## SELF-REGULATING BATTERY CHARGERS

WITH

FULL WAVE RECTIFICATION



TYPICAL PERFORMANCE CURVES

FOR TELEPHONE EXCHANGES

The First Battery Charger With No Moving Parts To Give Automatic Accurate and Close Storage Battery System Voltage Control. A NORTH COMPANY DEVELOPEMENT

THE NORTH ELECTRIC MANUFACTURING CO. GALION, OHIO

## SELF-REGULATING STORAGE BATTERY CHARGERS COPPER-OXIDE FULL-WAVE TYPE

This bulletin describes the new self-regulating battery charger developed by The North Electric Manufacturing Company.

#### General Description

The new battery charger is designed to reduce to a minimum the battery activity in storage battery systems by an automatic regulation of charging current and system voltage. The reduction in battery activity will result in greatly increased battery life.

The control of charging current and system voltage is accomplished without the use of bulbs, liquids, contacts or moving parts, so that the charger unit requires no attention. Since the battery activity is reduced to a negligible amount in a full float system, the only battery attention required is a check of the electrolyte level once or twice a vear.

The entire load of the system is carried by the battery charger; it responds instantly to any increase or decrease in the load. Consequently, the battery remains fully charged at all times, and will not



**Rear View of** 24 Cell (48 Volt) 3 Amp. Charger Vertical Rack Mounting

take any appreciable part of the system load unless the alternating current supply should fail.

#### Rectifying Elements

Copper-oxide rectifying stacks are employed to rectify the alternating current. The use of copper-oxide



**III** 

12 Cell (24 Volt) 1 Amp. Charger Cabinet Mounting

Front View of 24 Cell (48 Volt) 3 Amp. Charger Vertical Rack Mounting rectifying units instead of bulbs, liquids or contacts to convert alternating current to direct current has well-known advantages, apart from the practically unlimited life of the stacks, and their use has contributed materially to the reliability of the charger.

A sufficient number of rectifying stacks is employed in all sizes of chargers to care amply for the rating and to permit a substantial overloading to occur at intervals without deleterious effects.

#### Transformers

The line transformers and chokes are constructed of the highest quality transformer steel cores and they are wound and tested under the most exacting specifications. The specifications ensure that the transformers will have the ruggedness and reliability that are essential in a charger which is designed to eliminate maintenance attention in a storage battery direct-current supply system.

#### Noise Suppression

A suitable reactance is inserted in the output of the telephone type chargers so that under maximum rated load the system is entirely free from charger-ripple.

The charger has no sources of radio interference in its structure, consequently no disturbing effect need be anticipated from its operation.

#### Types of System Batteries

The new charger is designed for system batteries employing either the full float or the trickle charge method. The North Electric Mfg. Company will be glad to make recommendations regarding the arrangements to be employed for any specific application on receipt of inquiry.

#### Voltage Control

A close regulation of system voltage can be maintained under conditions of widely fluctuating loads. The best regulation is, of course, discernible within the range of median drain on the system battery which a charger serves.

#### Cabinets

The standard arrangement is to mount the apparatus in one or more sheet metal cabinets. Panels of metallic grille-work are inserted in the sheet metal casing to ensure adequate ventilation. A rigid back-plate is used to mount all of the apparatus within the cabinet.

Access to the interior of the cabinets is by means of hinged doors which are provided with locks.

THE LATEST CONTRIBUTION TO MAINTENANCE - FREE OPERATION OF TELEPHONE EXCHANGES

### No Moving Parts

No Voltage Fluctuations

Less Battery Deterioration

Less Water Loss

No Service Failures

Less Exchange Maintenance



24 Cell (48 Volt) 3 Amp. Charger Cabinet Mounting

# Specifications

## On Standard Charger Units

Catalogua	Battery	Amp.		Cabinet Size		Approx.
Number	Cells	Rating	Height	Width	Depth	Shipping Weight POUNDS
PE-1201	12	1.	12″	16″	12"	70
PE-1203	12	3.	12″	16″	12″	. 100
PE-1206	12	6.	23″	22″	13″	160
PE-1210	12	10.	23″	22"	13″	210
*PE-1215	12	15.	11.5″	22''	13″	300
			23″	22"	13″	· · · ·
PE-2401	24	1.	12″	16″	12″	80
PE-2403	24	3.	23″	22"	13″	160
PE-2406	24	6.	23″	22"	13"	275
*PE-2412	24	12.	23″	22"	13″	350
			23″	22"	13″	
**PE-2420	24	20.	23″	22″	13″	475
			23″	22″	13″	5
			23″	22"	13″	
* 10 0-1:	a a de se					· · · · · · · · · · · · · · · · · · ·

\* Two Cabinets. \*\* Three Cabinets

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