

# ZT-2055

Wireless 8-channel Isolated Digital Input and
8-channel Isolated Digital Output Module

## Features

- ISM 2.4 GHz Operating Frequency
- Fully Compliant with 2.4G IEEE 802.15.4 / ZigBee Specifications
- Wireless Transmission Range up to 700 m (Default)
- Adjustable RF Transmission Output Power
- External DIP and Rotary Switches for easy Configuration
- Supports AES-128 Encryption for the Wireless Communication (Passive)
- 8 Digital Input Channels and 8 Digital Output Channels
- All Digital Input Channels can be used as 16-bit Counters
- Sink-type Digital Output Channels with Overload Protection
- Surge and ESD Protection
- Configurable Power-on Value and Safe Value Settings

## Introduction

The ZT-2055 offers 8 isolated channels for digital input and 8 isolated channels for digital output. Either sink-type or source-type digital input can be selected via wire connections. All digital input channels are also able to be used as 16-bit counters. The ZT-2055 supports source-type output with short circuit protection. There are options for configuring power-on and safe digital output values. The ZT-2055 has 16 LED indicators to display the channel status, and has 4 kV ESD protection and 2500 VDC intra-module isolation. Users can easily configure the module address, protocol, checksum, ZB-PID and ZB-channel settings using a combination of rotary and DIP switches.

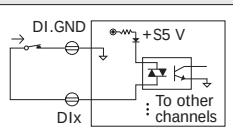
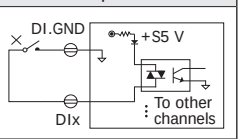
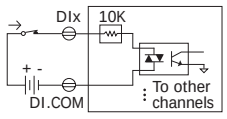
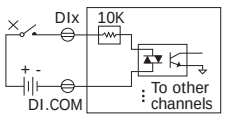
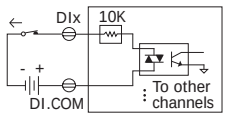
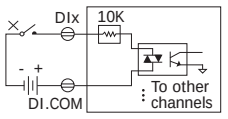
## Specifications

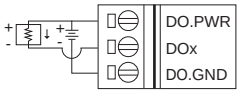
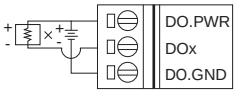
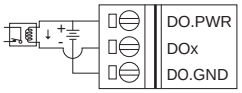
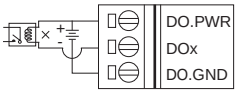
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|---|---|
| **CPU Module** | |
| Watchdog Timer | Yes, Module (1.6 Seconds), Communication (Programmable) |
| **Isolation** | |
| Intra-module Isolation | 2500 VDC |
| **EMS Protection** | |
| EFT (IEC 61000-4-4) | 4 kV for Power Line |
| ESD (IEC 61000-4-2) | 4 kV Contact for Power Line, Communication Line and each Channel, 8 kV Air for Random Point |
| Surge (IEC 61000-4-5) | 3 kV for Power Line |
| **LED Indicators** | |
| Status | 1 x Power and Communication<br>8 x Digital Input<br>8 x Digital Output |
| **ZigBee** | |
| Antenna | 2.4 GHz, 5 Omni-Directional |
| Max. Slaves | 255 |
| Protocol | Supports DCON and Modbus RTU Protocols |
| Standard | ZigBee 2007 Pro |
| Transmission Power | 10 dBm to 19 dBm (EIRP) (Adjustable via Utility) |
| Transmission Distance (LoS) | 300 m to 700 m (Depending on the RF power setting) |
| **Digital Input/Counter** | |
| Channels | 8 |
| Type | Dry Contact ; Wet Contact |
| Sink/Source (NPN/PNP) | Dry: Source ; Wet: Sink/Source |
| ON Voltage Level | Dry: Open ; Wet: +10 VDC ~ +50 VDC |
| OFF Voltage Level | Dry: Close to GND ; Wet: Max. +4 VDC |

| | |
|---|---|
| Max. Counts | 16-bit (65535) |
| Frequency | 100 Hz Max. |
| Min. Pulse Width | 5 ms |
| Effective Distance | Max. 500 meters |
| Input Impedance | 10 KΩ |
| Overvoltage Protection | ±70 VDC |
| **Digital Output** | |
| Channels | 8 |
| Type | Open Collector |
| Sink/Source (NPN/PNP) | Sink |
| Load Voltage | +3.5 ~ 50 VDC |
| Load Current | 650 mA/Channel |
| Overvoltage Protection | 60 VDC |
| Overload Protection | 1.4 A (with short-circuit protection) |
| Power on Value | Yes, Programmable |
| Safe Value | Yes, Programmable |
| **Power** | |
| Input Range | +10 VDC ~ +30 VDC |
| Consumption | Max. 2.5 W |
| **Mechanical** | |
| Dimensions (mm) | 33 x 96 x 110 (W x L x H) |
| Installation | DIN-Rail |
| **Environment** | |
| Operating Temperature | -25 °C ~ +75 °C |
| Storage Temperature | -30 °C ~ +80 °C |
| Humidity | 10 ~ 90% RH, Non-condensing |

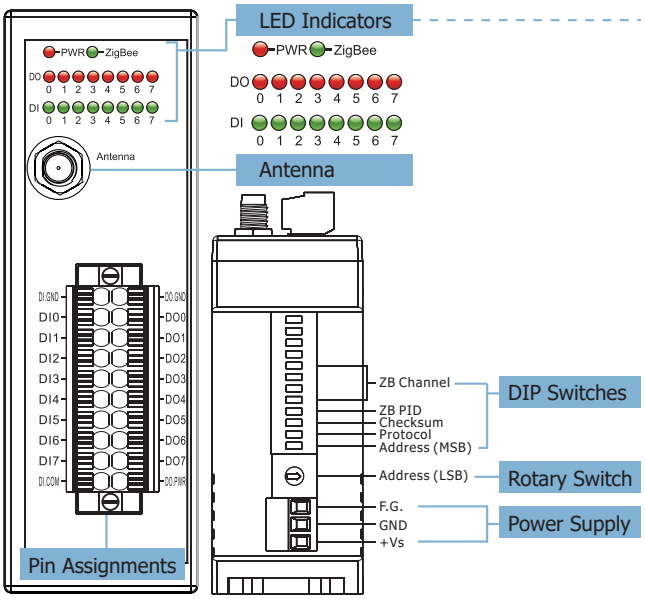
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## Wire Connections

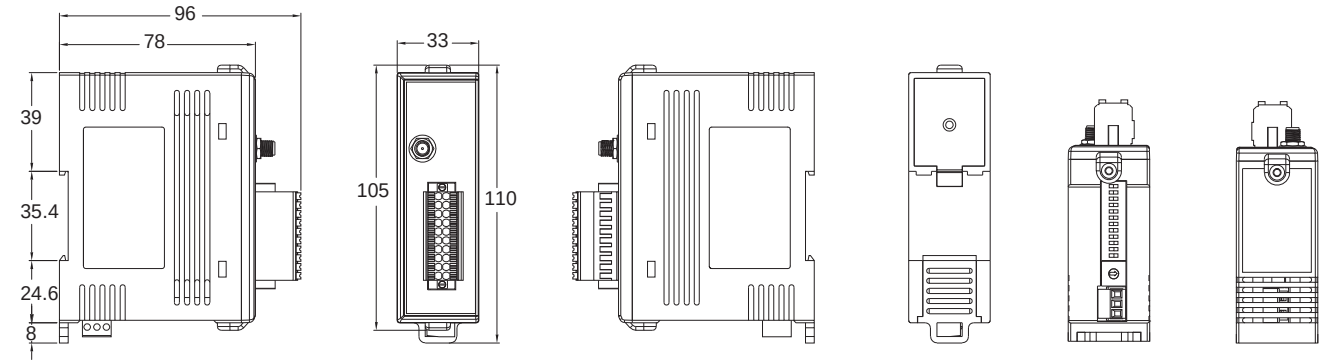
| Input Type | ON State Readback as 1 | OFF State Readback as 0 |
|---|---|---|
| Dry Contact | Close to GND | Open |
| |  |  |
| Wet Contact (Sink) | +10 ~ +50 VDC | +4 VDC Max. |
| |  |  |
| Wet Contact (Source) | +10 ~ +50 VDC | +4 VDC Max. |
| |  |  |

| Output Type | ON State Readback as 1 | OFF State Readback as 0 |
|---|---|---|
| Digital Output (Resistance Load) |  |  |
| Digital Output (Inductive Load) |  |  |

## Appearance




## Dimensions (Units: mm)




Left Side View | Front View | Right Side View | Top View | Rear View | Bottom View

## Ordering Information

| | |
|---|---|
| **ZT-2055 CR** | Wireless 8-channel Isolated Digital Input and 8-channel Isolated Digital Output Module (ZigBee Router) (RoHS) |

Important Note: ZigBee Data Acquisition modules reguire a ZigBee host converter to coordinate the data transmission path. Remember to order a ZT-2550 or ZT-2570 ZigBee host converter when purchasing ZigBee Data Acquisition Products.

## Accessories

| | |
|---|---|
| **MDR-20-24** | 24 VDC/1.0 A, 24 W Power Supply with DIN-Rail Mounting |
| **ZT-2510 CR** | ZigBee Repeater (RoHS) |
| **ZT-2550 CR** | RS-485/RS-232 to ZigBee Converter (Host) |
| **ZT-2570 CR** | Ethernet/RS-485/RS-232 to ZigBee Converter (Host) (RoHS) |
| **External Antenna** | 2.4 GHz External Antenna, RP SMA Male (Plug) |
| **Extension Cable** | 3S00x-1, RG58A/U × Meter Long RP-SMA (male) to RP-SMA (female) |

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