Installation and Operation Instructions for Series NRX PT Module

Instructions apply to:

- Serie NRX, Type NF Frame
  ANSI, UL1066, UL489 / IEC, IZMX16, IZM91

- Serie NRX, Type RF Frame
  IEC, IZMX40

⚠️ WARNING

(1) ONLY QUALIFIED ELECTRICAL PERSONNEL SHOULD BE PERMITTED TO WORK ON THE EQUIPMENT.
(2) ALWAYS DE-ENERGIZE PRIMARY AND SECONDARY CIRCUITS IF A CIRCUIT BREAKER CANNOT BE REMOVED TO A SAFE WORK LOCATION.
(3) DRAWOUT CIRCUIT BREAKERS SHOULD BE LEVERED (RACKED) OUT TO THE DISCONNECT POSITION.
(4) ALL CIRCUIT BREAKERS SHOULD BE SWITCHED TO THE OFF POSITION AND MECHANISM SPRINGS DISCHARGED.

FAILURE TO FOLLOW THESE STEPS FOR ALL PROCEDURES DESCRIBED IN THIS INSTRUCTION LEAFLET COULD RESULT IN DEATH, BODILY INJURY, OR PROPERTY DAMAGE.

⚠️ WARNING

THE INSTRUCTIONS CONTAINED IN THIS IL AND ON PRODUCT LABELS HAVE TO BE FOLLOWED. OBSERVE THE FIVE SAFETY RULES:
- DISCONNECTING
- ENSURE THAT DEVICES CANNOT BE ACCIDENTALLY RESTARTED
- VERIFY ISOLATION FROM THE SUPPLY
- EARTHING AND SHORT-CIRCUITING
- COVERING OR PROVIDING BARRIERS TO ADJACENT LIVE PARTS

DISCONNECT THE EQUIPMENT FROM THE SUPPLY. USE ONLY AUTHORIZED SPARE PARTS IN THE REPAIR OF THE EQUIPMENT. THE SPECIFIED MAINTENANCE INTERVALS AS WELL AS THE INSTRUCTIONS FOR REPAIR AND EXCHANGE MUST BE STRICTLY ADHERED TO PREVENT INJURY TO PERSONNEL AND DAMAGE TO THE SWITCHBOARD.
Section 1. Description

The Potential Transformer (PT) module is a device used to supply a three phase voltage signal to Series NRX NF-Frame or RF-Frame circuit breakers equipped with Digitrip 1150 programmable trip units.

Specifications:
The output of the module is directly proportional to the input voltage according to the ratio given below (Table 1).

<table>
<thead>
<tr>
<th>INPUT</th>
<th>OUTPUT (NORMAL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>208V LL</td>
<td>1.95V L-N</td>
</tr>
<tr>
<td>240V LL</td>
<td>2.25V L-N</td>
</tr>
<tr>
<td>415V LL</td>
<td>3.89V L-N</td>
</tr>
<tr>
<td>440V LL</td>
<td>4.13V L-N</td>
</tr>
<tr>
<td>480V LL</td>
<td>4.50V L-N</td>
</tr>
<tr>
<td>600V LL</td>
<td>5.63V L-N</td>
</tr>
<tr>
<td>690V LL</td>
<td>6.47V L-N</td>
</tr>
</tbody>
</table>

Table 1. Voltage Ratios

- Maximum rated input voltage: 690 volts line to line
- Burden: 1 VA per phase
- Output voltage accuracy: +/-2% of normal

Figure 1. Dimensions of PT Module

Section 2. Installation

The Series NRX PT Module is to be mounted on a standard 35mm EN DIN rail and connects to the breaker as shown. Figure 2 shows a 3-pole, 3-wire configuration. Figures 3 and 4 show connections for 3-pole breaker and a 4-pole breaker with an external neutral sensor.

Figure 2. Series NRX Breakers - 3-Pole, 3-Wire
The PT module secondary may connect up to 16 Series NRX breakers using 18 AWG wire for each phase in a daisy-chain configuration and may extend to the furthest breaker in the chain, to a maximum of 250 feet (Figure 5).

**Figure 3. Series NRX Breakers - 3-Pole, 4-Wire**

**Figure 4. Series NRX Breakers - 4-Pole, 4-Wire**

**Section 3. Operation**

Switches are provided to disconnect each phase from the mains (Figure 6). All three switches must be in the off ("O") position before performing dielectric testing of a system where the PT module is connected. When the test is complete, all switches must be in the on ("I") position for the module to function as intended.

**CAUTION**

DIELECTRIC TESTING OF A SYSTEM CONTAINING A PT MODULE WITH THE PHASE CONNECTED WILL DAMAGE THE PT MODULE. DISCONNECT ALL OF THE PHASES FROM THE MAINS (BY SELECTING "O") BEFORE TESTING. AFTER TESTING, RETURN ALL PHASE SWITCHES TO THE "I" POSITION.

**Figure 5. Daisy chain breaker connection of up to 16 breakers**

**Figure 6. Line Phase Switches**
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