

## 3.3 Supported Series C I/O modules

The list of I/O modules below can be used on a Series C IOLINK. The IOLINK contains a function that enables programming and reprogramming the executable image (rather than substitution of a removable hardware component). The preferred method of delivery of the image is over the IOLINK.


**Tip**

Series C IOLINK cannot contain any PM I/O IOPs.

C300 IOLINK block parameter IOLINKTYPE is used to determine if the IOLINK supports either Series C I/O or PM I/O.

**Table 6: Available I/O modules**

| IOM model names        | IOM block name        | Description                                                                                                                                              | # of chnls | Similar to PMIO type | IOP model names |
|------------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------------------|-----------------|
| CU-PAIH01<br>CC-PAIH01 | AI-HART               | High Level Analog Input with HART<br><br>(supports differential inputs on only channel 13 through channel 16)<br><br>Refer to Attention                  | 16         | HLAIHART             |                 |
| CC-PAIH02              | AI-HART               | High Level Analog Input with HART<br><br>((supports differential inputs on all 16 channel)                                                               | 16         | HLAIHART             |                 |
| CC-PAIX02              | AI-HART               | High Level Analog Input with Differential/Single-ended non-HART<br><br>(supports differential inputs on all 16 channels)                                 | 16         | HLAI                 |                 |
| CC-PAIX01              | AI-HL                 | High Level Analog Input with Differential non-HART<br><br>(supports differential inputs on only channel 13 through channel 16)<br><br>Refer to Attention | 16         | HLAI                 |                 |
| CU-PAIN01<br>CC-PAIN01 | AI-HL                 | High Level Analog Input with non-HART                                                                                                                    | 16         | HLAI                 |                 |
| CC-PAIH51              | AI-HART               | 1 Modem, High Level Analog Input with HART                                                                                                               | 16         | HLAIHART             |                 |
| CU-PAON01<br>CC-PAON01 | AO                    | Analog Output with non-HART                                                                                                                              | 16         | AO16                 |                 |
| CU-PAOX01<br>CC-PAOX01 | AO                    | Analog Output with non-HART<br><br>Refer to Attention                                                                                                    | 16         | AO16                 |                 |
| CU-PAIM01<br>CC-PAIM01 | AI-LLMUX <sup>1</sup> | Low Level Analog Input Mux                                                                                                                               | 64         | LLMUX                |                 |
| CC-PAIM51              | AI-LLAI               | Low Level Analog Input Mux                                                                                                                               | 16         | LLAI                 |                 |

| IOM model names        | IOM block name      | Description                                                                            | # of chnls | Similar to PMIO type | IOP model names |
|------------------------|---------------------|----------------------------------------------------------------------------------------|------------|----------------------|-----------------|
| CU-PAOH01<br>CC-PAOH01 | AO-HART             | Analog Output with HART                                                                | 16         | AO16HART             |                 |
| CC-PAOH51              | AO-HART             | 1 Modem, Analog Output with HART                                                       | 16         | AO16HART             |                 |
| CU-PDIH01<br>CC-PDIH01 | DI-HV               | High Voltage Digital Input (IOM supports both 120 and 240 volts AC)                    | 32         | DI                   |                 |
| CU-PDIL01<br>CC-PDIL01 | DI-24               | Low Voltage Digital Input (24 volts DC)                                                | 32         | DI<br>or<br>DI24V    |                 |
| CC-PDIL51              | DI-24               | Low Voltage, Digital Input (24 volts DC)                                               | 32         | DI                   |                 |
| CU-PDIS01<br>CC-PDIS01 | DI-SOE              | Low Voltage Digital Input (24 volts DC)                                                | 32         | DISOE                | Mx-PDIS12       |
| CU-PDOB01<br>CC-PDOB01 | DO-24B <sup>2</sup> | Bussed Low Voltage Digital Output (24 volts DC)                                        | 32         | DO_32                |                 |
| CC-PDOD51              | DO-24B              | Bussed Low Voltage, Digital Output (24 volts DC)                                       | 32         | DO32                 |                 |
| CU-PSOE01<br>CC-PSOE01 | DI-SOE              | Low Voltage Digital Input SOE (24 volts DC)                                            | 32         | DISOE                |                 |
| CC-PSP401              | SP                  | Speed Protection                                                                       | 26         |                      |                 |
| CC-PSV201              | SVP                 | Servo Valve Positioner                                                                 | 8          |                      |                 |
| CC-PPIX01              | PIM                 | Pulse Input Module                                                                     | 8          | PI IOP               |                 |
| CC-PUIO01              | UIO                 | Universal Input/Output Module                                                          | 32         |                      |                 |
| CC-PUIO31              | UIO                 | Universal Input/Output Module                                                          | 32         |                      |                 |
| Series C Mark II IOM   |                     |                                                                                        |            |                      |                 |
| CC-PAIH01              | AI-HART             | High Level Analog Input with HART                                                      | 16         |                      |                 |
| CC-PAOH01              | AO-HART             | Analog Output with HART                                                                | 16         |                      |                 |
| DC-PDIL51              | DI-24V              | Digital Input (24 volt DC) without Open Wire Detection                                 | 32         |                      |                 |
| DC-PDIS51              | DI-SOE              | Low-Voltage Digital Input SOE-Low Resolution (24 volts DC) without Open Wire Detection | 32         |                      |                 |
| DC-PDOD51              | DO-24B              | Bussed Low Voltage Digital Output (24 volts DC) without Open Wire Detection            | 32         |                      |                 |
| CC-PAIH51              | AI-HART             | 1 Modem, High Level Analog Input with HART                                             | 16         | HLAIHART             |                 |
| CC-PAOH51              | AO-HART             | 1 Modem, Analog Output with HART                                                       | 16         | AO16HART             |                 |
| CC-PAIN01              | AI-HL               | High Level Analog Input with non-HART                                                  | 16         | HLAI                 |                 |
| CC-PAON01              | AO                  | Analog Output with non-HART                                                            | 16         | AO16                 |                 |

Following Series C IO modules introduced in Experion PKS R410.

|                       |            |
|-----------------------|------------|
| HART Analog Input     | CC -PAIH51 |
| HART Analog Output    | CC-PAOH51  |
| Digital Input 24V DC  | CC-PDIL51  |
| Digital Output 24V DC | CC-PDOD51  |

These modules must be used only with Experion PKS R410 and later. These modules will not work as expected with earlier releases of Experion PKS. Using these with Experion releases prior to R410 by downgrading the firmware may render the module faulty and may not be possible to recover.

#### NOTES:

- There are two models of High Level Analog Input such as, CU-PAIX01 and CU-PAIN01. The Module Hardware and the corresponding IOTAs are different and CU-PAIN01 is a new model. From the perspective of configuration and implementation, both High Level Analog Input models use the same IOM Block such as, AI-HL. It must be noted that the two models utilize the same configuration; online migration is not possible as mixed redundant pair is not possible. There are two models of Analog Output such as, CU-PAOX01 and CU-PAON01. Hence, similarly configuration, implementation, and interoperability constraints apply and CU-PAON01 is the new model.
- Two new models of AI-HART (CC-PAIH02) and AI-HL (CC-PAIX02) modules are introduced to replace the older models of the AI-HART (CC-PAIH01) and AI-HL (CC-PAIX01) modules. The new models support both single-ended and differential inputs.
- With R410, a new model of HART Analog Input CC-PAIH51 is introduced. The HART Analog Input CC-PAIH51 and Cx-PAIH01 use the same IOM block, that is, AI-HART. The configuration and implementation mentioned in note 1 applies to the HART Analog Input module.
- With R410, a new model of HART Analog Output CC-PAOH51 is introduced. The HART Analog Output CC-PAOH51 and Cx-PAOH01 use the same IOM block, that is., AO-HART. The configuration and implementation mentioned in note 1 applies to the HART Analog Output module.
- With R410, a new model of Digital Input 24V DC CC-PDIL51 is introduced. The Digital Input 24V DC CC-PDIL51 and Cx-PDIL01 use the same IOM block, that is, DI-24. The configuration and implementation mentioned in note 1 applies to the Digital Input 24V module.
- With R410, a new model of Digital Output 24V DC CC-PDOD51 is introduced. The Digital Output 24V DC CC-PDOD51 and Cx-PDOB01 use the same IOM block, that is, DO-24B. . The configuration and implementation mentioned in note 1 applies to the Digital Output 24V module.
- Starting with R430, a new model of Low Level Analog Input Mux CC-PAIM51 is introduced.
- The UIO (CC-PUIO01) has 32 configurable input or output channels. Each channel can be configured as one of the following:
  - Analog Input (0-20mA or 4-20mA active)
  - Analog Output (4-20mA active)
  - Digital Input (with or without line monitoring)
  - Digital Output (with or without line monitoring)
- The UIO (CC-PUIO31) module is introduced with R432 and has 32 configurable input or output channels that are identical to the UIO (CC-PUIO01) module.

### 3.3.1 Compatibility matrix between AI modules and differential AI modules

You can choose the AI modules based on your functionality requirements. The following table lists the functionalities and the respective AI modules.

| If you want...             | Then you must select... |
|----------------------------|-------------------------|
| AI HART/GIIS functionality | CC-PAIH02 module        |