

iRBX6GF

Intelligent 6 Port HSR/PRP Ethernet Switch
IEC 61850 and IEEE 1613 Compliant



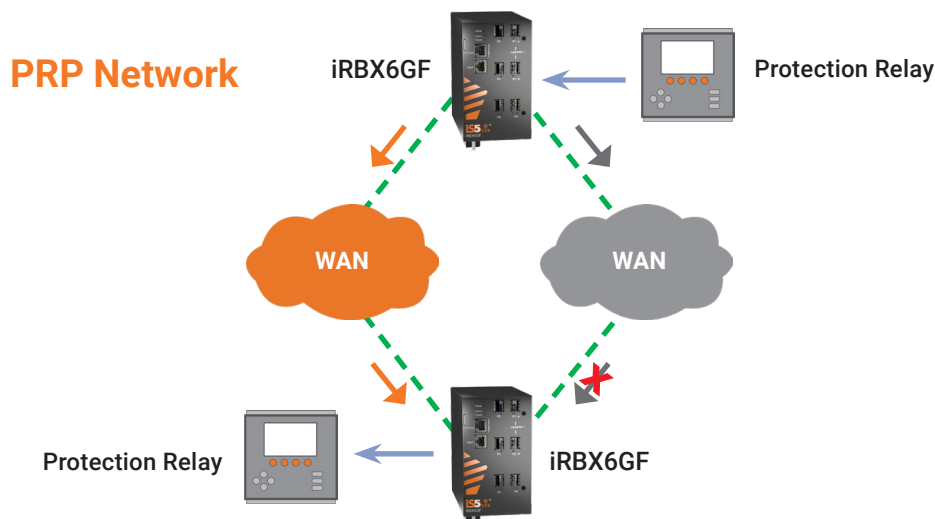
Product Features

- Fully compliant with:
 - IEC 62439-3 HSR (High-availability Seamless Redundancy)
 - IEC 62439-3 PRP (Parallel Redundancy Protocol)
- Supports:
 - 2 X 100/1000Base-X SFP
 - Single HSR/PRP Redundancy Box (RedBox),
(single QuadBox configuration—future implementation)
 - IEEE 1588v2 one step transparent clock
- Zero time to recovery in case of failure
- Redundancy with no single point of failure and supervised continuously for network and device management
- DIN rail or panel mounting options
- Available with dual power supplies

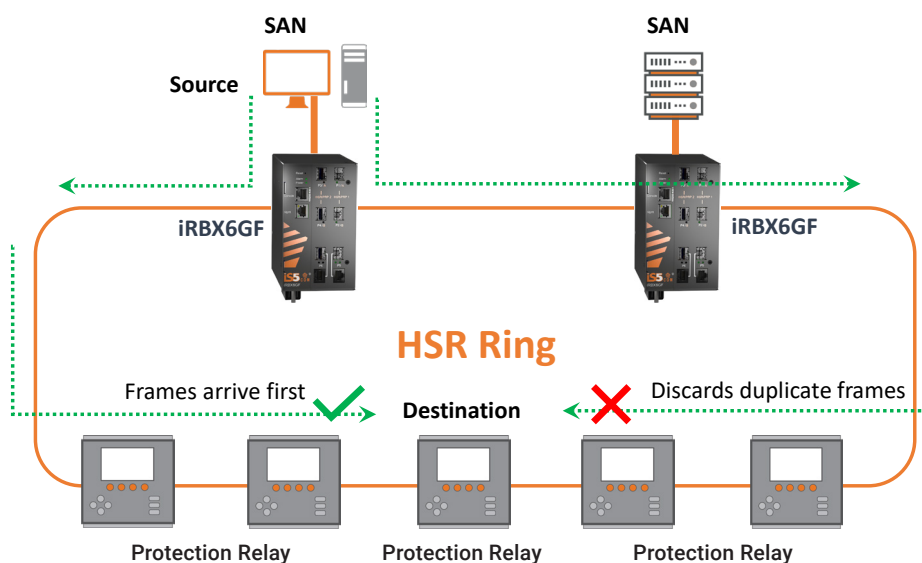
Introduction

The iRBX6GF switch* provides redundant ports for critical and high-availability networks. It supports both high-availability seamless redundancy (HSR) (IEC 62439-3 Clause 5) and parallel redundancy protocol (PRP) (IEC 62439-3 Clause 4).

PRP and HSR provide redundant paths with no single point of failure and zero packet loss. Therefore, single network faults in the ring will not result in any frame loss. The network is fully operational during maintenance and any device can be disconnected and replaced without breaking network connectivity.



PRP Architecture—to ensure a zero-packet loss redundancy network, duplicate packets are sent to the receiving node over two independent LANs.



HSR Architecture—to ensure a zero-packet loss redundancy network, duplicate packets are sent to the receiving node in opposing directions over multiple devices.

*Your iRBX model may differ from the one shown.

Specifications

MODEL NUMBER

iRBX6GF

PHYSICAL PORTS

SERIAL CONSOLE PORT	RS-232 in RJ-45 connector with console cable 115200bps, 8, N, 1
1 RJ45 MANAGEMENT PORT	Ethernet Management Port
100/1000BASE-X SFP	2 HSR/ PRP ports (Port 1 & 2)
100/1000BASE-X SFP	4 Switch ports (Port 3, Port 4, Port 5, and Port 6)
ALARM	Fault Contact: relay output to carry capacity of 1A at 24VDC

TECHNOLOGY

ETHERNET STANDARDS	IEEE 802.3 for 10Base-T IEEE 802.3u for 100Base-TX and 100Base-FX IEEE 802.3ab for 1000Base-T IEEE 802.3z for 1000Base-X
PRIORITY QUEUES	Not supported
TIME SYNCHRONIZATION	Supports IEEE 1588v2 transparent clock
NETWORK REDUNDANCY	HSR, PRP as per IEC62439-3; RSTP - Rapid Spanning Tree Protocol
SOFTWARE FEATURES	IEEE 802.1Q for VLAN Tagging IEEE 802.1w for RSTP (Rapid Spanning Tree Protocol) IEEE 1588v2 PTP clock synchronization HSR (High-availability Seamless Redundancy) PRP (Parallel Redundancy Protocol) NTP Time Synchronization Multi User support (Admin/Guest) SNMP support SSH Support Login Banner for CLI and WebUI Inband and dedicated Management interface LLDP support WebUI Management Syslog support

POWER

INPUT POWER	Redundant Power Supplies: Dual DC Inputs 24VDC(Nom), 9-36VDC (Oper), Dual DC Inputs 48VDC(Nom), 36-75VDC (Oper), or Dual Input 100-240VDC(Nom), 88-300VDC(Oper), or 100-240VAC(Nom), 85-264VAC(Oper)
POWER CONSUMPTION (TYP.)	Up to 20 W
OVERLOAD CURRENT PROTECTION	Present
REVERSE POLARITY PROTECTION	Internal

PHYSICAL CHARACTERISTICS

ENCLOSURE	IP-40 Galvanized Steel
DIMENSIONS iRBX6GF (W X D X H)	133.7 (W) x 159.4 (D) x 203.2 (H) mm (5.27 x 6.28 x 8.00 inches) (for panel mount option)
DIMENSIONS iRBX6GF (W X D X H)	133.7 (W) x 167.4 (D) x 175.7 (H) mm (5.27 x 6.59 x 6.92 inches) (for Dinrail mount option)
UNIT WEIGHT (G)	~ 2700 g
DIMENSIONS iRBX6GF-S (W X D X H)	88.9 (W) x 159.4 (D) x 203.2 (H) mm (3.50 x 6.28 x 8.00 inches) (for panel mount option)
DIMENSIONS iRBX6GF-S (W X D X H)	88.9 (W) x 167.4 (D) x 203.2 (H) mm (3.50 x 6.59 x 8.00 inches) (for Dinrail mount option)
UNIT WEIGHT (G)	~ 2000 g

Specifications

ENVIRONMENTAL

STORAGE TEMPERATURE	-40°C to +85°C (-40° to 185°F)
OPERATING TEMPERATURE	-40°C to +85°C (-40° to 185°F)
OPERATING HUMIDITY	5% to 95% Non-condensing

REGULATORY APPROVALS

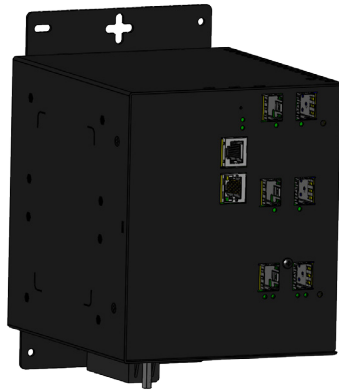
IEC & IEEE	IEC 61850-3, IEEE 1613, IEC 62439-3
EMI	FCC Part 15, Class A, CISPR Class A (EN55022)
EMS	IEC 61000-4-2 (ESD), IEC 61000-4-3 (Radiated RFI), IEC 61000-4-4 (Burst), IEC 61000-4-5 (Surge), IEC 61000-4-6 (Induced (Conducted) RFI), IEC 61000-4-8, IEC 61000-4-11

WARRANTY

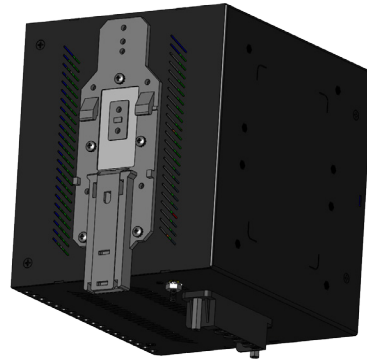
WARRANTY	5 years, (extendable option with additional terms)
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Dimensions

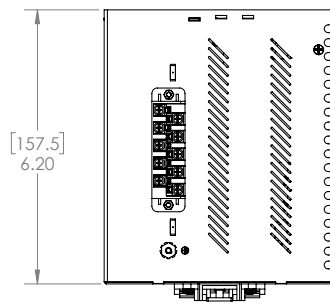
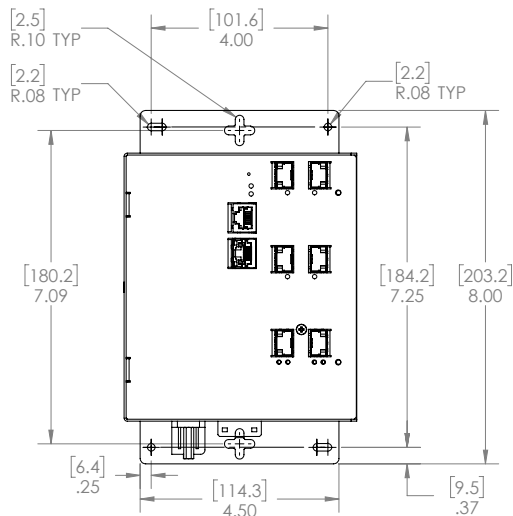
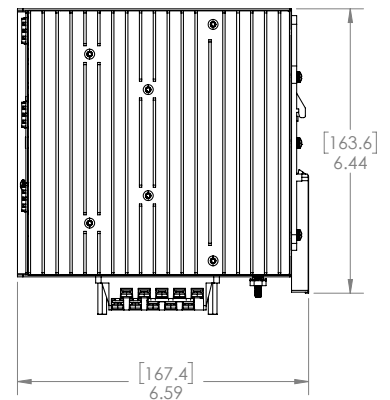
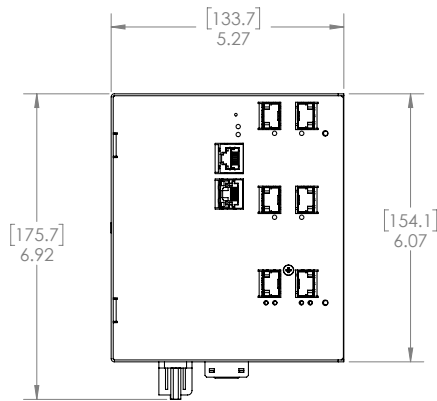
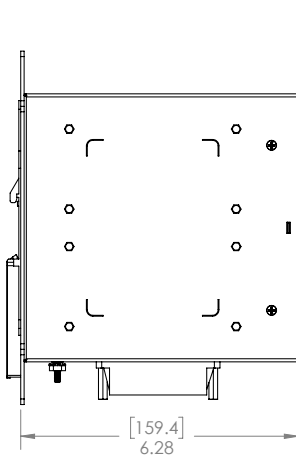
All dimensions are shown in inches [millimeters].



PANEL MOUNT



DINRAIL MOUNT



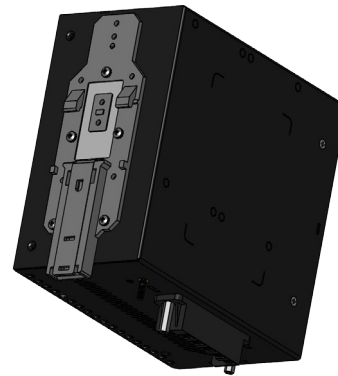
iRBX6GF

Dimensions

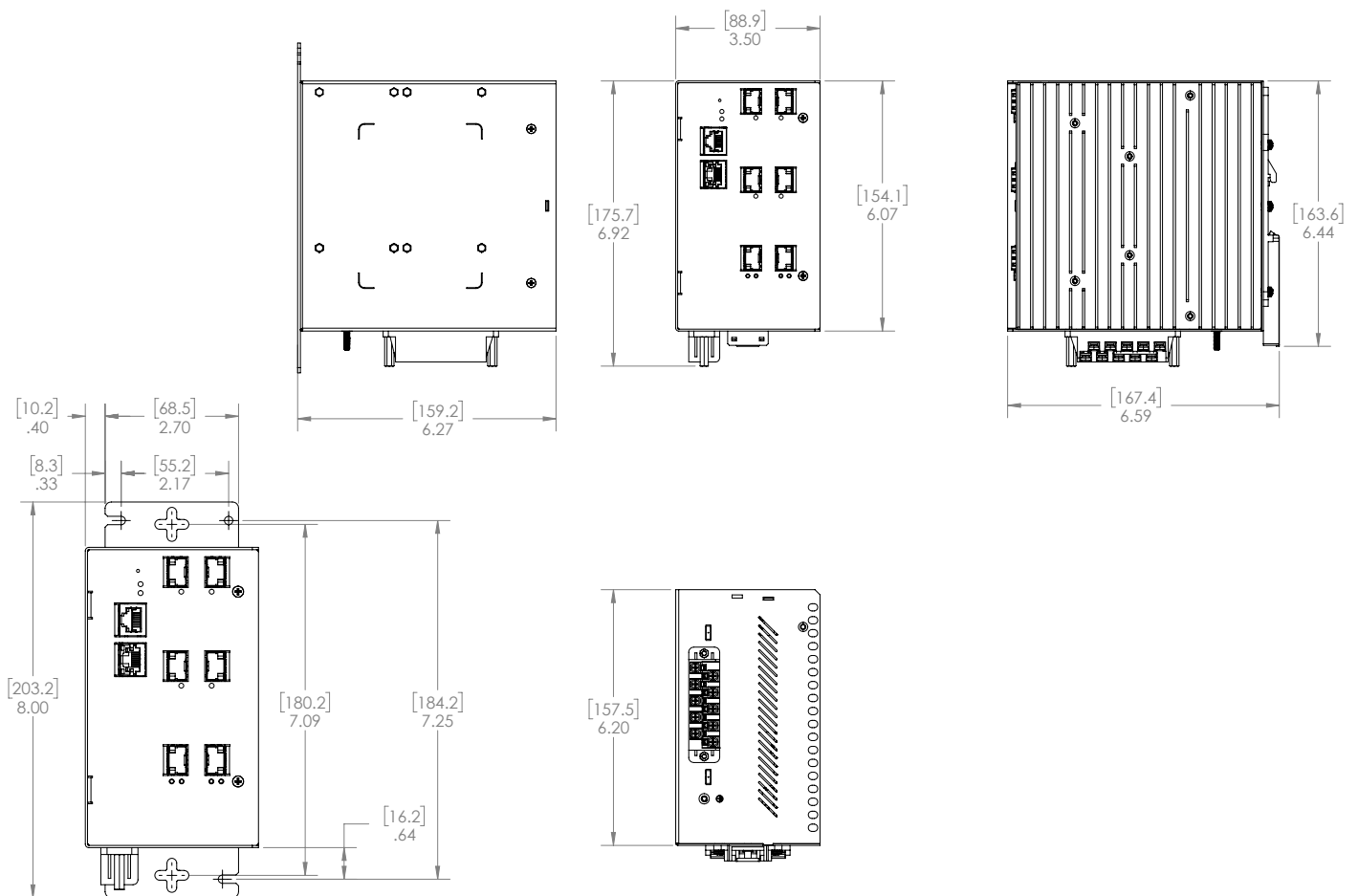
All dimensions are shown in inches [millimeters].



PANEL MOUNT



DINRAIL MOUNT



iRBX6GF-S

SUPPORTED SFPs FOR THE iRBX6GF

ORDER CODE	DESCRIPTION	WORKS WITH	
		PORTS 1-4	PORTS 5-6
SFP-SGMII-TX	SFP 10/100/1000Mbps TX RJ45, SGMII Transceiver 100m, -40°C to +85°C	•	•
SFP100-SGMII-MM	SFP 100Mbps SGMII, Multimode LC Transceiver 2km, 1310nm, -40°C to +85°C	•	•
SFP1000-MM-550	SFP 1Gbps Multimode LC Transceiver 550m, 850nm, -40°C to +85°C	•	•
SFP1000-MM-2	SFP 1Gbps Multimode LC Transceiver 2km, 1310nm, -40°C to +85°C	•	•
SFP1000-SM-10	SFP 1Gbps Singlemode LC Transceiver 10km, 1310nm, -40°C to +85°C	•	•
SFP1000-SM-20	SFP 1Gbps Singlemode LC Transceiver 20km, 1310nm, -40°C to +85°C	•	•
SFP1000-SM-40	SFP 1Gbps Singlemode LC Transceiver 40km, 1310nm, -40°C to +85°C	•	•
SFP1000-SM-60	SFP 1Gbps Singlemode LC Transceiver 60km, 1550nm, -40°C to +85°C	•	•
SFP1000-SM-80	SFP 1Gbps Singlemode LC Transceiver 80km, 1550nm, -40°C to +85°C	•	•

Ordering Information

BASE	POWER SUPPLY 1	POWER SUPPLY 2	MOUNT	PORT 1-2 (HSR/PRP)	PORT 3-4 (ETHERNET)	PORT 5-6 (ETHERNET)	MOD	DESCRIPTION
iRBX6GF	HV	HV	D	2GSFP	2GSFP	2GSFP		
iRBX6GF								Core assembly and packaging
iRBX6GF-S								Slim Line Core assembly and packaging (DC power only)
		XX						None
	LV	LV						Input 24VDC (Nom), 9-36VDC (Oper)
	MV	MV						Input 48VDC (Nom), 36-75VDC (Oper)
	HV	HV						Input 100-240VDC (Nom), 88-300VDC (Oper) or 100-240VAC (Nom), 85-264VAC (Oper)
			D					DIN Mount
			P					Panel Mounting
			N					No Mounting Hardware
				2GSFP	2GSFP			2 X 100/1000Base-X SFP (Blank no optical transceivers*)
						2GSFP		2 X 100/1000Base-X SFP (Blank no optical transceivers*)
							C1	Conformal Coating

* See Accessories List for SFP Transceiver Pricing; SFPs are to be ordered separately; If copper ports are required, use approved copper SFPs.

NOTE 1: HV option is not available in the Slim version.

iRBX6GF Sample Order Code

iRBX6GF-S-MV-LV-D-2GSFP-2GSFP-2GSFP

Description: 6 Port HSR/PRP Ethernet Switch, Slim line Core assembly, (Power Supply 1) Input 48VDC (Nom), 36-75VDC (Oper), (Power Supply 2) Input 24VDC (Nom), 9-36VDC (Oper), DIN Rail Mounting, (Port 1-2 (HSR/PRP)) 2 X 100/1000Base-X SFP, (Port 3-4 (Ethernet)) 2 X 100/1000Base-X SFP, (Port 5-6 (Ethernet)) 2 X 100/1000Base-X SFP.

The same unit, may be ordered with conformal coating by appending 'C1' to the order code, for example: iRBX6GF-S-MV-LV-D-2GSFP-2GSFP-2GSFP-C1

Description: 6 Port HSR/PRP Ethernet Switch, Slim line Core assembly, (Power Supply 1) Input 48VDC (Nom), 36-75VDC (Oper), (Power Supply 2) Input 24VDC (Nom), 9-36VDC (Oper), DIN Rail Mounting, (Port 1-2 (HSR/PRP)) 2 X 100/1000Base-X SFP, (Port 3-4 (Ethernet)) 2 X 100/1000Base-X SFP, (Port 5-6 (Ethernet)) 2 X 100/1000Base-X SFP. This system will be conformal coated.



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