



Addendum to Instructions for Installation, Operation and Maintenance of Digitrip 3000 Protective Relays

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COMPLETELY READ AND UNDERSTAND THIS ADDENDUM AND THE DIGITRIP 3000 INSTRUCTION BOOK (I.B. 17555) BEFORE ATTEMPTING INSTALLATION, OPERATION OR APPLICATION OF THE EQUIPMENT. IN ADDITION, ONLY QUALIFIED PERSONS SHOULD BE PERMITTED TO PERFORM ANY WORK ASSOCIATED WITH THE EQUIPMENT. ANY WIRING INSTRUCTIONS PRESENTED IN EITHER DOCUMENT MUST BE FOLLOWED CLOSELY. FAILURE TO DO SO COULD CAUSE PERMANENT EQUIPMENT DAMAGE.

1.0 INTRODUCTION

This addendum describes the Drawout Case option for the Digitrip 3000 Protective Relay.

The conventional Digitrip 3000 relay, style number 4D13120G01, is described in I.B. 17555. Table 1 lists the Drawout Case versions.

Description	Cat. No.	Style No.
Digitrip 3000 Drawout Relay	DT3001	4D13124G01
Digitrip 3000 Drawout Inner Chassis	DT3001-IC	66D2001G01
Digitrip 3000 Drawout Outer Case	DT3001-OC	66D2005G01

TABLE 1. ORDERING INFORMATION

2.0 GENERAL DESCRIPTION

The purpose of the DT3001 is to allow the device to be removed from gear, using a “quick disconnect” type strategy. The Digitrip 3000 Drawout Relay maintains the same electrical and operating specifications as the standard Digitrip 3000 (see I.B. 17555, pg. 17), with

the addition of the following Drawout connector specifications.

Make/Break Rating	10 A @ 240 Vac nominal 0.25 A @ 280 Vdc maximum
Terminal Wire Gauge	No. 14 to No. 10 AWG
Screw Torque Requirements	18 inch-pounds

TABLE 2. ADDITIONAL SPECIFICATIONS

The Drawout Outer Case consists of two assemblies, a molded plastic outer flange with “quick release” actuators and locking mechanism, and the aluminum housing with terminal blocks.

The Drawout terminal blocks features self-shorting, or short-before-break contacts, for ct connections that maintain circuit continuity when the device is removed. These self-shorting contacts will prevent damaging voltages from existing across the current transformer windings.

The terminal blocks feature a 2-stage disconnect operation. Removal of the DT3000 Inner Chassis will disconnect the trip circuits and short the ct secondaries before the unit control power is disconnected. Upon insertion of the Inner Chassis, the control power connections are made before the trip circuits are activated. ***This feature provides added security against false tripping.***



FIGURE 1. DIGITRIP 3000 DRAWOUT RELAY

3.0 INSTALLATION

NOTICE

The following material replaces sections 5-2, on page 34 of I.B. 17555.

3.1 Panel Preparation

When mounting the Drawout Case in a panel, it is necessary to prepare a cutout for the device per Figure 2. If a standard IQ cutout exists, no additional panel setup is required; the Drawout will mount in the existing 6-hole cutout.

3.2 Digitrip 3000 Drawout Relay Parts List

Before mounting the Drawout Relay, review Table 3 for all of the included parts:

Description	Quantity
Digitrip 3000 Drawout Inner Chassis	1
Digitrip 3000 Drawout Outer Case	1
Outer Flange	1
Mounting Hardware – #10-32 nuts & lock washers	6 each
Digitrip 3000 Instruction Book – I.B. 17555	1
Drawout Relay Addendum to I.B. 17555	1

TABLE 3. DT3000 DRAWOUT RELAY PARTS LIST

3.3 Mounting the Drawout Outer Case

- 3.3.1 Remove the Drawout Inner Chassis from the outer case.
- 3.3.2 Place the outer case flush against the backside of the panel so that the case studs project through their respective holes. Refer to Figure 3 for diagram.
- 3.3.3 The plastic outer flange is seated on the front of the panel and is attached to the top, center, and bottom studs that protrude through the panel.
- 3.3.4 Use the #10-32 hex nuts and lock washers, included with the relay, to mount the unit on the panel.

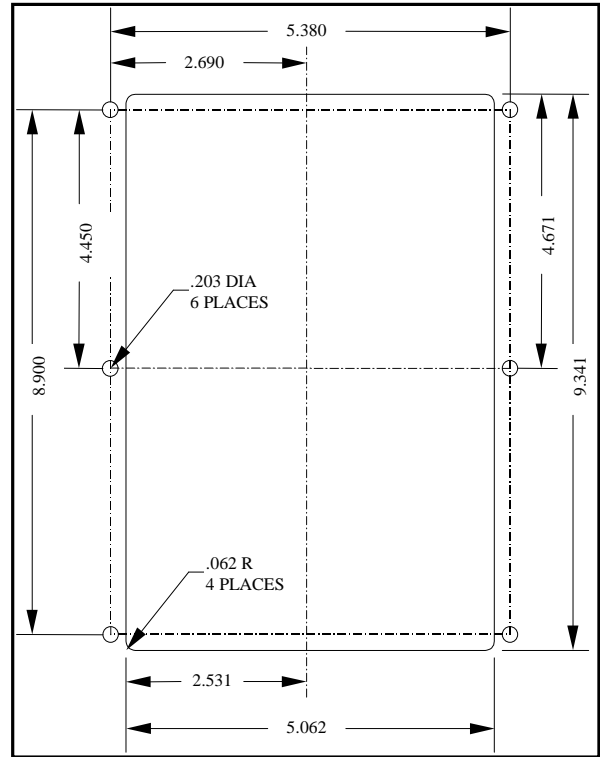


FIGURE 2. PANEL CUTOUT DIMENSIONS (INCHES)

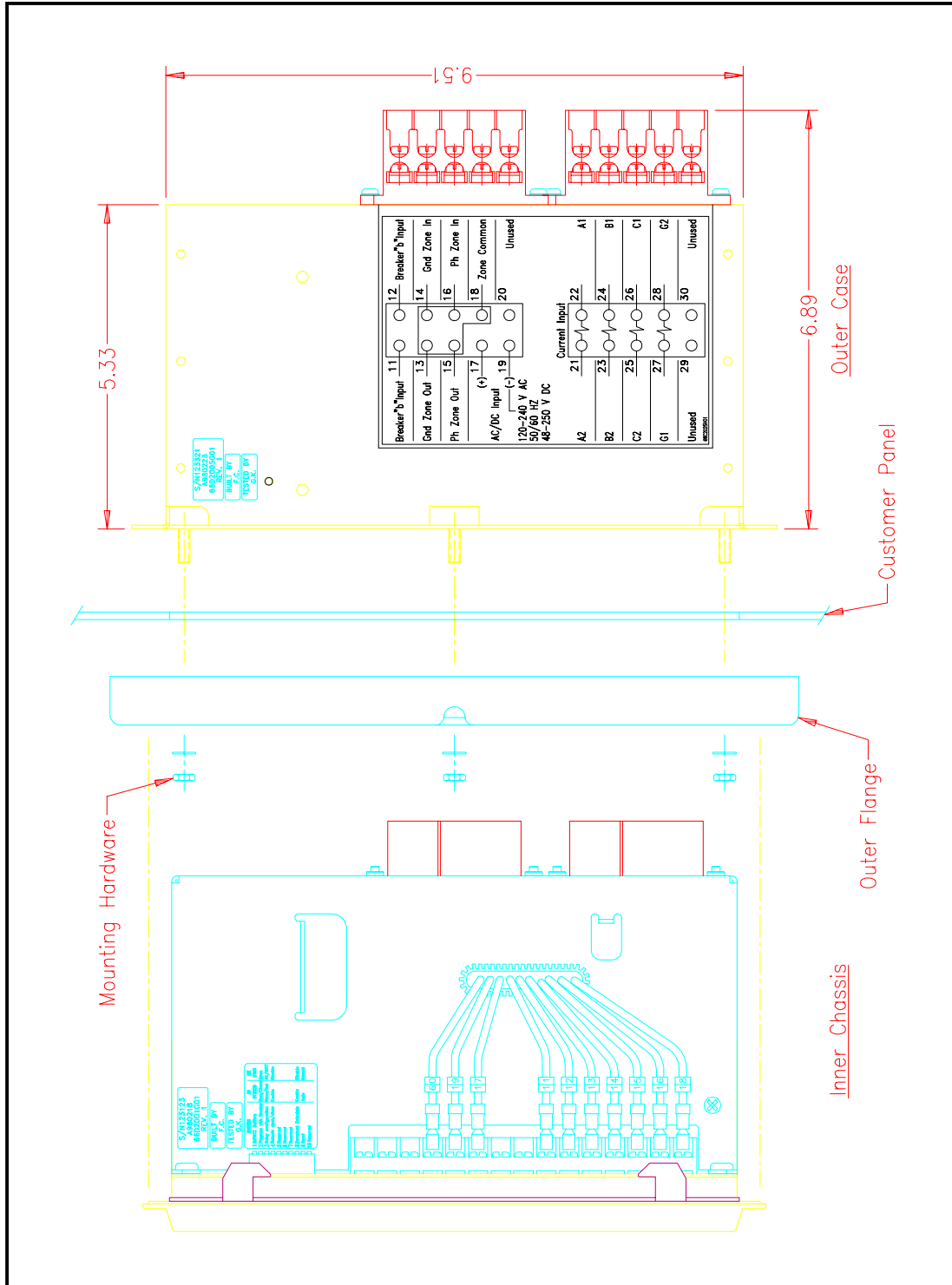


FIGURE 3. DT3001 PANEL MOUNTING

4.0 WIRING AND SETUP



WARNING

ENSURE THAT THE INCOMING AC POWER SOURCES ARE DISCONNECTED BEFORE PERFORMING ANY WORK ON THE DIGITRIP 3000 PROTECTIVE RELAY OR ITS ASSOCIATED EQUIPMENT. FAILURE TO OBSERVE THIS PRACTICE COULD RESULT IN SERIOUS INJURY, DEATH AND/OR EQUIPMENT DAMAGE.

NOTICE

The following material replaces section 5-4, on page 35 of I.B. 17555.

Refer to Figures 5, 6, 7 and 8 for the DT3001 typical wiring diagrams. Note the following:

1. Direct wire connections to the terminal blocks must be sizes #14 AWG to #10 AWG. The appropriate

sized spade and ring lugs can also be used to accommodate the wires.

2. All contacts are shown in the de-energized position.

NOTE: The Protection Off Alarm Relay is energized when control power is applied and the DT3000 is operating properly. To obtain a contact that closes when protection is lost, use terminals 48 & 50. For a contact that opens when protection is lost, use terminals 46 & 48.

3. The Digitrip 3000 comes with the zone interlocking jumpers installed (terminals 13 to 14 and 15 to 16). Leave these jumpers in place if zone selective interlocking is not used. See Section 5 below for more information on this topic.
4. The INCOM communications LED can be seen through a hole in the outer chassis. Refer to Figure 4.

NOTE: All wiring must conform to applicable federal, state, and local codes.

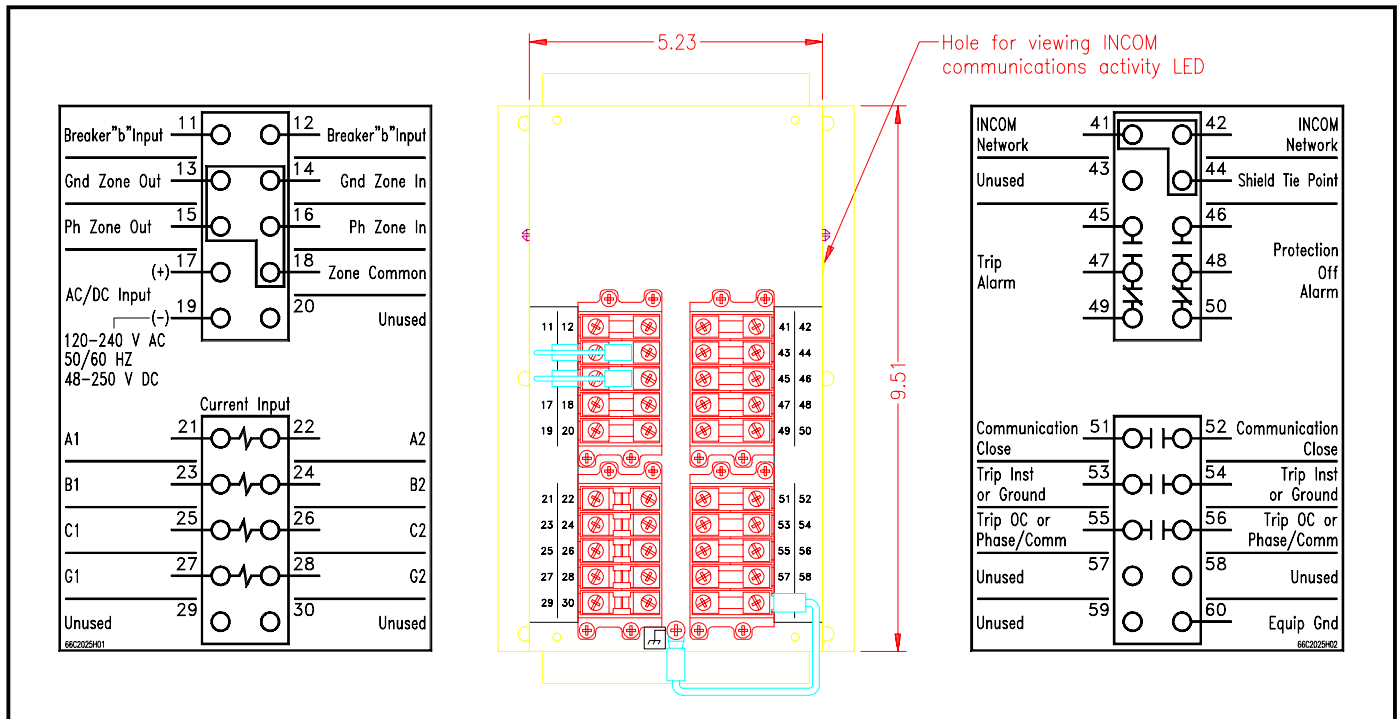


FIGURE 4. REAR VIEW OF DT3000 DRAWOUT OUTER CASE

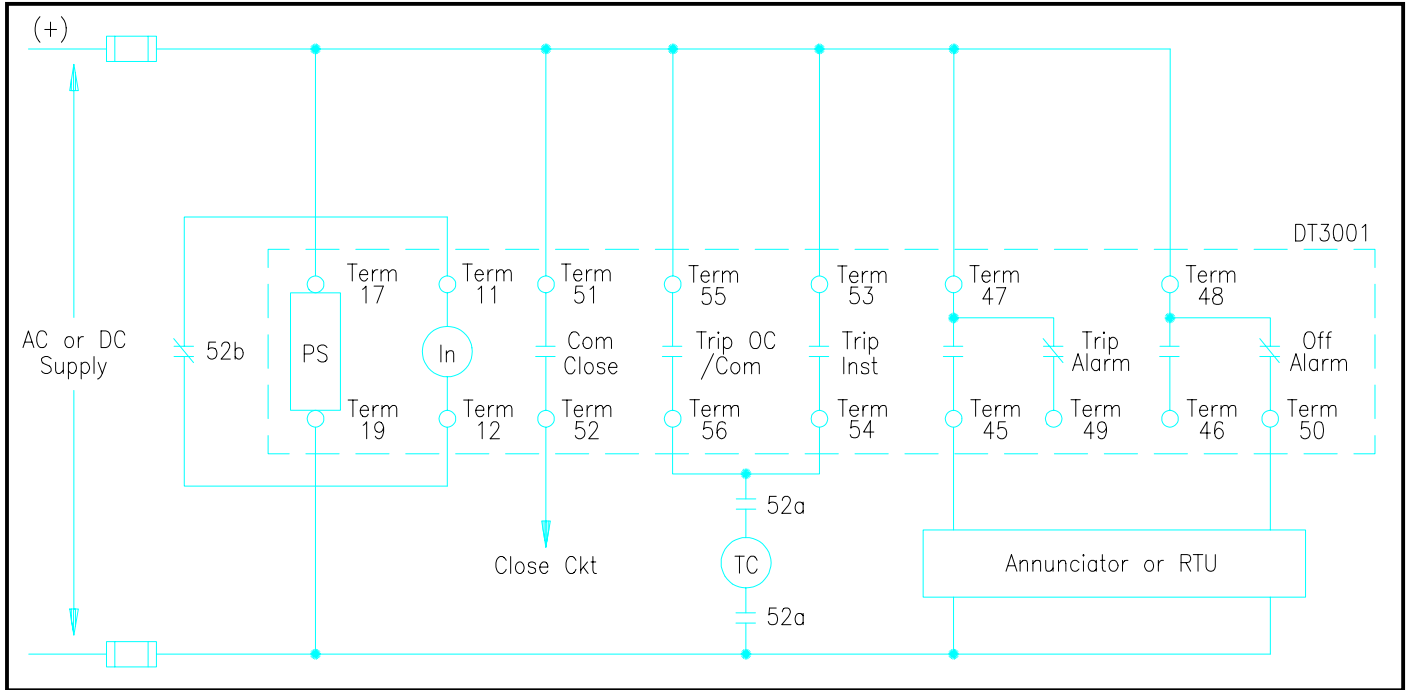


FIGURE 5. DT3001 TYPICAL AC OR DC SCHEMATIC

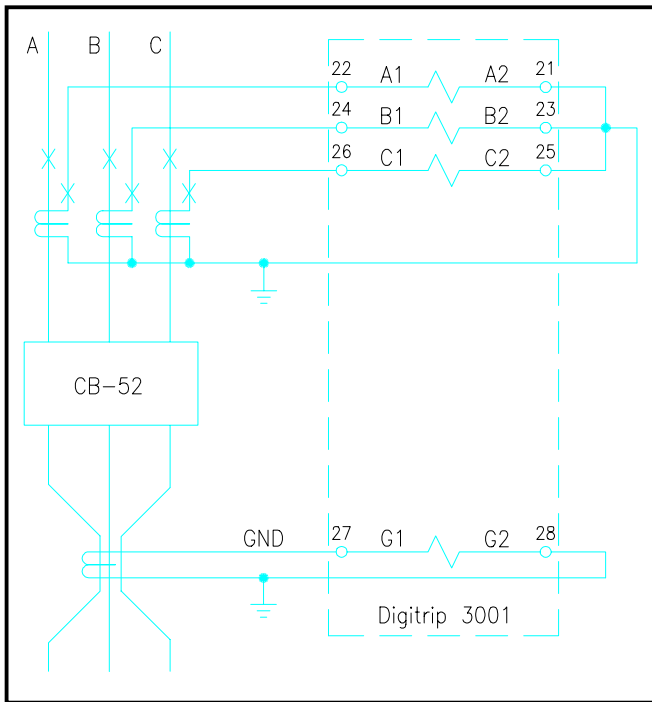


FIGURE 6. DT3001 TYPICAL AC EXTERNAL CURRENT CONNECTION WITH ZERO SEQUENCE GROUND CT

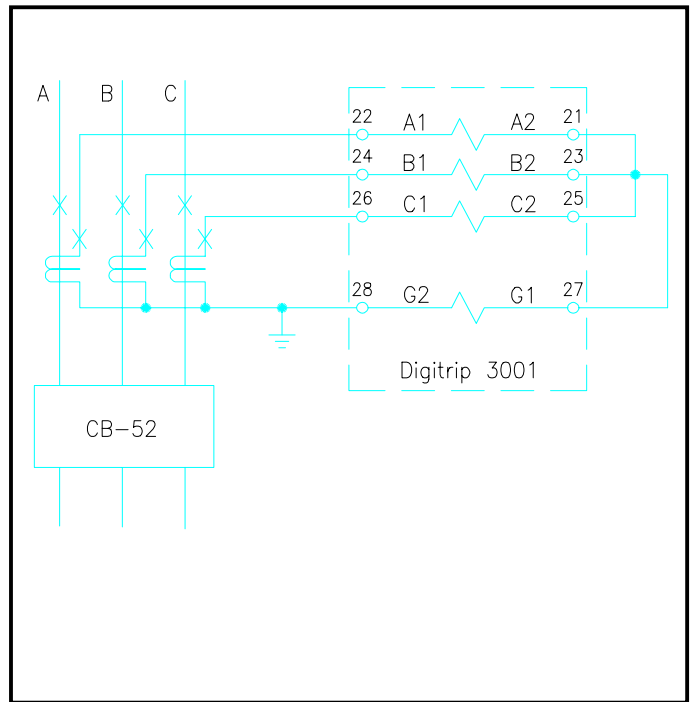


FIGURE 7. DT3001 TYPICAL RESIDUAL GROUND CONNECTION

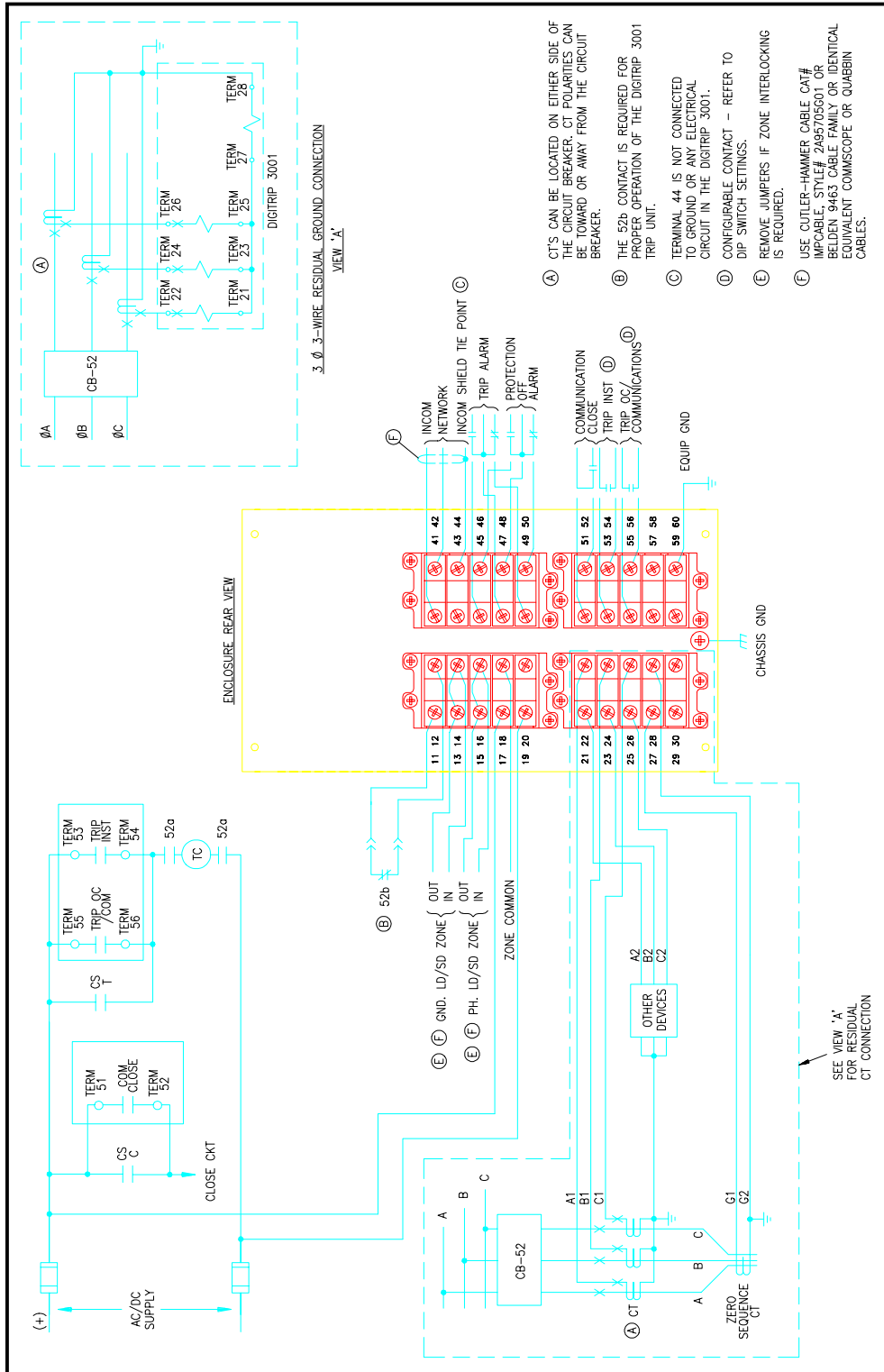


FIGURE 8. DT3001 TYPICAL WIRING DIAGRAM

5.0 APPLICATION CONSIDERATIONS

NOTICE

The following material replaces Figures 4-1 and 4-2 on pages 32 and 33 of I.B. 17555.

Zone selective interlocking is available on the Digitrip 3000 Protective Relays for the inverse time and short time functions on the phase and ground elements. Refer to Figure 9 for a typical phase zone selection interlocking wiring diagram or Figure 10 for a typical ground zone interlocking wiring diagram. **The terminal numbering is different from that of the standard DT3000 Protective Relay.**

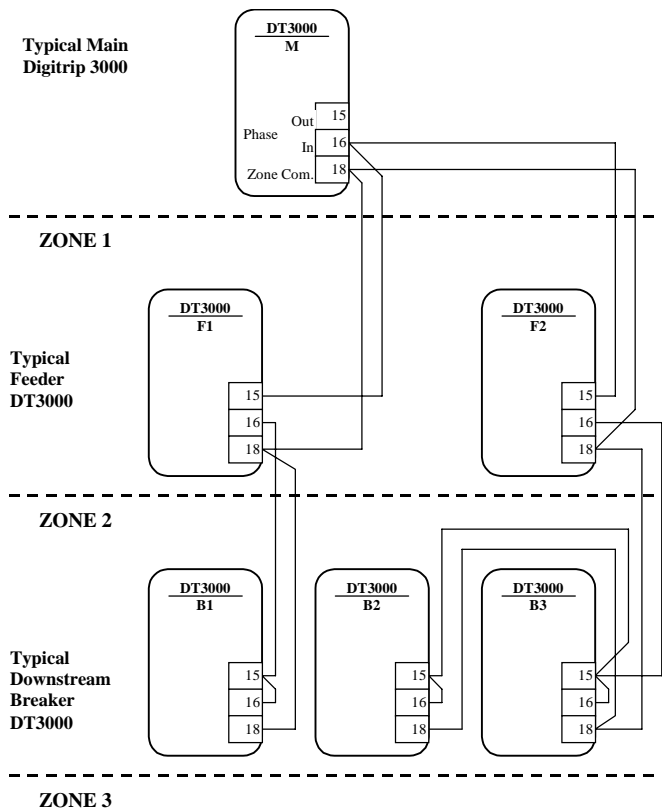


FIGURE 9. TYPICAL PHASE ZONE SELECTIVE INTERLOCKING CONNECTION DIAGRAM

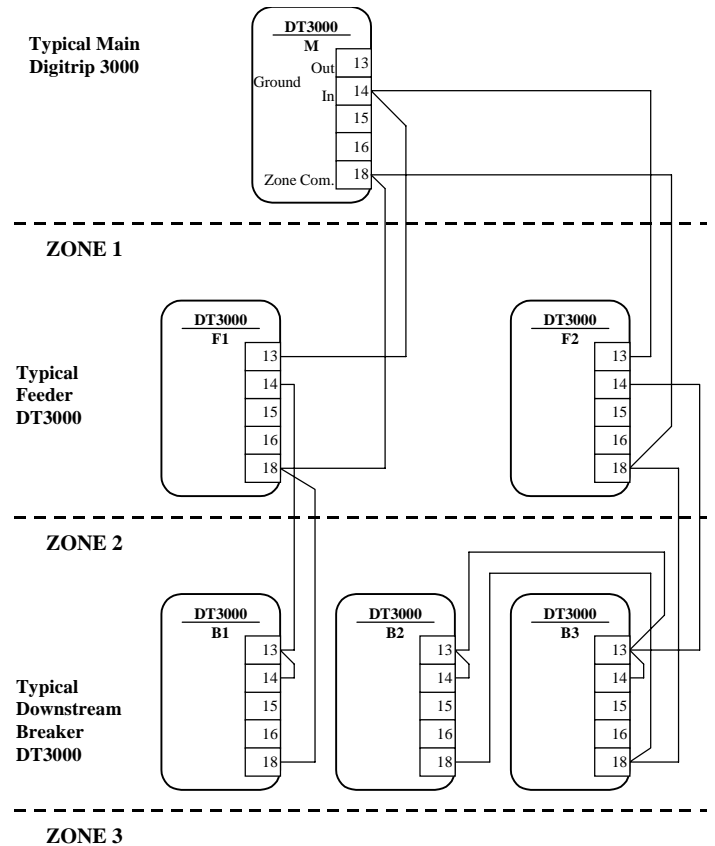


FIGURE 10. TYPICAL GROUND ZONE SELECTIVE INTERLOCKING CONNECTION DIAGRAM

NOTES:

1. Maximum distance between first and last phase or ground zone interconnection cable should be 250 feet. Route separate from power conductors.
2. Jumper on devices in last zone used to provide time delay per inverse time overcurrent or short delay time setting. If jumper is not used the Digitrip 3000 will initiate trip without time delay (nominally 0.1 seconds).
3. Up to 10 Digitrip devices may be wired in parallel to provide a single upstream restraint signal.
4. Only one zone common used for both phase and ground.
5. **DO NOT CONNECT ZONE COMMON TO EARTH GROUND.**

6.0 DRAWOUT OPERATION

6.1 Inserting the Relay:

Before the Digitrip 3000 is inserted into the Drawout Outer Case:

- Verify that all wiring is correct as shown in the wiring diagram.
- Set the DIP switches per Table 5.1 on page 36 of I.B. 17555.

When inserting the DT3000 Drawout into the Drawout Outer Case, use the guides to align the exterior of the device chassis with the interior of the outer case. Slide the unit into the Case using the guides, pressing firmly until all four latches located on the sides of the device are seated and latched into place. *Tabs on the DT3000 Drawout Inner Chassis will prevent the inner chassis from being inserted upside down or being inserted into an outer case of another IQ product.*



CAUTION

THE DT3000 INNER CHASSIS MUST BE FULLY INSERTED AND FULLY LATCHED IN TO ITS DRAWOUT OUTER CASE FOR PROPER OPERATION OF THE DEVICE.

When the unit is seated properly, the quick release buttons at the top and bottom of the unit will return to their non-compressed position. The device can now be secured in the outer case by inserting a utility locking ring in the provided slot.

6.2 Removing the Relay:



WARNING

REMOVAL OF THE DIGITRIP 3000 INNER CHASSIS FROM THE DRAWOUT OUTER CASE EXPOSES LIVE PARTS, WHERE THE HAZARD OF A FATAL ELECTRIC SHOCK IS PRESENT. ALWAYS DISCONNECT ANY CONTROL OR SOURCE POWER BEFORE TOUCHING ANYTHING ON THE INTERNAL OR EXTERNAL PARTS OF THE DRAWOUT OUTER CASE.

When removing the Inner Chassis from the Drawout Outer Case, first remove any locking ring that has been installed. Press the top and bottom quick release buttons simultaneously, and pull the relay out by its front panel.

7.0 WARRANTY AND LIABILITY INFORMATION

NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE OF MERCHANTABILITY, OR WARRANTIES ARISING FROM COURSE OF DEALING OR USAGE OF TRADE ARE MADE REGARDING THE INFORMATION, RECOMMENDATIONS, AND DESCRIPTIONS CONTAINED HEREIN. In no event will Cutler-Hammer be responsible to the purchaser or user in contract, in tort (including negligence), strict liability, otherwise for any special, indirect, incidental, or consequential damage or loss whatsoever, including but not limited to damage or loss of use of equipment, plant or power system, cost of capital, loss of power, additional expenses in the use of existing power facilities, or claims against the purchaser or user by its customers resulting from the use of the information and descriptions contained herein.

8.0 TECHNICAL ASSISTANCE

For additional information, technical assistance, or referral to a local authorized distributor, contact Power Management Applications Support at **1-800-809-2772**.

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