



1. FEATURES

- POWERED DIRECTLY FROM 3 PHASES
- BRIGHT LED LAMP TECHNOLOGY USED FOR INDICATION
- ALL PHASES FUSED INTERNALLY
- CONTAINS 2 AUXILIARY RELAYS FOR EXTERNAL INDICATION
- PLASTIC ENCLOSURE WITH KNOCKOUTS FOR CONVENIENT MOUNTING
- ISOLATED FLUSHMOUNT EXTERNAL DISPLAYS ARE OPTIONAL

2. INTRODUCTION

The I-Gard VIA is a 3-phase ground fault indicator unit and is designed specifically for Ground Fault Indication on Wye or Delta-connected, three-phase, three-wire, resistance grounded or ungrounded power systems. It may be used on systems between 120V and 600V (up to 690 without CSA approval) or up to any voltage with the use of 120V or 240V potential transformers (PT's).

One or more optional flush mounted external displays can be mounted on panel doors or other locations. Up to four displays can be connected using an RJ-45 (networking) cable in a daisy-chain configuration. Isolation inside the VIA protects the external display from high voltages. Up to several kilometers of cable can be used between the VIA and VIA-R display. Refer to table 2.0 for catalogue numbers.

The VIA is designed to provide an alarm when a single ground fault occurs, and to indicate on which phase the fault occurred. Additionally the VIA can indicate both phase loss as well as DC ground faults. Each phase is fused inside the VIA enclosure; therefore it does not require any external hardware.

When a second fault, on another phase, occurs in the distribution system, the only limitation on the amount of ground fault current is the impedances of the faults, the impedance of the source (transformer windings feeding the faults) and the ground circuit between them. Under

this condition, extensive damage can occur, making it necessary to clear the first fault as soon as possible. The prime advantage, then, of using the VIA Ground Alarm Indicator unit, is that the user is given early warning of ground faults allowing time to locate and clear the fault to ensure maximum service continuity.


Catalogue Number	Description
VIA	VIA (Voltage Indication Alarm)
 VIA-R	Remote VIA

Table 2.0 Catalogue numbers

3. OPERATION

The VIA measures the fault level as shown in Figure 3.0 below. The fault is expressed as a percentage of the total neutral voltage displacement at the time of a ground fault. A bolted fault (short) to ground is considered to be a 100% fault. A RED LED indicates a fault on which the neutral voltage displacement from ground is greater than or equal to 50%, YELLOW indicates a neutral to ground voltage greater than or equal to 20% and less than 50%, and GREEN means a neutral to ground voltage displacement of less than 20%.

Two auxiliary, normally open relays can also be used for external indication. The 20% relay closes when the system has a 20% or greater fault level (when any of the LED's change to YELLOW). The 50% relay closes when the system has a fault level that is greater than or equal to 50% (when any of the LED's change to RED). In addition, the 20% relay will close in the event of a phase loss.

The VIA indicator also has the capability to indicate when a DC fault has occurred. If a bolted fault (100%) occurs from the positive DC side of a rectifier, the VIA LED's will all turn RED and flash. If the fault is resistive (less than 100%) the LED's will turn YELLOW and flash. Likewise if the fault is from the negative side of the DC rectifier, the LED's will change color (depending on the fault intensity) and double flash (indicating a negative DC fault).

The fault indication is not a latched function; once the fault is cleared, the VIA will reset to the normal state.



7. TECHNICAL SPECIFICATIONS

Control Power and Burden:

120-690 VAC, +/- 10%, 50/60 Hz (CSA approved up to 600V AC)

4 VA @ 120V ac

12 VA @ 208V ac

15 VA @ 240V ac

45 VA @ 415V ac

60 VA @ 480V ac

100 VA @ 600V ac

125 VA @ 690V ac

Temperature Range (Celsius):

Operating Temperature: -40 to +65

Storage Temperature: -40 to +85

Isolation Voltage for External Display:

AC Voltage (60 seconds): 3000V

Peak Voltage (1 second): 6000V

Ground Fault:

Pickup Settings (as a percentage of displacement from ground):

GREEN 0% - 19%

YELLOW 20% - 49%

RED 50% - 100%

Pickup Tolerance:

+/- 15%

(YELLOW: 17% - 23%)

(RED: 42.5% - 57.5%)

Output Contacts:

Type: Form A (Normally Open)

Rating: 5A @ 250V ac (resistive)

5A @ 30V dc (resistive)

Replacement Fuse: Bussmann BBS-2

Physical:

Weight: 0.40 kg (0.88 lbs)

Dimensions: 6.57" (L) x 4.92" (W) x 3.22" (H) (See Fig. 8.0)

Standards: CSA

I-GARD RESERVES THE RIGHT TO CHANGE SPECIFICATIONS OF ITS PRODUCTS WITHOUT NOTICE

8. DIMENSIONAL DRAWINGS

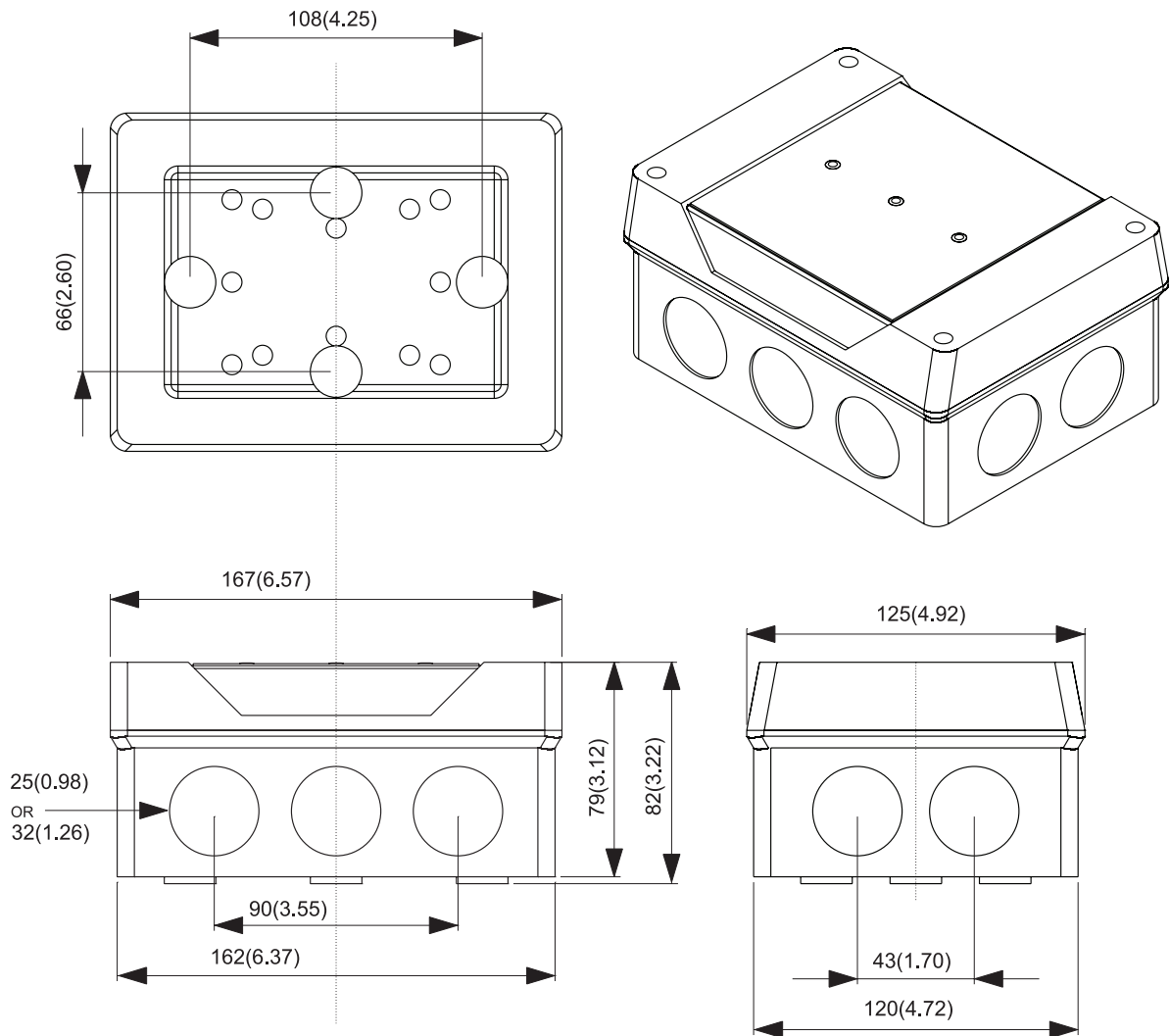


Figure 8.0: VIA / VIA-R Dimensions – mm (Inches)

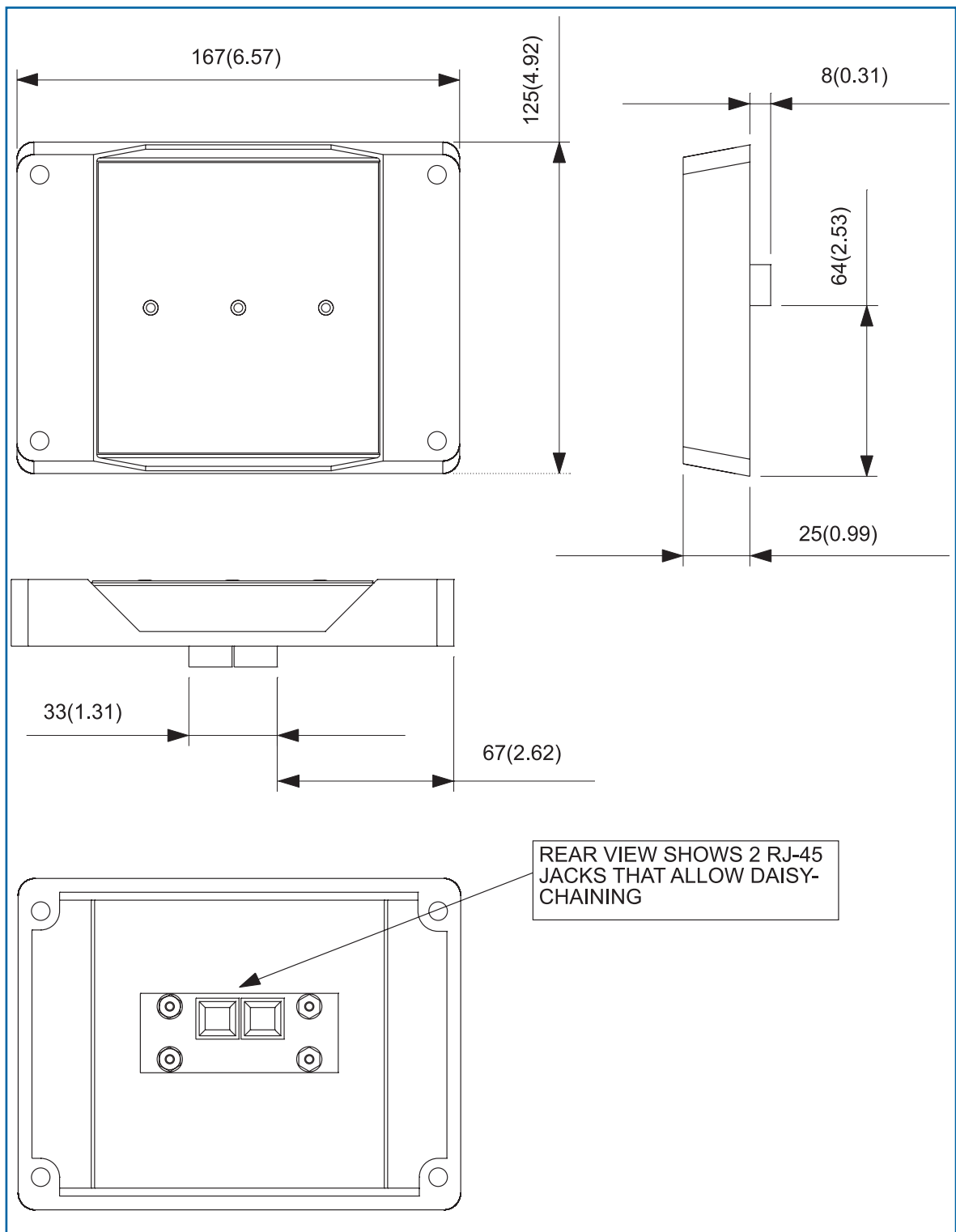


Figure 8.1: VIA-R Display Dimensions - mm (Inches)