# ZT-2060

### Wireless 6-channel Isolated Digital Input and 4-channel Relay Output Module
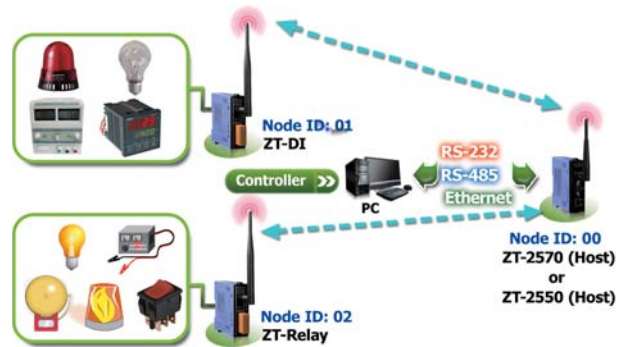
## Features

- ISM 2.4 GHz Operating Frequency
- Fully Compliant with 2.4G IEEE 802.15.4/ZigBee Specifications
- Wireless Transmission Range up to 700 m
- GUI Configuration Software (Windows Version)
- 6 Digital Input Channels and 4 Relay Output Channels
- Supports 16-bit Counters for Digital Input Channels
- Surge and ESD Protection
- DIN-Rail Mountable

## Introduction

The ZT-2060 offers 4 Form A power relay output channels and 6 digital input channels, each of which features photocouple isolation. In addition, you can choose sink-type or source-type input via wire connections. All channels are able to be used as 16-bit counters. The ZT-2060 has 10 LED indicators to display the channel status, and has 4 kV ESD protection and 3000 $V_{DC}$ 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.

## System Specifications

| Communication Interface | |
|---|---|
| Wireless Standards | ZigBee 2007 Pro |
| Transmission Power | 11 dBm (FCC Certificated) |
| 2.4 GHz Antenna | 5 dBi Omni directional |
| Transmission Range (LoS) | 700 m (Typical) |
| Certification | CE/FCC, FCC ID |
| Max. Slaves in a ZigBee Network | 255 |
| Protocols | Supports DCON and Modbus RTU Protocols |
| Hot Swap | Rotary and DIP switch |
| **LED Indicators** | |
| Power | 1 LED, Red |
| ZigBee Communication | 1 LED, Green |
| Digital Input and Output | 6 Green LEDs for Digital Input<br>4 Red LEDs for Relay Output |
| **Isolation** | |
| Intra-module Isolated,<br>Field-to-Logic | 2500 $V_{DC}$ |
| **EMS Protection** | |
| ESD (IEC 61000-4-2) | 4 kV Contact for Power Line, Communication Line and each Channel, 8 kV Air for Random Point |
| EFT (IEC 61000-4-4) | 4 kV for Power Line |
| **Power** | |
| Input Voltage Range | +10 $V_{DC}$ ~ +30 $V_{DC}$ |
| Power Consumption | 1.4 W Max. |
| **Mechanical** | |
| Flammability | Fire Retardant Materials (UL94-V0 Level) |
| Dimensions (W x L x H) | 33mm x 94 mm x 110 mm |
| Installation | DIN-Rail |
| **Environment** | |
| Operating Temperature | -25 ~ +75°C |
| Storage Temperature | -30 ~ +80°C |
| Relative Humidity | 10 ~ 90% RH, Non-condensing |

## Applications

Building Automation, Factory Automation, Machine Automation, Remote Maintenance, Remote Diagnosis, Testing Equipment.



## I/O Specifications
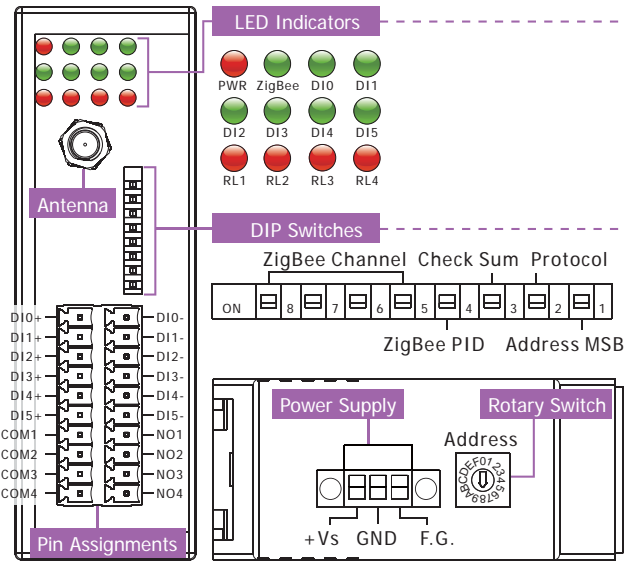
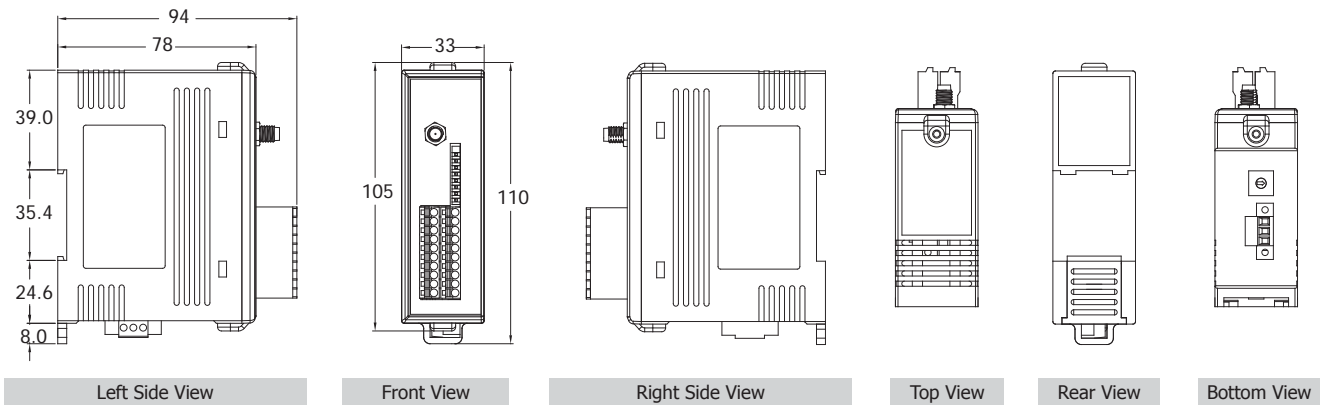| Digital Input | | |
|---|---|---|
| Input Channels | | 6 |
| Input Types | | Isolated, Wet Contact (Sink/Source) |
| Input Level | On Voltage Level | +3.5 $V_{DC}$ ~ +30 $V_{DC}$ |
| | Off Voltage Leve | +1 $V_{DC}$ Max. |
| Input Impedance | | 3 kΩ, 0.33 W |
| Counter | Channels | 6 |
| | Max. Count | 16-bit (65535) |
| | Max. Input Frequency | 100 Hz |
| | Min. Pulse Width | 5 ms |
| **Relay Output** | | |
| Output Channels | | 4 |
| Output Types | | Power Relay, Form A |
| Contact Rating | | 5 A @ (250 $V_{AC}$/30 $V_{DC}$) |
| Max. Contact Voltage | | 270 $V_{AC}$/125 $V_{DC}$ |
| Operate Time | | 10 ms max. at Rated Voltage |
| Release Time | | 5 ms max. at Rated Voltage |
| Endurance | Electrical | Resistive Load: 100,000 ops. min. (10 ops/minute) |
| | Mechanical | At No Load: 20,000,000 ops. min. (300 ops/minute) |
| Dielectric Strength | Between Contacts | 750 $V_{AC}$ for 1 minute |
| | Between Coil to Contacts | 3,000 $V_{AC}$ for 1 minute |
| Insulation Resistance | | 5,080 V (1.2/50 μs) |
| Surge Strength | | 5 ms max. at Rated Voltage |
| ESD Protection | | +/-4 kV contact for each channel |

## Wiring

| Input Type | ON State LED ON Readback as 1 | OFF State LED OFF Readback as 0 |
|---|---|---|
| TTL/ CMOS Logic | Voltage > 3.5V | Voltage < 1V |
| | Logic Level High / Logic GND — DIx+ DIx- | Logic Level Low / Logic GND — DIx+ DIx- |
| Relay Contact | Relay ON | Relay OFF |
| | + / - Relay Close — DIx+ DIx- | + / - Relay Open — DIx+ DIx- |
| Open Collector | Open Collector ON | Open Collector OFF |
| | ON — DIx+ DIx- | ON — DIx+ DIx- |

| Output Type | ON State LED ON Readback as 1 | OFF State LED OFF Readback as 0 |
|---|---|---|
| Relay Contact | Relay ON | Relay OFF |
| | AC/DC — Load — NOx COMx | AC/DC — Load — NOx COMx |

## Appearance

LED Indicators
PWR  ZigBee  DI0  DI1
DI2  DI3  DI4  DI5
RL1  RL2  RL3  RL4

Antenna

DIP Switches
ZigBee Channel    Check Sum    Protocol
ON  8  7  6  5  4  3  2  1
ZigBee PID    Address MSB

Pin Assignments
DI0+ DI0-
DI1+ DI1-
DI2+ DI2-
DI3+ DI3-
DI4+ DI4-
DI5+ DI5-
COM1 NO1
COM2 NO2
COM3 NO3
COM4 NO4

Power Supply          Rotary Switch
Address
+Vs  GND  F.G.

## Dimensions (Units: mm)

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

94 / 78 / 39.0 / 35.4 / 24.6 / 8.0 / 33 / 105 / 110

## Ordering Information

| ZT-2060 CR | Wireless 6-channel Isolated Digital Input and 4-channel Relay Output Module (RoHS) |
|---|---|
| **Important Note:** ZigBee Data Acquisition modules need a ZigBee host converter to coordinate the data transmission route. Please remember to order a ZT-2550 or ZT-2570 ZigBee host converter when you purchase ZigBee Data Acquisition Products. | |

## Accessories

| MDR-20-24 | 24 V$_{DC}$/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) |