

Modules converting "36 to 75V → 12V or 13.8V / 500W" with a 95% efficiency. Optimized shapes and volumes are enabling effective heat dissipation. Two presentations:

- **1CIHR** : integrated dynamic cooling with a mini tubed fan, fast racking-out for fan replacement directly by the user after 50,000 hours. Case 64 x 64 mm, thin (33 mm), weldable on printed circuit.
- **3HR** : passive dissipation through natural convection. To be mounted on wall or DIN rail, either on front or side. Case 112 x 120 x 37 mm, equipped with four screw connectors for wire sections ≤ 40mm<sup>2</sup>.

**Electrical data**

◆ "Vin" Input (protected against undervoltage)

- 36 or 42 to 75V (accidental max.: 100V / 0.1s)
- no load consumption: 100mA at 48V
- possible external *time-delay* fuse: 30A
- optional "on/off" remote control

◆ "Vout" Output

- 12V and 13.8V; accuracy: 1%
- fit, only for the 12V output: ±5%:
  - **3HR** optional with embedded "10 revolutions" axis
  - **1CIHR** external with "trim" pin
- line regulation: < 4.10<sup>-3</sup> of Vout
- load regulation: ≤ 1%
- temperature coefficient: ≤ 2.10<sup>-4</sup> of Vout, per °C
- switching frequency: fixed (≈ 130 kHz)
- residual ripple: ≤ 1% of Vout
- nominal efficiency: 95% (losses ≈ 26W)
- dynamic response: < 0.5 ms, with 25% load variation
- permissive capacitive load: 1200µF to ≥15,000µF depending on load

**Protections**

- input-output insulation: 1500V DC. Internal filter on the input
- against overload and short circuit (even constant)
- in case of inductive load: option "L" **3HR** will reinforce protection
- "inversion Vin" option **3HR** : internal diode (external fuse required)
- abnormal temperature rise: automatic shutdown and restarting
- total sealing IP67 (except fan for case **1CIHR**)

**Thermal and environmental performances**

- storage: -55 to +125°C ; operating: -40 to +85°C
- cooling **3HR** : natural convection (derating ≤ 2.5% per °C)
- temperature rise of the case, at full load: ≤ 39°C
- maximum ambient temperature:
  - 45°C at full power for case **3HR** (50°C for case **1CIHR**)
  - 65°C at half power for case **3HR** (70°C for case **1CIHR**)
- vibrations, shocks, humidity: protection by epoxy resin

**Standards and specifications**

- marking CE/UL60950-1, ICE60950-1, EN60950-1 / RoHS
- flammability for PA 2002: UL94HB, horizontal test
- MTBF case **3HR** : > 5.10<sup>5</sup> hours, case at 25°C
- MTBF fan (easy rapid unplugging): 50,000 hours
- worldwide manufacturers for active parts
- assembling and final controls: **ELECDAN-CONVERTER**

Case mountable on	Dimensions (mm)	Weight	SKU	Connections
DIN rail & wall	112 x 120 x 37	700 g	<b>3HR</b>	screw terminal, wires ≤ 72 mm <sup>2</sup>
Printed circuit	64 x 64 x 33	140 g	<b>1CIHR</b>	pins : Ø 1 and 1.5 mm

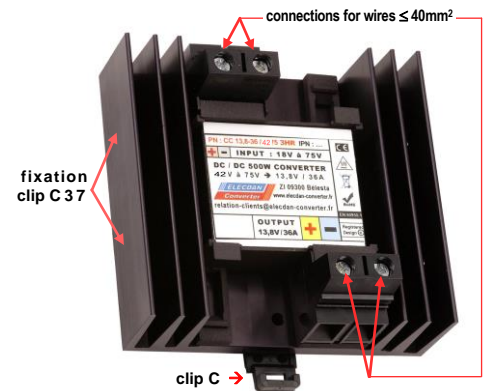
OPTIONS and SKU for case <b>3HR</b>	Vout fit with axis "10 revolutions"	AJ
	inductive load driving	L
	"ON / OFF" remote control	H
	symmetrical dissipator	112S
	"inversion" protection	PI

Pin	Ø mm	function
1	1	+Vin
2	1	on 2-3 / off
3	1	-Vin
4	1.5	-Vout
5	1	Trim
6	1.5	+Vout

Range & No. sequence	Input range (Volts)	Outputs Volts	Amp	no load consu. (mA)	SKU	Pre-tax price
12 - 1	36 to 75	12	41	100 at 48V	CC 12-41 / 3675 / 3HR	
12 - 2	42 to 75	13.8	36		CC 13.8-36 / 4275 / 1HR CI	

1) Storage and operating temperature for **1CIHR** : -30°C to +70°C  
 2) Thermal resistance for **3HR** : 1,5°C/W; this can be reduced to 0.75°C/W by adding a symmetrical dissipator "112 S"

Case <b>3HR</b> to be mounted on wall or DIN rail	
wall	front 112 x 120 : two holes Ø 4.5 mm, vertical fixing distance 90 mm front 112 x 37 : two M3, vertical fixing distance 50 mm
clip	front 112 x 120 : clip C face 112 x 37 : clip C 37



Case **1CIHR** : weldable on printed circuit 64 x 64 x thickness 33 mm; with built-in fan

