

8-Channel Digital Input Modbus Remote I/O Module

Compact Modbus RTU remote I/O module with eight digital inputs, RPM measurement, and pulse counting.

8DI Modbus Remote I/O Module

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Key Features

- 8 Digital Inputs, 24V compatible
- 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
- 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 mountable
- Dimensions: 110 mm × 55 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-8DI	8-Channel Digital Input Modbus Remote I/O Module
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

Applications

- Reading 8 digital input signals 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)
- Building compact Modbus input expansion for PLCs and SCADA systems in space-constrained panels
- Monitoring machine status, sensor, and switch inputs over RS-485

Specifications

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

Electrical Specifications

Parameter	Value
Supply Voltage	15–24V DC
Digital Input Voltage	15–24V DC
Communication Port	RS-485

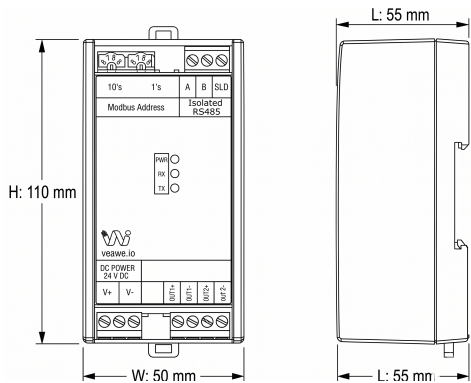
Input/Output Specifications

Parameter	Value
Digital Input Channel Count	8
Slow Counter Speed	Up to 1 kHz
High Speed Counter Channels	2 (DI1, DI2)
Counter Memory	Retentive on power cycles

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	5	6	7	8
Signal	X1	X2	X3	X4	X5	X6	X7	X8

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–DI8	10001–10008	Bit	DI1 to DI8 live digital input 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	10001–10008	Bit	DI1 to DI8 live digital input status
Discrete Inputs	10201–10208	Bit	DI1 to DI8 latched status, auto-clears on read
Coils	00251–00258	Bit	Reset DI1 to DI8 slow counters
Coils	00801–00802	Bit	Reset DI1, DI2 production counters
Input Registers	30251–30258	int16	DI1 to DI8 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	40101	int16	Modbus server (slave) address

Detailed Register Tables

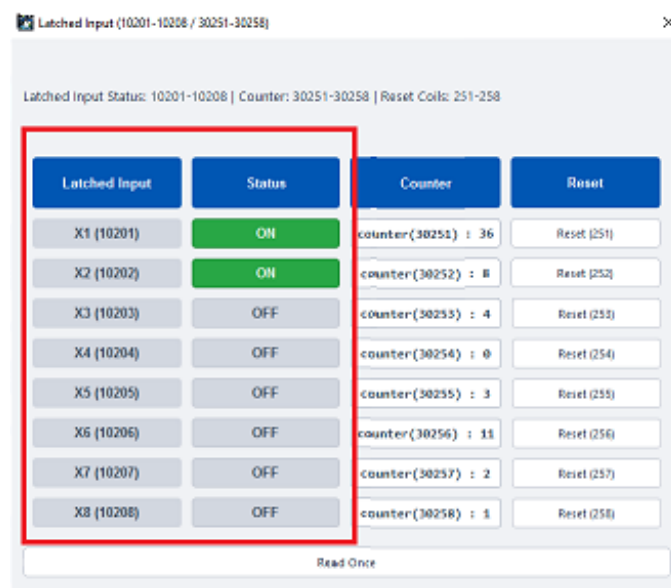
Discrete Inputs (1xxxx)

Digital Live Input Status

Address	Type	Description
10001–10008	Bit	DI1 to DI8 live digital input status

Digital Latched Input Status

Address	Type	Description
10201–10208	Bit	DI1 to DI8 latched status, auto-clears on read

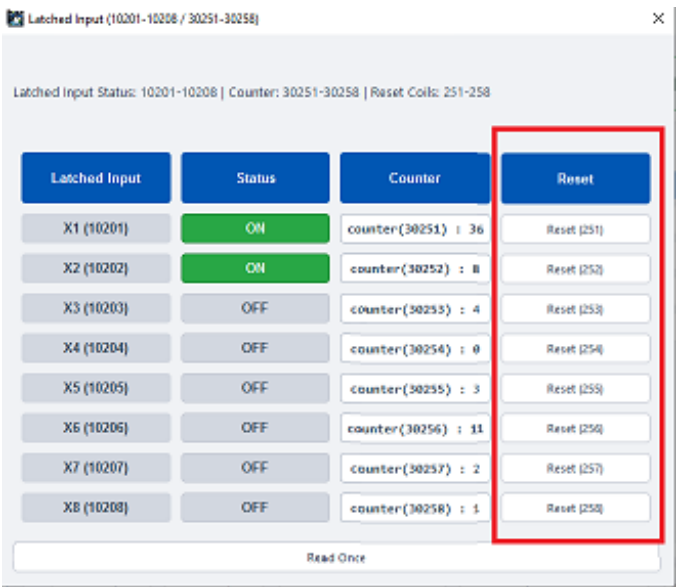


Latched input status stays high even after the input goes low and auto-clears only after the master reads this bit. This ensures no input state change is missed by the controller.

Coils (0xxxx)

Slow Counter Reset

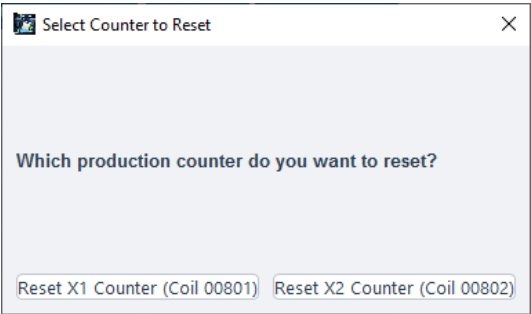
Address	Type	Description
00251–00258	Bit	Reset DI1 to DI8 slow counter



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

Production Counter Reset

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

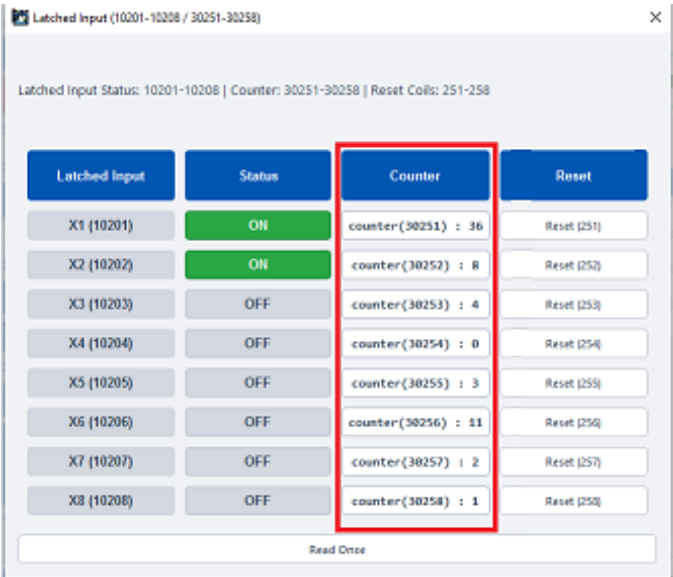


Writing 1 to the coil resets the corresponding retentive production counter value. This bit is self-clearing.

Input Registers (3xxxx)

Digital Inputs Slow Counter Values

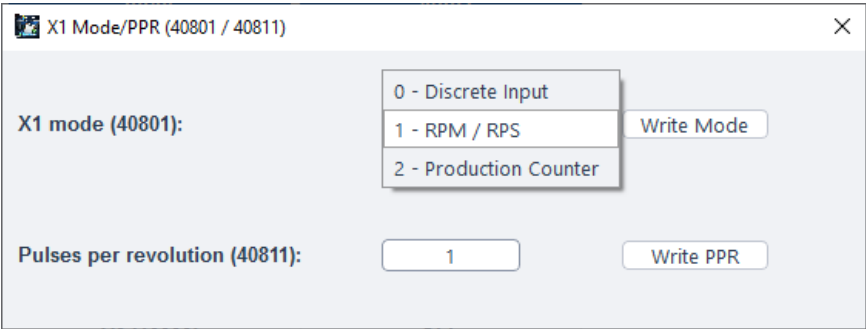
Address	Type	Description
30251–30258	int16	DI1 to DI8 slow counter, up to 1 kHz (Retentive memory on power cycles)



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

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

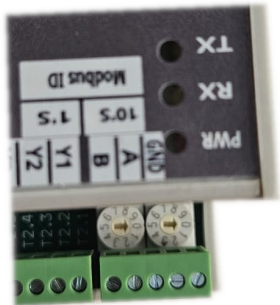
Configuration Settings

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.

LED Indications and Diagnostics

LED	Description
Power	Module power ON indication
Tx	RS-485 transmit activity
Rx	RS-485 receive activity
X1–X8	Digital input 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..**

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