

IDS-205 – Managed Industrial Ethernet Switch

 perle.com/products/switches/ids-205-industrial-managed-ethernet-switch.shtml

Kompakter DIN-Schienen-Switch mit 5 Ports

- 5 Port 10/100/1000Base-T (RJ45) für Gigabit- und Fast-Ethernet-Geräte
- IP-Verwaltung, VLAN- und Ausfallsicherheitsmanagement
- Kompaktes, korrosionsbeständiges Gehäuse zur Befestigung an einer Standard-DIN-Schiene
- Redundanter dualer Stromeingang 12/24/48 VDC
- Out-of-Band-Management über RJ45
- Sicherheits- und Gefahrenbereichszertifizierung für speicherprogrammierbare Steuerungen
- -40 bis 75 °C industrielle Betriebstemperatur (XT-Modelle)



Der **IDS-205** ist ein **Managed Ethernet Switch mit 5 Ports** , der in **industriellen 10/100/1000-Base-T-Umgebungen betrieben werden kann**, eine erweiterte Leistung bietet und einen **deterministischen Netzwerkbetrieb in Echtzeit** ermöglicht .

Ethernet-Switches in Industriequalität von Perle sind so konzipiert, dass sie **extremen Temperaturen, Überspannungen, Vibrationen und Erschütterungen** standhalten , die in der **industriellen Automatisierung, in der Regierung, im Militär, in der Öl- und Gasindustrie, im Bergbau** und in **Außenanwendungen** vorkommen .

Die **Fast-Setup-Funktion von Perle** bietet eine einfache **Plug-and-Play-** Installation, um Ihre Ethernet-Geräte sofort zu vernetzen. **CCNA** (Cisco Certified Network Associate) und **CCNP** (Cisco Certified Network Professional) geschulte Ingenieure werden das vertraute **Command Line Interface (CLI)** über In-Band-Telnet oder den Out-Band-Seriell-Konsolen-Port zu schätzen wissen .

Das **IDS-205** unterstützt ein umfassendes Set an Managementfunktionen, wie **P-Ring** , **Management VLAN** , **QoS** , **RMON** , **N:1 Port Mirroring** und **Local Alert Log** . Außerdem kann der Switch **mit einer IPv6-Adresse verwaltet werden** .

Diese **robusten** , lüfterlosen **Schalter** sind gehärtet, um eine überlegene Zuverlässigkeit **bei -10 bis 60 °C** zu bieten . Außerdem **jede Komponente** auf jedem **industriellen (XT) Modell** wurde **entwickelt und getestet** , um Griffbetriebstemperaturen zwischen **-40 und 75C** .

Alle industriellen Ethernet-Switches von Perle verwenden ausschließlich **High-End-Komponenten** der **führenden Chiphersteller** , um ein Höchstmaß an **Haltbarkeit und Zuverlässigkeit** zu gewährleisten . Darüber hinaus verfügen alle Einheiten über ein korrosionsbeständiges Aluminiumgehäuse und einen doppelten redundanten Stromeingang mit Verpolungs- und Überlastschutz.

Perle wurde **industrielle Hardware - Gestaltung** für **mehr als 35 Jahren** und dieses Know - how eingesetzt haben , um zu entwerfen **härtesten Ethernet auf dem Markt schaltet** .

Merkmale des IDS-205 Industrieller verwalteter DIN-Schienen-Switch

Einfache Bereitstellung	Die Zero-Touch-Erkennung mit Dynamic Host Control Protocol (DHCP), Perles „Fast Setup“ für die Erstinstallation, ermöglicht eine einfache Bereitstellung in Ethernet-Umgebungen.
Elastizität	<ul style="list-style-type: none"> • STP- und RSTP-Protokolle für eine schnelle Wiederherstellung. • <u>P-Ring-Protokoll von</u> Perle für schnelle Konvergenz in Ringtopologien
Verwaltbarkeit	<ul style="list-style-type: none"> • Web Device Manager, Telnet, SNMP und Perle's <u>PerleView</u> NMS für zentrales Management • In-Band-Management über RJ45-Port • Verwenden Sie eine IPv4- oder IPv6-Adresse
Robustes Design für raue Umgebungen	<ul style="list-style-type: none"> • Korrosionsbeständiges Gehäuse • Sicherheitszertifizierung für speicherprogrammierbare Steuerungen • Zertifiziert für explosionsgefährdete Bereiche • Erweiterte industrielle Temperaturmodelle
Zuverlässiger Betrieb	<ul style="list-style-type: none"> • Lüfterlos, keine beweglichen Teile • Dualer Stromeingang. Zur Redundanz an separate Stromquellen anschließen. <ul style="list-style-type: none"> ◦ Verpolungsschutz ◦ Überlaststromschutz • Bewältigt Vibrations- und Schockbedingungen in industriellen Umgebungen
Echtzeit-Ethernet-Leistung	<ul style="list-style-type: none"> • Schnelle Drahtgeschwindigkeit, Speichern und Weiterschalten • Automatische Erkennung von Geschwindigkeit und Duplex • Auto-mdi/mdix-Crossover funktioniert mit geraden und gekreuzten Kabeln
Energieeffizientes Ethernet (EEE)	Energy Efficient Ethernet (EEE) gemäß 802.3az sorgt für Energieeinsparungen während der Leerlaufaktivität des Netzwerks.

Leistungsinhalte

Automatische Port-Erkennung	Auto-Sensing der Port-Geschwindigkeit und Auto-Negotiation von Duplex auf allen Switch-Ports zur Optimierung der Bandbreite
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Auto-MDI/MDIX	Medium-dependent interface crossover (Auto-MDIX) capability on 10/100 and 10/100/1000 mbps interfaces that enables the interface to automatically detect the required cable type (straight thru or crossover) and to configure the connection appropriately
802.3x flow control	IEEE 802.3x flow control on all ports. (The switch does not initiate pause frames)
Storm Control	Storm Control verhindert, dass der Verkehr in einem LAN durch einen Broadcast-, Multicast- oder Unicast-Sturm auf einer der physischen Schnittstellen unterbrochen wird. Ein LAN-Sturm tritt auf, wenn Pakete das LAN überfluten, übermäßigen Datenverkehr erzeugen und die Netzwerkleistung beeinträchtigen. Storm Control ermöglicht die Begrenzung des Broadcast-, Multicast- und Unicast-Datenverkehrs
Static MAC Addressing	Diese Funktion ermöglicht die manuelle Konfiguration der MAC-Adressen pro Port. Flooding wird verhindert, indem MAC-Einträge über einen Neustart des Switches hinweg beibehalten werden.
Port-Blockierung	Port Blocking provides the ability to block the flooding of unknown layer 2 unicast and multicast traffic on an Interface
IPV4 IGMP Snooping	Internet Group Management Protocol (IGMP) constrains the flooding of multicast traffic by dynamically configuring Layer 2 interfaces so that multicast traffic is forwarded to only those interfaces associated with IP multicast devices. IGMPv1, v2, v3, IGMP snooping querier mode, IGMP report suppression, topology change notification and robustness variable features are supported
Port Quick Disconnect	In some network environments, it is desirable to move an Ethernet from one switch port to another and have the device come on-line quickly. The Port Quick Disconnect feature if enabled, provides an immediate age-out of the MAC addresses learned on the port when the port status changes from a link-up to a link-down state
Manageability Features	
Web Device Manager	The Perle Web Device Manager is an embedded Web based application that provides an easy to use browser interface for managing the switch. Unlike competitive products, Java applet technology is not required or used

Command Line Interface (CLI)	A familiar text-based Command Line Interface that is based on accepted industry standard syntax and structure. Ideal for CCNA and CCNP trained engineers, this interface is available via in-band Telnet or the out-band serial console port
SNMP	Manage the switch with an snmp compatible management station that is running platforms such as HP Openview or Perle's PerleVIEW NMS. SNMP V1 and V2C
<u>PerleVIEW</u>	PerleVIEW is Perle's SNMP-based network management system that provides a view of the network with a large scale of Perle networking devices.
IPv6	Manage with an IPv4 or IPV6 address
DHCP Client Auto-Configuration	Automates configuration of switch information such as IP address, default gateway, hostname and Domain Name System (DNS) as well as TFTP server names. Firmware and configuration file locations are provided through options 54, 66, 67, 125 and 150
DHCP Relay	DHCP Relay is used for forwarding requests from DHCP clients when they are not on the same physical subnet. As a DHCP relay agent the switch operates as a Layer 3 device that forwards DHCP packets between clients and servers.
DHCP Option 82 Insertion	Normally used in metro or large enterprise deployments DHCP Option 82 insertion is used to provide additional information on "physical attachment" of the client. As per RFC 3046, option 82 enables additional pre-defined information to be inserted into the DHCP request packet (for DHCP Servers that support this option)
LLDP	LLDP-Link Layer Discovery Protocol as per IEEE 802.1AB is a neighbor discovery protocol that is used for network devices to advertise information about themselves to other devices on the network. This protocol runs over the data-link layer, which allows two systems running different network layer protocols to learn about each other (via TLVs – Type-Length-Value)
File Download	Firmware can be transferred via TFTP or HTTP. Text-based files that can be created or edited by common text editors.
Availability and Redundancy Features	
Spanning Tree Protocol (STP)	IEEE 802.1D now incorporated in IEEE 802.1Q-2014, STP prevents bridge loops and the broadcast radiation that results from them.

Rapid Spanning Tree Protocol (RSTP)	Interoperable with STP, RSTP (IEEE 802.1w) takes advantage of point-to-point wiring and provides rapid convergence of the spanning tree. Reconfiguration of the spanning tree can occur in less than 1 second
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<u>P-Ring</u>	P-Ring provides an easy to use method for configuring a ring network using standard spanning tree protocols. Prevents a switch loop scenario in a ring topology.
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Link Standby	A link recovery feature using a primary and backup link. Provides a simple alternative to spanning tree protocols for link redundancy
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VLAN Features

VLAN Range	Up to 256 VLANS across a VLAN ID range of 1 to 4000
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VLAN Interfaces	Perle switches provide the ability to configure management VLAN interfaces. This enables network administrators to access the switch's management interface from separate VLAN networks
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Quality of Service (QoS) and Class of Service (CoS) Features

Classification	IP ToS/DSCP and IEEE 802.1p CoS
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Congestion Avoidance	Weighted Fair Queuing or Strict Queuing
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Egress Queues and scheduling	<ul style="list-style-type: none">• 4 traffic class queues per port• output queue mapping• DSCP to output queue mapping
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Monitoring Features

Port Mirroring	N:1 Port Mirroring is a method of monitoring network traffic. With port mirroring enabled, the switch sends a copy of one or more ports to a predefined destination port. Selection of Transmit, Receive frames or both can be made
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RMON	RMON statistics provided for statistics, history, alarms and events for network monitoring and traffic analysis
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Syslog	Facility for logging systems messages to an external SYSLOG server
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Alert Log	Facility for logging systems messages locally
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Traceroute	Layer 2 traceroute to identify the path that a frame takes from source to destination
Virtual cable test	A test that enables the detection of potential copper cabling issues such as pair polarity pair swaps and excessive pair skew as well as any opens, shorts or any impedance mismatch. Will report the distance in the cable to the open or short.
Power Supply Monitoring	Provides the status of power supplies of the switch
Alarm Processing	<p>The switch can monitor global switch conditions as well as individual ports. These alarms can be configured to send messages to ;</p> <ul style="list-style-type: none"> • an internal log file • external Syslog server • SNMP trap server • An external alarm device such as a bell, light or other signaling device via the switch's built-in dry contact alarm relay <p>Global Status Monitoring Alarms</p> <p>Dual power supply alarm</p> <p>Port Status Monitoring Alarms</p> <ul style="list-style-type: none"> • Link Fault Alarm (IE loss of signal) • Port not forwarding alarm • Port not operating alarm (failure upon start up tests) • FCS Bit error rate alarm
Alarm Relay	When enabled, energizes the built-alarm relay triggering an external alarm circuit such as a bell, light or other signaling device according to alarm conditions set
Management and Standards	
IEEE Standards	<p>IEEE 802.3 for 10Base-T</p> <p>IEEE 802.3u for 100Base-T(X) and 100Base-X</p> <p>IEEE 802.3ab for 1000Base-T</p> <p>IEEE 802.3z for 1000BaseX</p> <p>IEEE 802.3x for Flow Control</p> <p>IEEE 802.1D-2004 for Spanning Tree Protocol</p> <p>IEEE 802.1w for Rapid STP</p> <p>IEEE 802.1Q for VLAN Tagging</p> <p>IEEE 802.1p for Class of Service</p> <p>IEEE 802.3ad for Port Trunk with LACP</p> <p>IEEE 802.1AB LLDP</p>
SNMP MIB Objects	<p>IEEE8021-PAE-MIB</p> <p>NTPv4-MIB</p>

IEEE8021-SPANNING-TREE-MIB
SYSAPPL-MIB
LLDP-EXT-MED-MIB
SNMP-COMMUNITY-MIB
LLDP-EXT-MED-MIB
IGMP-STD-MIB
IEEE8021-MSTP-MIB
Q-BRIDGE-MIB
LLDP-EXT-DOT3-MIB
IF-MIB
RSTP-MIB
DIFFSERV-DSCP-TC
LLDP-EXT-DOT1-MIB
IEEE8021-TC-MIB
LLDP-MIB
RMON2-MIB
ENTITY-MIB
P-BRIDGE-MIB
PERLE-LOGIN-MIB
PERLE-ALERT-MIB
PERLE-IP-SSH-MIB
PERLE-IP-PROTOCOLS-MIB
PERLE-USER-MIB
PERLE-SMI
PERLE-MAC-NOTIFICATION-MIB
PERLE-SYSINFO-MIB
PERLE-LINKSTANDBY-MIB
PERLE-AAA-MIB
perle-AAA.MIB
PERLE-IPV6-MIB
PERLE-LOGGING-MIB
PERLE-VLAN-MIB
PERLE-IF-MIB
PERLE-ENTITY-VENDORTYPE-OID-MIB
PERLE-ERR-DISABLE-MIB
PERLE-SWITCH-PLATFORM-MIB
PERLE-ENVMON-MIB
PERLE-TIME-MIB
PERLE-PTP-MIB
PERLE-P-RING-MIB
PERLE-SNMP-MIB
PERLE-FILE-TRANSFER-MIB
PERLE-SWITCH-GLOBAL-MIB
PERLE-BOOT-MIB
PERLE-PRODUCTS-MIB
PERLE-BANDWIDTH-CONTROL-MIB
PERLE-IP-TELNET-MIB
PERLE-GVRP-MIB
PERLE-PORT-SECURITY-MIB
PERLE-DHCP-SERVER-MIB
PERLE-GARP-MIB
PERLE-ARCHIVE-MIB
PERLE-NTP-MIB
PERLE-SSL-MIB
PERLE-IGMP-MIB
PERLE-ACL-MIB

PERLE-POE-MIB
 PERLE-RELOAD-MIB
 PERLE-ENTITY-ALARM-MIB
 PERLE-IPV6-NEIGHBOR-MIB
 PERLE-DOT1X-AUTH-MIB
 PERLE-TC
 PERLE-DHCP-CLIENT-MIB
 PERLE-LINE-MIB
 PERLE-ARP-MIB
 PERLE-GMRP-MIB
 PERLE-MLD-MIB
 PERLE-IP-HTTP-MIB
 PERLE-PORT-MONITOR-MIB
 PERLE-SpTreeExtensions-MIB
 PERLE-IP-MIB

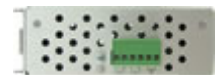
Hardware Features & Technical Specifications: IDS-205 Industrial Managed DIN Rail Switch

Power

Dual Power Input	Both inputs draw power simultaneously. If one power source fails, the other live source can, acting as a backup, supply enough power to meet the operational needs of the switch.
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12/24/48 VDC Nominal. (9.6 to 60 VDC)

Power Connector	4-Pin Removable Terminal Block. Grounding screw on metal chassis
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Maximum Current Consumption @24 vDC	0.15 amps
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Maximum Power Consumption @24 vDC	3.6 watts
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Overload Current Protection	Fused overload current protection
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Reverse polarity protection	The positive and negative inputs can be reversed providing safe and simple power connectivity.
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Access Ports

RJ45	5 shielded RJ45 ports for 10/100/1000Base-T up to 100 meters (328 ft) Auto-negotiation Auto-MDI/MDIX-crossover for use with either crossover over straight-through cable types Ethernet isolation 1500 V
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RJ45 Serial Console port	RJ45 DTE Optional rolled and straight thru RJ45 cables and DB adapters are available
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Alarms

Alarm Relay	<ul style="list-style-type: none">• NC (Normally Closed) dry contact.• 1A @ 24V
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Switch Properties

Standards	IEEE 802.3 for 10Base-T IEEE 802.3u for 100Base-TX and 100Base-FX IEEE 802.3ab for 1000Base-T Energy Efficient Ethernet (EEE) as per 802.3az. IEEE 802.3x for Flow Control
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Processing Type	Store and Forward
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MAC Address Table Size	8K
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VLAN ID range	1 to 4000
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IGMP groups	1024
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Packet Buffer Memory	1 Mbit
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Jumbo Frame Size	10 KB
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Indicators

Power	This LED is turned on when the appropriate level of voltage is applied to one or both of the power inputs
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System	Indicates whether the switch O/S is operating normally
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RJ45 Ethernet	These integrated colored LEDs indicate link, activity and speed for each port.
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Alarm	The alarm LED (Red) will be turned on under alarm conditions
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P-Ring Master LED	Status of the P-Ring Master
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Backup Network Coupling	Indicates whether or not the “Backup Network Coupling” feature is enabled (Redundant links connecting two P-Ring networks)
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Environmental Specifications

MTBF	320,305 Hours <i>Calculation model based on MIL-HDBK-217-FN2 @ 30 °C</i>
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Operating Temperature Ranges	Standard temperature models (Std): -10° C to 60° C (14° F to 140° F). XT Industrial extended temperature models (Ind) : -40° C to 75° C (-40 F to 167° F)
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Storage Temperature Range	Minimum range of -25° C to 70° C (-13° F to 158° F). -40 C to 85 C (-40 F to 185 F) for industrial extended temperature models
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Operating Humidity Range	5% to 90% non-condensing
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Storage Humidity Range	5% to 95% non-condensing
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Maximum Heat Output	12.3 Btu/hr
Operating Altitude	Up to 3,048 meters (10,000 feet)
Chassis	Metal with an IP20 ingress protection rating
Din Rail Mountable	DIN Rail attachment included. Mounts to standard 35 mm DIN rail in accordance with DIN EN 60175. Removable to accommodate optional Panel/Wall mount kit

Product Weight and Dimensions

Weight	0.61kg (1.34 lbs)
Dimensions	45 x 130 x 121mm

Packaging

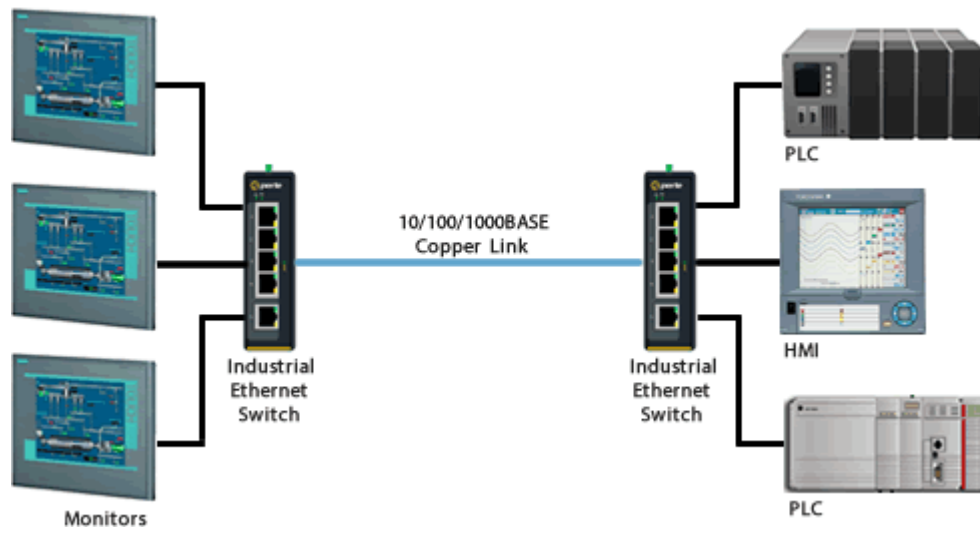
Shipping Weight	0.76kg (1.76 lbs)
Shipping Dimensions	170 x 260 x 70 mm

Standards and Certifications

Safety	IEC 62368-1 (ed 2) EN 62368-1:2014 UL 60950-1 IEC 60950-1:2005+A1:2009 and EN 60950-1:2006+A11:2009+A1:2010+A12:2011 CE Mark UL 61010-1 and UL 61010-2-201 (Standard for Safety for Programmable Controllers)
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Emissions	FCC 47 Part 15 Class A CISPR 22:2008/EN55022:2010 (Class A) CISPR 24:2010/EN 55024:2010
EMC and Immunity	CISPR 24:2010/EN 55024:2010 IEC/EN 61000-4-2 (ESD) : Contact discharge +/- 4kv, Air discharge +/- 8kv IEC/EN 61000-4-3 (RS) : 80mhz to 16hz ; 20v/m, 1.5hkhz to 2.0ghz ; 10 v/m, 2.0ghz to 2.7 ghz ; 5 v/m IEC/EN 61000-4-4 (EFT) : DC power line +/- 2kv, data line +/- 1kv IEC/EN 61000-4-5 (Surge) : DC power line, Line/Line +/- 1kv, Line/Earth +/- 2kv, data line /earth +/- 2kv IEC/EN 61000-4-6 (CS) :150mhz-80mhz 10vrms IEC/EN 61000-4-8 (Magnetic Field) :30 A/M IEC/EN 61000-6-2 (General Immunity in Industrial Environments)
Industrial Safety	UL 61010-1 and UL 61010-2-201 (Standard for Safety for Programmable Controllers). Formerly known as UL508 (Safety standard for Industrial Control Equipment)
Hazardous Locations (Hazloc)	ANSI/ISA 12.12.01, Class 1 Division 2 Groups A-D (formerly known as UL 1604) ATEX Class 1 Zone 2
Environmental	<u>Reach, RoHS and WEEE Compliant</u>
Other	ECCN: 5A991 HTSUS Number: 8517.62.0020 CCATS: G167960 5 year Warranty
Contents Shipped	<ul style="list-style-type: none"> • Industrial Ethernet Switch with DIN Rail attachment • Terminal block • Installation guide

IDS-205 Industrial Switch Diagram



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