D)_-30WH2 Series Dimensions

Front view
50,80 [2,000]
12,60 [0,496]
Ø1,00 [0,039]

Top view
Ø1,5 [Ø0,059]
3    4
2    PCB Layout    5
1    6

**Note: The grid distance is 2.54*2.54mm**

45,72 [1,800]
1    6
2    5
3    4
5,08 [0,200]
10,32 [0,406]
2,54 [0,100]
20,32 [0,800]
25,40 [1,000]

**Bottom view**

Note:
Size unit: mm[inch]
Pin section tolerance: ±0.1[±0.004]
Unmarked tolerance: ±0.25[±0.01]
The device layout is for reference only.

| Pin mode | | |
|---|---|---|
| Pin | Single | Dual |
| 1 | Vin | Vin |
| 2 | GND | GND |
| 3 | CNT | CNT |
| 4 | TRM | -XXVDC |
| 5 | 0V | COM |
| 6 | +XXVDC | +XXVDC |

## URD_S(D)_ZDK-30WH2 Series Dimensions
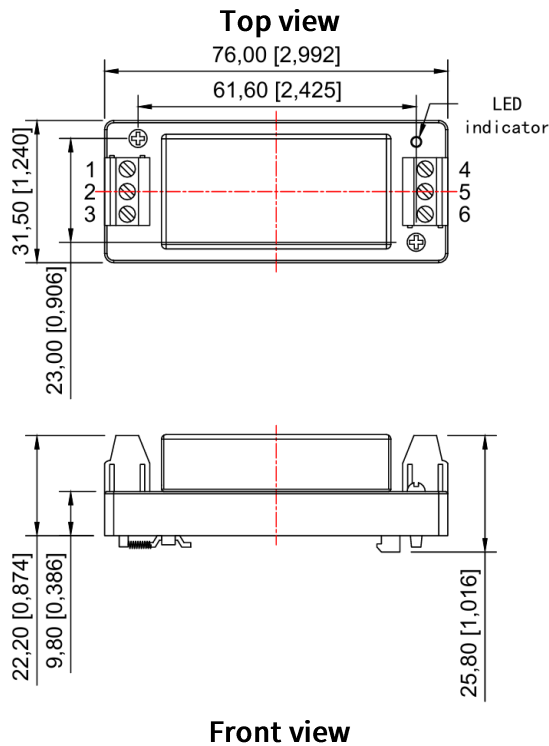
**Top view**

76,00 [2,992]
61,60 [2,425]
LED indicator
31,50 [1,240]
23,00 [0,906]
1 2 3
4 5 6

22,20 [0,874]
9,80 [0,386]
25,80 [1,016]

**Front view**

| Pin mode | | |
|---|---|---|
| Pin | Single | Dual |
| 1 | CNT | CNT |
| 2 | GND | GND |
| 3 | Vin | Vin |
| 4 | TRM | -XXVDC |
| 5 | 0V | COM |
| 6 | +XXVDC | +XXVDC |

Note:
Size unit: mm[inch]
Unmarked tolerance: ±0.25[±0.01]
Wiring strength: 24-12 AWG
Tightening torque: Max 0.4N-m
Din-rail type: TS35
The device layout is for reference only.

## URD_S(D)_ZD-30WH2 Series Dimensions
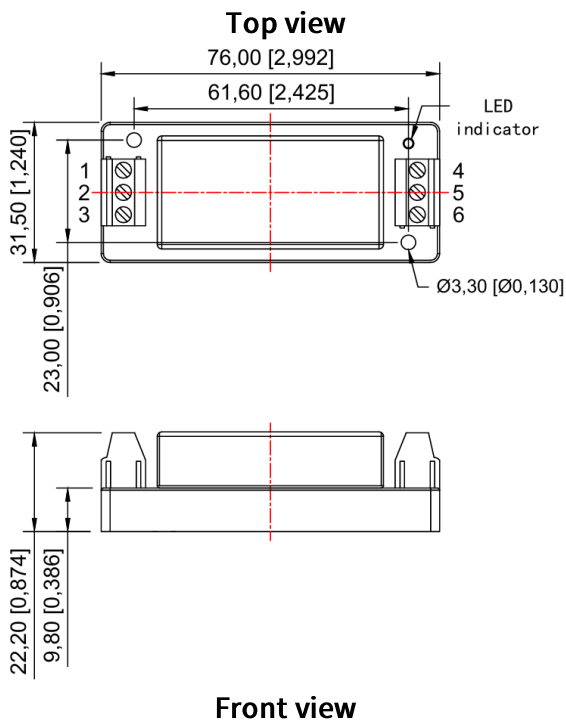
**Top view**

76,00 [2,992]
61,60 [2,425]
LED indicator
31,50 [1,240]
23,00 [0,906]
1 2 3
4 5 6
Ø3,30 [Ø0,130]

22,20 [0,874]
9,80 [0,386]

**Front view**

| Pin mode | | |
|---|---|---|
| Pin | Single | Dual |
| 1 | CNT | CNT |
| 2 | GND | GND |
| 3 | Vin | Vin |
| 4 | TRM | -XXVDC |
| 5 | 0V | COM |
| 6 | +XXVDC | +XXVDC |

Note:
Size unit: mm[inch]
Unmarked tolerance: ±0.25[±0.01]
Wiring strength: 24-12 AWG
Tightening torque: Max 0.4N-m
The device layout is for reference only.

## Application

Railway communication, display, monitoring equipment, petrochemical, industrial control, remote DC power supply system, switching system and other communication equipment.

## Selection Guide

| Model | Vin (VDC) | Vout (Vo±2%) | Current (mA) | Efficiency (%) | Isolation (VDC) |
|---|---|---|---|---|---|
| URD_S05-30WH2 | | 5 | 6000 | ≥85 | 1500 |
| URD_S12-30WH2 | | 12 | 2500 | ≥85 | 1500 |
| URD_S15-30WH2 | | 15 | 2000 | ≥85 | 1500 |
| URD_S24-30WH2 | | 24 | 1250 | ≥86 | 1500 |
| URD_D05-30WH2 | | ±5 | ±3000 | ≥85 | 1500 |
| URD_D12-30WH2 | | ±12 | ±1250 | ≥85 | 1500 |
| URD_D15-30WH2 | 24(9-36) 48(18-75) 110(40-160) | ±15 | ±1000 | ≥85 | 1500 |
| URD_S05ZD(K)-30WH2 | | 5 | 6000 | ≥85 | 1500 |
| URD_S12ZD(K)-30WH2 | | 12 | 2500 | ≥85 | 1500 |
| URD_S15ZD(K)-30WH2 | | 15 | 2000 | ≥85 | 1500 |
| URD_S24ZD(K)-30WH2 | | 24 | 1250 | ≥86 | 1500 |
| URD_D05ZD(K)-30WH2 | | ±5 | ±3000 | ≥85 | 1500 |
| URD_D12ZD(K)-30WH2 | | ±12 | ±1250 | ≥85 | 1500 |
| URD_D15ZD(K)-30WH2 | | ±15 | ±1000 | ≥85 | 1500 |

Note: Our company customizes module power supplies with any input or output for customers. If you have other output voltage requirements, please contact our company. Unless otherwise specified, the input =Vi. The characteristics of the module power supply should comply with the provisions of Table 1 and be applicable to the full temperature range (-40℃≤Tc≤85℃).

## Mechanical Specifications

| | |
|---|---|
| Size | 50.80 x 25.40 x 12.60 mm，ZD(K): 76.00 x 31.5 mm |

# DC-DC Converter
## URD_S(D)_(ZD)(K)-30WH2 Series



## Electrical Specifications

| Specifications | Symbol | Conditions Vi ,-40℃≤Tc≤85℃ (Unless otherwise specified) | Min | Max | Unit |
|---|---|---|---|---|---|
| Output Voltage | Vo | Full Load | Vo-2% | Vo+2% | V |
| Output Current | Iomax | — | — | P(Power)/ U(Output voltage)) | A |
| Output Ripple Voltage | Vp-p | Full Load，Vi，BW=20MHz，Normal Temperature | — | 240 | mV |
| Output Noise Voltage | Vp-p | Full Load，Vi，BW=20MHz，Normal Temperature | — | 300 | mV |
| Voltage Regulation | Sv | Vimin、Vi、Vimax，Full Load | — | ±2 | % |
| Load Adjustment | Si | Vi，Io=(10%~100%),5V,±5V | — | ±4 | % |
| | | Vi，Io=(10%~100%), Other outputs | — | ±2 | |
| Efficiency | η | Vi，Full Load，Normal Temperature | 84 | — | % |
| Insulation Resistance | Rl | Input-output, Insulation Voltage 500VDC | 1000 | — | MΩ |

## General Specifications

| EMC Specifications | Magnetic Field Sensitivity Test | GB6833.2-87 |
|---|---|---|
| | Electrostatic Discharge Sensitivity Test | GB6833.3-87 |
| | Radiation Sensitivity Test | GB6833.5-87 |
| | Conduction Sensitivity Test | GB6833.6-87 |
| Temperature Drift | ≤0.02%/℃ | |
| Storage Temperature | -40℃~125℃ | |
| Input Frequency | 200KHz- 400KHz | |
| Humidity | 10%~90%RH | |
| MTBF | ＞300000H | |

## Typical SpecificationsCurves
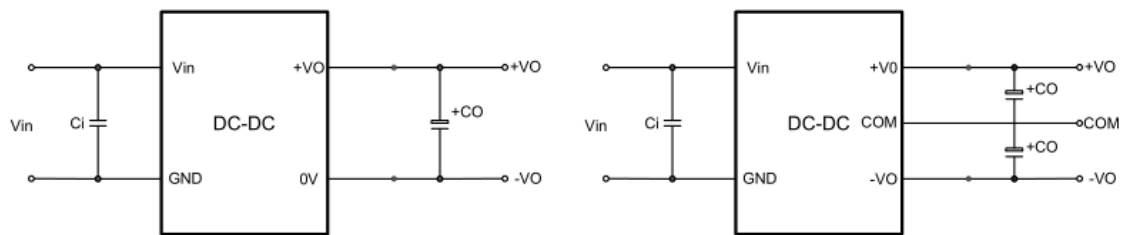
### Temperature chart
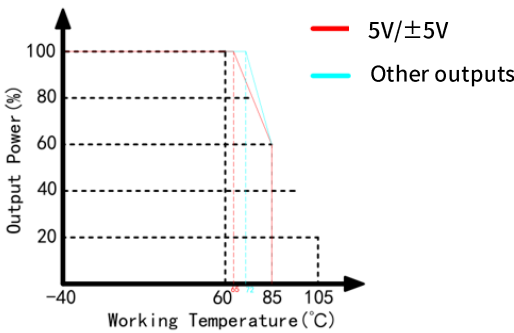


### Efficiency/Load graph
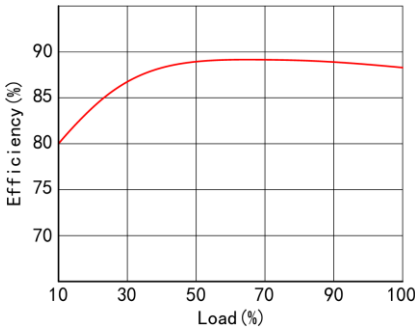


### Efficiency/Input voltage graph
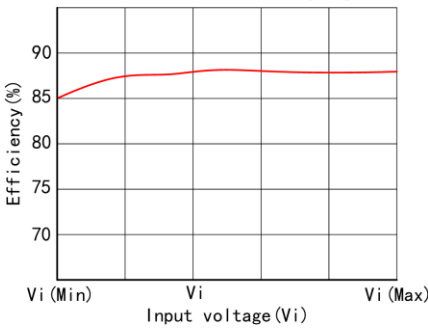
## Design Reference



## Recommendation Test

Filter: In some circuits that are sensitive to noise and ripple, an external filter capacitor can be connected to the DC/DC input and output terminals to reduce the impact of ripple on the system, but the value of the filter capacitor should be appropriate, if the capacitor is too large, it is likely to cause startup problems, for each output, under the condition of ensuring safe and reliable operation, the maximum capacitance of the filter capacitor can be referred to the external capacitance table. In order to obtain very low ripple, an "LC" filter network can be connected to the input and output end of the DC/DC converter, so that the filtering effect will be better, and it should be noted that the size of the inductance value and the frequency of the "LC" filter network should be staggered from the frequency of the DC/DC module power supply to avoid mutual interference. For each output channel, it is advisable to verify the condition of its external capacitor while ensuring safe and reliable operation. For further details, please refer to Table 1.

| Vin (VDC) | Vout (VDC) | Ci (μF) | Co (μF) |
|---|---|---|---|
| 24 (9~36) | 5 | 100μF/50V | 47μF/16V |
| | 12/15 | | 22μF/25V |
| | 24 | | 22μF/50V |
| | ±5/±12 | | 22μF/25V |
| | ±15 | | 22μF/50V |
| 48 (18~75) | 5 | 47~100μF/100V | 47μF/16V |
| | 12/15 | | 22μF/25V |
| | 24 | | 22μF/50V |
| | ±5/±12 | | 22μF/25V |
| | ±15 | | 22μF/50V |
| 110 (40~160) | 5 | 22~47μF/200V | 47μF/16V |
| | 12/15 | | 22μF/25V |
| | 24 | | 22μF/50V |
| | ±5/±12 | | 22μF/25V |
| | ±15 | | 22μF/50V |

The recommended values for the external filter capacitors are specified in Table 1.

## Precautions

### Package

This series of modules are packed in shockproof and anti-static foam.
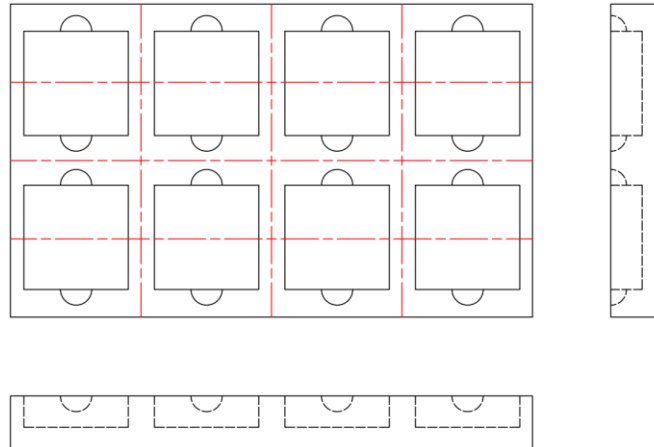
### Transport

The package containing the module is allowed to be transported by any means of transport, which should avoid direct rain and snow and mechanical damage.

### Storage

The module should be stored in a warehouse where the ambient temperature is -40 degrees ~ 125 degrees, the relative humidity is 10%~90%, and the surrounding environment is free from acidic, alkaline and other harmful gases.

Note: The above are the performance indicators of the product series listed in this manual. Some indicators of non-standard products may exceed the above requirements, so if there is any inconsistency between the manual and the product specification documents, please refer to the specification documents. If you have special needs, please contact us directly.