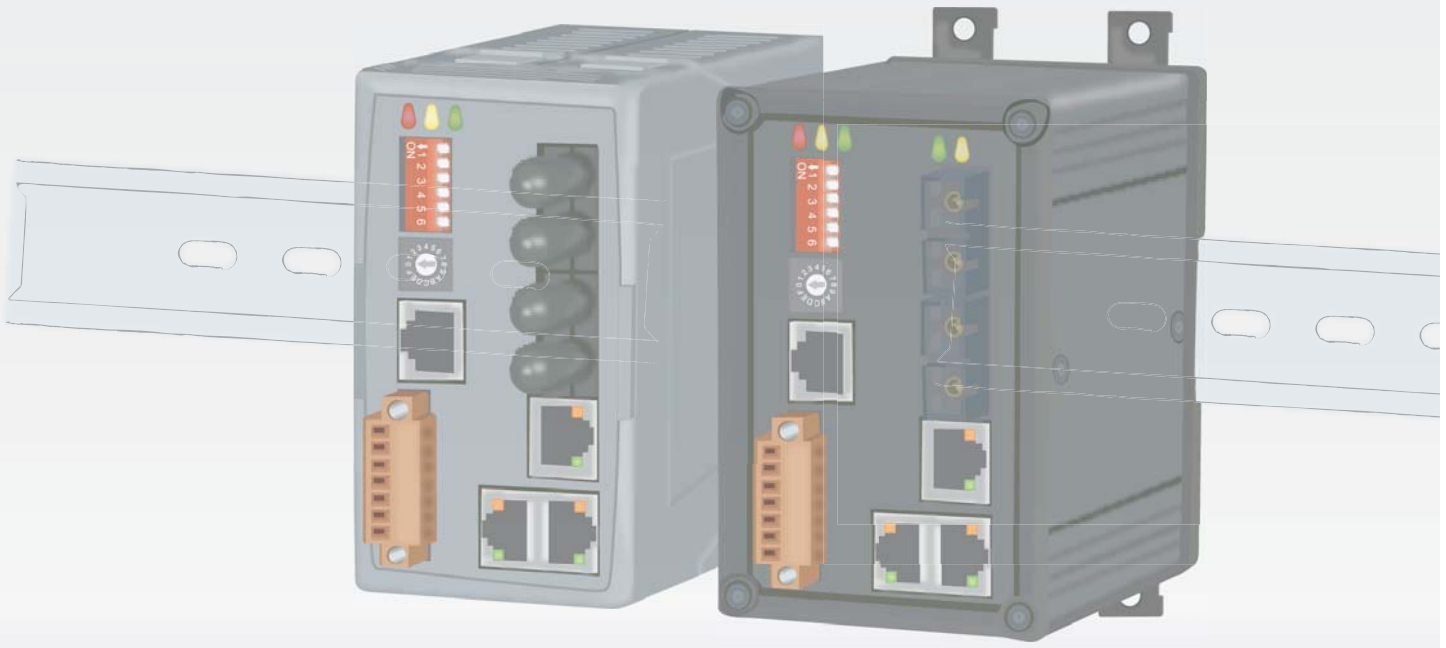
2

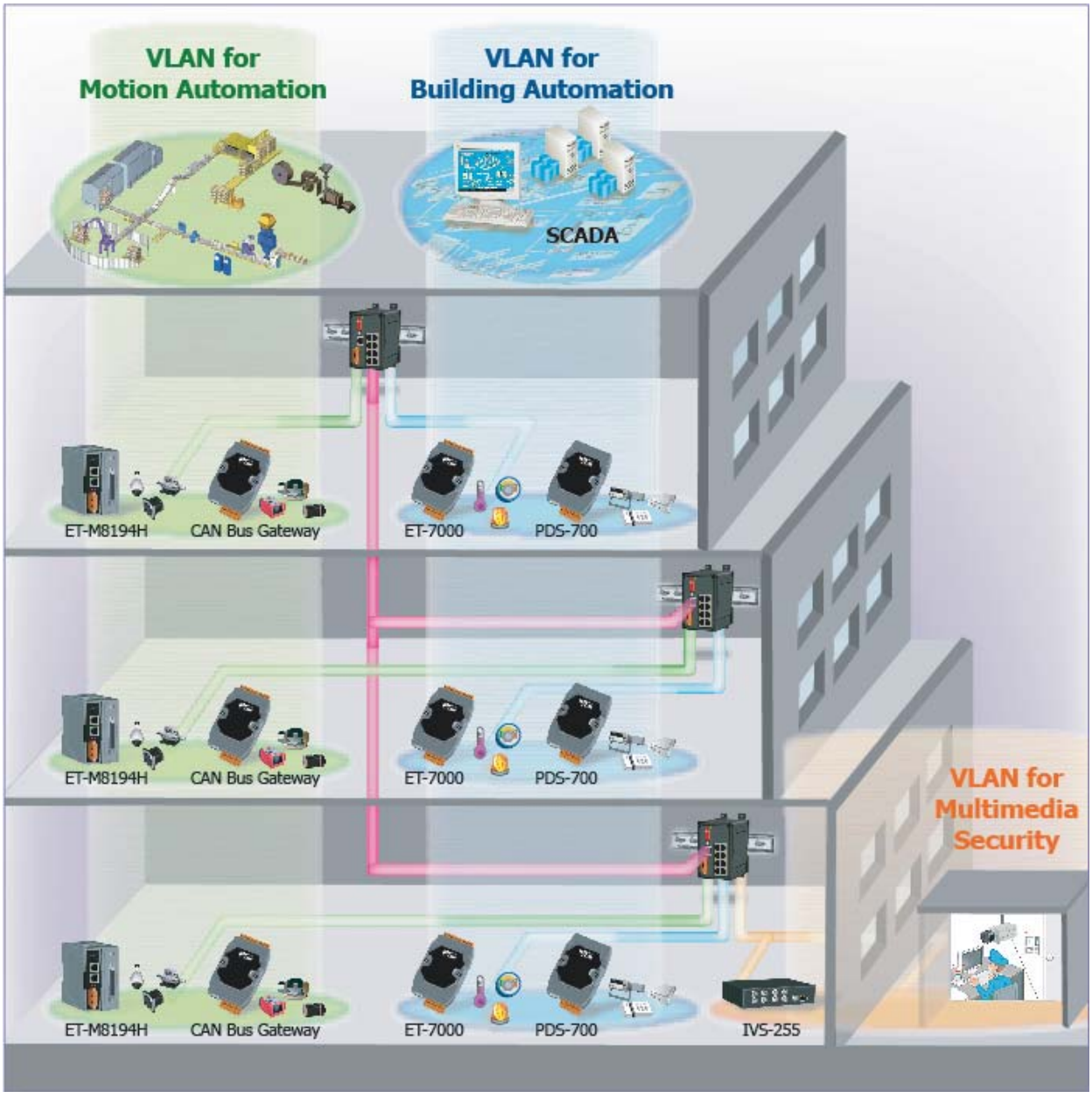
Managed Ethernet Switches



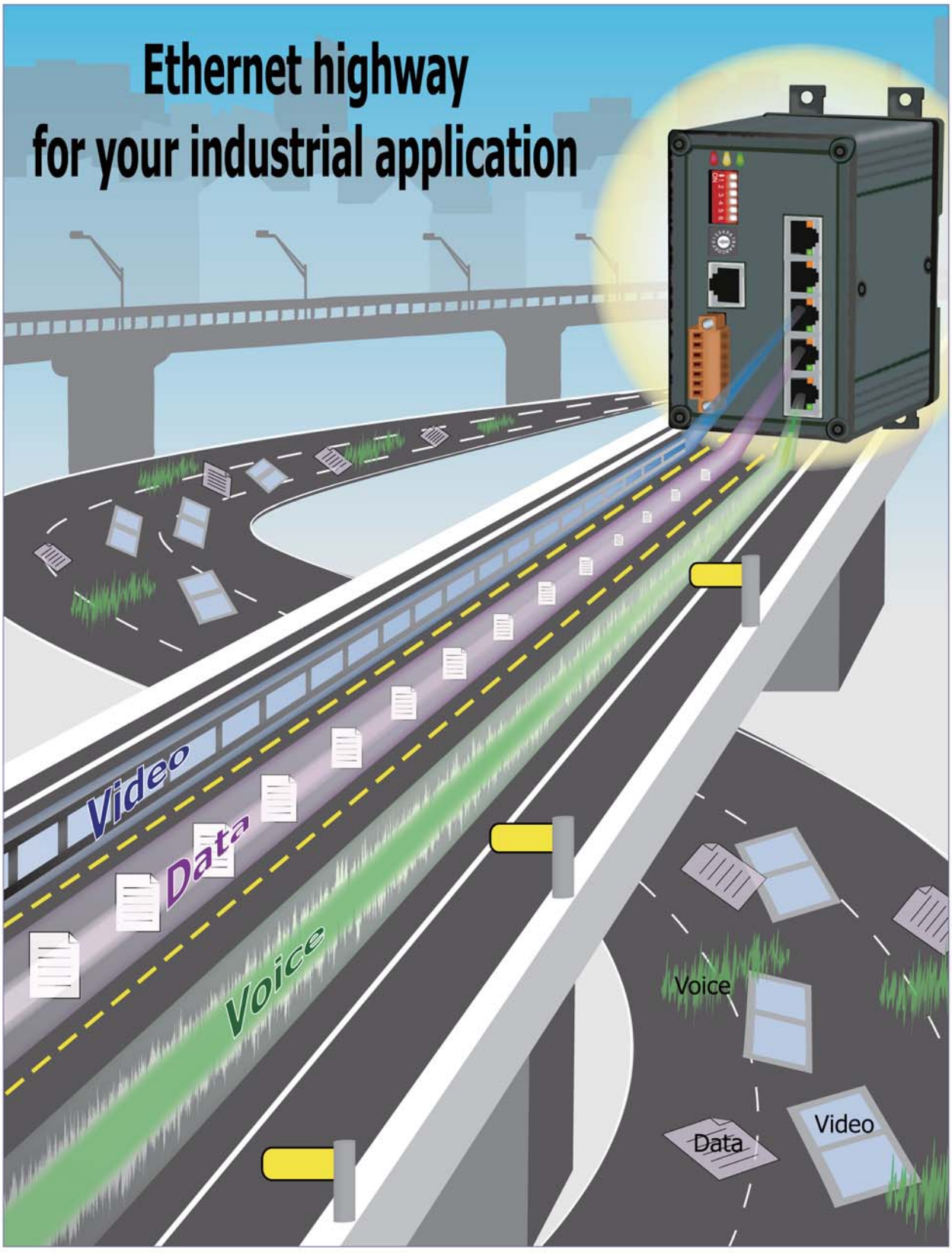
Managed Ethernet Switches

The managed switch can be configured through RS-232 port via serial console or Ethernet port using telnet or Web browser. In addition, the switch supports a lot of powerful managed functions, such as 802.1Q Tag-based VLAN, Port-based VLAN, 802.1p QoS (Quality of Service), Port Trunking, Spanning Tree, Cable Testing and Port Mirroring.

Built-in ICP DAS Cyber-Ring technique that enable multiple switches to be placed into a redundant ring. The switch detects and recovers from a fiber or copper link failure within approximately 50ms – for the majority of applications a seamless process. Modbus/TCP, Modbus/RTU and OPC supported, SCADA application can monitor status of Ethernet and fiber port with Modbus or OPC protocol.



Applications



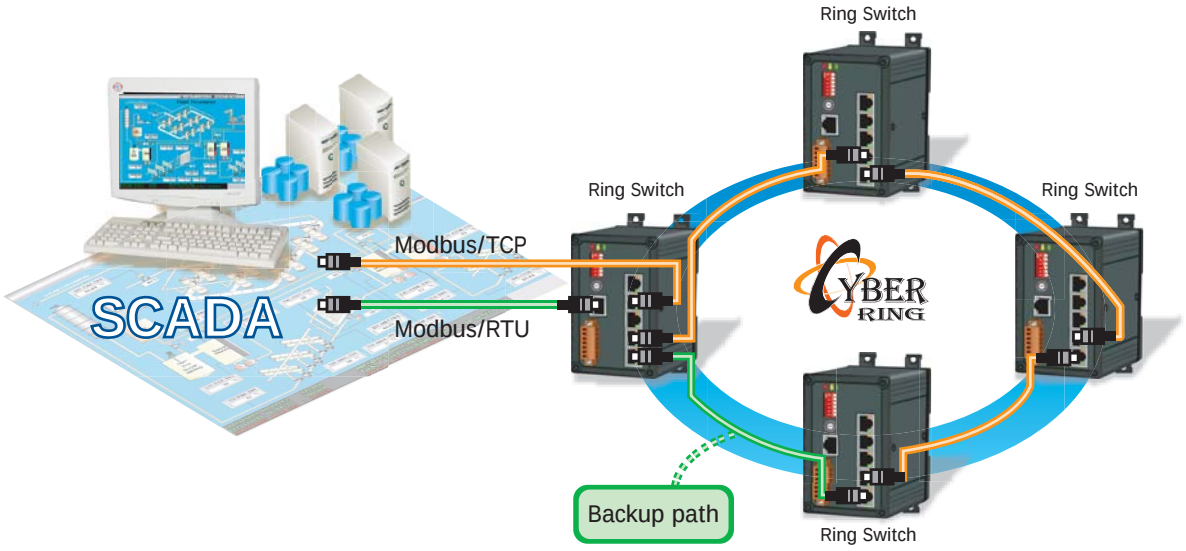
Cyber-Ring Ethernet Self-healing Technology

It is undoubted that the power of an Ethernet LAN (Local Area Network) is tremendous when applied to factory floor or industrial automation applications. However, you cannot just use commercial Ethernet switch there. Harsh environment will become a challenge to your switch, and, in many case, fault-tolerant network is also a must. To satisfy these, ICP DAS's Cyber-Ring technology provides you a rugged fault-tolerant, plug and play Ethernet solution.

The ICP DAS's proprietary Cyber-Ring self-healing Ethernet technology can establishes industrial Ethernet with high reliability and fault-tolerant capability. It can employ a ring topology network of either copper or fiber optic cable. While standard STP typically requires 20s to 30s to reconfiguration network structure following a link failure, Cyber-Ring technology reduces this downtime to within half a second. Average experience indicates a typical fault recovery time is 300ms for Cyber-Ring fault-tolerant network.

Features

- High reliability and fault-tolerant
- Real-time deterministic performance
- Scalable and flexible ring topology
- Cost-effective industrial redundant Ethernet solution
- Plug and play



Recovery Time

The recovery time of Cyber-Ring network consists of two parts, fault detected time and reconfiguration time. Recovery time of Cyber-Ring network is associated with the number of switches of the network and Cyber-Ring technology offers a variable preconfigured recovery time to support a wide range of number of switches. Typically, the recovery time of Cyber-Ring network with ten switches is less than 300ms.

Fault Detected Time

Fault detected time is defined as the time from the occurrence of the fault until fault detected. There is a master switch of Cyber-Ring network checks the health condition of Cyber-Ring network periodically. If active path is not response after a preconfigured period of time the master assumes that active path is failure and invokes reconfiguration mechanism to redirect traffics to the backup path.

Reconfiguration Time

The reconfiguration time of Cyber-Ring network is less than 5ms per switch. For example, a Cyber-Ring fault-tolerant network that was comprised of ten switches, the expected worst case reconfiguration time was 50ms. When a fault is detected, the Cyber-Ring network will reconfigure to provide alternate traffic path of the ring within 50ms.

Selection Guide

Managed Ethernet Switches

Model Name	Speed	Port	Operation temperature	Redundant Power	Casing	Page
MSM-508	10/100M	8	-30 ~ 75°C	DC + 10~30V	Metal	2-5

Real-time Redundant Ring Ethernet Switches

Model Name	Speed	Port	Operation temperature	Redundant Power	Casing	Page
RS-405	10/100M	5	-30 ~ 75°C	DC + 10~30V	Plastic	2-9
RSM-405	10/100M	5	-30 ~ 75°C	DC + 10~30V	Metal	2-9
RS-408	10/100M	8	-30 ~ 75°C	DC + 10~30V	Plastic	2-13
RSM-408	10/100M	8	-30 ~ 75°C	DC + 10~30V	Metal	2-13

Managed Ethernet Switches with Fiber Optics

Model Name	Fiber Optics				Ethernet		Redundant Power	Operation temperature	Casing	Page
	Mode	Connector	Speed	Port	Speed	Port				
MSM-508FC	Multi-mode	SC	100M	2	10/100M	6	DC + 10~30V	0 ~ 70°C	Metal	2-17
MSM-508FCS	Single-mode	SC	100M	2	10/100M	6	DC + 10~30V	0 ~ 70°C	Metal	2-17
MSM-508FT	Multi-mode	ST	100M	2	10/100M	6	DC + 10~30V	0 ~ 70°C	Metal	2-17

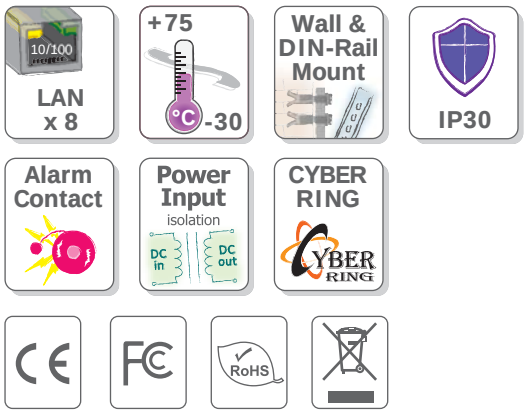
Real-time Redundant Ring Ethernet Switches with Fiber Optics

Model Name	Fiber Optics				Ethernet		Redundant Power	Operation temperature	Casing	Page
	Mode	Connector	Speed	Port	Speed	Port				
RS-405FC	Multi-mode	SC	100M	2	10/100M	3	DC + 10~30V	0 ~ 70°C	Plastic	2-21
RSM-405FC	Multi-mode	SC	100M	2	10/100M	3	DC + 10~30V	0 ~ 70°C	Metal	2-21
RS-405FCS	Single-mode	SC	100M	2	10/100M	3	DC + 10~30V	0 ~ 70°C	Plastic	2-21
RSM-405FCS	Single-mode	SC	100M	2	10/100M	3	DC + 10~30V	0 ~ 70°C	Metal	2-21
RS-405FT	Multi-mode	ST	100M	2	10/100M	3	DC + 10~30V	0 ~ 70°C	Plastic	2-21
RSM-405FT	Multi-mode	ST	100M	2	10/100M	3	DC + 10~30V	0 ~ 70°C	Metal	2-21

MSM-508 Available Soon

8-Port Industrial Ethernet Layer 2 Managed Switch

Highlight Information



Introduction

The MSM-508 is an 8-Port Industrial Ethernet (10/100Base-TX) Layer 2 Managed Switch. MSM-508 supports 10/100M auto-negotiation feature and auto MDI /MDIX function. It can automatically switch the transmission speed (10 Mbps or 100 Mbps) for corresponding connections. The connectors of Ethernet port are shielded RJ-45. The shielded RJ-45 connectors offer a high reliability Ethernet environment for industrial control and automation.

It can be managed through RS-232 port via serial console or Ethernet port using telnet or Web browser. In addition, the switch supports a lot of powerful managed functions, such as 802.1Q Tag-based VLAN, Port-based VLAN, 802.1p QoS (Quality of Service), Port Trunking, Spanning Tree, Cable Testing and Port Mirroring. Built-in ICP DAS Cyber-Ring technique that enable multiple switches to be placed into a redundant ring. The switch detects and recovers from a fiber or copper link failure within approximately 50ms – for the majority of applications a seamless process. Modbus/TCP, Modbus/RTU and OPC supported, SCADA application can monitor status of Ethernet port with Modbus or OPC protocol.

MSM-508 provides two power inputs that can be connected simultaneously to live DC power sources. If one of the power inputs fails, the other live source acts as a backup to automatically support the MSM-508's power needs. And, the relay output facility can deliver warning signal while dual power or network link failure.

Features

- Automatic MDI / MDI-X crossover for plug-and-play
- Each port supports both 10/100 Mbps speed auto negotiation
- Store-and-forward architecture
- Full duplex IEEE 802.3x and half duplex backpressure flow control
- 3.2Gbps high performance memory bandwidth
- Frame buffer memory: 1 Mbit
- Integrated look-up engine with dedicated 2 K unicast MAC addresses
- Supports +10~+30Vdc voltage with 1KV isolation Power failure alam by relay output
- Supports operating temperatures from -30 ~ +75°C
- DIN-Rail mount and Screw hole for wall mounting kit

Specifications

Technology	
Standards	IEEE802.3, 802.3u, 802.3x
Ethernet Switch Type	Intelligent store & forward
MAC Addresses	2K
Memory Bandwidth	3.2 Gbps
Vibration	EN 50155 and EN11373
EMC Immunity	EN61326-1 (EN61000-4-2, 3, 4, 5, 6)
Protocol	VLAN, QoS, Port Trunk, SMTP, TELNET
Interface	
RJ-45 Ports (shielded)	10/100BaseT(X)
RJ-45 Speed (auto-negotiating)	10 Mbps or 100 Mbps
RJ-45 Auto-MDI/MDI-X	All 8 ports
Ethernet Isolation	1500 Vrms 1 minute
Power	
Required Supply Voltage	+10 ~ +30VDC
Power Input Isolation	1KV
Power Consumption (Redundant Input Terminals)	8 W (typical - all ports active at 100 Mbps)
Mechanical	
Case	Metal
Environmental Rating	IP30 Protection
Dimensions (W x H x D)	47mm x 175mm x 128mm
Installation	DIN-Rail or Wall mounting
Environmental	
Operating Temperature	-30°C ~ +75°C
Storage Temperature	-40°C ~ +85°C
Ambient Relative Humidity	10% to 90% non-condensing

LED Functions

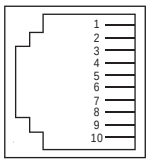
Standard RJ-45 female connectors are provided. A standard RJ-45 plug cable is all that is necessary to connect your device to the unit since switch that supports auto crossover.

MSM-508 Series 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
Ethernet Port	Orange On	Link to 100 Mbps
	Orange Off	Link to 10 Mbps
	Orange Blink	Backup Port
	Green Blink	Data Transmission

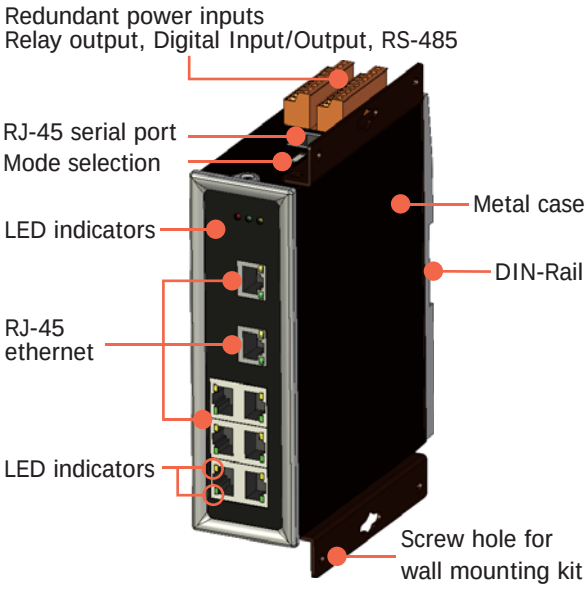
Serial Port

10-Pin RJ-45 Serial Port Pin-Out



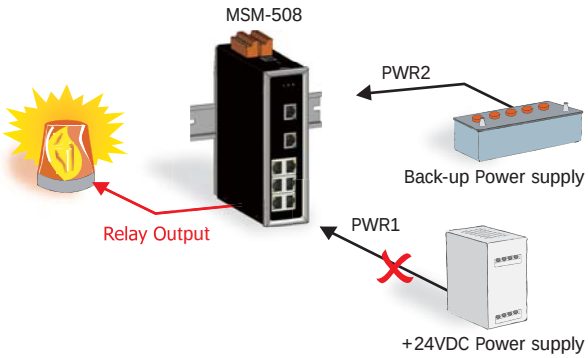
Pin#	Signal Name	Function
1	NC	No Connection
2	NC	No Connection
3	NC	No Connection
4	GND	RS-232 Ground
5	TXD	RS-232 TXD
6	RXD	RS-232 RXD
7	NC	No Connection
8	NC	No Connection
9	NC	No Connection
10	NC	No Connection

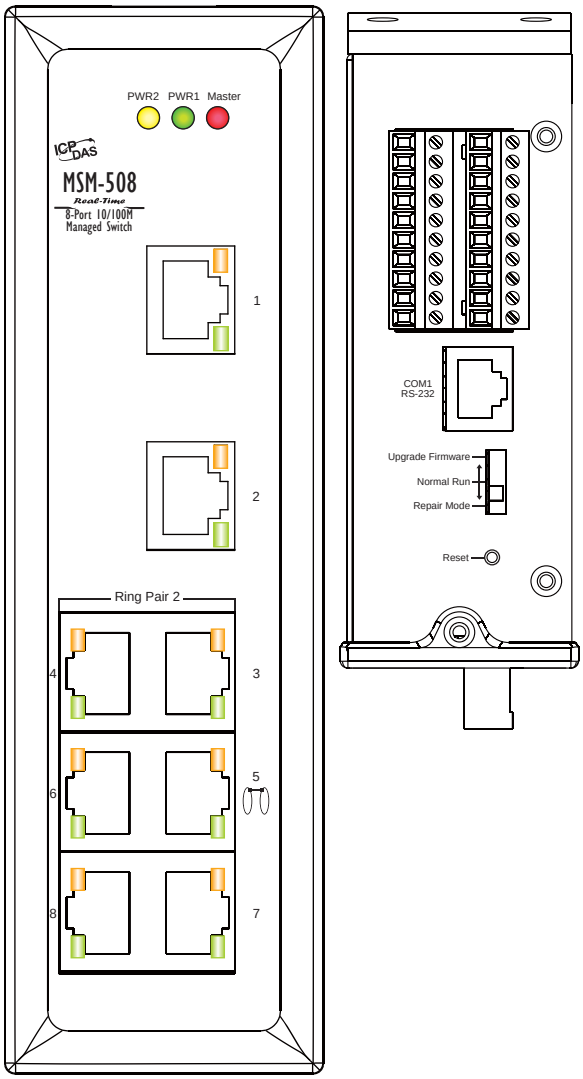
Appearance



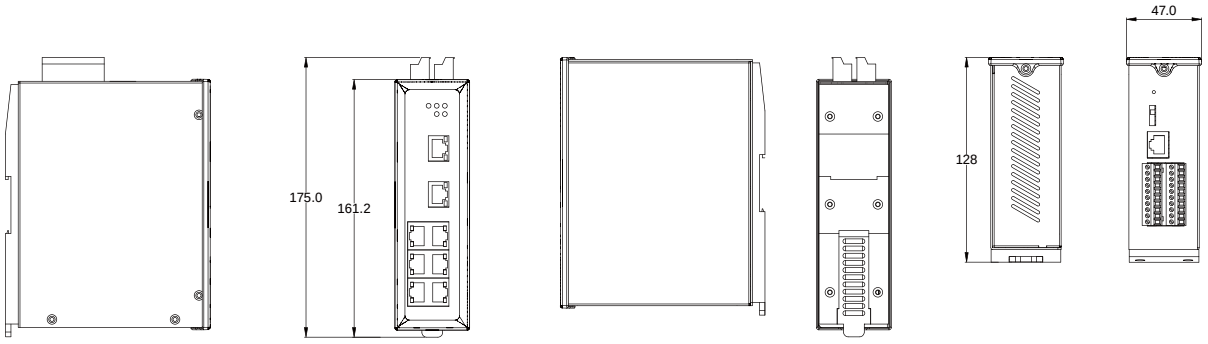
Redundant Power Inputs

Both power inputs can be connected simultaneously to live DC power sources.
If one power source fails, the other live source acts as a backup, and automatically supplies all of MSM-508 power needs.





Dimensions (Unit: mm)



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

Ordering Information

MSM-508 CR	8-Port Redundant Ring Switch with metal case (RoHS)

Accessories

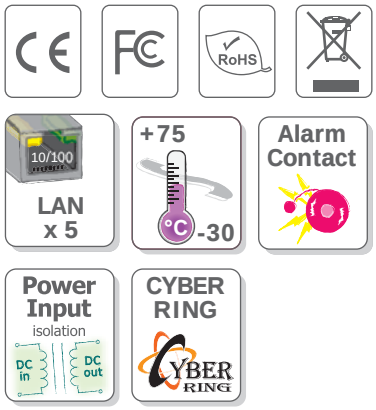
CA-090510	9-pin Female D-sub & RJ-45 cable, 1M Cable
PWR-24/110	24V/0.2A Power Supply, (No-mounting)
KWM020-1824F	24V/0.75A Power Supply, (No-mounting)
DIN-KA52F	24V/1A Power Supply, (With DIN-Rail mounting)

RS-405/RSM-405 NEW

5-Port Real-time Redundant Ring Switch

Highlight Information

RS-405/RSM-405



Only for RSM-405

Only for RS-405

RSM-405 RS-405

Introduction

The RS-405/RSM-405 is a 5-Port Industrial Ethernet (10/100Base-TX) Real-Time Redundant Ring Switch. RS-405/RSM-405 supports 10/100M auto-negotiation feature and auto MDI /MDIX function. It can automatically switch the transmission speed (10 Mbps or 100 Mbps) for corresponding connections.
Built-in ICP DAS Cyber-Ring technique that enable multiple switches to be placed into a redundant ring. It detects and recovers from a copper link failure within approximately 300ms – for the majority of applications a seamless process.

Features

- Automatic MDI / MDI-X crossover for plug-and-play
- Each port supports both 10/100 Mbps speed auto negotiation
- Store-and-forward architecture
- Full duplex IEEE 802.3x and half duplex backpressure flow control
- 3.2Gbps high performance memory bandwidth
- Frame buffer memory: 1 Mbit
- Integrated look-up engine with dedicated 2 K unicast MAC addresses
- Redundant Power Inputs +10 ~ +30V DC
  Power failure alarm by relay output
- Supports operating temperatures from -30 ~ +75°C
- DIN-Rail

Specifications

Models	RS-405	RSM-405
Technology		
Standards	IEEE802.3, 802.3u, 802.3x	
Ethernet Switch Type	Intelligent store & forward	
MAC Addresses	2K	
Memory Bandwidth	3.2 Gbps	
Vibration	EN 50155 and EN11373	
EMC Immunity	EN61326-1 (EN61000-4-2, 3, 4, 5, 6)	
Interface		
RJ-45 Ports (shielded)	10/100BaseT(X)	
RJ-45 Speed (auto-negotiating)	10 Mbps or 100 Mbps	
RJ-45 Auto-MDI/MDI-X	All 5 ports	
Ethernet Isolation	1500 Vrms 1 minute	
Power		
Required Supply Voltage	+10 ~ +30VDC	
Power Input Isolation	1KV	
Power Consumption (Redundant Input Terminals)	5 W (typical - all ports active at 100 Mbps)	
Mechanical		
Case	Plastic (Flammability UL 94V-0)	Metal (IP30 Protection)
Dimensions (W x H x D)	64mm x 118mm x 98mm	73mm x 132mm x 102mm
Installation	DIN-Rail	DIN-Rail or Wall mounting
Environmental		
Operating Temperature	-30°C ~ +75°C	
Storage Temperature	-40°C ~ +85°C	
Ambient Relative Humidity	10% to 90% non-condensing	

LED Functions

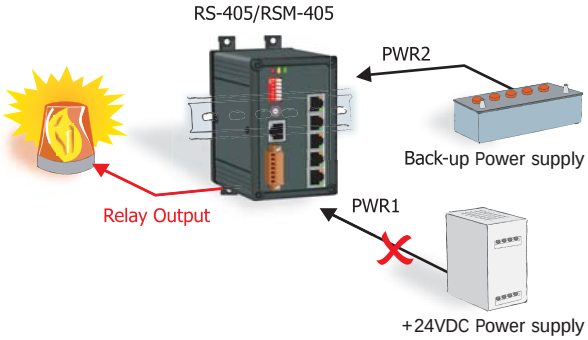
Standard RJ-45 female connectors are provided. A standard RJ-45 plug cable is all that is necessary to connect your device to the unit since switch that supports auto crossover.

RS/RSM-405 Series 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
Ethernet Port	Orange On	Link to 100 Mbps
	Orange Off	Link to 10 Mbps
	Orange Blink	Backup Port
	Green Blink	Data Transmission

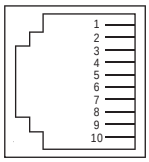
Redundant Power Inputs

Both power inputs can be connected simultaneously to live DC power sources.
If one power source fails, the other live source acts as a backup, and automatically supplies all of RS-405/RSM-405 power needs.

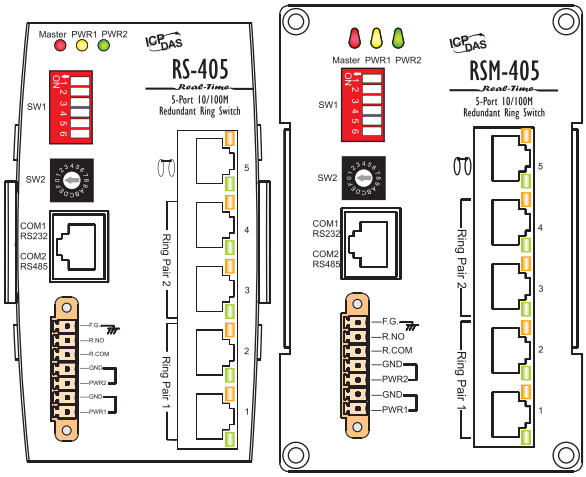


Serial Port

10-Pin RJ-45 Serial Port Pin-Out

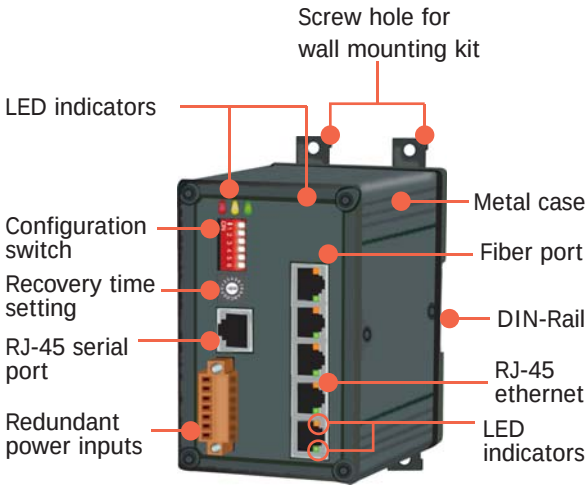


Pin#	Signal Name	Function
1	NC	No Connection
2	D+	RS-485 D+
3	D-	RS-485 D-
4	GND	RS-232 Ground
5	TXD	RS-232 TXD
6	RXD	RS-232 RXD
7	NC	No Connection
8	NC	No Connection
9	NC	No Connection
10	NC	No Connection

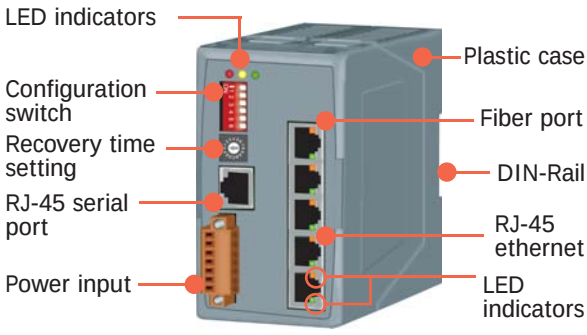


Appearance

RSM-405

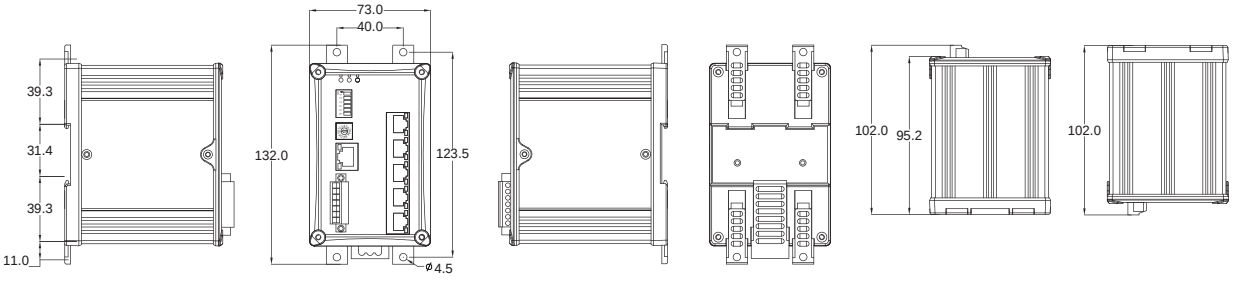


RS-405



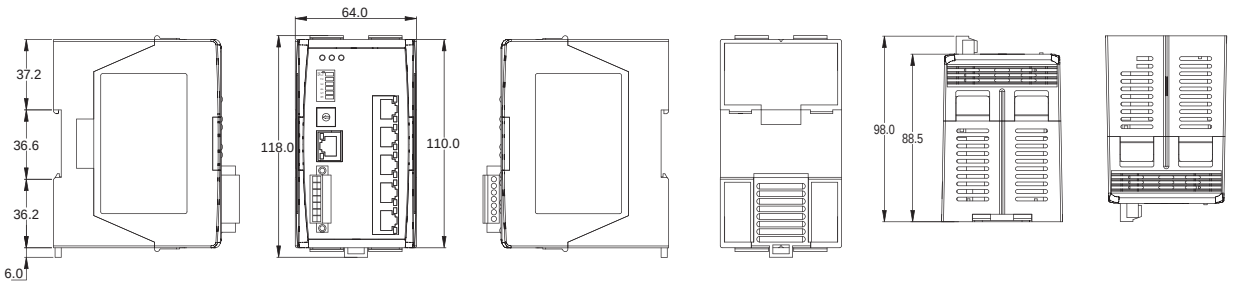
Dimensions (Unit: mm)

RSM-405



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

RS-405



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

Ordering Information

RS-405 CR	5-Port Redundant Ring Switch (RoHS)
RSM-405 CR	5-Port Redundant Ring Switch with metal case (RoHS)

Accessories

CA-090510	9-pin Female D-sub & RJ-45 cable, 1M Cable
GPSU06-6	24V/0.25A Power Supply, (No-mounting)
KWM020-1824F	24V/0.75A Power Supply, (No-mounting)
DIN-KA52F	24V/1A Power Supply, (With DIN-Rail mounting)

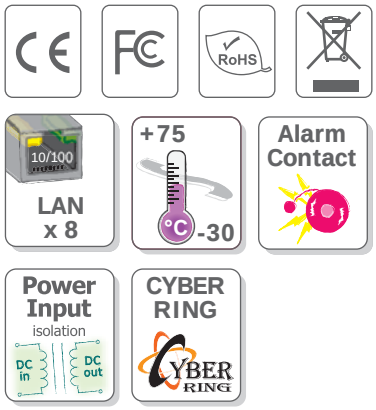
RS-408/RSM-408

NEW

8-Port Real-time Redundant Ring Switch

Highlight Information

RS-408/RSM-408



Only for RSM-408

Only for RS-408

RSM-408 RS-408

Introduction

The RS-408/RSM-408 is a 8-Port Industrial Ethernet (10/100Base-TX) Real-Time Redundant Ring Switch. RS-408/RSM-408 supports 10/100M auto-negotiation feature and auto MDI /MDIX function. It can automatically switch the transmission speed (10 Mbps or 100 Mbps) for corresponding connections.
Built-in ICP DAS Cyber-Ring technique that enable multiple switches to be placed into a redundant ring. It detects and recovers from a copper link failure within approximately 300ms – for the majority of applications a seamless process.

Features

- Automatic MDI / MDI-X crossover for plug-and-play
- Each port supports both 10/100 Mbps speed auto negotiation
- Store-and-forward architecture
- Full duplex IEEE 802.3x and half duplex backpressure flow control
- 3.2Gbps high performance memory bandwidth
- Frame buffer memory: 1 Mbit
- Integrated look-up engine with dedicated 2 K unicast MAC addresses
- Redundant Power Inputs +10 ~ +30V DC
  Power failure alarm by relay output
- Supports operating temperatures from -30 ~ +75°C
- DIN-Rail

Specifications

Models	RS-408	RSM-408
Technology		
Standards	IEEE802.3, 802.3u, 802.3x	
Ethernet Switch Type	Intelligent store & forward	
MAC Addresses	2K	
Memory Bandwidth	3.2 Gbps	
Vibration	EN 50155 and EN11373	
EMC Immunity	EN61326-1 (EN61000-4-2, 3, 4, 5, 6)	
Interface		
RJ-45 Ports (shielded)	10/100BaseT(X)	
RJ-45 Speed (auto-negotiating)	10 Mbps or 100 Mbps	
RJ-45 Auto-MDI/MDI-X	All 8 ports	
Ethernet Isolation	1500 Vrms 1 minute	
Power		
Required Supply Voltage	+10 ~ +30VDC	
Power Input Isolation	1KV	
Power Consumption (Redundant Input Terminals)	8 W (typical - all ports active at 100 Mbps)	
Mechanical		
Case	Plastic (Flammability UL 94V-0)	Metal (IP30 Protection)
Dimensions (W x H x D)	64mm x 118mm x 98mm	73mm x 132mm x 102mm
Installation	DIN-Rail	DIN-Rail or Wall mounting
Environmental		
Operating Temperature	-30°C ~ +75°C	
Storage Temperature	-40°C ~ +85°C	
Ambient Relative Humidity	10% to 90% non-condensing	

LED Functions

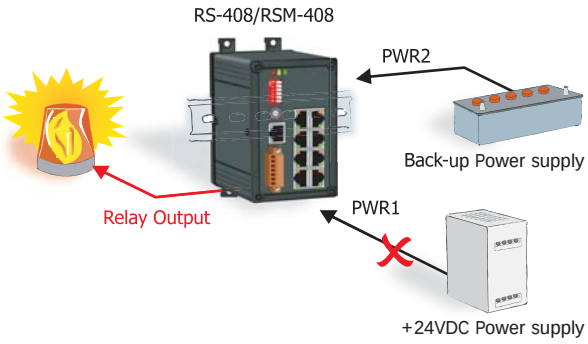
Standard RJ-45 female connectors are provided. A standard RJ-45 plug cable is all that is necessary to connect your device to the unit since switch that supports auto crossover.

RS/RSM-408 Series 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 online
	Orange Off	Power input 1 is offline
PWR2	Green On	Power input 2 is online
	Green Off	Power input 2 is offline
Ethernet Port	Orange On	Link to 100 Mbps
	Orange Off	Link to 10 Mbps
	Orange Blink	Backup Port
	Green Blink	Data Transmission

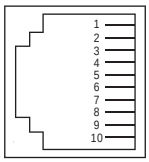
Redundant Power Inputs

Both power inputs can be connected simultaneously to live DC power sources.
If one power source fails, the other live source acts as a backup, and automatically supplies all of RS-408/RSM-408 power needs.

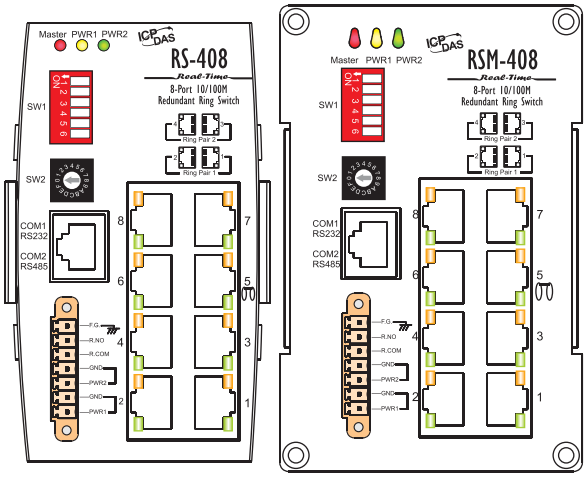


Serial Port

10-Pin RJ-45 Serial Port Pin-Out

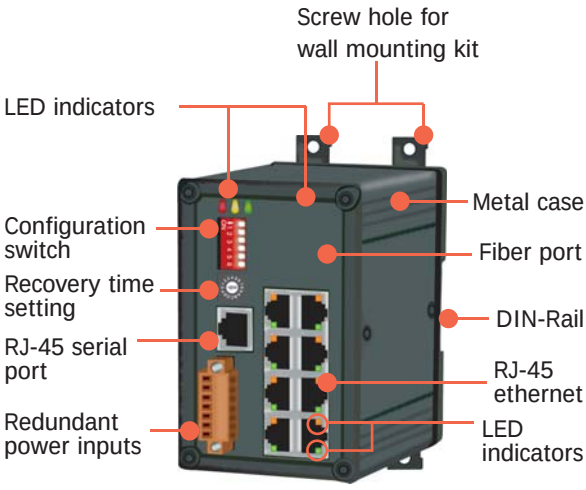


Pin#	Signal Name	Function
1	NC	No Connection
2	D+	RS-485 D+
3	D-	RS-485 D-
4	GND	RS-232 Ground
5	TXD	RS-232 TXD
6	RXD	RS-232 RXD
7	NC	No Connection
8	NC	No Connection
9	NC	No Connection
10	NC	No Connection

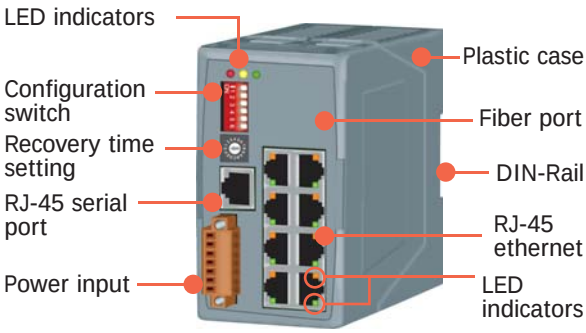


Appearance

RSM-408

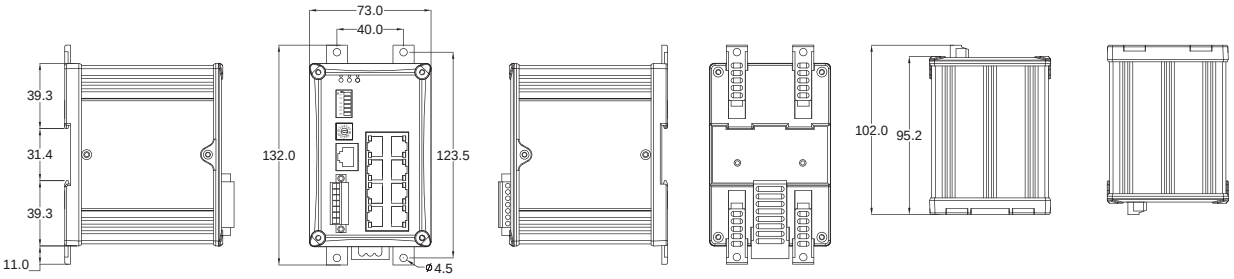


RS-408



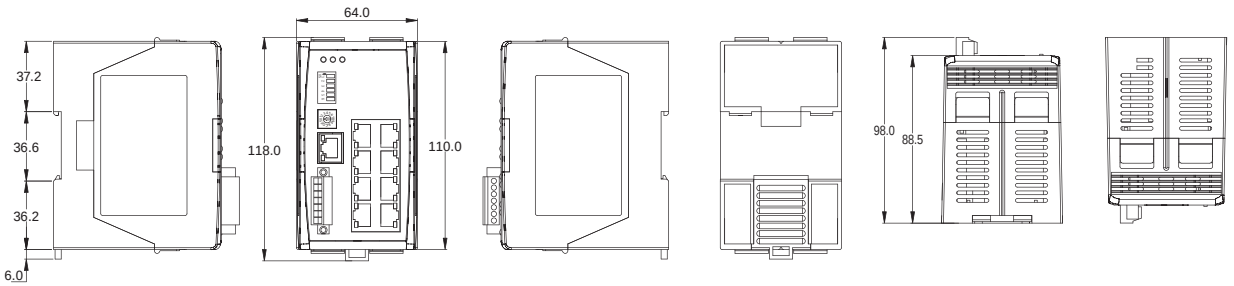
Dimensions (Unit: mm)

RSM-408



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

RS-408



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

Ordering Information

RS-408 CR	8-Port Redundant Ring Switch (RoHS)
RSM-408 CR	8-Port Redundant Ring Switch with metal case (RoHS)

Accessories

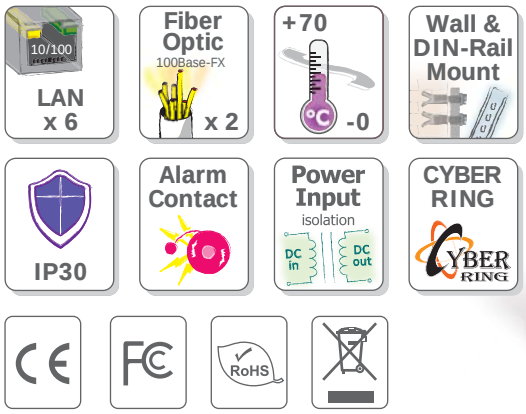
CA-090510	9-pin Female D-sub & RJ-45 cable, 1M Cable
GPSU06-6	24V/0.25A Power Supply, (No-mounting)
KWM020-1824F	24V/0.75A Power Supply, (No-mounting)
DIN-KA52F	24V/1A Power Supply, (With DIN-Rail mounting)

MSM-508F Series

Available Soon

8-Port Industrial Ethernet Layer 2 Managed Switch with 2-Port Fiber Optics

Highlight Information



MSM-508FC/FCS MSM-508FT

Introduction

The MSM-508F is an 8-Port Industrial Ethernet Layer 2 Managed Switch with 2-Port Fiber that secures data transmission by using fiber optic transmission to provide immunity from EMI/RFI interference. It is perfect solution for applications where transmission must be protected from electrical exposure, surges, lightning or chemical corrosion.

It can be managed through RS-232 port via serial console or Ethernet port using telnet or Web browser. In addition, the switch supports a lot of powerful managed functions, such as 802.1Q Tag-based VLAN, Portbased VLAN, 802.1p QoS (Quality of Service), Port Trunking, Spanning Tree, Cable Testing and Port Mirroring.

Built-in ICP DAS Cyber-Ring technique that enable multiple switches to be placed into a redundant ring. The switch detects and recovers from a fiber or copper link failure within approximately 300ms – for the majority of applications a seamless process. Modbus/TCP, Modbus/RTU and OPC supported, SCADA application can monitor status of Ethernet and fiber port with Modbus or OPC protocol.

MSM-508F provides two power inputs that can be connected simultaneously to live DC power sources. If one of the power inputs fails, the other live source acts as a backup to automatically support the MSM-508F's power needs. And, the relay output facility can deliver warning signal while dual power or network link failure.

Features

- Automatic MDI / MDI-X crossover for plug-and-play
- Each port supports both 10/100 Mbps speed auto negotiation
- Store-and-forward architecture
- Full duplex IEEE 802.3x and half duplex backpressure flow control
- 3.2Gbps high performance memory bandwidth
- Frame buffer memory: 1 Mbit
- Integrated look-up engine with dedicated 2 K unicast MAC addresses
- Supports +10~+30Vdc voltage with 1KV isolation Power failure alam by relay output
- Supports operating temperatures from 0 ~ +70°C
- DIN-Rail mount and Screw hole for wall mounting kit

Specifications

Models	MSM-508FC/FCS Series	MSM-508FT Series
Technology		
Standards	IEEE802.3, 802.3u, 802.3x	
Processing Type	Store & forward wire speed switching - no delays	
MAC Addresses	2K	
Memory Bandwidth	3.2 Gbps	
Flow Control	IEEE802.3x flow control, back pressure flow control	
Protocol	VLAN, QoS, Port Trunk, SMTP, TELNET	
Interface		
RJ-45 Ports	10/100BaseT(X) auto negotiation speed, F/H duplex mode, and auto MDI/MDIX connection	
Fiber Optics Port	100 Base-FX	
LED Indicators	10/100M, Link/Act, Full duplex/Half duplex(Fiber Port)	
Ethernet Isolation	1500 Vrms 1 minute	
Frame Ground for EMS Protection	Yes	
Multi Mode	Multi mode fiber cables: 50/125, 62.5/125 or 100/140 µm	
	Distance: 2 km, (62.5/125 µm recommended) for full duplex	
	Wavelength: 1300 or 1310nm	
	Min. TX Output: -20 dBm	
	Max. TX Output: -14 dBm	
	RX Sensitivity: -34 to -31 dBm	
Single Mode	Single-mode fiber cables: 8.3/125, 8.7/125, 9/125 or 10/125 µm	
	Distance: 15 km, (9/125 µm recommended) for full duplex	
	Wavelength: 1300 or 1310nm	
	Min. TX Output: - 15 dBm	
	Max. TX Output: -8 dBm	
	RX Sensitivity: -36 to -31 dBm	
Ethernet Transmission distance	Ethernet: 2-pair UTP/STP Cat.3,4,5, EIA/TIA-568 100-ohm	
	Fast Ethernet: 2-pair UTP/STP Cat. 5, EIA/TIA-568 100-ohm	
Power		
Input Voltage Range	+10 ~ +30VDC (Isolation redundant input)	
Power Consumption	0.3A@24VDC, +/- 5% arrowed with 100M Full duplex	
LED Indicator	Yes	
Protection	Power reverse polarity protection	
Frame Ground for EMS Protection	Yes	
Mechanical		
Case	Metal (IP30 Protection)	
Dimensions (W x H x D)	47mm x 175mm x 140mm	47mm x 175mm x 142mm
Installation	DIN-Rail or Wall mounting	
Environmental		
Operating Temperature	0°C ~ +70°C	
Storage Temperature	-20°C ~ +85°C	
Ambient Relative Humidity	10% to 90% non-condensing	

LED Functions

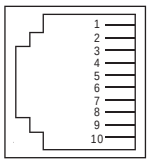
Standard RJ-45 female connectors are provided. A standard RJ-45 plug cable is all that is necessary to connect your device to the unit since switch that supports auto crossover.

MSM-508F Series 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
Ethernet Port	Orange On	Link to 100 Mbps
	Orange Off	Link to 10 Mbps
	Orange Blink	Backup Port
	Green Blink	Data Transmission
Fiber Port	Green Blink	Fiber is active port
	Green Off	Fiber backup port

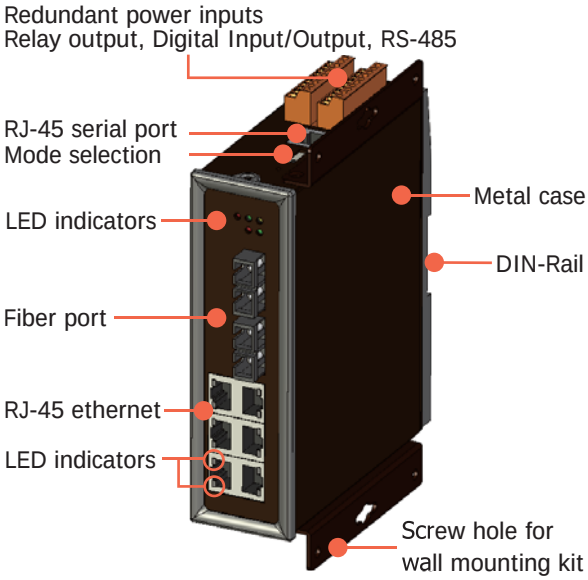
Serial Port

10-Pin RJ-45 Serial Port Pin-Out



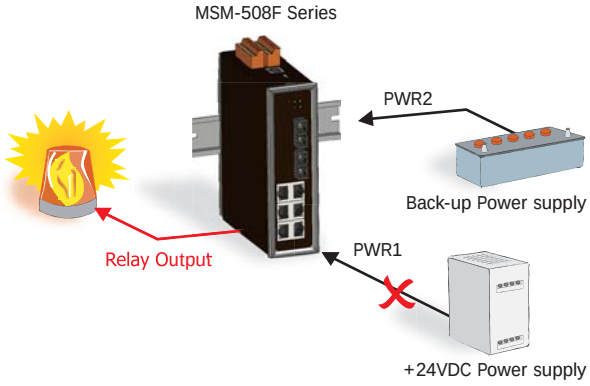
Pin#	Signal Name	Function
1	NC	No Connection
2	NC	No Connection
3	NC	No Connection
4	GND	RS-232 Ground
5	TXD	RS-232 TXD
6	RXD	RS-232 RXD
7	NC	No Connection
8	NC	No Connection
9	NC	No Connection
10	NC	No Connection

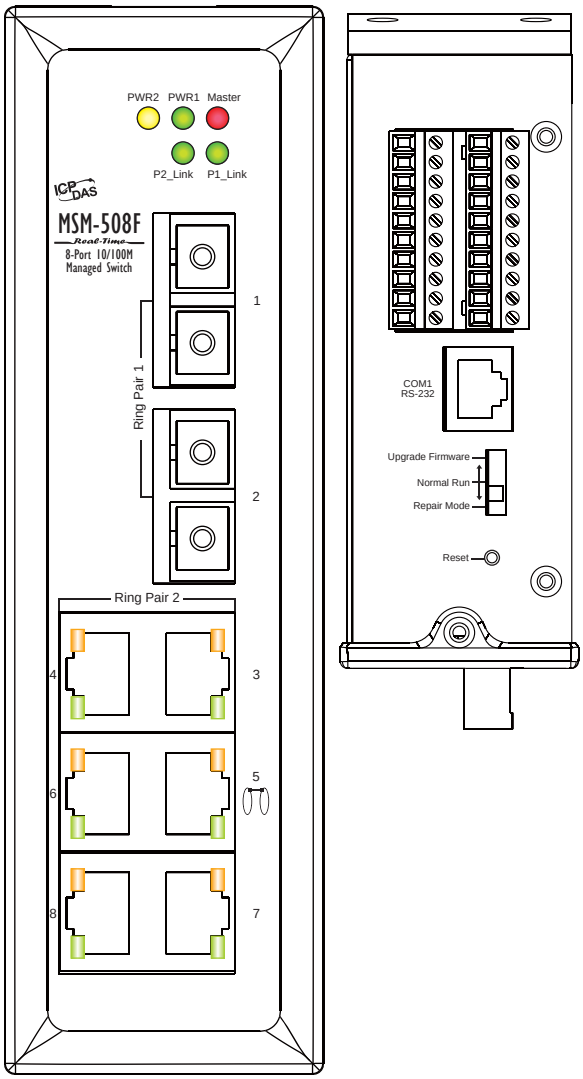
Appearance



Redundant Power Inputs

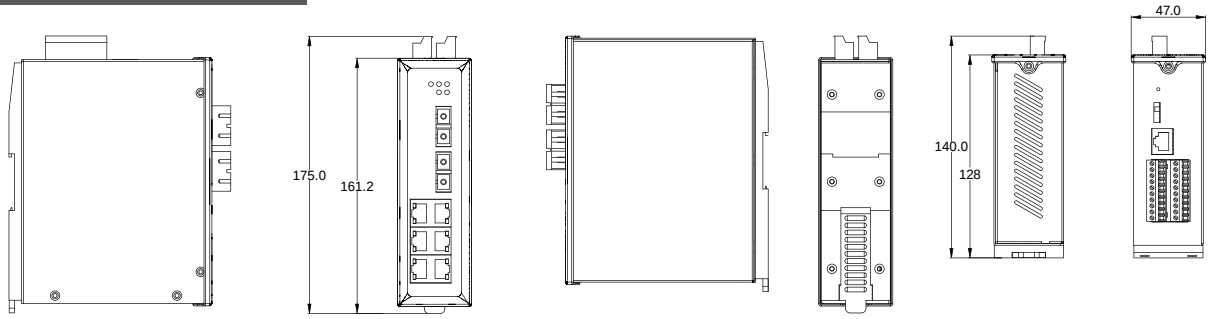
Both power inputs can be connected simultaneously to live DC power sources.
If one power source fails, the other live sourceacts as a backup, and automatically supplies all of MSM-508F Series power needs.





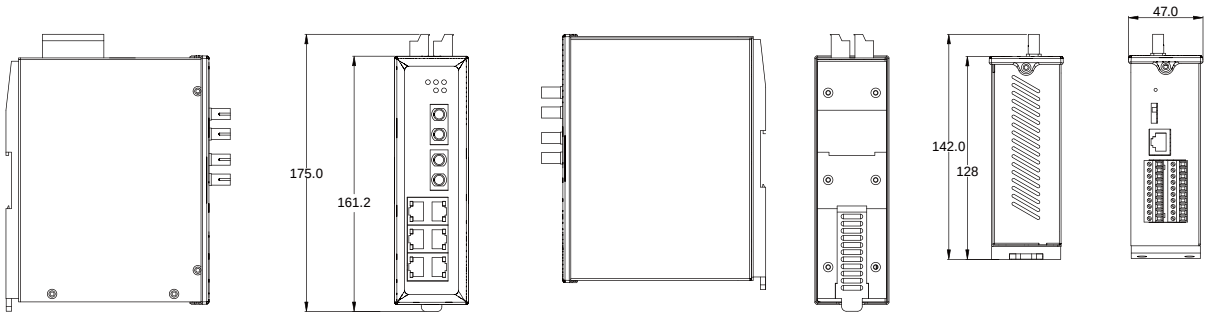
Dimensions (Unit: mm)

MSM-508FC/FCS Series



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

MSM-508FT Series



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

Ordering Information

MSM-508F [ ][ ] - [ ][ ] - [ ]

	Fiber Port Connector	Single Mode Distance	Operating Temperature
Ordering Code Definition	**T**: Multi mode ST connector **C**: Multi mode SC connector **CS**: Single mode SC connector	**40**: 40 km Standard Models: 15 km	**T**: Operating Temp: -30 to +75°C Standard Models: 0 to 70°C
Models	MSM-508FT MSM-508FC MSM-508FCS	MSM-508FC-40 MSM-508FCS-40	MSM-508FT-T MSM-508FC-T MSM-508FCS-T MSM-508FCS-40T

Accessories

CA-090510	9-pin Female D-sub & RJ-45 cable, 1M Cable
PWR-24/110	24V/0.2A Power Supply, (No-mounting)
KWM020-1824F	24V/0.75A Power Supply, (No-mounting)
DIN-KA52F	24V/1A Power Supply, (With DIN-Rail mounting)

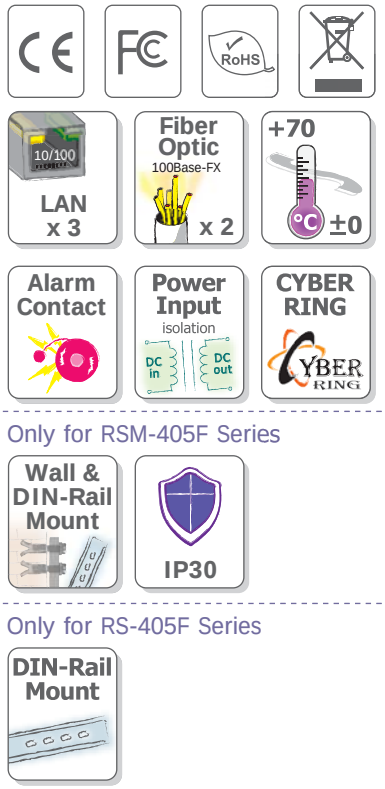
RS-405F/RSM-405F Series

NEW

5-Port Real-time Redundant Ring Switch with 2-Port Fiber Optics

Highlight Information

RS-405F/RSM-405F Series



Only for RSM-405F Series

Only for RS-405F Series

RSM-405F Series RS-405F Series

Introduction

The RS-405F/RSM-405F is a 5-port Industrial Ethernet Real-Time Redundant Ring Switch with 2-Port Fiber that secures data transmission by using fiber optic transmission to provide immunity from EMI/RFI interference.

Built-in ICP DAS Cyber-Ring technique that enable multiple switches to be placed into a redundant ring. It detects and recovers from a fiber or copper link failure within approximately 300ms – for the majority of applications a seamless process.

Features

- Automatic MDI / MDI-X crossover for plug-and-play
- Each port supports both 10/100 Mbps speed auto negotiation
- Store-and-forward architecture
- Full duplex IEEE 802.3x and half duplex backpressure flow control
- 3.2Gbps high performance memory bandwidth
- Frame buffer memory: 512 Kbit
- Integrated look-up engine with dedicated 1K unicast MAC addresses
- Redundant Power Inputs +10 ~ +30V DC
  Power failure alarm by relay output
- Supports operating temperatures from 0 ~ +70°C

Specifications

Models	RS-405F Series	RSM-405F Series
Technology		
Standards	IEEE802.3, 802.3u, 802.3x	
Processing Type	Store & forward wire speed switching - no delays	
MAC Addresses	1024	
Memory Bandwidth	3.2 Gbps	
Flow Control	IEEE802.3x flow control, back pressure flow control	
Interface		
RJ-45 Ports	10/100BaseT(X) auto negotiation speed, F/H duplex mode, and auto MDI/MDIX connection	
Fiber Optics Port	100 Base-FX	
LED Indicators	10/100M, Link/Act, Full duplex/Half duplex(Fiber Port)	
Ethernet Isolation	1500 Vrms 1 minute	
Frame Ground for EMS Protection	Yes	
Multi Mode	Multi mode fiber cables: 50/125, 62.5/125 or 100/140 µm	
	Distance: 2 km, (62.5/125 µm recommended) for full duplex	
	Wavelength: 1300 or 1310nm	
	Min. TX Output: -20 dBm	
	Max. TX Output: -14 dBm	
	RX Sensitivity: -34 to -31 dBm	
Single Mode	Single-mode fiber cables: 8.3/125, 8.7/125, 9/125 or 10/125 µm	
	Distance: 15 km, (9/125 µm recommended) for full duplex	
	Wavelength: 1300 or 1310nm	
	Min. TX Output: - 15 dBm	
	Max. TX Output: -8 dBm	
	RX Sensitivity: -36 to -31 dBm	
Ethernet Transmission distance	Ethernet: 2-pair UTP/STP Cat.3,4,5, EIA/TIA-568 100-ohm	
	Fast Ethernet: 2-pair UTP/STP Cat. 5, EIA/TIA-568 100-ohm	
Power		
Input Voltage Range	+10 ~ +30VDC (Isolation redundant input)	
Power Consumption	0.14A@24VDC, +/- 5% arrowed with 100M Full duplex	
LED Indicator	Yes	
Protection	Power reverse polarity protection	
Frame Ground for EMS Protection	Yes	
Mechanical		
Case	Plastic (Flammability UL 94V-0)	Metal (IP30 Protection)
Dimensions (W x H x D)	64mm x 118mm x 101mm	73mm x 132mm x 105mm
Installation	DIN-Rail	DIN-Rail or Wall mounting
Environmental		
Operating Temperature	0°C ~ +70°C	
Storage Temperature	-20°C ~ +85°C	
Ambient Relative Humidity	10% to 90% non-condensing	

LED Functions

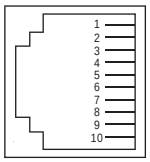
Standard RJ-45 female connectors are provided. A standard RJ-45 plug cable is all that is necessary to connect your device to the unit since switch that supports auto crossover.

RS/RSM-405F Series LED Indicator Functions

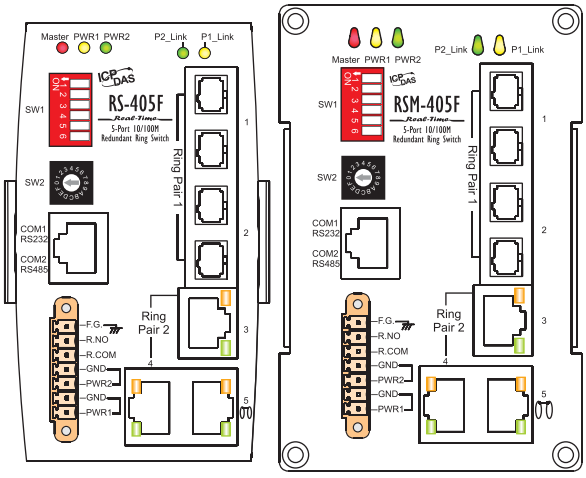
LED	Color	Description
Master	Red On	The switch is master of ring network
	Red Off	The switch is slave of ring network
PWR1	Orange On	Power input 1 is online
	Orange Off	Power input 1 is offline
PWR2	Green On	Power input 2 is online
	Green Off	Power input 2 is offline
Ethernet Port	Orange On	Link to 100 Mbps
	Orange Off	Link to 10 Mbps
	Orange Blink	Backup Port
	Green Blink	Data Transmission
Fiber Port	Orange Blink	Fiber 1 is active port
	Orange Off	Fiber 1 is backup port
	Green Blink	Fiber 2 is active port
	Green Off	Fiber 2 is backup port

Serial Port

10-Pin RJ-45 Serial Port Pin-Out

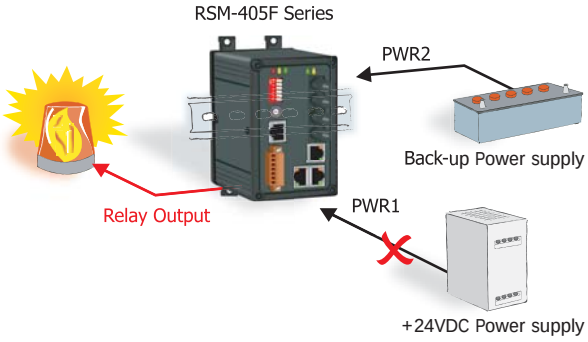


Pin#	Signal Name	Function
1	NC	No Connection
2	D+	RS-485 D+
3	D-	RS-485 D-
4	GND	RS-232 Ground
5	TXD	RS-232 TXD
6	RXD	RS-232 RXD
7	NC	No Connection
8	NC	No Connection
9	NC	No Connection
10	NC	No Connection



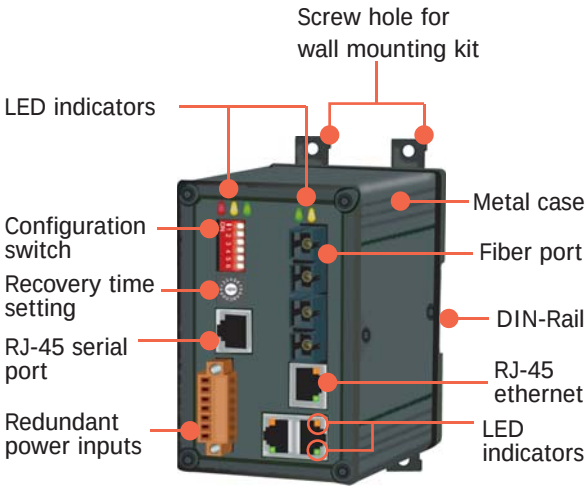
Redundant Power Inputs

Both power inputs can be connected simultaneously to live DC power sources.
If one power source fails, the other live source acts as a backup, and automatically supplies all of RS-405F/RSM-405F Series power needs.

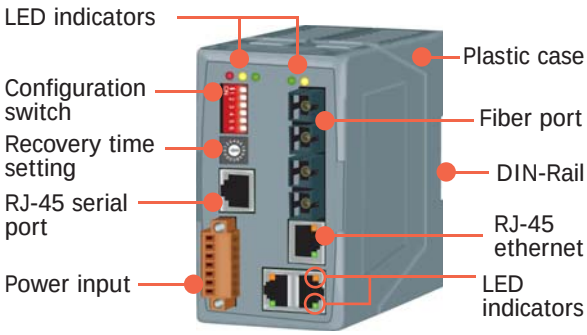


Appearance

RSM-405F Series

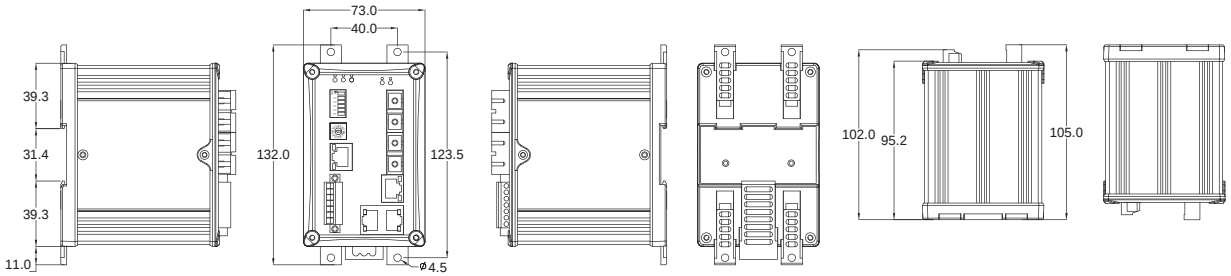


RS-405F Series



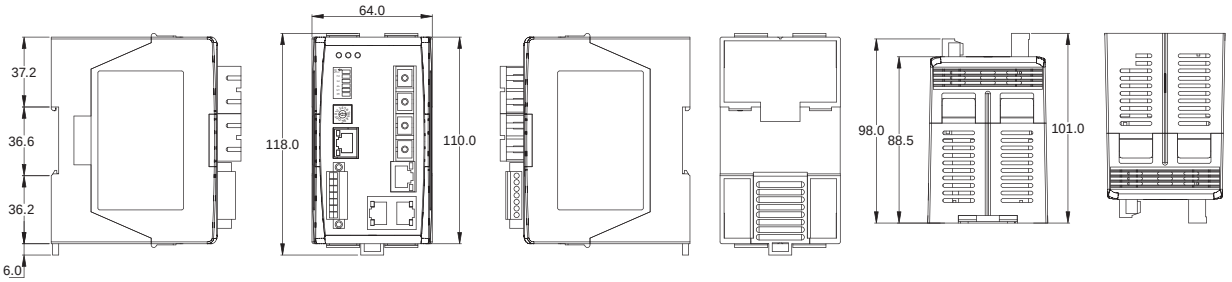
Dimensions (Unit: mm)

RSM-405F Series



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

RS-405F Series



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

Ordering Information

RS M -405F □□ - □□ - □

M: Metal

	Fiber Port Connector	Single Mode Distance	Operating Temperature
Ordering Code Definition	**T**: Multi mode ST connector **C**: Multi mode SC connector **CS**: Single mode SC connector	**40**: 40 km Standard Models: 15 km	**T**: Operating Temp: -30 to +75°C Standard Models: 0 to 70°C
Models	RS-405FT, RSM-405FT RS-405FC, RSM-405FC RS-405FCS, RSM-405FCS	RS-405FCS-40 RSM-405FCS-40	RS-405FT-T, RSM-405FT-T RS-405FC-T, RSM-405FC-T RS-405FCS-T, RSM-405FCS-T RS-405FCS-40T, RSM-405FCS-40T

Accessories

CA-090510	9-pin Female D-sub & RJ-45 cable, 1M Cable
PWR-24/110	24V/0.2A Power Supply, (No-mounting)
KWM020-1824F	24V/0.75A Power Supply, (No-mounting)
DIN-KA52F	24V/1A Power Supply, (With DIN-Rail mounting)

Managed Ethernet Switches

- Managed Switch for industrial application
- Web-based configuration
- QoS, VLAN, STP Supported
- Built-in Cyber-Ring Technology
- Dual Power Input
- Relay Alarm Output

MSM-508
8-Port 10/100 Base-T Managed Switch with metal case

MSM-508FC
Multi-mode, SC Connector, 6-Port 10/100 Base-T + 2-Port 100 Base-FX Fiber Managed Switch with metal case

MSM-508FCS
Single-mode, SC Connector, 6-Port 10/100 Base-T + 2-Port 100 Base-FX Fiber Managed Switch with metal case

MSM-508FT
Multi-mode, ST Connector, 6-Port 10/100 Base-T + 2-Port 100 Base-FX Fiber Managed Switch Multi-mode with metal case

Real-time Redundant Ring Switches

- High reliability and fault-tolerant
- Real-time deterministic performance
- Scalable and flexible ring topology
- Cost-effective industrial redundant Ethernet solution
- Modbus remote monitoring
- Plug and play

RS-405/RSM-405
5-Port Real-time Redundant Ring Switch

RS-408/RSM-408
8-Port Real-time Redundant Ring Switch

RS-405FC/RSM-405FC
Multi-mode, SC Connector, 3-Port 10/100 Base-T + 2-Port 100 Base-FX Fiber Real-time Redundant Ring Switch

RS-405FCS/RSM-405FCS
Single-mode, SC Connector, 3-Port 10/100 Base-T(X) + 2-Port 100 Base-FX Fiber Real-time Redundant Ring Switch

RS-405FT/RSM-405FT
Multi-mode, ST Connector, 3-Port 10/100 Base-T(X) + 2-Port 100 Base-FX Fiber Real-time Redundant Ring Switch