Actionpac LNS5 & Safegard V5 Damper Interface Catalogue

Two Position & Three Position Smoke Fire Damper Interface

This product forms part of a life safety system. Failure to correctly store, handle, install and maintain the product will directly put at risk the lives of the occupants and the fabric of the building.

ALWAYS READ THIS DOCUMENT BEFORE INSTALLATION. PLEASE RETAIN FOR FUTURE REFERENCE.
Two Position Damper Interface

The Safegard Damper Interface provides a complete Modbus communication device to control dampers.

TWO POSITION SMOKE FIRE DAMPER INTERFACE OPTIONS:

**SFDI-M**

The Safegard Smoke Fire Damper Interface provides a complete Modbus communication device to control any failsafe spring-return smoke fire damper actuator that incorporates two auxiliary switches.

**FDI-M**

The Safegard Fire Damper Interface provides a complete Modbus communication device to failsafe, via an electromagnet, any spring-return fire damper. Monitoring of the open and/or closed position is optional.

**SDI-M**

The Safegard Smoke Damper Interface provides a complete Modbus communication device to control any open/closed smoke damper actuator that incorporates two auxiliary switches.

*Please note:* Each interface is available in 24V or 230V. Please specify a voltage at time of order.
Dimensions and Mounting

The compact and robust design of the interface enclosure allows the unit to be mounted to a duct, block wall or stud wall.

Ensure the Interface is located close enough to the actuator/damper it is controlling/monitoring. Normally, actuator/electromagnet leads are 1m in length. Also, ensure the Interface is accessible for future maintenance purposes.

Please note:

- 150mm clearance required for lid removal and at cable entry points.
- Unused cable entries should be sealed with blind washers.
- Do not drill the enclosure as this will affect its IP rating.

Preparation

- Only trained and qualified personnel should be allowed to install, replace or service this equipment. Installation should be in accordance with the relevant local safety standards.
- The connectors can accommodate cable diameters up to 2.5mm². It is recommended that all wires be crimped to ease installation and replacement of the product.
- The mains wiring should comply with IEC 60227 or IEC 60245.
- A switch or circuit breaker should be included as part of the installation.
- The switch or circuit breaker should meet the relevant requirements of IEC 60947-1 and IEC 60947-3.
- The switch or circuit breaker should be in close proximity to the equipment and be within easy reach of the operator.
- The switch or circuit breaker should be marked as the disconnecting device for the equipment and should disconnect both poles of the supply.

Installation

1. Disconnect the local supply before commencing any work on the Interface.
2. Wire the interface in accordance with the wiring diagrams shown following. If the actuator is to be located more than 5m from the Interface then contact Safegard Systems for technical assistance.
3. Please be aware that the switch and auxiliary inputs are not optically isolated. It is recommended that the optional detectors (smoke or heat) use failsafe open contacts to guarantee their detection in the event of a fault condition. It is also recommended that the network cables are not run alongside any high voltage or high frequency sources. Also, network cables must not be mixed on an individual network as they have very different electrical characteristics and could render the system unreliable.
4. If FDI-M, the electromagnet failsafe release is optional. If used, the electromagnet must be protected by a suitable snubber device.
5. If FDI-M, the monitoring of the damper positions is optional.
6. Once wiring is complete, apply power to the DI-M. The green power LED should illuminate to indicate the presence of power.
7. The Interface is now ready to be configured using a standard Modbus tool or the Safegard system.
TWO POSITION SMOKE FIRE DAMPER INTERFACE (SFDI-M / FDI-M / SDI-M)

**SFDI-M Wiring: 230V**

- Green LED
- Red LED
- Yellow LED
- Blue LED
- Power LED
- Service LED
- Service Pin
- AUX1 AUX2
- GND
- NETWORK

**SFDI-M Wiring: 24V**

- Green LED
- Red LED
- Yellow LED
- Blue LED
- Power LED
- Service LED
- Service Pin
- AUX1 AUX2
- GND
- NETWORK

**FDI-M Wiring: 230V**

- Electromagnet failsafe release
- OPEN DAMPER CLOSER
- Damper Position Sense
- To Smoke Detector
- To Heat Detector
- Aux Inputs

**FDI-M Wiring: 24V**

- Electromagnet failsafe release
- OPEN DAMPER CLOSER
- Damper Position Sense
- To Smoke Detector
- To Heat Detector
- Aux Inputs
**SDI-M Wiring: 230V**

**SDI-M Wiring: 24V**

**Maintenance**

**24V AC/DC version**
5 x 20mm, Time-Lag Fuse, 2A rated (see F1 on wiring diagrams); for example Littlefuse 215 series

**120/230VAC versions**
5 x 20mm, Time-Lag Fuse, 1A rated (see F1 on wiring diagrams); for example Littlefuse 215 series

**LED Behaviour**

<table>
<thead>
<tr>
<th>FUNCTION</th>
<th>GREEN</th>
<th>RED</th>
<th>YELLOW</th>
<th>BLUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open</td>
<td>On</td>
<td>Off</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Closed</td>
<td>Off</td>
<td>On</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Travelling</td>
<td>Flashing</td>
<td>Flashing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fault</td>
<td>Flashing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ping</td>
<td>One-shot</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Offline</td>
<td>On</td>
<td>On</td>
<td>On</td>
<td>On</td>
</tr>
</tbody>
</table>

Wink function: Service LED flashes for 5s
### Specifications

#### Modbus
- **Chip**: Arm Cortex-M3
- **Service functions**: Service pin and service LED

#### Supply
*(please specify at time of order)*
- **Input voltages**:
  - (230 ± 23) V AC, 50 Hz
  - (120 ± 12) V AC, 60 Hz
  - (24 ± 4.8) V AC, 50 Hz
  - (24 ± 2.4) V DC
- **Maximum power consumption**: 2.5 W

#### Output
- **Contact type**: DPCO mechanical relay contacts
- **Maximum switched load**: 25 VA

#### Inputs
- **Contact type**: Non-isolated dry contacts
- **Sense current**: 10 mA

#### Environmental
- **Operating temperature**: -5 °C to 70 °C
- **Storage temperature**: -20 °C to 70 °C
- **Humidity**: 25 % RH to 90 % RH at 70 °C
- **Maximum altitude**: 2000 m

#### Conformance
- **Agency Listings**: CE
- **EMC**: EN60730-1:00+A1:04+A2:08 +A16:07 CISPR 22 / FCC part 15, cl. B
- **LVD**: EN60730-1:2005 + …+ A2:2008

#### Enclosure
- **Material**: ABS base with polycarbonate lid
- **IP rating**: IP 54
- **Flammability**: UL 94V-0
- **Pollution**: Category 2
- **Dimensions**: 213 mm x 170 mm x 90 mm (L x W x D)

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**Note:**
Optional HDIE available: 300°C for 2 hour or 400°C for ½ hour applications.

Please refer to Hot Enclosures Catalogue or contact Safegard Systems for details.
Three Position Damper Interface

The Safegard Systems 3PSFDI-M provides a complete Modbus communication device to control a single modulating actuator that incorporates two auxiliary switches.

ELECTROSTATIC SENSITIVE DEVICE

THREE POSITION SMOKE FIRE DAMPER INTERFACE OPTIONS:

Auto Mode

Damper can be set from the Actionpac or Safegard smoke control system to a balanced position (once learned) or to drive open or closed (damper configuration mechanically set) and failsafe via spring-return.

Learn Mode

Damper can be set to its required balanced position.

Local Mode

Damper can be modulated via a 2-10V signal from the Building Management System (BMS). In the event of a fire alarm/firefighters override input the Actionpac or Safegard smoke control system will take control away from the BMS and react according to the input(s).

Please note: The interface is available in 24V or 230V supply (both driving a 24V actuator). Please specify a voltage at time of order.
Dimensions and Mounting

The compact and robust design of the interface enclosure allows the unit to be mounted to a duct, block wall, or stud wall.

Ensure the interface is located close enough to the actuator it is controlling/monitoring. Normally actuator leads are 1 m in length. Ensure the interface is accessible for future maintenance purposes.

Please note:

- 150mm clearance required for lid removal and at cable entry points.
- Unused cable entries should be sealed with blind washers.
- Do not drill the enclosure as this will affect its IP rating.
Preparation

- Only trained and qualified personnel should be allowed to install, replace, or service this equipment. Installation should be in accordance with the relevant local safety standards.

- The connectors can accommodate cable diameters up to 2.5 mm². It is recommended that all wires are crimped to ease installation and replacement of the product.

Installation

1. Disconnect the local supply before commencing any work on the interface.

2. Wire the interface in accordance with the wiring diagram shown across. If the actuator is located more than 5 m from the interface, then contact Safegard Systems for technical assistance.

3. It is recommended that the network cables are not run alongside any high voltage or high frequency sources. Network cables should not be mixed on an individual network as they have very different electrical characteristics and could render the system unreliable.

4. Once the wiring is complete, apply power to the interface.

5. The interface is now ready to be configured using the Safegard Builder installation tool.

Replacement Fuse

2 A time-lag fuse (see F1 on wiring diagram). Suggested replacement: Littelfuse 215 series.
THREE POSITION SMOKE FIRE DAMPER INTERFACE (3PSFDI-M-24)

24V supply driving 24V actuator

Auto Mode

Status LEDs

<table>
<thead>
<tr>
<th>FUNCTION</th>
<th>GREEN</th>
<th>RED</th>
<th>YELLOW</th>
<th>BLUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open</td>
<td>On</td>
<td>Off</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Closed</td>
<td>Off</td>
<td>On</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Balanced</td>
<td>On</td>
<td>On</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Travelling</td>
<td>Flashing</td>
<td>Flashing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fault</td>
<td>Flashing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ping</td>
<td></td>
<td>On</td>
<td>One-shot</td>
<td></td>
</tr>
<tr>
<td>Offline</td>
<td>On</td>
<td>On</td>
<td>On</td>
<td>On</td>
</tr>
</tbody>
</table>

Wink function: Service LED (yellow) flashes for 5s
Learn Mode

Status LEDs

<table>
<thead>
<tr>
<th>Function</th>
<th>Green</th>
<th>Red</th>
<th>Yellow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learn</td>
<td>On/Off</td>
<td>On/Off</td>
<td></td>
</tr>
</tbody>
</table>

Use the potentiometer to balance the damper in the required position - The Learn LED illuminates when the actuator is within 2º of the setpoint

2 Rotate the potentiometer to 0% to fully close the damper

3 Use the potentiometer to balance the damper in the required position - The Learn LED illuminates when the actuator is within 2º of the setpoint

4 Service Pin (hold for 1 sec)

5 Learn Switch off
Local Mode

Status LEDs

<table>
<thead>
<tr>
<th>FUNCTION</th>
<th>GREEN</th>
<th>RED</th>
<th>YELLOW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local</td>
<td></td>
<td>On</td>
<td></td>
</tr>
</tbody>
</table>

24V supply driving 24V actuator
Preparation

- Only trained and qualified personnel should be allowed to install, replace, or service this equipment. Installation should be in accordance with the relevant local safety standards.

- The connectors can accommodate cable diameters up to 2.5 mm². It is recommended that all wires are crimped to ease installation and replacement of the product.

Installation

1. Disconnect the local supply before commencing any work on the interface.

2. Wire the interface in accordance with the wiring diagram shown across. If the actuator is located more than 5 m from the interface, then contact Safegard Systems for technical assistance.

3. It is recommended that the network cables are not run alongside any high voltage or high frequency sources. Network cables should not be mixed on an individual network as they have very different electrical characteristics and could render the system unreliable.

4. Once the wiring is complete, apply power to the interface.

5. The interface is now ready to be configured using the Safegard Builder installation tool.

Replacement Fuses

2 A time-lag fuse (see F1 & F2 on wiring diagram). Suggested replacement: Littelfuse 215 series.
THREE POSITION SMOKE FIRE DAMPER INTERFACE (3PSFDI-M-230)

230V supply driving 24V actuator

Auto Mode

Status LEDs

<table>
<thead>
<tr>
<th>FUNCTION</th>
<th>GREEN</th>
<th>RED</th>
<th>YELLOW</th>
<th>BLUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open</td>
<td>On</td>
<td>Off</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Closed</td>
<td>Off</td>
<td>On</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Balanced</td>
<td>On</td>
<td>On</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Travelling</td>
<td>Flash</td>
<td>Flash</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fault</td>
<td>Flash</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ping</td>
<td>One-shot</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Offline</td>
<td>On</td>
<td>On</td>
<td>On</td>
<td>On</td>
</tr>
</tbody>
</table>

Wink function: Service LED (yellow) flashes for 5s
Learn Mode

Status LEDs

<table>
<thead>
<tr>
<th>FUNCTION</th>
<th>GREEN</th>
<th>RED</th>
<th>YELLOW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learn</td>
<td>On/Off</td>
<td>On/Off</td>
<td></td>
</tr>
</tbody>
</table>

Learn Switch on

Use the potentiometer to balance the damper in the required position.
- The Learn LED illuminates when the actuator is within 2º of the setpoint.

2 Rotate the potentiometer to 0% to fully close the damper.

3 Service Pin (hold for 1sec)

4 Learn Switch off

5 230V supply driving 24V actuator

Three Position Smoke Fire Damper Interface (3PSFDI-M-230)
THREE POSITION SMOKE FIRE DAMPER INTERFACE (3PSFDI-M-230)

230V supply driving 24V actuator

Local Mode

Status LEDs

<table>
<thead>
<tr>
<th>FUNCTION</th>
<th>GREEN</th>
<th>RED</th>
<th>YELLOW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local</td>
<td></td>
<td>On</td>
<td></td>
</tr>
</tbody>
</table>

Diagram showing the local control interface with status LEDs and connections.
Specifications (utilises 24V actuator only)

**Modbus**
- Chip: Arm Cortex-M3
- Service functions: Service pin and service LED

**Supply**
- Input voltage:
  - (230 ± 23) V AC, 50 Hz
  - (24 ± 4.8) V AC, 50 Hz
  - (24 ± 2.4) V DC
- Max power consumption: 1.3 W

**Output**
- Contact type: SPST mechanical relay contact
- Max switched load: 25 VA

**Inputs**
- Contact type: Non-isolated dry contacts
- Sense current: 10 mA

**Environmental**
- Operating temperature: -5 °C to 70 °C
- Storage temperature: -20 °C to 70 °C
- Humidity: 25 % RH to 90 % RH at 70 °C
- Maximum altitude: 2000 m

**Conformance**
- EMC: EN 60730-1:00+A1:04+A2:08+A16:07
- Agency listings: CE

**Enclosure**
- Material: ABS base with polycarbonate lid
- IP rating: IP 54
- Flammability: UL 94V-0
- Pollution: Category 2
- Dimensions: 213 mm x 170 mm x 90 mm (L x W x D)

**Note:**
Optional HDIE available: 300°C for 2 hour or 400°C for ½ hour applications.
Please refer to Hot Enclosures Catalogue or contact Safegard Systems for details.

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Ce Complies with European standards

**WARNING:** The responsible body shall be made aware that, if the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

The information herein is subject to change without notice. We do not assume any liability arising out of the use of this product. Purchase of goods and services is subject to Safegard Systems standard terms and conditions.

Product warranty 12 months from date of delivery.

Actionair and Safegard are brand names of Swegon Air Management and Safegard Systems respectively and both companies are part of the Swegon Group.

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