

# RD-BR1

## Burden & Ratio Analysis Module

## Overview



The Radian RD-BR1 Burden & Ratio Analysis Module is an innovative advancement in CT testing. When used with Radian's RD-2x or RD-3x Dytronic Standards this accessory provides several benefits over other testing methods. The RD-BR1 allows testing without interruption to the customer's service and the design features single cycle burden insertion with simultaneous CT ratio and phase error. The module's unique design allows all ANSI values of 0.1, 0.5, 1.0, 2.0, 4.0 and 8.0 Ohms to be inserted with virtually no magnetizing effect on the CT. When testing with the RD-BR1 the user need not be concerned with overheating. An onboard temperature controlled fan keeps the module running cool and trouble free.

Testing with the RD-BR1 can be performed using any of the multiple burden resistors available. Utilizing Radian's unique solid state technology users can select multiple burdens or the complete sequence can be performed. Each burden is inserted and removed in an one line cycle, allowing the CT to be tested without adding any residual magnetization of the CT. Using this measurement technique minimizes any uncertainty of measurement caused by fluctuation of load. The measurements of current with and without burden allow the percent change to be automatically calculated.

Reduce lost revenue with the module's CT Ratio feature allowing the technician to verify CT nameplate information without removing the CT from service. Technician time spent at each site is also reduced with the addition of the CT Phase Error function allowing the detection of defective installations while testing the CT ratio.

RD-BR1 prevents unnecessarily changing of a good CT resulting in saved time and money. This is accomplished by performing a quick CT demagnetization on a CT that is saturated. CT demagnetization can effortlessly be performed at the end of each performance test.

The RD-BR1 provides unsurpassed user safety and is considered the safest CT Burden & Ratio Tester available. The module prevents user harm through an automatic system continuity check that is performed before opening the secondary of the CT. If an open loop is detected the RD-BR1 will automatically close the loop. In addition, testing of the internal burden resistors is done to verify operation before adding them into the secondary loop.

Data collection is easily saved and collected during the test. Test configurations and results can then effortlessly be stored or downloaded. Quick and simple test reports are automatically generated at the end of each test. This data can be easily viewed or exported.

The Radian RD-BR1 Burden & Ratio Analysis Module is truly an addition you should not be without when performing a CT test. The RD-BR1 is another in a highly respected line of Radian products providing unparalleled measurement accuracy. With the safety and multiple user functionality benefits the RD-BR1 provides it will soon be realized that the module is an efficient addition to your Radian RD-2x or RD-3x Dytronic Standards.

*Additional details provided on the back page of this bulletin.*

### Safest CT Tester Available

- Automatic System Continuity Check
- Multiple stage open secondary detection
  - Automatically closes loop
  - Locking Connection Terminals

### Fastest CT Tester Available

- One Cycle Burden Insertion
- Test all ANSI Burden points in 16 ms
- Simultaneous Burden, Ratio and Phase

### Adds No Magnetization to CT

### Demagnetizes CT cores

### Lightweight, Solid State Design

**Unparalleled Measurement Accuracy**

# Technical Specifications

## Input Power

RD Standard connection (Allows 60-600V at Site)

## Measurement Inputs

Primary CT Current: 0.1 – 3000 Amperes, 50 or 60 Hz (using probes)

Secondary CT Current: 0.01 – 20 Amperes, 50 or 60 Hz

CT Primary Probe Input Voltage: 3V RMS Max (using RR-CTA1)

Probe Scales: 10mV/A

## Measurement Accuracy

Accuracy dependent on RD Standard and Clamp-on Connected

## CT Burden Testing

CT Burden Values: 0.1, 0.2, 0.5, 1.0, 2.0, 4.0, 8.0 Ohms

Resistive Element Tolerance: +/- 1%

Insertion Burden: +/- 0.04 Ohms

## CT Demagnetization

Demag Burden: 8.0 Ohms Max

## Physical Description

Dimensions: Approximately 6.6" (16.7cm) L x 4" (10.3cm) W x 2.2" (5.6cm) H

Weight: Approximately 2.1 lbs (0.95 Kg)

Case: Construction is powder coated aluminum

Current Inputs: 6mm Multi-Contact brand sockets for 20 Amp

Clamp-on CT input: For a direct interface to an optional clamp-on current transformer

## Environment

Temperature: -20 to +70 deg C

Humidity: 10% to 95% non-condensing

## Protection

Isolation: Complete: Input / Output / Power / Case / Control

Dielectric Withstand: 2.3kV, 60Hz 60 Seconds

## Accessories

RR- 100135, 8 ft Test Switch Probe

RR- 100146, 12 ft Test Switch Probe

RC-FLEX3000A, 36" Flex Probe CT, 5 to 3000A

RC-MN106, 0.2 to 150A AC Current Probe

RC-SR704, 0.02 to 800A AC Current Probe

RC-JM800A, 1.0 to 2400A AC Current Probe

RC-HV2000A, Fiber Optically Coupled AC Current Probe 0-2000 Amperes, max. 150kV, max.

Window gap 1.89 inches

## Warranty

Radian Research warrants each of our products to be free from defects in material and workmanship. Our obligation under this warranty is to repair or replace any instrument or component therein which, within two years after shipment, proves to be defective upon examination. Radian will pay local domestic surface freight costs for return of product from Radian to the customer. If service is required, contact your local Radian Research representative or Radian headquarters in Lafayette, Indiana.