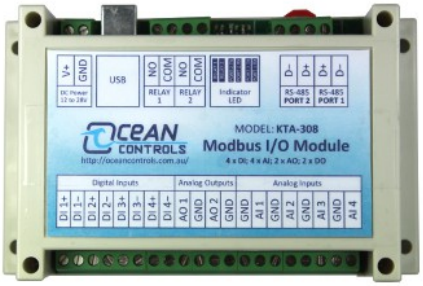

- 4 x Digital Inputs (optically isolated) with high speed counters
- 4 x Analog Inputs (4-20mA; 12 bit)
- 2 x Analog Outputs (4-20mA; 12 bit)
- 2 x Relay Outputs (240V; 5A)
- Dual RS-485 ports
- USB
- DIN rail mountable

The KTA-308 is a Modbus RTU I/O module with mixed I/O and dual RS-485 ports, allowing it to be interrogated by two Modbus Masters simultaneously. The I/O on the module is controlled and monitored by reading and writing to Modbus Holding Registers.

Each RS-485 port can be set to its own independent modbus address, baud rate, and parity. Reset switches return these settings back to default if required. A separate USB port acts as a third Modbus slave with fixed communication settings, intended for configuration, logging, etc.

Specification

Digital Inputs x 4

- Bi-directional, optically isolated inputs. Suit NPN, PNP, dry contact sensors
- 0 to 30V, 1kΩ effective resistance
- 2.5V DC activation threshold
- 3750V_{RMS} isolation
- 16 bit high speed counters

Analog Inputs x 4

- 4 to 20mA inputs, 12 bit resolution.
- 100Ω input impedance
- 0-5V, 0-10V, and 0-20mA inputs available on request.

Relay Outputs x 2

- SPST Relay. Rated to 5A (resistive) at 240V AC or 30V DC.
- Transistorised outputs available on request.

Analog Outputs x 2

- 4 to 20mA outputs, 12 bit resolution.
- 0 to 5V, 0 to 10V, and 0 to 20mA outputs available on request.

Serial Port Configuration

Both RS-485 ports and the USB port defaut to:

Modbus Address: *1*
Baud Rate: *9600*
Parity: *None*

These parameters can be changed by writing to the relevant Modbus Holding Registers. Changes will be effected after a power cycle.

Holding Register 32 (port 1) & 35 (port 2)

Parameter	Register Value
Modbus Address	1 to 247
Default	1

Holding Register 33 (port 1) & 36 (port 2)

Baud Rate	Register Value
2400	1
4800	2
9600	3
19200	4
38400	5
57600	6
115200	7
Default	3 (9600)

Holding Register 34 (port 1) & 37 (port 2)

Parity	Register Value
Odd	1
Even	2
None	3
Default	3 (none)

EXAMPLE. To change port 2 to:

- Address: 15
- Baud: 115200
- Parity: Even
-

Write 15 into Register 35, 7 into Register 36, and 2 into Register 37. Remove and re-apply power.

Modbus Holding Registers

Holding Register Address	Description	Notes	Read/Write
40001	Digital Input 1	0 = Off 1 = On	Read
40002	Digital Input 2	0 = Off 1 = On	Read
40003	Digital Input 3	0 = Off 1 = On	Read
40004	Digital Input 4	0 = Off 1 = On	Read
40005	Analog Input 1	4000 = 4mA 20000 = 20mA	Read
40006	Analog Input 2	4000 = 4mA 20000 = 20mA	Read
40007	Analog Input 3	4000 = 4mA 20000 = 20mA	Read
40008	Analog Input 4	4000 = 4mA 20000 = 20mA	Read
40009	Relay Output 1	0 = Off 1 = On	Read/Write
40010	Relay Output 2	0 = Off 1 = On	Read/Write
40011	Analog Output 1	4000 = 4mA 20000 = 20mA	Read/Write
40012	Analog Output 2	4000 = 4mA 20000 = 20mA	Read/Write
40013	DI Counter 1	16 Bit. Wraps back around to zero if maximum value is reached (65535).	Read/Write
40014	DI Counter 2	16 Bit. Wraps back around to zero if maximum value is reached (65535).	Read/Write
40015	DI Counter 3	16 Bit. Wraps back around to zero if maximum value is reached (65535).	Read/Write
40016	DI Counter 4	16 Bit. Wraps back around to zero if maximum value is reached (65535).	Read/Write
40030	Product ID	Always 2 for Modbus RTU I/O module	Read
40031	Firmware Revision	100 for first revision	Read

40032	Port 1 Address	1 to 247	Read/Write
40033	Port 1 Baud Rate	See *Serial Port Configuration*	Read/Write
40034	Port 1 Parity	See *Serial Port Configuration*	Read/Write
40035	Port 2 Address	1 to 247	Read/Write
40036	Port 2 Baud Rate	See *Serial Port Configuration*	Read/Write
40037	Port 2 Parity	See *Serial Port Configuration*	Read/Write