



Input range 150...264 V AC with PFC  
48 V battery charger  
3 kV AC I/O electric strength test voltage



Approvals pending



- U/P/I output characteristic
- High power density 300 W/dm<sup>3</sup>
- Overtemperature, overload and overvoltage protection

## Selection chart

Output 1		Input voltage	Rated power	Efficiency	Type
$U_{o\ nom}$ [V DC]	$I_{o\ nom}$ [A]	$U_i$ [V AC]	$P_{o\ tot}$ [W]	$\eta_{typ}$ [%]	
53.5	12.6	150...264	680	90	LB 1740-6R

## Input

Input voltage		150...264 V AC
	with full output power	187...264 V AC
Input frequency		47...63 Hz
Inrush current limitation	ETSI 300 132-1, at 230 V AC	<35 A
Input harmonics	IEC/EN 61000-3-2	class D
Power factor	$U_{i\ nom}, I_{o\ nom}$	>0.98
Efficiency	$U_{i\ nom}, I_{o\ nom}$	>90%

## Output

Nominal output voltage	$U_{i\ nom}, 50\% I_{o\ nom}, T_C = 25^\circ\text{C}$	$53.5 \pm 0.1\ \text{V}$
Nominal output power	power limitation	680 W
Current limitation	U/P/I characteristic	15.5 A
Static line and load regulation	$U_{i\ min} \dots U_{i\ max}, U_{i\ nom}, 5\% \dots 100\% I_{o\ nom}$	typ. $\pm 300\ \text{mV}$
Output voltage ripple and noise	$U_{i\ nom}, I_{o\ nom}, 20\ \text{MHz bandwidth}$	<120 mV <sub>pp</sub>
Psophometric ripple	A-filter acc. CCITT	<2 mV <sub>rms</sub>
Minimum load	not required	0 A
Auxiliary supply		$11.5 \pm 1\ \text{V}, 50\ \text{mA}$

**Protection**

Input fuses	not user accessible (fuses in both lines)	6.3 AT
Input transient protection	varistor	
Output	no-load, overload and short circuit proof	
Overtemperature	automatic output power derating	$T_C = 90^\circ\text{C}$

**Control**

Output voltage adjustment	by remote control, $U_{cr} = 0...10\text{ V}$	44...59.0 V DC
ON/OFF switch		
Shut-down input	TTL compatible signal	
Status monitoring	input OK output, module OK output	
Output voltage monitor	$U_{UoM} = 0...10\text{ V}$ for $U_o = 0...60\text{ V}$	
Output current monitor	$U_{IoM} = 0...10\text{ V}$ for $I_o = 0...20\text{ A}$	
Current share	up to 6 units in parallel	$\pm 50\text{ W}$
Status indication	LEDs: OK, error	

**Safety and EMC**

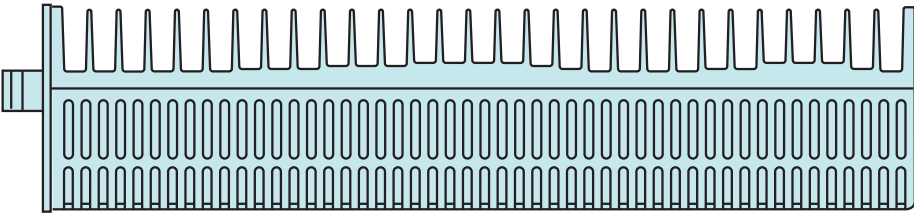
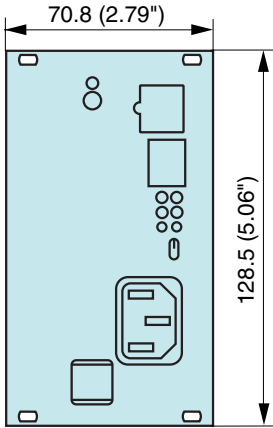
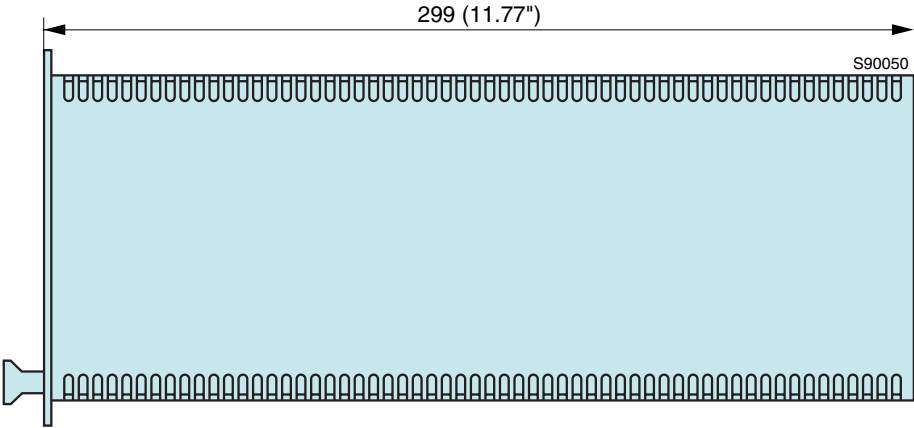
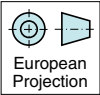
Approvals in progress	EN 60950, UL 1950, CSA 22.2 No. 950	
Protection degree		IP 20
Electric strength test voltage	class I, I/case	1.5 kV AC
	class I, I/O	3 kV AC
	class I, O/case	1 kV AC
Electrostatic discharge	IEC/EN 61000-4-2, level 3	4/8 kV, criterion B
Electromagnetic field	IEC/EN 61000-4-3, level 2	3 V/m, criterion A
Electr. fast transients/burst	IEC/EN 61000-4-4, level 4	4 kV, criterion B
Surge	IEC/EN 61000-4-5, level 4	4 kV, criterion B
Electromagnetic emissions	CISPR 22/EN 55022, conducted and radiated	class B

**Environmental specifications**

Operating temperature	$U_{i\text{ nom}}, I_{o\text{ nom}}$ , cooling by forced air flow $\geq 1\text{ m/s}$	$-25...60^\circ\text{C}$
Storage temperature	non operational	$-40...90^\circ\text{C}$
Relative humidity	non condensing	$\leq 93\%$
Shock	IEC/EN 60068-2-27, 11 ms	15 $g_n$
Bump	IEC/EN 60068-2-29, 6 ms	10 $g_n$
Sinusoidal vibration	IEC/EN 60068-2-6, 8.2...58.1/58.1...500 Hz	1 $g_n/2\text{ }g_n$
Random vibration	IEC/EN 60068-2-64, 10...200/200...2000 Hz	0.01/0.003 $g^2/\text{Hz}$

**Mechanical data**

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



**AMP 558065 Western connector**

Pin	Destination	Description
1	$U_{aux}$	Auxiliary voltage (12 V, 50 mA)
2	G	Reference ground
3	SD	Shut down input
4	D	Module OK
5	AC OK	AC input OK
6	$U_{cr}$	Remote control input
7	$U_{oM}$	Output voltage monitor
8	$I_{oM}$	Output current monitor
9	T or Uh	Current sharing or Aux.
10	n.c.	Open circuit

**Phoenix Power-Combicon connector**

Pin	Designation
1	Vi+
2	Vi-

**Accessories**

Temperature sensor for battery charging