Intelligent Input-Output Modules

Overview
Edwards intelligent modules are engineered to deliver high-performance features, superb reliability, and unbeatable quality. From control of ancillary equipment, to enhanced signaling functionality, these products add flexibility and powerful options to Edwards Signaling intelligent systems.

Designed expressly for small buildings, Edwards Signaling modules are addressable devices that are uniquely identified on the system by means of familiar rotary switches. Once registered, they share data and update status information that determines how the system behaves and how connected devices interact with one another.

Unique to Edwards Signaling modules is ground fault detection so precise that it actually pinpoints the specific module where the wiring problem has occurred. This saves hours of troubleshooting and wire tracing. And only Edwards Signaling provides this important feature!

The Edwards Signaling family of intelligent modules also offers contractors and installers simple setup and installation, while delivering options that take full advantage of intelligent fire alarm processing. With a microprocessor in each device, intelligence is distributed throughout the system so that command decisions are made instantly at the individual module, rather than bottlenecking at the control panel.

This not only speeds event processing, it also makes a more robust and reliable system – so robust, in fact, that when upgrading from a conventional panel to a Edwards Signaling intelligent system, you can usually use existing wiring – no twisted or shielded cable required!

Standard Features
- **Class A-B Two-Wire Module**
  Acts as an interface between conventional two-wire smoke detectors and the Edwards Signaling control panel.
- **Analog Class A Single Input Module**
  Used to connect a normally open, alarm, supervisory, or monitor type dry contact initiating device circuit to the Edwards Signaling control panel.
- **Analog Dual Input Module**
  Connects two normally open, alarm, supervisory, or monitor type dry contact initiating device circuits to the Edwards Signaling control panel.
- **Analog Dual Input Waterflow, Supervisory Module**
  Used to connect normally open waterflow alarm and supervisory initiating device circuits to the Edwards Signaling control panel. For Class B circuit operation.
- **Analog SLC Fault Isolator Module**
  Protects a Class A SLC from total collapse due to wire-to-wire short circuits.
- **Analog NAC Module**
  Connects a supervised output circuit to a signal riser.
- **Analog Contact Relay Module**
  Provides one Form C dry relay contact and can be configured to provide polarity reversal of its output.
- **Analog Single Input Mini Module**
  Connects a normally open, alarm, supervisory, or monitor type dry contact initiating device circuit (IDC) to the Edwards Signaling control panel. For Class B circuit operation.
Module Addressing

Use a screwdriver to adjust the two rotary switches on the front of the module. Set the TENS rotary switch (0 through 12) for the 10s digit and the ONES rotary switch for the 0 through 9 digit.

Example: device address 21, set TENS rotary switch to 2 and set the ONES rotary switch to 1.

Refer to the Specifications Table for available address numbers.

LED operation

Modules provide a bicolor LED for status indication.
- Flashing Green LED: Normal
- Flashing Red LED: Active

Class A Single Input Module

The Class A Single Input Module is used to connect a normally open, alarm, supervisory, or monitor type dry contact initiating device circuit (IDC) to the Edwards Signaling control panel. The module is designed for Class A circuit operation.

The module's device address is set using the two rotary switches located on the front of the module. One device address is required.

The device can be preset for alarm or supervisory operation using the slide switch located on the front of the module. The module can also be configured for other device types through front panel programming or the configuration utility.

Installation

Mount in a North American 4 inch square x 2-1/2 in. (64 mm) deep 2 gang box or a standard 4 in. square box 1-1/2 in. (38 mm) deep.

Warning

This module will not operate without electrical power. As fires frequently cause power interruption, you should discuss further safeguards with your local fire protection specialist.

This module does not support conventional smoke detectors.

Caution

Wire in accordance with NFPA 72 and CAN/ULC-S524. Be sure to observe the polarity of the wires as shown in the diagram.

Table:

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication line voltage</td>
<td>Maximum 20 V peak-to-peak</td>
</tr>
<tr>
<td>Current</td>
<td>400 μA</td>
</tr>
<tr>
<td>Activated</td>
<td>500 μA</td>
</tr>
<tr>
<td>Ground fault impedance</td>
<td>10 k ohm</td>
</tr>
<tr>
<td>Operating environment</td>
<td></td>
</tr>
<tr>
<td>Temperature</td>
<td>32 to 120°F (0 to 49°C)</td>
</tr>
<tr>
<td>Humidity</td>
<td>0 to 93% RH, noncondensing at 90°F (32°C)</td>
</tr>
<tr>
<td>Storage temperature range</td>
<td>–4 to 140°F (–20 to 60°C)</td>
</tr>
<tr>
<td>Compatible electrical boxes</td>
<td>North American 4 inch square x 2-1/2 in. (64 mm) deep 2 gang box Standard 4 inch square box 1-1/2 in. (38 mm) deep box</td>
</tr>
<tr>
<td>Max. circuit resistance</td>
<td>50 Ω (25 Ω per wire)</td>
</tr>
<tr>
<td>Max. circuit capacitance</td>
<td>0.1 μF</td>
</tr>
</tbody>
</table>
Class A-B Two-Wire Module

The E-2WIRE module interfaces between conventional two-wire smoke detectors and the Edwards Signaling control panel. It monitors the circuit and smoke detectors, and signals the control panel of any trouble or alarm conditions. The module also regulates and supervises the 24 VDC input power.

The E-2WIRE is configured to operate as a two-wire alarm device that does not require alarm verification. It can be set for two-wire alarm verified operation through front panel programming or the configuration utility. When using the alarm verification feature of the control panel, do not mix normally open contact initiating devices with two-wire conventional smoke detectors.

This module recognizes the CleanMe signal from detectors that support this feature.

The device address is set using the two rotary switches located on the front of the module. One device address is required.

The E-2WIRE can be set for Class B or Class A operation using the slide switch located on the front of the module.

**Note:** This module cannot be used on a device loop with isolator modules or isolator bases.

- **Communication line voltage:** Maximum 20.6 V peak-to-peak
- **Current**
  - Standby: 350 μA, Activated: 350 μA
- **Control panel input power:** 12.4 to 28.3 VDC (not resettable)
- **Smoke power current**
  - Standby: 17 mA, Alarm: 58 mA
- **Smoke detector current:** 3 mA
- **UL compatibility ID:** 0.0
- **Ground fault impedance:** 5 k ohm

Dual Input Module

The E-IDC2B connects two normally open, alarm, supervisory, or monitor type dry contact initiating device circuits (IDCs) to the Edwards Signaling control panel. This module is designed for Class B circuit operation.

The device address is set using the two rotary switches located on the front of the module. Two consecutive addresses are required. The second address is automatically assigned one number higher than the value set on the rotary switches.

The E-IDC2B can be preset for alarm or supervisory operation using the slide switch located on the front of the module. It can also be configured for other device types through front panel programming or the configuration utility.

- **Communication line voltage:** Maximum 20 V peak-to-peak
- **Current**
  - Standby: 550 μA, Activated: 725 μA
- **Ground fault impedance:** 10 k ohm
- **Operating environment**
  - **Temperature:** 32 to 120°F (0 to 49°C)
  - **Humidity:** 0 to 93% RH, noncondensing at 90°F (32°C)
- **Storage temperature range:** –4 to 140°F (–20 to 60°C)
- **Compatible electrical boxes**
  - North American 4 inch square x 2-1/2 in. (64 mm) deep 2 gang box.
  - Standard 4 in. square box 1-1/2 in. (38 mm) deep
- **Wire size:** 12, 14, 16, or 18 AWG wire (2.5, 1.5, 1.0, or 0.75 sq. mm) (Sizes 16 and 18 AWG are preferred)
- **Device address**
  - 01 to 63 (64 point control panel)
  - 01 to 126 (127 point control panel)
- **Initiating device circuit (IDC)**
  - **EOL resistor value:** 4.7 kΩ, (P/N: EOL-4.7)
  - **Max. circuit resistance:** 50 Ω (25 Ω per wire)
  - **Max. circuit capacitance:** 0.1 μF

- **Style D (Class A)**
- **Style B (Class B)**

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</tr>
<tr>
<td><strong>Current</strong></td>
<td></td>
</tr>
<tr>
<td>- Standby</td>
<td>350 μA, Activated: 350 μA</td>
</tr>
<tr>
<td><strong>Control panel input power</strong></td>
<td>12.4 to 28.3 VDC</td>
</tr>
<tr>
<td><strong>Smoke power current</strong></td>
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<td>- Standby</td>
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<td><strong>Ground fault impedance</strong></td>
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<tr>
<td><strong>Max. circuit capacitance</strong></td>
<td>0.1 μF</td>
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Dual Input Waterflow, Supervisory Module

The E-IDCWS connects normally open waterflow alarm and supervisory initiating device circuits (IDCs) to the Edwards Signaling control panel. The E-IDCWS is designed for Class B circuit operation.

The device address is set using the two rotary switches located on the front of the module. Two consecutive addresses are required. The second address is automatically assigned one number higher that the value set on the rotary switches.

The E-IDCWS can operate in the following modes:

**Waterflow**
- Alarm latching delayed: Configures the module for use with only nonretarded waterflow alarm switches. When the NO input contact of an initiating device is closed, an alarm is sent to the control panel, which after a 16 second time delay, generates an alarm signal.

**Supervisory**
- Supervisory active nonlatching US marketplace
- Supervisory active latching Canadian marketplace

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**SLC Fault Isolator Module**

The E-ISO protects a Class A SLC from total collapse due to wire-to-wire short circuits. The module monitors line voltages and opens the SLC when a short is detected. A short is isolated between the two modules located electrically closest to the short.

The device address is set using the two rotary switches located on the front of the module. One device address is required.
NAC Module

The E-NAC module connects a supervised output circuit to a signal riser. The output wiring is monitored for open and short circuits. A short circuit causes the module to inhibit the activation of the audible/visual signal circuit so the riser is not connected to the wiring fault. Upon command from the control panel, the module connects the output circuit to the riser input. The output circuit energizes a riser to operate polarized audible and visual signals. The module can be used for connection of a Class A or Class B (with EOL) output notification appliance circuit (NAC).

The E-NAC module is configured to operate as a Continuous Silenceable device type from the factory. It can also be configured for other device types, such as Genesis (for synchronization of Edwards Genesis series strobes) through front panel programming or the configuration utility.

**Genesis Audible/Visual/Silence:** Used with Genesis and Enhanced Integrity horns and strobes. Signals maintain synchronization per UL 1971. For Genesis devices, this configuration allows connected horns to be silenced while strobes on the same two-wire circuit continue to flash until the panel is reset.

**Communication line voltage:** Maximum 20 V peak-to-peak

**Current**
- Standby: 350 μA
- Activated: 200 μA

**Ground fault impedance:** 10 k ohm

**Operating environment**
- Temperature: 32 to 120°F (0 to 49°C)
- Humidity: 0 to 93% RH, noncondensing at 90°F (32°C)

**Output ratings**
- Circuit current: 24 VDC at 2 A max.
- EOL resistor value: 47 kΩ UL listed

**Storage temperature range:** –4 to 140°F (–20 to 60°C)

**Compatible electrical boxes**
- North American 4 inch square x 2-1/2 in. (64 mm) deep 2 gang box
- Standard 4 in. square box 1-1/2 in. (38 mm) deep

**Wire size**
- 12, 14, 16, or 18 AWG wire (2.5, 1.5, 1.0, or 0.75 sq. mm) (Sizes 16 and 18 AWG are preferred)

**Device address**
- (one address required)
- 01 to 64 (64 point control panel)
- 01 to 127 (127 point control panel)

Contact Relay Module

The E-RLY provides one Form C dry relay contact. It can also be configured to provide polarity reversal of its output. The E-RLY can be used to control external appliances or shut down equipment.

The E-RLY is wired according to its operation. It is configured to operate as a relay nonsilence device type, and can function as either a control relay or polarity reversal relay, depending on how it is wired.

**Control relay function:** Provides one Form C dry relay contact.

**Polarity reversal relay function:** Provides polarity reversal of its output.

**Note:** Additional device types are available through front panel programming or the configuration utility. Refer to applicable control panel technical reference manual.

**Communication line voltage:** Maximum 20 V peak-to-peak

**Current**
- Standby: 125 μA
- Activated: 125 μA

**Contact ratings (pilot duty)**
- 30 VDC: 2 A
- 125 VAC: 0.5A resistive load 60 W or 62.5 VA max.

**Relay type:** Form C, programmable

**Operating environment**
- Temperature: 32 to 120°F (0 to 49°C)
- Humidity: 0 to 93% RH, noncondensing at 90°F (32°C)

**Storage temperature range:** –4 to 140°F (–20 to 60°C)

**Compatible electrical boxes**
- North American 4 inch square x 2-1/2 in. (64 mm) deep 1 gang box
- North American 4 inch square x 2-1/2 in. (64 mm) deep 2 gang box
- Standard 4 in. square box 1-1/2 in. (38 mm) deep box

**Wire size**
- 12, 14, 16, or 18 AWG wire (2.5, 1.5, 1.0, or 0.75 sq. mm) (Sizes 16 and 18 AWG are preferred)

**Module address**
- (one address required)
- 01 to 64 (64 point control panel)
- 01 to 127 (127 point control panel)
## Single Input Mini Module

The E-IDC1B connects a normally open, alarm, supervisory, or monitor type dry contact initiating device circuit (IDC) to the Edwards Signaling control panel. This module is for Class B circuit operation.

The device address is set using the two rotary switches located on the front of the module. One device address is required.

The module is configured to operate as an alarm latching device type from the factory. When the NO contact of an initiating device is closed, an alarm signal is sent to the control panel and the alarm condition is latched at the module.

Additional device types are available through front panel programming or the configuration utility. Refer to applicable control panel technical reference manual.

### Ordering Information

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Ship Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-IDC1A</td>
<td>Analog Class A Single Input Module</td>
<td>0.50 lbs. (0.23 kg.)</td>
</tr>
<tr>
<td>E-IDC1B</td>
<td>Analog Single Input Mini Module</td>
<td>0.34 lbs. (0.15 kg.)</td>
</tr>
<tr>
<td>E-2WIRE</td>
<td>Analog Class A-B Two-Wire Module</td>
<td>0.50 lbs. (0.23 kg.)</td>
</tr>
<tr>
<td>E-IDC2B</td>
<td>Analog Dual Input Module</td>
<td>0.50 lbs. (0.23 kg.)</td>
</tr>
<tr>
<td>E-2IDCWS</td>
<td>Analog Dual Input Waterflow-Supervisory Module</td>
<td>0.50 lbs. (0.23 kg.)</td>
</tr>
<tr>
<td>E-NAC</td>
<td>Analog NAC Module</td>
<td>0.50 lbs. (0.23 kg.)</td>
</tr>
<tr>
<td>E-RLY</td>
<td>Analog Contact Relay Module</td>
<td>0.50 lbs. (0.23 kg.)</td>
</tr>
<tr>
<td>E-ISO</td>
<td>Analog SLC Fault Isolator Module</td>
<td>0.50 lbs. (0.23 kg.)</td>
</tr>
</tbody>
</table>

### Specifications

- **Communication line voltage:** Maximum 20 V peak-to-peak
- **Current:**
  - Standby: 350 μA
  - Activated: 500 μA
- **Ground fault impedance:** 10 k ohm
- **Operating environment:**
  - Temperature: 32 to 120°F (0 to 49°C)
  - Humidity: 0 to 93% RH, noncondensing at 90°F (32°C)
- **Storage temperature range:** –4 to 140°F (–20 to 60°C)
- **Wire size:** 12, 14, 16, or 18 AWG wire (2.5, 1.5, 1.0, or 0.75 sq. mm) (Sizes 16 and 18 AWG are preferred)
- **Device address:** (two addresses required)
  - 01 to 64 (64 point control panel)
  - 01 to 127 (127 point control panel)
- **Initiating device circuit (IDC):**
  - EOL resistor value: 47 kΩ, (P/N: EOL-47)
  - Max. circuit resistance: 50 Ω (25 Ω per wire)
  - Max. circuit capacitance: 0.1 μF

### Diagram

![Diagram of E-IDC1B module connections and specifications](image-url)