ISO 9001:2015 CERTIFIED

TPSD2

TruPowerSource
Battery Charger / Power Supply

Made in U.S.A

The La Marche TPSD2 Battery Charger Series is designed to perform as a Power Supply / Battery Eliminator. This model incorporates Controlled Ferroresonant technology to provide the DC system with a dependable battery charger.

Updated LCD display with digital control is now standard with the TPSD2 Charger Series. The User-friendly interface makes installation even easier as all configurations are done through the display.

The design of the TPSD2 utilizes special magnetics that optimizes the performance of the charger. It's known for its High Efficiency, High Power Factor, Low Harmonic Distortion and inherent Current Limiting. The MTBF (Mean Time Between Failure) for this design is conservatively rated at 225,000 hours at 50 C°, assuring longevity and a higher return for your dollar.

Standard Features

- AC Input Circuit Breaker
- DC Output Circuit Breaker
- AC & DC Surge Protection (MOV's)
- Digital Float and Equalize Voltage Adjustment
- Multil-Mode Equalize with Configurable Timer
  (manual, automatic every 7, 14 or 30 days and equalize after sensing a low DC voltage)
- Local & Remote Equalize Capability
- Local & Remote Output Voltage Sensing
- Output Load Current Sharing
- Internal Temperature Compensation
- Positive and Negative Ground Detection
- Digitally Configurable Alarm System
  - Alarm Thresholds
  - Alarm Delays
  - Contact Operations (Latching/Non-latching)
- Remote Annunciation 2-Form "C" Relay Contacts with Adjustable Parameters:
  - Summary Alarm
  - AC Power Failure
  - Low DC Voltage
  - High DC Voltage
  - Low Current
  - Positive and Negative Ground (not adjustable)
  - High DC Voltage Shutdown (HVSD)
- Alarm Contacts testing capability to confirm functionality (via front panel or remotely with optional communication card)
- U.L. 1012, C-UL Listed (for all 60Hz Units)
- 5-Year Warranty

Optional Accesories

- **05D** Data Logging
- **551** Digital Controller with VFD Display
- **01C** 2-Pole High Interrupting Capacity AC Breaker 65KAIC 240VAC*
- **01D** 2-Pole High Interrupting Capacity AC Breaker 65KAIC 480VAC*
- **01F** 3-Pole High Interrupting Capacity AC Breaker 65KAIC 240VAC*
- **01G** 3-Pole High Interrupting Capacity AC Breaker 65KAIC 480VAC*
- **05C** DC Current Transducer
- **206** DC Voltage Transducer
- **102** Blocking Diode
- **11W** External Temperature Probe 22ft
- **11Y** External Temperature Probe 100ft
- **11L** Lightning Arrestor
- **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

*Only available for units with current draws above 8 amps

Communication Protocols

- **21J** IEC 61850
- **21P** DNP 3.0 Communications RS232/RS485/Ethernet
- **21Q** Modbus Communications RS232/RS485/Ethernet
- **21S** Modbus RTU - Serial Data Port
- **21X** SNMP

Specifications subject to change without notice

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P25-DSTPSD2-1
ECN 23540
04/24

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.

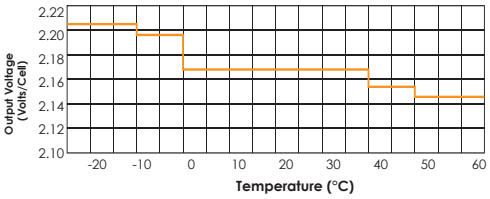
- **DC Voltage Regulation Steady-State**
  ± 0.5% of setting from no load to full load over the specified input voltage, frequency and ambient temperature ranges.

- **Dynamic Response (On Battery)**
  Voltage transient < ± 5% over a step change in the load from 20% to 100%. Recovery Time 200 mS.

- **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.

- **Temperature Compensation**
  5 step curve @ -0.001V/cell/°C as shown below.
  (consult factory for other compensation rates.)



PROTECTION

- **Current Soft Start**
  The output current will gradually increase after the charger is turned on, eliminating surges and overshoot.

- **Current Limit**
  Electronic Current - Limiting Control Circuitry provides a digitally adjustable limit from 50 to 115% of the rated output current of the charger. Factory set at 115%.

- **DC Breaker**
  Standard units are equipped with 2-pole circuit breaker.

- **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.

ENVIRONMENTAL

- **Operating Temperature**
  0 to 50°C

- **Storage Temperature**
  -40 to 85°C

- **Humidity**
  0 to 95% Relative Humidity (Non-Condensing)

- **Cooling**
  Convection cooled

REMOTE MONITORING

- Form "C" Alarm Contacts
- With optional Communications Card:
  - Connect to SCADA System
  - Web Monitoring
  - Alarm / Notification E-mails

ENCLOSURES

- **Dimensions**
  Overall dimensions and weights 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 a seven stage iron phosphate wash, sealer and deionized rinse. Then coated with an environmentally safe and durable ANSI 61 gray Polyester TGIC Minite powder finish.

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

TPSD2 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 Breaker/ Rating	A1 120	ABD1 120/240/208	BLD1 240/220 /208	Feeder* Breaker Size	Rating	C1 480V	Feeder* Breaker Size	Rating	lbs	kgs	5BL1 240/220	Feeder* Breaker Size	lbs	kgs		
24V[2] (12L or 20N)	TPSD2-6-24V	6	10 / 7.5KAIC	2	---	---	5	2KAIC	---	---	---	90	40.8	---	---	---	---	119	4B
	TPSD2-12-24V	12	15 / 7.5KAIC	4	---	---	10	2KAIC	---	---	---	90	40.8	---	---	---	---	238	4B
	TPSD2-20-24V	20	30 / 7.5KAIC	---	6.7/3.4/3.9	---	15/10/10	5KAIC	---	---	---	100	45.4	3.4 / 3.7	5 / 5	110	49.8	396	4T
	TPSD2-25-24V	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	4T
	TPSD2-30-24V	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	4T
	TPSD2-35-24V	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	4T
	TPSD2-50-24V	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	4T
	TPSD2-75-24V	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	4T
	TPSD2-100-24V	100	150 / 25KAIC	---	34/17/20	---	60/30/30	5KAIC	8.4	15	5KAIC	225	102.1	17 / 19	25 / 25	248	112.5	1347	9T
48V[2] (24L or 37N)	TPSD2-6-48V	6	10 / 7.5KAIC	4	---	---	10	2KAIC	---	---	---	90	40.8	---	---	---	---	191	4B
	TPSD2-12-48V	12	15 / 7.5KAIC	8.1	---	---	15	2KAIC	---	---	---	110	49.9	---	---	---	---	382	4B
	TPSD2-20-48V	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	4T
	TPSD2-25-48V	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	4T
	TPSD2-30-48V	30	40 / 7.5KAIC	---	21/11/12	---	30/15/15	5KAIC	---	---	---	155	70.3	11 / 11	15 / 15	171	77.6	601	4T
	TPSD2-35-48V	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	4T
	TPSD2-50-48V	50	70 / 7.5KAIC	---	34/17/20	---	60/30/30	5KAIC	8.4	15	5KAIC	205	93.0	17 / 19	25 / 25	225	102.1	1002	4T
	TPSD2-75-48V	75	100 / 7.5KAIC	---	51/26/30	---	80/40/40	5KAIC	13	20	5KAIC	295	133.8	26 / 28	40 / 40	325	147.4	1503	9T
	TPSD2-100-48V	100	150 / 25KAIC	---	---	34/37/39	50/50/50	5KAIC	17	25	5KAIC	321	145.6	34 / 37	50 / 50	354	160.6	2004	9T
130V[2] (58L or 60L, 92N or 96N)	TPSD2-6-130V	6	10 / 5KAIC	---	11/5/5.8	---	20/10/10	5KAIC	---	---	---	140	63.5	5.0 / 5.5	10 / 10	154	69.9	478	4T
	TPSD2-12-130V	12	15 / 10KAIC	---	21/11/12	---	30/15/15	5KAIC	---	---	---	175	79.4	11 / 11	15 / 15	193	87.5	955	4T
	TPSD2-20-130V	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	4T
	TPSD2-25-130V	25	40 / 10KAIC	---	42/21/25	---	60/30/30	5KAIC	11	15	5KAIC	250	113.4	21 / 23	30 / 30	275	124.7	1989	4T
	TPSD2-30-130V	30	40 / 10KAIC	---	51/26/30	---	80/40/40	5KAIC	13	15	5KAIC	319	144.7	26 / 28	40 / 40	352	159.7	1503	9T
	TPSD2-35-130V	35	50 / 10KAIC	---	59/30/34	---	100/50/50	5KAIC	15	20	5KAIC	372	168.7	30 / 33	45 / 45	410	186	1753	9T
	TPSD2-50-130V	50	70 / 10KAIC	---	---	42/46/49	60/60/70	5KAIC	21	25	5KAIC	532	241.3	42 / 46	60 / 60	586	265.8	2504	9T

** 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 Breaker/ Rating	BD3 240/208V	Feeder* Breaker Size	Rating	C3 480	Feeder* Breaker Size	Rating	lbs	kgs	5G3 380V	Feeder* Breaker Size	lbs	kgs		
24V[2] (12L or 20NC)	TPSD2-75-24V	75	100 / 7.5KAIC	6.3 / 7.3	10 / 10	5KAIC	---	---	---	400	181.4	---	---	---	---	752	72
	TPSD2-100-24V	100	150 / 25KAIC	8.5 / 9.8	15 / 15	5KAIC	---	---	---	475	215.5	---	---	---	---	1002	72
	TPSD2-150-24V	150	200 / 25KAIC	13 / 15	20 / 20	5KAIC	6.3	15	5KAIC	530	240.4	---	---	---	---	1503	72
	TPSD2-200-24V	200	250 / 25KAIC	17 / 20	25 / 25	5KAIC	8.5	15	5KAIC	600	272.2	---	---	---	---	2004	72
48V[2] (24L or 37NC)	TPSD2-50-48V	50	70 / 7.5KAIC	8.5 / 9.8	15 / 15	5KAIC	---	---	---	400	181.4	---	---	---	---	1002	72
	TPSD2-75-48V	75	100 / 7.5KAIC	13 / 15	25 / 25	5KAIC	6.3	10	5KAIC	575	260.8	---	---	---	---	1503	72
	TPSD2-100-48V	100	150 / 25KAIC	17 / 20	30 / 30	5KAIC	8.5	15	5KAIC	600	272.2	---	---	---	---	2004	72
	TPSD2-150-48V	150	200 / 25KAIC	26 / 30	40 / 40	5KAIC	13	20	5KAIC	700	317.5	---	---	---	---	3005	72
	TPSD2-200-48V	200	250 / 25KAIC	34 / 40	60 / 60	5KAIC	17	25	5KAIC	755	342.5	---	---	---	---	4007	72
130V[2] (58L or 60L, 92NC or 96NC)	TPSD2-25-130V	25	40 / 10KAIC	11 / 13	20 / 20	5KAIC	---	---	---	420	190.5	---	---	---	---	1252	72
	TPSD2-30-130V	30	40 / 10KAIC	13 / 15	20 / 20	5KAIC	6.3	10	5KAIC	490	222.3	---	---	---	---	1503	72
	TPSD2-35-130V	35	50 / 10KAIC	15 / 18	25 / 25	5KAIC	7.4	10	5KAIC	550	249.5	---	---	---	---	1753	72
	TPSD2-50-130V	50	70 / 10KAIC	22 / 25	35 /35	5KAIC	11	20	5KAIC	600	272.2	---	---	---	---	2504	72
	TPSD2-75-130V	75	100 / 10KAIC	32 / 37	50 / 50	5KAIC	16	25	5KAIC	660	299.4	20	30	727	329.8	3756	72
	TPSD2-100-130V	100	150 / 25KAIC	43 / 49	70 / 70	5KAIC	22	30	5KAIC	800	362.9	27	35	882	400.1	5008	72
	TPSD2-125-130V[3]	125	175 / 25KAIC	53[3] / 61[3]	80 / 80	5KAIC	27[3]	40	5KAIC	850	385.6	---	---	---	---	6260	44
	TPSD2-150-130V	150	200 / 25KAIC	64[3] / 74[3]	100 / 100	5KAIC	32[3]	45	5KAIC	900	408.2	---	---	---	---	7512	44

** Recommended Breaker Size*

[1] AC Current Draws based @ 100% load and standard battery cells of 12L (24V), 24L (48V) and 60L (130V). Maximun 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.

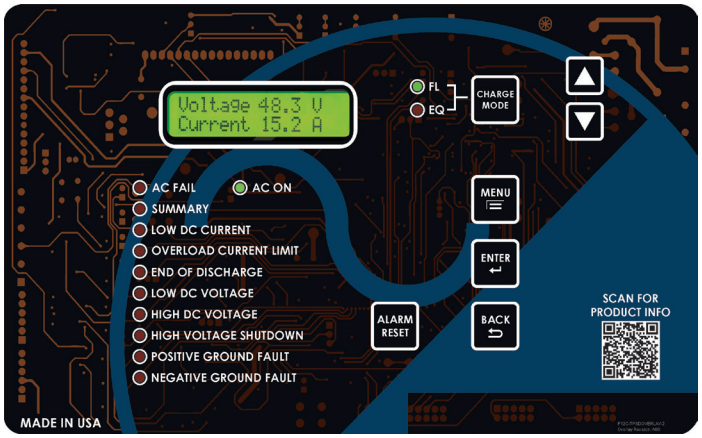
[4] BTU's are based on 12L (24V), 24L (48V) and 60L (130V). Heat loss is stated for nominal float voltage, 100% output current and nominal AC line.

Case Specifications

Case No.	Overall Dimensions								
	Width		Depth		Height		Cable Entry (when facing unit)		Mounting
	in	mm	in	mm	in	mm	AC input	DC output	
4B*	19.000	483	15.000	381	12.250*	311*	RIGHT TOP / BOTTOM / SIDE	LEFT TOP / BOTTOM	19/23" RACK, WALL/ FLOOR
4T*	19.000	483	15.000	381	24.000*	610*	RIGHT TOP/ BOTTOM	LEFT TOP / BOTTOM / SIDE	19/23" RACK, WALL / FLOOR
9T*	20.500	521	15.875	403	37.620*	956*	RIGHT TOP / BOTTOM / SIDE	TOP / BOTTOM	23" RACK, WALL / FLOOR
72	27.000	686	23.500	597	44.500	1130	RIGHT / BOTTOM / SIDE	BOTTOM	FLOOR
44	24.000	610	19.000	483	72.100	1831	TOP LEFT	TOP RIGHT	FLOOR

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

Front Panel Display



Standard LCD Display

Alarm Indicators:

- AC "ON" LED
- Summary Alarm
- Low DC Current
- Low DC Voltage
- High DC Voltage / HVSD
- Ground Detection Fault
- AC Power Fail
- Overload Alarm
- End of Battery Discharge
- High Voltage Shutdown

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)

Ordering Information

When ordering, please specify:

- La Marche Model Number TPSD2
- DC Amps
- DC Volts
- Special Frequency, When Required
- AC Voltage Code
- AC Phase Code
- Battery Cell Type Code
- Optional Accessories (Option Code)

Model Number Nomenclature

TPSD2 - 25 - 130V - ( ) ( ) ( ) - ( ) - ( )

- TPSD2 - Model Number
- 25 - DC Amps
- 130V - DC Volts
- ( ) - Special Frequency When Required **
- ( ) - AC Voltage(s) Code(s)
- ( ) - AC Phase Code
- ( ) - Battery Cell Range
- ( ) - Factory Assigned Accessory Code

**** 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	12LR
24L	37N	24LR
58L	92N	58LR
60L	96N	60LR

L = Lead Acid
N = Nickel Cadmium
LR = VRLA