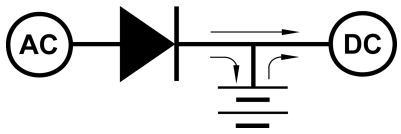
Staticon **Mine Vehicle Locomotive Chargers** are the most functionally advance, durable, field serviceable and proven of their type. Over 40 years of similar applications to electric plant vehicles is testimony to their reliability.



Features

Reliability by Design

- Robust industrial duty
- Electronic + magnetic V regulation
- Failsafe electronic control module
- AC input fuse, DC output fuse
- Transformer isolation
- Soft-switching, low noise
- Tropical / Humidity Proofing

Optimum Battery Charging

- For lead acid and lithium cells
- Constant I high + V finish charge
- Diagnostic auto equalize
- Battery V sensing / monitoring
- Battery end V selection
- Low battery charging temperature
- Low battery water consumption
- Standard Anderson connector

User Friendly

- Simple, no special training
- Automatic battery charging
- Switchable battery charge V
- Friendly diagnostic display
- Battery V meter jacks
- Front access for service

Warranty & Service

- 5 year warranty
- 20 year service availability
- 25 year design life

Safety Features

- Emergency kill switch
- Shutdown (5 min.) if charged battery connected
- No-start if wrong V battery connected
- Start delay timer (0-4 h adj)

Environment Friendly

- Soft-walk-in AC startup
- Energy efficient (85 - 95%)
- CSA / UL EMI compliant
- Quiet, convection cooling
- Drip Shield (NEMA 2, IP22)

Versatile Options

- X 50 Hz AC Input Voltages
- P Input PF Correction
- N V Temp. Compensation
- L Low V Startup PB
- S Special Cables & Plugs Standard Anderson

Ah Capacity 8 h	Ah Capacity 12 h	Battery Cells	Nominal Volts	AC Input	Cabinet Style	Mass (kg)
300	**450**	20-168	40-336	3Ø	M1	231
450	**675**	20-70	40-140	3Ø	M1	205
600	**900**	25-168	50-336	3Ø	M1	298
770	**1150**	40-70	80-140	3Ø	M1	295
940	**1410**	40-60	80-120	3Ø	M1	300
1050	**1570**	40-60	80-120	3Ø	M2, M3	335
1210	**1810**	48-60	96-120	3Ø	M2, M3	365
1500	**2250**	48-120	96-240	3Ø	M2, M3	536

Cabinet Style	Dimensions mm (in). H	W	D	NEMA / IEC Rating
M1	610 (24)	1219 (48)	610 (24)	2 / IP22
M2	610 (24)	1626 (64)	610 (24)	2 / IP22
M3 *	711 (28)	1829 (72)	711 (28)	3R / IP24

* M3 is an optional sealed cabinet

Charger Model Numbers

MPL 70 K 770 M2 _

- 770 — Max. number of battery cells
- K — AC input voltage code (table at right)
- M2 — Battery capacity (8h Ah rate)
- M1 - M3 cabinet (table above)
- Options (see above)

AC Voltage	Phase	Code
208	3	E
380-400-415	3	LX (50 Hz)
480	3	F
600	3	K

- Auto IEi for long battery life
- Low battery temperature rise
- No battery discharge when AC off
- Good for Lead Acid and Lithium batteries
- Good for flooded & sealed batteries
- Good for old & new batteries

Contents

Specifications 2

Charger Specs

Power Conversion Design

- Transformer input (60 or 50 Hz)
- Full-wave, silicon diode rectifier
- 6 pulse I, V, 3 phase
- Soft switching, low noise

Output Control

- Closed loop, negative feedback control
- Analog circuitry (no digital electronics)
- High speed electronic V sensing
- FET based voltage-to-current control
- Failsafe, magnetic shunt regulation
- Start delay charge timer (0-4 h adj)

Steady-State DC V Regulation

- ±3% (full load, ±10% AC V)

Output Ripple Voltage

- ≤ 2% rms (on resistive load)
- ≤ 1% rms (on typical battery)

Charge Function

- High rate constant I initial charge
- Finish rate constant V finish charge

Annunciation & Meters

- Standard annunciation:

Start delay	1 yellow LED
High rate	5 red LEDs
Finish rate	5 green LEDs
100% Charged	1 yellow LED
Battery fault	1 red LED

Protection & Safety

- Emergency AC kill switch + contactor
- AC Fuse 3P 3W
- DC fuse rated I ≈ full load IDC
- Input transformer, electrical isolation
- I^2t coordinated diode stacks
- Failsafe I limit set at 120% of rated IDC
- Shutdown (5 min.) on charged battery
- No start if wrong V battery connected

Surge Tolerance

- Inherent, inductive surge tolerance is 4 kV (1Ø) & 6 kV (3Ø) peak for 8 ms
- Withstands ANSI / IEEE C62.41 (IEC 6080-4) standard surge V waveforms

Electromagnetic Interference

- Conducted / radiated EMI within CSA C108.8 & FCC Part 15 Class B limits

In-Rush & Input power Factor

- In-rush I ≈ 3x full load A for 1-3 cycles
- Input PF ≈ 0.80 (PF ≥ 0.90 optional)

Audible Noise

- 55-65 dBA (at 1 m, rating dependent)

Cabinets

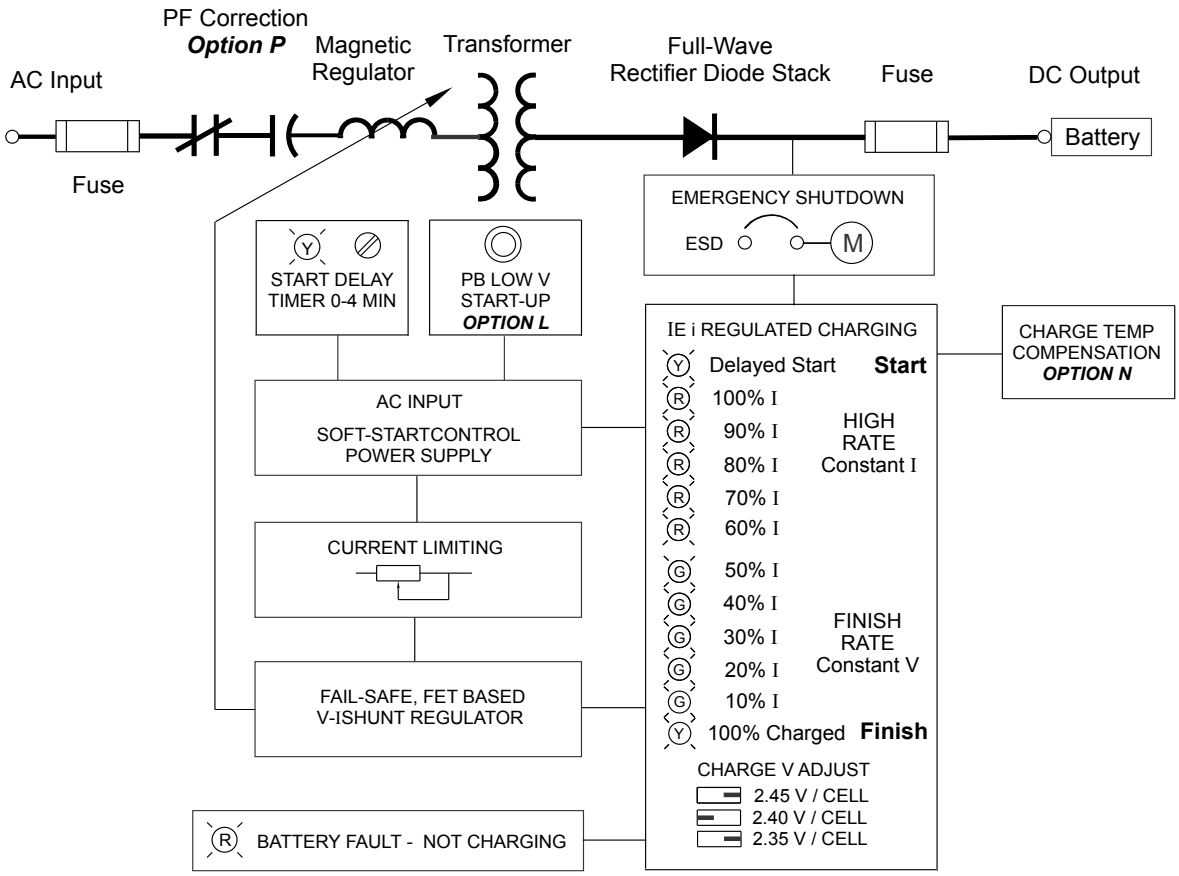
- M1 & M2 - NEMA type 2, IEC60529 IP22
- M3 - NEMA type 3R, IEC60529 IP24
- Front accessible, side cable entry
- Powder coated, baked enamel finish

Environmental Requirements

- Natural convection cooled
- -20°C to +40°C continuous operation
- RH < 95% non-condensing

Design & Test Standards

- CSA SPE-1000 inspected & approved
- Built to CSA C22.2 No. 107.2
- Magnetics designed for Class H, 180°C



Single-Line Diagram with Control Functions