RS Series Quick Start

v1.2, Jan. 2018

What's in the box?

In addition to this guide, the package includes the following items:

RS

RSM

RS or RSM Series x1

Quick Start x1(This Document)

Related Information

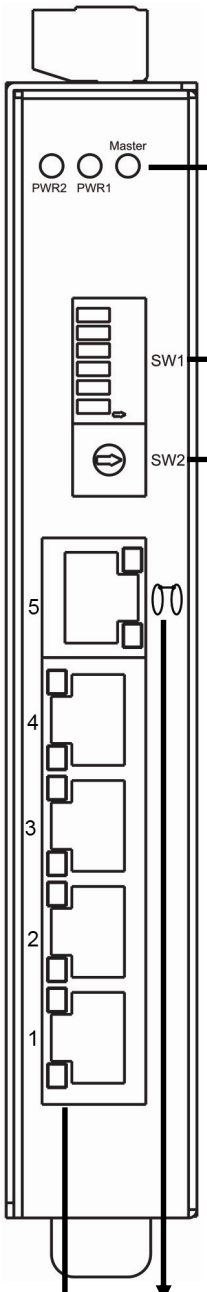
For detailed information about the hardware and software of RS series, refer to the RS Series User Manual.

- Documentation & Software:
http://ftp.icpdas.com/pub/cd/ethernetswitch/napdos/rs-405/

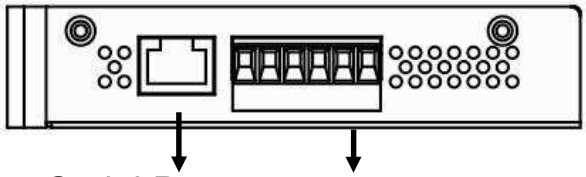
- RS Series Product Page:
http://www.icpdas.com/root/product/solutions/industrial_ethernet_switch/switch_selection.html

1 Appearance

RSM-405-R Front Panel



Top Panel



Serial Port:
COM1 RS-232

Terminal block

(Refer to Chapter 2 Pin Assignments)

LED indicator functions

LED	Color	Description
Master	Red On	The switch is master of ring network
	Red Off	The switch is slave of ring network
PWR1	Orange On	Power input 1 is alive
	Orange Off	Power input 1 is offline
PWR2	Green On	Power input 2 is alive
	Green Off	Power input 2 is offline

SW1: Redundancy mode configuration

	OFF	ON
1	Redundancy Mode	Tradition Mode
2	Normal State	Default Setting
3	Primary Switch	Secondary Switch
4	Ring Protocol	STP Protocol
5	Disable Ring Pair2	Enable Ring Pair2
6	Disable Ring Pair1	Enable Ring Pair1

SW2: Max. Recovery time selection

State	Time	State	Time	State	Time
F	1.5 s	9	900 ms	3	300 ms
E	1.4 s	8	800 ms	2	200 ms
D	1.3 s	7	700 ms	1	100 ms
C	1.2 s	6	600 ms	0	N/A
B	1.1 s	5	500 ms		
A	1.0 s	4	400 ms		

Interconnection port for 2
Phase recovering coupling

RJ-45 Ethernet ports

RS-405/RSM-405/RS-408/RSM-408 Series Front Panel

LED indicator functions

LED	Color	Description
Master	Red On	The switch is master of ring network
	Red Off	The switch is slave of ring network
PWR1	Orange On	Power input 1 is alive
	Orange Off	Power input 1 is offline
PWR2	Green On	Power input 2 is alive
	Green Off	Power input 2 is offline

SW1: Redundancy mode configuration

	OFF	ON
1	Redundancy Mode	Tradition Mode
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4	Ring Protocol	STP Protocol
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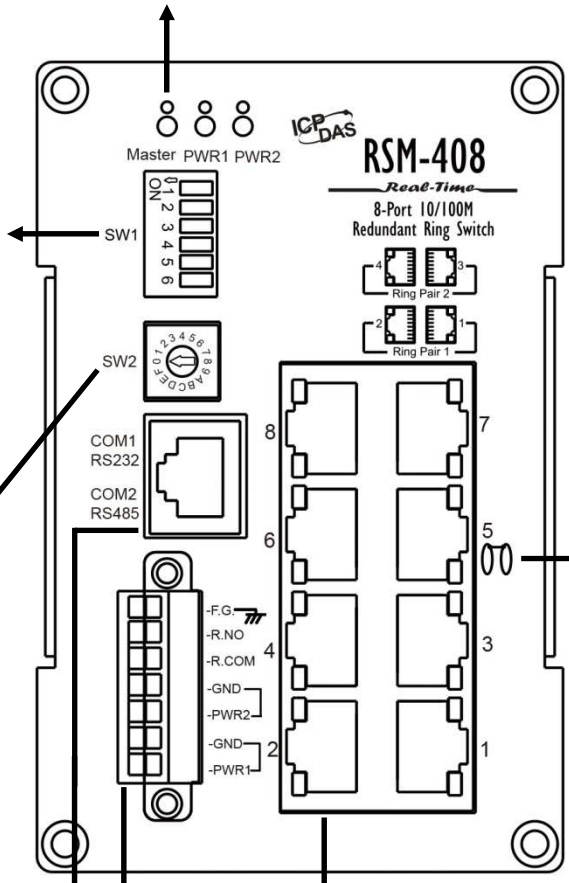
C	1.2 s	6	600 ms	0	N/A
B	1.1 s	5	500 ms		
A	1.0 s	4	400 ms		



RJ-45 Ethernet ports

Serial Port: COM1 RS-232/COM2 RS-485
(Refer to Chapter 2 Pin Assignments)

Interconnection port for 2
Phase recovering coupling

Terminal block
(Refer to Chapter 2 Pin Assignments)

RS-405F/RSM-405F Series Front Panel

LED indicator functions

LED	Color	Description
Master	Red On	The switch is master of ring network
	Red Off	The switch is slave of ring network
PWR1	Orange On	Power input 1 is alive
	Orange Off	Power input 1 is offline
PWR2	Green On	Power input 2 is alive
	Green Off	Power input 2 is offline

Fiber Ports LEDs:

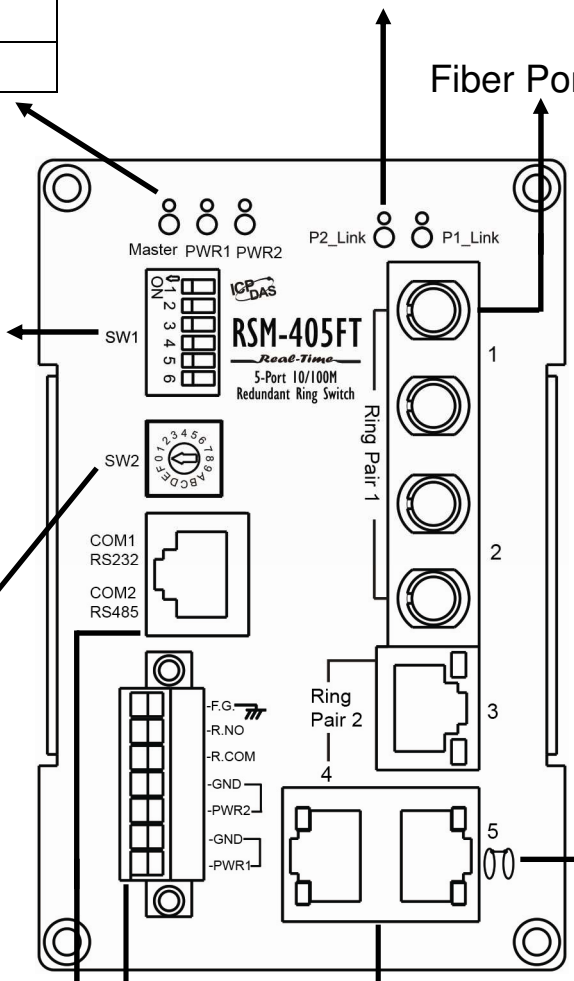
LED	ON	OFF	BLINK
P1_Link	Link	Not Link	Transmission
P2_Link	Link	Not Link	Transmission

SW1: Redundancy mode configuration

	OFF	ON
1	Redundancy Mode	Tradition Mode
2	Normal State	Default Setting
3	Primary Switch	Secondary Switch
4	Ring Protocol	STP Protocol
5	Disable Ring Pair2	Enable Ring Pair2
6	Disable Ring Pair1	Enable Ring Pair1

SW2: Max. Recovery time selection

State	Time	State	Time	State	Time
F	1.5 s	9	900 ms	3	300 ms
E	1.4 s	8	800 ms	2	200 ms
D	1.3 s	7	700 ms	1	100 ms
C	1.2 s	6	600 ms	0	N/A
B	1.1 s	5	500 ms		
A	1.0 s	4	400 ms		



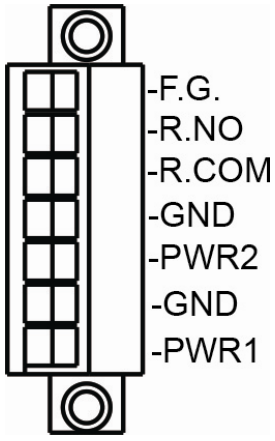
2 Pin Assignments

10-pin RJ-45 Serial Port

10-pin RJ-45	Signal		CA-090510 Mapping	
			RJ-45	DB-9
01	-	-	-	-
02	D+	COM2 RS-485, Data+	Pin 1	Pin 6
03	D-	COM2 RS-485, Data-	Pin 2	Pin 7
04	GND	COM1 RS-232, Ground	Pin 3	Pin 5
05	TxD	COM1 RS-232, Transmit Data	Pin 4	Pin 2
06	RxD	COM1 RS-232, Receive Data	Pin 5	Pin 3
07	-	-	-	-
08	-	-	-	-
09	-	-	-	
10	-	-	-	-

NOTE: RSM-405-R not supports COM2 (RS-485).

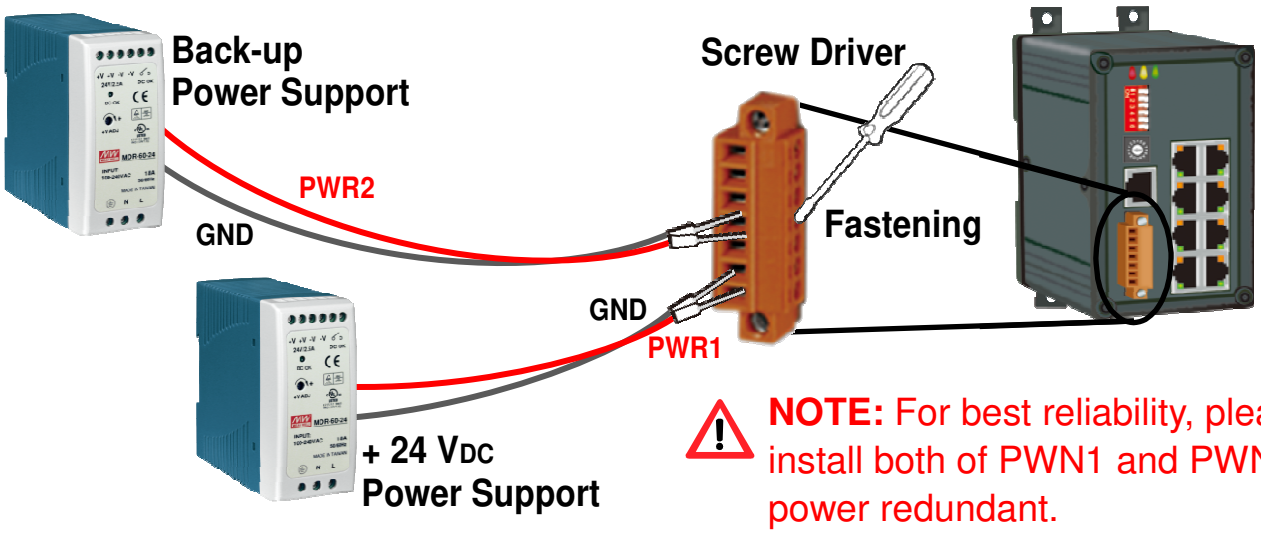
Terminal Block



	Pin	Description
1	F.G.	Frame Ground
2	R.NO	Relay
3	R.COM	Relay
4	GND	Power 2 Grounding
5	PWR2	DC Power Input 2 ➢ RS(M)-405, RS(M)-408, RS(M)-405F Series: Valid Power Voltage Range: **+10 VDC ~ +30 VDC** ➢ RS-405-R, RS(M)-405A, RS-(M)-405AF Series: Valid Power Voltage Range: **+12 VDC ~ +48 VDC**
6	GND	Power 1 Grounding
7	PWR1	DC Power Input 1 ➢ RS(M)-405, RS(M)-408, RS(M)-405F Series: Valid Power Voltage Range: **+10 VDC ~ +30 VDC** ➢ RS-405-R, RS(M)-405A, RS-(M)-405AF Series: Valid Power Voltage Range: **+12 VDC ~ +48 VDC**

3 Connecting Input Power

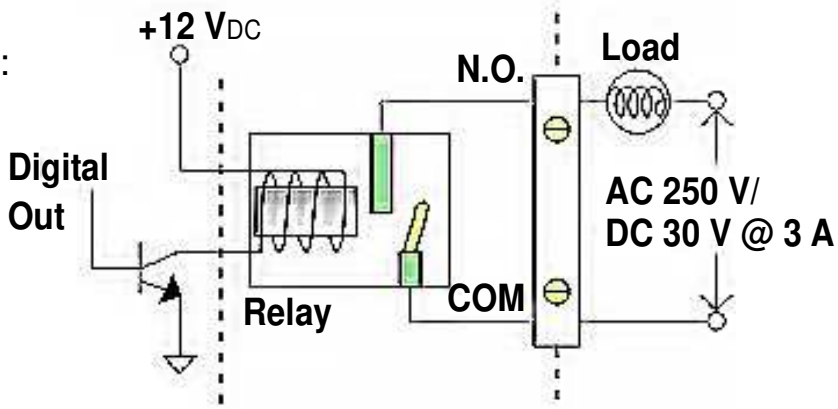
Insert the wire of your DC supply or Battery supply into the PWN1 and/or PWN2 contacts of the terminal block connector, and fastening the terminal screws to prevent the wires from coming loose.



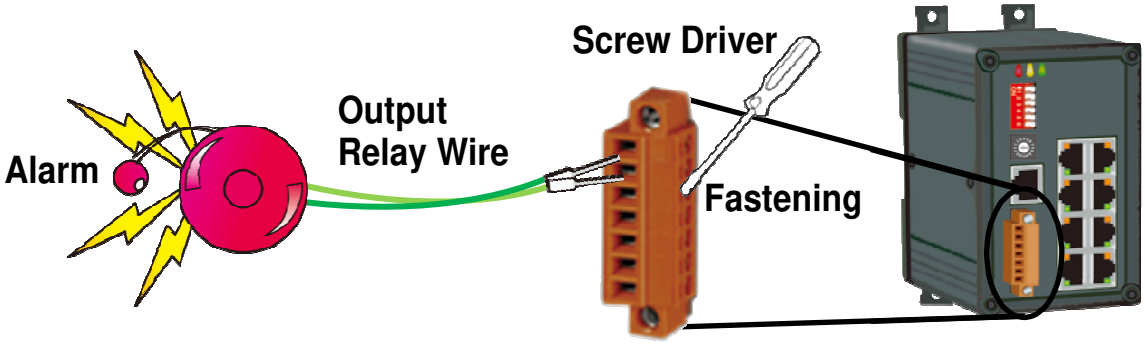
NOTE: For best reliability, please install both of PWN1 and PWN2 for power redundant.

4 Connecting Output Relay

The diagram of output relay:



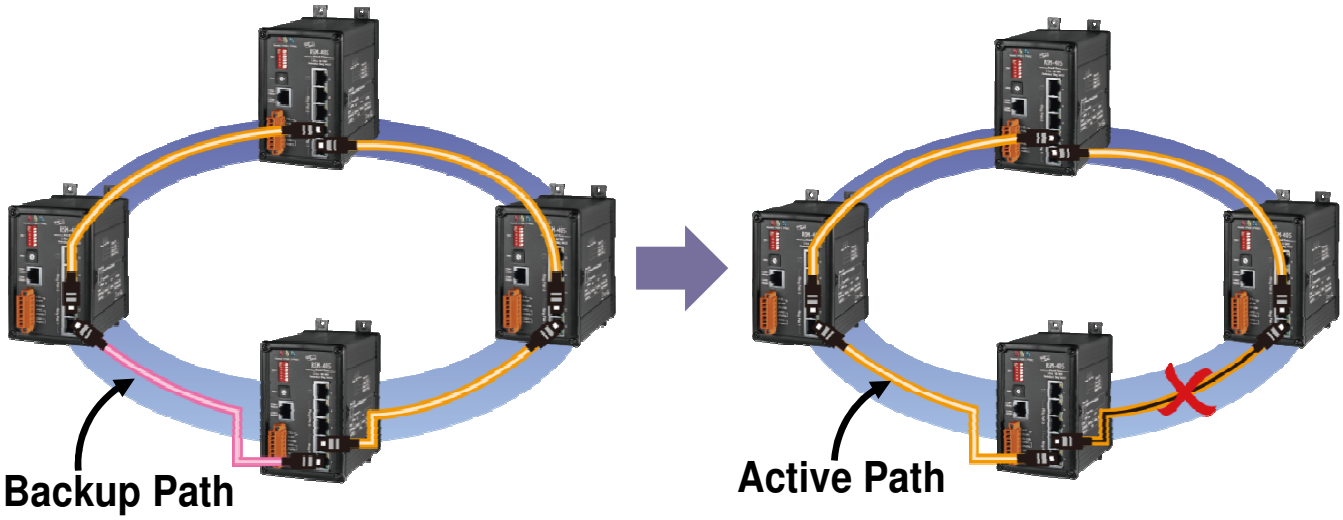
Insert the relayed device such as a light bulb or a buzzer pair of wire, and fastening the terminal screws to prevent the wires from coming loose.



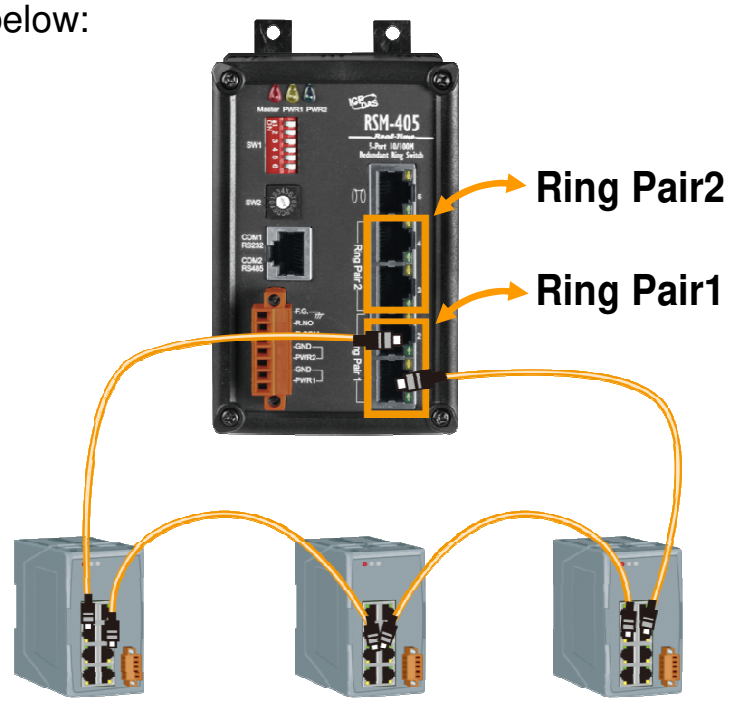
5 Single Ring Topology

A ring topology ensures the network having one more chance to keep connection alive when any connection between 2 switches (nodes) has been broken inside the ring.

When we have formed a ring network, the focal point (master) will choose any one and only one path as **Redundant Path**. It is actually inactive when the ring network works properly. At the moment of any connection failure, the focal point will activate the **Redundant Path** and fire alarm to output relay.



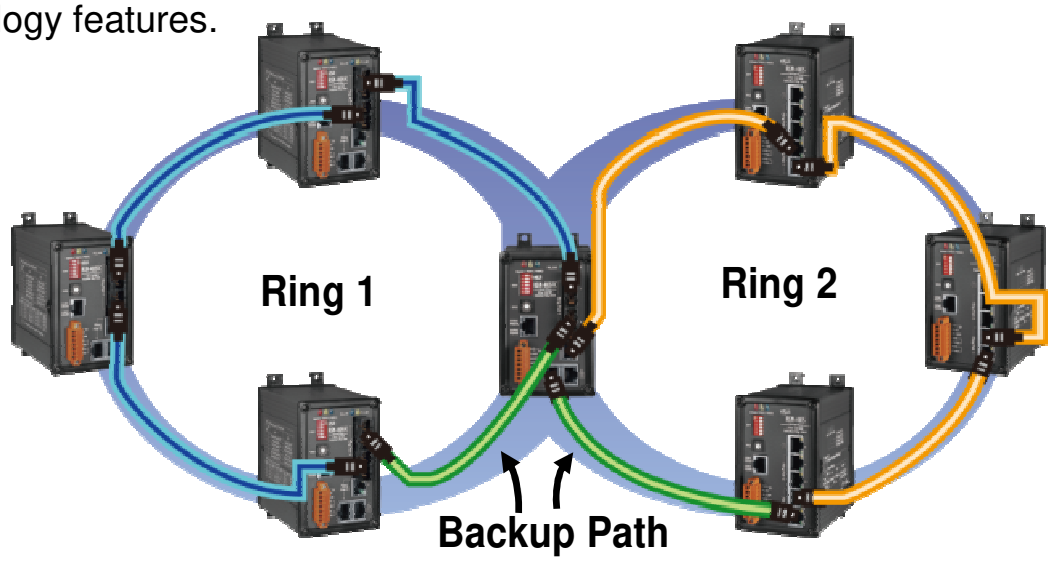
RS Series come with 2 ring pair by default. A ring pair can form a ring with other network devices as below:

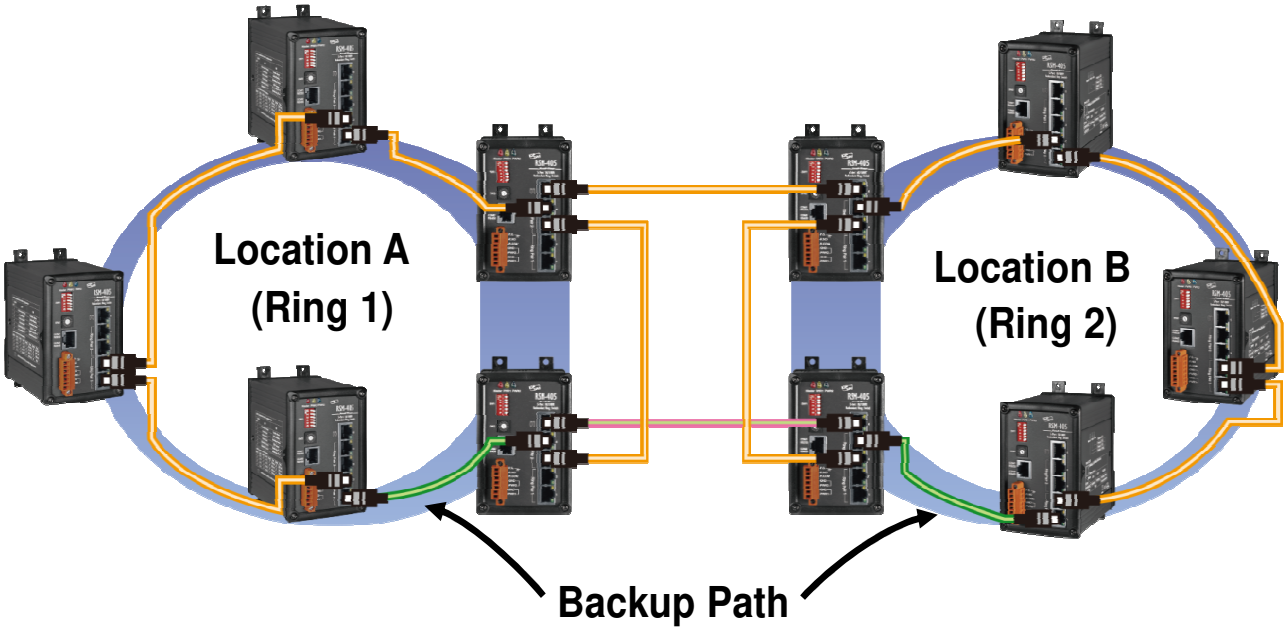


6 Dual Ring Coupling Topology

As a ring network is a small group of switches by geography, functionalities, or subsystem, 2 or more rings could be coupled together to form a whole picture of industrial network for an integrated system.

Single coupling point uses a switch to bridge 2 rings. Each ring still keeps original ring topology features.



Double Ring Coupling

Double Ring Coupling is the enhanced version of Ring Coupling topology. It improves the reliability of Ring Coupling topology. In Double Ring Coupling topology, there are two coupling points providing redundant coupling path of two rings.