2DO Modbus Remote I/O Module

2 Isolated Digital Outputs, 5\~24V compatible

Isolated 2DO Modbus Remote I/O Module

Compact Modbus RTU remote I/O module with two isolated digital SSR outputs, including one high-speed PWM-capable output channel.

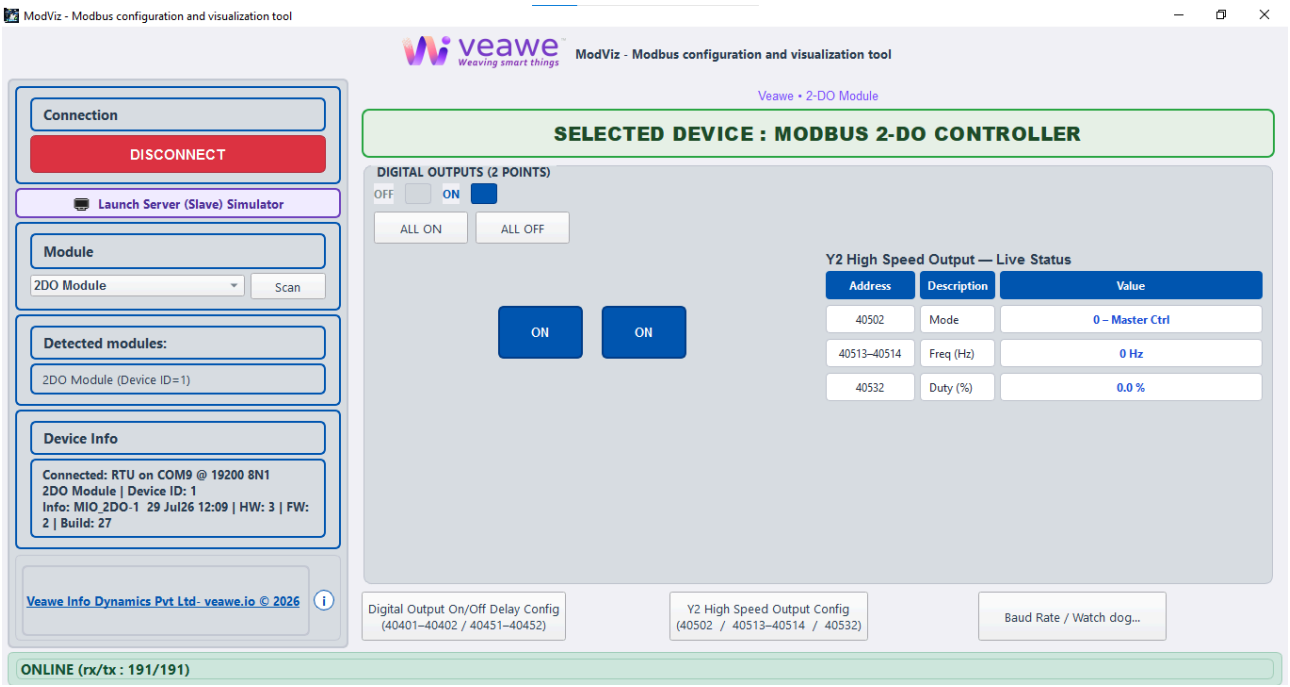
Key Features

- 2 Isolated Digital SSR Outputs, 0~60V DC, 1.0 Amp
- 1 High speed Output with Variable Frequency and Duty
- Modbus RTU over RS-485
- Dip address switch for address selection from 1 to 15
- Wide Supported baud rates from 300 to 115200
- DIN Rail mount support
- Dimensions: 60mm x 50mm x 20mm (L x W x 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
MIO-ISO-2DO	**2-Channel Isolated Digital Output Module (5~24V compatible)**
UIO-4DI-4DO	4-Channel Digital Input / 4-Channel Digital Output Module
UIO-8DO	8-Channel Digital Output Module
UIO-12DI-12DO	12-Channel Digital Input / 12-Channel Digital Output Module
UIO-24DO	24-Channel Digital Output Module
UIO-24DI-24DO	24-Channel Digital Input / 24-Channel Digital Output Module

Applications

- **Industrial Automation** – Drive relays, contactors, and solenoids from a Modbus master in PLC and SCADA systems
- **Process Control** – Switch pumps, motors, valves, and other on/off actuators remotely
- **Energy & Utilities** – Trigger alarms, indicator lamps, or breaker trip/close signals
- **Building Management** – Control HVAC equipment, lighting circuits, and access control devices
- **Remote Monitoring** – Ideal for distributed installations requiring remote on/off control over Modbus RTU

Specifications

Parameter	Value
Mounting	DIN rail
Dimensions	60 mm x 50 mm x 20 mm (L x W x H)

Electrical Specifications

Parameter	Value
Supply Voltage	12–24V DC or USB 5V
Communication Port	RS-485

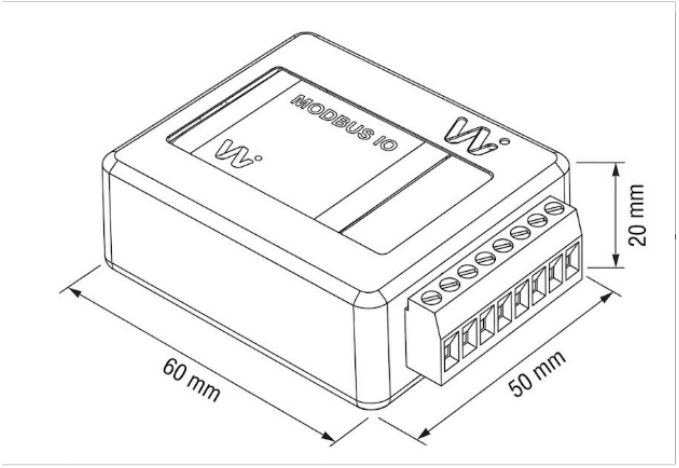
Input/Output Specifications

Parameter	Value
Channel Count	2
Output Type	Polarity Free AC/DC Solid State Relay (SSR)
Output Voltage Range	Max 60V AC Peak or 60V DC
Max Load Current	1.0 A
High Speed Output	1 channel (Y2), PWM configurable up to 1000 Hz
Output Delay Resolution	10 ms (1 count = 10 ms, up to 655.35 s)

Isolation & Protection Specifications

Parameter	Value	Notes / Description
Supply Reverse Polarity Protection	Integrated	Series protection diode (continuous protection, zero reverse leakage)
Supply Isolation	Non-Isolated	Common ground between input power, internal circuitry
Output Isolation	2.5kVrms	Opto isolated outputs with other circuitry
Transient Voltage Clamping	Up to 600W	Clamps overvoltage spikes (10/100 µs peak pulse rating)
EMC & Immunity Standards	Class-Compliant	Meets IEC 61000-4-2 (ESD), IEC 61000-4-4 (EFT), & IEC 61000-4-5 (Surge)
RS-485 Bus ESD Protection	15kV HBM/Air	IEC61000-4-2 Integrated high-ESD protected transceiver on A/B lines

Mechanical Dimensions

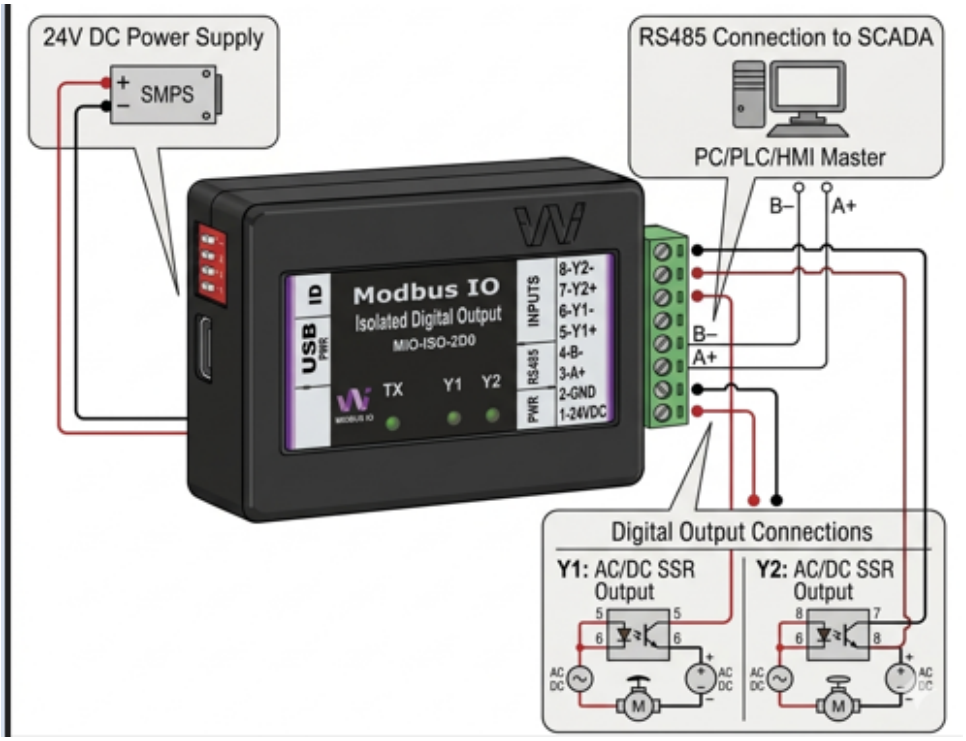


Terminal Details

Pin	1	2	3	4	5	6	7	8
Signal	24V+	24V-	A+	B-	Y1~	Y1~	Y2~	Y2~

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
DO1–DO2	00001–00002	Bit	Digital 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	10001–10002	Bit	DO1 to DO2 live digital output status
Coils	00001–00002	Bit	DO1 to DO2 output control and status
Coils	00401–00402	Bit	Pending DO1 to DO2 state while ON/OFF delay timer is active
Coils	00502	Bit	HSO2 (Y2) output control and status
Holding Registers	40101	int16	Modbus server (slave) address (switch value)
Holding Registers	40102	int16	Baud rate selection
Holding Registers	40103	int16	Serial format selection
Holding Registers	40104	int16	Serial device mode. 0 = Server (slave), 1 = Client (master)
Holding Registers	40105	int16	Remote read/write poll interval. Example: 10 = 1 second
Holding Registers	40106	int16	Watchdog interval. Example: 10 = 1 sec-ond
Holding Registers	40107	int16	Watchdog action. 0 = Modbus Watchdog Disabled, 1 = Reset Outputs on Modbus Watchdog Expire
Holding Registers	40401–40402	int16	DO1 to DO2 ON delay
Holding Registers	40451–40452	int16	DO1 to DO2 OFF delay
Holding Registers	40502	int16	High Speed Output (Y2) mode
Holding Registers	40512–40513	int32	High Speed Output (Y2) PWM frequency
Holding Registers	40532	int16	High Speed Output (Y2) PWM duty %

Detailed Register Tables

Discrete Inputs (1xxxx)

Digital Live Output Status

Address	Description
10001–10002	DO1 to DO2 live digital output status

Coils (0xxxx)

Output Control

Address	Description
00001–00002	DO1 to DO2 output control and status
00502	HSO2 Output Control and status

Pending Output State

Address	Description
00401–00402	Pending DO1 to DO2 state while ON/OFF delay timer is active

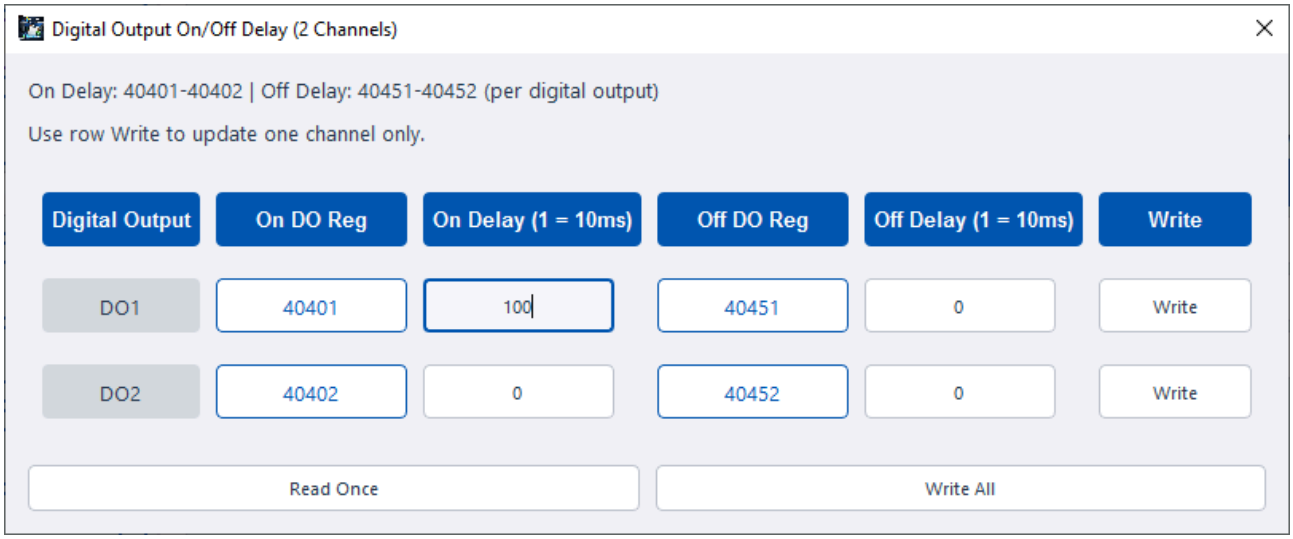
This indicates there is pending Output which needs to be on when its Delay timer expires Forcing this coil will ignore the Delay time and switch the DO to ON state.

Holding Registers (4xxxx)

Digital Output Delay Configuration

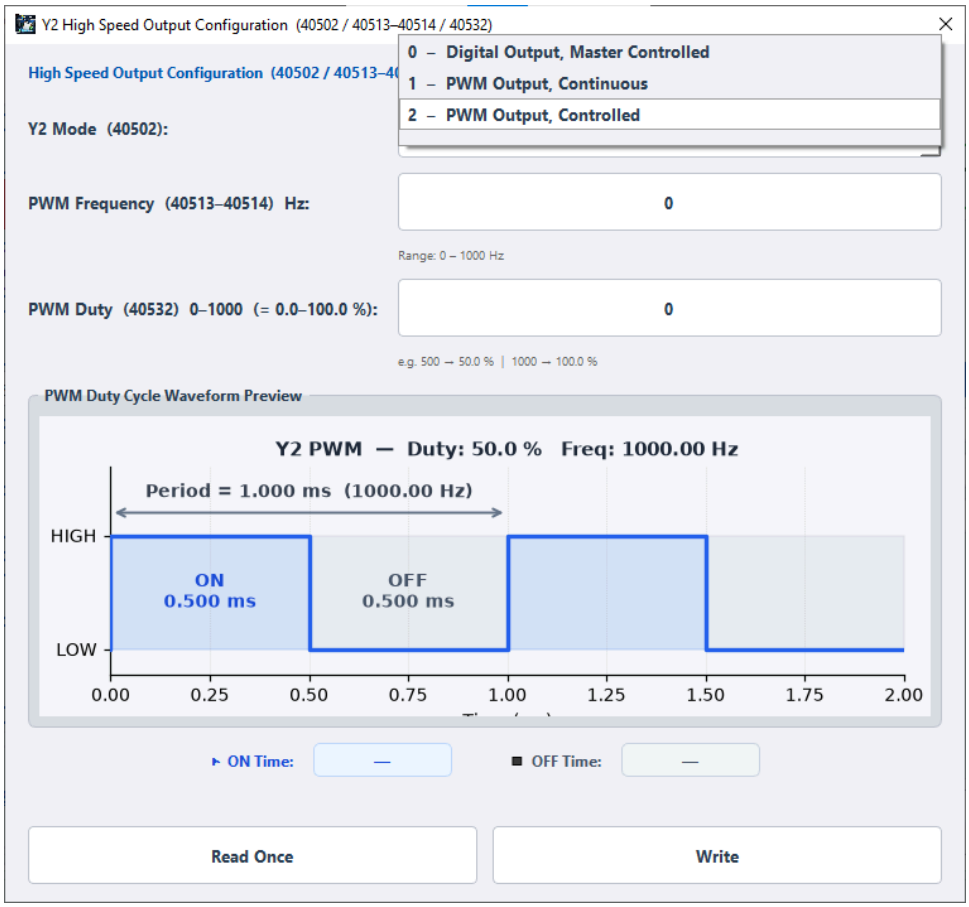
Address	Type	Description
40401–40402	int16	DO1 to DO2 ON delay
40451–40452	int16	DO1 to DO2 OFF delay

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



High Speed Output Configuration

Address	Type	Description
40502	int16	Y2 (HSO) mode. 0 = Digital output (master controlled), 1 = PWM continuous, 2 = PWM controlled
40512–40513	int32	Y2 (HSO) PWM frequency, 0–1000 Hz
40532	int16	Y2 (HSO) PWM duty %, 0–100.0% (raw 0–1000)



Communication Settings

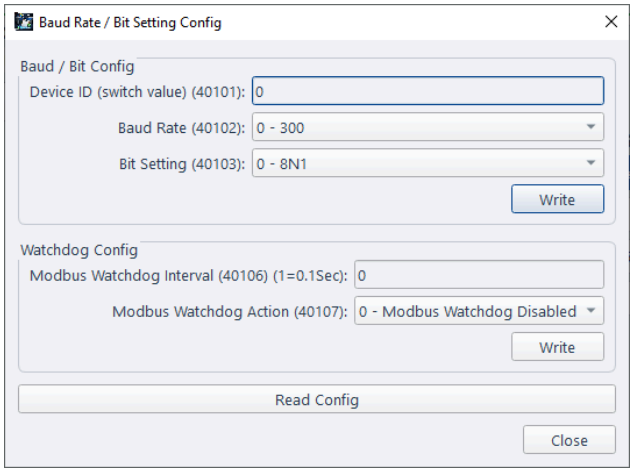
Address	Type	Description
40101	int16	Modbus server (slave) address (switch value)
40102	int16	Baud rate selection
40103	int16	Serial format selection
40104	int16	Serial device mode. 0 = Server (slave), 1 = Client (master)
40105	int16	Remote read/write poll interval. Example: 10 = 1 second
40106	int16	Watchdog interval. Example: 10 = 1 second
40107	int16	Watchdog action. 0 = Modbus Watchdog Disabled, 1 = Reset Outputs on Modbus Watchdog Expire

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

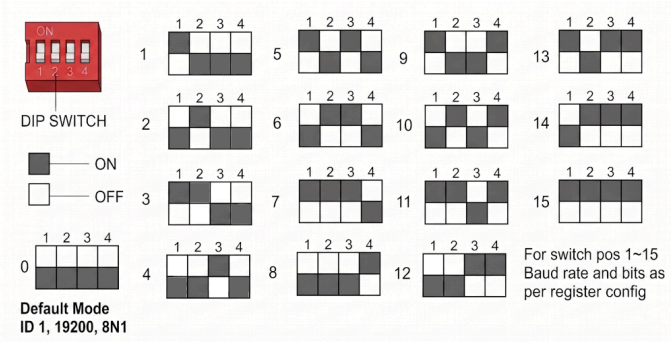
Configuration Settings

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

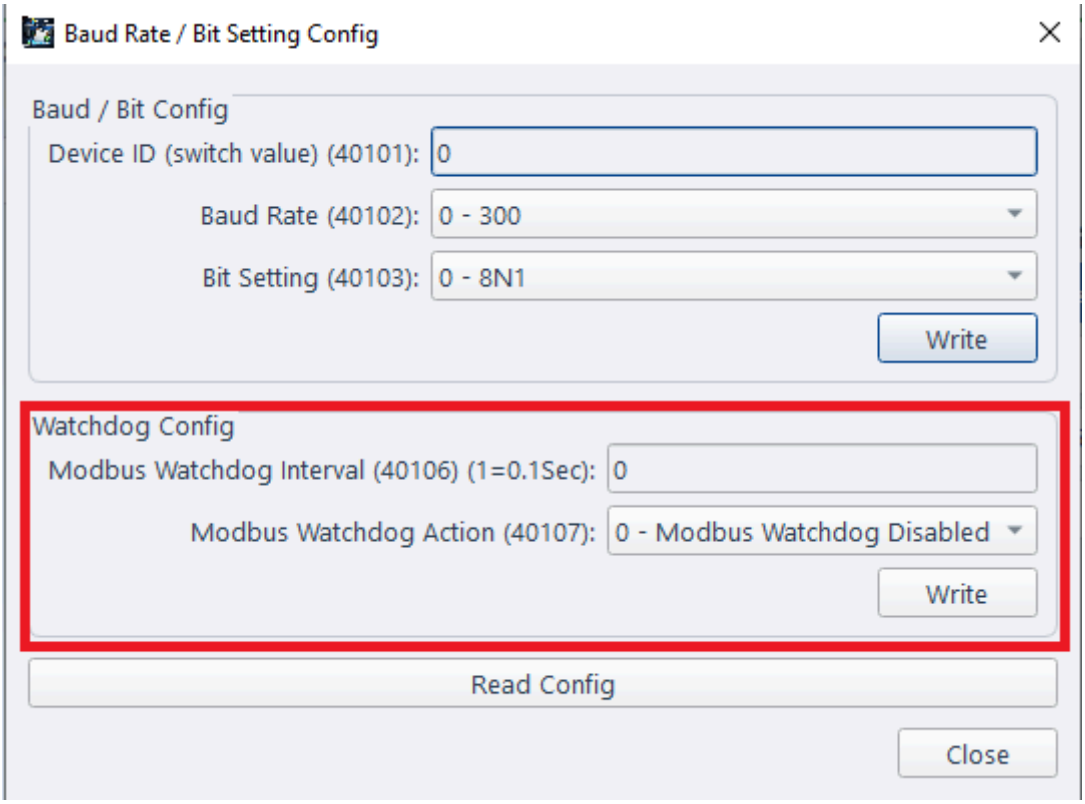


Changing to default mode does not overwrite stored settings. Stored settings remain unchanged until written through Modbus.

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
Tx	RS-485 transmit status and run blink every 2 sec when idle
DO1–DO2	Digital Output active status

Revision History

Revision	Date	Changes
Rev 1.0	2026-08-10	Initial datasheet, HW Version = 3, FW Version = 2

Get the latest version of this datasheet : **click here..**

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