IDS-305G – Managed Industrial Ethernet Switch mit Gigabit Fiber

perle.com/products/switches/ids-305g-industrial-managed-gigabit-switch.shtml

4 x 10/100/1000Base-T RJ45 und 1 x 1000Base-X SC/ST

- 4 Port 10/100/1000Base-T für Gigabit- und Fast-Ethernet-Geräte
- 1 Port 1000Base-X SC/ST Glasfaserverbindung
- Erweitertes Switching, VLAN, Verschlüsselung und IEEE 1588 PTP
- Unterstützung von PROFINET- und Modbus-TCP-Protokoll
- Kompaktes, korrosionsbeständiges Gehäuse zur Befestigung an einer Standard-DIN-Schiene
- Redundanter dualer Stromeingang 12/24/48 VDC
- Sicherheits- und Gefahrenbereichszertifizierung für speicherprogrammierbare Steuerungen
- -40 bis 75 °C industrielle Betriebstemperatur

Der **IDS-305 G** ist ein **Managed Ethernet Switch mit 5 Ports** , der in **industriellen Umgebungen betrieben werden kann,** eine erweiterte Leistung bietet und einen **deterministischen Netzwerkbetrieb in Echtzeit** ermöglicht . Für die Vernetzung von Gigabit- und Fast-Ethernet-Geräten stehen vier 10/100/1000-Base-T-Ethernet-Ports zur Verfügung. Eine 1000Base-X-Glasfaserverbindung ist verfügbar, **um die Gigabit-Ethernet-Betriebsentfernungen über Glasfaser zu erweitern** .

Neben der Verlängerung von Verbindungen über größere Entfernungen ist die **Verwendung von Glasfaser** in Umgebungen von **entscheidender Bedeutung,** in denen **hohe elektromagnetische Störungen (EMI)** ein häufiges Phänomen sind, wie z. B. in Industrieanlagen. Diese Interferenz kann zu Datenbeschädigungen über kupferbasierte Ethernet-Verbindungen führen. Daten, die über Glasfaserkabel übertragen werden, sind jedoch vollständig immun gegen diese Art von Rauschen, wodurch eine optimale Datenübertragung über die gesamte Werkshalle hinweg gewährleistet wird.

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** .

Mit über 30 Modellen bietet der Perle IDS-305G eine Auswahl an Anschlüssen, Fasertypen, Temperaturunterstützung und Betriebsentfernungen.

Die **Fast-Setup-Funktion von** Perle bietet eine einfache **Plug-and-Play-** Installation, um Ihre Ethernet-Geräte sofort zu vernetzen. Das vertraute **Command Line Interface (CLI)** über In-Band-Telnet oder den Out-Band-Seriell-Konsolenport wird von **CCNA** (Cisco Certified Network Associate) und **CCNP** (Cisco Certified Network Professional) geschulten Ingenieuren geschätzt .

Der **PRO-Funktionssatz** des IDS-305G ist ideal für erweiterte Umgebungen, in denen zusätzliche umfangreiche **Sicherheits-** und **Netzwerkintegrationsfunktionen** erforderlich sind.

- AAA- Sicherheitsprotokolle (Authentifizierung, Autorisierung, Abrechnung) : RADIUS und TACACS+
- SSH-, SNMPv3-, Telnet- und HTTPS- sichere Verwaltungssitzungen
- Management Access Lists (ACL) nach IP-Adresse und IP-Portnummer
- Erzwingen der Kennwortstärke Anforderungen
- IEEE 802.1x-Authentifizierung und Portsicherheit zum Schutz von Benutzerzugriffsports
- Optimieren Sie die Leistung und Intelligenz des Netzwerks mit Advanced Protocols : LLDP, GVRP, Voice VLANs, MSTP, GMRP, IPv4 IGMP Snooping und IPv6 MLD Snooping

MRP (IEC62439-2) , **PROFINET** , **Modbus TCP** , **Management VLAN** , **QoS** , **RMON** , **N:1 Port Mirroring** und **Local Alert Log** sind nur einige der umfassenden Managementfunktionen, die vom **IDS-409 unterstützt werden** . Außerdem kann der Switch **mit einer IPv6-Adresse verwaltet werden** .

Die IDS-305G, die in einer Vielzahl von Modellen erhältlich ist, sind **robuste,** lüfterlose **Schalter** , die gehärtet sind, um eine überlegene Zuverlässigkeit **bei -10 bis 60 °C oder** rauen erweiterten Betriebstemperaturen **von -40 bis 75 °C** zu bieten . **Jede Komponente** jedes Industriemodells (XT) wurde für Betriebstemperaturen zwischen -40 und 75 °C **entwickelt und getestet** .

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

Perle wurde **industrielle Hardware - Gestaltung** für **mehr als 35 Jahre.** Dieses Know-how wurde genutzt, um die **robustesten Ethernet-Switches auf dem Markt zu entwickeln** , die Ihr System über Jahre hinweg am Laufen halten.

Merkmale des IDS-305G Industrieller verwalteter DIN-Schienen-Switch

Einfache Bereitstellung	Zero-Touch-Erkennung mit Dynamic Host Control Protocol (DHCP), Perles „Fast Setup“ für die Erstinstallation, ermöglicht eine einfache Bereitstellung in Ethernet-Umgebungen
Sicherheit	802.1X, Portsicherheit , Secure Shell (SSHv2); SNMPv3 bietet verschlüsselten Administratordatenverkehr während CLI- und SNMP-Sitzungen; TACACS+ und RADIUS-Authentifizierung erleichtern die zentrale Kontrolle und schränken nicht autorisierte Benutzer ein.
Elastizität	• STP, RSTP and MSTP protocols for fast recovery. • MRP (IEC 62439-2) for fast convergence in industrial ring networks. Prevents a switch loop scenario with recovery time of 10 ms or better. • Perle’s P-Ring protocol for configuring a ring network using standard spanning tree protocols. • Link Standby is a link recovery feature for two links that provides a simple alternative to spanning tree protocols for link redundancy • Buffered Real Time Clock backup
Manageability	• Web Device Manager, Telnet/SSH, HTTPS access, SNMP and Perle’s PerleView NMS for centralized management • In-band management via RJ45 port • Use an IPv4 or IPv6 address
Industrial Ethernet Protocol Support	Manage Perle IDS-300 switches via PLC, NMS, HMI or SCADA systems using **PROFINET or Modbus TCP**.
Rugged design for harsh environments	• Corrosion resistant case • Programmable Controller Safety certified • Certified for hazardous locations • Extended industrial temperature models

Reliable operation	• Fan-less, no moving parts
	• Dual power input. Connect to separate power sources for redundancy.
	  ◦ Reverse polarity protection
	  ◦ Overload current protection
	• Handles vibration and shock conditions found in industrial environments

Real-time Ethernet performance	• Fast wire-speed , store and forward switching • Auto-sensing for speed and duplex • Auto-mdi/mdix-crossover works with straight and crossover cables
Energy Efficient Ethernet (EEE)	Energy Efficient Ethernet (EEE) gemäß 802.3az sorgt für Energieeinsparungen während der Leerlaufaktivität des Netzwerks.

Leistungsinhalte

class="col-width-20"Port Auto-sensing	Auto-sensing of port speed and auto-negotiation of duplex on all switch ports for optimizing bandwidth

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)
Link Aggregation protocol	Increase port bandwidth through link aggregation. Support is provided for IEEE 802.3ad using Link Aggregation Control Protocol (LACP). Up to eight (8) ports in a single port-channel
Static Link Aggregation	Provides the ability to operate under a static (manual) link aggregation scenario (where the remote switch peer does not support LACP)
Storm Control	Storm control prevents traffic on a LAN from being disrupted by a broadcast, multicast, or unicast storm on one of the physical interfaces. A LAN storm occurs when packets flood the LAN, creating excessive traffic and degrading network performance. Storm Control enables limits to be placed on broadcast, multicast and unicast traffic
Bandwidth Control Monitoring	Bandwidth Control provides the ability to monitor the flow rates on a per port basis and the ability to cause an SNMP trap to occur (selectable) and put the port in an "error-disabled" state
Static MAC Addressing	This feature enables the manual configuration of the MAC addresses on a per port basis. Flooding is prevented by retaining MAC entries across a reboot of the switch.
Port Blocking	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
IPV6 MLD Snooping	With Multicast Listener Discovery (MLD) snooping, IPv6 multicast data is selectively forwarded to a list of ports that want to receive the data, instead of being flooded to all ports in a VLAN. This list is constructed by snooping IPv6 multicast control packets
GMRP	GARP Multicast Registration Protocol (GMRP) provides a constrained multicast flooding facility similar to IGMP snooping. GMRP provides a mechanism that allows bridges and end stations to dynamically register group membership information with the MAC bridges attached to the same LAN segment and for that information to be disseminated across all bridges in the Bridged LAN that supports extended filtering services
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. Operates with both http and secure https streams. 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/SSH or the out-band serial console port
Industrial Ethernet Protocols	Manage Perle IDS-300 switches via PLC, NMS, HMI or SCADA systems using **PROFINET or Modbus TCP**.
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
PerleVIEW	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)
DHCP Server	For networks where a central DHCP server is not provided, the switch can provide a DHCP Server function for allocation of IP addresses to the connected devices
DHCP server port-based address allocation	When Ethernet switches are deployed in the network, they offer connectivity to the directly connected devices. In some environments, such as on a factory floor, if a device fails, the replacement device must be working immediately in the existing network When configured, the DHCP server port-based address allocation feature ensures that the same IP address is always offered to the same connected port even as the client identifier or client hardware address changes in the DHCP messages received on that port
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)
LLDP-MED	LLDP Media Endpoint Discovery is an extension to LLDP that operates between endpoint devices such as IP phones and network devices such as switches. It specifically provides support for voice over IP (VoIP) applications and provides additional TLVs for capabilities discovery, network policy, Power over Ethernet, inventory management and location information
NTP	The switch can provide the time to NTP/SNTP capable client devices (or other switches, etc). You can run the SNTP client and the NTP server concurrently on your system. Therefore you can obtain time from an outside source and serve that time to the devices connected to the switch.

IEEE 1588 – PTP (Precision Time Protocol)	• IEEE 1588 V1 and V2 • Boundary Clock V1 • Boundary Clock V2 • End-to-End Transparent Clock Sync Two Step Operation • End-to-End Transparent Clock Sync One Step Operation • Peer-to-Peer Transparent Clock • End-to-end Boundary clock • Peer-to-peer boundary clock • Microsecond accuracy
File Download	Firmware can be transferred via TFTP, SCP, HTTP, or HTTPS. Text-based files that can be created or edited by common text editors.
Secure Copy Protocol (SCP)	SCP based on the Secure Shell (SSH) protocol, is a means of securely transferring computer files between a local host and a remote host or between two remote hosts.
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. Other Spanning Tree features include BPDU guard, Root guard, loop guard, root guard and TCN Guard
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
Multiple Spanning Tree Protocol (MSTP)	Originally defined in IEEE 802.1s and now incorporated IEEE 802.1Q-2014, defines an extension to RSTP for use with VLANs. The Multiple Spanning Tree Protocol configures a separate Spanning Tree for each VLAN group and blocks all but one of the possible alternate paths within each Spanning Tree.
MRP	Media Redundancy Protocol (IEC 62439-2). Fast convergence protocol designed for industrial networks. Recovery time of 10 ms or better in rings composed of up to 14 switches. Prevents a switch loop scenario in a ring topology.
P-Ring	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.
Link Standby	A link recovery feature using a primary and backup link. Provides a simple alternative to spanning tree protocols for link redundancy
VLAN Features	
VLAN Range	Up to 256 VLANS across a VLAN ID range of 1 to 4000
GVRP	Generic Attribute Registration Protocol (GARP) VLAN Registration Protocol (GVRP) is an application defined in the IEEE 802.1Q standard that allows for the control of VLANs. With GVRP, the switch can exchange VLAN configuration information with other GVRP switches, prune unnecessary broadcast and unknown unicast traffic, and dynamically create and manage VLANs on switches that are connected through 802.1Q trunk ports.

Voice VLANs	Voice VLANs enables one to separate, prioritize, and authenticate voice traffic moving through your network, and to avoid the possibility of broadcast storms affecting VoIP (Voice-over-IP) operation. With an IP Phone connected to an access port, a switchport voice VLAN enables the use of one VLAN for voice traffic and another VLAN for data traffic from an Ethernet device attached to the phone
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
Security Features	

IEEE 802.1X	• Provides secure access to switch ports from a central RADIUS server. The switch operating as an authenticator interacting with an 802.1X compliant supplicant (PC or industrial device) through the use of the EAPOL protocol. Authentication will be granted/denied through an external RADIUS server.
	• RADIUS assigned VLAN
	  ◦ IETF 64 (Tunnel Type)
	  ◦ IETF 65 (Tunnel Medium Type)
	  ◦ IETF 81 (Tunnel Private Group ID)
	• Guest VLAN and Restricted VLANs are supported
	• For non-802.1X devices found in industrial applications, the switch can use the client MAC address for authorization through the use if MAB (MAC Authentication Bypass)
	• Switch can also be configured as an 802.1X supplicant (edge switch) with an 802.1x-aware upstream switch

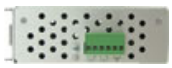
Login Banner and MOTD	A login message banner presented during sign-on can be configured by the network administrator. A Message Of The Day can also be created for presentation to an authenticated user.
Password Strength Checking	Many organizations require stringent management over the strength level of their passwords. When enabled, Perle extends this capability to local passwords stored on the switch enforcing strong passwords to be used.
Port Security – Secure MAC Addresses	This port security feature provides the ability to restrict input to an interface by limiting and identifying MAC addresses of the stations allowed to access the port (Access or Trunk) and will take specific actions when violations occur.
Management ACL	Restricting access to management functions can be configured by protocol or IP address selection are provided. This enables administrators to allow only specific workstations using particular protocols to be able to access the management functions of the switch
RADIUS Management Access Authentication	AAA support for RADIUS servers that Authenticate, Authorize and Account management sessions
TACACS+ Management Access Authentication	AAA support for TACACS+ servers that Authenticate, Authorize and Account management sessions
Secure Socket Layer (SSL)	SSL provided for secure browser sessions using HTTPS
Secure Shell (SSH)	SSH provided for secure SSH session for CLI and SCP file transfer sessions
SNMPV3	Support provided for secure version 3 of SNMP

Quality of Service (QoS) and Class of Service (CoS) Features	
Classification	IP ToS/DSCP and IEEE 802.1p CoS
Congestion Avoidance	Weighted Fair Queuing or Strict Queuing
Egress Queues and scheduling	• 4 traffic class queues per port • output queue mapping • DSCP to output queue mapping
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
RMON	RMON statistics provided for statistics, history, alarms and events for network monitoring and traffic analysis
Syslog	Facility for logging systems messages to an external SYSLOG server
Alert Log	Facility for logging systems messages locally
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
Internal Temperature Monitoring	The internal ambient temperature of the switch can be obtained from the management interfaces
Alarm Processing	The switch can monitor global switch conditions as well as individual ports. These alarms can be configured to send messages to ; • 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 Global Status Monitoring Alarms Dual power supply alarm Port Status Monitoring Alarms • 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	IEEE 802.3 for 10Base-T IEEE 802.3u for 100Base-T(X) and 100Base-X IEEE 802.3ab for 1000Base-T EEE 802.3z for 1000BaseX IEEE 802.3x for Flow Control IEEE 802.1D-2004 for Spanning Tree Protocol IEEE 802.1w for Rapid STP EEE 802.1s for Multiple Spanning Tree Protocol IEEE 802.1Q for VLAN Tagging IEEE 802.1p for Class of Service IEEE 802.1X for Authentication IEEE 802.3ad for Port Trunk with LACP IEEE 802.1AB LLDP IEEE 1588v1 PTP Precision Time Protocol IEEE 1588v2 PTP Precision Time Protocol
SNMP MIB Objects	IEEE8021-PAE-MIB NTPv4-MIB 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-305G 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. 12/24/48 VDC Nominal. (9.6 to 60 VDC)
Power Connector	4-Pin Removable Terminal Block. Grounding screw on metal chassis 
Maximum Current Consumption @24 vDC	0.14 amps
Maximum Power Consumption @24 vDC	3.4 watts
Overload Current Protection	Fused overload current protection
Reverse polarity protection	The positive and negative inputs can be reversed providing safe and simple power connectivity.
Access Ports	

RJ45	4 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
RJ45 Serial Console port	RJ45 DTE Optional rolled and straight thru RJ45 cables and DB adapters are available
Gigabit Fiber port	1000Base-x fiber port models Duplex SC or ST connector • Multimode 50/125 or 62.5/125 micron fiber cable • Single mode 9/125 micron fiber cable Simplex (BIDI, single strand) SC connector • Multimode 50/125 or 62.5/125 micron fiber cable • Single mode 9/125 micron fiber cable PC and UPC type patch cords supported.

Fiber Port Specs

Fiber Type	Transmit (dBm)		Receive (dBm)		Power Budget (dB)	Wavelength (nm)	IEEE	Core Size (um)	Modal Bandwidth (MHz* Km)	Maximum Operating Distance
	Min	Max	Min	Max						
MMF (Duplex SC/ST)	-9.5	-4.0	-17.0	-3.0	7.5	850	1000Base-SX	62.5	160	220 m (722 ft)
								62.5	200	275 m (902 ft)
								50	400	500 m (1,640 ft)
								50	500	550 m (1,804 ft)
								50	2000	1000 m (3281 ft)
MMF (Duplex SC/ST)	-6.0	0.0	-17.0	0.0	11.0	1310	1000Base-LX	62.5	160	2 km (1.2 mi)
								50	500	1 km (3280ft)
MMF (simplex SC)	-10.0	-4.0	-17.0	-3.0	7.0	1310 / 1550 1550 / 1310	1000Base-BX-U 1000Base-BX-D	62.5 50	500	500 m (1,640 ft)

SMF (Duplex SC/ST)	-9.5	-3.0	-20.0	-3.0	10.5	1310	1000Base-LX/LH	9	**	10 km (6.2 mi)
SMF (Simplex SC)	-9.0	-3.0	-20.0	-3.0	11.0	1310 / 1490 1490 / 1310	1000Base-BX-U 1000Base-BX-D	9	**	10 km (6.2 mi)
SMF (Simplex SC)	-8.0	-3.0	-22.0	-3.0	14.0	1310 / 1490 1490 / 1310	1000Base-BX-U 1000Base-BX-D	9	**	20 km (12.4 mi)
SMF (Duplex SC/ST)	-2.0	2.0	-23.0	-3.0	21.0	1310	1000Base-EX	9	**	40 km (24.9 mi)
SMF (Simplex SC)	-3.0	2.0	-23.0	-3.0	20.0	1310 / 1490 1490 / 1310	1000Base-BX-U 1000Base-BX-D	9	**	40 km (24.9 mi)
SMF (Duplex SC/ST)	-2.0	5.0	-23.0	-3.0	21.0	1550	1000Base-ZX	9	**	70 km (43 mi)
SMF (Simplex SC)	-2.0	3.0	-26.0	-3.0	24.0	1510 / 1590 1590 / 1510	1000Base-BX-U 1000Base-BX-D	9	**	80 km (50 mi)
SMF (Duplex SC/ST)	0.0	5.0	-32.0	-9.0	32.0	1550	1000Base-ZX	9	**	120 km (74.6 mi)
SMF (Simplex SC)	-3.0	2.0	-34.0	-9.0	31.0	1510 / 1590 1590 / 1510	1000Base-BX-U 1000Base-BX-D	9	**	120 km (74.6 mi)
SMF (Duplex SC/ST)	2.0	5.0	-34.0	-9.0	36.0	1550	1000Base-ZX	9	**	160 km (100 mi)

* 1db/km multimode fiber cable
** as per ITU-T G.652 SMF specifications

Alarms	
Alarm Relay	• NC (Normally Closed) dry contact. • 1A @ 24V

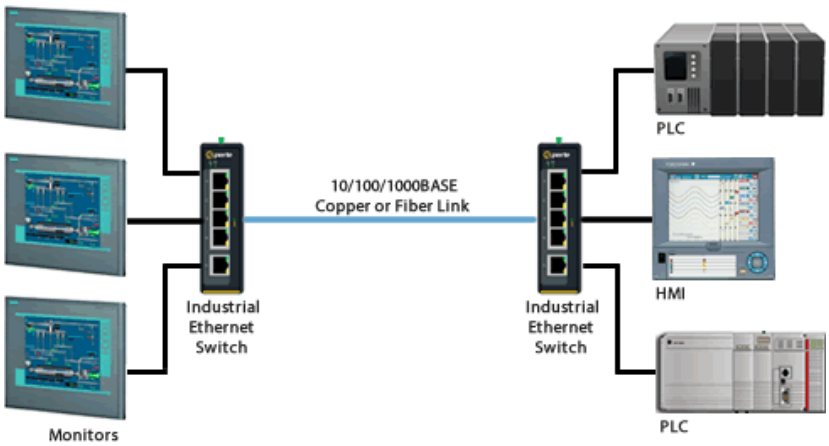
Switch Properties

Standards	IEEE 802.3 for 10Base-T IEEE 802.3u for 100Base-T(X) IEEE 802.3ab for 1000Base-T IEEE 802.3z for 1000BaseX Energy Efficient Ethernet (EEE) as per 802.3az. IEEE 802.3x for Flow Control
Processing Type	Store and Forward
MAC Address Table Size	8K
VLAN ID range	1 to 4000
IGMP groups	1024
Packet Buffer Memory	1 Mbit
Jumbo Frame Size	10 KB
Indicators	
Power	This LED is turned on when the appropriate level of voltage is applied to one or both of the power inputs
System	Indicates whether the switch O/S is operating normally
RJ45 Ethernet	These integrated colored LEDs indicate link, activity and speed for each port.
Fiber Link	Fiber link LED indicates Link and Data Activity
Alarm	The alarm LED (Red) will be turned on under alarm conditions
P-Ring Master LED	Status of the P-Ring Master
Backup Network Coupling	Indicates whether or not the “Backup Network Coupling” feature is enabled (Redundant links connecting two P-Ring networks)
Environmental Specifications	
MTBF	277,426 Hours *Calculation model based on MIL-HDBK-217-FN2 @ 30 °C*
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)
Storage Temperature Range	Minimum range of -25° C to 75° C (-13° F to 167° F). -40 C to 85 C (-40 F to 185 F) for industrial extended temperature models

Operating Humidity Range	5% to 90% non-condensing
Storage Humidity Range	5% to 95% non-condensing
Maximum Heat Output	11.6 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	
Laser Safety	EN 60825-1:2007 Fiber optic transmitters on this device meet Class 1 Laser safety requirements per IEC-60825 FDA/CDRH standards and comply with 21CFR1040.10 and 21CFR1040.11.
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)
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) : IEC/EN 61000-4-3 (RS) IEC/EN 61000-4-4 (EFT) : IEC/EN 61000-4-5 (Surge) IEC/EN 61000-4-6 (CS) IEC/EN 61000-4-8 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	Reach, RoHS and WEEE Compliant
Other	ECCN: 5A992
	HTSUS Number: 8517.62.0020
	CCATS: G167960
	5 year Warranty
Contents Shipped	Industrial Ethernet Switch with DIN Rail attachment Terminal block Installation guide

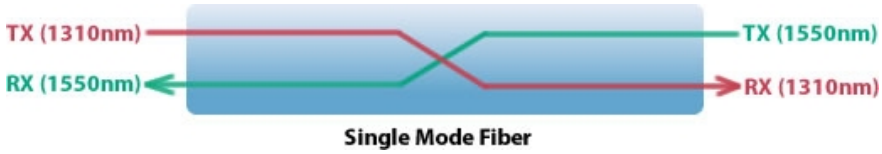
IDS-305G Industrial Switch Diagram



Single Mode / Single Strand (WDM) Fiber

Connecting devices over a single fiber strand (also referred to as "Bi-Directional" BiDi or Simplex)

To reduce costs, or where there are limits on available fiber, Wavelength-Division Multiplexing (WDM) technology may be utilized. WDM uses separate transmit and receive frequencies to communicate on a single fiber strand. WDM technology relies on the fact that optical fibers can carry many wavelengths of light simultaneously without interaction between each wavelength. Thus, a single fiber can carry many separate wavelength signals or channels simultaneously. WDM systems are divided into different wavelength patterns, conventional/coarse (CWDM) and dense (DWDM).



When Single Strand fiber is used, you will need an **"Up"** side and a **"Down"** side when interconnecting fiber devices.

Perle offers a wide variety of Single Fiber ("Up/Down") Ethernet Switches and Media Converters for use with single strand of fiber.

Select a Model to obtain a Part Number – IDS-305G

Operating Temperature (Std) = -10° C to 60° C (14° F to 140° F)
All Models have 4 x 10/100/1000Base-T (RJ45) Connectors

	Choose your Fiber Connection from the table below 1000Base-X Duplex Fiber								
		Transmit (dBm)		**Receive (dBm)**					
Model	**Fiber Connector**	**Min**	**Max**	**Min**	**Max**	**Power Budget (dB)**	**Wavelength (nm)**	**Fiber Type**	**Operating Distance**
IDS-305G-CMD05	1 x Duplex SC	-9.5	-4.0	-17.0	-3.0	7.5	850	MMF	550 m (1,804 ft.)
IDS-305G-TMD05	1 x Duplex ST	-9.5	-4.0	-17.0	-3.0	7.5	850	MMF	550 m (1,804 ft.)
IDS-305G-CMD2	1 x Duplex SC	-6.0	0.0	-17.0	0.0	11.0	1310	MMF	2 km (1.2 mi)
IDS-305G-TMD2	1 x Duplex ST	-6.0	0.0	-17.0	0.0	11.0	1310	MMF	2 km (1.2 mi)
IDS-305G-CSD10	1 x Duplex SC	-9.5	-3.0	-20.0	-3.0	10.5	1310	SMF	10 km (6.2 mi)
IDS-305G-TSD10	1 x Duplex ST	-9.5	-3.0	-20.0	-3.0	10.5	1310	SMF	10 km (6.2 mi)
IDS-305G-CSD40	1 x Duplex SC	-2.0	2.0	-23.0	-3.0	21.0	1310	SMF	40 km (24.9 mi)

IDS-305G-TSD40	1 x Duplex ST	-2.0	2.0	-23.0	-3.0	21.0	1310	SMF	40 km (24.9 mi)
IDS-305G-CSD70	1 x Duplex SC	-2.0	5.0	-23.0	-3.0	21.0	1550	SMF	70 km (43 mi)
IDS-305G-TSD70	1 x Duplex ST	-2.0	5.0	-23.0	-3.0	21.0	1550	SMF	70 km (43 mi)
IDS-305G-CSD120	1 x Duplex SC	0.0	5.0	-32.0	-9.0	32.0	1550	SMF	120 km (74.6 mi)
IDS-305G-TSD120	1 x Duplex ST	0.0	5.0	-32.0	-9.0	32.0	1550	SMF	120 km (74.6 mi)
IDS-305G-CSD160	1 x Duplex SC	2.0	5.0	-34.0	-9.0	36.0	1550	SMF	160 km (100 mi)
IDS-305G-TSD160	1 x Duplex ST	2.0	5.0	-34.0	-9.0	36.0	1550	SMF	160 km (100 mi)

Operating Temperature (Ind) = -40° C to 75° C (-40 F to 167° F)
All Models have 4 x 10/100/1000Base-T (RJ45) Connectors

	Choose your Fiber Connection from the table below 1000Base-X Duplex Fiber								
		Transmit (dBm)		**Receive (dBm)**					
Model	**Fiber Connector**	**Min**	**Max**	**Min**	**Max**	**Power Budget (dB)**	**Wavelength (nm)**	**Fiber Type**	**Operating Distance**
IDS-305G-CMD05-XT	1 x Duplex SC	-9.5	-4.0	-17.0	-3.0	7.5	850	MMF	550 m (1,804 ft.)
IDS-305G-TMD05-XT	1 x Duplex ST	-9.5	-4.0	-17.0	-3.0	7.5	850	MMF	550 m (1,804 ft.)
IDS-305G-CSD10-XT	1 x Duplex SC	-9.5	-3.0	-20.0	-3.0	10.5	1310	SMF	10 km (6.2 mi)
IDS-305G-TSD10-XT	1 x Duplex ST	-9.5	-3.0	-20.0	-3.0	10.5	1310	SMF	10 km (6.2 mi)

* 1db/km multimode 50/125 micron fiber cable

Single Fiber (Simplex / BiDi) Models Recommended use in pairs

Operating Temperature (Std) = -10° C to 60° C (14° F to 140° F)
All Models have 4 x 10/100/1000Base-T (RJ45) Connectors

	Choose your Fiber Connection from the table below 1000Base-X Simplex (BiDi) Fiber								
		Transmit (dBm)		Receive (dBm)					
Model	Fiber Connector	Min	Max	Min	Max	Power Budget (dB)	Wavelength (nm) TX / RX	Fiber Type	Operating Distance
IDS-305G-CMS05U	1 x Simplex SC	-10.0	-4.0	-17.0	-3.0	7.0	1310 / 1550	MMF	500 m (1,640 ft)
IDS-305G-CMS05D	1 x Simplex SC	-10.0	-4.0	-17.0	-3.0	7.0	1550 / 1310	MMF	500 m (1,640 ft)
IDS-305G-CSS10U	1 x Simplex SC	-9.0	-3.0	-20.0	-3.0	11.0	1310 / 1490	SMF	10 km (6.2 mi)
IDS-305G-CSS10D	1 x Simplex SC	-9.0	-3.0	-20.0	-3.0	11.0	1490 / 1310	SMF	10 km (6.2 mi)
IDS-305G-CSS20U	1 x Simplex SC	-8.0	-3.0	-22.0	-3.0	14.0	1310 / 1490	SMF	20 km (12.4 mi)
IDS-305G-CSS20D	1 x Simplex SC	-8.0	-3.0	-22.0	-3.0	14.0	1490 / 1310	SMF	20 km (12.4 mi)
IDS-305G-CSS40U	1 x Simplex SC	-3.0	2.0	-23.0	-3.0	20.0	1310 / 1490	SMF	40 km (24.9 mi)
IDS-305G-CSS40D	1 x Simplex SC	-3.0	2.0	-23.0	-3.0	20.0	1490 / 1310	SMF	40 km (24.9 mi)
IDS-305G-CSS80U	1 x Simplex SC	-2.0	3.0	-26.0	-3.0	24.0	1510 / 1590	SMF	80 km (50 mi)
IDS-305G-CSS80D	1 x Simplex SC	-2.0	3.0	-26.0	-3.0	24.0	1590 / 1510	SMF	80 km (50 mi)
IDS-305G-CSS120U	1 x Simplex SC	-3.0	2.0	-34.0	-9.0	31.0	1510 / 1590	SMF	120 km (74.6 mi)
IDS-305G-CSS120D	1 x Simplex SC	-3.0	2.0	-34.0	-9.0	31.0	1590 / 1510	SMF	120 km (74.6 mi)

Operating Temperature (Ind) = -40° C to 75° C (-40 F to 167° F)
All Models have 4 x 10/100/1000Base-T (RJ45) Connectors

Choose your Fiber Connection from the table below
1000Base-X Simplex (BiDi) Fiber

Model	Fiber Connector	Transmit (dBm)		Receive (dBm)		Power Budget (dB)	Wavelength (nm) TX / RX	Fiber Type	Operating Distance
		Min	Max	Min	Max				
IDS-305G-CSS10U-XT	1 x Simplex SC	-9.0	-3.0	-20.0	-3.0	11.0	1310 / 1490	SMF	10 km (6.2 mi)
IDS-305G-CSS10D-XT	1 x Simplex SC	-9.0	-3.0	-20.0	-3.0	11.0	1490 / 1310	SMF	10 km (6.2 mi)

Industrial Ethernet Switch Accessories

Panel Mount kit PM3	Brackets for attaching 30 to 75 mm wide Perle IDS industrial switches inside a control panel or to a wall for wall.
Rack Mount Kit RM4U	Bracket for mounting Perle DIN Rail switches in a standard 19” rack. Occupies “4U” of vertical rack space. 275 mm (10 inches) deep
UNO-PS/1AC/24DC/150W Power Supply	UNO-PS/1AC/24DC/150W Power Supply - DIN-Rail 24 VDC , 150 Watt power supply with universal 85 to 264 VAC, -25 to 70°C extended operating temperature. Power Supply Specifications.
DBA0020C	RJ-45F to DB-9F crossover (DTE) adapter for Perle serial console ports with Sun/Cisco pinout. #1100300-10

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