

Model RI – ICE Pack

Impressed Current Electronic Package

... the remedy for “Mag” headaches

Typical Applications:

- Replaces Mg anodes for cathodic protection of underground structures
- Useful for spot protection in areas not adequately covered by primary system

Featuring:

- Constant current output does not vary with seasonal variations in resistivity
- 20 year design life with proven high silicon iron anodes
- Direct hook-up to 115 VAC
- 120 or 240 milliamper output currents
- Other sizes available on special order

Packaging

- 3 inches (8 cm) dia cotton bag, 20 inches (50 cm) long



Design Compatibility

The **Model RI ICE Pack™** is a self-contained unit consisting of a constant current rectifier connected to a high silicon iron anode and packaged in a cotton bag containing calcined petroleum coke. The rectifier circuit is available in both half wave and full wave models. Half wave rectifiers are used for a structure electrically bonded to the power company grounding system; full wave units are used when the structure is electrically isolated from the grounding system. This unique circuit does not generate heat; therefore, it is completely encapsulated in potting compound to protect it from the environment. Each **ICE Pack™** can replace several magnesium anodes; and with a design life of 20 years, it also eliminates one anode replacement cycle. **ICE Packs™** are a cost effective alternative for cathodically protecting any underground structure.

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***R Series
Rectifiers***

RI4.doc-03/05 © EDI 2005

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Will the ICE-Pack™

Cure Your Mag Headaches?

If you can answer YES to any of the following questions ...

Is the soil resistivity above 1000 Ω -cm?

With magnesium anodes, output drops with increased soil resistivity. Typically, a 17 lb. mag anode will put out up to 100 mA in 1000 Ω -cm soil. With higher soil resistivities additional mags are needed to maintain the required current output. However, with an **ICE-Pack**, a coke column can be designed to lower ground bed resistance, which provides you with the required current output. For example, if the soil resistivity is 25,000 Ω -cm, an **ICE-Pack** will produce 120 mA of current in a 7.5 ft. column of coke; and for soil resistivities of 5000 Ω -cm and lower, no additional coke is necessary!

Have interference problems prevented you from installing a conventional impressed current system?

Each ICE-Pack will put out the same current as 1-2 magnesium anodes. Like a mag, it can be installed close to the structure so that the current output from the anode is less likely to be shielded by foreign structures.

Is 115 VAC power conveniently available?

The ICE-Pack is designed to operate with 115 VAC input. Up to twenty-five 125 mA ICE-Packs can be spliced onto a #12 AWG header cable which is terminated in a standard safety disconnect box. An ammeter or shunt, if required, can be installed in the box.

Are your installation costs increasing every time you replace a mag?

The ICE-Pack has a 20-year design life. A magnesium anode typically lasts 8-10 years. Each ICE-Pack eliminates at least one replacement cost and may save as many as two. The initial installation costs for either anode are about the same.

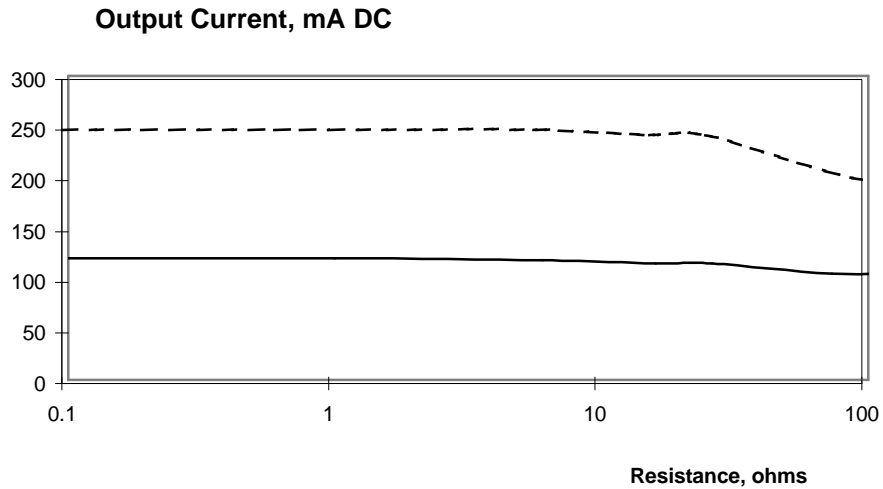
... an ICE-Pack will solve your anode problems.

Performance Characteristics

Data shown are for the half wave circuit; full wave circuits will be similar .

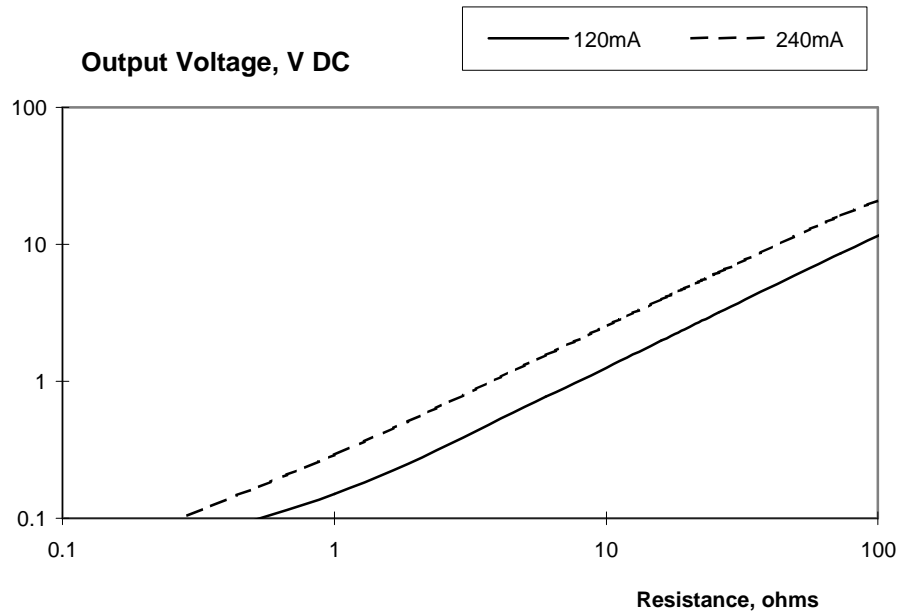
Output Current

The 120mA and 240mA models will maintain rated output in groundbeds up to about 50 ohms.

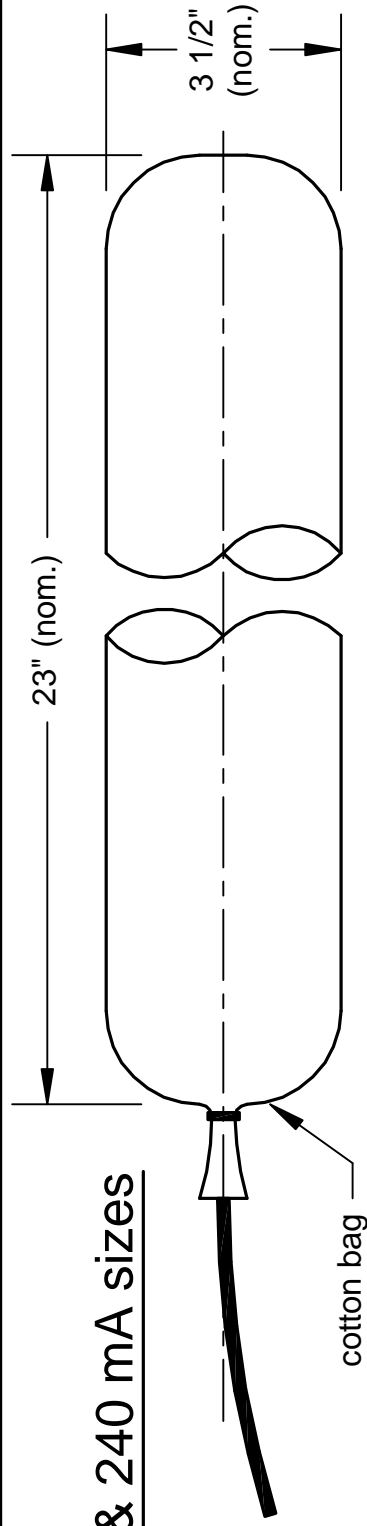


Anode Voltage

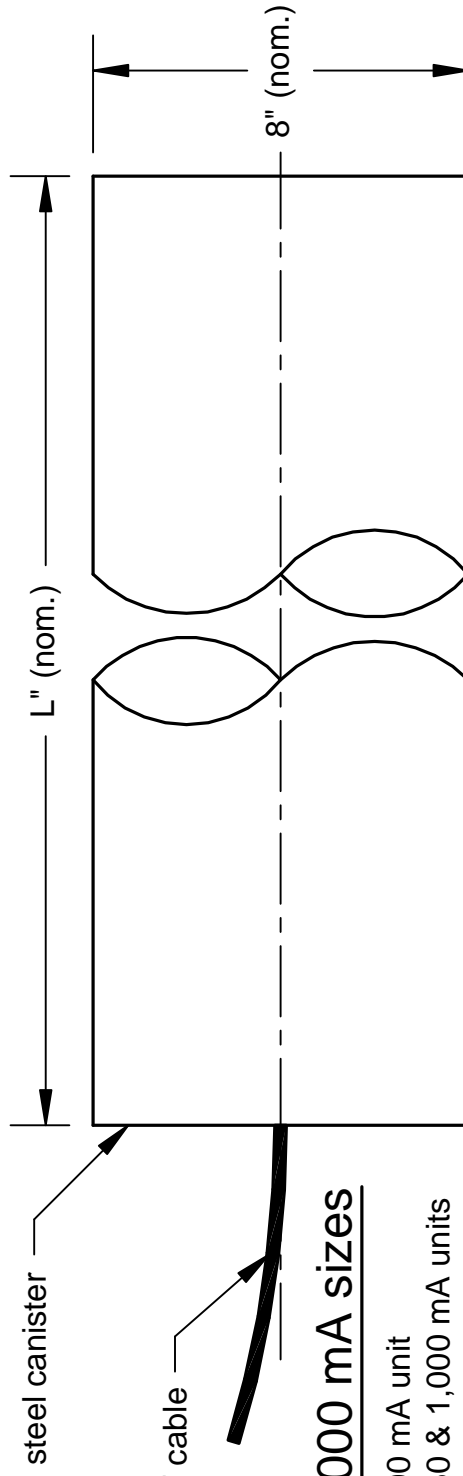
Anode voltage adjusts automatically to keep current at the rated level. To prevent a reduction in current output in high resistivity soil, the groundbed resistance can be reduced by increasing the length of the coke column.



120 & 240 mA sizes



cotton bag



steel canister

#14 AWG UF cable

500, 750 & 1000 mA sizes

L = 54 inches on 500 mA unit

L = 84 inches on 750 & 1,000 mA units

Specify as EDI Model RI-*xx*y-LW*nnn*

where *xx* = rectifier size code

y = wave form code

nnn = lead wire length, feet

Size codes, *xx*

12 = 120 mA

24 = 240 mA

50 = 500 mA

75 = 750 mA

1k = 1,000 mA

Wave form codes, *y*

H = half wave

F = full wave

Other size rectifiers are available on special order.

Constant current rectifier and high silicon iron anode are contained in a cotton bag or steel canister. Backfill is coke breeze.

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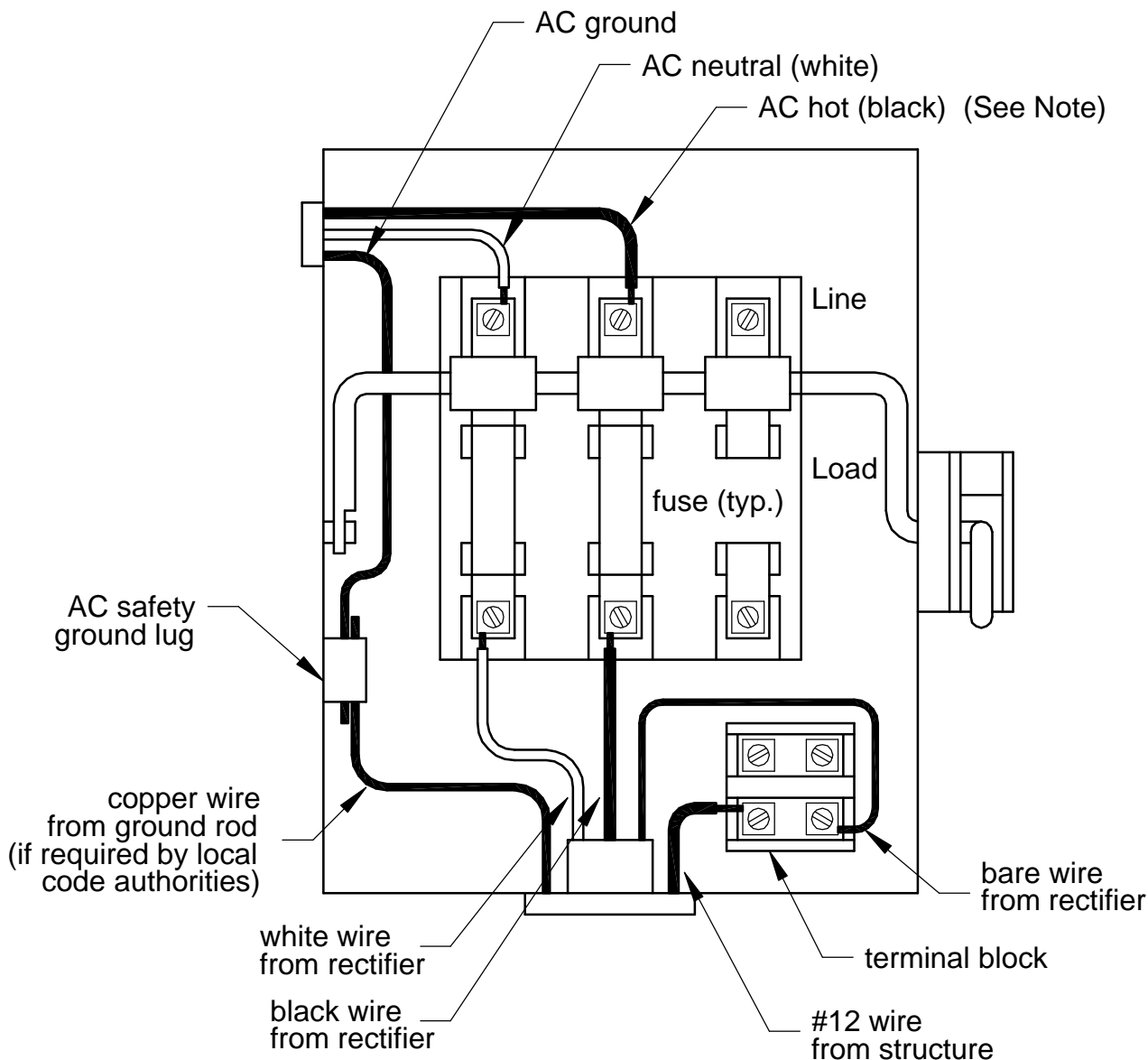
ICE Pack™ Rectifier - Anode Assy

SCALE VARIES

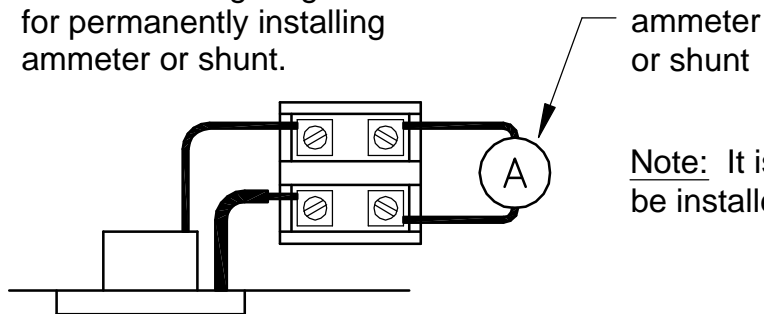
DATE 04/14/03

DRAWN BY FJA

DRAWING NUMBER RIASY



Alternate wiring diagram for permanently installing ammeter or shunt.



Note: It is recommended that a surge protector be installed on the AC power line to the rectifier.

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SCALE	HALF
DRAWN BY	FJA
DATE	03/24/05
DRAWING NO.	RIAPP1



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Model RI Wiring Diagram

