

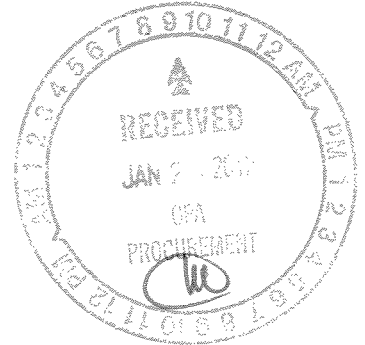


GUAM POWER AUTHORITY
AGANA, GUAM

SPECIFICATION No. E-046

REVISION:1
January 18, 2012

PREPARED BY THE ENGINEERING DEPT.



GUAM POWER AUTHORITY
P.O. BOX 2977
AGANA, GUAM 96932

TRANSMISSION & DISTRIBUTION SPECIFICATION


SPECIFICATION NO. E-046

FOR

**FAULT CURRENT INDICATORS:
OVERHEAD DISTRIBUTION**

EFFECTIVE DATE: 1/14/12

ISSUED: 

APPROVED: 



FAULT CURRENT INDICATORS: OVERHEAD DISTRIBUTION

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1.0 SCOPE

- 1.1 This specification covers GPA requirements for the application of fault current indicator (FCI) used for overhead distribution system fault location.
- 1.2 The fault indicator will facilitate the location and isolation of faults on the overhead distribution primary system.
- 1.3 The FCI is intended for use in tropical weather conditions with a corrosive sea air atmosphere, with wind strength of 155 MPH and subject to moderate and severe earthquakes.

2.0 APPLICABLE PUBLICATIONS

The equipment specified herein shall be designed, manufactured, assembled, and tested in accordance with ANSI/IEEE 495-1986 including the latest revisions with respect to material, design and tests.

3.0 DEVIATIONS AND NON-CONFORMANCE REQUIREMENTS

- 3.1 Deviations from this specification or changes in the material or design after the purchase order has been placed must be approved by the GPA Engineering department and acknowledged by a Purchase Order Amendment issued by GPA.
- 3.2 Units received with deviations or non-conformances that are not acknowledged per Section 3.1 are subject to rejection. The Supplier of rejected units is responsible for any corrective action including but not limited to materials, labor and transportation necessary to dispose of or make the units conform to the specification. GPA shall specify the corrective action required from the supplier.
- 3.3 Notification of defective units discovered before or after installation that are believed to be inherent to manufacturing problems or workmanship shall be made and forwarded to the Supplier. The description of the item, documentation of the problem and the described information, disposition and/or follow-up (as appropriate) that GPA expects from the Supplier will be specified. The Supplier's response shall be made within thirty (30) days unless an extension is acknowledged and approved in writing by the GPA Manager of Engineering.

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4.0 SUBMITTALS

- 4.1 The bidder shall provide with their bid or proposal a written notification of any deviations from this specification. Submittals shall include product and data sheets, part numbers, a statement of compliance to this specification and other relevant information necessary to evaluate the submittal. The acceptance of GPA shall in no way abrogate the requirements of this specification.
- 4.2 Shop drawings indicating details of construction and the outline of all connectors shall be submitted to GPA Engineering for review and approval.

Information required includes:

- a. Clamping Range
- b. Weight
- c. Temperature Range
- d. Rated Voltage
- e. Trip Value Range
- f. Fault Flashing Times
- g. LED Flash Life
- h. Battery Amp Hour Rating

Drawings showing metric measurements shall also indicate the equivalent English measurement. These drawings shall be made a part of the quotation.

- 4.3 Two sets of Trip Response Time-Current Curves shall be provided on standard log-log graph paper or equivalent.
- 4.4 Drawings returned to the Supplier as approved shall be considered authorization to proceed with the work. The approval of GPA shall in no way abrogate the requirements of this specification.
- 4.5 Instruction books shall be furnished in electronic (PDF) copy and hard copy which shall contain the description of components, parts and accessories, detailed installation instructions, complete instructions covering operation and maintenance of equipment and a complete replacement parts list.
- 4.6 At least three (3) hard copies and one (1) electronic (AutoCad and PDF) copy of the complete sets of drawings and instructions manuals shall be provided to GPA's Engineering Department at the time of delivery.

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5.0 CERTIFIED LABORATORY TEST REPORTS

Certified tests shall be conducted in accordance with ANSI/IEEE 495-1986. The Supplier shall furnish two (2) copies of certified test reports for all tests and (2) copies of the ANSI/IEEE 495-1986 to the GPA Manager of Engineering within two (2) weeks of delivery.

6.0 DESIGN

- 6.1 The FCI shall have the capability to adjust to variable load current situations between 10 and 500 Amps.
- 6.2 The FCI shall be applicable in single and three phase applications.
- 6.3 The FCI shall have an operational voltage range of 4.16 kV to 34.5 kV.
- 6.4 The FCI shall have an inrush restraint feature to prevent false indication during an inrush event caused by switching, transformers, and motors.
- 6.5 The FCI shall provide a 4 hour and manual reset option.
- 6.6 Indicator LED's shall provide adequate daytime and nighttime visual identification in the event of a fault.
- 6.7 The FCI shall have a flashing life of 1500 hours minimum and an overall equipment storage life of 20 years.
- 6.8 Installation of the FCI shall be accomplished with a single hot stick. Any required adaptive equipment shall be provided by the supplier.
- 6.9 The FCI shall have a clamping diameter between 0.25" and 1.3" to accommodate #2 through 927 kcmil AAC, AAAC, and copper conductors.

7.0 MANUFACTURING

Each fault indicator shall be permanently and legible identified with the following information.

- 7.1 Manufacturer's Identification (including catalog number)
- 7.2 Manufacture Date
- 7.3 Date Tag for installation and removal of FCI for warranty purposes.

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8.0 QUALITY CONTROL

- 8.1 The Supplier shall have a quality control program to ensure compliance with the requirements of this specification. The program shall be documented and available for GPA's review if requested.
- 8.2 Documentation of the quality control program shall indicate where in the production and manufacturing process the quality checks are taken, describe the purpose of the checks, and describe the nature of the check, i.e. if check is visual only or if electrical or mechanical testing is used.
- 8.3 The supplier shall certify that the compositions of all materials used are sufficient to meet the requirements of this specification.

9.0 PACKING AND SHIPPING

The Supplier shall have adequate work and inspection instructions for handling, storage, preservation, packaging, and shipping to protect the quality of the FCI and prevent damage, loss and deterioration.

10.0 WARRANTY

The FCI shall come with a minimum 5 year warranty.

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