



## RECTIFIERS SPECIFICATIONS AND DATA

### DESCRIPTION

A Dings rectifier is auxiliary equipment that supplies electric power to electromagnetic separators. It converts the alternating current from a local power source to the direct current needed by such separators.

The Dings rectifier consists of a hinged door cabinet and an internal assembly of electrical components. Ratings and sizes of components in this solid state silicon diode design determine output in volts and watts.

Rectifiers are available in a wide range of wattages to handle the power requirement of any size electromagnetic separator. A rectifier cabinet can be selected in a particular NEMA (National Electrical Manufacturers Association) enclosure according to the proposed rectifier location at the jobsite.



### SPECIFICATIONS (All Sizes & Models)

- 1) AC input 460 volts, 3 ph, 60 Hz.
- 2) DC output 115 volts or 230 volts (depends on separator requirement).
- 3) Output wattage (1 to 50 KW) to match separator requirement.
- 4) Three phase solid state rectifier bridge.
- 5) Dry type insulating transformers, delta wye circuit.
- 6) Operation in excess of 95.5% efficiency.
- 7) Power factor approaches one (unity).
- 8) No maintenance solid state design.
- 9) Convection cooling is standard.
- 10) Ventilated or nonventilated enclosures depending on NEMA selection.
- 11) All units conservatively rated for cool continuous operation.
- 12) Excellent voltage regulation — within 3.5% from no load to full load.
- 13) Five NEMA enclosures available — 1, 4, 4X, 9 & 12.
- 14) Cabinet housing 16 ga. steel or thicker, depending on NEMA enclosure.
- 15) Wall mounted cabinet design on all NEMA enclosures.
- 16) Rust inhibiting primer.
- 17) Temperature rated for up to 40°C (104°F) ambient.
- 18) Excellent overload capacity for short infrequent periods.
- 19) Hinged front door for easy access.
- 20) For operation up to 5,000 feet above sea level without derating.
- 21) For operation above 5,000 feet, or where ambient temperature exceeds 40°C (104°F), rectifier should be oversized or derated — because output wattage is diminished. Consult factory.
- 22) Options:
  - a) Special AC input voltage — other than 460V.
  - b) Special DC output voltage — other than 115V or 230V.
  - c) Operation on 50Hz.
  - d) Manual starter with overload heaters, 1 through 9KW only - externally housed.

22) Options, cont'd

- e) Magnetic starter with overload heaters — internally housed, available for any KW. Standard starter on 10 KW and up.
- f) Pilot light - indicates when rectifier is on.
- g) AC or DC voltmeter.
- h) AC or DC ammeter.
- i) AC or DC line fuses (three for AC, two for DC).
- j) AC or DC circuit breaker.
- k) AC or DC control relay (four poles maximum).
- l) AC or DC fused disconnect.
- m) AC or DC non-fused disconnect.
- n) Undercurrent relay (one pole N.O. or N.C.).
- o) Auxiliary contacts.
- p) Thermostat.
- q) Extra shunt.
- r) Tropicalized cabinet.
- s) Internal space heaters.
- t) Epoxy paint.
- u) Leg kit for floor mounting.
- v) Extra start/stop contacts.
- w) Wiring for remote start/stop.
- x) Compensating taps on transformer.
- y) UL approved cabinet only.
- z) Automatic thermal cutout for customer's alarm circuit.

**NEMA 9** Hazardous Locations, Indoor. Nonventilated enclosures must prevent the ingress of explosive amounts of hazardous materials. If gaskets are used they shall be mechanically attached and non-combustible, nondeteriorating, vermin proof material. Rust resistant coating. For Class II Groups E, F & G locations.

**NEMA 12** Industrial Use, Dust Tight, Drip Tight, Indoor. Enclosures must protect enclosed equipment against flying fibers, dust and dirt, light splashing, seepage, dripping and external condensation of noncorrosive liquids. There are no holes through enclosure and no conduit knockouts or conduit openings. Wall mounting must have external mounting means. Floor mounting must have a closed bottom and provisions for mounting. Rust resistant coating.

## DESCRIPTIONS OF NEMA ENCLOSURES

The descriptions below are brief. Refer to the National Electrical Code and the various NFPA and NSI Standards referenced by the NEC to make a proper selection of enclosure.

**NEMA 1** General purpose, Indoor Only. Ventilated totally enclosed cabinet. Openings shall prevent entrance of a rod 0.500 inches in diameter. Rust resistant coating.

**NEMA 4** Water Tight and Dust Tight, Indoor/Outdoor. Nonventilated enclosure must protect enclosed equipment against splashing water, falling or hose directed water, and severe condensation. Must be sleet resistant but not sleet proof. Mounting means external to equipment cavity. Rust resistant coating.

**NEMA 4X** Same general description as NEMA 4 except cabinet is of stainless steel or fiberglass construction.

| RECTIFIER KW<br>(115 OR 230 Volt DC)  | RECTIFIER WEIGHTS IN LBS. |             |        |         |
|---|---------------------------|-------------|--------|---------|
|   | NEMA 1                    | NEMA 4 & 4X | NEMA 9 | NEMA 12 |
| 1   | 77                        | 116         | 250    | 125     |
| 2   | 88                        | 130         | 301    | 139     |
| 3   | 102                       | 145         | 316    | 154     |
| 4   | 117                       | 256         | 438    | 228     |
| 5   | 117                       | 259         | 441    | 231     |
| 6.5   | 169                       | 279         | 461    | 251     |
| 8   | 172                       | 305         | 558    | 313     |
| 10  | 196                       | 305         | 558    | 313     |
| 12.5  | 217                       | 387         | 700    | 428     |
| 15  | 220                       | 438         | *      | 479     |
| 17.5  | 313                       | 439         | *      | 480     |
| 20  | 313                       | 597         | *      | 593     |
| *Consult factory  |                           |             |        |         |
| Available on Request:<br>Cabinet outline dimensions drawing, wiring diagram with parts list, and an instruction bulletin. |                           |             |        |         |