



Input voltage up to 144 VDC  
Single output of 3.3 to 48 VDC  
No input-to-output isolation



- RoHS lead solder exemption compliant
- Efficiency up to 97%
- Low input-output differential voltage
- No derating over temperature



**Selection chart**

Output		Input voltage $V_i$ [VDC]	Rated power $P_{otot}$ [W]	Efficiency $\eta_{typ}$ [%]	Type	Options
$V_{o nom}$ [VDC]	$I_{o nom}$ [A]					
3.3	25	8 - 40	82.5	82	PSK 3E25-7	-9, E, P, B, B1
5.1	12	8 - 80	61.2	79	PSS 5A12-7	-9, E, P, C, B, B1
5.1	14	8 - 40	71.4	83	PSS 5A14-2	B, B1
5.1	16	8 - 80	81.6	79	PSK 5A16-7	-9, E, P, C, B, B1
5.1	18	8 - 40	91.8	82	PSK 5A18-2	B, B1
5.1	20	8 - 80	102	79	PSK 5A20-7	-9, E, P, C, B, B1
5.1	25	8 - 40	127.5	82	PSK 5A25-7	-9, E, P, C, B, B1
12 (15) <sup>1</sup>	9	18 - 144	108 (135)	91	PSS 129-7	-9, E, P, C, B, B1
12 (15) <sup>1</sup>	12	15 - 80	144 (180)	91	PSS 1212-7	-9, E, P, C, B, B1
12 (15) <sup>1</sup>	12	18 - 144	144 (180)	91	PSK 1212-7	-9, E, P, C, B, B1
12 (15) <sup>1</sup>	14	16 - 40	168 (210)	90	PSS 1214-2	B, B1
12 (15) <sup>1</sup>	16	15 - 80	192 (240)	90	PSK 1216-7	-9, E, P, C, B, B1
12 (15) <sup>1</sup>	18	16 - 40	216 (270)	90	PSK 1218-2	B, B1
12 (15) <sup>1</sup>	20	15 - 80	240 (300)	90	PSK 1220-7	-9, E, P, C, B, B1
24	9	31 - 144	216	94	PSS 249-7	-9, E, P, C, B, B1
24	12	29 - 80	288	94	PSS 2412-7	-9, E, P, C, B, B1
24	12	31 - 144	288	94	PSK 2412-7	-9, E, P, C, B, B1
24	14	29 - 60	336	94	PSS 2414-2	B, B1
24	16	29 - 80	384	94	PSK 2416-7	-9, E, P, C, B, B1
24	18	29 - 60	432	94	PSK 2418-2	B, B1
24	20	29 - 80	480	94	PSK 2420-7	-9, E, P, C, B, B1
36	9	44 - 144	324	96	PSS 369-7	-9, E, P, C, B, B1
36	12	42 - 80	432	96	PSS 3612-7	-9, E, P, C, B, B1
36	12	44 - 144	432	96	PSK 3612-7	-9, E, P, C, B, B1
36	16	42 - 80	576	95	PSK 3616-7	-9, E, P, C, B, B1
36	20	42 - 80	720	95	PSK 3620-7	-9, E, P, C, B, B1
48	9	58 - 144	432	97	PSS 489-7	-9, E, P, C, B, B1
48	12	58 - 144	576	97	PSK 4812-7	-9, E, P, C, B, B1

<sup>1</sup> These converters ( $V_{o nom} = 12 V$ ) can be adjusted to 15 V using the R-control input.

### Input

Input voltage	refer to selection chart
No load input current	≤ 50 mA

### Output

Efficiency	$V_{i\text{nom}}, I_{o\text{nom}}$	up to 97%
Output voltage setting accuracy	$V_{i\text{nom}}, I_{o\text{nom}}$	±0.6% $V_{o\text{nom}}$
Output voltage switching noise	IEC/EN 61204, total	typ. 0.2%
Line regulation	$V_{i\text{min}} - V_{i\text{max}}, I_{o\text{nom}}$	typ. ±0.2%
Load regulation	$V_{i\text{nom}}, 0 - I_{o\text{nom}}$	typ. 0.15%
Minimum load	not required	0 A
Current limitation	rectangular U/I characteristic	typ. 110% $I_{o\text{nom}}$
Hold-up time	$V_{i\text{nom}}, I_{o\text{nom}}$ , with ext. diode in input line, PSS	up to 7 ms

### Protection

Input reverse polarity	built-in fuse	
Input undervoltage lockout		typ. 80% $V_{i\text{min}}$
Input transient protection	suppressor diode	
Output	no-load, overload and short circuit proof	
Output overvoltage	suppressor diode in each output	typ. 150% $V_{o\text{nom}}$
Overtemperature	switch-off with auto restart	$T_C$ typ. 100°C

### Control

Inhibit	TTL input, output enabled if left open	
R control	min. adjustable output voltage	0 V
	max. adjustable output voltage	up to 125% $V_{o\text{nom}}$
Output voltage indication	LED (except -2)	
Sense lines	compensation for voltage drop across load lines, PSS	
Test sockets	test sockets for check of output voltage	
Operation in parallel	current sharing feature (CS)	

### Safety

Approvals	EN 60950, UL 1950, CSA C22.2 No. 950	
Protection degree	units without options	IP 20/30
Electric strength test voltage	I/case and O/case	500/750/1500 VDC

### EMC

Electrostatic discharge	IEC/EN 61000-4-2	
Electromagnetic field	IEC/EN 61000-4-3	
Electr. fast transients/bursts	IEC/EN 61000-4-4	
Surge	IEC/EN 61000-4-5	
Conducted disturbances	IEC/EN 61000-4-6	
Electromagnetic emissions	CISPR 22/EN 55022	

### Environmental

Operating ambient temperature	-2, $V_{i\text{nom}}$ , $I_{o\text{nom}}$ , convection cooled	-10 to 50°C
Operating case temperature $T_C$	-2, $V_{i\text{nom}}$ , $I_{o\text{nom}}$	-10 to 80°C
Storage temperature	-2, non operational	-25 to 100°C
Operating ambient temperature	-7, $V_{i\text{nom}}$ , $I_{o\text{nom}}$ , convection cooled	-25 to 71°C
Operating case temperature $T_C$	-7, $V_{i\text{nom}}$ , $I_{o\text{nom}}$	-25 to 95°C
Storage temperature	-7, non operational	-40 to 100°C
Damp heat	IEC/EN 60068-2-3	
Vibration, sinusoidal	IEC/EN 60068-2-6	
Shock	IEC/EN 60068-2-27	
Bump	IEC/EN 60068-2-29	
Random vibration	IEC/EN 60068-2-64	
MTBF	MIL-HDBK-217	

### Options

Large and small cooling plate instead of standard heatsink		B/B1
Extended temperature range	-40 to 71°C, ambient, operating	-9
Electronic inrush current limitation		E
Output voltage adjustment	$\pm 8\%$ $V_{o\text{nom}}$ , excludes feature R and vice versa	P
Thyristor crowbar on output		C

### Accessories

Front panels 19" (Schroff/Intermas), 12 und 16 TE
Mating H15 or H15 S4 connectors with screw, solder, fast-on or press-fit terminals
Connector retention facilities
Adapter kit for DIN-rail

### Pin allocation

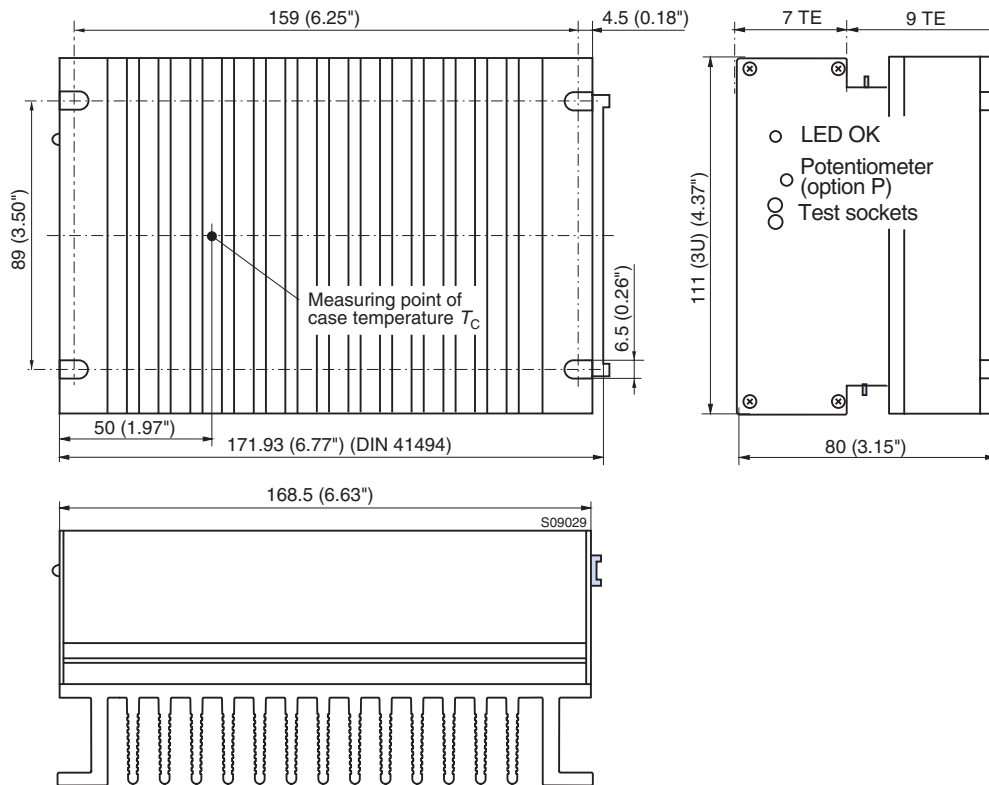
Electrical Determination	Type H15		Type H15 S4	
	Pin No.	Ident.	Pin No.	Ident.
Output voltage (positive)	4	Vo+	4/6	Vo+
Output voltage (positive)	6	Vo+		
Output voltage (negative)	8	Go-	8/10	Go-
Output voltage (negative)	10	Go-		
Crowbar trigger input (option C)	12	C	12	C
Inhibit input	14	i	14	i
R-input (output voltage programming) <sup>1</sup>	16	R	16	R
Sense line (negative)	18	S-	18	S-
Sense line (positive)	20	S+	20	S+
Current sharing control input	22	CS	22	CS
Protective ground (leading pin)	24	⊕	24	⊕
Input voltage (negative)	26	Gi-	26/28	Gi-
Input voltage (negative)	28	Gi-		
Input voltage (positive)	30	Vi+	30/32	Vi+
Input voltage (positive)	32	Vi+		

**Mechanical data**

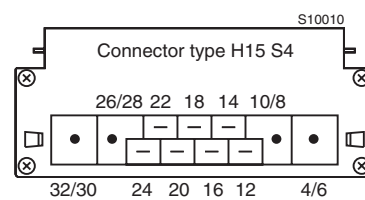
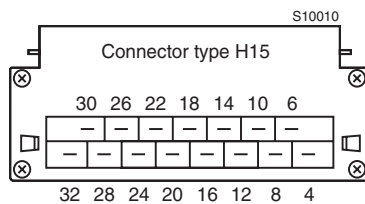
Tolerances  $\pm 0.3$  mm (0.012") unless otherwise indicated.



**PSK**

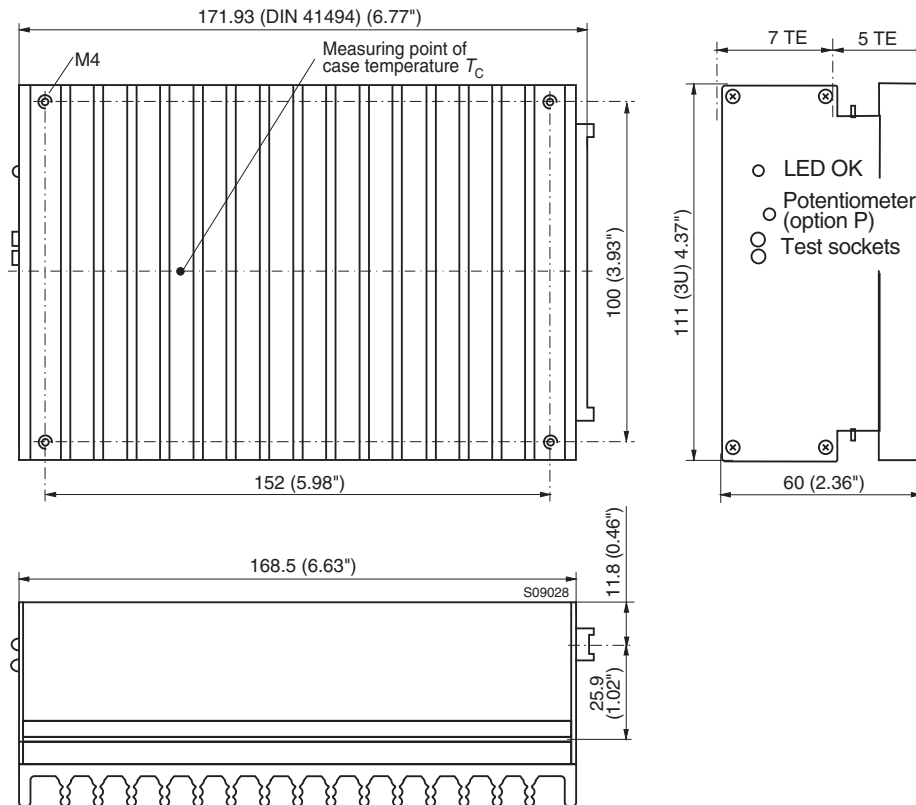


**Pin allocation**



H15 S4 connectors for 20 and 25 A types

**PSS**



**NUCLEAR AND MEDICAL APPLICATIONS** - Power-One products are not authorized for use as critical components in life support systems, equipment used in hazardous environments, or nuclear control systems without the express written consent of the respective divisional president of Power-One, Inc.

**TECHNICAL REVISIONS** - The appearance of products, including safety agency certifications pictured on labels, may change depending on the date manufactured. Specifications are subject to change without notice.