

date 01/14/2022 page 1 of 5

SERIES: VFM-30-UW | DESCRIPTION: DC POWER LINE FILTER

FEATURES

- compact
- high efficiency 98%
- meet IEC/EN61000-4 standard
- compliant to railway standard EN50155
- CISPR22/EN55022 compliant
- DIP, Chassis and DIN Rail mounting version
- input voltage protection
- ultra wide input rating





SPECIFICATIONS

| parameter | conditions/description | min | typ | max | units |
|-----------------------|---|-----------|-------|-------|-------|
| input voltage | | 40 | 110 | 160 | Vdc |
| output power | | | | 30 | W |
| no load input current | at 110 Vdc | | · | 1 | mA |
| efficiency | at 110 Vdc, full load | | 98 | | % |
| isolation voltage | +Vin to GND, -Vin to GND, at 1 minute and 1,500 leakage current 5 mA max | | 1,500 | Vac | |
| conducted emissions | CISPR22/EN55022, 150 kHz ~ 30 MHz class B | | | | |
| radiated emissions | CISPR22/EN55022, 30 MHz ~ 1 GHz class B | | · | | |
| ESD | IEC/EN61000-4-2, air \pm 8 kV, contact \pm 6kV, class B | | | | |
| radiated immunity | IEC/EN61000-4-3, 10 V/m, class A | | | | |
| EFT/burst | IEC/EN61000-4-4, ±4 kV(5 kHz, 100 kHz), class B | | | | |
| surge | IEC/EN61000-4-5, ±2 kV (1.2μs/50μs 2Ω)/±4 kV (1.2 μs/50 μs 12 Ω), class B | | | | |
| conducted immunity | IEC/EN61000-4-6, 10 Vr.m.s, class A | | | | |
| MTBF | as per MIL-HDBK-217F, 40°C | 1,200,000 | | hours | |
| RoHS | yes | | | | |
| operating temperature | | -40 | | 85 | °C |
| storage temperature | | -55 | | 125 | °C |
| storage humidity | non-condensing | 5 | | 95 | % |
| vibration | IEC/EN61373, 10 cycles in each axis, test time in each axis: 3 minute, frequency: 5-150 Hz, amplitude: 7.5mm, acceleration: 10g | | | | |

Notes: 1. All specifications are measured at Ta=25°C, humidity < 75%, nominal input voltage, and rated load, unless otherwise specified.

PART NUMBER KEY

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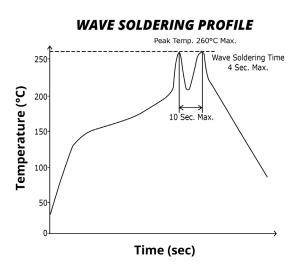
Mounting Style: D = board mount T = chassis mount DIN = DIN-rail mount

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SOLDERABILITY²

| parameter | conditions/description | min | typ | max | units |
|----------------|----------------------------|-----|-----|-----|-------|
| hand soldering | for 3~5 seconds | 350 | 360 | 370 | °C |
| wave soldering | see wave soldering profile | | | 260 | °C |

Note: 2. For board mount models only.



MECHANICAL

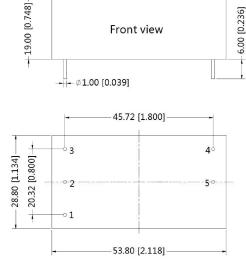
| parameter | conditions/description | min | typ | max | units |
|---------------|--|-----|-----|-----|-------|
| | board mount: 53.80 x 28.80 x 19.00 [2.118 x 1.134 x 0.748 inch] | | | | mm |
| dimensions | chassis mount: 76.00 x 31.50 x 27.80 [2.992 x 1.240 x 1.094 inch] | | | mm | |
| | DIN-Rail mount: 76.00 x 31.50 x 32.40 [2.992 x 1.240 x 1.276 inch] | | | | mm |
| case material | black flame-retardant heat-proof epoxy resin (UL94V-0) | | | | |
| weight | board mount | | 50 | | g |
| | chassis mount | | 70 | | g |
| | DIN-rail mount | | 90 | | g |

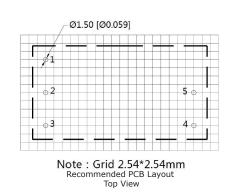
MECHANICAL DRAWING (BOARD MOUNT)

units: mm [inch] tolerance: $\pm 0.50[\pm 0.020]$ pin diameter tolerance: $\pm 0.10[\pm 0.004]$

| PIN CONNECTIONS | | |
|-----------------|----------|--|
| PIN | Function | |
| 1 | GND | |
| 2 | -Vin | |
| 3 | +Vin | |
| 4 | +Vout | |
| 5 | -Vout | |

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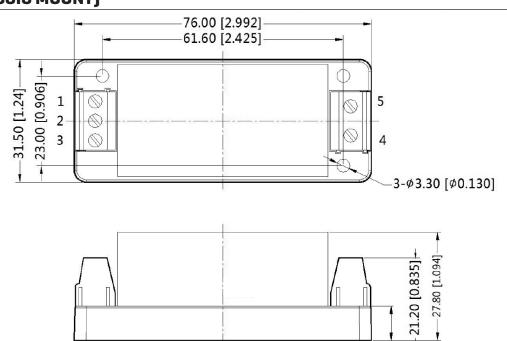


MECHANICAL DRAWING (CHASSIS MOUNT)

units: mm [inch] tolerance: ±0.50[±0.020]

wire range: 24~12 AWG tightening torgue: 0.4 N*m max

| PIN CONNECTIONS | | |
|-----------------|----------|--|
| PIN | Function | |
| 1 | GND | |
| 2 | -Vin | |
| 3 | +Vin | |
| 4 | +Vout | |
| 5 | -Vout | |



8.80 [0.346]-

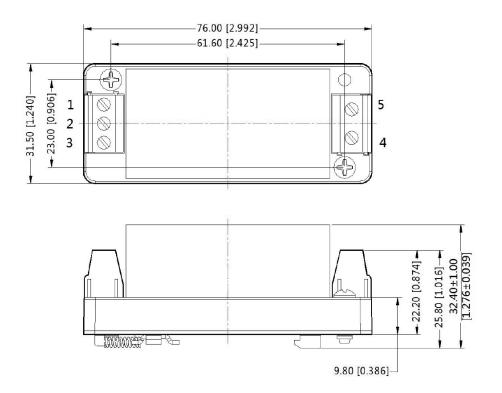
MECHANICAL DRAWING (DIN-RAIL MOUNT)

units: mm [inch] tolerance: ±0.50[±0.020]

installed on DIN rail TS35 wire range: 24~12 AWG tightening torgue: 0.4 N*m max

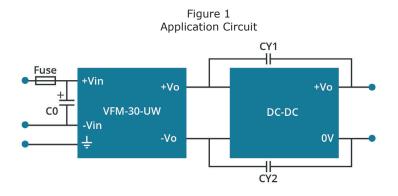
| PIN CONNECTIONS | | |
|-----------------|----------|--|
| PIN | Function | |
| 1 | GND | |
| 2 | -Vin | |
| 3 | +Vin | |
| 4 | +Vout | |
| 5 | -Vout | |

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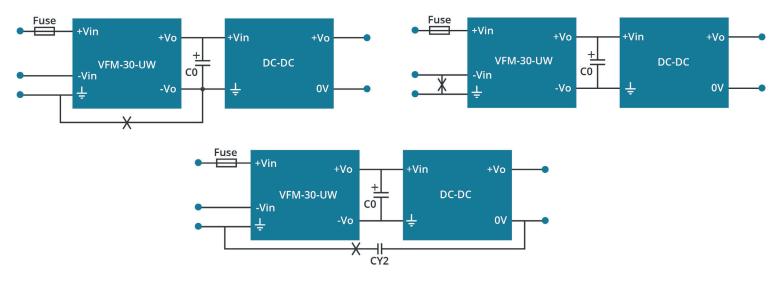
APPLICATION CIRCUIT

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| Recommended External Circuit Components | | | |
|---|---|--|--|
| FUSE | choose according to power module datasheet | | |
| C0 | 100 µF / 200 V, electrolytic | | |
| CY1, CY2 | 1 nF / 2 kV | | |

Figure 2 Non-supported Application for Module



REVISION HISTORY

| rev. | description | date |
|------|-------------------------|------------|
| 1.0 | initial release | 12/17/2018 |
| 1.01 | packaging removed | 05/14/2021 |
| 1.02 | circuit figures updated | 01/14/2022 |

The revision history provided is for informational purposes only and is believed to be accurate.



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CUI offers a two (2) year limited warranty. Complete warranty information is listed on our website.

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