



FT, FS series

Traction Industrial battery chargers ; Power motive Stationary chargers ; Fully automatic (Wa profile version) Digital amp meter LCD display Microprocessor-controlled

TECHNICAL FEATURES

► Model series and voltage of power supply inlet

- FT - Series : 380-415VAC Three-phase	• Adjustable to 50Hz : 380 - 390 - 400 - 415 - 420 VAC • Adjustable to 60Hz : 395 - 405 - 415 - 430 - 440 VAC
- FS - Series : 220-240VAC Single-phase	• Adjustable to 50Hz : 210 - 220 - 225 - 230 - 240 VAC
- FSHZ - Series : 220VAC 60Hz	• Adjustable to 60Hz : 220 - 230 - 235 - 240 - 250 VAC
- FTPH-Series : 200-220VAC Three-phase	• Adjustable to 50Hz : 180-190-200-210-220-230 VAC • Adjustable to 60Hz : 190-200-210-220-230-240 VAC
- FTHZ-Series : 380VAC 60Hz Three-phase	• Adjustable to 50Hz : 355 - 365 - 375 - 385 - 415 VAC • Adjustable to 60Hz : 370 - 380 - 390 - 400 - 430 VAC
- FTKJ-Series : 440-460VAC Three-phase	• Adjustable to 50Hz : 410 - 415 - 440 - 460 - 470 VAC • Adjustable to 60Hz : 430 - 440 - 460 - 480 - 490 VAC

OUTLINE

This range of automatic battery charger has been designed for using in a rugged industrial environment for the recharging of traction batteries used in a wide range of motive vehicles.

This range includes : forklift trucks, mining-type locomotives, stacker, pallet Truck, AGV, floor sweepers, milk Floats and other on-highway electric vehicles.



- Tropicalized stray-flux transformer (semi-constant current charging)
- Charging with decreasing current (Wa characteristic) until a voltage of 2.4V/cell is reached and the gas charging phase begins
- Foreseen charging time : 9 -11hours (without Equalising charge)
- Time-controlled gas charging phase ,adjustable by set jumper 3 or 4hours(3hrs as Standard).
- The safety timer stops the Initial charging phase after 10 or 12 hours
- Autostart adjustable by set DIP switch 5 seconds or1h or 2h or 3h (5Sec as standard)
- Equalising charge with charging cycle of 10 minutes interspaced with rest period of 50 minutes. (By press the EQ switch to turn on or turn off the Equalising charge ,LED EQ)
- Week-end charge (Compensation charge) 10minutes charge repeated every 24 hours after fully charged to compensate the battery self discharge.
- Last status memory function ,If power supply has been shut off while charging process ,the charger will charge follow the last stage ,when power has already supplied again .

- **Display**
 - Main LED (Power supply)
 - "E" LED (Charging)
 - 50% LED
 - 80% LED
 - Full LED
 - EQ LED
 - Fail LED (Error)
 - Digital amp meter

- Protection class : IP-20
- Protection : - Input circuit breaker
- Output fuse
- Buzzer sound when finish charging process and alerting sound when false, fail, or wrong connection

CALCULATION TO DETERMINE THE SUITABLE CHARGER

For Traction Battery (5-6 Hours rate)

$$I = \frac{C \text{ (Ah)}}{5.5} \quad 8-9 \text{ Hours charging}$$

$$I = \frac{C \text{ (Ah)}}{6} \quad 9-10 \text{ Hours charging}$$

$$I = \frac{C \text{ (Ah)}}{6.7} \quad 10-11 \text{ Hours charging}$$

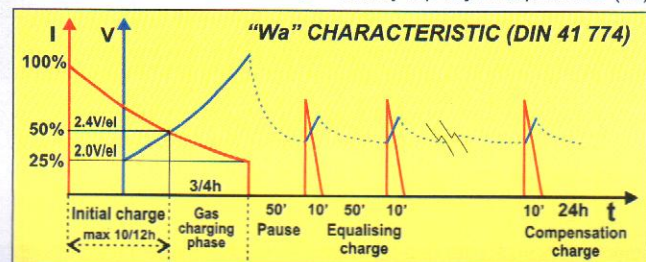
For Deep Cycle Battery (20 Hours rate)

$$I = \frac{C \text{ (Ah)}}{8} \quad 9-10 \text{ Hours charging}$$

$$I = \frac{C \text{ (Ah)}}{9} \quad 10-11 \text{ Hours charging}$$

$$I = \frac{C \text{ (Ah)}}{10} \quad 11-12 \text{ Hours charging}$$

I = Initial charge current (A)
C = Battery capacity in Ampere-Hour (Ah)



V. Batt	Lead acid battery (9-10 hrs recharge)		MAINS SUPPLY THREE-PHASE							MAINS SUPPLY SINGLE-PHASE									
	Traction (5-6 hrs rate)	Deep cycle (20 hrs rate)	Model (FT Series)	Output Current (DC A)	Power		Cables length (Meter)		Case	Weight (Kg)	Model (FS Series)	Output Current (DC A)	Power		Cables length (Meter)		Case	Weight (Kg)	
					(kVA)	(kW)	Input	Output					(kVA)	(kW)	Input	Output			
12v	120 Ah	160 Ah	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	150 Ah	200 Ah	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	180 Ah	240 Ah	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	240 Ah	320 Ah	FT1240B	40	0.7	0.64	3.5	3.5	A4	34	FS1220B	20	0.4	0.32	3.0	3.5	A3	16.3	
24v	120 Ah	160 Ah	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	150 Ah	200 Ah	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	180 Ah	240 Ah	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	240 Ah	320 Ah	FT2420B	20	0.7	0.64	3.5	3.5	A4	27	FS1225B	25	0.5	0.4	3.0	3.5	A3	16.7	
	360 Ah	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	480 Ah	—	FT2430B	30	1.1	0.95	3.5	3.5	A4	29	FS1230B	30	0.6	0.48	3.0	3.5	A3	19	
	600 Ah	—	FT2440B	40	1.5	1.27	3.5	3.5	A4	30	FS1240B	40	0.7	0.64	3.0	3.5	A3	22	
	720 Ah	—	FT2460B	60	2.2	1.91	3.5	3.5	A4	37	FS2420B	20	0.7	0.64	3.0	3.5	A3	21	
840 Ah	—	FT2480B	80	3.0	2.54	3.5	3.5	B1	53	FS2425B	25	0.9	0.8	3.0	3.5	A3	22		
36v	120 Ah	160 Ah	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	150 Ah	200 Ah	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	180 Ah	240 Ah	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	240 Ah	320 Ah	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	360 Ah	—	FT3620B	20	1.1	0.95	3.5	3.5	A4	30	FS2430B	30	1.1	0.95	3.0	3.5	A3	23	
	480 Ah	—	FT3630B	30	1.7	1.43	3.5	3.5	A4	32	FS2440B	40	1.5	1.27	3.0	3.5	A4	31	
	600 Ah	—	FT3640B	40	2.2	1.91	3.5	3.5	A4	50	FS2460B	60	2.2	1.91	3.0	3.5	A4	40	
	720 Ah	—	FT3660B	60	3.4	2.86	3.5	3.5	A4	64	FS2480B	80	3.0	2.54	3.5	3.5	B1	57	
840 Ah	—	FT3680B	80	4.5	3.82	3.5	3.5	B1	71	FS24100B	100	3.7	3.18	3.5	3.5	B1	67		
48v	120 Ah	160 Ah	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	150 Ah	200 Ah	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	180 Ah	240 Ah	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	240 Ah	320 Ah	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	300 Ah	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	360 Ah	—	FT36100B	100	5.6	4.77	3.5	3.5	B2	78	FS24120B	120	4.5	3.82	3.5	3.5	B1	74	
	420 Ah	—	FT36120B	120	6.7	5.72	3.5	3.5	B2	81	FS24140B	140	5.2	4.45	3.5	3.5	B2	86	
	480 Ah	—	FT36140B	140	7.8	6.68	3.5	3.5	B3	99	FS3620B	20	1.1	0.95	3.0	3.5	A3	23	
	540 Ah	—	FT36160B	160	9.0	7.63	3.5	3.5	B3	107	FS3625B	25	1.4	1.19	3.0	3.5	A3	26	
	600 Ah	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	720 Ah	—	FT4820B	20	1.5	1.27	3.5	3.5	A4	30	FS3630B	30	1.7	1.43	3.0	3.5	A3	29	
	840 Ah	—	FT4830B	30	2.2	1.91	3.5	3.5	A4	34	FS3640B	40	2.2	1.91	3.0	3.5	A4	39	
960 Ah	—	FT4830B	30	2.2	1.91	3.5	3.5	A4	39	FS3660B	60	3.4	2.86	3.5	3.5	A4	54		
1080 Ah	—	FT4840B	40	3.0	2.54	3.5	3.5	A4	39	FS3680B	80	4.5	3.82	3.5	3.5	B1	68		
1200 Ah	—	FT4850B	50	3.8	3.18	3.5	3.5	A4	40	FS36100B	100	5.6	4.77	3.5	3.5	B2	83		
72v	360 Ah	—	FT4860B	60	4.5	3.82	3.5	3.5	A4	46	FS36120B	120	6.7	5.72	3.5	3.5	B2	89	
	480 Ah	—	FT4870B	70	5.3	4.46	3.5	3.5	B1	63	FS36140B	140	7.8	6.68	3.5	3.5	B3	100	
	600 Ah	—	FT4880B	80	6.0	5.09	3.5	3.5	B1	66	FS36160B	160	9.0	7.63	3.5	3.5	B3	110	
	720 Ah	—	FT4890B	90	6.8	5.73	3.5	3.5	B2	78	FS4820B	20	1.5	1.27	3.0	3.5	A3	27	
	840 Ah	—	FT48100B	100	7.5	6.36	3.5	3.5	B2	83	FS4825B	25	1.9	1.59	3.0	3.5	A3	29	
	960 Ah	—	FT48120B	120	9.0	7.63	3.5	3.5	B2	90	FS4830B	30	2.2	1.91	3.0	3.5	A4	37	
	1080 Ah	—	FT48140B	140	10.4	8.9	3.5	3.5	B3	104	FS4830B	30	2.2	1.91	3.0	3.5	A4	37	
	1200 Ah	—	FT48160B	160	11.9	10.2	3.5	3.5	B3	135	FS4840B	40	3.0	2.54	3.0	3.5	A4	43	
80v	360 Ah	—	FT48180B	180	13.4	11.5	3.5	3.5	B4	158	FS4850B	50	3.8	3.18	3.5	3.5	A4	60	
	480 Ah	—	FT48200B	200	14.9	12.72	3.5	3.5	B4	170	FS4860B	60	4.5	3.82	3.5	3.5	A4	68	
	600 Ah	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	720 Ah	—	FT7220B	20	2.3	1.91	3.5	3.5	A4	34	FS4870B	70	5.3	4.46	3.5	3.5	B1	73	
	840 Ah	—	FT7230B	30	3.5	2.86	3.5	3.5	A4	40	FS4880B	80	6.0	5.09	3.5	3.5	B1	78	
	960 Ah	—	FT7240B	40	4.4	3.82	3.5	3.5	A4	44	FS4890B	90	6.8	5.73	3.5	3.5	B2	90	
	1080 Ah	—	FT7260B	60	6.7	5.72	3.5	3.5	B1	76	FS48100B	100	7.5	6.36	3.5	3.5	B2	93	
	1200 Ah	—	FT7280B	80	9.0	7.63	3.5	3.5	B2	92	FS48120B	120	9.0	7.63	3.5	3.5	B2	107	
96v	360 Ah	—	FT72100B	100	11.2	9.54	3.5	3.5	B2	100	—	—	—	—	—	—	—	—	
	480 Ah	—	FT72120B	120	13.4	11.4	3.5	3.5	B3	125	—	—	—	—	—	—	—	—	
	600 Ah	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	840 Ah	—	FT8060B	60	7.5	6.36	3.5	3.5	B1	78	FS7220B	20	2.3	1.91	3.0	3.5	A3	32	
80v	480 Ah	—	FT8080B	80	9.9	8.48	3.5	3.5	B2	92	FS7230B	30	3.5	2.86	3.5	3.5	A4	43	
	600 Ah	—	FT80100B	100	12.4	10.6	3.5	3.5	B2	115	FS7240B	40	4.4	3.82	3.5	3.5	A4	50	
	720 Ah	—	FT80120B	120	14.9	12.7	3.5	3.5	B3	132	FS7260B	60	6.7	5.72	3.5	3.5	B1	85	
	840 Ah	—	FT80140B	140	17.4	14.8	3.5	3.5	B4	167	FS7280B	80	9.0	7.63	3.5	3.5	B2	103	
96v	960 Ah	—	FT80160B	160	19.9	17.0	3.5	3.5	B4	172	—	—	—	—	—	—	—	—	
	360 Ah	—	FT9660B	60	9.0	7.63	3.5	3.5	B1	89	—	—	—	—	—	—	—	—	
	480 Ah	—	FT9680B	80	11.9	10.2	3.5	3.5	B2	108	—	—	—	—	—	—	—	—	
	600 Ah	—	FT96100B	100	14.9	12.7	3.5	3.5	B3	133	—	—	—	—	—	—	—	—	

DIMENSIONS (mm)

SHAPE	W	D	H
A3	283	356	369
A4	360	432	410
B1	457	410	743
B2	511	435	817
B3	562	508	895
B4	638	607	1073

This publication may not include some latest technical changes and/or revision to these unit. changes are periodically made to the information described here. Future editions will incorporate with these changes. All information included herein is subject to change without notice.