

Mini modules DC-DC converters with:

- large input range,
- maximum thermal dissipation facilitated by epoxy resin internal casting and lateral dissipator,
- protection against humidity, dust, shocks and vibrations,
- 3 presentations, for mounting either: on DIN rail or wall (A1RD case) / on wall (A1P case) / on printed circuit board with "half-brick" connection (A1CI case)

Electrical data

♦ "Vin" Input (protected against undervoltage and surge pulses)

- two voltage input ranges available:
 - 9 to 36V (accidental max.: 50V / 0.1s)
 - 18 to 75V (accidental max.: 100V / 0.1s)
- no load consumption: 80mA to 190mA (see table)
- possible external fuse: 12A (6A for 18 to 75V)
- optional "ON/OFF" remote control

♦ "Vout" Output (soft start in 50ms)

- 5V/12V/15V/±12V/±15V/24V/28V; accuracy: 1%
- optional fit with embedded "10 revolutions" axis: ±10%
- line and load regulation: < 10^{-3} of Vout
- temperature coefficient: 2.10^{-4} of Vout, per °C
- switching frequency: fixed (250 to 300 kHz)
- residual ripple: ≤ 1% of Vout
- nominal efficiency: 88 to 90% (losses ≤ 7W)
- dynamic response: < 2% of Vout / 200µs / load 50% to 75%
- permissive capacitive load: 1000µF to ≥15,000µF depending on load

Protections

- input-output insulation: 2000V DC. Internal filter on the input
- against overload and short circuit (even constant) by pulsed flow
- in case of inductive load: option "L" will reinforce protection
- inversion Vin ; this option reduces the efficiency
- abnormal temperature rise: automatic shutdown and restarting
- sealing: IP67 protection against water and dust (for the 3 presentations)

Thermal and environmental performances

- storage: -55 to +125°C ; operating: -40 to +85°C
- cooling: natural convection (derating 5% per °C)
- temperature rise of the 3 cases, at full load: ≈ 20°C
- maximum ambient temperature:
 - 65°C at full power
 - 75°C at half power
- vibrations, shocks, humidity: protection by epoxy resin

Standards and specifications

- marking CE/UL60950-1, ICE60950-1, EN60950-1 / RoHS
- flammability: UL94HB, horizontal test
- MTBF: > 5.10^5 hours, case at 30°C
- worldwide manufacturers for active parts
- assembling and final controls: ELECDAN-CONVERTER

| Case mountable on | Length | Width x depth | Material Weight | add SKU | Connections |
|--------------------|------------|---------------|-----------------|-----------|--|
| ① DIN rail or wall | 69 + 15 mm | 64 x 32 mm | PA 2002 | 230g A1RD | screw terminal wire ≤ 2mm ² |
| ② Wall | 64 + 8 mm | 64 x 32 mm | PA 2002 | 220g A1P | wire ≤ 2mm ² |
| ③ Printed circuit | 64 mm | 64 x 31 mm | PA 2002 | 215g A1CI | pin Ø 1mm |

| | | | |
|-------------------------------------|-------|-------------------------|----|
| Vout fit with axis "10 revolutions" | AJ | "inversion" protection | PI |
| inductive load driving | L | wired outputs | F |
| "ON / OFF" remote control | H | Vout presence indicator | V |
| other Vin and/or Vout | value | personalized case | P |

| Range & No. sequence | Input range (Volts) | Outputs | | no load consu. (mA) | SKU add ARD or AP or ACI | Pre-tax price |
|----------------------|---------------------|---------|-----|---------------------|--------------------------|---------------|
| | | Volts | Amp | | | |
| 3 - 1 | | 5 | 10 | 130 | CC 5-10 / 936 | |
| 3 - 2 | | 12 | 4.2 | 130 | CC 12-4.2 / 936 | |
| 3 - 3 | 9V to 36V | 15 | 3.3 | 130 | CC 15-3.3 / 936 | |
| 3 - 4 | | ±12 | 2.1 | 150 | CC 212-2.1/936 | |
| 3 - 5 | | ±15 | 1.7 | 190 | CC 215-1.7 / 936 | |
| 3 - 6 | | 24 | 2.1 | 150 | CC 24-2.1 / 936 | |
| 3 - 7 | | 28 | 1.8 | 190 | CC 28-1.8 / 936 | |
| 3 - 8 | | 5 | 10 | 130 | CC 5-10 / 1875 | |
| 3 - 9 | | 12 | 4.2 | 130 | CC 12-4.2 / 1875 | |
| 3 - 10 | 18V to 75V | 15 | 3.3 | 130 | CC 15-3.3 / 1875 | |
| 3 - 11 | | ±12 | 2.1 | 80 | CC 212-2.1/1875 | |
| 3 - 12 | | ±15 | 1.7 | 100 | CC 215-1.7 / 1875 | |
| 3 - 13 | | 24 | 2.1 | 80 | CC 24-2.1 / 1875 | |
| 3 - 14 | | 28 | 1.8 | 100 | CC 28-1.8 / 1875 | |



Case A1RD
DIN rail or wall mounting
width: 9 + 69 + 6 mm
height: 64 mm
depth: 32 mm



2 holes Ø 3.2mm
wall mounting
48.2mm
50.8mm
Case A1P
wall mounting
width: 64 + 8 mm
height: 64 mm
depth: 32 mm



Bottom view (pins)
- Vin -
+ Vin +
- Vout -
+ Vout +
adj •
35.56mm
48.2mm
Case A1CI 64 x 64 x 31 mm, weldable on printed circuit ("half-brick" type of location, pins Ø 1mm)