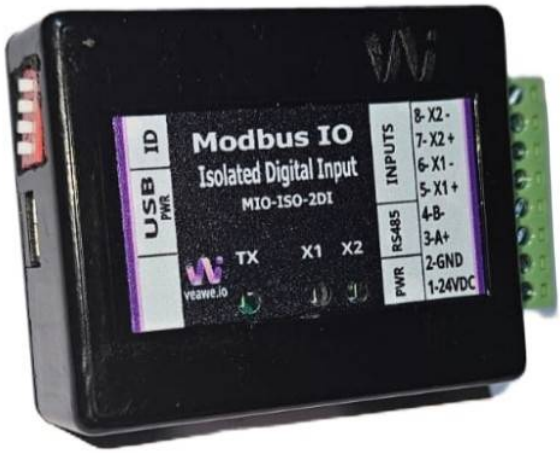
| | |
|---|---|
| veawe™ | Remote IO Module / Modbus transmitter<br>MIO-ISO-2DI |

## Compact Isolated 2DI Modbus Remote I/O Module

Compact Modbus RTU remote I/O module with two isolated digital inputs, pulse counting, RPM calculation.




# Key Features

- 2 Isolated Digital Inputs, 5~24V compatible
- 2 High speed Production counter and RPM measurement
- All Inputs has latched status, Never miss an input change
- All Inputs has individual counter functions
- Modbus RTU over RS-485
- Dip address switch for address selection from 1 to 15
- Wide Supported baud rates from 300 to 115200
- Dimensions: 60mm x 50mm x 20mm (L x W x H)

# Supported Modbus Function Codes

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

# Basic Registers

## Digital Input Status

| Address | Description |
|---|---|
| 10001–10002 | DI1 to DI2 live digital input status |
| 10201–10202 | DI1 to DI2 latched state, Auto-cleared on read |

## High Speed Counter Values

| Address | Type | Description |
|---|---|---|
| 30801–30802 | int16 | DI1 to DI2 RPS value |
| 30811–30812 | int16 | DI1 to DI2 RPM value |
| 30821–30824 | int32 | DI1 to DI2 production counter<br>(**Not stored on power cycles for 2DI model**) |

## Slow counter Values

| Address | Type | Description |
|---|---|---|
| 30201–30202 | int16 | DI1 to DI2 slow counter (1 kHz)<br>**(Not stored on power cycles for 2DI model)** |

## 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/**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# Discrete Inputs (1xxxx)

## Digital Live Input Status

| Address | Description |
|---|---|
| 10001–10002 | DI1 to DI2 live digital input status |

## Digital Latched Input Status

| Address | Description |
|---|---|
| 10201–10202 | DI1 to DI2 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 makes sure no input status is missed by the controller

# Coils (0xxxx)

## Slow Counter Reset

| Address | Description |
|---|---|
| 00251–00252 | Reset DI1 to DI2 slow counter |

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

## Production Counter Reset

| Address | Description |
|---|---|
| 00801–00804 | Reset production counter for High speed counters, DI1 and 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 |
|---|---|---|
| 30251–30252 | int16 | DI1 to DI2 slow counter (1 kHz) |

The DI change are counted and stored in these registers

## High Speed Counter Values

| Address | Type | Description |
|---|---|---|
| 30801–30802 | int16 | DI1 to DI2 RPS value |
| 30811–30812 | int16 | DI1 to DI2 RPM value |
| 30821–30824 | int32 | DI1 to DI2 production counter |

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## High Speed Counter Configuration

| Address | Type | Description |
|---|---|---|
| 40801–40802 | int16 | DI1 to DI2 mode |
| 40811–40812 | int16 | DI1 to DI2 pulses per revolution (1~65535) |

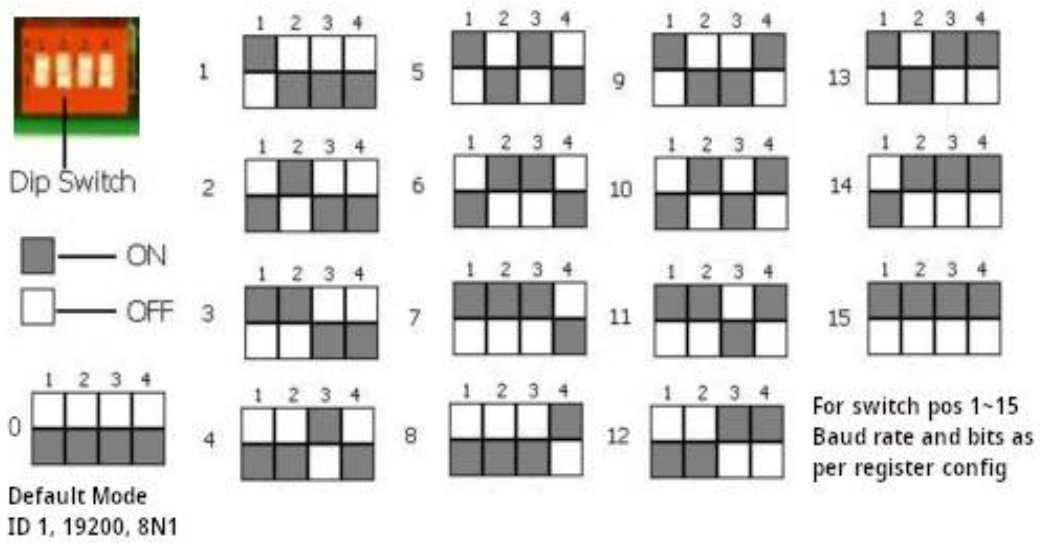
DI Mode Values:

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

## Communication Settings

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

### Modbus Address (40101) is set using the rotary/dip switches




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

| 40102 | | | | 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 Default: 8N1

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# Default Mode

Default mode is useful when communication settings are unknown.
When dip switch address switch is set to 00:

- Slave 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

| LED | Description |
|---|---|
| Tx | RS-485 transmit and Run activity every 2 sec |
| X1–X2 | Digital input status |

# Electrical Specifications

| Parameter | Value |
|---|---|
| Supply Voltage | 5V@USB-C or 12V ~ 24 V DC |
| Isolated Digital Inputs | 5V ~ 30V DC |
| Communication Port | RS-485 |
| Connector Type | 3.81 mm Plug-able screw terminal block |

# Connector Terminal Details

| Pin | Signal |
|---|---|
| 1 | 24V |
| 2 | GND |
| 3 | A+ |
| 4 | B- |
| 5 | X1+ |
| 6 | X1- |
| 7 | X2+ |
| 8 | X2- |

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# Register Summary Tables

## 2. DI and Slow Counter Register Table

| Function | Address Range | Type | Description |
|---|---|---|---|
| Discrete Inputs | 10001–10002 | Bit | DI1 to DI2 live status |
| Discrete Inputs | 10201–10202 | Bit | DI1 to DI2 latched state |
| Input Registers | 30251–30252 | int16 | DI1 to DI2 slow counter |

## 4. High Speed Counter Input Table

| Function | Address Range | Type | Description |
|---|---|---|---|
| Coils | 00801–00802 | Bit | Reset production counter |
| Input Registers | 30801–30802 | int16 | HSC1 to HSC2 RPS value |
| Input Registers | 30811–30812 | int16 | HSC1 to HSC2 RPM value |
| Input Registers | 30821–30824 | int32 | HSC1 to HSC2 production counter |

## 5. Complete Register Table

| Function | Address Range | Type | Description |
|---|---|---|---|
| Discrete Inputs | 10001–10002 | Bit | DI1 to DI2 live status |
| Discrete Inputs | 10201–10202 | Bit | DI1 to DI2 latched state |
| Coils | 00251–00252 | Bit | Reset slow counter |
| Coils | 00801–00802 | Bit | Reset production counter |
| Input Registers | 30251–30252 | int16 | DI1 to DI4 slow counter |
| Input Registers | 30801–30802 | int16 | HSC1 to HSC2 RPS value |
| Input Registers | 30811–30812 | int16 | HSC1 to HSC2 RPM value |
| Input Registers | 30821–30824 | int32 | HSC1 to HSC2 production counter |
| Holding Registers | 40101 | int16 | Slave address |
| Holding Registers | 40102 | int16 | Baud rate selection |
| Holding Registers | 40103 | int16 | Serial format |
| Holding Registers | 40801–40802 | int16 | HSC1 to HSC2 mode |
| Holding Registers | 40811–40812 | int16 | HSC1 to HSC2 PPR |


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