

Pliant: readily yielding to influence

ECDIO



- Intelligent, Full-Function Digital Input/Output Module
- 24 I/O Lines
- RS485 Network Interface
- Network Supports up to 32 Modules
- Includes Periodic Functions, Read/Write Bits, Read/Write Bytes, Failsafe Periodic Functions
- ECN (standard), SDI-12, MODBUS RTU
- 2500Vrms Optical Isolation

AMASSER ECDIO Digital I/O Module

The 2500 Vrms isolated ECDIO Digital I/O Module is a compact DIN-Rail mountable, full-function, digital input/output (I/O) subsystem that is compatible with the following RS485 Multi-Drop Networking protocols: AMASS Data's ECN, SDI-12/RS485 and MODBUS RTU. The ECDIO provides firmware-based intelligent digital I/O functions for its 24 I/O lines and uses the ECN which supports up to 32 modules over a distance of 4000 feet on single or dual twisted pair cable.

24 Input/Output Lines

The unit provides three 8-bit parallel I/O ports. One port dedicated output, the second port is dedicated input and the third port is independently programmable as either an input or output port. Three ALS645 octal buffer devices are provided to buffer the I/O ports and provide +/- 24 mA drive capacity. This is sufficient to directly interface to standard opto-module racks. Connection to the I/O points is via a 50-pin ribbon connector, which can be connected directly to industry standard digital I/O termination panels.

Distributed Full-Function Control

The ECDIO module has been designed to provide the user with intelligent Digital I/O functions that are easily executed over a robust & reliable network from a COMM port on your industrial PC. The firmware provides input, output, network and specialized functions.

- **INPUT FUNCTIONS:** Firmware includes Read Bits, Read Byte, read timer registers & read periodic on/off registers.
- **OUTPUT FUNCTIONS:** Firmware includes Write Byte, set timer register & set periodic on/off registers. The basic clock tick by which the firmware operates is 10 milliseconds. Output timers are 16 bits and provide 10 msec to 655.35 second interval timing.
- **WATCHDOG:** Firmware provides a watchdog function for the communications port. It is user-programmable and allows an orderly shutdown of I/O in case of communications failure.
- **FAILSAFE:** Firmware provides two outputs that can be programmed to provide periodic maintenance until communications have been restored.

Optical Isolation

The communications port is a 2500Vrms optically isolated RS485 multi-drop interface and can be configured for half of Full duplex operation. Network termination resistor sockets are provided on the module. An on board DC-DC converter provides the RS485 interface circuitry with 2500 Vrms isolated +5V dc power.

Specifications

Processor - Atmel 89C52 @ 11.0592MHz.
Word Size - 8 bit data - 8 bit instruction
Memory - 89C52, 8 Kbytes FLASH
256 bytes RAM

Ports 1,2,4,5: VOH = 3.0 VDC min
VOL = 0.4 VDC max
IOH = -2.5 mA max
IOL = 2.5 mA min
leakage (IOL) = 10 uA max

Connectors

ECNet – Screw Terminals

Compatible connectors:

Flat cable - 3M 3473-6010,TB
Ansley 609-100M or equivalent
DIN connector - 96/64 PC mount

Compatible connectors:

Flat cable - GW Elco 00-8259-096-
124 or equivalent
Discrete Wire - GW Elco 60-8257-
3017 or equal
DIGITAL I/O - 50 pin pcb mount:
Molex 15-25-5501
SBX Connector - As per Intel iSBX
Expansion Bus Specification.

Power Requirements

+ 5V +/- 5% @ 250mA max.

Physical Characteristics

Height - 13.77 mm. (0.542in.)
Width - 100.0 mm (3.93 in.)
Depth - 200.00 mm (8.65 in.)
Weight - 0.175 Kg (0.5 lb.)
Mounting - Standard single height, double depth
Eurocard, with IEC 603-2-IEC-C064-M
connector.

Digital Inputs

Ports 0,3: present 1 LSTTL load
Ports 1,2,4,5: VIH = 2.0 VDC min
VIL = 0.8 VDC max.
(no pullups)
Leakage (IIL) = 1uA max.

Environmental Characteristics

Operating: - 40 to +85 C
Storage: - 55 to +105 C
Humidity: <= 90% non-condensing

Digital Outputs

Ports 0,3: installed 74LS225 buffer
drives 60 LSTTL loads
VOH = 2.0 VDC min
VOL = 0.8 VDC max
IOH = -15mA max
IOL = 24mA min.

The above information is believed to be true at the time of printing. AMASS Data reserves the right to modify specifications without notice.

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