ControlEdge HC900 IO Modules Specifications

51-52-03-41, April 2021

Overview

The Honeywell ControlEdge HC900 Controller is an advanced loop and logic controller offering a modular design sized to satisfy the control and data acquisition needs of a wide range of process equipment.

I/O Modules

The following I/O modules are available to create a custom control solution.

- 16 Channel Universal IO Module Galavanically isolated Input/Output to chassis (p.29)

- 8-point universal analog input modules: Galvanic isolation point to chassis inputs may be mixed on a module and may include multiple thermocouple types, RTDs, ohms, voltage or mill voltage types – all easily assigned using the Process Control Designer configuration tool. High point-to-point galvanic isolation simplifies installation and saves the expense of external isolation hardware (p.8).

- 16-point high level analog input module: each point is configurable for V or mA. Galvanically isolated point to chassis. Galvanically isolated point to point (p.12). 250-ohm shunt resistors can be added per channel.

- 4-point galvanically isolated analog output module. Galvanically isolated point to chassis supports from 0 to 20mA each (p.14).

- 8-point analog output, galvanically isolated in 2 groups of 4 points. Galvanically isolated point to chassis. Supports from 0 to 20mA each (p.15).

- 16-point analog output, galvanically isolated in 4 groups of 4 points. Galvanically isolated point to chassis. Supports from 0 to 20mA each (p.16).

- 16-point digital input modules: Contact closure type, DC Voltage, AC Voltage and AC/DC voltage types (p.17). Galvanically isolated in groups of 8 channel to chassis

- 32-point digital input module: DC voltage. Galvanically isolated point to chassis. Galvanically isolated in 2 groups of 16 points (p.2117).

- 8-point AC or 16-point DC digital output modules (sinking type). Galvanically isolated point to chassis. Galvanically isolated in 2 groups of 8 points (p.20).

- 32-point digital output: DC voltage (sourcing type). Galvanically isolated point to chassis. Galvanically isolated in 2 groups of 16 points (p.25).

- 8-point relay output module: four form C type and four form A type relays. Galvanically isolated point to chassis. Galvanically isolated relay to relay (p.22).

- 4 channel Pulse/Frequency/Quadrature I/O module. Galvanically isolated point to chassis (p.26).

Insert and Removal of I/O under Power

For ease of maintenance, the ControlEdge HC900 controller supports removing and inserting I/O modules from the module rack without removing power from the controller. Each module is sensed for validity by the controller and auto-configured on insertion.

Other Modules

In addition to I/O, the following modules are available.

- Scanner 1 module, single port (p.33)

- Scanner 2 Module, dual port (p.34)

- Universal AC Power Supply, 60W (p.6)

- Power Supply 24VDC, 60W (p.6)

- Redundant Switch Module (p.35)

- Power Status Module (p.35)

Failsafe

All ControlEdge 900 Platform I/O modules support a user specified failsafe value (analog) or state (digital) that the module outputs or inputs will assume if communication between the controller and the module is interrupted. Output modules are also disabled if the controller fails to start. Module diagnostics are not initiated if the control strategy does not call for the inputs or outputs on the modules to execute.

Failsafe is restricted to de-energize in safety applications.

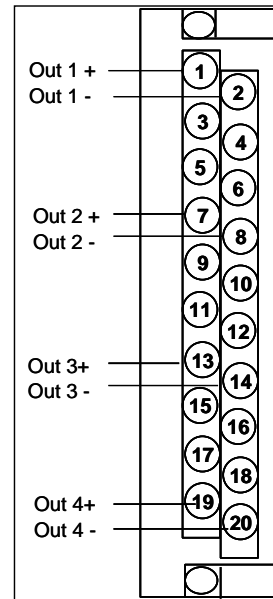| Digital Input, 120/240 Vac (16 channel 125 Vdc)	T3C@ Ta = 60 deg. C T4 @ Ta = 40 deg. C
Digital Input Vdc (32 channel)	T3C@ Ta = 60 deg. C T4 @ Ta = 40 deg. C
Digital Output, Relay type (8 channel)	T5
Digital Output, 24 Vdc, (16 channel)	T4
Digital Output, 120/240 Vac (8 channel)	T4
Digital Output Vdc (32 channel)	T6
Pulse/Frequency/Quadrature (4 channel)	T5
Universal IO Module (16 channel)	T4

Dimensions and Weight

| Item	Module Number	Dimension	Weight
4 I/O slot Rack[1,2]	900R04-0200	137mm H* x 266.7mm W x 151.7mm D 5.4" H* x 10.5" W x 6.0" D	2104g
8 I/O slot Rack[1,2]	900R08-0200	137mm H* x 419.1mm W x 151.7mm D 5.4" H* x 16.5" W x 6.0" D	3126g
8 I/O slot Rack with redundant power support[1,2]	900R08R-0200	137mm H* x 530.9mm W x 151.7mm D 5.4" H* x 20.9" W x 6.0" D	4422g
12 I/O slot Rack[1,2]	900R12-0200	137mm H* x 571.5mm W x 151.7mm D 5.4" H* x 22.5" W x 6.0" D	4072g
12 I/O slot Rack with redundant power support[1,2]	900R12R-0200	137mm H* x 683.3mm W x 151.7mm D 5.4" H* x 26.9" W x 6.0" D	5252g
Redundant CPM Rack[1,2]	900RR0-0101	137mm H* x 261.6mm W x 151.7mm D 5.4" H* x 10.3" W x 6.0" D	1751g
CPU, ControlEdge 900	900C30-0460/ 900C30S-0460	137mm H x 38.1mm W 5.4" H* x 1.5" W	350g
	900C50-0460/ 900C50S-0460	137mm H x 38.1mm W 5.4" H* x 1.5" W	360g
	900C70-0460/ 900C75-0460/ 900C70S-0460/ 900C75S-0460	137mm H x 38.1mm W 5.4" H* x 1.5" W	400g
Scanner, ControlEdge 900	900S50-0460/ 900S50S-0460	137mm H x 38.1mm W 5.4" H* x 1.5" W	360g
	900S75-0460/ 900S75S-0460	137mm H x 38.1mm W 5.4" H* x 1.5" W	400g
4 port serial communications module, 2 x RS232, 2 x RS485	900ES1-0100	137mm H x 35.6mm W 5.4" H* x 1.4" W	350g
SIL UIO	900U02-0100	134mm H x 33.1mm W 5.3" H* x 1.3" W	260g
Universal AI -RTD, TC, V, 8 Ch	900A01-0202	137mm H x 35.6mm W 5.4" H* x 1.4" W	210g
Analog Input hi level, 16 Ch	900A16-0103	137mm H x 35.6mm W 5.4" H* x 1.4" W	397g
Analog Output, 0 to 20mA, 4 Ch	900B01-0301	137mm H x 35.6mm W 5.4" H* x 1.4" W	408g
Analog Outputs 0 to 20mA, 8 Ch	900B08-0202	137mm H x 35.6mm W 5.4" H* x 1.4" W	400g

Analog Output Module (900B01-xxxx)

The Analog Output module provides 4 isolated 0 to 21.8 mA outputs that may be scaled by the user to any span within this range on a per output basis.

A green blinking status LED on the module indicates when the module is being scanned. A red status LED when module or channel diagnostics exist. A user specified failsafe value is supported to allow predictable operation in the event communication between the module and the controller is interrupted.

Outputs are updated synchronous with control execution. A user specified rate of change limit may be applied to each output when needed.

Outputs per module	4 (isolated)
Current	0 to 21.8 mA, range selectable
Load resistance	750 ohms max
Galvanic Isolation	500VDC Channel to Channel.
Galvanic Isolation from logic	600 VDC
Accuracy	0.1% full scale at reference conditions
Modules per rack	10 max, up to 12 with product ambient temperature de-rating (see figure below)
Minimum current sensing	> 3.5 mA per output
Calibration Data	Data is stored in non-volatile memory. Redundant Factory Calibration, with automatic rejection of Bad version. Individual Channel Field Calibration
Diagnostics	Monitoring of Factory Calibration, Field Calibration, Configuration, and +24 VDC power supply.
Output Verification	Feedback to controller that indicates output current flowing.
D/A Resolution	12 bits
Power Supply Loading	5V ; 40mA max 24V ; 200mA max
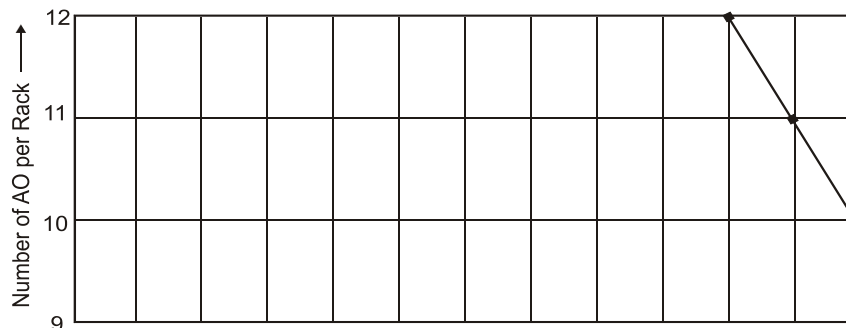
P01 Power Supply De-rating for AO Modules