Bristol® ControlWave® Remote Ethernet I/O

With the ever-increasing demand for distributed I/O architectures Bristol® ControlWave® Remote I/O modules, from Emerson Process Management, are the ideal solution to minimize installation cost. The compact DIN-rail mount modules provide an open connectivity through 10 Mbps Ethernet and 38.4 KB serial RS 485. The wide range of module I/O configurations brings exceptional flexibility to network diversity. Each module is designed and rated for harsh industrial environments, a perfect compliment to the ControlWave Process Automation Management Solution as well as our Network 3000 measurement and control system.

Features

- Open Modbus (Modbus TCP) Ethernet connectivity
- RS 485 Modbus RTU or Modbus ASCII
- Easy-to-use ConfigTools software configuration
- Internal 24 V dc loop power minimizes wiring cost
- 'Hot Swap' I/O module replacement
- 10 – 30 V dc power input
- -30 to +70°C operating temperature range
- CSA, UL Class I, Div. 2 Groups A-D, and CE approved

Specifications

All I/O

- Compact 4 ¾" W x 3 ¼" H x 4 1/8" D
- 10 – 30 V dc power input
- 1.2 Watt typical per module (48 mA @ 24 Vdc) – varies by module and load
- Temperature: -30 to +70°C operating temperature range
- Humidity: 5 – 95% non-condensing
- RS 485 port Master or Slave up to 38400 baud – up to 32 nodes per line
- Up to 16,000 nodes per network
- 10Base T at 10 Mbps Ethernet port
- 1200 V RMS 1 minute isolation on Ethernet port
- ESD (Electro Static Discharge) withstand: 8KV
- Vibration meets IEC 68-2-6

  1g for 10 Hz to 150 Hz

  .5g for 150 Hz to 2000 Hz

The ControlWave Remote Ethernet I/O series consists of seven modules

ControlWave Discrete Input Module

- Number of inputs: 16
- Input source or sink: Configurable
- Input voltage: 12/24 V AC/DC
- Input resistance: 3.6 KΩ
- One High Speed Counter channel up to 2 KHz
- Scan rate: 2 mS
- Power: .75 watt

ControlWave Discrete Output Module

- Number of outputs: 16
- Output voltage: 10 to 30 Vdc
- Maximum output current per channel: 1 Amp
- Maximum output current (all 8 channels): 8 Amp
- Maximum off state leakage current: 0.05 mA
- Pulse duration output: Configurable
- Scan rate: 2 mS

ControlWave Analog Input Module

- Number of inputs: 16
- Input range: 4-20 mA - internal or external loop powered
- A/D resolution: 14 bit (0.01%)
- Full scale accuracy @ 20°C: +/-0.05%
- Span and offset temp. coefficient: +/- 50 ppm per°C
- Input impedance: 100 Ohms
- Input current protection: field replaceable fusible shunts
- Scan rate: 5 mS

ControlWave Analog Instrumentation Input Module

- Number of inputs: 8
- Input range: Isolated Current or Thermocouple
- 4-20 mA - internal or external loop powered
- J, K, E, R, T, B, C, N, S thermocouple Cold-junction compensated and reported as °F, °C, or 0.1°C
- A/D resolution: 16 bit (0.0031%)
- Full scale accuracy @ 20°C: +/-0.02%
- Span and offset temp. coefficient: +/- 30 ppm per°C
- Common mode isolation:
- Between two input terminals: +/-25 V dc
- Between inputs and ground: 1200 Volts
- Input impedance: Voltage 200 KΩ Current 100 Ohms
- Input current protection: field replaceable fusible shunts
- Scan rate: 100 mS

ControlWave RTD/DI Input Module

- Number of inputs: 4 RTD inputs and 4 DI
- RTD inputs: 100 ohm platinum, -200 to +850°C
- A/D resolution: 16 bit (0.0031%)
- Scan rate: 700 ms (4 RTD)
- DI specifications same as for 16 DI module
- Scan rate: 20 ms (4 DI)

ControlWave Mixed 8DI/8AI Input Module

- Number of inputs: 8 AI and 8 DI
- Specification same as 16 AI module and 16 DI module

ControlWave Mixed 8DI/8DO Input Module

- Number of inputs: 8 DI and 8 DO
- Specification same as 16 DI module and 16 DO modules

ControlWave Mixed 8AI/4AO Module

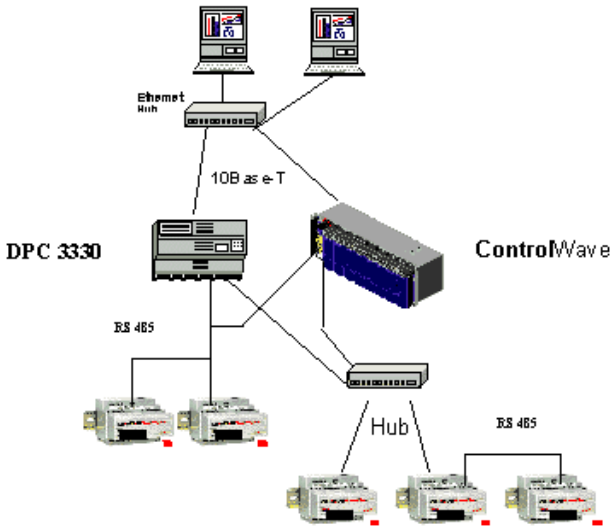
- Number of inputs: 8 AI and 4 AO
- Specification for AI's same as 16 AI module
- Output range: 4 – 20 mA
- D/A resolution: 16 bit
- Full scale accuracy @ 20°C: +/-0.02%
- Maximum output settling time: 5 mS
- External loop supply: 10 – 30 V dc
- Load resistance: 0 – 750 Ω
- Short circuit protection: Current limiting
- Scan rate: 5 mS

ControlWave Ethernet I/O Configuration Tools

The ControlWave Ethernet I/O Tool Kit is a Windows configuration utility for initial setup and testing of all Ethernet I/O modules. This easy to use utility allows assignment of communication paramenters

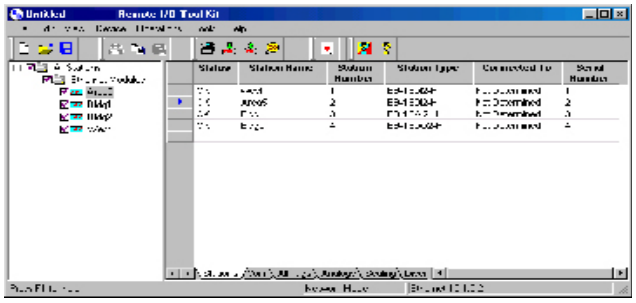
including I/P address, comm port baud rate and module address. It also provides I/O setup, tag name assignment, scaling factors, etc.

Once the module is configured it can be tested for proper operation before being put into operation.



Remote Setup Module

In conjunction with the configuration software, the Remote Setup Module provides a RS 232 interface to the PC allowing the Ethernet module base to be initially configured with a I/P, module address RS 485 port baud rate, etc. The Setup module plugs into any Ethernet I/O base so one Setup module can be used for the entire system. All Ethernet I/O modules can be configured through a local Ethernet connection with the configuration software only or through a Ethernet network using the Setup module. The Setup module is most useful when configuring a RS 485 network since it allows configuration through a RS 232 PC port rather than requiring the RS 485 in the PC.



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