

No.	Power	Input range (volts)	Voltage output (volts) unipolar or bipolar								Typical efficiency	Box (type / SKU / thermal resistance / dimensions in mm)		
												DIN Rail	Wall	Printed circuit
1	15W	9 to 36 18 to 75	5	12	15	±12	±15	24	28		0.83	ARD (6°C / W) 69 x 64 x 15	AP (8°C / W) 64 x 64 x 16	ACI (8°C / W) 64 x 64 x 15
2	30W	9 to 36 18 to 75	5	12	15	±12	±15	24	28	48	0.87			
3	50W	9 to 36 18 to 75	5	12	15	±12	±15	24	28		0.87	A1RD (3°C / W) 69 x 64 x 32	A1P (3°C / W) 64 x 64 x 32	A1CI (3°C / W) 64 x 64 x 31
4	75W	9 to 36 18 to 75	5	12	15			24	28		0.88			
5	100W	9 to 36 18 to 75		12	15			24	28		0.87	A2RD (2°C / W) 69 x 64 x 48		
6	150W	9 to 36 18 to 75	5	12	15			24	28	48	0.87	3 (1.5°C / W) 112 x 120 x 37)		1CI (1°C / W) 64 x 64 x 45 (provide 12V / 5W to fan)
7	200W	18 to 75		12							0.93	3 HR (1.5°C / W) 112 x 120 x 37		1CI HR (1°C / W) 64 x 64 x 33
8	200W	60 to 160		12	15			24			0.88	1 (1°C / W) dynamic cooling or		
9	250W	200 to 400		12	15			24		48	0.88	3 (1.5°C / W) 112 x 120 x 37)		
10	300W	9 to 36	5	12	15			24	28	48	0.87	1 (1°C / W) dynamic cooling or	1CI (1°C / W) 64 x 64 x 45 (provide 12V / 5W to fan)	
		18 to 75									0.89	4 (1°C / W) 225 x 120 x 37		
11	450W	36 to 75						24	28	48 0 to 60	0.90	4 (1°C / W) 225 x 120 x 37 or		
								24 to 30			0.95	4 S (0.5°C / W) 225 x 120 x 74		
												4 (1°C / W) 225 x 120 x 37		
12	500W	36 to 75		12	13.8						0.95	3 HR (1.5°C / W) 112 x 120 x 37		1CI HR (1°C / W) 64 x 64 x 33
13	600W	9 to 36						24	28	48	0.89	4 S (0.5°C / W) 225 x 120 x 74		
		18 to 36									0.89			
		18 to 75									0.88			
		36 to 75									0.89			
		200 to 400									0.88			
14	1000W	36 to 75						24	28	48	0.95	4 HR S (0.5°C / W) 225 x 120 x 74		
15	1250W 2000 peak													
16	40W	200V to 1000V		12				24			≥ 0.83	All-aluminum, molded, screw-on housing 120 x 94 x 35 mm (2.5° / W)		
	80W							24		48		All-aluminum, molded, screw-on housing 145 x 95 x 40 mm (2° / W)		
	160W									48		All-aluminum, molded, screw-on housing 223 x 146 x 40 mm (1° / W)		
High input voltage (1000V) particularly intended for WIND and PHOTOVOLTAIC systems														

Mini modules DC-DC converters with:

- large input range,
- maximum thermal dissipation facilitated by epoxy resin internal casting and two aluminum sides,
- protection against humidity, dust, shocks and vibrations,
- 3 presentations, for mounting either: on DIN rail or wall (ARD case) / on wall (AP case) / on printed circuit board with "half-brick" connection (ACI 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: 15mA to 98mA (see table)
- possible external fuse: 4A (2A 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 (320 to 390 kHz)
- residual ripple: $\leq 1\%$ of Vout
- nominal efficiency: 83 to 86% (losses $\leq 3W$)
- dynamic response: $< 1\%$ of Vout / 150µs / load 50% to 75%
- permissive capacitive load: 470µF to $\geq 4700\mu F$ 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: -40 to +125°C ; operating: -40 to +85°C
- cooling: natural convection (derating $\leq 5.5\%$ per °C)
- temperature rise of the case: +20°C (DIN rail) or +25°C (other mounting)
- maximum ambient temperature:
 - 67°C at full power (DIN rail) or 61°C (other mounting)
 - 76°C at half power (DIN rail) or 73°C (other mounting)
- vibrations, shocks, humidity: protection by epoxy resin

Standards and specifications

- marking CE/UL60950-1, ICE60950-1, EN60950-1 / RoHS
- flammability: UL94HB, horizontal test
- MTBF: $> 10^6$ hours, case at 30°C
- worldwide manufacturers for active parts
- assembling and final controls: ELECDAN-CONVERTER

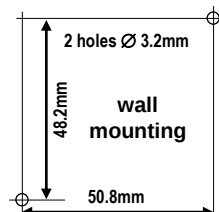
Case mountable on	Length	Width x depth	Material Weight	add SKU	Connections
① DIN rail or wall	69 + 15 mm	64 x 15 mm	115g	ARD	screw terminal
② Wall	64 + 8 mm	64 x 16 mm	110g	AP	wire $\leq 2mm^2$
③ Printed circuit	64 mm	64 x 15 mm	105g	ACI	pin Ø 1mm

OPTIONS and their SKU			
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 Volts	Amp	no load consu. (mA)	SKU add ARD or AP or ACI	Pre-tax price
1 - 1	9V to 36V	5	3	41	CC 5-3 / 936	
1 - 2		12	1.25	15	CC 12-1.25 / 936	
1 - 3		15	1	18	CC 15-1 / 936	
1 - 4		± 12	0.625	95	CC 212-0.625 / 936	
1 - 5		± 15	0.5	100	CC 215-0.5 / 936	
1 - 6		24	0.625	95	CC 24-0.625 / 936	
1 - 7		28	0.53	98	CC 28-0.53 / 936	
1 - 8	18V to 75V	5	3	28	CC 5-3 / 1875	
1 - 9		12	1.25	15	CC 12-1.25 / 1875	
1 - 10		15	1	14	CC 15-1 / 1875	
1 - 11		± 12	0.625	50	CC 212-0.625 / 1875	
1 - 12		± 15	0.5	50	CC 215-0.5 / 1875	
1 - 13		24	0.625	50	CC 24-0.625 / 1875	
1 - 14		28	0.53	52	CC 28-0.53 / 1875	



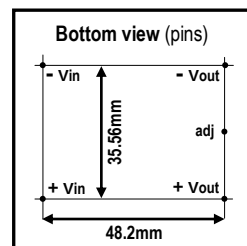
Case **ARD**
 DIN rail or wall mounting
 width: 9 + 69 + 6 mm
 height: 64 mm
 depth: 15 mm



Case **AP**
 wall mounting
 width: 64 + 8 mm
 height: 64 mm
 depth: 16 mm



Case **ACI** 64 x 64 x 15 mm, weldable on printed circuit ("half-brick" type of location, pins Ø 1mm)



Mini modules DC-DC converters with:

- large input range,
- maximum thermal dissipation facilitated by epoxy resin internal casting and two aluminum sides,
- protection against humidity, dust, shocks and vibrations,
- 3 presentations, for mounting either: on DIN rail or wall (ARD case) / on wall (AP case) / on printed circuit board with "half-brick" connection (ACI 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: 30mA to 190mA (see table)
- possible external fuse: 6A (4A for 18 to 75V)
- optional "ON/OFF" remote control

♦ "Vout" Output (soft start in 50ms)

- 5V/12V/15V/±12V/±15V/24V/28V/48V; 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 (280 kHz)
- residual ripple: ≤1% of Vout
- nominal efficiency: 87 to 91% (losses ≤ 4.5W)
- dynamic response: $< 1\%$ of Vout / 200µs / load 50% to 75%
- permissive capacitive load: 470µF to ≥10,000µF 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: -40 to +125°C ; operating: -40 to +85°C
- cooling: natural convection (derating ≤ 4% per °C)
- temperature rise of the case: +25°C (DIN rail) or +35°C (other mounting)
- maximum ambient temperature:
 - 60°C at full power (DIN rail) or 50°C (other mounting)
 - 72°C at half power (DIN rail) or 67°C (other mounting)
- 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

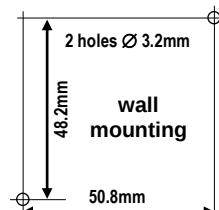
Case mountable on	Length	Width x depth	Material Weight	add SKU	Connections
① DIN rail or wall	69 + 15 mm	64 x 15 mm	120g	ARD	screw terminal
② Wall	64 + 8 mm	64 x 16 mm	115g	AP	wire ≤ 2mm ²
③ Printed circuit	64 mm	64 x 15 mm	110g	ACI	pin Ø 1mm

OPTIONS and their SKU			
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

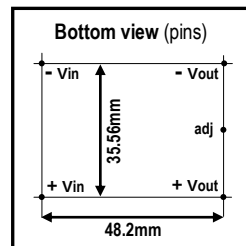
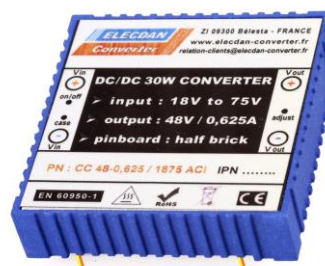
Range & No. sequence	Input range (Volts)	Outputs		no load consu. (mA)	SKU add ARD or AP or ACI	Pre-tax price
		Volts	Amp			
2 - 1	9V to 36V	5	6	130	CC 5-6 / 936	
2 - 2		12	2.5	75	CC 12-2.5 / 936	
2 - 3		15	2	95	CC 15-2 / 936	
2 - 4		±12	1.25	30	CC 212-1.25/936	
2 - 5		±15	1	36	CC 215-1 / 936	
2 - 6		24	1.25	30	CC 24-1.25 / 936	
2 - 7		28	1.06	33	CC 28-1.06 / 936	
2 - 8		48	0.625	190	CC 48-0.625 / 936	
2 - 9	18V to 75V	5	6	130	CC 5-6 / 1875	
2 - 10		12	2.5	40	CC 12-2.5 / 1875	
2 - 11		15	2	50	CC 15-2 / 1875	
2 - 12		±12	1.25	30	CC 212-1.25/1875	
2 - 13		±15	1	28	CC 215-1 / 1875	
2 - 14		24	1.25	30	CC 24-1.25 / 1875	
2 - 15		28	1.06	33	CC 28-1.06 / 1875	
2 - 16		48	0.625	100	CC 48-0.625 / 1875	



Case **ARD**
 DIN rail or wall mounting
 width: 9 + 69 + 6 mm
 height: 64 mm
 depth: 15 mm



Case **AP**
 wall mounting
 width: 64 + 8 mm
 height: 64 mm
 depth: 16 mm



Case **ACI** 64 x 64 x 15mm, weldable on printed circuit ("half-brick" type of location, pins Ø 1mm)

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: $\leq 1\%$ of Vout
 - nominal efficiency: 88 to 90% (losses $\leq 7W$)
 - dynamic response: $< 2\%$ of Vout / 200µs / load 50% to 75%
 - permissive capacitive load: 1000µF to $\geq 15,000\mu F$ 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: $\approx 20^\circ C$
- 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	230g	A1RD	screw terminal
2 Wall	64 + 8 mm	64 x 32 mm	220g	A1P	wire $\leq 2mm^2$
3 Printed circuit	64 mm	64 x 31 mm	215g	A1CI	pin $\varnothing 1mm$

OPTIONS and their SKU			
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 Volts	Amp	no load consu. (mA)	SKU add ARD or AP or ACI	Pre-tax price
3 - 1	9V to 36V	5	10	130	CC 5-10 / 936	
3 - 2		12	4.2	130	CC 12-4.2 / 936	
3 - 3		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	18V to 75V	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		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	



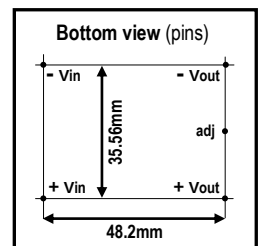
Case **A1RD**
DIN rail or wall mounting
width: 9 + 69 + 6 mm
height: 64 mm
depth: 32 mm



2 holes $\varnothing 3.2mm$
48.2mm
50.8mm
wall mounting
Case **A1P**
wall mounting
width: 64 + 8 mm
height: 64 mm
depth: 32 mm



Case **A1CI** 64 x 64 x 31 mm, weldable on printed circuit ("half-brick" type of location, pins $\varnothing 1mm$)



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) for Vout = 5V/12V/15V/24V
 - 18 to 75V (accidental max.: 100V / 0.1s) for Vout = 12V/15V
 - no load consumption: 90mA to 270mA (see table)
 - possible external fuse: 20A (10A for 18 to 75V)
 - optional "ON/OFF" remote control
- ♦ **"Vout" Output** (soft start in 50ms)
 - 5V/12V/15V/24V (Vin : 9 to 36V) & 12V/15V (Vin : 18 to 75V); accuracy: 1%
 - optional fit with embedded "10 revolutions" axis: $\pm 10\%$
 - line and load regulation: $< 2 \cdot 10^{-3}$ of Vout
 - temperature coefficient: $2 \cdot 10^{-4}$ of Vout, per °C
 - switching frequency: fixed (210 to 300 kHz)
 - residual ripple: $\leq 1\%$ of Vout
 - nominal efficiency: 88 to 91% (losses $\leq 10W$)
 - dynamic response: $< 1\%$ of Vout / 150µs / load 50% to 75%
 - permissive capacitive load: 4700µF to $\geq 22,000\mu F$ depending on load

Protections

- input-output insulation: 1500V 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

Thermal and environmental performances

- storage: -40 to +125°C ; operating: -40 to +85°C
- cooling: natural convection (derating 5% per °C)
- temperature rise of the case, 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: $> 8 \cdot 10^5$ hours, case at 25°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	240g	A1RD	screw terminal
② Wall	64 + 8 mm	64 x 32 mm	230g	A1P	wire $\leq 2mm^2$
③ Printed circuit	64 mm	64 x 31 mm	225g	A1CI	pin $\varnothing 1mm$

OPTIONS and their SKU				
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	
remote sense	T	solid state relay " Vout "	R	

Range & No. sequence	Input range (Volts)	Outputs Volts	Amp	no load consu. (mA)	SKU add A1RD or A1P or A1CI	Pre-tax price
4 - 1	9V to 36V	5	15	185	CC 5-15 / 936	
4 - 2		12	6.2	75	CC 12-6.2 / 936	
4 - 3		15	5	270	CC 15-5 / 936	
4 - 4		24	3.1	110	CC 24-3.1 / 936	
4 - 5		28	2.6	130	CC 28-2.6 / 1036	
4 - 6	18V to 75V	12	6.2	90	CC 12-6.2 / 1875	
4 - 7		15	5	90	CC 15-5 / 1875	

NB: model No. 4-5 (output 28V) requires Vin min = 10V



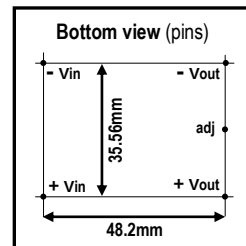
Case **A1RD**
 DIN rail or wall mounting
 width: 9 + 69 + 6 mm
 height: 64 mm
 depth: 32 mm



Case **A1P**
 wall mounting
 width: 64 + 8 mm
 height: 64 mm
 depth: 32 mm



Case **A1CI** 64 x 64 x 31 mm, weldable on printed circuit ("half-brick" type of location, pins $\varnothing 1mm$)



Mini modules DC-DC converters with:

- large input range,
- maximum thermal dissipation facilitated by epoxy resin internal casting and 2 lateral dissipators,
- protection against humidity, dust, shocks and vibrations,
- mounting on DIN rail (A2RD case).

Electrical data

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

- two voltage input ranges available:
 - 9 to 36V (accidental max.: 50V / 0.1s) for Vout = 12V/15V/24V
 - 18 to 75V (accidental max.: 100V / 0.1s) for Vout = 12V
- no load consumption: 70mA to 250mA (see table)
- possible external fuse: 25A (12A for 18 to 75V)
- optional "ON/OFF" remote control

◆ "Vout" Output (soft start in 20ms)

- 12V/15V/24V (Vin : 9 to 36V) and 12V (Vin : 18 to 75V); 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 (210 to 300 kHz)
- residual ripple: $\leq 1\%$ of Vout
- nominal efficiency: 87 to 90% (losses $\leq 15W$)
- dynamic response: $< 1\%$ of Vout / 150µs / load 50% to 75%
- permissive capacitive load: 2200µF to $\geq 22,000\mu F$ 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

Thermal and environmental performances

- storage: -55 to +125°C ; operating: -40 to +100°C
- cooling: natural convection (derating 3.3% per °C)
- temperature rise of the case, at full load: +30°C
- maximum ambient temperature:
 - 70°C at full power
 - 85°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 25°C
- worldwide manufacturers for active parts
- assembling and final controls: ELECDAN-CONVERTER

Case mountable on	Length	Width x depth	Material Weight	add SKU	Connections
DIN rail	69 + 15 mm	64 x 48 mm	PA 2002 340g	A2RD	screw terminal wires $\leq 2mm^2$

OPTIONS and their SKU	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
	remote sense	T	solid state relay " Vout "	R

Range & No. sequence	Input range (Volts)	Outputs		no load consu. (mA)	SKU add A2RD	Pre-tax price
		Volts	Amp			
5 - 1	9V to 36V	12	8.3	180	CC 12-8.3 / 936	
5 - 2		15	6.6	250	CC 15-6.6 / 936	
5 - 3		24	4.1	120	CC 24-4.1 / 936	
5 - 4		28	3.5	140	CC 28-3.5 / 1136	
5 - 5	18V to 75V	12	8.3	70	CC 12-8.3 / 1875	

NB: model No. 5-4 (output 28V) requires Vin min = 11V



Case **A2RD**
DIN rail mounting
width: 9 + 69 + 6 mm
height: 64 mm
depth: 48 mm



Front view
(64 x 48 mm)

Optional

Case **1CIHR**, output voltage 12V

- dimensions in mm: 64 x 64 x height 33
- weldable on printed circuit ("half-brick" type of location)
- cooling by built-in fan, pluggable

Modules equipped with streamlined DC/DC converters, dust & water-resistant IP67, available in two presentations for optimum space saving and heat dissipation:

- **3**: special dissipator, mounting on side or front, on DIN rail or wall; connections through 4 streamlined clamps for wires $\leq 72\text{mm}^2$
- **1CI**: weldable on printed circuit (not $\frac{1}{2}$ brick); the built-in fan "50,000 h"-12V-5W must be powered through pins No. 10 and 11.

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: 50mA to 200mA (see table)
- possible external time-delay fuse: 25A (12A for 18 to 75V)
- optional "ON/OFF" remote control for case **3**

◆ "Vout" Output

- 5V/12V/15V/24V/28V/48V; accuracy: 1%
- optional fit with embedded "10 revolutions" axis: $\pm 10\%$
- line and load regulation: $< 2 \cdot 10^{-3}$ of Vout
- temperature coefficient: $3 \cdot 10^{-4}$ of Vout, per °C
- switching frequency: fixed (≈ 300 kHz)
- residual ripple: $\leq 1\%$ of Vout ($< 2\%$ for 5V)
- nominal efficiency: 87 to 90% (losses $\leq 22.5\text{W}$)
- dynamic response: < 0.5 ms, with 25% load variation
- permissive capacitive load: $2200\mu\text{F}$ to $\geq 22,000\mu\text{F}$ depending on load

Protections

- input-output insulation: 1500V 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" option: internal diode (external fuse required)
- abnormal temperature rise: automatic shutdown and restarting
- total sealing IP67 (except fan for case **1CI**)

Thermal and environmental performances

- storage: -40 to $+105^\circ\text{C}$; operating: -40 to $+100^\circ\text{C}$
- cooling **3**: natural convection (derating 3% per °C)
- temperature rise of the case, at full load: $< 35^\circ\text{C}$
- maximum ambient temperature:
 - 65°C at full power for case **3** (70°C for case **1CI**)
 - 82°C at half power for case **3** (70°C for case **1CI**)
- 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 **3**: $> 8 \cdot 10^5$ hours, case at 25°C (MIL-HB217E)
- 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 700g	3	screw terminal wires $\leq 72\text{mm}^2$
Printed circuit	64 x 64 x 45 200g	1CI	pins: $\varnothing$ (mm) 1.02 and 2.03

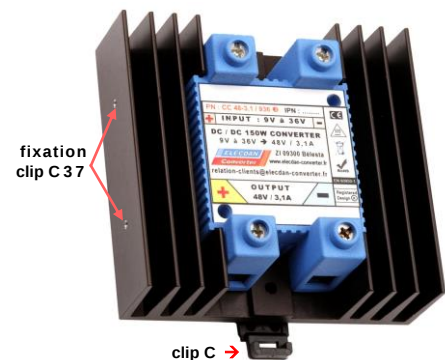
OPTIONS and SKU for case 3	Vout fit with axis "10 revolutions"	AJ
	inductive load driving	L
	"ON / OFF" remote control	H
	other Vin and/or Vout	value
	remote sense	T
	"inversion" protection	PI

Pin	mm	function
1	1	+Vin
2	1	on/off (2-4)
3	1	Case
4	1	-Vin
5	2	-Vout
6	1	-Sense
7	1	Trim
8	1	+Sense
9	2	+Vout
10	1	+ of 12V fan
11	1	0 of 12V fan

Range & No. sequence	Input range (Volts)	Outputs Volts	Amp	no load consu. (mA)	SKU add 3 or 1CI	Pre-tax price
6 - 1	9V to 36V	5	30	200	CC 5-30 / 936	
6 - 2		12	12.5	100	CC 12-12.5 / 936	
6 - 3		15	10	100	CC 15-10 / 936	
6 - 4		24	6.25	100	CC 24-6.25 / 936	
6 - 5		28	5.3	110	CC 28-5.3 / 936	
6 - 6		48	3.1	120	CC 48-3.1 / 936	
6 - 7	18V to 75V	5	30	100	CC 5-30 / 1875	
6 - 8		12	12.5	50	CC 12-12.5 / 1875	
6 - 9		15	10	50	CC 15-10 / 1875	
6 - 10		24	6.25	50	CC 24-6.25 / 1875	
6 - 11		28	5.3	55	CC 28-5.3 / 1875	
6 - 12		48	3.1	60	CC 48-3.1 / 1875	

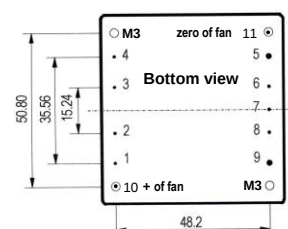
Case **3** for DIN rail or wall mounting

wall	front 112 x 120 : two holes $\varnothing 4.5$ mm, vertical fixing distance 90 mm
clip	front 112 x 37 : two M3, vertical fixing distance 50 mm
	front 112 x 120 : clip C
	front 112 x 37 : clip C 37



Case **1CI**: weldable on printed circuit

64 x 64 x thickness 45 mm; with built-in fan



Modules converting "18 to 75V → 12V / 17A" with a 93% 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 ≤ 40mm².

Electrical data

◆ "Vin" Input (protected against undervoltage)

- 18 to 75V (accidental max.: 80V / 0.1s)
- no load consumption: 100mA at 48V
- possible external time-delay fuse: 20A

◆ "Vout" Output

- 12V; accuracy: 1%
- fit ±10%:
 - **3HR** optional with embedded "10 revolutions" axis
 - **1CIHR** external with "trim" pin
- line and load regulation: < 2.10⁻³ of Vout
- temperature coefficient: ≤ 2.10⁻⁴ of Vout, per °C
- switching frequency: fixed (≈ 260 kHz)
- residual ripple: ≤ 1% of Vout
- nominal efficiency: 93% (losses ≈ 15W)
- dynamic response: < 0.2 ms, with 25% load variation
- permissive capacitive load: 4700µF to ≥22,000µF depending on load

Protections

- input-output insulation: 1500V DC. Internal filter on the input
- against overload and short circuit (even constant) by pulsed flow
- 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 ≤ 4.3% per °C)
- temperature rise of the case, at full load: ≤ 22.5°C
- maximum ambient temperature:
 - 62°C at full power for case **3HR** (70°C for case **1CIHR**)
 - 72°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** : > 8.10⁵ hours, case at 25°C (MIL-HB217E)
- MTBF fan (easy rapid unplugging): 50,000 hours
- worldwide manufacturers for active parts
- assembling and final controls: ELECDAN-CONVERTER

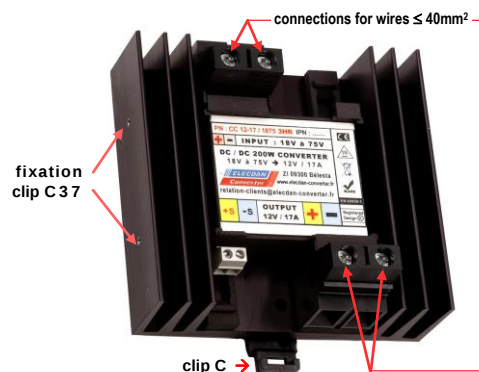
Case mountable on	Dimensions (mm)	Weight	SKU	Connections
DIN rail & wall	112 x 120 x 37	700 g	3HR	screw terminal, wires ≤ 40 mm ²
Printed circuit	64 x 64 x 33	140 g	1CIHR	pins : Ø 1 and 1.5 mm

OPTIONS and SKU for case 3HR	Vout fit with axis "10 revolutions"	AJ
	inductive load driving	L
	"ON / OFF" remote control	H
	remote sense	T
	"inversion" protection	PI

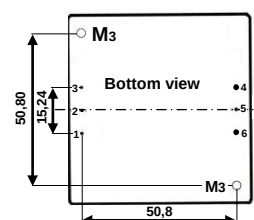
Pin	Ø mm	function
1	1	+Vin
2	1	on 2-3 / off
3	1	-Vin
4	1.5	-Vout
5	1	Trim
6	1.5	+Vout

Range & No. sequence	Input range (Volts)	Outputs Volts	Amp	no load consu. (mA)	SKU	Pre-tax price
7 - 1	18V	12	17	100 at 48V	CC 12-17 / 1875 / 3HR	
7 - 2	to 75V				CC 12-17 / 1875 / 1CIHR	

Case 3HR to be mounted on wall or DIN rail		
wall	front 112 x 120 : two holes Ø 4.5 mm, vertical fixing distance 90 mm	
clip	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



Modules equipped with streamlined DC/DC converters, dust & water-resistant IP67, available in two presentations for optimum space saving and heat dissipation:

- **3** : special heat dissipator, mounting on side or front, on DIN rail or wall; connections through 4 streamlined clamps for wires $\leq 72\text{mm}^2$
- **1** : integrated dynamic cooling with a mini tubed fan, fast racking-out for fan replacement directly by the user after 50,000 hours.

Case 96 x 64 x 61 mm thickness, to be mounted on wall or DIN rail.
NB. The range of temperatures is limited (-30 to +70°C).

Electrical data

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

- 60 to 160V (accidental max.: 180V / 0.1s)
- no load consumption: < 15mA at 72V
- possible external time-delay fuse: 7A
- optional "ON/OFF" remote control

◆ "Vout" Output

- 12V / 15V / 24V; accuracy: 1%
- optional fit with embedded "10 revolutions" axis: $\pm 10\%$
- line and load regulation: < $5 \cdot 10^{-3}$ of Vout
- temperature coefficient: $2 \cdot 10^{-4}$ of Vout, per °C
- switching frequency: fixed (≈ 360 kHz)
- residual ripple: $\leq 1.5\%$ of Vout
- nominal efficiency: 88% (losses < 28W)
- dynamic response: < 0.5 ms, with 25% load variation
- permissive capacitive load: 1000µF to >10,000µF depending on load

Protections

- input-output insulation: 2500V AC. 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" option: internal diode (external fuse required)
- abnormal temperature rise: automatic shutdown and restarting
- total sealing IP67 (except fan for case 1)

Thermal and environmental performances

- storage **3** : -40 to +100°C ; operating **3** : -40 to +90°C
- cooling **3** : natural convection (derating 2.5% per °C)
- temperature rise of the case, at full load: < 35°C
- maximum ambient temperature:
 - 50°C at full power for case **3** (60°C for case **1**)
 - 70°C at half power for cases **3** and **1**
- 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 **3** : > 150,000 hours, case at 25°C (MIL-HB217E)
- 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
3 DIN rail & wall	112 x 120 x 37	700g	3	screw terminal, wires $\leq 72\text{mm}^2$
1 DIN rail & wall	96 x 64 x 61	380g	1	

OPTIONS and SKU	Vout fit with axis "10 revolutions"	AJ	other Vin and/or Vout	value
	inductive load driving	L	remote sense	T
	"ON / OFF" remote control	H	"inversion" protection	PI

Range & No. sequence	Input range (Volts)	Outputs		no load consu. (mA)	SKU	Pre-tax price
		Volts	Amp			
8 - 1	60V to 160V	12	16.6	< 10 at 72V	CC 12-16.6 / 60160	
8 - 2		15	13.3		CC 15-13.3 / 60160	
8 - 3		24	8.3	< 15 at 72V	CC 24-8.3 / 60160	

Case **3** to be mounted on wall or DIN rail

paroi	front 112 x 120 : two holes $\varnothing 4.5$ mm, vertical fixing distance 90 mm
clip	front 112 x 37 : two M3, vertical fixing distance 50 mm
	face 112 x 37 : clip C 37



- Case **1** 64 x 96 x thickness 61 mm ; with built-in fan
- DIN rail mounting
 - wall mounting (vertical fixing distance 85 mm)



Modules equipped with streamlined DC/DC converters, dust & water-resistant IP67, available in two presentations for optimum space saving and heat dissipation:

- **3** : special heat dissipator, mounting on side or front, on DIN rail or wall; connections through 4 streamlined clamps for wires $\leq 72\text{mm}^2$
- **1** : integrated dynamic cooling with a mini tubed fan, fast racking-out for fan replacement directly by the user after 50,000 hours. Case 96 x 64 x 61 mm thickness, to be mounted on wall or DIN rail. NB. The range of temperatures is limited (-30 to +70°C).

Electrical data

◆ "Vin" Input (protected against undervoltage)

- 200 to 400V
- no load consumption: $< 10\text{mA}$ at 200V
- possible external time-delay fuse: 2.5A
- optional "ON/OFF" remote control

◆ "Vout" Output

- 12V / 15V / 24V / 48V; accuracy: 1%
- optional fit with embedded "10 revolutions" axis: $\pm 10\%$
- line and load regulation: $< 2.10^{-3}$ of Vout
- temperature coefficient: 2.10^{-4} of Vout, per °C
- switching frequency: fixed ($\approx 360\text{ kHz}$)
- residual ripple: $\leq 1\%$ of Vout
- nominal efficiency: 88% (losses $< 34\text{W}$)
- dynamic response: $< 0.5\text{ ms}$, with 25% load variation
- permissive capacitive load: $1000\mu\text{F}$ to $>10,000\mu\text{F}$ depending on load

Protections

- input-output insulation: 3000V AC. Internal filter on the input
- against overload and short circuit (even constant) by limitation
- in case of inductive load: option "L" will reinforce protection
- "inversion Vin" option: internal diode (external fuse required)
- abnormal temperature rise: automatic shutdown and restarting
- total sealing IP67 (except fan for case **1**)

Thermal and environmental performances

- storage **3**: -40 to +100°C ; operating **3**: -40 to +90°C
- cooling **3**: natural convection (derating 2.5% per °C)
- temperature rise of the case, at full load: $< 35^\circ\text{C}$
- maximum ambient temperature:
 - 50°C at full power for case **3** (60°C for case **1**)
 - 70°C at half power for cases **3** and **1**
- 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 **3**: $> 150,000$ hours, case at 25°C (MIL-HB217E)
- MTBF fan (easy rapid unplugging): 50,000 hours
- worldwide manufacturers for active parts
- assembling and final controls: ELECDAN-CONVERTER

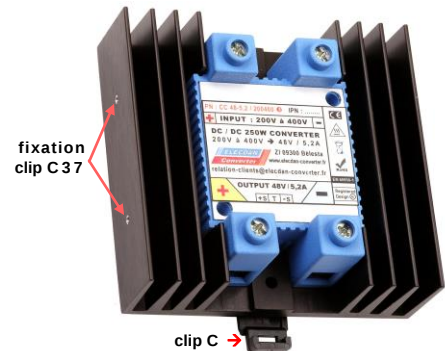
Case mountable on	Dimensions (mm)	Weight	SKU	Connections
3 DIN rail & wall	112 x 120 x 37	700g	3	screw terminal, wires $\leq 72\text{mm}^2$
1 DIN rail & wall	96 x 64 x 61	380g	1	

OPTIONS and SKU	Vout fit with axis "10 revolutions"	AJ	other Vin and/or Vout	value
	inductive load driving	L	remote sense	T
	"ON / OFF" remote control	H	"inversion" protection	PI

Range & No. sequence	Input range (Volts)	Outputs		no load consu. (mA)	SKU add 3 or 1	Pre-tax price
		Volts	Amp			
9 - 1	200V to 400V	12	21	< 10 at 200V	CC 12-21 / 200400	
9 - 2		15	16.5		CC 15-16.5 / 200400	
9 - 3		24	10.5		CC 24-10.5 / 200400	
9 - 4		48	5.2		CC 48-5.2 / 200400	

Case **3** to be mounted on wall or DIN rail

wall	front 112 x 120 : two holes $\varnothing 4.5\text{ mm}$, vertical fixing distance 90 mm	
clip	front 112 x 37 : two M3, vertical fixing distance 50 mm	face 112 x 37 : clip C 37



- Case **1** 64 x 96 x thickness 61 mm ; with built-in fan
- DIN rail mounting
 - wall mounting (vertical fixing distance 85 mm)



Modules equipped with streamlined DC/DC converters, dust & water-resistant IP67, available in three presentations for optimum space saving and heat dissipation:

- **4** : special heat dissipator, mounting on side or front, on DIN rail or wall; connections through 4 streamlined clamps for wires $\leq 72\text{mm}^2$.
- **1** : integrated dynamic cooling with a mini tubed fan, fast racking-out for fan replacement directly by the user after 50,000 hours. Case $96 \times 64 \times 61\text{ mm}$ thickness, to be mounted on wall or DIN rail. NB. The range of temperatures is limited (-30 to +70°C).
- **1Cl** : like **1** but weldable on printed circuit (not half-brick), thickness 45 mm only.

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 200mA (see table)
- possible external time-delay fuse: 70A (35A for 18 to 75V)
- optional "ON/OFF" remote control for cases **4** and **1**

◆ "Vout" Output

- 5V/12V/15V/24V/28V/48V; accuracy: 1%
- optional fit **4** & **1** with embedded "10 revolutions" axis: $\pm 10\%$
- line and load regulation: $< 2 \cdot 10^{-3}$ of Vout
- remote sense -S and +S: 2-position mini screw-terminal (wires $\leq 2\text{mm}^2$)
- temperature coefficient: $3 \cdot 10^{-4}$ of Vout, per °C
- switching frequency: fixed ($\approx 200\text{ kHz}$)
- residual ripple: $\leq 1\%$ of Vout ($< 2\%$ for 5V)
- nominal efficiency: 88 to 90% (losses $\leq 41\text{W}$)
- dynamic response: $< 0.5\text{ ms}$, with 25% load variation
- permissive capacitive load: $2200\mu\text{F}$ to $\geq 22,000\mu\text{F}$ depending on load

Protections

- input-output insulation: 1500V 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" option: internal diode (external fuse required)
- abnormal temperature rise: automatic shutdown and restarting
- total sealing IP67 (except fan for case **1** and **1Cl**)

Thermal and environmental performances

- storage **4** : -40 to +105°C ; operating **4** : -40 to +90°C
- cooling **4** : natural convection (derating 2.5% per °C)
- temperature rise of the case, at full load: $< 41^\circ\text{C}$
- maximum ambient temperature: 50°C at full power and 70°C at half power
- 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 **4** : $> 8 \cdot 10^5$ hours, case at 25°C (MIL-HB217E)
- 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
4 DIN rail & wall	225 x 120 x 37 1150 g	4	screw terminal wires $\leq 72\text{ mm}^2$
1 DIN rail & wall	96 x 64 x 61 380 g	1	
1Cl printed circuit	64 x 64 x 45 200 g	1Cl	pins $\varnothing 1$ & 2 mm

OPTIONS and SKU for cases 4 & 1	Vout fit with axis "10 revolutions"	AJ
	inductive load driving	L
	"ON / OFF" remote control	H
	other Vin and/or Vout	value
	"inversion" protection	PI

Pin	Ø mm	function
1	1	+Vin
2	1	on/off (2-4)
3	1	Case
4	1	-Vin
5	2	-Vout
6	1	-Sense
7	1	Trim
8	1	+Sense
9	2	+Vout
10	1	+ of 12V fan
11	1	0 of 12V fan

Range & No. sequence	Input range (Volts)	Outputs		no load consu. (mA)	SKU add 4 or 1 or 1Cl	Pre-tax price
		Volts	Amp			
10 - 1	9V to 36V	5	60	200	CC 5-60 / 936	
10 - 2		12	25	200	CC 12-25 / 936	
10 - 3		15	20	200	CC 15-20 / 936	
10 - 4		24	12.5	120	CC 24-12.5 / 936	
10 - 5		28	10.6	120	CC 28-10.6 / 936	
10 - 6	18V to 75V	48	6.2	120	CC 48-6.2 / 936	
10 - 7		5	60	100	CC 5-60 / 1875	
10 - 8		12	25	100	CC 12-25 / 1875	
10 - 9		15	20	100	CC 15-20 / 1875	
10 - 10		24	12.5	80	CC 24-12.5 / 1875	
10 - 11		28	10.6	80	CC 28-10.6 / 1875	
10 - 12		48	6.2	80	CC 48-6.2 / 1875	



clip C225 →

Case **4** to be mounted on wall or DIN rail

Wall:

- front 225 x 120: 2 holes $\varnothing 4.5\text{mm}$, vertical fixing dist.: 90 or 200mm
- side 225 x 37: two M3, vertical fixing dist.: 50mm

Clip:

- front 225 x 120: clip C 225
- side 225 x 37: clip C 37



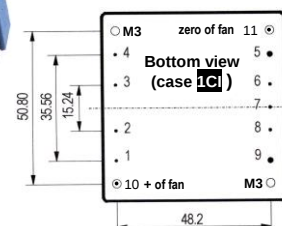
Case **1**

- 64 x 96 x thickness 61mm
- built-in fan
- DIN rail mounting
- wall mounting (vertical fixing distance 85mm)



Case **1Cl** : weldable on printed circuit

- 64 x 64 x thickness 45 mm
- built-in fan



Modules equipped with streamlined DC/DC converters, dust & water-resistant IP67, available in two presentations with different thermal resistance:

- **4** : thermal resistance 1°C/W ; can be mounted on front or side, on wall or DIN rail; connections through 4 streamlined clamps for wires $\leq 72\text{mm}^2$.
- **4S** : thermal resistance $0,5^{\circ}\text{C/W}$; a symmetrical dissipator "225 S" is added to case **4**, which doubles the thickness (74 mm instead of 37 mm).

Electrical data

◆ "Vin" Input (protected against undervoltage)

- 36 to 75V (accidental max.: 100V / 0.1s)
- no load consumption: 90mA to 100mA (see table)
- possible external fuse: 25A
- optional "ON/OFF" remote control

◆ "Vout" Output

- 24V / 28V / 48V; accuracy: 1%
- optional fit with embedded "10 revolutions" axis: $\pm 10\%$
- line and load regulation: $< 2 \cdot 10^{-3}$ of Vout
- temperature coefficient: $2 \cdot 10^{-4}$ of Vout, per $^{\circ}\text{C}$
- switching frequency: fixed ($\approx 450\text{ kHz}$)
- residual ripple: $\leq 1\%$ of Vout
- nominal efficiency: 90% (losses $\leq 50\text{W}$)
- dynamic response: 0.2 ms, with 25% load variation
- permissive capacitive load: $2200\mu\text{F}$ to $\geq 22,000\mu\text{F}$ depending on load

Protections

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

Thermal and environmental performances

- storage: -40 to $+100^{\circ}\text{C}$; operating: -40 to $+90^{\circ}\text{C}$
- cooling: natural convection (derating 2.5% per $^{\circ}\text{C}$)
- temperature rise of the case, at full load: $+50^{\circ}\text{C}$
- maximum ambient temperature:
 - at full power: 40°C for case **4** and 65°C for case **4S**
 - at half power: 65°C for case **4** and 77°C for case **4S**
- vibrations, shocks, humidity: protection by epoxy resin

Standards and specifications

- marking CE/UL60950-1, ICE60950-1, EN60950-1 / RoHS
- flammability: UL94HB, horizontal test
- MTBF $> 5 \cdot 10^5$ hours, case at 25°C
- worldwide manufacturers for active parts
- assembling and final controls: ELECDAN-CONVERTER

Case mountable on	Dimensions (mm)	Weight	SKU	Connections
4 DIN rail & wall	225 x 120 x 37	1150 g	4	screw terminal wires $\leq 72\text{ mm}^2$
4S DIN rail & wall	225 x 120 x 74	2260 g	4S	

OPTIONS and SKU	Vout fit with axis "10 revolutions"	AJ	other Vin and/or Vout	value
	inductive load driving	L	symmetrical dissipator	225 S
	"ON / OFF" remote control	H	"inversion" protection	PI

Range & No. sequence	Input range (Volts)	Outputs		no load consu. (mA)	SKU aadd 4 or 4S	Pre-tax price
		Volts	Amp			
11 - 1	36V to 75V	24	18	90	CC 24-18 / 3675	
11 - 2		28	16	100	CC 28-16 / 3675	
11 - 3		48	9.3	100	CC 48-9.3 / 3675	
New options (please contact us)		1 output choice: 24V to 30V; efficiency: 95% 2 output: 0 to 60V; internal or external setting				

Case 4S

(Case **4** + symmetrical dissipator 225S)



Mounting on wall or DIN rail

1 Wall :

- front 225 x 120: two holes $\varnothing 4.5\text{ mm}$, vertical fixing distance: 90 or 200 mm
- side 225 x 37: two M3, vertical fixing distance: 50 mm

2 Clip :

- front 225 x 120: clip C 225
- side 225 x 37: clip C 37

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 ≤ 40mm².

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: < 4.10⁻³ of Vout
- load regulation: ≤ 1%
- temperature coefficient: ≤ 2.10⁻⁴ 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** : > 5.10⁵ 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	3HR	screw terminal, wires ≤ 72 mm ²
Printed circuit	64 x 64 x 33	140 g	1CIHR	pins : Ø 1 and 1.5 mm

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

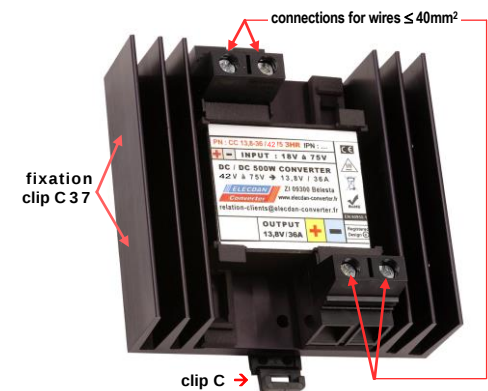
Pin	Ø mm	function
1	1	+Vin
2	1	on 2-3 / off
3	1	-Vin
4	1.5	-Vout
5	1	Trim
6	1.5	+Vout

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	

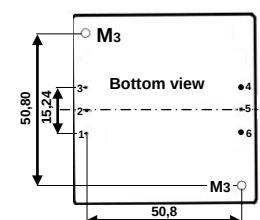
1) Storage and operating temperature for **1CIHR** : -30°C to +70°C
 2) Thermal resistance for **3HR** : 1,5°C/W; this can be reduced to 0.75°C/W by adding a symmetrical dissipator "112 S"

Case **3HR** to be mounted on wall or DIN rail

wall	front 112 x 120 : two holes Ø 4.5 mm, vertical fixing distance 90 mm
clip	front 112 x 37 : two M3, vertical fixing distance 50 mm
clip	front 112 x 120 : clip C
clip	face 112 x 37 : clip C 37



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



With its optimized shape and volume for efficient natural convection cooling, this case can be mounted on wall (on the side) or on DIN rail (on front or side). Connections are made through 4 streamlined clamps for wires $\leq 72 \text{ mm}^2$. Thermal resistance is 0.5°C/W and can be reduced to 0.25°C/W if required, with optional air flow of 4 m/s.

Electrical data

◆ "Vin" Input (protected against undervoltage)

- 5 input ranges available: 9 to 36V / 18 to 36V / 18 to 75V / 36 to 75V / 200 to 400V
- no load consumption: from 60mA to 400mA (see table)
- possible external time-delay fuse: current (A) = $1200 / V_{in} \text{ min.}$
- optional "on/off" remote control

◆ "Vout" Output

- 12V / 15V / 24V / 28V / 48V, depending on ranges; accuracy: 1%
- optional fit with embedded "10 revolutions" axis: $\pm 10\%$
- line and load regulation: $< 2 \cdot 10^{-3}$ of V_{out}
- remote sense -S and +S: 2-position mini screw-terminal (wires $\leq 2 \text{ mm}^2$)
- temperature coefficient: $\leq 3 \cdot 10^{-4}$ of V_{out} , per $^\circ\text{C}$
- switching frequency: fixed ($\geq 200 \text{ kHz}$)
- residual ripple: $\leq 1\%$ of V_{out}
- nominal efficiency: 88 to 90% (losses $\leq 82 \text{ W}$)
- dynamic response: $< 0.5 \text{ ms}$, with 25% load variation
- permissive capacitive load: $1000 \mu\text{F}$ to $\geq 22,000 \mu\text{F}$ depending on load

Protections

- input-output insulation: 1500V DC (3000V AC for $V_{in} = 200$ to 400V)
- internal filter on the input
- against overload and short circuit (even constant)
- in case of inductive load: option "L" will reinforce protection
- "inversion V_{in} " option: internal diode (external fuse required)
- abnormal temperature rise: automatic shutdown and restarting
- total sealing IP67

Thermal and environmental performances

- storage: -40 to $+100^\circ\text{C}$; operating: -40 to $+85^\circ\text{C}$
- cooling: natural convection (derating 2.5% per $^\circ\text{C}$)
- temperature rise of the case, at full load: $< 41^\circ\text{C}$
- maximum ambient temperature: 45°C at full power, 65°C at half power
- vibrations, shocks, humidity: protection by epoxy resin

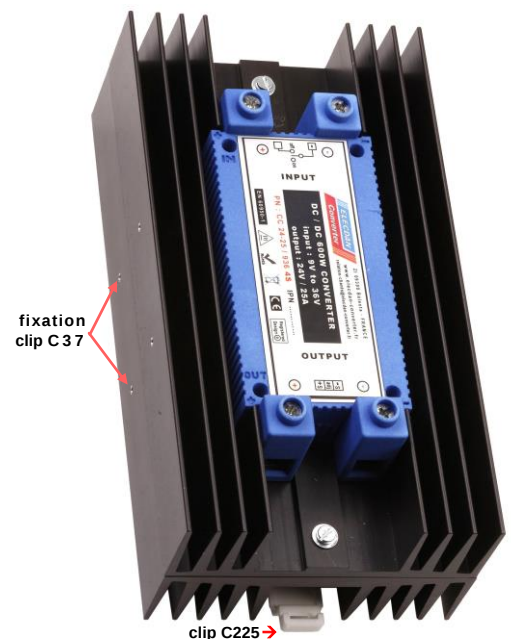
Standards and specifications

- marking CE/UL60950-1, ICE60950-1, EN60950-1 / RoHS
- flammability for PA 2002: UL94HB, horizontal test
- MTBF: $> 4 \cdot 10^5$ hours, case at 25°C
- worldwide manufacturers for active parts
- assembling and final controls: ELECDAN-CONVERTER

Range & No. sequence	Input range (Volts)	Outputs		no load consu. (mA)	SKU	Pre-tax price
		Volts	Amp			
13 - 1	9V to 36V	24	25	400	CC 24-25 / 936	
13 - 2		28	21	400	CC 28-21 / 936	
13 - 3		48	12.5	240	CC 48-12.5 / 936	
13 - 4	18V to 36V	12	50	< 300	CC 12-50 / 1836	
13 - 5		24	25		CC 24-25 / 1836	
13 - 6		28	21		CC 28-21 / 1836	
13 - 7	18V to 75V	48	12.5	160	CC 48-12.5 / 1836	
13 - 8		24	25		CC 24-25 / 1875	
13 - 9		28	21		CC 28-21 / 1875	
13 - 10	36V to 75V	48	12.5	< 150	CC 48-12.5 / 1875	
13 - 11		12	50		CC 12-50 / 3675	
13 - 12		24	25		CC 24-25 / 3675	
13 - 13	200V to 400V	28	21	< 60	CC 28-21 / 3675	
13 - 14		48	12.5		CC 48-12.5 / 3675	
13 - 15		12	50		CC 12-50 / 200400	
13 - 16		15	40		CC 15-40 / 200400	
13 - 17		24	25		CC 24-25 / 200400	
13 - 18		28	21		CC 28-21 / 200400	
13 - 19		48	12.5		CC 48-12.5 / 200400	

Case 4S

(Case 4 + symmetrical dissipator 225S)



Mounting on wall or DIN rail

❶ Wall :

- front 225 x 120: two holes $\varnothing 4.5 \text{ mm}$, vertical fixing distance: 200 mm
- side 225 x 37: two M3, vertical fixing distance: 50 mm

❷ Clip :

- front 225 x 120: clip C 225
- side 225 x 37: clip C 37

Case mountable on	Dimensions (mm)	Weight	SKU	Connections
DIN rail & wall	225 x 120 x 74	2260 g	4S	screw terminal, wires $\leq 72 \text{ mm}^2$

OPTIONS and SKU	Vout fit with axis "10 revolutions"	AJ	other V_{in} and/or V_{out}	value
	inductive load driving	L	"inversion" protection	PI
	"ON / OFF" remote control	H	side clip	C 37

With its optimized shape and volume for efficient natural convection cooling, this case can be mounted on wall (on the side) or on DIN rail (on front or side). Connections are made through 4 streamlined clamps for wires $\leq 40 \text{ mm}^2$. Thermal resistance is 0.5°C/W and can be reduced to 0.25°C/W if required, with optional air flow of 4 m/s.

Electrical data

◆ "Vin" Input (protected against undervoltage)

- 36 to 75V (accidental max.: 100V / 0.1s)
- no load consumption: $\leq 220\text{mA}$ at 48V
- possible external time-delay fuse: 60A
- optional "on/off" remote control

◆ "Vout" Output

- 24V / 28V / 48V ($\leq 60\text{V}$ / 900W option); accuracy: 1%
- optional fit with embedded "10 revolutions" axis:
 - 24V output: $\pm 3\%$
 - 48V output: 0 to -10%
- line regulation: $< 4 \cdot 10^{-3}$ of Vout
- load regulation: $\leq 1\%$
- temperature coefficient: $\leq 2 \cdot 10^{-4}$ of Vout, per $^\circ\text{C}$
- residual ripple: $\leq 1\%$ of Vout
- nominal efficiency: 95% (losses $\leq 52\text{W}$)
- dynamic response: $< 1 \text{ ms}$, with 25% load variation
- permissive capacitive load: $1200\mu\text{F}$ to $\geq 15,000\mu\text{F}$ 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" will reinforce protection
- "inversion Vin" option: internal diode (external fuse required)
- abnormal temperature rise: automatic shutdown and restarting
- total sealing IP67

Thermal and environmental performances

- storage: -55 to $+125^\circ\text{C}$; operating: -40 to $+85^\circ\text{C}$
- cooling: natural convection (derating $\approx 4\%$ per $^\circ\text{C}$)
- temperature rise of the case, at full load: $\leq 26^\circ\text{C}$
- maximum ambient temperature:
 - 60°C at full power (72°C with optional ventilation 4 m/s)
 - 72°C at half power
- vibrations, shocks, humidity: protection by epoxy resin

Standards and specifications

- marking CE / UL / C UL60950-1 / RoHS
- flammability for PA 2002: UL94HB, horizontal test
- MTBF: $> 2.5 \times 10^5$ hours, case at 25°C
- worldwide manufacturers for active parts
- assembling and final controls: ELECDAN-CONVERTER

Case mountable on	Dimensions (mm)	Weight	SKU	Connections
DIN rail & wall	225 x 120 x 74	2260 g	4HRS	screw terminal, wires $\leq 40 \text{ mm}^2$

OPTIONS and SKU	Vout fit with axis "10 revolutions"	AJ	"ON / OFF" remote control	H
	inductive load driving	L	"inversion" protection	PI

Range & No. sequence	Input range (Volts)	Outputs		no load consu. (mA)	SKU	Pre-tax price
		Volts	Amp			
14 - 1	36V to 75V	24	41	200	CC 24-41 / 3675 / 4HRS	
14 - 2		28	35		CC 28-35 / 3675 / 4HRS	
14 - 3		48	19	220	CC 48-19 / 3675 / 4HRS	

Optional output: 46V to 60V / 900W (please contact us)

Case 4HRS

(Case 4HR + symmetrical dissipator 225S)



Mounting on wall or DIN rail

① Wall :

- front 225 x 120: two holes $\varnothing 4.5 \text{ mm}$, vertical fixing distance: 200 mm
- side 225 x 37: two M3, vertical fixing distance: 50 mm

② Clip :

- front 225 x 120: clip C 225
- side 225 x 37: clip C 37

With its optimized shape and volume for efficient natural convection cooling, this case can be mounted on wall (on the side) or on DIN rail (on front or side). Connections are made through 4 streamlined clamps for wires $\leq 40 \text{ mm}^2$. Thermal resistance is 0.5°C/W and can be reduced to 0.25°C/W if required, with optional air flow of 4 m/s.

Electrical data

◆ "Vin" Input (protected against undervoltage)

- 36 to 75V (accidental max.: 100V / 0.1s)
- no load consumption: 400mA at 48V
- possible external time-delay fuse: 120A
- optional "on/off" remote control

◆ "Vout" Output

- 48V; accuracy: 1%
- optional fit with embedded "10 revolutions" axis: $\pm 2\%$
- line regulation: $< 4 \cdot 10^{-3}$ of Vout
- load regulation: $\leq 1\%$
- temperature coefficient: $\leq 2 \cdot 10^{-4}$ of Vout, per $^\circ\text{C}$
- residual ripple: $\leq 1\%$ of Vout
- nominal efficiency: 95% (losses $\approx 66\text{W}$)
- dynamic response: $< 2 \text{ ms}$, with 25% load variation
- permissive capacitive load: $1200\mu\text{F}$ to $\geq 15,000\mu\text{F}$ 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" will reinforce protection
- "inversion Vin" option: internal diode (external fuse required)
- abnormal temperature rise: automatic shutdown and restarting
- total sealing IP67

Thermal and environmental performances

- storage: -55 to $+125^\circ\text{C}$; operating: -40 to $+85^\circ\text{C}$
- cooling: natural convection (derating $< 3\%$ per $^\circ\text{C}$)
- temperature rise of the case, at full load: $\leq 33^\circ\text{C}$
- maximum ambient temperature:
 - 50°C at full power (68°C with optional ventilation 4 m/s)
 - 68°C at half power
- vibrations, shocks, humidity: protection by epoxy resin

Standards and specifications

- marking CE / UL / C UL60950-1 / RoHS
- flammability for PA 2002: UL94HB, horizontal test
- MTBF: $> 150,000$ hours, case at 25°C
- worldwide manufacturers for active parts
- assembling and final controls: ELECDAN-CONVERTER

Case mountable on	Dimensions (mm)	Weight	SKU	Connections
DIN rail & wall	225 x 120 x 74	2260 g	4HRS	screw terminal, wires $\leq 40 \text{ mm}^2$

OPTIONS and SKU				
	Vout fit with axis "10 revolutions"	AJ	"ON / OFF" remote control	H
	inductive load driving	L	"inversion" protection	PI

Range & No. sequence	Input range (Volts)	Outputs Volts	Amp	no load consu. (mA)	SKU	Pre-tax price
15 - 1	36V to 75V	48	26	800	CC 48/26-41/3675/4HRS	
Peak current: 41A / 5 seconds / minute						

Case 4HRS
 (Case 4HRS + symmetrical dissipator 225S)



Mounting on wall or DIN rail

❶ Wall :

- front 225 x 120: two holes $\varnothing 4.5 \text{ mm}$, vertical fixing distance: 200 mm
- side 225 x 37: two M3, vertical fixing distance: 50 mm

❷ Clip :

- front 225 x 120: clip C 225
- side 225 x 37: clip C 37

These high input voltage converters are particularly intended for specific applications such as WINDMILLS and PHOTOVOLTAIC systems. They are built in robust all-aluminum cases. The internal casting made of epoxy resin homogenizes the components' temperature, offers maximum power dissipation, and protects against humidity, dust, shocks and vibrations.

Electrical data

◆ "Vin" Input (protected against undervoltage)

- 200V to 1000V (accidental max: 1200V/5s)
- no load consumption: 2 to 10 mA (see table)
- possible retarded fuse, on the input: ≤ 2A or 4A or 8A depending on the module's power and its minimum input voltage

◆ "Vout" Output

- 12V/3.4A ; 24V/1.7A ; 24V/3.2A ; 48V/1.6A ; 48V/3.2A (accuracy: 1%)
- line and load regulation: <1% of Vout
- temperature coefficient: $2 \cdot 10^{-4}$ of Vout, per °C
- switching frequency: fixed (> 60kHz)
- residual ripple: ≤1% of Vout
- minimum efficiency, at full load: 83%
- permissible capacitive load: from 2200µF to ≥22 000µF depending on load

Protections

- input-output insulation: 4000V 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 (standard protection, without influence on the efficiency)
- abnormal temperature rise: automatic shutdown and restarting
- sealing: IP67 protection against water and dust

Thermal and environmental performances

- storage: -40 to +85°C ; operating: -30 to +75°C
- cooling: natural convection (derating 3.3% per °C)
- temperature rise of the case, at full load: ≈ +30°C
- maximum ambient temperature:
 - 45°C at full power
 - 60°C at half power
- vibrations, shocks, humidity: protection by epoxy resin

Standards and specifications

- marking CE/UL60950-1, ICE60950-1, EN60950-1 / RoHS
- flammability: closed all aluminum housing
- MTBF: 350,000 h (40W); 150,000 h (80W); 75,000 h (160W) at 25°C
- worldwide manufacturers for active parts
- assembling and final controls: ELECDAN-CONVERTER

Housing screwable on wall with 4 "M4" center distance:	Length x width x depth	Material weight	Power	Connections
108 x 84 mm	120 x 94 x 35 mm	0,6 kg	40W	screw terminal Phoenix VDFK4 wire ≤ 8mm ²
135 x 85 mm	145 x 95 x 40 mm	0,92 kg	80W	
212 x 136 mm	223 x 146 x 40 mm	2,1 kg	160W	

Range & No. sequence	Input range (Volts)	Outputs		no load consu. (mA)	SKU	Pre-tax price
		Volts	Amp			
16 - 1	200V to 1000V	12	3.4	2	CC 12-3.4 / 1000	
16 - 2		24	1.7	2	CC 24-1.7 / 1000	
16 - 3		24	3.2	5	CC 24-3.2 / 1000	
16 - 4		48	1.6	5	CC 48-1.6 / 1000	
16 - 5		48	3.2	10	CC 48-3.2 / 1000	

Three all aluminum housing



❶ Version **40W** (12 and 24V)
 (120 + 11) x 94 x 35 mm

❷ Version **80W** (24V and 48V)
 (145 + 11) x 95 x 40 mm

❸ Version **160W** (48V)
 (223 + 11) x 146 x 40 mm