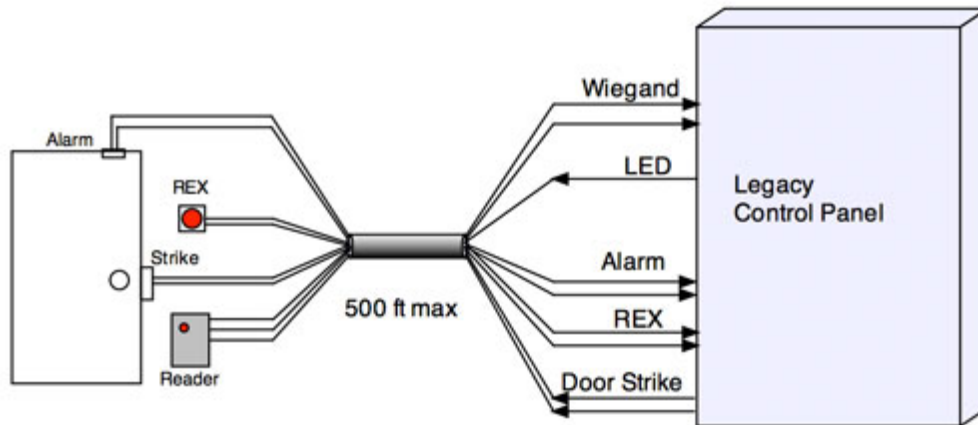# Open Supervised Device Protocol - OSDP

Application Note AN340606-2

Replacing legacy access control panels while maintaining operation with legacy card readers and other field devices.


When the need arises to replace or upgrade a card access or security control panel and if the new panel is OSDP compliant, it may be advantageous or necessary to convert the field devices to OSDP compatibility. This normally means replacing all readers, sensors, contacts, relays, and door control equipment to OSDP compliant versions as well. If this is not an immediate option due to time or cost constraints, the Cypress OSDP-1000 can provide an effective solution.
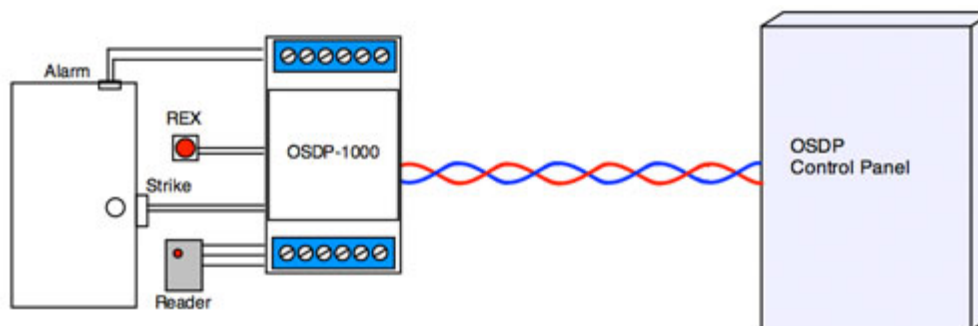

Credential Reader - Any Wiegand (Data 0 / Data 1), Strobed (Clock/Data), F/2F, or Serial interface can be handled by the OSDP-1000 when configured in "Reader Interface Mode". Since the format of the data is reported by the OSDP-1000 to the new control panel as an array of bits or characters, the panel's software must be configured to process the raw bit stream or character string. The reader type is configured by either on-board DIP switch or via OSDP configuration command from the panel.

Door Strike / Gate Operator - If the panel has provisions for multiple, dry-contact relay outputs and the panel's power supply is capable of driving the door or gate operator, then the 2 wires already in place to provide this function can continue to be used. Otherwise, since the OSDP-1000 is mounted in a secure location (not accessible from the un-secure side of the door or gate), it can be used to control the door or gate via OSDP command from control panel. If the control current is 1amp or less (at 12 to 24Vdc), the OSDP-1000's on-board,

form C relay can be used. The new control panel will simply command the OSDP-1000 to turn the relay on or off. If higher currents are required, an external relay can be added. The power for the door strike, mag lock, or gate operator can be supplied from the panel (centralized power) or a local power supply near the door or gate (distributed power).
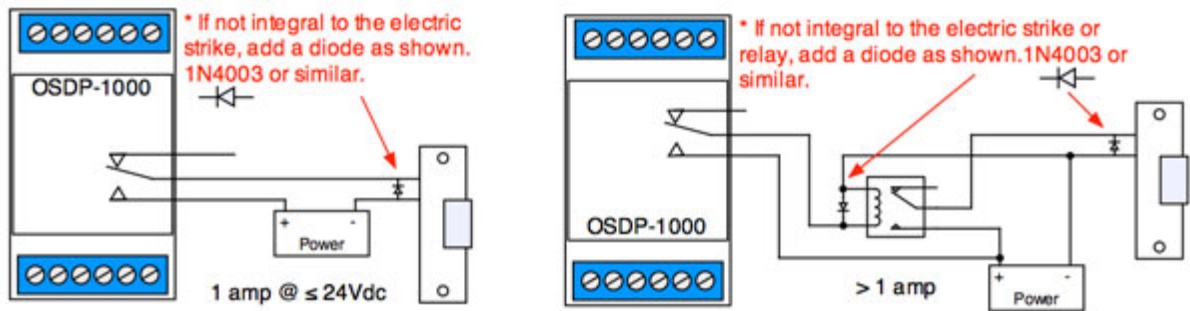
Sensors, Contacts, Switches, EOL Devices - Since the OSDP-1000 is mounted on the secure side of the door or gate, all remaining field wiring can be terminated at the OSDP-1000. The new control panel will request data via protocol command/response and use it to determine the status of the door position switch, request-to-exit button, or motion detector. The OSDP-1000 has 2 Supervised alarm inputs to accomodate end-of-line resistor configurations. These can also be used as digital inputs.
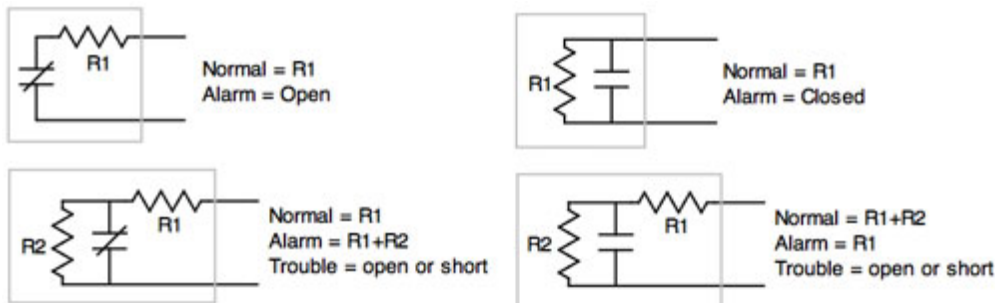
Power Considerations - The OSDP-1000 does not magically create power for itself, the reader, or door strike from the twisted pair communication wires (but we might be working on it). The legacy panel or other power supply provided enough power to operate the reader, sensors, and door or gate operator. If the new control panel does not provide this power, then a suitable power supply must be installed at the panel location or at the door or gate. The OSDP-1000 only requires about 50ma and accepts a wide range of voltage (7 to 24Vdc). The reader, door strike, and any powered end-of-line device typically dictate what voltage to use (12 or 24Vdc).

RS-485 Twisted Pair - After over 30 years of experience with twisted pair communication in the security space, we have found that any 2 conductors will work to some extent. A brand new 18AWG twisted shielded pair will maximize the distance and reliability and is highly recommended. But we have used old coax, 26AWG solid phone wires, THHN, and just about everything else and managed to get at least 500 feet out of it at 9600 bits per second. We understand the everyday installation challenges and have designed the OSDP-1000 to be as tolerant of real-world conditions as possible.

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