



Modbus Remote I/O
4-Channel Digital Input / 4-Channel Digital Output
Module
UIO-4DI-4DO

4-Channel Digital Input / 4-Channel Digital Output Modbus Remote I/O Module

Compact Modbus RTU remote I/O module with four digital inputs, RPM measurement, pulse counting, and four digital NPN outputs with output delay control.

4DI / 4DO Modbus Remote I/O Module

Compact Modbus RTU remote I/O module with four digital inputs with RPM measurement and pulse counting, and four digital NPN outputs with configurable ON/OFF delay control.



Key Features

- 4 Digital Inputs, 24V compatible
- 4 Digital NPN Outputs
- 2 High speed production counter and RPM measurement (DI1, DI2)
- All inputs have latched status – Never miss an input change
- All inputs have individual counter functions with retentive memory storage
- Configurable digital output ON delay and OFF delay
- Modbus RTU over RS-485
- Rotary address switch for address selection from 1 to 99
- Wide supported baud rates from 300 to 115200
- DIN rail or wall mountable
- Dimensions: 110 mm × 50 mm × 55 mm (L × W × H)

ModViz – Modbus Configuration & Visualization Tool

ModViz is a powerful yet simple configuration and visualization tool designed to work seamlessly with **Veawe Modbus I/O modules**. It enables engineers, system integrators, and technicians to quickly configure, monitor, and test field devices through an intuitive graphical interface.

The software can be downloaded from <https://veawe.io/modviz/>



Ordering Information

Product Code	Description
UIO-4DI-4DO	4-Channel Digital Input / 4-Channel Digital Output Modbus Remote I/O Module
UIO-12DI-12DO	12-Channel Digital Input / 12-Channel Digital Output Modbus Remote I/O Module
UIO-24DI-24DO	24-Channel Digital Input / 24-Channel Digital Output Modbus Remote I/O Module
UIO-24DI	24-Channel Digital Input Modbus Remote I/O Module
UIO-24DO	24-Channel Digital Output Modbus Remote I/O Module
UIO-8DI	8-Channel Digital Input Modbus Remote I/O Module

Applications

- Reading 4 digital input signals and simultaneously controlling 4 NPN outputs from a single compact Modbus module
- Counting pulses from flow meters, encoders, and proximity sensors with retentive memory
- Measuring rotational speed using the 2 high speed counter channels (DI1, DI2)
- Driving relays, solenoids, and indicator lamps with configurable per-channel ON/OFF delay
- Building compact Modbus I/O expansion for PLCs and SCADA systems in space-constrained panels
- Replacing traditional timer relays with software-configurable delay logic on each output channel

Specifications

Parameter	Value
Mounting	DIN rail or wall mountable
Dimensions	110 mm × 50 mm × 55 mm (L × W × H)

Electrical Specifications

Parameter	Value
Supply Voltage	15–24V DC
Digital Output Rating	24VDC 500mA max, NPN Control
Digital Input Voltage	15–24V DC
Communication Port	RS-485

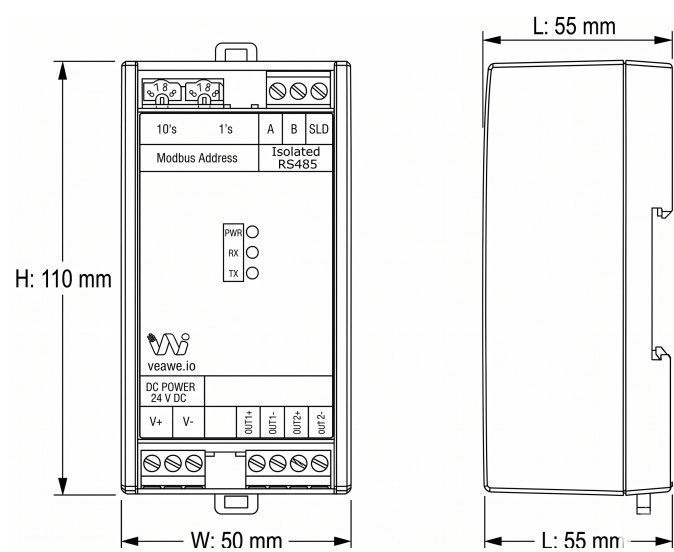
Input/Output Specifications

Parameter	Value
Digital Input Channel Count	4
Digital Output Channel Count	4
Output Type	Digital NPN
Slow Counter Speed	Up to 1 kHz
High Speed Counter Channels	2 (DI1, DI2)
Counter Memory	Retentive on power cycles
ON/OFF Delay Resolution	10 ms (1 count = 10 ms)
Maximum Output Delay	655.35 seconds (65535 counts)

Isolation & Protection Specifications

Parameter	Value	Notes / Description
Supply Reverse Polarity Protection		
Supply Isolation		
Transient Voltage Clamping		
EMC & Immunity Standards		
RS-485 Bus ESD Protection		

Mechanical Dimensions



Terminal Details

Top Connector – RS-485

Pin	1	2	3
Signal	A	B	Shield

Bottom Connector – Power

Pin	1	2
Signal	24V	GND

Digital Input Connector

Pin	1	2	3	4
Signal	X1	X2	X3	X4

Digital Output Connector

Pin	5	6	7	8
Signal	Y1	Y2	Y3	Y4

Wiring Diagrams

Note: All images and connection diagrams shown are for illustrative purposes only and may differ from the actual product.



Communication Interface

Protocol	Physical Layer	Default Baud Rate	Default Format
Modbus RTU	RS-485	19200	8N1

Basic Process Registers

Signal	Address	Type	Description
DI1–DI4	10001–10004	Bit	DI1 to DI4 live digital input status
DO1–DO4	00001–00004	Bit	DO1 to DO4 output control and status

Supported Modbus Function Codes

Read	Write
01 – Read Coils	05 – Write Single Coil
02 – Read Discrete Inputs	06 – Write Single Register
03 – Read Holding Registers	15 – Write Multiple Coils
04 – Read Input Registers	16 – Write Multiple Registers

Register Map Overview

Function	Address Range	Type	Description
Discrete Inputs	10001–10004	Bit	DI1 to DI4 live digital input status
Discrete Inputs	10201–10204	Bit	DI1 to DI4 latched status, auto-clears on read
Coils	00001–00004	Bit	DO1 to DO4 digital output control and status
Coils	00251–00254	Bit	Reset DI1 to DI4 slow counters
Coils	00401–00404	Bit	Pending DO1 to DO4 delay status and override
Coils	00801–00802	Bit	Reset DI1, DI2 production counters
Input Registers	30251–30254	int16	DI1 to DI4 slow counter values (1 kHz)
Input Registers	30801–30802	int16	DI1, DI2 RPS values
Input Registers	30811–30812	int16	DI1, DI2 RPM values
Input Registers	30821–30824	int32	DI1, DI2 production counters
Holding Registers	40801–40802	int16	DI1, DI2 mode configuration
Holding Registers	40811–40812	int16	DI1, DI2 pulses per revolution (1–65535)
Holding Registers	40401–40404	int16	DO1 to DO4 ON delay
Holding Registers	40451–40454	int16	DO1 to DO4 OFF delay
Holding Registers	40101	int16	Modbus server (slave) address

Detailed Register Tables

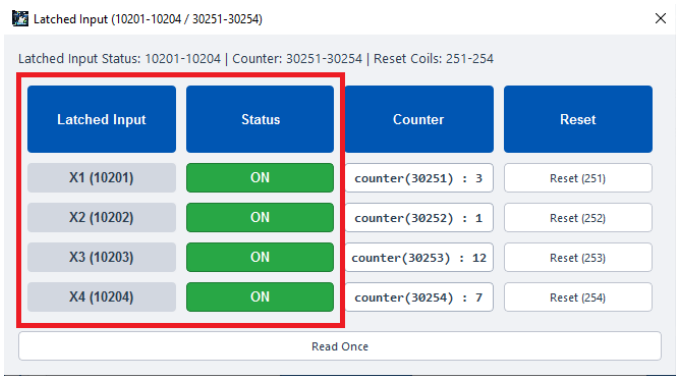
Discrete Inputs (1xxxx)

Digital Live Input Status

Address	Type	Description
10001–10004	Bit	DI1 to DI4 live digital input status

Digital Latched Input Status

Address	Type	Description
10201–10204	Bit	DI1 to DI4 latched status, auto-clears on read



Latched input status stays high even after the input goes low and auto-clears only after the master reads this bit. This ensures no input state change is missed by the controller.

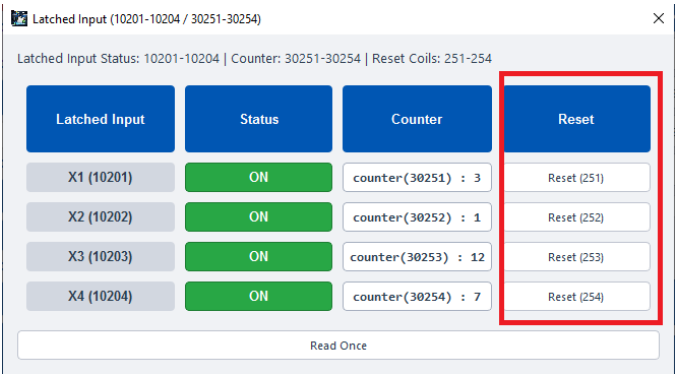
Coils (0xxxx)

Digital Output Control

Address	Type	Description
00001–00004	Bit	DO1 to DO4 digital output control and status

Slow Counter Reset

Address	Type	Description
00251–00254	Bit	Reset DI1 to DI4 slow counter



Writing 1 to the coil resets the corresponding slow counter value. This bit is self-clearing and the reset value is not stored on power cycle.

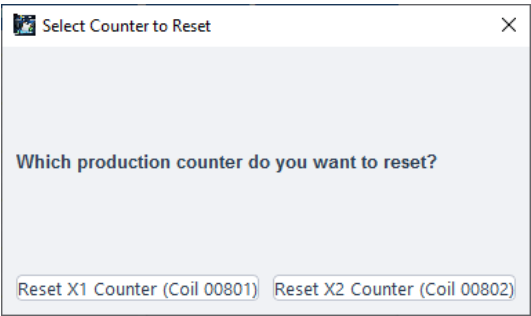
Pending Output State

Address	Type	Description
00401–00404	Bit	Pending DO1 to DO4 state while ON/OFF delay timer is active

Writing 1 to a pending coil overrides the delay timer and immediately switches the output ON.

Production Counter Reset

Address	Type	Description
00801–00802	Bit	Reset production counter for high speed counters DI1, DI2

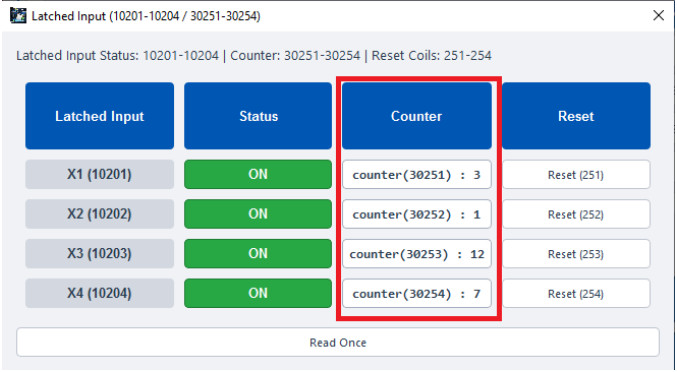


Writing 1 to the coil resets the corresponding retentive production counter value. This bit is self-clearing.

Input Registers (3xxxx)

Digital Inputs Slow Counter Values

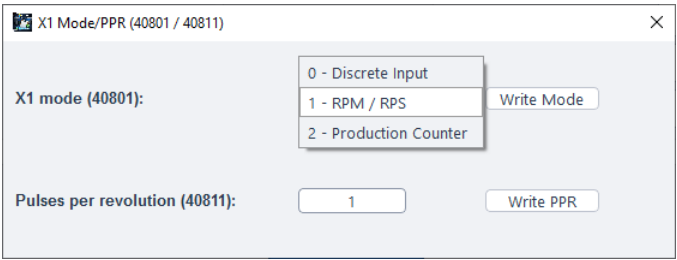
Address	Type	Description
30251–30254	int16	DI1 to DI4 slow counter, up to 1 kHz (Retentive memory on power cycles)



DI state changes are counted and stored in these registers. Counter values are retained across power cycles.

High Speed Counter Values

Address	Type	Description
30801–30802	int16	DI1, DI2 RPS value
30811–30812	int16	DI1, DI2 RPM value
30821–30824	int32	DI1, DI2 production counter (Retentive memory on power cycles)



Holding Registers (4xxxx)

High Speed Counter Configuration

Address	Type	Description
40801–40802	int16	DI1, DI2 mode
40811–40812	int16	DI1, DI2 pulses per revolution (1–65535)

DI Mode Values:

- 0 = Normal digital input
- 1 = RPM / RPS measurement
- 2 = Production counter

Digital Output Delay Configuration

Address	Type	Description
40401–40404	int16	DO1 to DO4 ON delay
40451–40454	int16	DO1 to DO4 OFF delay

Digital Output On/Off Delay (4 Channels)

On Delay: 40401-40404 | Off Delay: 40451-40454 (per digital output)
Use row Write to update one channel only.

Digital Output	On DO Reg	On Delay (1 = 10ms)	Off DO Reg	Off Delay (1 = 10ms)	Write
DO1	40401	100	40451	0	Write
DO2	40402	0	40452	0	Write
DO3	40403	0	40453	0	Write
DO4	40404	0	40454	0	Write

Read OnceWrite All

Delay Resolution: 1 = 10 ms, 100 = 1 second. Maximum value: 65535 = 655.35 seconds.

Communication Settings

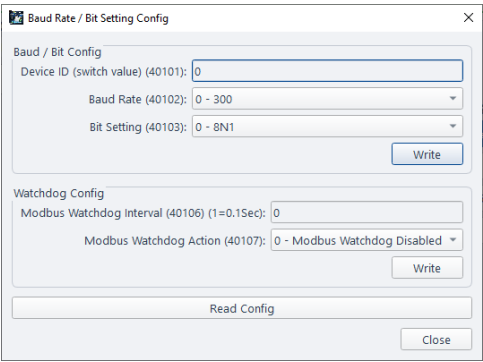
Address	Type	Description
40101	int16	Modbus server (slave) address (switch value)
40102	int16	Baud rate selection
40103	int16	Serial format selection

Modbus Address (40101)

This is set using the rotary or DIP switches.

Baud Rate Register (40102) and Serial Format Register (40103)

Value	Baud Rate	Value	Baud Rate	Value	Format
0	300	7	9600	0	8N1
1	600	8	14400	1	8E1
2	1200	9	19200	2	8O1
3	1800	10	38400	3	8N2
4	2400	11	57600	4	8E2
5	4800	12	62500	5	8O2
6	7200	13	115200		



Default: 19200 baud, 8N1.

Default Settings

Setting	Default
Slave Address	As per switch position
Baud Rate	19200
Serial Format	8N1

Configuration Settings

Default Mode

Default mode is useful when communication settings are unknown.

When the rotary address switch is set to 00:

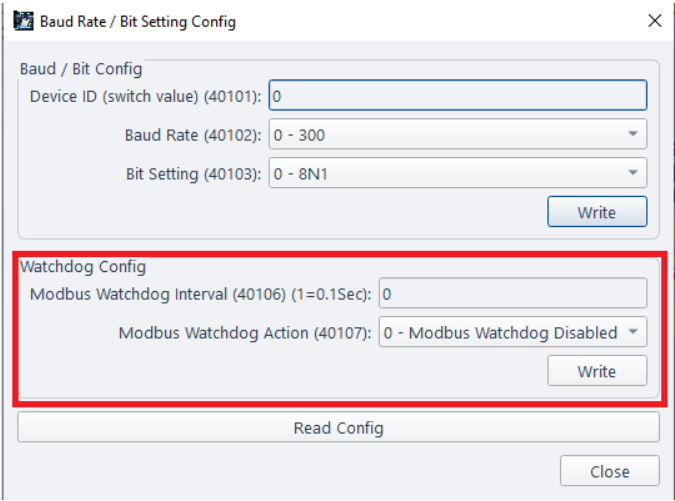
- Server address = 1
- Baud rate = 19200
- Serial format = 8N1



Changing to default mode does not overwrite stored settings. Stored settings remain unchanged until written through Modbus.

Watchdog Action

The Bus Watchdog automatically resets all outputs to their initial safe state if communication with the Modbus client is lost. This helps ensure safe operation during cable disconnection, client failure, or other communication faults.



Configurable timeout: 1 to 600 seconds (100 ms resolution).

LED Indications and Diagnostics

LED	Description
Power	Module power ON indication
Tx	RS-485 transmit activity
Rx	RS-485 receive activity
X1–X4	Digital input status
Y1–Y4	Digital output status

Revision History

Revision	Date	Changes
Rev 1.0	2026-08-25	Initial datasheet, HW Version = 3, FW Version = 2

Get the latest version of this datasheet : [click here..](#)

Support

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