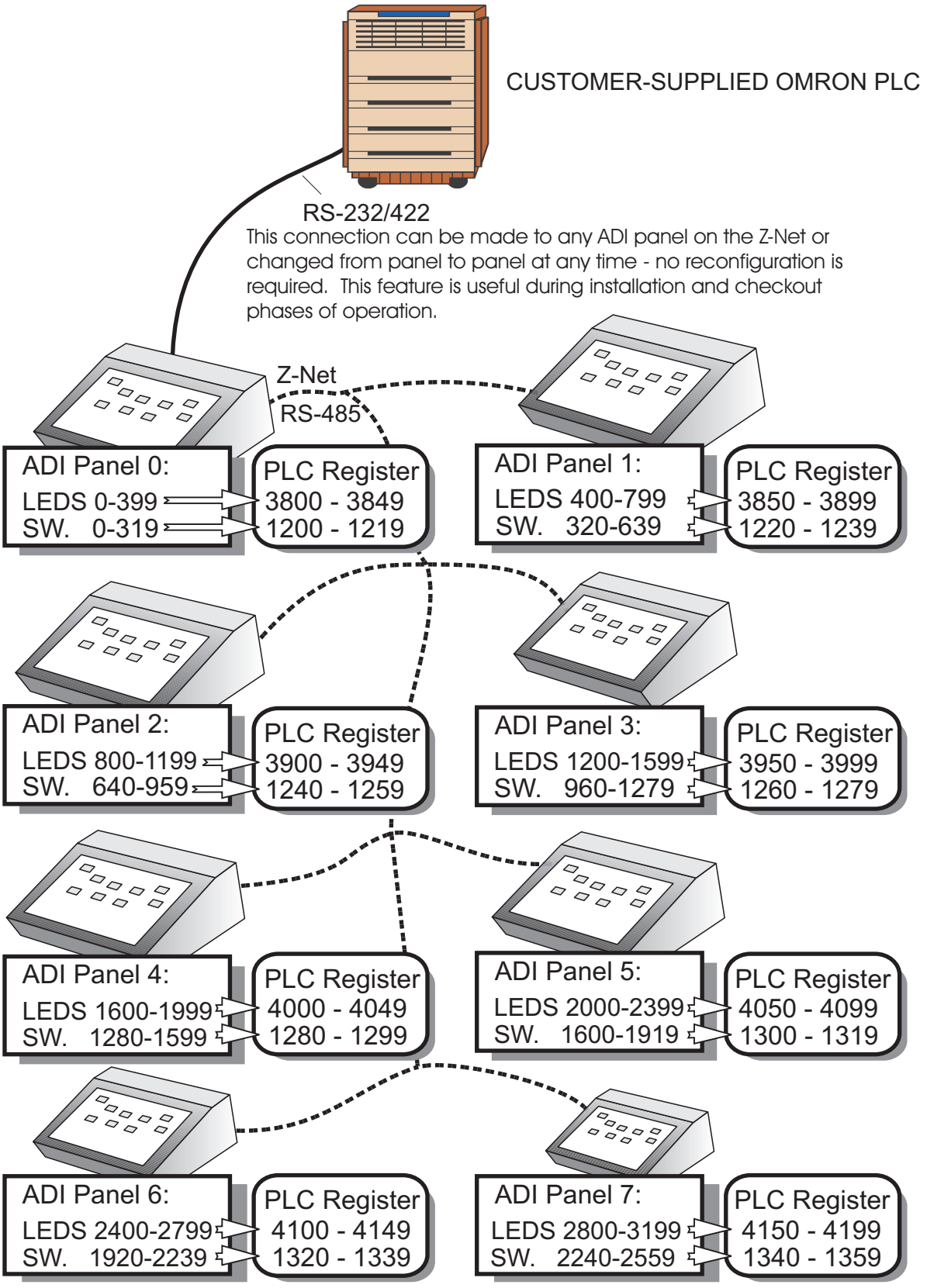
# ADI / Omron PLC Host Link Interface

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# COMMUNICATION FORMAT FOR ADI PANELS AND OMRON PLC:

Automation Displays control graphic panels can communicate using the Omron Host-Link protocol. You can connect ADI control graphics to the Omron serial ports on a CS1 PLC, for example. **The PLC must be in the MONITOR mode in order for the control panel to write to PLC memory locations**.

**REPORTING SWITCHES FROM THE ADI PANEL TO THE Omron PLC:**

The ADI panel writes to the "CIO" memory area of the PLC to report switch status. When a switch is activated, a single bit is set. Each PLC register holds sixteen bits, so sixteen switches are stored in each register. The ADI panel maintains a memory image of all of the switches, so it is able to fill in all sixteen bits of the register. The PLC should not modify these registers.

When a graphic panel switch is released, the ADI interface clears the associated register bit.
Each switch requires a unique register bit address. For example, a switch for door 101 might use "CIO" register 1200, bit 7.

**CONTROLLING ADI LEDS FROM THE Omron PLC:**

For controlling LEDs, bits are set in the "CIO" registers by the user. The ADI panel reads from the PLC "CIO" memory to get the LED status from the PLC. The PLC uses two bits to represent each LED. A single 16-bit PLC register controls eight LEDs. For each LED, the two bits are encoded as follows:

00 = LED off
01 = LED slow flash
10 = LED fast flash
11 = LED on

Each LED requires a unique register bit address. For example, the first LED might use register 3800, bits 0 & 1. In this text, bit 0 refers to the least significant bit, and bit 15 refers to the most significant bit.

It is not practical to use a single bit per LED because steady flash rates cannot be supported.

**SERIAL PORT PARAMETERS:**

The serial port parameters used for the Host Link protocol are 7 data bits, even parity, and 1 stop bit. Although the interface will operate at lower baud rates, you must **use 19200 or 38400** baud to get the best switch and LED response times.

**USING THE ADI Z-NET:**

The ADI Z-Net is a proprietary network protocol that can interconnect up to eight graphic panels so that they appear as one large panel to the PLC. Each switch and LED on the interconnected panels must have a unique address, even if the panels are visually and functionally identical.

The Z-Net wiring requires a single twisted-shielded pair. The panels are wired in daisy chain configuration, with total length up to 2000 feet. Communication uses the RS-485 standard, and runs at 76.8K baud.