



Instructions for Type WPONI Product Operated Network Interface Module Used with ADVANTAGE Starters

I.L. 17408B

Model A

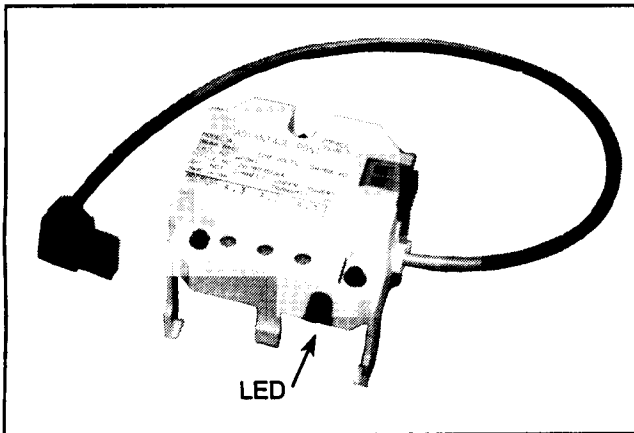


Fig. 1 Advantage WPONI Module

DEFINITIONS

IMPACC – The communications system, which includes CONI cards, WPONI modules, Advantage motor controllers, twisted pairs, PONI cards, IQ products, etc.

INCOM – The network that is part of the IMPACC system.

ADVANTAGE motor controllers – Advantage Contactors, Starters and Overload Relays.

THE WPONI MODULE

A Type W Product Operated Network Interface (WPONI) Module is designed to communicate information from an ADVANTAGE motor controller to a computer control station. The WPONI module provides remote control and permits the microprocessor in the solid-state current sensing unit of a motor starter to transmit data regarding the starter via an INCOM network that is part of an Integrated Monitoring, Protection and Control Communications (IMPACC) system. A typical network consists of twisted pairs, daisy-chained as shown in Figure 2 to a remote personal-size computer. The WPONI Module is powered by the product it is attached to and needs no other source of power.

Each WPONI Module has three hexadecimal (digits 0 through 9, plus A through F) selector switches that must be used to assign a unique address to each module in the INCOM network. A light emitting diode (LED) located below the three address switches lights while the WPONI Module is transmitting information into the IMPACC network. See Figure 1. The LED does not light while the WPONI card is receiving instructions.

WPONI CAPABILITIES

A WPONI will respond to commands to:

- Turn a starter or contactor ON or OFF.
- Cause an overload relay to TRIP, thereby requiring a RESET to resume operation.
- RESET the starter or overload relay after it has tripped.

A WPONI will transmit the data, identified by the WPONI address, to a central control computer equipped with a CONI card to display the following:

- Status of the device to which the WPONI is connected, i.e., ON, OFF or TRIPPED.
- Current in each motor branch circuit conductor (line current).
- Percent of phase unbalance, where percent unbalance is the difference between the maximum line current and the minimum line current divided by the overload trip current, expressed as a percentage.
- Motor running overload.
- Control voltage.
- Overload protection settings.
- The cause of a TRIPPED condition, i.e., overload, ground-fault or extreme phase unbalance (phase loss).
- The time the starter or overload relay tripped.

TRANSMITTING DEVICES

A WPONI Module can be used to transmit data from and receive instructions for ADVANTAGE contactors, starters and overload relays.

The WPONI Modules may be intermixed with PONI cards and other transmitters compatible with an IMPACC network operating at 9600 baud. See Figure 2.

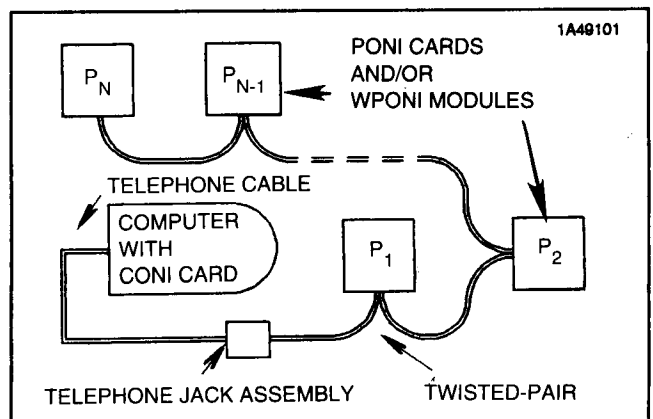


Fig. 2 Network Interwiring

INSTALLATION

This industrial type control is designed to be installed, operated, and maintained by adequately trained workmen. These instructions do not cover all details, variations, or combinations of the equipment, its storage, delivery, installation, check-out, safe operation, or maintenance. Care must be exercised to comply with local, state, and national regulations, as well as safety practices, for this class of equipment.

CAUTION: Remove power from (de-energize) the device to which the WPONI is being attached or wired, otherwise damage will result.

Snap the WPONI onto the device it is to be associated with. Insert the 5-hole plug onto the first five pins in the device connector receptacle. Expect the shock-mounted printed circuit board inside the device to give under the pressure of insertion. Support the cable so that it does not touch power wiring.

The terminal supplied is suitable for use with stranded copper wire from AWG 24 to AWG 12, single conductor. Tighten the attaching screws to 7 lb.-in. Route the cable away from power conductors, such that it cannot come in contact with parts that may exceed 80° C total temperature or may be at a potential exceeding 150 V.

Use twisted pair wire (telephone or instrumentation wire) to connect each WPONI to the INCOM network, daisy-chain style. Attach the twisted pairs to the two-pole plug located at the side of the WPONI inserted into the receptacle. Polarity of the twisted pairs is not significant.

Where the terminating WPONI is installed more than 500 feet from the control station computer connect a 100 ohm, 1/2 watt, carbon composition resistor across its two-pole plug. Consult the factory for information regarding transmission line terminations if any WPONI or PONI card is installed more than 2500 feet from the controlling computer. Not more than 1000 units (WPONI's and PONI cards) should be used on any single INCOM network.

RECEIVING DEVICE

The control station for the IMPACC network must be an IBM personal computer or equivalent (compatible) with a Computer Operated Network Interface (CONI) card or a translator unit that will accept the INCOM network signals and convert them to RS 232 format for transmission to the controlling computer.

ADDRESSING

Each WPONI Module installed in any one network must have a unique address. The three hexadecimal selector switches offer 4096 different addresses (16x16x16), ranging from 000 to FFF. Records of

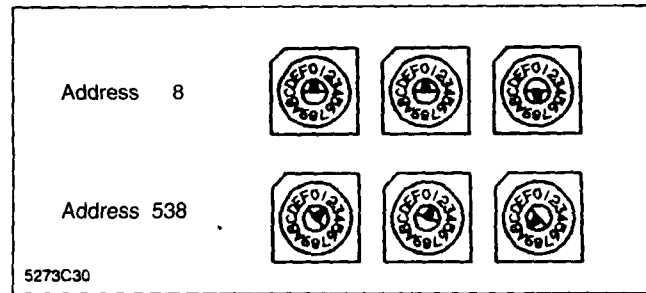


Fig. 3 Address Switch Examples

addresses may be maintained in terms of the hexadecimal number (recommended) or decimal equivalent. In a hexadecimal system, A=10, B=11, C=12, D=13, E=14 and F=15. Examples of switch settings are shown in Figure 3.

To convert from a hexadecimal number to a decimal number multiply the setting on the A3 switch by 256, and add to it the product of 16 times the setting on the center switch, and to that sum add the setting of the A1 switch. The hexadecimal number in the second example in Figure 3 is 21A, which translates to (2 x 256) + (1 x 16) + 10 = 538.

WATCHDOG TIMER

The WPONI includes an optional feature called a "watchdog timer" that permits a user to direct a shutdown whenever the communication tie between the central control computer and the WPONI is lost. Where selected, this feature will automatically TRIP the overload relay, or turn OFF the contactor or starter on which the WPONI is mounted, when five seconds have elapsed since the last command was received from the computer. To take advantage of this feature, select an address where the A1 selector switch is set to any one of the six letters, A through F. To disable this feature, select an address where the A1 selector switch is set to any one of the ten digits 0 through 9. There are 1536 different addresses available with the watchdog timer feature and 2560 different addresses available without the feature.

OPERATION CHECK

After the IMPACC system has been installed, check the operation of each WPONI and PONI card applying power to the parent unit and issuing an IMPACC command through the system to each WPONI and PONI card in turn, using the selected addresses. If the product responds by flashing the LED (OFF to receive, ON while transmitting, OFF to receive) all connections are correct. If the LED remains OFF replace the WPONI or PONI card.

