

AT10.1 SERIES

FLOAT BATTERY CHARGERS



UL-1564



CSA-C22.2



Seismic Zone 4
Qualification



**Advanced
technology
microprocessor
control**

**Constant potential
DC power supplies
for:**

- Floating & charging stationary batteries
- Power for utility, UPS and communications or industrial type loads

HINDLEPOWER

A combination of advanced technology microprocessor control and performance-engineered modular construction make AT10.1 Series chargers and rectifiers easy to set up, easy to operate, and easy to maintain.



APPLICATIONS

Utility & Communications

- Power Generation
- Substations
- Microwave Relay Sites
- Switchgear

Manufacturing

- Emergency dc Power
- DC Operated Breakers
- Alarm Systems

Commercial

- Alarm Systems
- Uninterruptible Power Systems
- DC Control Systems

Transportation

- Signal Systems
- Switchgear
- Alarm Systems

DESIGN FEATURES

Modular Construction

- Rectifier, microprocessor control, input/output, power transformer, filter and alarm assemblies are all modular and easily replaceable.

Thirty-Year Life

- All units are engineered for a greater than 30-year life with an MTBF of 100,000 hours.

Field Service Less than 60 Minutes

- For fast service, enclosure and instrument panel are easily removable without disturbing chassis or installed conduit. Schematic and diagnostic information plates are mounted on enclosure. Modular construction and self-diagnostics result in an MTTR of less than 60 minutes.

Install on Wall, Stand or Rack

- Units are easily wall mounted, with the exception of larger units which are floor mounted. Floor stands or rack-mounting provisions are optional.

Fast, Online Adjustment

- Control, alarm and operating level set points are adjusted digitally from the front panel while online, without the need to vary loads or external conditions.

Engineered for Safety and Acceptance

Units are designed and tested for worldwide applications

- NEMA Compliant
- UL-1564 NRTL
- CSA C22.2 Certified
- CE/IEC Compliant (*Group 2 only*)
- Meets FCC requirements for part 15 subpart J class A
- Seismic Zone 4 Analyzed/Qualified

Microprocessor circuits control virtually all functions and settings through front panel switches.

Press to choose digital display of Volts/Amps/Equalize hours remaining.

Press to select float or equalize mode.

Choose from three equalize methods: continuous, timed, or automatically timed after AC interrupt.

Press to adjust voltage settings or timer hours when in EDIT mode. Press to test LED lamps when in normal mode.



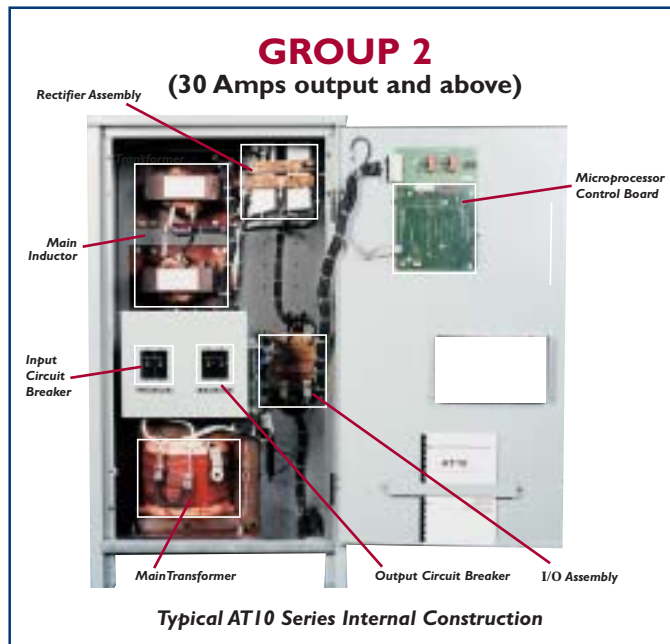
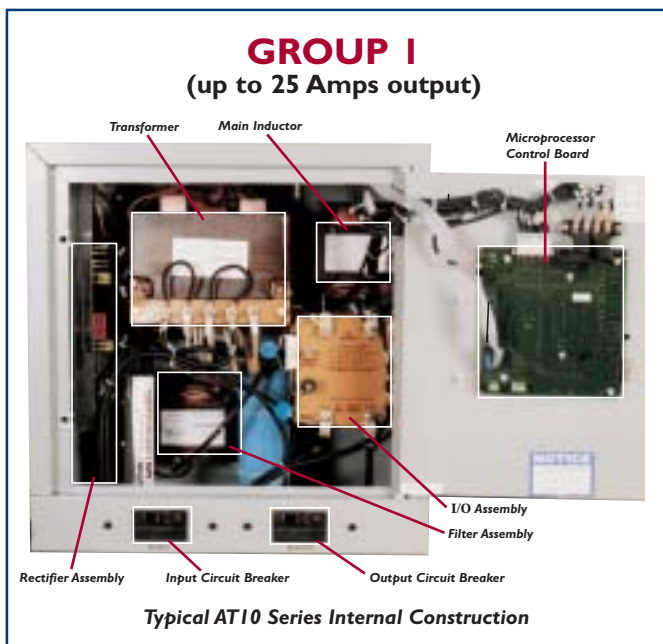
1% digital meter shows voltage, amperage and hours. Also displays self-diagnostics error codes.

LED lamps indicate abnormal conditions. A summary relay contact or optional individual relay contacts provide remote indication.

Press to switch to EDIT mode and to ENTER voltage settings and timer hours.

All controls can be disabled for tamper-free operation. Operational conditions remain displayed.

HINDLEPOWER



SPECIFICATIONS

AC Input

- **Voltage Group 1:** 120/208/240 Volts 60Hz 480Vac 60Hz 220Vac 50/60Hz (special order) 380/416 Vac 50/60Hz (special order)
- **Voltage Group 2:** Must specify
- **Input Voltage Tolerance:** +10%, -12%
- **Input Frequency Tolerance:** $\pm 5\%$
- **Efficiency:** 85-90% (typical at 130Vdc) at 50-100% load

DC Output

- **Voltage Ratings:** 12, 24, 48, or 130Vdc nominal
- **Current Ratings:** 6, 12, 16, 20, 25, 30, 40, 50, 75, 100Adc
- **Continuous Rating:** 110% rated current at maximum equalize voltage at 50°C
- **Voltage Regulation:** $\pm 0.25\%$ for line, load and temperature variations
- **Electrical Noise:** 30mVrms/32dBnC weighted maximum on filtered units
- **Surge Withstand Capability:** Meets IEEE-472/ANSI C37.90a

STANDARD FEATURES

- 1% Digital LED meter for Vdc, Adc, timer hours and alarm settings
- AC On indicating light
- AC input and dc output circuit breakers
- Float/equalize selector switch with indicating lights
- Manual equalize timer (0-255 hr.) with indicating lights
- AC line failure automatic equalize timer (0-255 hr.) with indicating light
- Self-diagnostics
- Local or remote voltage sense with redundancy to protect against remote sense failure
- High dc voltage shutdown
- Reverse polarity protection
- Front panel controls can be disabled for security
- MOV surge suppressors, input and output
- I/O compression lugs
- Switchboard wire, UL VW-1
- Membrane front panel
- ANSI 61 gray finish, baked epoxy powder
- Alarm assembly with local LEDs and summary relay contact for ac failure, dc failure, high Vdc, low Vdc, positive and negative ground fault

- Redundant control loops for higher reliability
- A redundant analog circuit for LVDC alarm, totally independent of the microprocessor

OPTIONS/ACCESSORIES

- Output filter for 30mVrms ripple with battery
- Battery eliminator filter
- Individual alarm contacts for each of the alarms
- Input lightning arrestor
- Medium or high AIC circuit breakers
- Temperature compensation via remote probe
- Ground pad with #4 AWG lug
- Fungus proofing (tropicalization)
- Floor stand
- Relay rack mounting
- Drip shield
- Cabinet heater
- NEMA 4 or NEMA 12 enclosures
- Provision for locking front panel

The classic model — with output ratings to 25 Amperes — now with more features!



Cabinet Style 586

(Shown with Optional Penthouse and Drip Shield.)



Cabinet Style 594

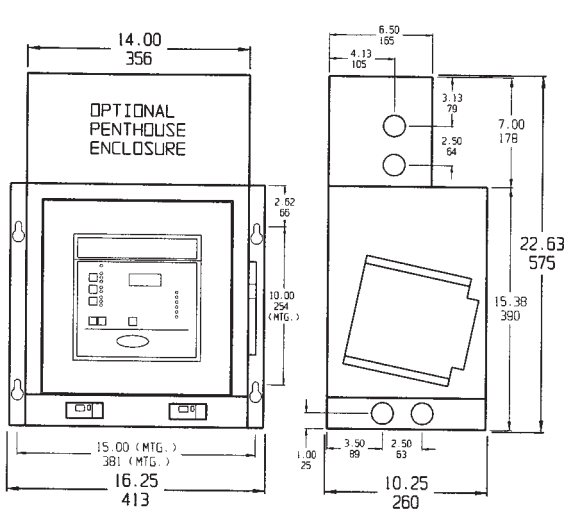
AT10.1 Group I: Input, Output, Heat Loss, Cabinet Style & Shipping Weight

Ampere Rating	6A			12A			16A			20A			25A							
AC Input Voltage	120	208	240	480	120	208	240	480	120	208	240	480	120	208	240	480				
Output Voltage: 12Vdc	Float Adjust: 11.5-14.5Vdc						Equalize Adjust: 12-15.5Vdc													
AC Input Amperes (Nominal)	1.4	0.9	0.8	0.4	2.6	1.5	1.4	0.7	3.6	2.1	1.8	0.9	4.2	2.4	2.1	1.1	5.3	3.1	2.7	1.4
AC Input Circuit Breaker (120V)	10A			10A	10A			10A	10A			10A	10A			10A				
DC Output Circuit Breaker	15A			20A	25A			30A	30A			40A	40A							
Heat Loss - Watts (BTU/hr.)	43 (146)			77 (264)	100 (341)			123 (420)	151 (517)											
Cabinet Style	586			586	586			586	586			586								
Shipping Weight, lb. (kg)	44 (20)			44 (20)	67 (30)			67 (30)	67 (30)			67 (30)								
Output Voltage: 24Vdc	Float Adjust: 23-29.5Vdc						Equalize Adjust: 24-31Vdc													
AC Input Amperes (Nominal)	3.2	1.8	1.6	0.8	6.0	3.5	3.0	1.5	7.8	4.5	3.9	2.0	9.6	5.5	4.8	2.4	12	6.9	6.0	3.0
AC Input Circuit Breaker (120V)	10A			10A	15A			15A	15A			15A								
DC Output Circuit Breaker	15A			20A	25A			30A	30A			40A								
Heat Loss - Watts (BTU/hr.)	56 (190)			94 (321)	120 (409)			146 (497)	178 (609)											
Cabinet Style	586			586	586			586	586			586								
Shipping Weight, lb. (kg)	44 (20)			58 (26.3)	75 (34)			75 (34)	75 (34)			75 (34)								
Output Voltage: 48Vdc	Float Adjust: 46-57Vdc						Equalize Adjust: 48-61Vdc													
AC Input Amperes (Nominal)	6.5	3.8	3.3	1.7	12	6.9	6.0	3.0	16	9.2	8.0	4.0	20	12	10	5.0	25	14	13	6.3
AC Input Circuit Breaker (120V)	10A			20A	20A			25A	25A			30A								
DC Output Circuit Breaker	15A			20A	25A			30A	30A			40A								
Heat Loss - Watts (BTU/hr.)	80 (274)			127 (433)	158 (538)			188 (643)	229 (781)											
Cabinet Style	586			586	594			594	594			594								
Shipping Weight, lb. (kg)	58 (26)			75 (34)	110 (50)			110 (50)	110 (50)			110 (50)								
Output Voltage: 130Vdc	Float Adjust: 115-140Vdc						Equalize Adjust: 123-145Vdc													
AC Input Amperes (Nominal)	12	6.9	6.0	3.0	26	15	13	6.5	28	16	14	7.0	34	20	17	8.5	43	25	22	11
AC Input Circuit Breaker (120V)	20A			35A	50A			60A	60A			60A								
DC Output Circuit Breaker	15A			20A	25A			30A	30A			40A								
Heat Loss - Watts (BTU/hr.)	145 (494)			210 (716)	255 (871)			300 (1023)	351 (1199)											
Cabinet Style	586			594	594			594	594			594								
Shipping Weight, lb. (kg)	80 (36)			147 (67)	193 (88)			193 (88)	193 (88)			193 (88)								

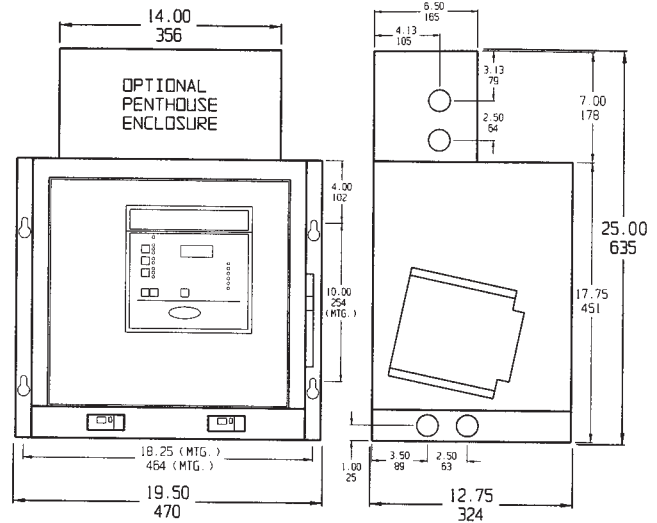
Models with higher ratings: AT10.1 Group 2 models with single-phase ac input ratings, and dc output ratings to 100Adc, described in this brochure; also SCR/SCRf Series models with dc output ratings to 800Adc at 12 through 260Vdc.

GROUP I

(Cabinet dimensions shown are in inches/millimeters.)



Cabinet Style 586



Cabinet Style 594

Sample	A	B			C			D	E			F			G			H	J	K	L	M
	AT10	0	1	2	0	0	6	U	2	4	0	S	A	U	X	G	L	X	X	C		
	AT10																					

	Description	Code	Feature		Description	Code	Feature		
A		AT10	AT10 series			AT10	AT10 series		
B	Nominal DC Output Voltage	012	12Vdc	F	Circuit Breaker Rating	S	Standard (see table)		
		024	24Vdc			M	Medium (see table)		
		048	48Vdc			H	High (see table)		
		130	130Vdc						
C	Nominal DC Output Current	006	6Adc	G	Aux Relay Board	AUX	Installed		
		012	12Adc			XXX	Not Supplied		
		016	16Adc						
		020	20Adc			H	Ground Pad	G	Installed
		025	25Adc			X		Not Supplied	
D	Filtering	U	Unfiltered	J	Lightning Arrestor	L	Installed		
		F	Filtered			X	Not Supplied		
		E	Eliminator						
E	AC Input Voltage (Standard)	240	120/208/240V 60Hz	K	Fungus Proofing	F	Installed		
			Wired for 240Vac unless otherwise specified, re-tappable in field.			X	Not Supplied		
E	AC Input Voltage (Custom)	480	480V 60Hz	L	Static Proofing	S	Installed		
		220	220V 50/60Hz			X	Not Supplied		
		416	380/416V 50/60Hz						
			Wired for 416Vac unless otherwise specified, re-tappable in field.	M	Bilingual Labeling for Canada	C	Installed		
						Blank	Not Supplied		

50Hz models are available on special order.

This ordering code is unique for AT10.1chargers rated 6-25A output.

Circuit Breaker AC & DC AIC Ratings:

- S-10KAIC/240Vac; 10KAIC/125Vdc* (Not for 480Vac)
- M-25KAIC/240Vac; 18KAIC/480Vac; 10KAIC/250Vdc)
- H-65KAIC/240Vac; 25KAIC/480Vac; 25KAIC/250Vdc)

*For chargers 16Adc and larger; consult factory for other ratings.





Cabinet Style 5017



Cabinet Style 5018

**Expanded
output ratings —
now to
100 Amperes.
Same great
features as
Group I!**

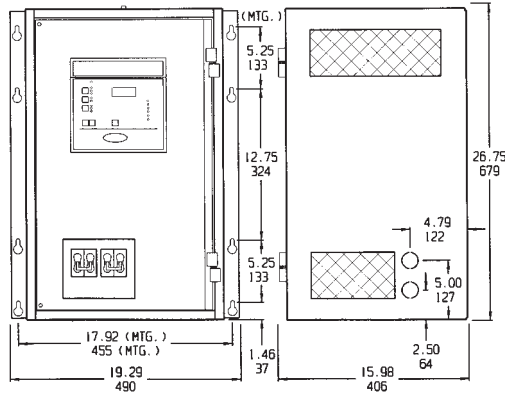
AT10.1 Group 2: Input, Output, Heat Loss, Cabinet Style & Shipping Weight

Ampere Rating	30A				40A				50A				75A				100A			
AC Input Voltage	120 208 240 480				120 208 240 480				120 208 240 480				120 208 240 480				120 208 240 480			
Output Voltage: 12Vdc	Float Adjust: 11.5-14.5Vdc Equalize Adjust: 12-15.5Vdc																			
AC Input Amperes (Nominal)	7.2-4.1-3.6-1.8				9.6-5.5-4.8-2.4				12-6.9-6.0-3.0				18-10-8.9-4.5				24-14-12-6.0			
AC Input Circuit Breaker (120V)	10A				15				15				25				35			
DC Output Circuit Breaker	50				60				80				100				150			
Heat Loss - Watts (BTU/hr.)	131 (448)				173 (589)				213 (728)				316 (1078)				418 (1428)			
Cabinet Style	5017				5017				5017				5018				5018			
Shipping Weight, lb. (kg) (Note 2)	140 (63)				155 (70)				170 (77)				220 (100)				280 (127)			
Output Voltage: 24Vdc	Float Adjust: 23-29.5Vdc Equalize Adjust: 24-31Vdc																			
AC Input Amperes (Nominal)	13-7.3-6.3-3.2				17-9.7-8.4-4.2				21-12-10.5-5.3				32-18-16-7.9				42-24-21-10.5			
AC Input Circuit Breaker (120V)	20				25				35				40				70			
DC Output Circuit Breaker	50				60				80				100				150			
Heat Loss - Watts (BTU/hr.)	162 (554)				209 (714)				259 (885)				379 (1293)				501 (1709)			
Cabinet Style	5017				5017				5017				5018				5018			
Shipping Weight, lb. (kg) (Note 2)	150 (68)				180 (82)				190 (86)				250 (113)				320 (145)			
Output Voltage: 48Vdc	Float Adjust: 46-57Vdc Equalize Adjust: 48-61Vdc																			
AC Input Amperes (Nominal)	23-13-11-5.6				30-17-15-7.5				38-22-19-9.4				56-33-28-14.1				75-43-38-19			
AC Input Circuit Breaker (120V)	35				40				50				70				100			
DC Output Circuit Breaker	50				60				80				100				150			
Heat Loss - Watts (BTU/hr.)	219 (747)				282 (962)				344 (1174)				498 (1699)				656 (2238)			
Cabinet Style	5017				5017				5017				5018				5018			
Shipping Weight, lb. (kg) (Note 2)	170 (77)				220 (100)				240 (109)				340 (154)				440 (200)			
Output Voltage: 130Vdc	Float Adjust: 115-140Vdc Equalize Adjust: 123-145Vdc																			
AC Input Amperes (Nominal)	53-31-26.5-13.3				71-41-35-18				89-51-44-22				133-77-66-33							
AC Input Circuit Breaker (120V)	70				100				Note 1				Note 1							
DC Output Circuit Breaker	50				60				80				100							
Heat Loss - Watts (BTU/hr.)	366 (1250)				459 (1567)				556 (1897)				793 (2708)							
Cabinet Style	5017				5018				5018				5018							
Shipping Weight, lb. (kg) (Note 2)	220 (100)				300 (136)				300 (136)				440 (200)							

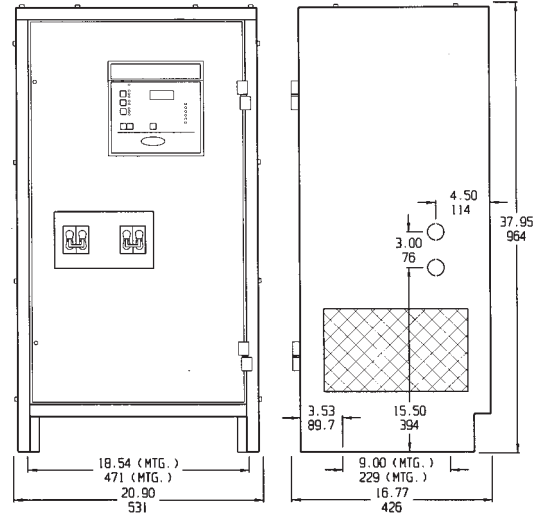
Models with higher ratings: SCR/SCRF Series models are available with dc output ratings to 800Adc at 12 through 260Vdc.
 NOTES: 1. 120Vac input not available. 2. Shipping weights are approximate.

GROUP 2

(Cabinet dimensions shown are in inches/millimeters.)



Cabinet Style 5017



Cabinet Style 5018

Sample	A	B	C	D	E	F	G	H	J	K	L	M	N	P						
	AT10	I	3	0	0	5	0	F	4	8	0	S	F	S	X	A	X	X	X	X
	AT10																			

	Description	Code	Feature		Description	Code	Feature		
A		AT10	AT10 series			AT10	AT10 series		
B	Nominal DC Output Voltage	012	12Vdc	G	AC Input Fuses	F	Installed		
		024	24Vdc			X	Not Supplied		
		048	48Vdc						
		130	130Vdc						
C	Nominal DC Output Current	030	30Adc	H	DC ckt Breaker	S	Standard AIC		
		040	40Adc			M	Medium AIC		
		050	50Adc			H	High AIC		
		075	75Adc			0	No Breaker		
		100	100Adc						
D	Filtering	U	Unfiltered	J	DC Fuses	F	Installed		
		F	Filtered			X	Not Supplied		
		E	Eliminator						
E	AC Input Voltage*	120	120V 60Hz	K	Aux Relay Board	A	Installed		
		208	208V 60Hz			X	Not Supplied		
		240	240V 60Hz						
		480	480V 60Hz						
		220	220V 50/60Hz			L	Ground Pad	G	Installed
		380	380V 50/60Hz					X	Not Supplied
416	416V 50/60Hz								
F	AC ckt Breaker	S	Standard AIC	M	Lightning Arrestor	L	Installed		
		M	Medium AIC			X	Not Supplied		
		H	High AIC						
		0	No Breaker						
N	Fungus Proofing	F	Installed	P	Static Proofing	S	Installed		
		X	Not Supplied			X	Not Supplied		

This ordering code is unique for AT10.I chargers rated 30-100A output.

<p>Circuit Breaker AC & DC Ratings: S-5KAIC 120/240/480Vac; 5KAIC 125Vdc M-25KAIC 120/240/480Vac; 10KAIC 250Vdc H-65KAIC 120/240/480Vac; 25KAIC 250Vdc</p>



History of HindlePower

HindlePower enjoys a long and outstanding reputation as the premier manufacturer of stationary and utility battery chargers in the Western Hemisphere. **HindlePower** began as The Power Systems Division of HITRAN Corporation, in the mid-1970s. **HindlePower** renamed itself in the year 2000, in an effort to establish its own unique identity while reinforcing a firm connection with its earliest history as part of the original Hindle Transformer Company (HITRAN).

Today, **HindlePower** is located in scenic Easton, Pennsylvania and continues to thrive and grow both in terms of sales and reputation. Most major battery manufacturers offering utility and stationary products have selected **HindlePower** as the charger companion for their batteries. Some battery manufacturers have chosen to *private label* while others have chosen to *distribute* our excellent line of charger products bearing the prestigious **HindlePower** name. Either way, private-labeled or **HindlePower**-branded, you can be assured that when you select and use a **HindlePower** battery charging product, you are following in a long tradition of quality, service and reliability that began as HITRAN Corporation in the late 1940s and continues today!

The future of the **HindlePower** line of battery charger products will be further enhanced and improved to include many of the latest advancements and achievements in technology. Our team is committed to the highest-possible quality, resulting in zero failures and world-class products and service. As we continue to forge ahead, we the people of **HindlePower**, will never forget our roots, or the commitment to customer satisfaction that our name brings to both our customers and the industry.

Standard Product Literature Available from HindlePower:

Product	Brochure	Product	Brochure
AT10.I Series Options & Accessories	JF5020	Railroad Maintenance Charger	JF5015
AT30 Battery Charger	JF5018	SCR/SCRF Battery Chargers	JF5010
AT-OG Battery Chargers	JF5019	Single-Cell Battery Chargers	JF5007
AT Series Communications	JF5014	Transit Battery Charging System	JF5023
Custom Design & Engineering Services	JF5011	Universal Maintenance Charger	JF5008



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