ComfortPoint Open
CPO-DIO (DIGITAL I/O CONTROLLER)

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GENERAL

- CPO-DIO modules are supported for all CPO plant controllers.
- Outstanding performance with 32-bit technology.
- Built-in Real Time Clock.
- CPO-DIO is based on B-AAC BACnet profile.
- Connects to RS-485 CP-IO bus of supported plant controllers.
- Fully integrated with ComfortPoint Open Manager (CPOM) as IO device and BACnet controller integrated under plant controller (CPO-PC-6A, CP-IPC).
- Fully integrated with Enterprise Building Integrator (EBI) for the existing EBI system with ComfortPoint Open (CPO) subsystems, the DIOs are considered as BACnet controller and also as IO devices.
- Flexible and easy configuration with ComfortPoint Open Studio.
- Suitable for smoke control systems (UUKL applications).

Attention
Due to Product renovation & technology upgrade, the specifications given in this data sheet maybe subject to change. Please contact your regional product management for current updates.

FEATURES

Onboard Inputs and Outputs
CPO-DIO comes with 8 UI, 8 DI and 16 DO (triacs) I/O which can be used as an expansion I/O board by connecting it to the supported plant controllers on the same RS485 bus.

Scalable and Powerful
Designed with 32-bit processor and built in Real Time Clock, the system can be expanded from a small to a large Integrated Building Management System.

Programming and Configuration
ComfortPoint Open Studio enables users to add/delete/modify I/O assignments when used as an expansion I/O board.

Flexible mounting options
DIN-rail / Wall mounting.

Automatic MAC addressing
Automatically assigns own unique MAC address.

CPO-DIO FRONT VIEW
**SPECIFICATIONS**

### Electrical Data

**Operating Voltage**
- 24 VAC ± 20%

**Power Consumption**
- 15 VA

**Housing Material**
- ABS Plastic

**Mounting**
- DIN rail
- Wall mounting

**Protection Class**
- IP20

**CPU**
- Processor: Kinetis K10, 32-bit, ARM Cortex-M4

**Real Time Clock**
- Built-in Real Time Clock

**Memory**
- 1 MB Flash
- 96 KB RAM
- Battery backup: Data backup up to 72 hours

### Integrated I/Os

**Input: 16 (8UI+8DI)**
- 8 Universal Input
  - NTC 20K (-50 °C to +150 °C)
  - PT1000 (-50 °C to +150 °C)
  - 0 (2) to +10 VDC
  - 0 (4) to 20 mA (with an external resistor of 499 Ω ± 0.25%)
  - Potential Free Contact as Digital Input
- 8 Digital Input
  - DC signal (max. 30 VDC)
  - Potential free contact
  - Can be used as pulse inputs for metering purpose (15Hz max)

**Output: 16 Digital Output (Triac Outputs)**
- Maximum voltage: 24 VAC
- Maximum continuous current: 500 mA
- Minimum current: 30 mA

### MTBF (Mean Time Between Failure) Data
- 100,000 Hours or 11.4 Years

### Environmental

**Temperature**
- Operation: 0~50 °C
- Storage: -20 ~ +70 °C

**Ambient Humidity (operation and storage)**
- 5 to 93% relative humidity, non-condensing

### Certifications
- BACnet B-AAC
- UL 916, UUKL
- FCC Part 15, Subpart B, Class B

### Models
- CPO-DIO: 32 point on board I/O

### Hardware Interfaces

**MSTP Port 1**
- Supports 9.6, 19.2, 38.4 and 76.8 Kbps
- Connects to MSTP network with max 30 BACnet devices per network
- 3 x screw terminal, removable

**RS485 Port**
- Allows connecting ComfortPoint Open plant controllers and other Expansion IO Boards.

### Mode Selector Switch

CPO-DIO can be operated in two modes:
- Expansion I/O module: To configure as Expansion I/O module, set the Mode Switch Pin 2 to ON.
- BACnet MSTP controller: To configure as BACnet MSTP controller, set the Mode Switch Pin 2 to OFF.

**Note:** To enable the end of line resistor when used as a BACnet MSTP controller and IO board, set Pin 1 to ON.
Controller Addressing

- Controller from factory with a sticker on the rotary switches, supports both Automatic and Manual MAC addressing:
  - AutoMAC feature is enabled by default (rotary switches are set to FF).
  - Manual MAC addressing is possible by removing the sticker and setting the rotary switches (01 ~ 1F).
- Controller without a sticker on the rotary switches, supports only Manual MAC addressing.

DIMENSION

All dimensions mentioned in the following figure are in mm.