

CAUTION: TURN OFF POWER TO THE ELECTRIC SERVICE OR PANEL AND TO EQUIPMENT TO BE PROTECTED BEFORE INSTALLING ANY SURGE PROTECTION DEVICE. ALL WIRING SHOULD COMPLY WITH THE NATIONAL ELECTRIC CODE AND LOCAL ELECTRIC CODES.

INSTALLATION

1. TEST and verify system voltage to assure proper selection of the Surge Protection Device (SPD) in accordance with the wiring diagrams shown on page 2. Turn off the electric power to the panel.
2. CONFIRM that the Surge Protection Device is the proper voltage configuration for this installation. Refer to the installation diagrams for additional information.
3. SELECT a location to mount the UG40 cabinet. Mount as close as possible to the electric panel or individual piece of equipment to be protected. The UG40 should be mounted on a flat vertical surface that can support the weight of the device. Consideration should be given to the available knockout positions in the panel when deciding where to locate the UG40. All wire leads should be kept as short as possible to insure optimum operation.
4. The internal disconnect switch and associated 100 KAIC fuses are the prime current protection devices for the UG40; therefore, lead wires may be connected to either a bus bar or a multi-pole breaker. If connected to a breaker, use a 30 to 100 amp breaker with the appropriate number of poles. Panel breakers will not trip from surge activity due to their inherent slow response.

NOTE: For installations connecting directly to bus bar, the UG40 must be less than ten feet (10') wire distance from the bus bar to qualify the internal disconnect switch and fuses as the primary overcurrent device in accordance with the NEC 10 foot rule 240-21(b).

MOUNTING

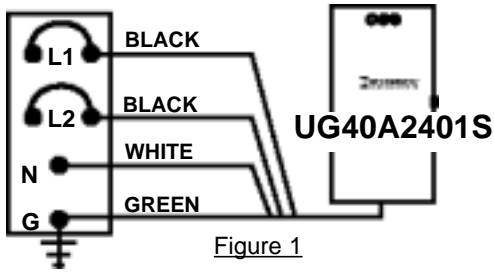
1. Attach the upper and lower mounting rails to the UG40 Cabinet using the screws provided.
2. Pre-drill holes in the surface on which the UG40 will be mounted. Use at least four (4) appropriate size mounting screws or bolts.
3. Select and remove the proper size knockout from the UG40 cabinet. Install conduit, sealtite or other proper wire protection between the panel and the UG40.

WIRING

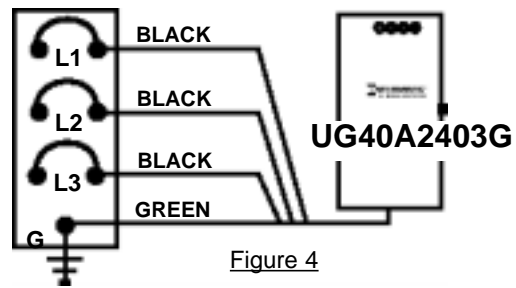
1. For installations using less than two feet of wire for each lead, use at least 8 AWG stranded wire. For installations requiring up to four feet of wire for each lead, use a minimum wire size of 6 AWG. Use 4 AWG minimum for over 6 foot lead length. Refer to section 3 under INSTALLATION if lead length is over 6 foot.
2. Measure and cut all leads to proper length, keeping in mind that leads should be as short and straight as possible.
3. Tape all wires together to minimize inductive coupling.
4. Route the wire lead bundle through the conduit to the panel.
5. Connect the GROUND (green) lead to the ground bus in both the UG40 and the electric panel.
6. If used, connect the NEUTRAL (white) to the neutral fuse terminal in the UG40 and the neutral bus in the electric panel. If installing at the main distribution panel, the neutral and ground leads could terminate at a common bus bar in the panel.
7. Connect the phase leads to the disconnect switch in the UG40. Then connect them to the appropriate breaker or bus connections in the electric panel. NOTE: For HIGH LEG DELTA, make certain that the high leg is connected to the center switch position in the UG40.(Refer to Figure 3) For GROUNDED PHASE DELTA, make certain that the grounded phase is connected to the center switch position in the UG40.(Refer to Figure 4)
8. Connect wires to the alarm relay terminals. Alarm wires should be routed through a knockout that is separate from the power leads. (Refer to alarm wiring drawings)
9. CHECK all connections for tightness.
10. REPLACE Disconnect Switch Cover.
11. REPLACE Dead-front panel.

WIRING DIAGRAMS

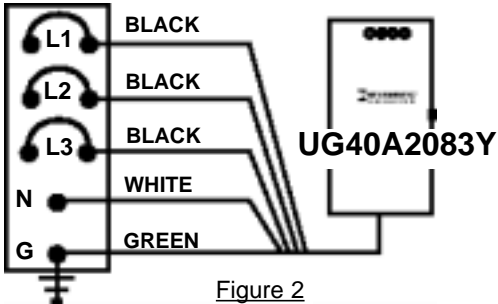
120/240 VAC Single Phase



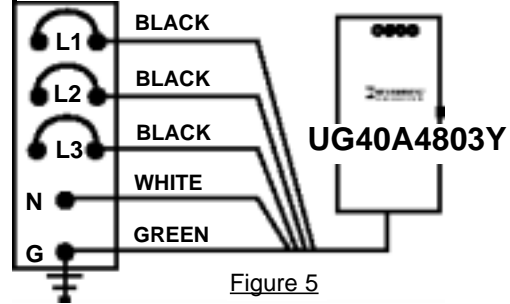
240 VAC Three Phase Delta 240 VAC Ground Phase Delta



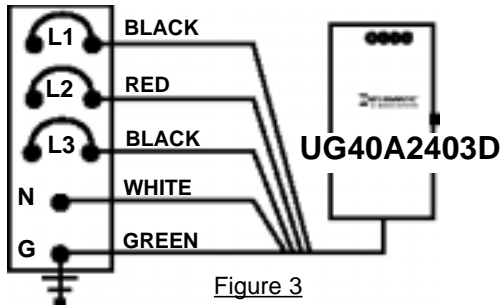
120/208 VAC Three Phase Wye



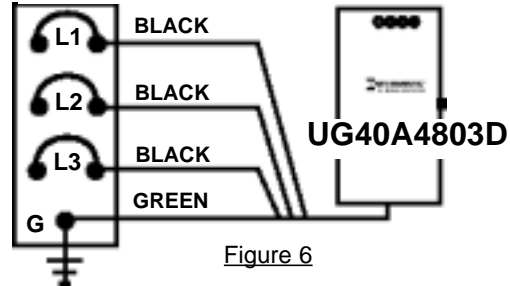
277/480 VAC Three Phase Wye



120/240 VAC Three Phase High Leg Delta



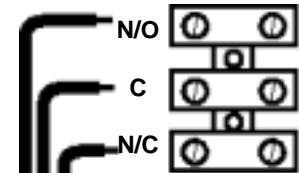
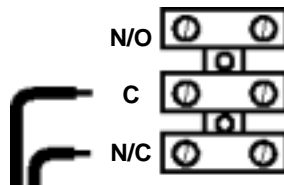
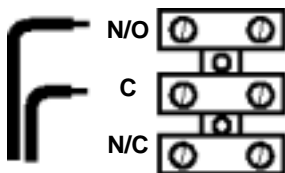
480 VAC Three Phase Delta



NOTE: For convenience sake, these wiring diagrams show installation on the load side of a breaker. UG40 systems may be installed without an external breaker. Refer to installation instruction number 4 on page 1.

ALARM RELAY OUTPUT CONNECTIONS

- Two Wire Closed Loop: Connect feed wire to the Common (C) terminal and return wire to the Normally Opened (N/O) terminal. During normal operation, the contact will be closed between C and N/O. The contact will open during an alarm condition. (Refer to Figure 7)
- Two Wire Opened Loop: Connect the feed wire to the Common (C) terminal and return wire to the Normally Closed (N/C) terminal. During normal operation, the contact will be opened between C and N/C. The contact will close during an alarm condition. (Refer to Figure 8)
- Three Wire Supervised Loop: Connect feed wire to the Common (C) terminal, one return wire to the Normally Opened (N/O) terminal and the second return wire to the Normally Closed (N/C) terminal. During normal operation, the contact will be closed between C and N/O and opened between C and N/C. An alarm condition will reverse the condition. (Refer to Figure 9)
- Consult the instructions for your specific monitoring system for additional information.



FINAL CHECKOUT PROCEDURE

1. CHECK each module for correct installation. They should sit flat against the back-plate with the locking clips firmly engaged in the T-slots on each side of the module.
2. Make sure that the Disconnect Switch cover and the Dead-front panel have been replaced and properly secured.
3. Turn the UG40 disconnect switch to the OFF position.
4. Place alarm mode selector switch in the NORMAL position.
5. RESTORE electric power to the UG40 circuit or equipment circuit.
6. Turn UG40 disconnect switch to ON position.
7. Check all indicator lights for proper illumination.
8. Check output continuity for the alarm relay. (a) Common to Normally Open = 0 ohms; (b) Common to Normally Closed = greater than 10 M ohms.
9. Audible Alarm should be silent.
10. Place mode selector switch in SILENCE position: Audible alarm should sound. Return mode selector switch to normal position.
11. Place and hold mode selector switch in TEST position. Audible alarm should sound and the alarm relay outputs should reverse state. Release the switch and allow it to return to the NORMAL position.

OPERATION

1. The MODE SELECTION SWITCH should be in the NORMAL position.
2. The cabinet door should be closed and secured to prevent access by unauthorized personnel.
3. The STATUS INDICATOR lights should be ON and visible through the viewing ports when the door is closed.
4. The ALARM STATUS INDICATOR should be OFF.
5. An operator can check system function by performing steps 9 and 10 of the FINAL CHECKOUT PROCEDURE as required by local codes or procedures.

ALARM CONDITIONS

Alarm sounding and relay in "alarm state"

1. The audible alarm will sound and the alarm relay output will reverse state under the following conditions:
 - loss of one or more protection circuits
 - removal of a protection module
2. Move the mode selection switch to the SILENCE position. The local audible alarm will silence but the alarm relay output will remain in the alarm condition until the UG40 is returned to normal operating condition.
3. Determine the cause of the alarm. One or more of the module indicator lights may be off. Turn the UG40 disconnect switch to the OFF position and check the modules for proper installation. Each module should sit flat against the back-plate and the locking clips should be firmly engaged in the T-slots on each side of the module.
4. Turn the UG40 disconnect switch to the ON position. If the alarm condition does not clear, turn the UG40 disconnect switch to the OFF position.
5. Remove and replace the module(s) whose indicators were not lit.
6. Turn the UG40 disconnect switch to the ON position and repeat step 3 if normal operation is not restored.

Alarm not sounding but relay in "alarm state"

1. The alarm relay output will change state but the audible alarm will not sound under the following conditions:
 - loss of power to the UG40
 - UG40 disconnect switch turned to the OFF position
 - one or more UG40 fuses blown.
 - fault in the remote monitor system
2. Check for module indicator light illumination. If all of the module lights are on, then consult directions for trouble shooting the remote monitoring system.

TECHNICAL ASSISTANCE

For application or technical assistance contact Intermatic at **1-800-391-4555** or on the web at **www.intermatic.com**.

TEN YEAR LIMITED PRODUCT WARRANTY

For

INTERMATIC® MODULAR SURGE PROTECTION DEVICES

(1) What Is Covered By This Limited Warranty

Repair or Replacement of Product

Intermatic Incorporated ("Intermatic") warrants to the original purchaser only, the Intermatic model UG28A2401S, UG28A2083Y, UG28A2403D, UG28A4803Y, UG28A4803D or UG30A2401S, UG30A2083Y, UG30A2403D, UG30A2403G, UG30A4803Y, UG30A4803D, UG40A2401S, UG40A2083Y, UG40A2403D, UG40A2403G, UG40A4803Y, UG40A4803D Surge Protection Devices (each a "Product") shall be free from defects in material or workmanship for a period of ten years (120 months) from date of purchase or 126 months from date of manufacture. If the purchaser discovers a defect in material or workmanship, the purchaser must promptly submit a warranty claim. Upon a determination by Intermatic that the Product is defective, Intermatic, at its sole option, shall correct any defect in material or workmanship by either repairing or replacing the Defective Product. Any repair, including both parts and labor, shall be at Intermatic's expense. The foregoing remedies are the purchaser's exclusive remedies for a breach of warranty.

For purposes of this Limited Warranty, a Power Transient shall mean over-voltage resulting from momentary voltage spikes or surges on an AC power line of magnitude that the Product, according to its specifications, is designed to stop before such spikes or surges affect downstream equipment.

The Product must be installed in the appropriate application in complete accordance with the installation instructions. All building wiring and other connections to the Product must conform to all applicable national, state and local electrical codes; the Product must not be opened, modified, exposed to extreme heat or cold, submerged or subjected to abnormal use or service. All products must be used in accordance with the instructions provided with the Product and the purchaser shall be solely responsible for selecting a Product model with specifications appropriate for the equipment to be protected. Intermatic shall determine, in its sole discretion, whether any Product returned by a purchaser has been used in accordance with its instructions, is an appropriate model for the purchaser's use thereof, and whether the Product is defective.

(2) What Is Not Covered By This Warranty

Intermatic does not warrant (a) defects in the Product or damage to any equipment caused by the failure to properly install the Product, (b) damage caused by use of the Product for purposes other than those for which it was designed, (c) damage caused by disaster such as fire, flood and wind, (d) damage caused by unauthorized attachments or modification of the Product, (e) damage to the Product occurring during shipment, or (f) damage caused by electrical disturbances exceeding published product specifications, (g) damage to the Product caused by any other abuse or misuse by the purchaser.

(3) Disclaimer of Warranty

THE FOREGOING WARRANTIES ARE IN LIEU OF ALL OTHER EXPRESSED WARRANTIES. TO THE EXTENT ALLOWED BY LAW, ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE LIMITED IN DURATION TO THE DURATION OF THIS LIMITED WARRANTY.

(4) Limitation of Remedies

IN NO CASE SHALL INTERMATIC BE LIABLE FOR ANY SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES BASED UPON BREACH OF WARRANTY, BREACH OF CONTRACT, NEGLIGENCE, STRICT TORT, OR ANY OTHER LEGAL THEORY. SUCH EXCLUDED DAMAGES INCLUDE, BUT ARE NOT LIMITED TO, DAMAGE TO SOFTWARE, LOSS OF DATA, LOSS OF PROFITS, LOSS OF SAVINGS OR REVENUE, LOSS OF USE OF THE PRODUCT OR ANY ASSOCIATED EQUIPMENT, COST OF CAPITAL, COST OF ANY SUBSTITUTE EQUIPMENT, FACILITIES OR SERVICES, DOWNTIME, THE CLAIMS OF THIRD PARTIES INCLUDING CUSTOMERS, DAMAGE TO PROPERTY AND PERSONAL INJURY. SOME STATES DO NOT ALLOW LIMITS ON WARRANTIES OR ON REMEDIES FOR BREACH IN CERTAIN TRANSACTIONS. IN SUCH STATES, THE LIMITS IN THIS PARAGRAPH AND IN PARAGRAPH (3) MAY NOT APPLY.

(5) Time Limit for Bringing Suit

No action arising out of any claimed breach of warranty may be brought more than one year after the cause of action has occurred.

(6) No Other Warranties

Unless modified in writing signed by both parties, this agreement is understood to be the complete and exclusive agreement between the parties, superseding all prior agreements, oral or written, and all other communications between the parties relating to the subject matter of this agreement. No employee of Intermatic or any other party is authorized to make any warranty in addition to those made in this agreement.

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