MACROMATIC

INSTALLATION INSTRUCTIONS
PJPU-FA8X SERIES
THREE-PHASE MONITOR RELAYS

January 2017 **901-0000-321**

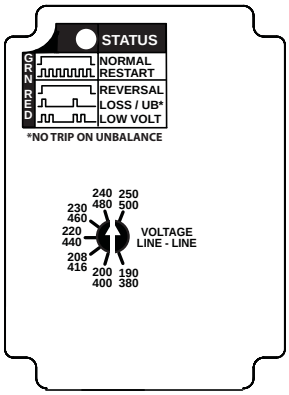
DANGER!

Potentially hazardous voltages are present. Electrical shock can cause death or serious injury.
Installation should be done by qualified personnel following all National, State & Local Codes.

BE SURE TO REMOVE ALL POWER SUPPLYING THIS EQUIPMENT BEFORE CONNECTING OR DISCONNECTING WIRING.
READ INSTRUCTIONS BEFORE INSTALLING OR OPERATING THIS DEVICE. KEEP FOR FUTURE REFERENCE.

Installation & Setup

1. Mount the appropriate 8 pin octal socket in a suitable enclosure. **NOTE: a 600V-rated socket such as the Macromatic 70169-D or Custom Connector OT08-PC must be used with these products on applications greater than 300V. When making connections to the socket, make sure to match the terminal numbers on the socket to the ones shown on the wiring diagram (the wiring diagram on the relay is the view looking towards the bottom of the relay vs. the top of the socket).** Use one or two #12-22 solid or stranded copper or copper-clad aluminum conductors with terminals on the above Macromatic or Custom Connector sockets—a terminal tightening torque of 12 in-lbs should be used.
2. Set the VOLTAGE LINE-LINE knob to the actual three-phase line-to-line voltage. The Voltage Line-Line knob on the PJPU-FA8X has two ranges (see right): 190-250V on the low voltage scale and 380-500V on the high voltage scale. The unit auto senses the three-phase line-line voltage when applied and automatically selects one of the two ranges.
3. Connect the three-phase line-line voltage to terminals 3, 4 and 5 (see Wiring Diagram on the side of the relay or on the back of this sheet). A connection to the neutral or ground is not required in Wye systems. DO NOT connect output wires to terminals 1, 2, 6, 7 and 8 until later (Step 7).
4. Plug the three-phase monitor relay into the socket, making sure the key on the center post is in the proper orientation before insertion. **If the relay must be removed from the socket, do NOT rock the relay back and forth excessively—the center post could be damaged.**
5. Apply three-phase voltage. The LED indicator should initially flash GREEN while the relay goes through its start-up delay and then illuminate solid GREEN. If the LED turns RED solid or flashing, a fault condition exists and must be corrected. **Use the LED Status Table at right or the Troubleshooting Guide on back to determine exact cause of fault.** Make required corrections.
6. REMOVE THREE-PHASE VOLTAGE.
7. Connect the output terminal wires to terminals 1, 2, 6, 7 and 8 (see Wiring Diagram on the side of the relay or on back).
8. When all connections are made, apply three-phase line-line voltage. The LED indicator should initially flash GREEN while the relay goes through its restart delay and then illuminate solid GREEN when all voltage conditions are correct.
9. If the LED does not illuminate solid GREEN during regular operation, a fault condition has occurred. REMOVE THREE-PHASE VOLTAGE, and check for proper phase rotation, presence of all three phases, and low voltage conditions. **Use the LED Status Table (see right) or the Troubleshooting Guide (see next page) to determine exact cause of fault.** Correct if necessary. **NOTE: The PJPU-FA8X will provide an indication of an unbalance condition, but the relay will not trip (de-energize).** Re-energization is automatic upon correction of the fault condition.



PJPU-FA8X
190-500V

LED STATUS		STATUS
GREEN	⎍	NORMAL (RELAY ON)
	⎍⎍⎍	RESTART (DELAY)
RED	⎍	REVERSAL
	⎍ ⎍	LOSS/UB* (UNBALANCE)
	⎍⎍	LOW VOLT (UNDERVOLTAGE)

* NO TRIP ON UNBALANCE

(Continued on Back)

Warranty

All catalog-listed PJPU-FA8X Series products manufactured by Macromatic are warranted to be free from defects in workmanship or material under normal service and use for a period of five (5) years from date of manufacture.

W134 N5345 Campbell Drive ◆ Menomonee Falls, WI 53051
800-238-7474 ◆ Fax 262-781-4433 ◆ www.macromatic.com ◆ tech-support@macromatic.com

Troubleshooting

If the unit fails to operate properly, check that all connections are correct per the appropriate wiring diagram on the product. Check Troubleshooting table below. If problems continue, contact Macromatic at 800-238-7474 or e-mail tech-support@macromatic.com for assistance.

Troubleshooting Guide

LED STATUS	SITUATION	SOLUTION
GREEN 	Motor is not starting	The relay is going through its POWER-UP/RESTART delay and will energize the output contacts when completed.
GREEN 	Motor is not starting	The relay is in the run mode and working properly. Either another control device is preventing the motor from starting or all wiring should be checked.
NO INDICATION	Relay is not energized and/or motor is not running	Verify L1, L2 and L3 (A, B & C) are connected to terminals 3, 4 and 5. Measure the three line-to-line voltages. If any of the voltages are below the specified minimum operation voltage, the relay does not have enough power to operate. Check to see why operating voltage is low and correct.
RED 	On power-up or with motor running	The relay is sensing a phase reversal or phase out-of-sequence (rotation) condition. REMOVE THREE-PHASE VOLTAGE and switch any two of the three line connections to the relay to ensure the phase sequence (rotation) is correct.
RED 	Either a phase loss or voltage unbalance condition ●	If the LED is flashing per the diagram at left and the relay has tripped (de-energized), the unit has sensed a phase loss condition. Make sure all three phases are present. Check for a blown fuse or loose or broken wire. If the LED is flashing per the diagram at left, but the relay has not tripped (de-energized), the unit has sensed a voltage unbalance condition. Measure all three line-line voltages and calculate the percent unbalance—compare to the fixed UNBALANCE value of 6%. Determine why the unbalanced condition exists and correct it. **NOTE:** The PJPU-FA8X will not trip on an unbalance condition, but will provide an indication.
RED 	Low voltage (Undervoltage)	Measure the three line-to-line voltages. If the average of these three voltages is below the UNDERVOLTAGE TRIP fixed 90% setting, the relay has tripped due to a low voltage

● NOTE: The PJPU-FA8X will provide an indication of an unbalance condition, but the relay will not trip (de-energize).

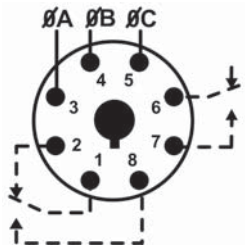


Diagram 175

Typical Connections
(For Load Side connection, contact Macromatic)