

Quick Installation Guide

DES-3073GC-P






Industrial Desktop Managed Switch

Introduction

The **DES-3073GC-P** is a desktop managed industrial switch designed for extreme temperatures, dusty environments and high humidity. Featuring seven 10/100Base-T(X) RJ-45 fast Ethernet ports and three Gigabit combo ports (10/100/1000Base-T(X) RJ-45 & 100/1000Base-X SFP Ports), the device can be managed centrally via web browsers, TELNET, console or other third-party SNMP software as well as ORing's proprietary Open-Vision management utility. With complete support for Ethernet redundancy protocols such as O-Ring (recovery time < 10ms over 250 units of connection) and MSTP (RSTP/STP compatible), the switch can protect your mission-critical applications from network interruptions or temporary malfunctions with its fast recovery technology. Boasting a wide operating temperature from -40°C to 70°C, the switch can meet the demanding requirements of power substations and rolling stock applications.

Package Contents





The device is shipped with the following items. If any of these items is missing or damaged, please contact your customer service representative for assistance.

Contents	Pictures	Number
DES-3073GC-P		X 1
CD		X 1
Console Cable		X 1
QIG		X 1
Power Cord		X 1

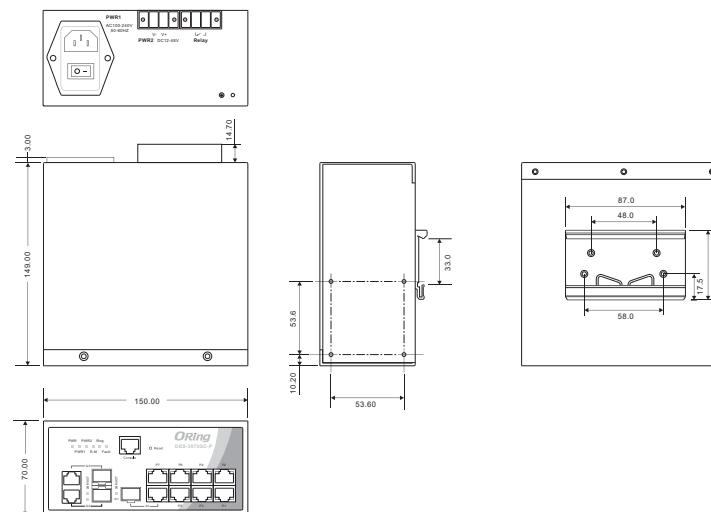
Preparation

Before you begin installing the switch, make sure you have all of the package contents available and a PC with Microsoft Internet Explorer 6.0 or later, for using web-based system management tools.

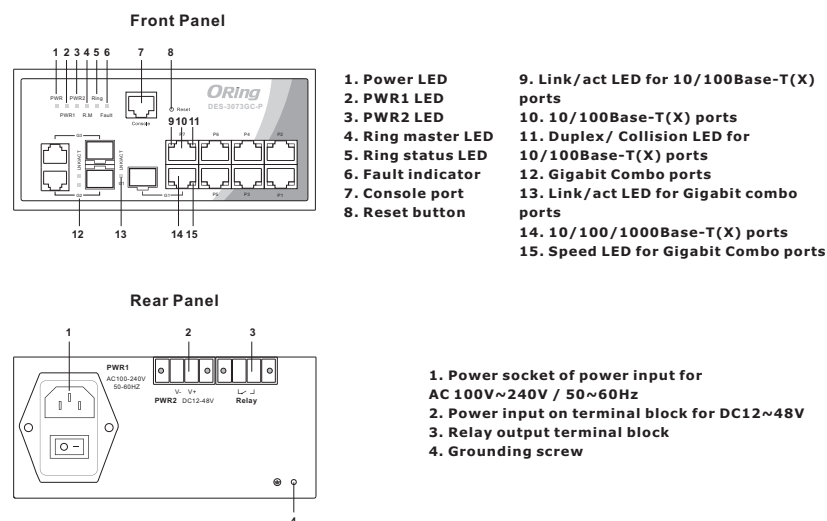
Safety & Warnings

-  **Elevated Operating Ambient:** If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature (T_{ma}) specified by the manufacturer.
-  **Reduced Air Flow:** Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.
-  **Mechanical Loading:** Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.
-  **Circuit Overloading:** Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.

Dimension



Panel Layouts



Network Connection

The switch provides standard Ethernet ports. According to the link type, the switch uses CAT 3, 4, 5, 5e UTP cables to connect to any other network devices (PCs, servers, switches, routers, or hubs). Please refer to the following table for cable specifications.

Cable Types and Specifications:

Cable	Type	Max. Length	Connector
10BASE-T	Cat. 3, 4, 5 100-ohm	UTP 100 m (328 ft)	RJ-45
100BASE-TX	Cat. 5 100-ohm UTP	UTP 100 m (328 ft)	RJ-45
1000BASE-T	Cat. 5/Cat. 5e 100-ohm UTP	UTP 100 m (328ft)	RJ-45

For pin assignments for different types of cables, please refer to the following tables.

1000Base-T RJ-45 Port			10/100 Base-T(X) RJ-45 Port		
Pin Number	Assignment		Pin Number	Assignments	
1	BI_DA+		1	TD+	
2	BI_DA-		2	TD-	
3	BI_DB+		3	RD+	
4	BI_DC+		4	Not used	
5	BI_DC-		5	Not used	
6	BI_DB-		6	RD-	
7	BI_DD+		7	Not used	
8	BI_DD-		8	Not used	

1000Base-T MDI/MDI-X			10/100 Base-T(X) MDI/MDI-X		
Pin Number	MDI port	MDI-X port	Pin Number	MDI port	MDI-X port
1	BI_DA+	BI_DB+	1	TD+(transmit)	RD+(receive)
2	BI_DA-	BI_DB-	2	TD-(transmit)	RD-(receive)
3	BI_DB+	BI_DA+	3	RD+(receive)	TD+(transmit)
4	BI_DC+	BI_DD+	4	Not used	Not used
5	BI_DC-	BI_DD-	5	Not used	Not used
6	BI_DB-	BI_DA-	6	RD-(receive)	TD-(transmit)
7	BI_DD+	BI_DC+	7	Not used	Not used
8	BI_DD-	BI_DC-	8	Not used	Not used

Note: "+" and "-" signs represent the polarity of the wires that make up each wire pair.

Console Port Pin Definition

To connect the console port to an external management device, you need an RJ-45 to DB-9 cable, which is also supplied in the package. Below is the console port pin assignment information.

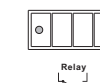
PC (male) pin assignment	RS-232 with DB9 (female) pin assignment (RJ45-DB9 cable)	RJ45 pin assignment
PIN#2 RxD	PIN#2 RxD	PIN#2 RxD
PIN#3 TxD	PIN#3 TxD	PIN#3 TxD
PIN#5 GND	PIN#5 GND	PIN#5 GND

Wiring

Power inputs

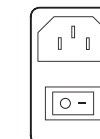
Fault Relay

The relay contacts of the 2-pin terminal block connector are used to detect user-configured events. The two wires attached to the fault contacts form a close circuit when a user-configured event is triggered. If a user-configured event does not occur, the fault circuit remains opened.



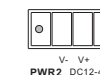
AC Power Connection (PWR1)

For power supply, simply insert the AC power cable to the power connector at the back of the switch and turn on the power switch. The input voltage is 100V~240V / 50~60Hz



DC Power Connection (PWR2)

For DC power input, please wiring from DC output of external power source to the terminal block at the back of the switch. The input voltage is 12~48VDC



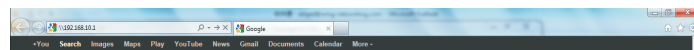
Configurations

After installing the switch, the green power LED should turn on. Please refer to the following table for LED indication.

LED	Color	Status	Description
PWR	Green	On	Power on
PWR1	Green	On	Power module 1 activated
PWR2	Green	On	Power module 2 activated
R.M	Green	On	System running in Ring Master mode
Ring	Green	On	System running in Ring mode
		Blinking	Ring structure is broken (i.e. part of the ring is disconnected)
Fault	Amber	On	Faulty relay (power failure or port malfunctioning)
10/100Base-T(X) Fast Ethernet ports			
LNK/ACT	Green	On	Ethernet links connected
		Blinking	Transmitting data
DPX/COL	Amber	On	Port running in full-duplex mode
		Blinking	Collision occurs
10/100/1000Base-T(X) Ethernet ports			
LNK/ACT	Green	On	Ethernet links connected
		Blinking	Transmitting data
Speed	Amber	On	Port running at 100Mbps
SFP Combo ports			
LNK/ACT	Green	On	Ethernet links connected
		Blinking	Transmitting data

Follow the steps to set up the switch:

1. Launch the Internet Explorer and type in IP address of the switch. The default static IP address is **192.168.10.1**



2. Log in with default user name and password (both are **admin**). After logging in, you should see the following screen. For more information on configurations, please refer to the user manual. For information on operating the switch using ORing's Open-Vision management utility, please go to ORing website.



Resetting

To reboot the switch, press the **Reset** button for 2-3 seconds.

To restore the switch configurations back to the factory defaults, press the **Reset** button for 5 seconds.

ORing

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Specifications

ORing Switch Model	DES-3073GC-P
Physical Ports	
10/100 Base-T(X) Port in RJ45 Auto MDI/MDIX	7
Gigabit combo Ports with 10/100/1000Base-T(X) and 100/1000Base-X SFP Port	3
Technology	
Ethernet Standards	IEEE 802.3 for 10Base-T IEEE 802.3u for 100Base-TX and 100Base-FX IEEE 802.3z for 1000Base-X IEEE 802.3ab for 1000Base-T IEEE 802.3ad for LACP (Link Aggregation Control Protocol) IEEE 802.3x for Flow control IEEE 802.1D for STP (Spanning Tree Protocol) IEEE 802.1p for COS (Class of service) IEEE 802.1Q for VLAN Tagging IEEE 802.1w for RSTP (Rapid Spanning Tree Protocol) IEEE 802.1s for MSTP (Multiple Spanning Tree Protocol) IEEE 802.1x for Authentication IEEE 802.1AB for LLDP (Link Layer Discovery Protocol)
MAC Table	8192 MAC addresses
Priority Queues	4
Processing	Store-and-Forward
Switch Properties	Switch latency: 7 us Switch bandwidth: 7.4Gbps Max. Number of Available VLANs: 4096 IGMP multicast groups: 1024 Port rate limiting: User Define
Security Features	Enable/disable ports, MAC based port security Port based network access control (802.1x) VLAN (802.1q) to segregate and secure network traffic Supports Q-in-Q VLAN for performance & security to expand the VLAN space Radius centralized password management SNMPv3 encrypted authentication and access security
Software Features	STP/RSTP/MSTP (IEEE 802.1D/w/s) Redundant Ring (O-Ring) with recovery time less than 30ms over 250 units Modbus/TCP supported QoS supported TOS/Diffserv supported Quality of Service (802.1p) for real-time traffic VLAN (802.1Q) with VLAN tagging and GVRP supported IGMP Snooping for multicast filtering Port configuration, status, statistics, monitoring, security SNTP for synchronizing of clocks over network Support PTP Client (Precision Time Protocol) clock synchronization DHCP Server / Client support Port Trunk support MVR (Multicast VLAN Registration) support Modbus TCP
Network Redundancy	O-Ring, Open-Ring, O-chain, MRP, STP, RSTP, MSTP
Warning / Monitoring System	Relay output for fault event alarming Syslog server / client to record and view events Include SMTP for event warning notification via email Event selection support
RS-232 Serial Console Port	RS-232 in RJ45 connector with console cable. Baud rate setting: 9600bps, 8, N, 1
Fault Contact	
Relay	Relay output to carry capacity of 1A at 24VDC
Power	
Redundant Input power	Dual power inputs. One 100~240V AC and one 12~48VDC.
Power consumption(Typ.)	15 Watts
Overload current protection	Present
Physical Characteristic	
Enclosure	IP-30
Dimension (W x D x H)	150(W) x 149(D) x 70(H) mm (5.9 x 5.9 x 2.76 inch)
Weight (g)	1950 g
Environmental	
Storage Temperature	-40 to 85°C (-40 to 185°F)
Operating Temperature	-40 to 70°C (-40 to 158°F)
Operating Humidity	5% to 95% Non-condensing
Reverse Polarity Protection	Present on terminal block
Regulatory Approvals	
EMI	FCC Part 15, CISPR (EN55022) class A
EMS	EN61000-4-2 (ESD), EN61000-4-3 (RS), EN61000-4-4 (EFT), EN61000-4-5 (Surge), EN61000-4-6 (CS), EN61000-4-8, EN61000-4-11
Shock	IEC60068-2-27
Free Fall	IEC60068-2-32
Vibration	IEC60068-2-6
Safety	EN60950-1
Warranty	5 years