

MODELS 1604 & 1608



DESCRIPTION

Curtis DME Switch-Mode chargers are compact, portable, light-weight units designed to be used on all international power outlets.

1604CS:	12 or 24V, 4A, convection, sealed
1604FV:	12 or 24V, 8A, fan, vented
1608FS:	12 or 24V, 8A, fan, sealed

APPLICATION

Curtis switch-mode battery chargers are ideal for charging Durable Medical Equipment and electric vehicles utilizing 12 or 24V power, such as scooters and wheelchairs.

WARRANTY

Two year limited warranty from time of delivery.

FEATURES

- Users have the ability to customize the charger by programming the charge profiles, battery chemistry, battery size and fan modulation.
- Charging is fast due to the unit's microprocessor control and switch-mode operation.
- The Curtis 1604 and 1608 chargers safely recover deeply discharged batteries and prevent overcharging.
- Light weight and compact size offers substantial space advantages over other chargers.
- All units feature Auto Voltage Select (AVS): One unit operates for 120VAC or 230VAC. This eliminates the need to service and stock multiple models.
- Automatic shutoff and restart to compensate for battery self discharge.
- Reliable charging is achieved through a multi-stage, multi-mode charging algorithm.
- 1604CS has natural convection/conduction cooling that eliminates the need for a fan. 1604FV and 1608FS have forced air cooling with temperature regulation for long fan life.
- Thermal protection prevents damage from over temperature conditions.
- Output current is limited so as not to exceed the maximum power and/or thermal capacity.
- Output is short circuit and reverse polarity protected.
- Suitable for lead acid batteries.
- LEDs indicate AC Power ON, Charging Status and Fault Conditions.
- On-board/off-board interlock provided.
- IP 54 electronics packaging on models 1604CS & 1608FS. (see note under Model Encodement)

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MODELS 1604 & 1608

SPECIFICATIONS

	12V/24V, 4A		12V, 8A		24V, 8A	
	120VAC	230VAC	120VAC	230VAC	120VAC	230VAC
Nominal Operating Voltage Input Voltage (VAC)	90 - 132	180 - 264	90 - 132	180 - 264	105 - 132	210 - 264
Operating Frequency (Hz)	47 - 63					
Input Current (A _{rms} , max.)						
12VDC nominal outputs	1.0 @ 90V/60Hz	0.5 @ 180V/50Hz	2.0 @ 90V/60Hz	1.0 @ 180V/50Hz	—	—
24VDC nominal outputs	2.0 @ 90V/60Hz	1.0 @ 180V/50Hz	—	—	4.0 @ 105V/60Hz	2.0 @ 210V/50Hz
Input Leakage (μ A, max.)	<500 @ 120V/60Hz	<500 @ 230V/50Hz	<500 @ 120V/60Hz	<500 @ 230V/50Hz	<500 @ 120V/60Hz	<500 @ 230V/50Hz
Output Power (W, nom./max.)						
12VDC nominal outputs	48 / 67.5				96 / 125	
24VDC nominal outputs	96 / 135				192 / 240	
Output Current (A, max.)	4.0				8.0	
Output Voltage (VDC, nom./range)						
12VDC nominal outputs			12 / 6.0 - 15.0			
24VDC nominal outputs			24 / 12.0 - 30.0			

MODEL ENCODEMENT

Model Number	Cooling	Sealing	Input Voltage	Output Current
1604CS-AVS/12/04-001	Convection	IP54	12	4A
1604CS-AVS/24/04-001	Convection	IP54	24	4A
1604FV-AVS/12/08-001	Fan	IP30	12	8A
1604FV-AVS/24/08-001	Fan	IP30	24	8A
1604FS-AVS/12/08-001	Fan	IP54 (see note 1)	12	8A
1604FS-AVS/24/08-001	Fan	IP54 (see note 1)	24	8A

Note 1: Electronics protected to IP54, Fan protected to IP30

PROGRAMMABLE PARAMETERS AND CHARGE PROFILES

The Models 1604 and 1608 chargers have four parameters that can be programmed by the user, using a Curtis 1311 handheld programmer. These parameters consist of:

- Constant Voltage setpoint:** Optimize the charge profile for different battery chemistries such as AGM, Gel, SLA, VRLA and other special applications.
- Amp hour Capacity:** Allows the charger to indicate potential battery problems, based on charge times, for batteries of different sizes.
- End of Charge Mode:** Allows the user to choose from IVa (End of Charge Profile), $I_1V_1I_2V_2$ (End of Charge Profile with Equalize), IV_1V_2 (Float Profile), and $I_1V_1I_2V_2$ (Float Profile with Equalize) charge profiles (see Figures 1, 2, 3 and 4, respectively).
- Fan Modulation:** Provides a quieter mode of operation.

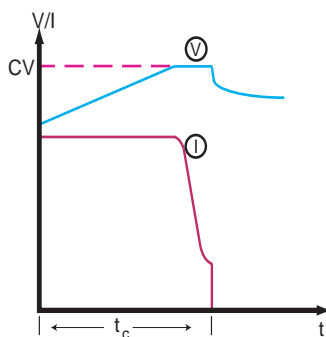


Figure 1

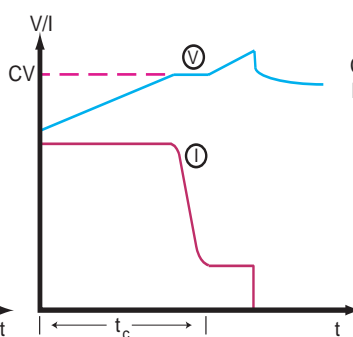


Figure 2

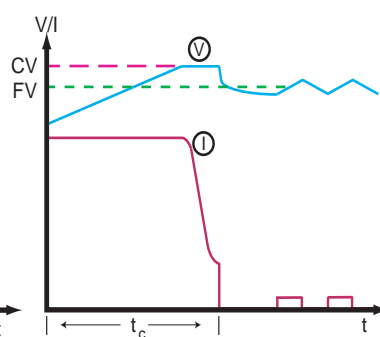


Figure 3

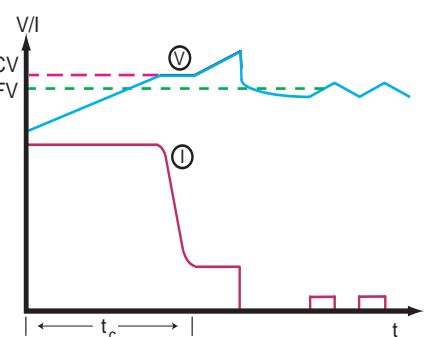
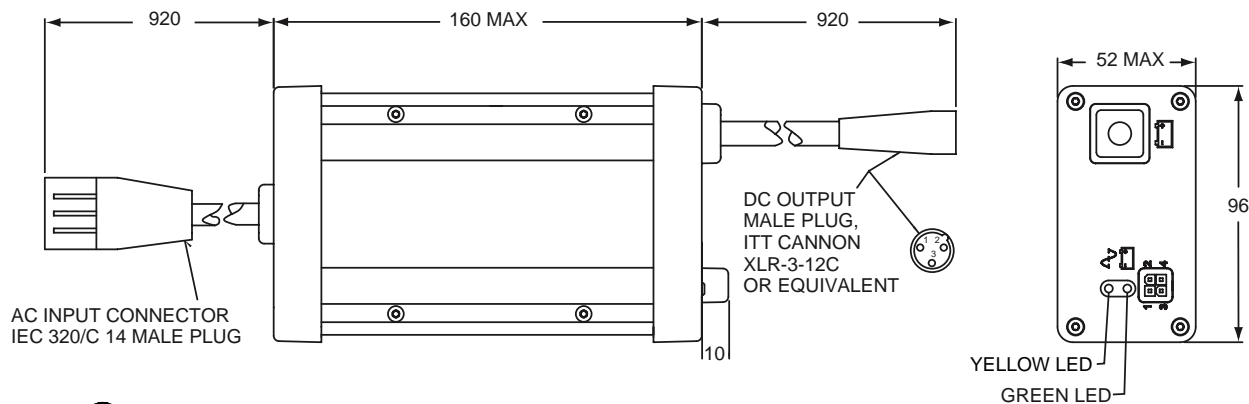


Figure 4

MODELS 1604 & 1608

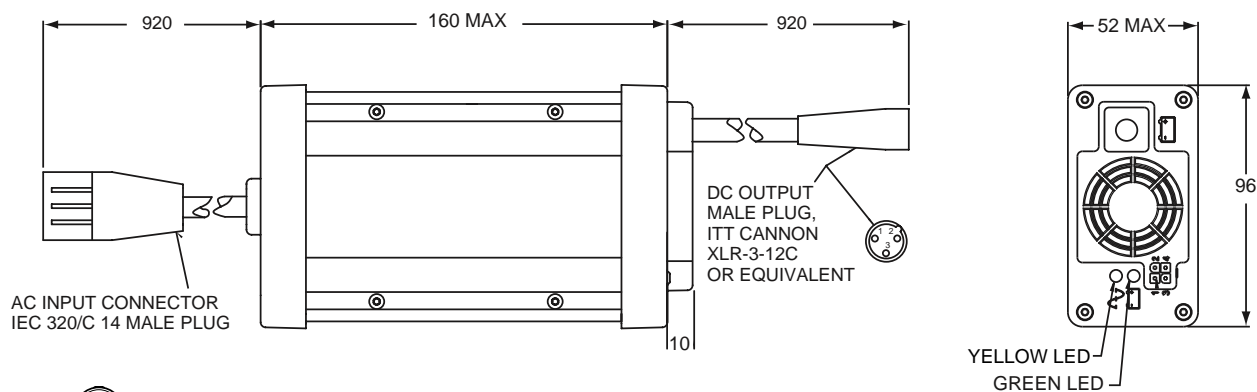
1604CS DIMENSIONS mm



OPTIONAL 3 PIN TO 6 PIN
DIN ADAPTOR

Note: Please specify Optional Curtis P/N 17604348-1 for cable to interface directly with Curtis MC-2 and Model 1288 motor controller.

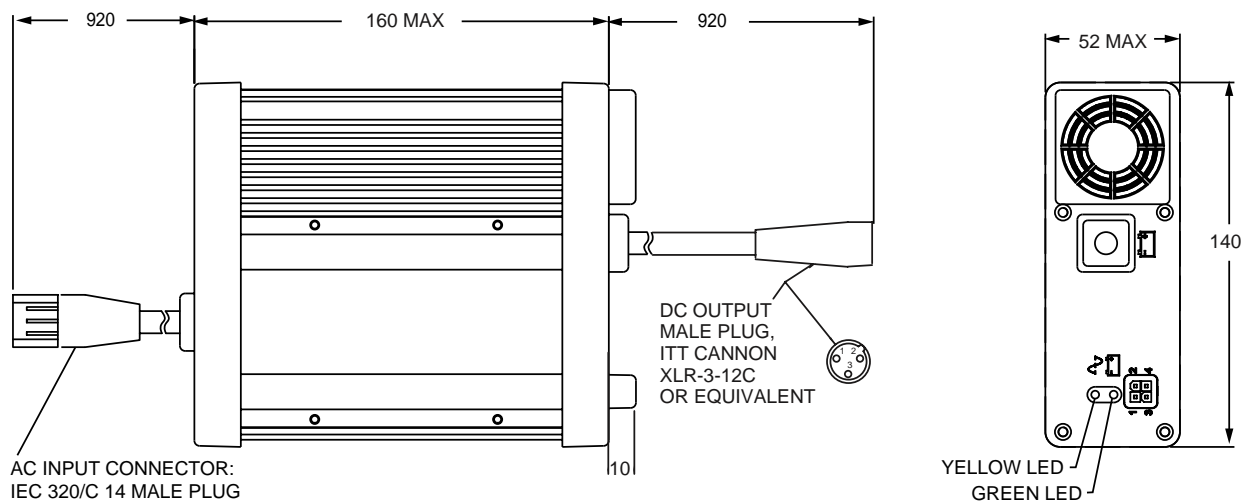
1604FV DIMENSIONS mm



OPTIONAL 3 PIN TO 6 PIN
DIN ADAPTOR

Note: Please specify Optional Curtis P/N 17604348-1 for cable to interface directly with Curtis MC-2 and Model 1288 motor controller.

1608FS DIMENSIONS mm



OPTIONAL 3 PIN TO 6 PIN
DIN ADAPTOR

Note: Please specify Optional Curtis P/N 17604348-1 for cable to interface directly with Curtis MC-2 and Model 1288 motor controller.