



# PMOD 6 XAL 001

## ANALOG LINE MODULE

### MODULE FOR CONNECTION OF ANALOG AUDIO COMPONENTS

The INTRON-X is the modern, modular IP system platform for scalable intercom, PA/GA and PA solutions from INDUSTRONIC.

With the XAL module you can connect up to 6 analog audio components – analog intercom stations as well as interconnect INDUSTRONIC systems and third-party systems.

As the control inputs and outputs are divided into separate groups of 12, it is possible to connect two systems at different voltage potential to one XAL module.



- 6 analog audio interfaces with
  - 2 x 4-wire audio (full duplex)
  - 4 x 2-wire audio (half duplex)
- 24 bidirectional potential-free control inputs and outputs
- 2 Ethernet interfaces for redundant network connection
- Power supply of the internal electronics via PoE (with redundancy) or separate DC supply
- Integrated self-monitoring
- Configuration via INDUSTRONIC management tools

### PLUG-IN DEVICE 6 XAL 001

|             |             |
|-------------|-------------|
| Type number | 344-021-100 |
|-------------|-------------|

### MECHANICAL DATA

|                        |  |
|------------------------|--|
| Mounting               | 1/3 19" width in a 1 RU INTRON-X 19" chassis of type 3 XRC 001 |
| Width x height x depth | 147 mm x 44 mm x 265 mm (5.79" x 1.73" x 10.43")               |
| Weight                 | Approx. 1 kg (approx. 2.20 lbs)                                |

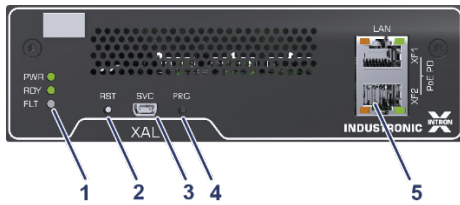
### POWER CONSUMPTION (XD1 OR POE)

|         |       |
|---------|-------|
| Typical | 4 W   |
| Maximum | 6.5 W |

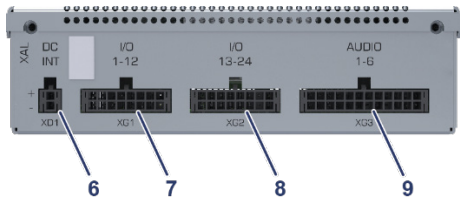
### DC POWER SUPPLY (XD1)

|              |                    |
|--------------|--------------------|
| Power supply | 42 V DC to 72 V DC |
|--------------|--------------------|

## FRONT/REAR



- 1 LEDs for operating status
- 2 Reset button
- 3 Service interface (Mini USB)
- 4 Service button
- 5 Ethernet interfaces



- 6 DC power supply
- 7 Interface to terminal block 12 XIOTB 001 (I/O 1 to 12)
- 8 Interface to terminal block 12 XIOTB 001 (I/O 13 to 24)
- 9 Interface to terminal block 6 XATB 001 or 6 XAFTB 001

## CONTROL INPUTS/ OUTPUTS (XG1 AND XG2)

|   |  |
|---|--|
| <b>Quantity</b>                                 | 12 per interface with the same reference and power supply potential                |
| <b>Input voltage level of each input</b>        | Off: 0 V DC to 5 V DC<br>On: 10 V DC to 72 V DC<br>(current consumption max. 2 mA) |
| <b>Voltage and current value of each output</b> | Max. 72 V DC, 100 mA   |
| <b>Power supply</b>                             | Max. 72 V DC<br>Supplied via the I/O terminal block, max. 2.5 A                    |

## AUDIO INTERFACE (XG3)

|                        |   |
|------------------------|---|
| <b>Quantity</b>        | 2 x 2-/4-wire (full duplex)<br>4 x 2-wire (half duplex) |
| <b>Frequency range</b> | 200 Hz to 16,000 Hz (+/-3 dB)                           |

### 2-/4-wire input

|   |   |
|---|---|
| <b>Audio input voltage</b>                                    | Min. 0.4 Vpp to max. 4 Vpp (adjustable) |
| <b>Input impedance</b>  | > 2 kOhms                               |
| <b>Recommended output impedance of the analog counterpart</b> | < 1 kOhms                               |

### 2-wire output

|                             |   |
|-----------------------------|---|
| <b>Audio output voltage</b> | Min. 0.4 Vpp to max. 4 Vpp at 600 Ohms (adjustable)   |
| <b>Output impedance</b>     | 150 Ohms  |
| <b>Phantom power supply</b> | Max. 72 V DC<br>Supplied via the audio terminal block |
| <b>Output phantom power</b> | Max. 350 mA   |

### 4-wire output

|                             |   |
|-----------------------------|---|
| <b>Audio output voltage</b> | Min. 0.4 Vpp to max. 8 Vpp at 600 Ohms (adjustable) |
| <b>Output impedance</b>     | 33 Ohms   |

## NETWORK INTERFACES (XF1 AND XF2)

|                     |  |
|---------------------|--|
| <b>Quantity</b>     | 2 x RJ45   |
| <b>Type</b>         | 10Base-T/100Base-TX Ethernet, IEEE 802.3   |
| <b>PoE</b>          | IEEE 802.3af, Class 2, 6.49 W  |
| <b>Requirements</b> | IPv4 network<br>Support of UDP, SCTP, RTP and RTCP protocols<br>Quality of Service (QoS)<br>Ideal latency value < 20 ms (max. 50 ms)<br>Jitter: max. 10 ms<br>200 kBit/s basic bandwidth and 200 kBit/s per active audio channel |

## SERVICE INTERFACE (SVC)

|                 |              |
|-----------------|--------------|
| <b>Quantity</b> | 1 x Mini-USB |
|-----------------|--------------|

## ENVIRONMENTAL REQUIREMENTS AND STANDARDS

|   |  |
|---|--|
| <b>Ambient temperature during operation</b> | -15 °C to +55 °C<br>(+5 °F to +131 °F)                                   |
| <b>Storage temperature</b>                  | -25 °C to +70 °C<br>(-13 °F to +158 °F)                                  |
| <b>Relative humidity (non-condensing)</b>   | Max. 95 %  |
| <b>Degree of protection</b>                 | IP20   |
| <b>Vibration resistance</b>                 | 2 Hz to 13.2 Hz, +/-1.5 mm,<br>13.2 Hz to 200 Hz, 1 g                    |
| <b>Operating altitude</b>                   | Max. 2,000 m (6,562 ft) above sea level                                  |
| <b>Pollution degree</b>                     | 2 (according to EN 62368-1)  |
| <b>Electrical safety</b>                    | EN 62368-1   |
| <b>EMC</b>                                  | EN 61000-6-2, EN 61000-6-4,<br>EN 55032 Class B, EN 55035,<br>EN 50130-4 |

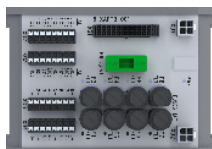
## ACCESSORIES



### 6 XATB 001

Terminal block for 6 analog audio interfaces

|                                       |   |
|---------------------------------------|---|
| <b>Mounting</b>                       | DIN rail  |
| <b>Width x height x depth</b>         | 50 mm x 128 mm x 46 mm<br>(1.97" x 5.04" x 1.81")   |
| <b>Power supply (XD1 and XD2)</b>     | 42 V DC to 72 V DC, max. 16 A,<br>2 x 4 poles, cascadable   |
| <b>Audio interfaces (XG2 and XG3)</b> | Incl. reference and supply potential<br>2 x 8-pole push-in terminals,<br>1.5 mm <sup>2</sup> , max. 2.5 A |
| <b>Type number</b>                    | 344-021-102   |



### 6 XAFTB 001

Terminal and fuse block for 6 analog terminal devices with additional power supply

|  |   |
|--|---|
| <b>Mounting</b>                              | DIN rail  |
| <b>Width x height x depth</b>                | 90 mm x 128 mm x 65 mm<br>(3.54" x 5.04" x 2.56")   |
| <b>Power supply (XD1 and XD2)</b>            | 42 V DC to 72 V DC, max. 16 A,<br>2 x 4 poles, cascadable   |
| <b>Audio interfaces (XG2 and XG3)</b>        | Incl. reference and supply potential<br>2 x 8-pole push-in terminals,<br>1.5 mm <sup>2</sup> , max. 2.5 A |
| <b>Additional power supply (XD3 and XD4)</b> | 2 x 8-pole push-in terminals<br>1.5 mm <sup>2</sup> , max. 1 A each                                       |
| <b>Type number</b>                           | 344-021-103   |



### 12 XIOTB 001

Terminal block for 12 control inputs and outputs

|   |   |
|---|---|
| <b>Mounting</b>                             | DIN rail  |
| <b>Width x height x depth</b>               | 50 mm x 128 mm x 46 mm<br>(1.97" x 5.04" x 1.81")   |
| <b>Power supply (XD1 and XD2)</b>           | 42 V DC to 72 V DC, max. 16 A,<br>2 x 4 poles, cascadable   |
| <b>Control inputs/outputs (XG2 and XG3)</b> | Incl. reference and supply potential<br>2 x 8-pole push-in terminals,<br>1.5 mm <sup>2</sup> , max. 2.5 A |
| <b>Type number</b>                          | 344-020-102   |



#### 24 XCBL 121 3.5 m LSZH-FR

Cable to connect the XAL to XATB or XAFTB, 24 poles, 3.5 m (11.48 ft), 0.14 mm<sup>2</sup>, connectors overmolded on both sides, halogen-free, flame-retardant

**Type number**

244-901-351

Further cable lengths available upon request.



#### 24 XCBL 121 3.5 m

Cable to connect the XAL to XATB or XAFTB, 24 poles, 3.5 m (11.48 ft), 0.14 mm<sup>2</sup>, connectors overmolded on both sides

**Type number**

244-951-351

Further cable lengths available upon request.



#### 16 XCBL 121 3.5 m LSZH-FR

Cable to connect the XAL to XIOTB, 16 poles, 3.5 m (11.48 ft), 0.14 mm<sup>2</sup>, connectors overmolded on both sides, halogen-free, flame-retardant

**Type number**

244-900-351

Further cable lengths available upon request.



#### 4 XCBL 531 3.5 m LSZH-FR

Power supply cable for the terminal block XATB, XAFTB and XIOTB, 4 poles, 3.5 m (11.48 ft), 0.75 mm<sup>2</sup>, 1 x connector covered with heat-shrink tube, 1 x flying leads, halogen-free, flame-retardant

**Type number**

244-905-351

Further cable lengths available upon request.



#### 4 XCBL 531 3.5 m

Power supply cable for the terminal block XATB, XAFTB and XIOTB, 4 poles, 3.5 m (11.48 ft), 0.75 mm<sup>2</sup>, 1 x connector covered with heat-shrink tube, 1 x flying leads

**Type number**

244-955-351

Further cable lengths available upon request.



#### 4 XCBL 561 0.15

Power supply cable for cascading the XATB, XAFTB and XIOTB terminal blocks, 4 poles, 0.15 m (0.49 ft), 0.75 mm<sup>2</sup>, halogen-free, flame-retardant

**Type number**

244-904-150

Further cable lengths available upon request.



#### 2 XCBL 421 1.5 m

Power supply cable for the plug-in device 6 XAL 001, 2 poles, 1.5 m (4.92 ft), 0.5 mm<sup>2</sup>, connectors on both sides, halogen-free, flame-retardant

**Type number**

244-902-151

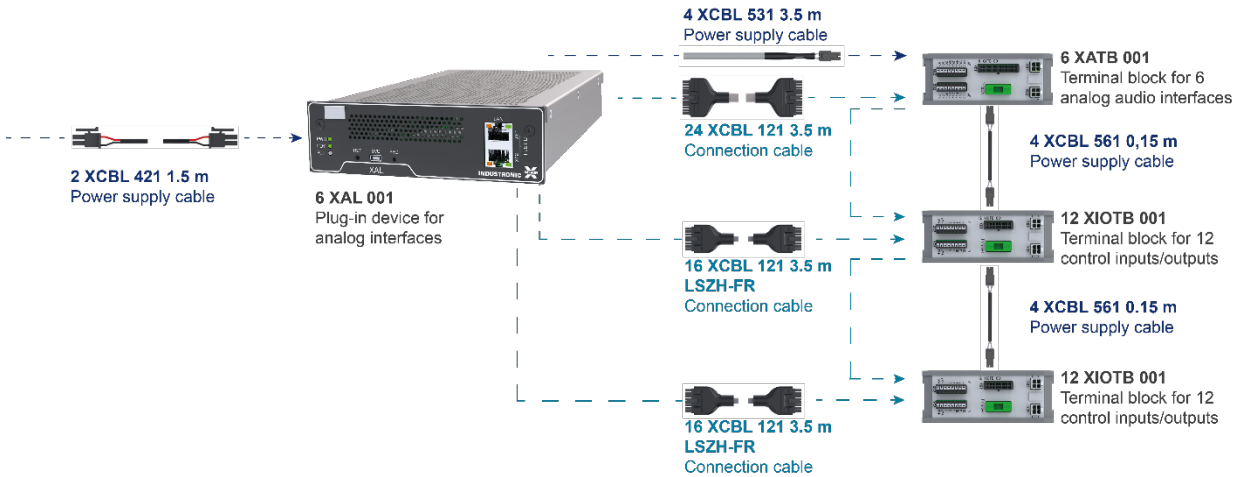
Further cable lengths available upon request.

# PREFERRED MODULES

## PMOD 6 XAL 001/1

Plug-in device incl. 3 terminal blocks and connection cables for up to 6 analog audio interfaces and 24 control inputs and outputs

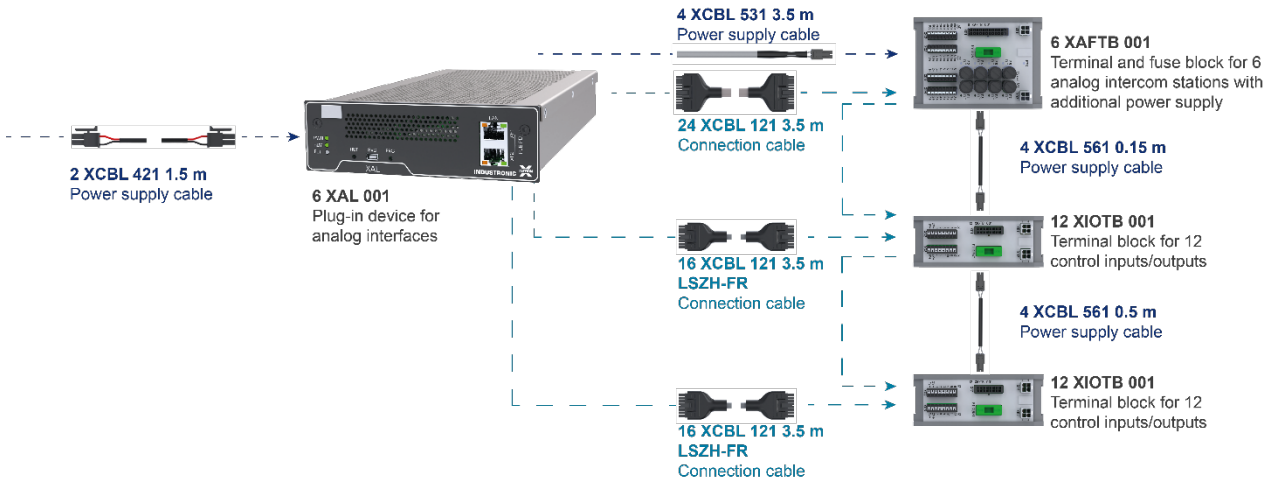
*Note: Use PMOD 6 XAL 001/2 for the connection of analog terminal devices which require an additional power supply via further pairs of wires.*



## PMOD 6 XAL 001/2

Plug-in device incl. 3 terminal blocks and connection cables for up to 6 analog intercom stations with a total of 24 control inputs and outputs

This module enables additional power supply for analog terminal devices via further pairs of wires.



## OVERVIEW PREFERRED MODULES

|                             | PMOD 6 XAL 001/1 | PMOD 6 XAL 001/2 |
|-----------------------------|------------------|------------------|
| Plug-in device 6 XAL 001    | x                | x                |
| Terminal block 6 XATB 001   | x                |                  |
| Terminal block 6 XAFTB 001  |                  | x                |
| Terminal block 12 XIOTB 001 | 2x               | 2x               |
| Cable 24 XCBL 121           | x                | x                |
| Cable 16 XCBL 121 LSZH-FR   | 2x               | 2x               |
| Cable 2 XCBL 421            | x                | x                |
| Cable 4 XCBL 531            | x                | x                |
| Cable 4 XCBL 561            | 2x               | 2x               |
| Type number                 | 326-021-001      | 326-021-002      |

## ACTIVATIONS

**Please note:** To commission the module, an INDUSTRONIC activation is required!

### ACT-X Interface Device

|                    |   |
|--------------------|---|
| <b>Description</b> | Activation of one INTRON-X interface plug-in device |
| <b>Type number</b> | 101-100-030   |

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