

**PRODUCT – A00012**

**IK RELAY**

**OVERLAOD RELAY**

**Operation Manual**

IK Relay Manual  
Part number: A00012

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# Overview

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The Bramco IK Overload relay has been designed to detect Earth current faults flowing in a power system and to provide visual indication of Earth Leakage conditions.

## 1. Features

Adjustable trip current and dual time curves from front panel

### 1.1. Physical Layout

The IK relay is designed for Din rail or 2 hole, foot mounting.

See Section 3 for Specifications and important power supply information.

See Section 4 for Installation Recommendations.

### 1.2. External Connections

Terminal Number	Description
1	110VAC CONTROL INPUT
2	110VAC CONTROL INPUT
3	COM 1
4	N/C 1
5	N/O 1
6	COM 2
7	N/C 2
8	N/O 2
9	CT 1
10	CT 1
11	NO CONN
12	NO CONN
13	NO CONN
14	NO CONN
15	CT 2
16	CT 2

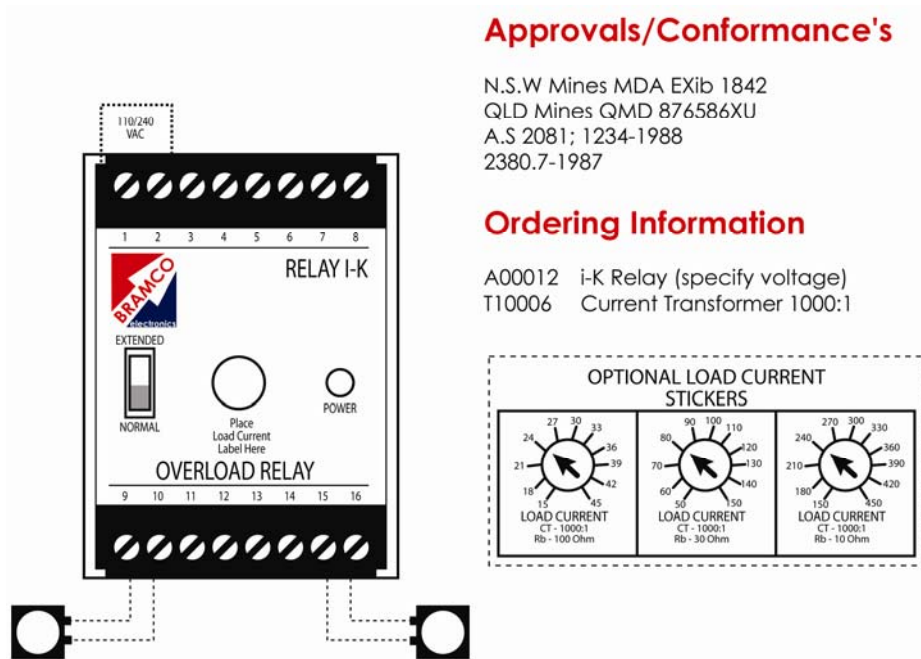
# 1. 3 Typical Installation

## Approvals/Conformance's

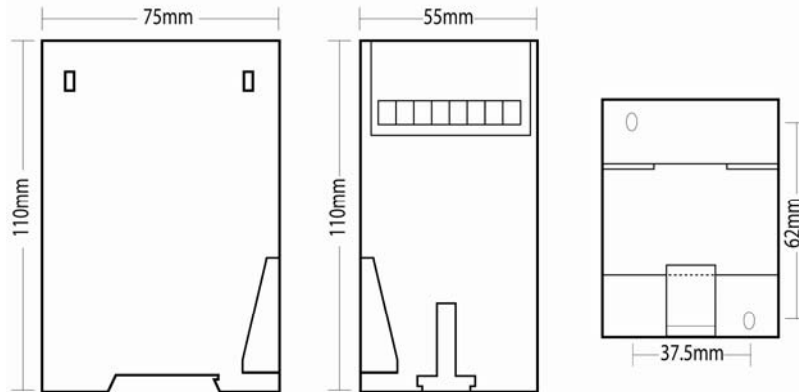
N.S.W Mines MDA EXib 1842  
 QLD Mines QMD 876586XU  
 A.S 2081; 1234-1988  
 2380.7-1987

## Ordering Information

A00012 i-K Relay (specify voltage)  
 T10006 Current Transformer 1000:1

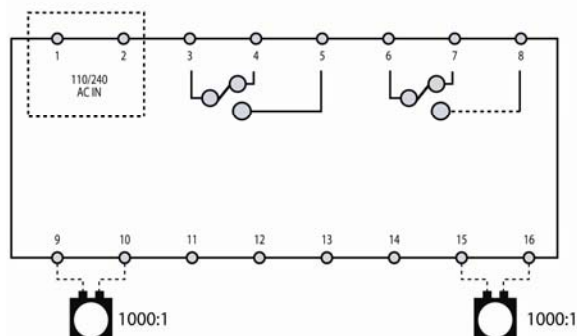


## Outline and Mounting Hole Dimensions



Unit can be mounted on Din Rail or screwed down via mounting holes

## Connection Details



## 2. Operation

### 2.1. Outline

Designed to provide OL protection on load circuits which are neutral limited.  
Status Led for Power On

**NOTE:** IK relay may only be used on limited neutral systems.

### 2.2. Non-Failsafe Mode

**NON-FAILSAFE** - the IK relay is de-energised (open) when relay is un-powered, and, energised (closed) with a fault. Auto reset occurs when the load is disconnected.

### 2.3. Trip Parameters

Adjustment of the Overload Current setting is by front panel single turn knob adjustment.  
Switch selection of 2 inverse Trip Time curves.

## 4 Specifications

Supply Voltage	A00012 – 120V 50/60Hz 2VA Optional - 240V, 24 – 48VAC/DC 2VA
Current Transformer	2 x 1000:1A 15VA Bramco Special
Overload Current Range	15 – 450A Range 1 15 – 45 Amps Burden 100R Range 2 45 – 150 Amps Burden 30R Range 3 150 – 450 Amps Burden 10R
Tripping Time Curve	Refer Inverse Time Curves for other multipliers Normal 40 Seconds @ 2 x FLC Extended 80 Seconds @ 2 x FLC
Relay Function	Non-Failsafe.
Contact ratings	2 x C/O 5A 250VAC, 100VA max 5A 30VDC Resistive 3A 30VDC Inductive load 90W L/R 7mS

Maximum Switching Voltage	380VAC/125VDC
Temperature Range	0 – 50 Deg C

## 5 Installation and Setup

Following are some recommendations for installation and wiring to help achieve successful operation.

The IK relay is supplied in a 16 terminal poly style enclosure with provision for Din rail or foot mounting.

### 5.1 Operating Voltage

120VAC input is connected to Terminals 1 and 2.

Before powering the IK, check the supply voltage matches the IK control voltage.

**NOTE:** If powered from 240VAC with the relay supplied as 120V, the IK will be damaged.

Optional: 240VAC, and for 24 – 48VAC/DC, input is connected to terminals 1 (Pos) and 2 (Neg).

### 5.2 Operation

The overload current range available is 15Amps to 450Amps in three steps.

Each CT (2 off) requires a resistive burden be connected directly across its terminals.

**NOTE:** Use same burden value for both CT's.

The OL current ranges are:

15 – 45 Amps	Burden 100 R	6W (2 off supplied loose)
45 – 150 Amps	Burden 30R	6W (2 off supplied loose)
150 – 450 Amps	Burden 10R	6W (2 off supplied loose)

First select the Overload Range, fit the range burden resistors, select and stick to the relay front, the range scale to suit ( supplied loose), and then adjust the load current setting to a value to suit the current protection required.

IK relays trip at 1.15 OL Setting.

## 5.3 Switch Selection of Current Range

The overload range available is 15Amps to 450Amps in three steps.

An external 3 position selector switch may be used to select the correct burden for each range for the 2 x CT inputs.

See Range Switch Connection diagram.

## 5.2 Trip Time Curves

There are 2 trip time curves available.

**Normal** - This is a 40 Second curve.

eg. If OL is set to 100A. If the load current is 200A will cause a trip in 40 seconds.

**Extended** - This is a 80 Second curve.

eg. If OL is set to 100A. If the load current is 200A will cause a trip in 80 seconds.

These time delay curves are calibrated @ 2 x FLC.

Performance of the IK relay is as per the curves supplied and is absolute, there being no separate hot and cold characteristic.

See **Overload Inverse Trip Curves**.

IK RELAY - A00012 OVERLOAD INVERSE TIME CURVES

