



Mine Charger

Mine Skid Rapid (MSR)
Mine Skid Premium (MSP)



- **Heavy-duty steel drip-proof sled type cabinet**
- **Battery protecting Ferro-resonant design**

Ferro Magnetics Corporation
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314-739-1414

Mine Sled Charger

STANDARD FEATURES

- Battery protecting Ferro-resonant design
- Rugged sled base
- Adjustable output taps allow for:
Compensation for aged batteries or
AC line variations.
- Pennsylvania Mine Safety Option available
- Built to BCI Standards
- High power factor and high efficiency
- Convection cooled cabinet
- Fifteen foot of battery cable without connector
- DC amps indicator

SINGLE & DUAL CIRCUIT CABINETS

Single and dual circuit models are available, allowing you the choice of charging your vehicle battery trays in series or parallel. Consult your charger supplier for all the available models.

CONSTRUCTION

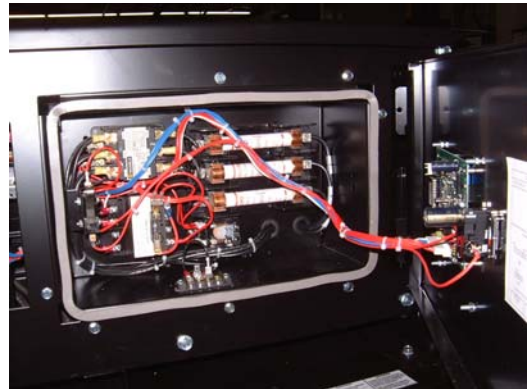
Heavy duty steel drip-proof sled type cabinet. Easy front door access to fuses and AC input taps. Top, is removable to allow easy service.



Component placement allows for cool operation

WARRANTY

Two year warranty against any defect in workmanship and materials to the original purchaser. Fuses are not included.



Easy access to serviceable parts

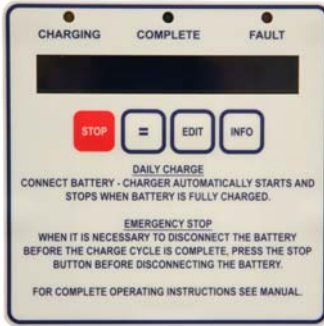
TWO POWER RATINGS OFFERED

The mine charger line is available in two models. The Premium (MSP) will recharge a battery in 8 hours, of matched amp-hour size that has been discharged 100%. This charger is ideal for three shift applications.

Customers may want the security of handling very abusive three shift applications. The Rapid Recovery (MSR) model is suited for the job. It will recharge a battery in 6 hours, of matched amp-hour size that has been discharged 100%.

271 Control (046-0271)

DISPLAY CAPABILITIES



- 16 Character LCD display
- Displays DC amps and volts per cell
- Charging, Fault and Complete LEDs
- Periodic messages show the charger state
- Displays message if abnormal charge condition is detected
- Delayed Start time remaining
- End Voltage, End Current, Run time, % AH returned and Total Amp-hours can be displayed during or after charge cycle completed.

FEATURES

- Fully automatic, utilizes dV/dt-dI/dt termination of charge
The control will start charging approximately 5 seconds after the battery is connected. Charge cycle termination is controlled by the slope of the battery's voltage with relationship to time. Fully charges partially discharged batteries without over charging.
- Setup and charge algorithm customization is programmable thru keypad access. Fully programmable charge profile including start amps, trip volts, finish amps and finish volts.
- Wrong battery voltage-discrimination
If a battery with too many or too few cells is connected, the charger will not start.
- Jump start for dead batteries
Using battery voltage-discrimination requires a means to initiate the charge cycle if a properly sized battery is deeply discharged and is below the low voltage start point.
- Watchdog circuit for microprocessor or time faults
If the microprocessor fails, or if it takes too long to reach certain milestones during the charge cycle, the control will terminate the charge and display the reason for the charge termination.
- High DC voltage shutdown (settable)
- Timed delay start settable from 0:00 -24:00 hours if set for auto start.
Prevents opportunity charging or delays charge until after AC Peak Demand Periods
- Zero DC current shutdown (disconnected battery)
If the battery is disconnected during the charge cycle, the loss of current flow is sensed and the charger is de-energized.
- Manual/Auto equalize (by number of cycles)
The user may select a manual equalize using the keypad button and/or an automatic equalize can be programmed for every 1-30 charge cycles.
- Refresh charge (automatic re-charge cycling)
Allows the charger to cycle on every "n" hours (settable up to 72:00 hours) and refresh the battery as long as it remains connected to the charger. Refresh cycles will not add to auto Equalize count. The cycle consists of a 30 minute charge at the finish current rate.
- Membrane Keypad Buttons (Eliminates broken switches)
- Cool-down timer settable for up to 24:00 hours after charging is complete.
- Automatic start-up when a battery is connected or can be set for manual start using the keypad. When automatic start is selected, the charger will resume a charge cycle after a power failure.

CONVIENIENT AC INPUT CONNECTION

Fast and simple AC connection points save time when moving the charger from place to place within the mine. Typical AC input voltages are 480 and 575. There are 50 Hertz models also available. Consult with your charger supplier for additional ratings information.



AC Connection points

PENNSYLVANIA MINE MODIFICATION

The optional PA modification consists of the following features:

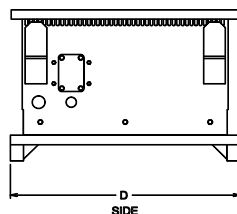
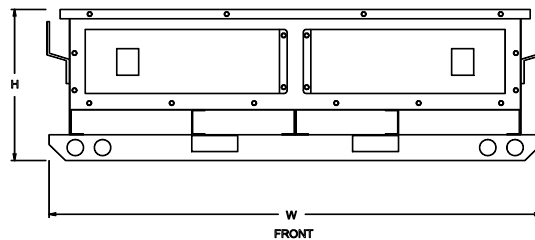
- AC ground interlock circuit.
- AC Interlock case ground.
- Battery ground-check lead.
(Requires PA approved DC cable and explosion proof connector not included with this modification)
- Manual Start/Stop control. (No delayed-start or refresh charge)
- Door and lid interlocks.
- Emergency Stop switch.

NOTE: Call for approved model list of BOTE numbers issued. If not currently on approval list, units can be inspected by Dept. of Deep Mine Safety at the mine site.



PA Mine Modification (Available Option)

Mine Charger Case Dimensions



CASE	D	H	W
428	35in. 889mm.	24in. 610mm.	44in. 1118mm.
429	35in. 889mm.	24in. 610mm.	75in. 1905mm.