



Standard TPSD Unit Shown Above

**TruPowerSource
Filtered Battery Charger / Power Supply /
Battery Eliminator**

The La Marche TPSD Filtered Battery Charger / Power Supply / Battery Eliminator is controlled Ferroresonant technology ideally suited for Switchgear and Process Control applications. It is designed to carry continuous loads up to its maximum rated output. The MTBF (Mean Time Between Failure) is conservatively rated at 225,000 hours at 50°C, assuring longevity and a higher return for your dollar.

The TPSD assures the quality, reliability and performance you have come to expect from La Marche.

Standard Features

- Controlled Ferroresonant Microprocessor
- Automatic DC Voltage Regulation
- Automatic AC Voltage Compensation
- AC & DC Surge Protection (MOV's)
- AC Input Circuit Breaker
- DC Output Circuit Breaker or Fuse
- Digital Meter Display & Alarm Indicators
- Local & Remote Equalize
- Local & Remote Output Voltage Sensing
- Float/Equalize Mode Switching & Lights
- Output Load Current Sharing
- Internal Temperature Compensation
- AC Power Failure Relay with Form "C" Contacts
- U.L. 1012, C-UL Listed (for all 60Hz Units)
- 5-Year Limited Warranty

Options

- 017** DC Breaker 2-Pole (Standard on some units) see chart on pg. 3 for further details.
- 01D** 2-Pole High Interrupting Capacity AC Breaker 65KAIC 480VAC. Only available for units with current draws above 12 amps.
- 01G** 3-Pole High Interrupting Capacity AC Breaker 65KAIC 480VAC. Only available for units with current draws above 12 amps.
- 102** Blocking Diode
- 11W** External Temperature Probe 22ft
- 11Y** External Temperature Probe 100ft
- 11L** Lightning Arrestor
- 21S** Serial Data Port - Modbus RTU
- 21P** DNP3 Communications / SCADA
- 21Q** Modbus Communications / SCADA
- 09C** I.D. Tags - White text on black background
- 09V** I.D. Tags - Black text on white background
- 09W** Heat Shrink Wire Markers with Electrical Schematic
- 06V** Second Digital Meter - DC Volts Only
- 38G** ABS Type Approval

Specifications

ELECTRICAL

- **AC Input**
Voltage range: +/- 10% from nominal
Frequency range: +/- 5%
- **Single Phase models:**
A1: 120VAC/1/60Hz
ABD1: 120/240/208VAC/1/60Hz
BLD1: 240/220/208VAC/1/60Hz
C1: 480VAC/1/60Hz
5BL1: 240/220VAC/1/50Hz
- **Three Phase models:**
BD3: 240/208VAC/3/60Hz
C3: 480VAC/3/60Hz
5G3: 380VAC/3/50Hz
- **DC Output**
DC Amps: 6 to 200 amperes
DC Volts: 24, 48 & 130VDC
DC Output Voltage Range - a chart is provided on the last page of this data sheet.
- **Output Filtering (With or without a battery)**
30mV RMS for single phase models and 100mV RMS for three phase models.
- **DC Voltage Regulation Steady-State**
+/- 0.5% of setting from no load to full load over the specified input voltage, frequency and ambient temperature ranges.
- **Dynamic Response (On Battery)**
Maximum Voltage Transient will not exceed +/- 5% of initial steady-state voltage for a step change from 20 to 100% of the full rated load. Recovery to steady-state voltage regulation does not exceed 200ms and all transient behavior disappears within 500ms.
- **Audible Noise**
Less than 65dBA at any point 5 feet from any vertical surface of the enclosure.
- **Load Sharing**
Load sharing terminal located inside of unit. When connected, identical La Marche Units are forced to share the load within +/- 5% for individual unit outputs greater than 15% of the rated output.

PROTECTION

- **Current Walk-in**
The output current will gradually increase after the charger is turned on, eliminating surges and overshoot.
- **Current Limit**
The chargers have an inherent magnetic current limiting feature. Electronic current limiting control circuitry provides for an adjustable value of 50 to 115% of the rated output current.
- **AC Breaker**
Single Phase Units:
A two-pole breaker opens both legs of the AC service to 208VAC and 240VAC. Breaker opens phase side of 120VAC service.
Three Phase Units:
A three-pole breaker opens all three legs of the AC service.
- **DC Breaker & DC Fuse**
Standard units are equipped with a fuse or a 2-pole circuit breaker. For units equipped with a fuse, an optional breaker is available. Refer to the model chart on the next page for further details.

ENVIRONMENTAL

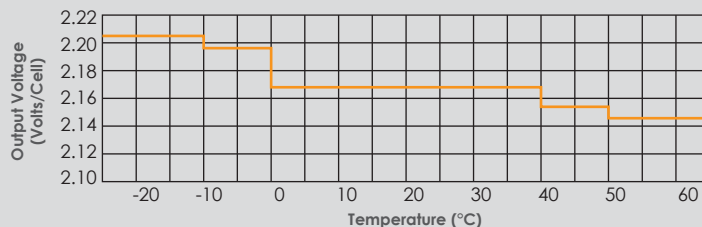
- **Operating Temperature**
0 to 50° C (32 to 122° F)
- **Storage Temperature**
-40 to 85° C (-40 to 185° F)
- **Relative Humidity**
0 to 95% (non-condensing)
- **Cooling**
Convection Cooled

ENCLOSURES

- **Dimensions**
Overall dimensions and weights are listed on the last page. Case specifications are subject to change due to innovative product development and design. When space requirements are critical, please consult the factory.
- **Mounting**
Our enclosures are very versatile. Some units can be wall, floor or rack mounted and others can be wall or floor mounted. See the Case Specifications Chart on the last page of this data sheet for further details.
- **Finish**
Pretreated with three step iron phosphate wash and deionized rinse. Finished with environmentally safe water based ANSI 61 gray baked enamel.

TEMPERATURE COMPENSATION

The TPSD units feature Temperature Compensation circuitry. An ambient temperature probe is mounted inside the unit. The Temperature Compensation mode may be selected on the TPSD control to temperature compensate the output voltage in steps that approximate - .001V/cell/degree C as shown below.



Digital Meter Display & Alarm Indicators

The TPSD is equipped with a handy and user-friendly Digital Meter Display and Alarm Indicators located on the front panel of the unit.



PANEL FEATURES INCLUDE:

- Float/Equalize mode lights
- AC "ON" green indicator light
- Low DC Current, Low DC Voltage, High DC Voltage, Positive/Negative Ground Detection and Summary Alarm and Lights with (2) sets of Form "C" contacts.
- Potentiometers to adjust the current limit, float and equalize voltages.
- High DC Voltage Shutdown Alarm and Light with (1) set of Form "C" contact.
- A switch that controls 2 different functions:
a) An Automatic Electronic Equalize Timer to initiate an Equalize charge for the batteries.
b) A selectable Digital Amp/Volt meter allows the operator to choose if the digital display will show the system current or voltage. Status indicator lights give a visual indication of which option has been selected.
- A switch that tests the Ground Detection LED.

TPSD Charger Chart

1-Phase																					
Model Number	DC Amps	DC Protection		60Hz										50Hz ⁽³⁾				Heat Loss BTU's/ Hour ⁽⁴⁾	Case No.		
				AC Current Draw ⁽¹⁾ Recommended Feeder AC Supply Breaker								Shipping Weight		AC Current Draw ⁽¹⁾ Feeder AC Supply Breaker		Shipping Weight					
		DC Fuse	DC Breaker/ Rating	A1 120	ABD1 120/240/208	BLD1 240/220/208	Feeder** Breaker Size	Rating	C1 480V	Feeder** Breaker Size	Rating	lb	kg	5BL1 240/220	Feeder** Breaker Size	lb	kg				
24V ⁽²⁾ (12L or 20NC)	TPSD-6-24V	6	---	10 / 7.5kaic	2	---	---	5	2kaic	---	---	---	90	40.8	---	---	---	---	119	4B	
	TPSD-12-24V	12	---	15 / 7.5kaic	4	---	---	10	2kaic	---	---	---	90	40.8	---	---	---	---	238	4B	
	TPSD-20-24V	20	---	30 / 7.5kaic	---	6.7 / 3.4 / 3.9	---	10 / 5 / 5	5kaic	---	---	---	100	45.4	3.4 / 3.7	5 / 5	110	49.8	396	4	
	TPSD-25-24V	25	---	40 / 7.5kaic	---	8.4 / 4.2 / 4.9	---	15 / 10 / 10	5kaic	---	---	---	125	56.7	4.2 / 4.6	10 / 10	138	62.6	495	4	
	TPSD-30-24V	30	---	40 / 7.5kaic	---	11 / 5 / 5.8	---	15 / 10 / 10	5kaic	---	---	---	150	68.0	5.0 / 5.5	10 / 10	165	74.8	405	4	
	TPSD-35-24V	35	---	50 / 7.5kaic	---	12 / 5.9 / 6.8	---	20 / 10 / 10	5kaic	---	---	---	154	69.9	5.9 / 6.4	10 / 10	170	77.1	472	4	
	TPSD-50-24V	50	---	70 / 7.5kaic	---	17 / 8.4 / 9.7	---	30 / 15 / 15	5kaic	---	---	---	175	79.4	8.4 / 9.2	15 / 15	193	87.5	674	4	
	TPSD-75-24V	75	---	100 / 7.5kaic	---	26 / 13 / 15	---	40 / 20 / 20	5kaic	6.3	10	5kaic	211	95.7	13 / 14	20 / 20	233	105.7	1011	4	
TPSD-100-24V	100	130	Optional*	---	34 / 17 / 20	---	40 / 20 / 20	5kaic	8.4	15	5kaic	225	102.1	17 / 19	25 / 25	248	112.5	1347	9		
48V ⁽²⁾ (24L or 37NC)	TPSD-6-48V	6	---	10 / 7.5kaic	4	---	---	10	2kaic	---	---	---	90	40.8	---	---	---	---	191	4B	
	TPSD-12-48V	12	---	15 / 7.5kaic	8.1	---	---	15	2kaic	---	---	---	110	49.9	---	---	---	---	382	4B	
	TPSD-20-48V	20	---	30 / 7.5kaic	---	14 / 6.7 / 7.8	---	20 / 10 / 10	5kaic	---	---	---	150	68.0	6.7 / 7.3	10 / 10	165	74.8	637	4	
	TPSD-25-48V	25	---	40 / 7.5kaic	---	17 / 8.4 / 9.7	---	30 / 15 / 15	5kaic	---	---	---	150	68.0	8.4 / 9.2	15 / 15	165	74.8	796	4	
	TPSD-30-48V	30	---	40 / 7.5kaic	---	21 / 11 / 12	---	30 / 15 / 15	5kaic	---	---	---	155	70.3	11 / 11	15 / 15	171	77.6	601	4	
	TPSD-35-48V	35	---	50 / 7.5kaic	---	24 / 12 / 14	---	40 / 20 / 20	5kaic	5.9	10	5kaic	180	81.7	12 / 13	20 / 20	198	89.8	702	4	
	TPSD-50-48V	50	---	70 / 7.5kaic	---	34 / 17 / 20	---	40 / 20 / 20	5kaic	8.4	15	5kaic	205	93.0	17 / 19	25 / 25	225	102.1	1002	4	
	TPSD-75-48V	75	---	100 / 7.5kaic	---	51 / 26 / 30	---	70 / 35 / 35	5kaic	13	20	5kaic	295	133.8	26 / 28	40 / 40	325	147.4	1503	9	
TPSD-100-48V	100	130	Optional*	---	---	34 / 37 / 39	---	50 / 50 / 50	5kaic	17	25	5kaic	321	145.6	34 / 37	50 / 50	354	160.6	2004	9	
130V ⁽²⁾ (68L or 60L, 92NC or 96NC)	TPSD-6-130V	6	---	10 / 5kaic	---	11 / 5 / 5.8	---	20 / 10 / 10	5kaic	---	---	---	140	63.5	5.0 / 5.5	10 / 10	154	69.9	478	4	
	TPSD-12-130V	12	---	15 / 10kaic	---	21 / 11 / 12	---	30 / 15 / 15	5kaic	---	---	---	175	79.4	11 / 11	15 / 15	193	87.5	955	4	
	TPSD-20-130V	20	---	30 / 10kaic	---	34 / 17 / 20	---	50 / 25 / 25	5kaic	8.4	15	5kaic	225	102.1	17 / 19	25 / 25	233	105.7	1591	4	
	TPSD-25-130V	25	---	40 / 10kaic	---	42 / 21 / 25	---	60 / 30 / 30	5kaic	11	15	5kaic	250	113.4	21 / 23	30 / 30	275	124.7	1989	4	
	TPSD-30-130V	30	---	40 / 10kaic	---	51 / 26 / 30	---	60 / 30 / 30	5kaic	13	15	5kaic	319	144.7	26 / 28	40 / 40	352	159.7	1503	9	
	TPSD-35-130V	35	---	50 / 10kaic	---	59 / 30 / 34	---	80 / 40 / 40	5kaic	15	20	5kaic	372	168.7	30 / 33	45 / 45	410	186	1753	9	
	TPSD-50-130V	50	---	70 / 10kaic	---	---	42 / 46 / 49	60 / 60 / 70	5kaic	21	25	5kaic	532	241.3	42 / 46	60 / 60	586	265.8	2504	9	

* Optional DC Breaker is rated at 10kaic.
** Recommended Breaker Size

3-Phase																					
Model Number	DC Amps	DC Protection		60Hz										50Hz ⁽³⁾				Heat Loss BTU's/ Hour ⁽⁴⁾	Case No.		
				AC Current Draw ⁽¹⁾ Recommended Feeder AC Supply Breaker								Shipping Weight		AC Current Draw ⁽¹⁾ Feeder AC Supply Breaker		Shipping Weight					
		DC Fuse	DC Breaker/ Rating	BD3 240/208V	Feeder** Breaker Size	Rating	C3 480	Feeder** Breaker Size	Rating	lb	kg	5G3 380V	Feeder** Breaker Size	lb	kg						
24V ⁽²⁾ (12L or 20NC)	TPSD-75-24V	75	---	100 / 7.5kaic	6.3 / 7.3	10 / 10	5kaic	---	---	---	400	181.4	---	---	---	---	752	72			
	TPSD-100-24V	100	130	Optional*	8.5 / 9.8	15 / 15	5kaic	---	---	---	475	215.5	---	---	---	---	1002	72			
	TPSD-150-24V	150	200	Optional*	13 / 15	20 / 20	5kaic	6.3	15	5kaic	530	240.4	---	---	---	---	1503	72			
	TPSD-200-24V	200	250	Optional*	17 / 20	25 / 25	5kaic	8.5	15	5kaic	600	272.2	---	---	---	---	2004	72			
48V ⁽²⁾ (24L or 37NC)	TPSD-50-48V	50	---	70 / 7.5kaic	8.5 / 9.8	15 / 15	5kaic	---	---	---	400	181.4	---	---	---	---	1002	72			
	TPSD-75-48V	75	---	100 / 7.5kaic	13 / 15	25 / 25	5kaic	6.3	10	5kaic	575	260.8	---	---	---	---	1503	72			
	TPSD-100-48V	100	130	Optional*	17 / 20	30 / 30	5kaic	8.5	15	5kaic	600	272.2	---	---	---	---	2004	72			
	TPSD-150-48V	150	200	Optional*	26 / 30	40 / 40	5kaic	13	200	5kaic	700	317.5	---	---	---	---	3005	72			
TPSD-200-48V	200	250	Optional*	34 / 40	60 / 60	5kaic	17	25	5kaic	755	342.5	---	---	---	---	4007	72				
130V ⁽²⁾ (68L or 60L, 92NC or 96NC)	TPSD-25-130V	25	---	40 / 10kaic	11 / 13	20 / 20	5kaic	---	---	---	420	190.5	---	---	---	---	1252	72			
	TPSD-30-130V	30	---	40 / 10kaic	13 / 15	20 / 20	5kaic	6.3	10	5kaic	490	222.3	---	---	---	---	1503	72			
	TPSD-35-130V	35	---	50 / 10kaic	15 / 18	25 / 25	5kaic	7.4	10	5kaic	550	249.5	---	---	---	---	1753	72			
	TPSD-50-130V	50	---	70 / 10kaic	22 / 25	35 / 35	5kaic	11	20	5kaic	600	272.2	---	---	---	---	2504	72			
	TPSD-75-130V	75	100	Optional*	32 / 37	50 / 50	5kaic	16	25	5kaic	660	299.4	20	30	727	329.8	3756	72			
	TPSD-100-130V	100	130	Optional*	43 / 49	70 / 70	5kaic	22	30	5kaic	800	362.9	27	35	882	400.1	5008	72			
	TPSD-125-130V ⁽³⁾	125	200	Optional*	53 ⁽³⁾ / 61 ⁽³⁾	80 / 80	5kaic	27 ⁽³⁾	40	5kaic	850	385.6	---	---	---	---	6260	44			
TPSD-150-130V ⁽³⁾	150	200	Optional*	64 ⁽³⁾ / 74 ⁽³⁾	100 / 100	5kaic	32 ⁽³⁾	45	5kaic	900	408.2	---	---	---	---	7512	44				

* Optional DC Breaker is rated at 10kaic.
** Recommended Breaker Size

⁽¹⁾ AC Current Draws based @ 100% load and standard battery cells of 12L (24V), 24L (48V) and 60L (130V). Maximum Current Draw is 115% of ratings shown.
⁽²⁾ Must specify only one battery type and number of cells from range shown above. Please consult factory for other available cell ranges if desired range not shown.
⁽³⁾ Not UL Listed

⁽⁴⁾ BTU's are based on 12L (24V), 24L (48V) and 60L (130V). Heat loss is stated for nominal float voltage, 100% output current and nominal AC line.

Case Specifications

Case No.	Overall Dimensions					
	Width		Depth		Height	
	in	mm	in	mm	in	mm
4B*	19.000	483	15.000	381	12.250*	311*
4*	19.000	483	15.000	381	24.000*	610*
9*	23.000	584	15.000	381	36.000*	914*
72	27.000	686	23.500	597	44.500	1130
44	24.000	610	19.000	483	72.100	1831

Case sizes may differ depending on optional accessories. Consult factory when dimensions are critical. Detailed dimensional drawings are available for mounting purposes. *Floor mounting brackets adds 2" (51mm) to overall height.

Case No.	Cable Entry (when facing unit)		Mounting
	AC input	DC output	
4B*	RIGHT	LEFT	19/23" RACK, WALL / FLOOR
4*	RIGHT	LEFT	19/23" RACK, WALL / FLOOR
9*	TOP RIGHT	TOP LEFT	23" RACK, WALL / FLOOR
72	RIGHT / BOTTOM	BOTTOM	FLOOR
44	LEFT	RIGHT	FLOOR

Adjustable DC Output Voltage Range

	Battery Cell Type Code	Float		Equalize	
		Min	Max	Min	Max
24V	12L	25.44	27.60	27.00	28.80
	20N	27.80	29.00	30.00	32.00
48V	24L	50.88	55.20	54.00	57.60
	37N	51.43	53.65	55.50	59.20
130V	58L	122.96	133.40	130.50	139.20
	60L	127.20	138.00	135.00	144.00
	92N	127.88	133.40	138.00	147.20
	96N	133.44	139.20	144.00	153.60

Battery Charger Sizing Guidelines

- Required Battery Backup Time (Hours)
- DC Output Voltage
- Ampere Hour Capacity of Battery
- Allowable Recharge Time From Full Discharge (Hours), Where Applicable
- Continuous and Intermittent DC Loads and Duration (Amps)

Model Number Nomenclature

TPSD - 25 - 130V - () () () - () - ()

Model Number: TPSD
 DC Amps: 25
 DC Volts: 130V
 Factory Assigned Accessory Code: ()
 Battery Cell Range: ()
 AC Phase Code: ()
 AC Voltage(s) Code(s): ()
 Special Frequency When Required *: ()

Special Frequency Code 5 - 50Hz * 60Hz standard unless special code is entered	AC Voltage Codes A - 120 C - 480 G - 380 BD - 240/208 BL - 240/220 ABD - 120/240/208 BLD - 240/220/208	AC Phase Codes 1 - Single Phase 3 - Three Phase	Battery Cell Type Code 12L 20N 24L 37N 58L 92N 60L 96N L = Lead Acid N = Nickel Cadmium
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Ordering Information

When ordering, please specify:

- La Marche Model Number TPSD
- DC Amps
- DC Volts
- Special Frequency, When Required
- AC Voltage Code
- AC Phase Code
- Battery Cell Type Code
- Optional Accessories (Option Code)