T Series — *500 Watt AC-DC Converters*

Universal input range 70...255V AC with PFC
Single outputs up to 56.5 V DC
4 kV AC I/O electric strength test voltage

- Rugged electrical and mechanical design, hot swappable
- Battery chargers for 24 and 48 V lead acid batteries with remote temperature control
- Operating ambient temperature range –25...71°C with convection cooling

Selection chart

Output Voltage at 0.5 x $I_{o\ nom}$ [V DC]	**Temperature coefficient** of output [mV/K]	**Output current** $I_{o\ nom}$ [A]	**Input voltage** U_i [V AC]	**Type**	**Options** [1]
24.25 24.25	–5 –5	16 16	70...140 85...255	UT 1201-7 LT 1201-7	B1 B1
25.25...28.25 25.25...28.25	–3 –3	14.5 14.5	70...140 85...255	UT 1240-7Z LT 1240-7Z	B1, D B1, D
48 48	–5 –5	11 11	70...140 85...255	UT 1702-7 LT 1702-7	B1 B1
50.5...56.5 50.5...56.5	–3 –3	10.2 10.2	70...140 85...255	UT 1740-7Z LT 1740-7Z	B1, D B1, D
54.5 54.5	–5 –5	10 10	70...140 85...255	UT 1701-7 LT 1701-7	B1 B1

[1] Availability on request.

Input

Input voltage AC		refer to selection chart
Input frequency		47/63 Hz
Power factor	active PFC	>0.96
Inrush current	virtually no inrush current	

Output

Efficiency	$U_{i\ nom}$, $I_{o\ nom}$	up to 93%
Output voltage setting accuracy	$U_{i\ nom}$, 50% $I_{o\ nom}$	±0.25 V
Output voltage noise (total)	IEC/EN 61204, including a sinusoidal output ripple at	
	twice the line frequency	≤1.1 V_{pp}
Line regulation	$U_{i\ min}$...$U_{i\ max}$, $I_{o\ nom}$	typ. 1.6%
Load regulation	$U_{i\ nom}$, 1...100% $I_{o\ nom}$	typ. 2.5%
Minimum load	not required	
Current limitation	constant power, constant current characteristic	typ. 145% $I_{o\ nom}$
Operation in parallel	enabled by droop current share	
Hold-up time	$I_{o\ nom,}$ output voltage decrease to 85% $U_{o\ nom}$	16 ms

Protection

Input fuse	built-in, UT/LT	10 A slow blow/6.3 A fast
Reverse polarity	bridge rectifier	
Input undervoltage lockout		typ. 90% $U_{i\ min}$
Input overvoltage lockout		typ. 104% $U_{i\ max}$
Input transient	varistor	
Output	no-load, overload and short circuit proof	
Output overvoltage	second control loop	30/60 V SELV
Overtemperature	switch-off with auto restart	T_C typ. 100°C

Control

Output voltage adjustment	U_{cr} input for remote control	93...104% $U_{o\ nom}$
Inhibit	output enabled if inhibit left open	
Output undervoltage monitoring	threshold level externally adjustable	
Status monitoring	system good (Sys OK, Uo OK, no int. or external fault)	
Status indication	LEDs: Sys OK, U_o OK and Error	

Safety

Approvals	EN 60950, UL 1950, CSA 22.2 No. 950	
Electric strength test voltage	class I, I/case	2 kV AC
	class I, I/O	4 kV AC
	class I, O/case	1 kV AC
Degree of protection		IP 30

EMC

Electrostatic discharge	IEC/EN 61000-4-2, level 4, contact/air	8/15 kV, criterion A
Electromagnetic field	IEC/EN 61000-4-3, level 3	10 V/m, criterion A
Electr. fast transients/bursts	IEC/EN 61000-4-4, level 4, capacitive/direct	2/4 kV, criterion A
Surge	IEC/EN 61000-4-5, level 3	2 kV, criterion A
Conducted disturbances	IEC/EN 61000-4-6, level 3	10 V_{rms}, criterion A
Electromagnetic emissions	CISPR 22/EN 55022, conducted	class B

Environmental

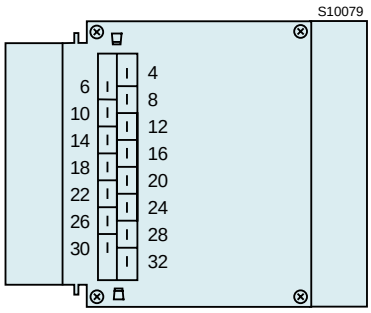
Operating ambient temperature	$U_{i\ nom}$, $I_{o\ nom}$, convection cooled	–25...71°C
Operating case temperature T_C	$U_{i\ nom}$, $I_{o\ nom}$	–25...95°C
Storage temperature	non operational	–40...100°C
Damp heat	IEC/EN 60068-2-3, 93%, 40°C	56 days
Vibration, sinusoidal	IEC/EN 60068-2-6, 2...28/28...2000 Hz	1.5 mm/5 g_n
Shock	IEC/EN 60068-2-27, 6 ms	100 g_n
Random vibration	IEC/EN 60068-2-64, 20...500 Hz	4.9 $g_{n\ rms}$
MTBF	MIL-HDBK-217E, G_B, 40°C	198'000 h

Options

Remote bus voltage monitoring	D
Battery cell voltage selector switch	Z
Mounting plate for chassis mounting	B1

Pin allocation

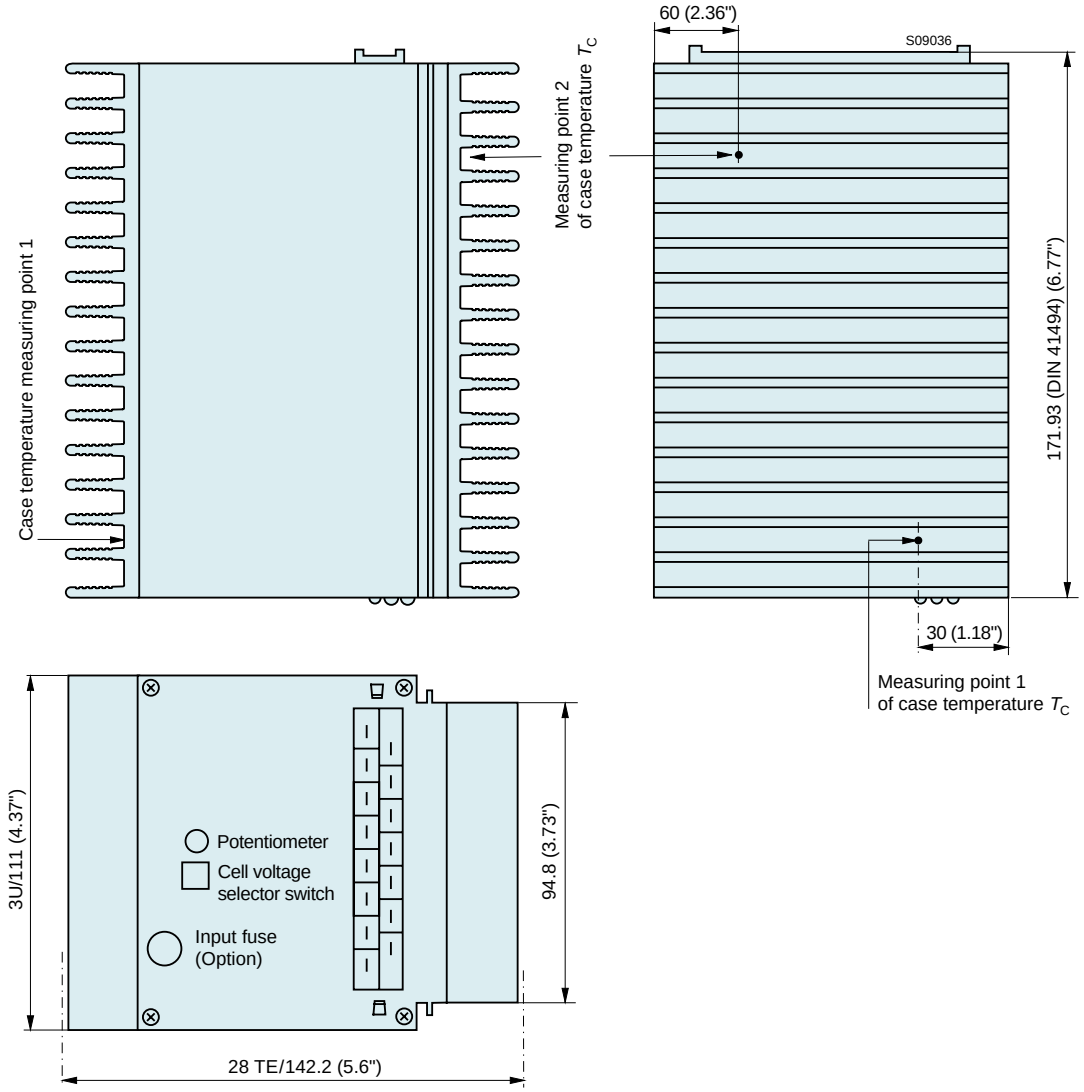
Pin	Electrical determination	Design.
4	Phase	P⏦
6	Neutral	N⏦
8	Protective earth	⏚
10	Protective earth	⏚
12	Output voltage positive	Vo+
14	Output voltage positive	Vo+
16	Hot plug-in contact, positive	HC+
18	Hot plug-in contact, negative	HC–
20	Output voltage negative	Vo–
22	Output voltage negative	Vo–
24	System good signal input	Sys In
26	System good signal output	Sys Out
28	Inhibit input or remote control input	i/U_{cr}
30	Power down signal	D
32	Power down signal threshold of U_o	D set



Mechanical data

Tolerances ±0.3 mm (0.012") unless otherwise indicated.

European Projection



Accessories

Front panels 19" (Schroff)
Mating H15 connectors with screw, solder, fast-on or press-fit terminals
Connector retention facilities and code key system for connector coding
Back planes for system integration
19" racks for system integration
Temperature sensors for battery charging