

# CHR SERIES INDUSTRIAL CHARGERS

The CHR series is a field-proven line of high reliability rectifiers, specifically designed for telecommunication and industrial applications. Offering field-proven reliability of over 20 years, the CHR chargers offer the safest and most reliable charging of all types of batteries, sealed or vented. Advance, flexible design allows the Chargers to be configured for most user-specific applications.

**20+ Year life design for industrial applications.**

**Designed to CSA 22.2.950, UI1950, IEC950 and CE**

**Quality management system per ISO9000.**

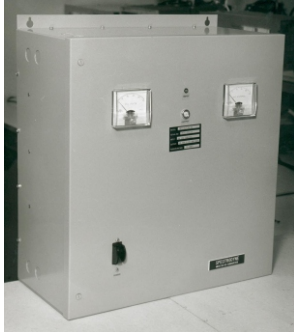
**Very low output ripple and EMI.**

**Battery eliminator mode is standard.**

**Battery cannot be overcharged under any operating condition.**

**Fully automatic operation with manual override.**

**Float and Equalize modes with equalize timer.**



## Input

115/208/240V (+/-10%), 50-60Hz, single phase.

## Output Voltage

Standard outputs are: 12V, 24V, 36V, 48V, 72V, 130V and 250V.

## Cell Voltage

	<i>L/Acid Sealed</i>	<i>L/Acid Flooded</i>	<i>Ni-Cad</i>
Nominal	2.0V	2.0V	1.2V
Float	2.2 to 2.25V	2.10 to 2.25V	1.3 to 1.45V
Equalize	2.3 to 2.4V	2.3 to 2.5V	1.4 to 1.55V
Formation	2.45 to 2.7V	2.45 to 2.7V	1.5 TO 1.65v
Discharge	1.75V	1.75V	1.0V

*Settings may vary per manufacturer's recommendation.*

## Output Current

From 0.05 Amp to 50 Amps, model dependant. Units may be operated in parallel for higher output current.

## Regulation

Better than 1%, combined load and line; 0.5% typical for 10-90% load.

## Ripple

Better than 1%, with or without batteries connected. Typical ripple:  
30mV (32dBrc voice band) for 12V and 24V units. 60mV for 48V units.  
100mV for 72V and 130V units. 200mV for 250V output units.

## Current Limit

Adjustable rectangular current limit for constant voltage or constant current operation.

## Equalization

Manual or fully automatic, with or without timer functions. Float and equalize voltage settings are user-adjustable from front panel; selected mode is confirmed by dedicated LED indicator .

## Protection

Common mode and differential ac line filtering.  
Brownout, transient and lightning (indirect) protection.  
Current walk-in soft-start. Overload and short circuit protection.  
Isolation (Dielectric): CSA C22.2 # 107.2-01.  
EMI: EN55022 class A, FCC 20780 class A .  
Surge Withstanding Capability (SWC): ANSI C37.90/IEEE-472.

## Over Temperature

Gradual reduction of output power if heatsink temperature exceeds a preset limit.

## Reverse polarity

Non-destructive cross-bar diode type polarity reversal protection.

## Parallel Operation

Chargers may be operated in parallel with current sharing or master/slave (N+1) arrangement.

## Output Metering

Analog or digital meters.

## Circuit Breakers

AC and DC circuit breakers (output fuse on some models).

## Alarms

Self-resetting Form-C LV/AC fail alarm with LED indicator is standard. Additional Alarms are optional.

## Efficiency

90% typical, model dependent.

## Cooling

Convection or forced air cooling with thermostatically controlled fan, model dependent

## Environmental

Operating temperature range:-10°C to +40°C. Storage: -40°C to +85°C  
Humidity, non-condensing. 0° to 95% RH.

# CHR SERIES INDUSTRIAL CHARGERS



Typical 130V 20 Amp output Charger, 19-inch rack mount, 2RU (3.25" high)

## STANDARD CONFIGURATIONS

- **V1:** Constant potential/constant current operation. 19 inch rack mount enclosure, input/output circuit breakers, digital voltmeter /ammeter, float/equalize controls and indicators, built-in 8-Hr equalize timer, Low Voltage Alarm, Reverse polarity protection.
- **V2:** Same as Version V1 but no controls or indicators. Input/output TBs are provided. Compact wall mount type enclosure
- **V3:** Wall mount enclosure for indoor or outdoor installation (as specified). All other features are same Version V1. Analog meters are supplied on some models.

## COMMON FEATURES, V1, V2 and V3

- Soft start and precise current limit.
- 120 or 240V, 50-60Hz, 1-phase operation (User specified)
- 1% regulation; less than 0.25% ripple typical.
- Input and output transient/noise protection.
- Digital voltmeter and ammeter.(Analog meters supplied on some models)
- Battery isolation diode
- Reverse polarity protection
- -10° to +40°C temp. range; up to 95% RH, NC.
- Overload and short circuit protection.

## OPTIONS & ACCESSORIES

- **Option 1** Temperature compensation, -40° to +60°C.
- **Option 2** Extended temperature range, -30° to +60°C.
- **Option 3** Low battery voltage load disconnect (LVD).
- **Option 4** Lightning protection, input and output.
- **Option 5** Two-Pole AC and DC circuit breakers.
- **Option 6** Alarm Package comprising:
  1. AC fail alarm(ACA) with Form-C contacts.
  2. Low voltage alarm (LVA) with Form-C contacts.
  3. High voltage alarm (HVA) with Form-C contacts.
  4. Charger fail alarm (CFA) with Form-C contacts
  5. Ground fault alarm (GFA) with Form-C contacts
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