Panel Bus I/O Modules

GENERAL
The Honeywell Panel Bus I/O Modules communicate via the Panel Bus. The pluggable Honeywell Panel Bus I/O modules consist of a terminal socket and a removable electronic module, allowing the socket to be mounted and wired before the electronic module is installed. All such electronic modules can be swapped out without disrupting the power and bus connections: Simply unplug the "old" and insert the "new" module.

⚠️ WARNING
Risk of electric shock or equipment damage!
► Do not touch any live parts in the cabinet.
► Disconnect the power supply before you start to install the control system. More than one disconnect switch may be required to de-energize the system.
► Do not reconnect the power supply until you have completed the installation.
► Unused terminals must be closed (by completely screwing in the terminal screws), thus preventing the accidental touching of "live" parts.

The mixed Honeywell Panel Bus I/O modules offer a mix of 34 inputs and outputs in a compact housing. Software updates, configuration, and commissioning are all done automatically by the controller for all Panel Bus I/O Modules. The Panel Bus I/O Modules are addressed manually by adjusting their HEX switches. The Panel Bus I/O Modules may be used with any CPU supporting Panel Bus communication (e.g., the XL800, CPO-PC-6A, etc.).

FEATURES
- Plug-and-play functionality for easy maintenance.
- Pluggable Panel Bus I/O modules can be exchanged without rewiring. Further, the separate installation of terminal sockets and electronic modules lower risk of damage and theft in the construction phase.
- Fast wiring with state-of-the-art push-in terminals (screw-type terminals also available) and bridge connectors.
- Wide range of sensors supported (NTC20kΩ, NTC10kΩ, PT1000-1/-2, Johnson A99 PTC, NI1000TK5000, PT3000, Balco500, 0/2…10 V, 0/4…20 mA). **NOTE**: The mixed Panel Bus I/O modules XF830A, XFU830A, and CPO-IO830 feature inputs suitable for signals from NTC20kΩ sensors and 0/2…10 V, 0/4…20 mA, only!
- Binary input LEDs of the pluggable Honeywell Panel Bus I/O Modules can be configured for status display (off / yellow) or alarm display (green / red) per channel. **NOTE**: The mixed I/O modules XF830A, XFU830A, and CPO-IO830 feature only non-configurable binary input LEDs!
- Configurable safety position for outputs, in case of loss of communication with the controller.
- Max. wiring flexibility due to optional accessories like aux. terminals and cross-connectors.
- Can be mounted in small installation housings
- Flexible mix of Panel Bus I/O modules covering all your application requirements.
OVERVIEW

<table>
<thead>
<tr>
<th>order number</th>
<th>description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pluggable Panel Bus I/O Modules</strong></td>
<td></td>
</tr>
<tr>
<td>XF821A</td>
<td>Pluggable Panel Bus Analog Input Module (with 8 analog inputs)</td>
</tr>
<tr>
<td>XF822A</td>
<td>Pluggable Panel Bus Analog Output Module (with 8 analog outputs)</td>
</tr>
<tr>
<td>XFR822A</td>
<td>Pluggable Panel Bus Analog Output Module (with 8 analog outputs and manual overrides)</td>
</tr>
<tr>
<td>XF823A</td>
<td>Pluggable Panel Bus Binary Input Module (with 12 binary inputs)</td>
</tr>
<tr>
<td>XF824A</td>
<td>Pluggable Panel Bus Relay Output Module (with 6 relay outputs)</td>
</tr>
<tr>
<td>XFR824A</td>
<td>Pluggable Panel Bus Relay Output Module (with 6 relay outputs and manual overrides)</td>
</tr>
<tr>
<td>XFR825A</td>
<td>Pluggable Panel Bus Floating Output Module (with 3 floating outputs and manual overrides)</td>
</tr>
<tr>
<td><strong>Mixed Panel Bus I/O Modules with integrated socket</strong></td>
<td></td>
</tr>
<tr>
<td>XF830A</td>
<td>Mixed Panel Bus I/O Module (with 8 analog inputs, 8 analog outputs, 12 binary inputs, and 6 relay outputs), with push-in terminals (incl. bridge connector and swivel label); housing matches XL800 design</td>
</tr>
<tr>
<td>XFU830A</td>
<td>Mixed Panel Bus I/O Module (with 8 analog inputs, 8 analog outputs, 12 binary inputs, and 6 relay outputs), with screw terminals (incl. bridge connector and swivel label); housing matches XL800 design</td>
</tr>
<tr>
<td>CPO-IO830</td>
<td>Mixed Panel Bus I/O Module (with 8 analog inputs, 8 analog outputs, 12 binary inputs, and 6 relay outputs), with push-in terminals (incl. bridge connector); housing matches CPO-PC-6A design</td>
</tr>
<tr>
<td><strong>Terminal Sockets (not needed for the mixed I/O modules XF830A, XFU830A, and CPO-IO830)</strong></td>
<td></td>
</tr>
<tr>
<td>XS821-22</td>
<td>Push-in terminal socket for pluggable AI/IO modules (incl. bridge connector, swivel label)</td>
</tr>
<tr>
<td>XSU821-22</td>
<td>Screw-type terminal socket for pluggable AI/IO modules (incl. bridge connector, swivel label)</td>
</tr>
<tr>
<td>XS823</td>
<td>Push-in terminal socket for pluggable BI modules (incl. bridge connector, swivel label)</td>
</tr>
<tr>
<td>XSU823</td>
<td>Screw-type terminal socket for pluggable BI modules (incl. bridge connector, swivel label)</td>
</tr>
<tr>
<td>XS824-25</td>
<td>Push-in terminal socket for pluggable relay/floating output modules (incl. bridge connector, cross connector, swivel label)</td>
</tr>
<tr>
<td>XSU824-25</td>
<td>Screw-type terminal socket for pluggable relay/floating output modules (incl. bridge connector, cross connector, swivel label)</td>
</tr>
</tbody>
</table>
Table 2. Overview of auxiliary parts and spare parts

<table>
<thead>
<tr>
<th>order number</th>
<th>description</th>
</tr>
</thead>
<tbody>
<tr>
<td>XS814</td>
<td>Ten Auxiliary Terminal Blocks (for distribution of signals/power). Each terminal block includes two groups with seven internally-connected push-in terminals. For pluggable I/O modules, only.</td>
</tr>
<tr>
<td>XS830</td>
<td>Ten Auxiliary Terminal Blocks (for distribution of signals/power). Each terminal block consists of two groups of nine internally-connected push-in terminals. For XF830A and XFU830A, only.</td>
</tr>
<tr>
<td>XS831</td>
<td>Ten Auxiliary Terminal Blocks (for connection of 0…20 mA signals). Each terminal block consists of two groups of four pairs of push-in terminals (each with a 499Ω resistor to GND) for supporting up to eight current inputs. For XF830A and XFU830A, only.</td>
</tr>
<tr>
<td>XS815</td>
<td>20 Cross-Connectors for connection of six relay commons. One Cross-Connector is included in the Terminal Socket package. For pluggable I/O modules, only.</td>
</tr>
<tr>
<td>XS816</td>
<td>10 Bridge Connectors. One Bridge Connector is included in the Terminal Socket package.</td>
</tr>
<tr>
<td>XAL10</td>
<td>10 Swivel Labels Holders (for attaching the application-specific label printed with CARE). One Swivel Label Holder is included in each Terminal Socket package. For pluggable I/O modules, only.</td>
</tr>
<tr>
<td>XAL11</td>
<td>10 Swivel Label Holders for XF830A and XFU830A mixed Panel Bus I/O modules. One Swivel Label Holder is included in each package of XF830A and XFU830A mixed Panel Bus I/O modules.</td>
</tr>
</tbody>
</table>

**NOTE:** All Honeywell Panel Bus I/O analog and binary I/O Modules are protected against short circuit, 24 VAC +20% and 40 VDC. The relay outputs of relay output modules, floating output modules, and mixed I/O modules should be equipped with appropriate fusing to protect against short-circuiting of the load.
Table 3. Pluggable Panel Bus I/O Module specifications

<table>
<thead>
<tr>
<th>Module</th>
<th>Analog Input</th>
<th>Analog Output</th>
<th>Binary Input</th>
<th>Relay Output</th>
<th>Floating Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>XFB21A</td>
<td>XFB22A, XFB22A</td>
<td>XFB23A</td>
<td>XFB24A, XFB24A</td>
<td>XFB25A</td>
<td></td>
</tr>
<tr>
<td>no. of I/Os</td>
<td>8 analog inputs</td>
<td>8 analog outputs</td>
<td>12 binary inputs requiring a gold contact or open collector</td>
<td>6 relay outputs</td>
<td>3 floating outputs</td>
</tr>
<tr>
<td>characteristics</td>
<td>Linear Graph, 0..10 VDC with pull-up, 0(2)…10 VDC without pull-up, NTC20kΩ (-50…+150 °C, default), NTC10kΩ (-30…+100 °C), PT1000 (-50…+150 °C), Johnson A99 (-40…+120 °C), NTC20kΩ (-50…+150 °C), BALCO200 (-30…+120 °C)</td>
<td>0…11 VDC / ± 1 mA Also configurable as: floating outputs or binary outputs (0 V / 10 V)</td>
<td>static binary input, (default: dry contact)</td>
<td>relay outputs (default)</td>
<td>floating outputs</td>
</tr>
<tr>
<td></td>
<td>Also configurable as: floating outputs or binary outputs (0 V / 10 V)</td>
<td>Also configurable as: floating outputs or binary outputs (0 V / 10 V)</td>
<td>also configurable as: totalizers (20 Hz)</td>
<td>Features:</td>
<td>2 relays per floating output</td>
</tr>
<tr>
<td></td>
<td>Safety position (remain, 0%, 50%, 100%)</td>
<td>Safety position (remain, 0%, 50%, 100%)</td>
<td>also configurable as: totalizers (20 Hz)</td>
<td>1 LED per input</td>
<td>Voltage: 19…250 VAC, 1…29 VDC, P&gt;50 mW</td>
</tr>
<tr>
<td></td>
<td>red LED per output</td>
<td>light intensity follows output level in auto</td>
<td>also configurable as: totalizers (20 Hz)</td>
<td>Color mode can be set per input to OFF/yellow or green/red using CARE</td>
<td>max. total current: 12 A</td>
</tr>
<tr>
<td>Version with manual override (R):</td>
<td>1 potentiometer per output</td>
<td>1 potentiometer per output</td>
<td>also configurable as: totalizers (20 Hz)</td>
<td>ON: &lt; 1.6 kΩ to GND or &lt; 2.5 V to GND, OFF: &gt; 90 kΩ to GND or &gt; 4 V to GND</td>
<td>current per relay: N.O.: 4(4) A (AC) or 4(1) A (DC), N.C.: 2(1) A (AC) or 4(1) A (DC)</td>
</tr>
<tr>
<td></td>
<td>auto feedback signal (mode + value)</td>
<td>auto feedback signal (mode + value)</td>
<td>also configurable as: totalizers (20 Hz)</td>
<td>blinking in manual override position</td>
<td>safety position (remain, 0%, 100%)</td>
</tr>
<tr>
<td></td>
<td>blinking in manual override position</td>
<td>blinking in manual override position</td>
<td>also configurable as: totalizers (20 Hz)</td>
<td>voltage: 24 V (AC/DC)</td>
<td>yellow LED per output</td>
</tr>
<tr>
<td>Safety position (remain, 0%, 50%, 100%)</td>
<td></td>
<td></td>
<td></td>
<td>max. total current: 12 A</td>
<td>1 potentiometer per floating output</td>
</tr>
</tbody>
</table>
| also configurable as: safety position (remain, 0%, 50%, 100%) | | | | current per relay: N.O.: 4(4) A (AC) or 4(1) A (DC), N.C.: 2(1) A (AC) or 4(1) A (DC) | control of the controller and HMI. When a manual override switch or potentiometer is not in its default position ("auto"), the corresponding output LED will blink continuously, and the output module will send a feedback signal with the status "manual override" and the given override position to the controller (which will then also store this information in its alarm memory).

NOTE: When updating the firmware of output modules, their outputs are turned OFF – regardless of the position of their manual override switches and/or potentiometers.

Table 4. Mixed Panel Bus I/O module specifications (XFB830A, XF830A, and CPO-IO830)

<table>
<thead>
<tr>
<th>Analog Inputs</th>
<th>Analog Outputs</th>
<th>Binary Inputs</th>
<th>Relay Outputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number: 8</td>
<td>Configurable types:</td>
<td>Configurable types:</td>
<td>Configurable types:</td>
</tr>
<tr>
<td></td>
<td>• NTC20kΩ (-30…+110 °C) (default)</td>
<td>• 0…11 VDC / ± 1 mA (default)</td>
<td>• Static binary inputs (default: static, dry contact): ON: &lt; 1.6 kΩ to GND or &lt; 2.5 V to GND, OFF: &gt; 90 kΩ to GND or &gt; 4 V to GND</td>
</tr>
<tr>
<td></td>
<td>• Linear Graph</td>
<td>• binary outputs (0 V / 10 V)</td>
<td>• also configurable as: totalizers (15 Hz)</td>
</tr>
<tr>
<td></td>
<td>• 0..10 VDC with pull-up</td>
<td>• 10-bit resolution (default)</td>
<td>• also configurable as: safety position (remain, 50%, 100%)</td>
</tr>
<tr>
<td></td>
<td>• 0(2)…10 VDC without pull-up</td>
<td>• Safety position (remain, 0%, 50%, 100%)</td>
<td>• 1 yellow LED per input</td>
</tr>
<tr>
<td></td>
<td>Also configurable as:</td>
<td>Also configurable as:</td>
<td>Features:</td>
</tr>
<tr>
<td></td>
<td>binary inputs (static, dry contact, only)</td>
<td>binary inputs (static, dry contact, only)</td>
<td>2 relays per output</td>
</tr>
<tr>
<td></td>
<td>Features:</td>
<td>Features:</td>
<td>Voltage: 24 VAC/DC, P=50 mW</td>
</tr>
<tr>
<td></td>
<td>• 10-bit resolution</td>
<td>• 10-bit resolution (default)</td>
<td>max. total current: 3 A (AC/DC)</td>
</tr>
<tr>
<td></td>
<td>• configurable offset per input</td>
<td>• Safety position (remain, 0%, 50%, 100%)</td>
<td>current per relay: 500 mA</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>normally-open contacts: P &gt; 50 mW, voltage: 24 V (AC/DC)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1 yellow LED per output</td>
</tr>
</tbody>
</table>
GENERAL FEATURES

Legend
1 Controller (e.g., XL800, XL Web II, CPO-PC-6A, etc.)
2 Cable (power and LonWorks) connection from controller to Panel Bus I/O Modules
3 Swivel label holder
4 Cable connection between Panel Bus I/O Modules on separate DIN rails
5 Bridge connectors between Panel Bus I/O Modules on same DIN rail
6 Stopper (from 3rd-party supplier)
7 Auxiliary terminal packages

Fig. 2. Panel Bus I/O Modules on DIN rails

Table 5. System constraints

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. no. of I/O modules (any combination) per controller</td>
<td>depends upon controller type</td>
</tr>
<tr>
<td>Max. no. of I/O modules per row</td>
<td>10</td>
</tr>
<tr>
<td>Max. current (F1)</td>
<td>4 A</td>
</tr>
<tr>
<td>Max. current (F2)</td>
<td>12 A</td>
</tr>
<tr>
<td>Max. current (F3)</td>
<td>12 A</td>
</tr>
<tr>
<td>Max. row length</td>
<td>3 m</td>
</tr>
<tr>
<td>Max. distance between rows</td>
<td>40 m</td>
</tr>
<tr>
<td>Min. cross-section of GND (terminal 9) (protected by F2)</td>
<td>1.5 mm²</td>
</tr>
</tbody>
</table>

LEDs
Each Honeywell Panel Bus I/O Module is equipped with:
- one green power LED
- one yellow service LED

Overvoltage Protection
All Honeywell Panel Bus I/O analog and binary I/O Modules are protected against short circuit, 24 VAC ±20% and 40 VDC. The relay outputs of relay output modules, floating output modules, and mixed I/O modules should be equipped with appropriate fusing to protect against short-circuiting of the load.

Service LED
Each Panel Bus I/O Module is equipped with a yellow service LED (status: yellow/OFF) for easy diagnosis of failures.

Microprocessor
Each Panel Bus I/O Module is equipped with its own microprocessor.

System Constraints
Depending upon the given controller, up to 64 I/O modules in any combination of models may be connected.

Addressing
Addressing is performed using the HEX switch.
Analog Input Module

The pluggable Honeywell Panel Bus Analog Input Module, with 8 analog inputs, is installed with the XS821-22 or XSU821-22 Terminal Socket.

Fig. 3. XF821A Panel Bus AI Module (shown with terminal socket)

Legend
1 Hex switch S2
2 Service LED
3 Power LED

Fig. 4. Analog input low impedance (input circuit for PT1000, Johnson A99 PTC, Balco500, PT3000, NI1000TK5000, slow binary input)

Fig. 5. Analog input high impedance (input circuit for voltage input for active sensors)

Fig. 6. Analog input impedance setpoint (input circuit for NTC10kΩ, NTC20kΩ, wall module setpoint)

Fig. 7. Terminal assignment and internal connections

Features
- 0…10 VDC, 2…10 VDC without pull-up
- 0…10 VDC with pull-up (linear graph, e.g. used for wall module connection)
- 0/4…20 mA, needs 499 Ω resistor in parallel
- NTC20kΩ (-50…+150 °C, default)
- NTC10kΩ (-30…+100 °C)
- PT1000-1 (-50…+150 °C)
- PT1000-2 (0…+400 °C)
- NI1000TK5000 (-30…+130 °C)
- PT3000 (-50…+150 °C)
- BALCO500 (-30…+120 °C)
- Binary input
- 16-bit resolution
- Configurable offset per input
- Auxiliary voltage: 10 VDC, $I_{MAX} = 5$ mA
- Sensor failure detection
Fig. 8. XF821A Panel Bus AI Module, wiring example 1: Active sensor and potentiometer
**Fig. 9. XF821A Panel Bus AI Module, wiring example 2: Passive sensor and 0 (4) ... 20 mA signal**
Analog Output Modules

They are installed with the XS821-22 or XSU821-22 Terminal Socket.

Feature

- 0…11 VDC, +/-1 mA
- Floating actuator (requires MCD3)
- Binary output (0 V / 10 V)
- red LED per output (brightness according to signal level)
- Optional versions with manual override potentiometers (Auto, 0…100%; LED flashes in override mode)
- Feedback on manual override signal
- 8-bit resolution
- Configurable safety position for outputs in case of communication problems (remain, 0%, 50%, 100%)
Fig. 12. XF822A Panel Bus AO Module, wiring example 1: Actuator
The relay module facilitates the control of peripheral devices with high load via the analog outputs. 
Input terminal 17 of MCD3 controls changeover contact K3.
Relay terminal 18 of MCD3 controls the N.O. contacts (floating outputs) K1, K2.
Fig. 14. XF822A Panel Bus AO Module, wiring example 3: Relay Module MCE 3

The relay module facilitates the control of peripheral devices with high load via the analog outputs.

- Input terminal 16 of MCE3 controls the N.O. contact K3.
- Input terminal 17 of MCE3 controls the changeover contact K2.
- Input terminal 18 of MCE3 controls the changeover contact K1.
Binary Input Module

Fig. 15. XF823A Panel Bus BI Module (shown with XS823 terminal socket)

Legend
1 Hex switch S2
2 Status LEDs
3 Service LED
4 Power LED

The pluggable Honeywell Panel Bus Binary Input Module, with 12 binary inputs, is installed with the XS823 or XSU823 Terminal Socket.

Fig. 16. Terminal assignment and internal connections

Features
- Static binary input (dry contact)
- Totalizer for up to 20 Hz
- LEDs per binary input supporting alarm display mode (red/green) or status mode (off/yellow).
- Color mode of each LED can be set to OFF/yellow or green/red in CARE.

Configuration as Fast Totalizer
Using CARE, the binary inputs can be configured as fast totalizers for operation in conjunction with devices equipped with an open collector output.

Table 6. Binary inputs used as fast totalizers

<table>
<thead>
<tr>
<th>Frequency</th>
<th>max. 20 Hz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pulse ON</td>
<td>min. 25 ms</td>
</tr>
<tr>
<td>Pulse OFF</td>
<td>min. 25 ms</td>
</tr>
<tr>
<td>Bounce</td>
<td>max. 5 ms</td>
</tr>
</tbody>
</table>

Fig. 17. Configuration of binary input as fast totalizer
Fig. 18. XF823A Panel Bus BI Module, wiring example: Dry contact and totalizer
Relay Output Modules

Fig. 19. XFR824A Panel Bus Relay Output Module (shown with terminal socket)

Legend
1 Hex switch S2
2 Manual overrides
3 Status LEDs
4 Service LED
5 Power LED

The pluggable Honeywell Panel Bus Relay Output Modules, with 6 relay outputs, are available in the following versions:
- XF824A Panel Bus Relay Output Module (without manual overrides)
- XFR824A Panel Bus Relay Output Module (with manual overrides)

They are installed with the XS824-25 or XSU824-25 Terminal Socket.

Fig. 20. Terminal assignment and internal connections

Features
- Cross-Connector
- 1 yellow LED per output
- Optional versions with manual override switches (Auto, 0, 1; LED flashes in override mode)
- Feedback on manual override signal
- Configurable safety position for outputs in case of communications problems (remain, OFF, ON)
- Permissible load per Relay Output Module (total)
  - Max. load:
    - 19…250 VAC: 12 A
    - 1…29 VDC: 12 A resistive, 3 A inductive
- Permissible load per normally-open contact:
  - Max. load:
    - 19…250 VAC: 4 A resistive or inductive
    - 1…29 VDC: 4 A resistive, 1 A inductive
  - Min. load: P > 50 mW
- Permissible load per normally-closed contact:
  - Max. load:
    - 19…250 VAC: 2 A resistive, 1 A inductive
    - 1…29 VDC: 2 A resistive, 1 A inductive
  - Min. load: P > 50 mW
Fig. 21. XF824A Panel Bus RO Module, wiring example 1: Both relay blocks with line voltage
LEGEND:

- F1 = MAX. 4 A
- F3 = MAX. 12 A
- THIN LINES = = MIN. 0.75 mm²
- THICK LINES = = MIN. 1.5 mm² - or less, as per F3
- DASHED LINES = - - - - = SELECTED INTERNAL CONNECTIONS

Fig. 22. XF824A Panel Bus RO Module, wiring example 2: Relay blocks with low and line voltage
Floating Output Module

Fig. 23. XFR825A Panel Bus Floating Output Module (shown with socket)

Legend
1 Hex switch S2
2 Manual overrides
3 Status LEDs
4 Service LED
5 Power LED

The pluggable XFR825A Panel Bus Floating Output Module, with manual overrides and 3 floating outputs, is installed with the XS824-25 or XSU824-25 Terminal Socket.

Fig. 24. Terminal assignment and internal connections

Features
- Cross-Connector
- 1 red LED (opening) and 1 green LED (closing) per floating output
- Manual override potentiometers (Auto, 0%...100%; LED flashes in override mode)
- Feedback on manual override signal
- Configurable safety position for outputs in case of communication problems (remain, 0%, 50%, 100%)
- Permissible Load per Floating Output Module (total)
  - Max. load:
    19…250 VAC: 12 A
    1…29 VDC: 12 A resistive, 3 A inductive
- Permissible load per normally-open contact:
  - Max. load:
    19…250 VAC: 4 A resistive or inductive
    1…29 VDC: 4 A resistive, 1 A inductive
  - Min. load: P > 50 mW
- Permissible load per normally-closed contact:
  - Max. load:
    19…250 VAC: 2 A resistive, 1 A inductive
    1…29 VDC: 2 A resistive, 1 A inductive
  - Min. load: P > 50 mW
Fig. 25. XFR825A Panel Bus FO Module, wiring example: Floating actuator
Mixed I/O Modules

XF830A  
XFU830A  
CPO-I0830

Fig. 26. XF830A, XFU830A, and CPO-I0830 Mixed Panel Bus Modules

The mixed Honeywell Panel Bus I/O modules, with 8 analog inputs, 8 analog outputs, 12 binary inputs, and 6 relay outputs, are available in the following versions:
- XF830A mixed Honeywell Panel Bus I/O module, with push-in terminals;
- XFU830A mixed Honeywell Panel Bus I/O module, with screw terminals;
- CPO-I0830 mixed Honeywell Panel Bus I/O module, with push-in terminals.

Each features an integrated terminal socket and electronic module. The XF830A can be equipped with up to two rows of (XS830 and/or XS831) auxiliary terminal blocks on the top and/or bottom. The XFU830A and CPO-I0830 can be equipped with up to two rows of (XS830 and/or XS831) auxiliary terminal blocks on the top, only.

Fig. 27. XF830A mixed Panel Bus I/O module, shown with 4 optional aux. terminal blocks (top view)

Fig. 28. XFU830A mixed Panel Bus I/O module, shown without optional aux. terminal blocks (top view)

Warning

Risk of electric shock or equipment damage! It is not permitted to wire the relays of the mixed Panel Bus I/O modules for anything other than low voltage.

Permissible Loads

Table 7. Permissible loads of mixed Panel Bus I/O modules

<table>
<thead>
<tr>
<th></th>
<th>max. load</th>
<th>min. load</th>
</tr>
</thead>
<tbody>
<tr>
<td>per module (total for all relay contacts)</td>
<td>19...29 VAC, 1...29 VDC</td>
<td>0.05 A res./ind., cos φ ≥ 0.6</td>
</tr>
<tr>
<td>per normally open contact</td>
<td>19...29 VAC, 1...29 VDC</td>
<td>&gt;50 mW, cos φ ≥ 0.6</td>
</tr>
<tr>
<td></td>
<td>3 A resistive or inductive, no capacitive load, protected by fuse F4</td>
<td></td>
</tr>
</tbody>
</table>

Fig. 29. CPO-I0830 mixed Panel Bus I/O module, shown with 4 optional aux. terminal blocks (top view)
Fig. 30. Analog input high impedance (input circuit for voltage input for active sensors)

Fig. 31. Analog input impedance setpoint (input circuit for NTC10kΩ, NTC20kΩ, wall module setpoint)

Fig. 32. Configuration of a binary input as a fast totalizer
Fig. 33. XF830A mixed Panel Bus I/O Module, wiring example: Actuators
Fig. 34. CPO-IO830 Connection example (for current inputs)
Approvals, Certifications, and Standards

Approvals and Certifications
- CE-approved
- Conforms to EN 60730-1 and EN 60730-2-9
- Investigated according to United States Standard UL916 (USL-listed) as well as according to Canadian National Standard(s) C22.2 (CNL-listed)

Classification according to EN60730-1
Environmental conditions: For use in home (residential, commercial, and light-industrial) environments
Pollution degree: Class 2
Protection against shock: Class II
Software class: Class A
Overvoltage category: II

Classification according to EN60529
(Degree of Protection Provided by Enclosures)
Classification: IP20

Ambient Environmental Limits
Operating temperature: 0 … +50 °C at 5…93% r.H.
Storage temperature: -20 … +70 °C at 5…93% r.H.
Humidity: 5 … 93% r.h. non-condensing

Current Requirements and Heat Dissipation
The Panel Bus I/O Modules are equipped with highly-efficient switching power supplies which provide for relatively uniform power consumption over a wide range of supply voltages (see Table 8). The specific heat dissipation inside the modules amounts to less than 2 W for all models.

Table 8. Current requirements of Panel Bus I/O modules

<table>
<thead>
<tr>
<th>devices powered</th>
<th>supply voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>24 VAC</td>
</tr>
<tr>
<td>XF821A</td>
<td>130 mA</td>
</tr>
<tr>
<td>XF822A, XFR822A</td>
<td>150 mA</td>
</tr>
<tr>
<td>XF823A</td>
<td>180 mA</td>
</tr>
<tr>
<td>XF824A, XFR824A, XFR825A</td>
<td>140 mA</td>
</tr>
<tr>
<td>XF830A, XFU830A, CPO-IO830</td>
<td>200 mA</td>
</tr>
</tbody>
</table>

Mechanical

Housing Dimensions (H x W x D)
The pluggable Panel Bus I/O Modules (mounted on Terminal Sockets) all have the dimensions: 110 X 90 X 93 mm (see also Fig. 35 on page 25).
The XF830A and XFU830A mixed Panel Bus I/O Modules have the dimensions: 216 X 110 X 93 mm (see also Fig. 36 on page 25).
The CPO-IO830 mixed Panel Bus I/O Module has the dimensions: 216 X 110 X 61 mm (see also Fig. 37 on page 26).

Housing Material
Plastic, flame-retardant

Mounting Methods
DIN-rail mounting (e.g., in control cabinet).

Calculated Lifetime of Weakest Components
MTBF ≥ 13.7 years (under typical operating conditions)
Dimensions

Fig. 35. Pluggable Honeywell I/O Modules (example with manual overrides), incl. terminal socket, dimensions (in mm)

Fig. 36. XF830A (shown) and XFU830A mixed Honeywell I/O Module (example with 4 auxiliary terminal packages), dimensions (in mm)
Fig. 37. CPO-IO830 Mixed Honeywell I/O Modules, dimensions (in mm)