ZT-2053-IOP

ZigBee I/O Pair-connection Module with
the 14-channel Isolated Digital Input

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
- 14 Channels Pair-connection of the Digital Input
- DO Safe Value setting for Wireless Disconnection Monitoring
- Configurable I/O Pairing Number
- Surge and ESD Protection
- Supports AES-128 Encryption for the Wireless Communication
- DIN-Rail Mountable

Introduction

The ZT-2053-IOP module acts as a ZigBee coordinator that provides 14-channel digital input pair-connection function with module of ZT-2043 (14-ch sink type digital output). An embedded I/O channel binding function means that there is no need to use an external controller.

The status of each ZT-2053-IOP channel triggers the corresponding remote digital output channels on the ZT-2043 module. The ZT-2053-IOP continually transmits updates on the status of the digital input channels to the remote ZT-2043 to ensure that the digital output channels are synchronized.

The ZT-2053-IOP also provides external DIP switches for easy configuration, which can be used to synchronize the digital signals in any environment where wiring is difficult.

System Specifications

Communication Interface	
Wireless Standards	ZigBee 2007 Pro
Transmission Power	11 dBm (FCC Certificated) (Max 19 dBm)
Antenna	2.4 GHz - 5 dBi Omni-directional Antenna
Transmission Range (LoS)	700 m (Typical)
Max. Slaves in a ZigBee Network	255
LED Indicators	
Power / Debug	1 LED, Red
ZigBee Communication	1 Green LED, ZigBee Communication Indicator
Digital Input and Output	14 Green LED, Digital Input Channel Indicators
Isolation	
Intra-module Isolated, Field-to-Logic	3750 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
Surge (IEC 61000-4-5)	±3 kV for Power
Power	
Input Voltage Range	+10 V$_{DC}$ ~ +30 V$_{DC}$
Power Consumption	0.72 W Max.
Mechanical	
Flammability	Fire Retardant Materials (UL 94V-0 Level)
Dimensions (L × W × H)	87 mm × 33 mm × 110 mm
Installation	DIN-Rail
Environment	
Operating Temperature	-25 ~ +75°C
Storage Temperature	-30 ~ +80°C
Relative Humidity	10 ~ 90% RH, Non-condensing

Applications

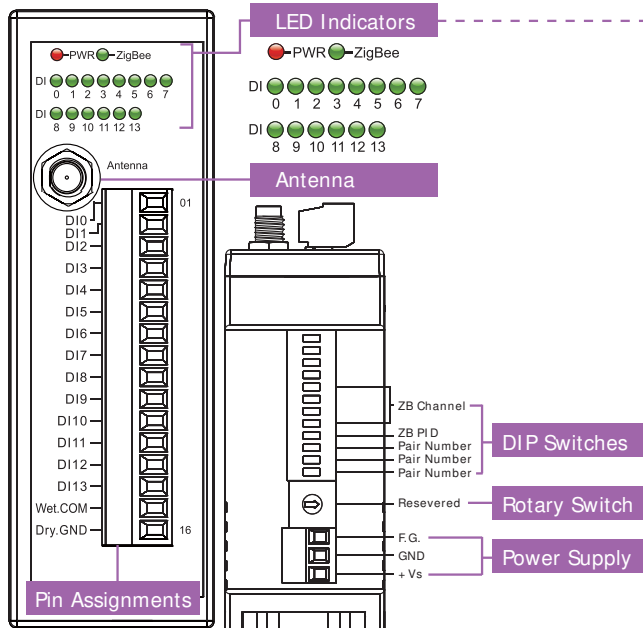Building Automation, Factory Automation, Machine Automation, Remote Maintenance, Remote Diagnosis, Testing Equipment.
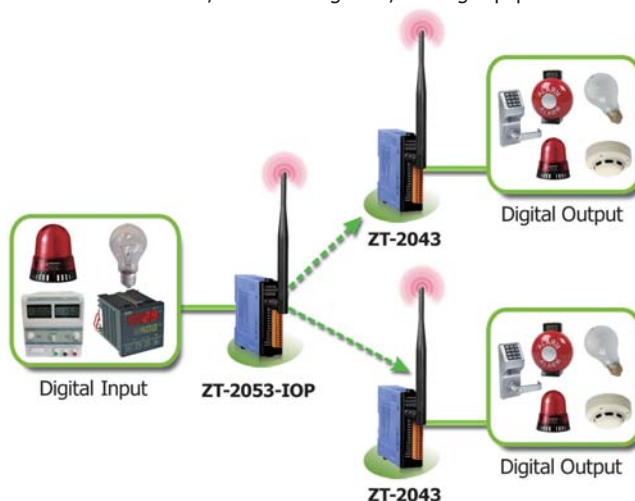
I/O Specifications

Digital Input		
Input Channels	14	
Dry Contact (Sink)	On Voltage Level: Close to GND	
	Off Voltage Level: Open	
	Effective Distance for Dry Contact: 500 m Max.	
Wet Contact (Sink/Source)	On Voltage Level: +3.5 V$_{DC}$ ~ +30 V$_{DC}$	
	Off Voltage Level: +1 V$_{DC}$ Max.	
Input Impedance	3 kΩ, 0.33 W	

▣ Wiring

Input Type	ON State LED ON Readback as 1	OFF State LED OFF Readback as 0
Dry Contact (Sink)	Relay ON	Relay OFF
	Relay Close — Dry.GND / INx	Relay Open — Dry.GND / INx
Wet Contact (Source)	Voltage > 3.5V	Voltage < 1V
	− / + Wet.COM / INx	− / + Wet.COM / INx
Wet Contact (Sink)	Open Collector ON	Open Collector OFF
	+ / − Wet.COM / INx	+ / − Wet.COM / INx

▣ Appearance

LED Indicators

PWR ZigBee
DI 0 1 2 3 4 5 6 7
DI 8 9 10 11 12 13

Antenna

Pin Assignments:
DI0, DI1, DI2, DI3, DI4, DI5, DI6, DI7, DI8, DI9, DI10, DI11, DI12, DI13, Wet.COM, Dry.GND (01–16)

ZB Channel
ZB PID
Pair Number
Pair Number
Pair Number — DIP Switches

Resevered — Rotary Switch

F.G.
GND
+ Vs — Power Supply

▣ Dimensions (Units: mm)

87
78
39.0
35.4
24.6
8.0

Left Side View

33
105   110

Front View

Right Side View

87   78

Top View

Rear View

Bottom View
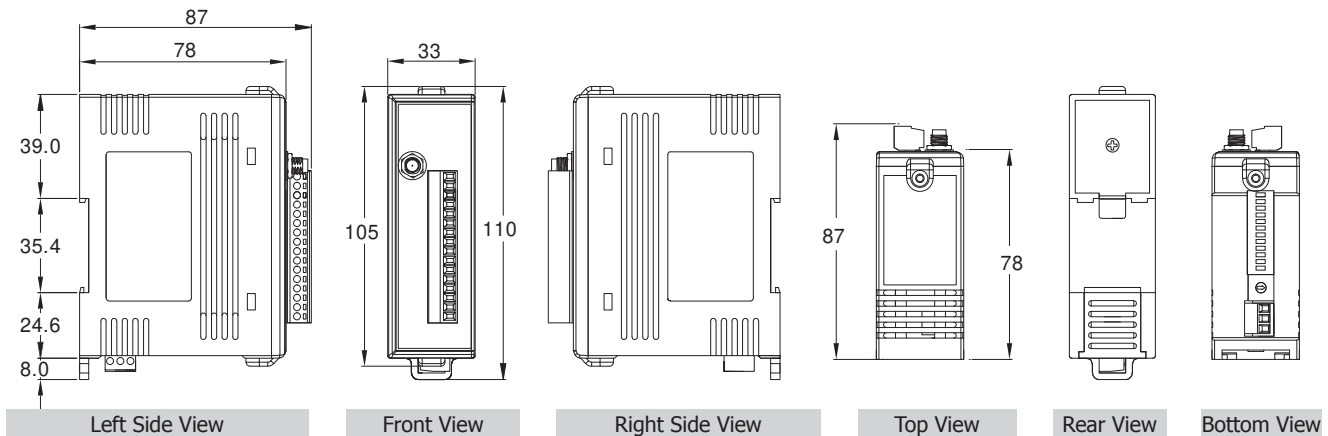
▣ Ordering Information

ZT-2053-IOP CR	ZigBee Pair-connection to the 14-ch Isolated Digital Input Module (Host, ZigBee Coordinator) (RoHS)
ZT-2042 CR	ZigBee 4-ch PhotoMOS Relay Output and 4-ch Open Collector Output Module (Slave, ZigBee Router) (RoHS)
ZT-2043 CR	ZigBee 14-ch Isolated Digital Output Module (Slave, ZigBee Router) (RoHS)
ZT-2055 CR	ZigBee 8-channel Isolated Digital Input and 8-channel Isolated Digital Output Module (Slave, ZigBee Router) (RoHS)
ZT-2060 CR	ZigBee 6-ch Isolated Digital Input and 4-ch Relay Output Module (Slave, ZigBee Router) (RoHS)

Important Note: ZigBee Pair-connection module is a ZigBee host to coordinate the ZigBee I/O module. Please order at least one ZT-2000 digital series module to work for ZigBee I/O pairing.

▣ Accessories

ZT-USBC CR	USB to ZigBee Converter (ZigBee Full-function) (RoHS)
ZT-2570 CR	Ethernet/RS-485/RS-232 to ZigBee Converter (Host, ZigBee Coordinator) (RoHS)
ZT-2550 CR	RS-485/RS-232 to ZigBee Converter (Host)
ZT-2510 CR	ZigBee Repeater (Slave, ZigBee Router) (RoHS)

Important Note: The default pairing setting of ZT-2053-IOP is paired with the ZT-2043. If there is any pairing requirement with other ZigBee I/O modules, a ZigBee converter is required for doing the software configuration.