MANUFACTURER DOCUMENT PACKAGE

# Manufacturer's Manual

Reference package for procurement and maintenance review

HONEYWELL

## 900A16-0103

**16-CHANNEL HIGH-LEVEL ANALOG INPUT MODULE**

Used with the applicable ControlEdge HC900 configuration.

REFERENCE PACKAGE

OFFICIAL DOCUMENT

Selected official manufacturer pages follow this cover.

Source: ControlEdge HC900 16-channel High-level Analog Input Module; applicable manufacturer document pages 1, 23, 24, 63, 64, 75

Honeywell

Technical Information

# ControlEdge PLC Specification



## CE03-100-180.1

**Release 180.1**

**December 2023,**

**Version 1.4**

### 2.5.3. Analog Input High Level, 16 Channel (900A16-0103)

The High Level Analog Input module supports up to 16 user-configurable inputs on a per point basis for Voltage or current. Point-to-point isolation and back-plane isolation are provided. Modules perform analog to digital conversion in synchronization with CPU control execution, eliminating data interchange latency. All analog input modules are processed in parallel, eliminating scan time increases as modules are added.
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.

**High Level Analog Input Specifications**

| Item | Specification |
|---|---|
| Inputs per module | 16 (isolated) |
| Input types | V, mA |
| Signal Source | See High Level Analog Input Reference Accuracy for range types. |
| Input Impedance | >1 megohm for volts and 250 ohms for mA inputs |
| Galvanic Input Isolation | 400 VDC point to point, solid state switching; 1K VDC to logic. |
| Noise Rejection | Series Mode >31dB<br>Common Mode >90dB at 120VAC |
| Over-range limit | +/- 10% for linear ranges (volts). |
| Accuracy | Factory configured accuracy = ± 0.1 % of range.<br>Reference conditions<br>Temperature = 25 °C ± 3 °C (77 °F ± 5 °F)<br>Humidity = 45 % to 55 % RH non-condensing<br>Line voltage = Nominal ± 1 %<br>Source resistance = 0 ohm<br>Series mode and common mode = 0 V<br>Frequency = Nominal ± 1 % |
| Temp. Effect on Accuracy | ±0.01% of full scale per degree Celsius maximum |
| A/D Converter | One per module |
| A/D Resolution | ±15 Bits |
| Update rate | 100ms (Analog to Digital Converter per module) |
| Long term Stability | 0.1% per year |
| Calibration | Data is stored in non-volatile memory<br>Redundant Factory Calibration |
| Diagnostics | Monitoring of Factory Calibration, 24 VDC supply, and configuration. |
| Channel Configuration Data | Stored in non-volatile memory. |

**High Level Analog Input Reference Accuracy**

| Input Type | Range | Reference Accuracy |
|---|---|---|
| Milliamperes | 4 to 20 mAdc<br>0 to 20 mAdc | ± 0.15% F.S. (mA)**<br>± 0.15% F.S. (mA)** |
| **Tolerances for these input types include that of internal Dropping Resistors | | |
| | | |
| Volts | 0 to 1VDC<br>0 to 2 VDC<br>0 to 5 VDC<br>0 to 10 VDC<br>1 to 5 VDC<br>-1 to 1 VDC<br>-2 to 2 VDC<br>-5 to 5 VDC<br>-10 to 10 VDC | ± 0.1% F.S. (mV)<br>± 0.1% F.S. (mV)<br>± 0.1% F.S. (mV)<br>± 0.1% F.S. (mV)<br>± 0.1% F.S. (mV)<br>± 0.1% F.S. (mV)<br>± 0.1% F.S. (mV)<br>± 0.1% F.S. (mV) |

# 3. Hardware Power Consumption, Heat Dissipation and Weight

## 3.1. ControlEdge900 I/O Modules

### 3.1.1. Power Consumption and Heat Dissipation

| Item | Module number | Max. Current @5V | Max. Current @24V | Heat Dissipation (W) |
|---|---|---|---|---|
| Control Processor Module | 900CP1-0200 | 750 mA | 0 mA | 3.75W |
| Expansion Processor Module | 900SP1-0200 | 520 mA | 0 mA | 2.6W |
| Control Processor Module, Ext. Temp (-40 to 70°C) | 900CP1-0300 | 750 mA | 0 mA | 3.75W |
| Expansion Processor Module, Ext. Temp (-40 to 70°C) | 900SP1-0300 | 520 mA | 0 mA | 2.6W |
| Serial communications module, 2 x RS232, 2 x RS485, Ext. Temp (-40 to 70°C) | 900ES1-0100 | 400 mA | 0 mA | 2 W |
| UIO Module, Ext. Temp (-40 to 70°C) | 900U01-0100 | 380 mA | 0 mA | 8.5W |
| Universal AI -RTD, TC, V, 8 Ch | 900A01-0202 | 40 mA | 25 mA | 0.8W |
| Analog Input High level,16 Ch | 900A16-0103 | 75 mA | 50 mA | 2.2W |
| Analog Output, 0 to 20mA ,4 Ch | 900B01-0301 | 40 mA | 200 mA | 6.8W |
| Analog Outputs 0 to 20mA,8 Ch | 900B08-0202 | 225 mA | 350 mA | 9.4W |
| Digital Input 120/240 VAC, 16 Ch | 900G03-0202 | 130 mA | 0 mA | 0.65W |
| Digital Input 24VDC, 32Ch, Ext. Temp (-40 to 70°C) | 900G32-0301 | 215 mA | 0 mA | 1.1W |
| Digital Input, Contact Type, 16 Ch | 900G01-0202 | 130 mA | 40 mA | 1.76W |
| Digital Input, 120/240 VAC-125VDC, 16 Ch | 900G04-0101 | 130mA | 130 mA | 8.3W |
| Digital Output - 120/240 VAC, 8 Ch | 900H03-0202 | 218 mA | 0 mA | 1.09W |
| Digital Output - 24VDC, 32 Ch, Ext. Temp (-40 to 70°C) | 900H32-0302 | 235 mA | 0 mA | 1.175W |
| Digital Output, Relay, 8 Ch | 900H01-0202 | 110 mA | 100 mA | 3W |
| Pulse/Freq, 4 Ch | 900K01-0201 | 110 mA | 250 mA | 6.6W |
| 120/240 V AC, 58W Power Supply | 900P01-0501 | N/A | N/A | 25W |
| 120/240 V AC, 41W Power Supply Ext. Temp (-40 to 70°C) | 900P01-0701 | N/A | N/A | 25W |
| 24V DC, 51W Power Supply | 900P24-0501 | N/A | N/A | 51W |
| Redundant Power Status Module, Ext. Temp (-40 to 70°C) | 900PSM-0200 | 22 mA | 0 mA | 0.11W |
| MOXA EDS-308 Ethernet Switch (8 Copper ports) | 50008930-001 | 0 mA | 350 mA | 8.4W |
| MOXA EDS-316-MM-SC Ethernet Switch (14 Copper + 2 Multi-Mode ports) | 50008930-002 | 0 mA | 380 mA | 9.12W |
| MOXA EDS-316-SS-SC Ethernet Switch (14 Copper + 2 Single-Mode ports) | 50008930-003 | 0 mA | 380 mA | 9.12W |
| MOXA EDS-308-SS-SC Ethernet Switch (6 Copper + 2 Single-Mode ports) | 50008930-004 | 0 mA | 350 mA | 8.4W |
| MOXA Fiber Optic Convertor IMC-101-M-SC, Multi-mode | 50135395-001 | 0 mA | 160 mA | 3.84W |
| MOXA Fiber Optic Convertor IMC-101-S-SC), Single mode | 50135395-002 | 0 mA | 160 mA | 3.84W |

### 3.1.2. Dimensions and Weight

| Item | Module Number | Dimension | Weight |
|---|---|---|---|
| 1 I/O Slot Rack[1,2,3] | 900R01-0300 | 137mm H x 150 mm W x 151.7mm D<br>5.4” H x 5.9” W x 6.0” D | 900g |
| 4 I/O slot Rack[1,2,3] | 900R04-0300 | 137mm H x 266.7mm W x 151.7mm D<br>5.4” Hx 10.5” W x 6.0” D | 2104g |
| 8 I/O slot Rack[1,2,3,] | 900R08-0300 | 137mm H x 419.1mm W x 151.7mm D<br>5.4” H x 16.5” W x 6.0” D | 3126g |
| 8 I/O slot Rack with redundant power support[1,2,3] | 900R08R-0300 | 137mm Hx 530.9mm W x 151.7mm D<br>5.4” H x 20.9” W x 6.0” D | 4422g |
| 12 I/O slot Rack[1,2,3,] | 900R12-0300 | 137mm H x 571.5mm W x 151.7mm D<br>5.4” H x 22.5” W x 6.0” D | 4072g |
| 12 I/O slot Rack with redundant power support[1,2,3] | 900R12R-0300 | 137mm H x 683.3mm W x 151.7mm D<br>5.4” H x 26.9” W x 6.0” D | 5252g |
| Redundant CPM Rack[1,2,3] | 900RR0-0300 | 137mm H x 261.6mm W x 151.7mm D<br>5.4” H x 10.3” W x 6.0” D | 1751g |
| CPM, ControlEdge 900 | 900CP1-0300 | 137mm H x 38.1mm W<br>5.4" H x 1.5" W | 320g |
| EPM, ControlEdge 900 | 900SP1-0300 | 137mm H x 38.1mm W<br>5.4" H x 1.5" W | 320g |
| 4 port serial communications module, 2 x RS232, 2 x RS485 | 900ES1-0100 | 137mm H x 35.6mm W<br>5.4" H x 1.4" W | 350g |
| Universal IO Module | 900U01-0100 | 137mm H x 38.1mm W<br>5.4” H x 1.5” W | 190g |
| Universal AI -RTD, TC, V, 8 Ch | 900A01-0202 | 137mm H x 35.6mm W<br>5.4” H x 1.4” W | 210g |
| Analog Input hi level, 16 Ch | 900A16-0103 | 137mm H x 35.6mm W<br>5.4” H x 1.4” W | 397g |
| Analog Output, 0 to 20mA, 4 Ch | 900B01-0301 | 137mm H x 35.6mm W<br>5.4” H x 1.4” W | 408g |
| Analog Outputs 0 to 20mA, 8 Ch | 900B08-0202 | 137mm H x 35.6mm W<br>5.4” H x 1.4” W | 400g |
| Digital Input 120/240 VAC, 16 Ch | 900G03-0202 | 137mm H x 35.6mm W<br>5.4” H x 1.4” W | 210g |
| Digital Input 24VDC, 32 Ch | 900G32-0301 | 137mm H x 35.6mm W<br>5.4” H x 1.4” W | 175g |
| Digital Input, Contact type, 16 Ch | 900G01-0202 | 137mm H x 35.6mm W<br>5.4” H x 1.4” W | 354g |
| Digital Input, 120/240 VAC-125VDC, 16 Ch | 900G04-0101 | 137mm H x 35.6mm W<br>5.4” H x 1.4” W | 400g |
| Digital Output - 120/240 VAC, 8 Ch | 900H03-0202 | 137mm H x 35.6mm W<br>5.4” H x 1.4” W | 230g |
| Digital Output – 24VDC, 32 Ch | 900H32-0302 | 137mm H x 35.6mm W<br>5.4” H x 1.4” W | 180g |
| Digital Output, Relays, 8 Ch | 900H01-0202 | 137mm H x 35.6mm W<br>5.4” H x 1.4” W | 425g |
| Pulse/Freq, (4chan) | 900K01-0201 | 137mm H x 35.6mm W<br>5.4” H x 1.4" W | 360g |
| Power Supply 120/240VAC, 58W | 900P01-0501 | 137mm H x 72.6mm W<br>5.4” H x 2.86” W | 820g |

# 7. Module Number List

## 7.1. ControlEdge 900 I/O Modules

| Item | Model | Description |
|---|---|---|
| **Racks** | | |
| 1 | 900RR0-0300 | Redundant CPM Rack (Assembly), Ext. Temp (-40 to 70°C) |
| 2 | 900R01-0300 | 1 I/O Slot Rack – Non-Redundant Power (Assembly), Ext. Temp (-40 to 70°C) |
| 3 | 900R04-0300 | 4 I/O Slot Rack – Non-Redundant Power (Assembly), Ext. Temp (-40 to 70°C) |
| 4 | 900R08-0300 | 8 I/O Slot Rack – Non-Redundant Power (Assembly), Ext. Temp (-40 to 70°C) |
| 5 | 900R12-0300 | 12 I/O Slot Rack – Non-Redundant Power (Assembly), Ext. Temp (-40 to 70°C) |
| 6 | 900R08R-0300 | 8 I/O Slot Rack – Redundant Power (Assembly), Ext. Temp (-40 to 70°C) |
| 7 | 900R12R-0300 | 12 I/O Slot Rack – Redundant Power (Assembly), Ext. Temp (-40 to 70°C) |
| **Control Processor Module** | | |
| 8 | 900CP1-0200 | Control Processor Module v1 |
| 9 | 900CP1-0300 | Control Processor Module, Ext. Temp (-40 to 70°C) |
| 10 | 900CP2-0100 | Control Processor Module v2 |
| **Expansion Processor Module** | | |
| 10 | 900SP1-0200 | Expansion Processor Module |
| 11 | 900SP1-0300 | Expansion Processor Module, Ext. Temp (-40 to 70°C) |
| 12 | 900ES1-0100 | 4 port serial communications module, 2 x RS232, 2 x RS485, Ext. Temp (-40 to 70°C) |
| **IO Module** | | |
| 13 | 900U01-0100 | Universal IO Module, Ext. Temp (-40 to 70°C) |
| 14 | 900A01-0202 | Universal AI, RTD, TC, V, 8 Ch |
| 15 | 900A16-0103 | Analog Input high level (16 channel) |
| 16 | 900B01-0301 | Analog Output, 0 to 20mA, (4 channel) |
| 17 | 900B08-0202 | Analog Outputs 0 to 20mA (8 channel, 5 modules/rack) |
| 18 | 900G03-0202 | Digital Input 120/240 VAC, 16 Ch |
| 19 | 900G32-0301 | Digital Input 24VDC, 32Ch, Ext. Temp (-40 to 70°C) |
| 20 | 900G01-0202 | Digital Input, Contact type, (16 channel) |
| 21 | 900G04-0101 | Digital Input, 120/240 VAC-125VDC, (16 channel Isolated) |
| 22 | 900H03-0202 | Digital Output, 120/240 VAC, 8 Ch |
| 23 | 900H32-0302 | Digital Output,24VDC, 32 Ch, Ext. Temp (-40 to 70°C) |
| 24 | 900H01-0202 | Digital Output, Relays (8 channel) |
| 25 | 900K01-0201 | Pulse/Freq (4 channel) |
| **Power Supply** | | |
| 26 | 900P01-0501 | 120/240 V AC, 58 W Power Supply |
| 27 | 900P24-0501 | 24 V DC, 51W Power Supply |
| 28 | 900P01-0701 | AC-DC-NON SIL 41W Power supply, Ext. Temp (-40 to 70°C) |
| 29 | 900PSM-0200 | Redundant Power Status Module, Ext. Temp (-40 to 70°C) |
| **Terminal Blocks** | | |
| 30 | 900TEK-0200 | TB Housing, Black 20 Position Euro style |
| 31 | 900TER-0200 | TB Housing, Red 20 Position Euro style |
| 32 | 900TCK-0200 | TB Housing, Black 36 Position Euro style |
| 33 | 900TBR-0200 | High Voltage Terminal Block (Barrier Style) |