

Perle Systems

 perle.com/products/ethernet-io-secure-device-server.shtml

Secure Ethernet I/O

IOLAN SDS I/O Secure Device Server

IOLAN DS I/O Device Server

- Secure remote access and control of digital I/O and relays
- Universal Digital I/O, Analog input, RTD/Thermocouple temperature sensor input & RS-232/422/485
- 10/100 Ethernet interface with 1.5kv isolation (802.3 standard)
- Terminal block connectors for power and I/O



Perle's **Ethernet I/O** technology (IOLAN SDS I/O Device Server) enables **secure access** and control of remote digital I/O, analog I/O, pulse I/O, relays and temperature sensors as well as **secure connections** of remote serial equipment on any IP network. The IOLAN SDS I/O has the ability to monitor environmental alarms, intrusion detection, relay contact closures and equipment failure. Through remote operator or application control, opening and closing of integrated relay contacts or activation of digital output signals can be incorporated into any response of a critical event.

Management, Monitoring and Control of High-Value Distributed I/O Assets

Ideal for

The monitoring and protection of high-value **distributed I/O** assets and access to its data. This also involves the protection and control of its physical environment along with the ability to take corrective action when necessary. Digital and analog sensors, proximity and mechanical switches, relays, pushbuttons, temperature and humidity sensors can assist in determining the integrity and security of the asset's local environment. Information from these sent back to a central support location over a network can help an enterprise react more quickly to an important event or failure. IOLAN SDS I/O Device Servers are ideal for these applications.

Why IOLAN SDS I/O Device Servers are the preferred choice:

- Universal Digital I/O, Analog input, RTD/Thermocouple temperature sensor input and EIA/RS-232/422/485 offers flexibility for a wide range of applications
- Digital I/O Extension provides a cable replacement solution by transmitting digital input signals securely via SSL to a remote output peer over an IP/Ethernet network
- Secure AES(256/192/128), 3DES, Blowfish, CAST128, ARCFour or ARCTWO data encryption ciphers across the LAN via SSH and SSL Models without encryption are also available
- Advanced user authentication via RADIUS, TACACS+, LDAP, Kerberos, NIS and RSA prevent unauthorized access

- Attached I/O devices can be **Modbus UID addressable** for operational compatibility
- Plug & Play installation utility eliminates configuration hassles for all IOLAN's on your IP network
- Advanced event management using Port buffering, Syslog, SNMP V3 and email event notification
- Operates in application environments requiring extended ambient operating temperatures of -40C to +74C (-40F to +165F).
- Central management capabilities via a Perle Device Manager for Windows
- Access IOLAN SDS units using common web browsers or command line interface over encrypted tunnels with HTTPS/SSL/TLS or SSH

Secure Ethernet I/O Connectivity

IOLAN SDS I/O Device Servers enable administrators to securely acquire information from **remote I/O** (digital and analog based) devices across an IP network. Sensitive server data gathering and control information between SCADA server and **remote I/O** is protected through powerful encryption ciphers such as AES, 3DES, RC4, RC2 and CAST128. Authorized administrative access to an IOLAN SDS is assured via standard authentication schemes such as RADIUS, TACACS+, LDAP, Kerberos, NIS and RSA Security's SecurID tokens.

Recognized as the most secure method for communicating to remote private networks over the Internet, the IPSec standard provides robust authentication and encryption of IP packets at the network layer of the OSI model. As a standard it is ideal for multi-vendor interoperability within a network, providing flexibility and the ability to match the right solution for a particular application.

Extended Temperature Support

The IOLAN SDS I/O Device Server addresses the need for connecting **remote I/O** and serial devices that operate in extreme temperatures -40C to +74C (-40F to +165F) to an enterprise's IP network.

Access I/O Devices over Ethernet using Popular Central Applications

An IOLAN I/O Device Server is ideal for **remote I/O** management using common SCADA or OPC Servers using **Modbus/TCP protocol** as well as Network Management Systems (NMS) utilizing SNMP.

Flexible and Reliable COM/TTY Access to Ethernet I/O

An IOLAN I/O Device Server is ideal for connecting COM/TTY based applications such as **Modbus ASCII/RTU to remote I/O devices**. Perle's [TruePort re-director](#) provides COM port or fixed TTY connections across an IP network.

An Application Program Interface (API) is also available so that custom applications can be developed to access **distributed I/O** channels attached to remote IOLAN I/O Device Servers. Common serial applications such as Visual Basic can be used to send IOLAN API commands to remote IOLAN I/O Device Servers across an IP network. This API is available for the most popular operating systems today.

Universal I/O

The IOLAN SDS I/O Device Server connects to a wide variety of **distributed I/O** devices. For examples [click here](#).

Universal I/O on IOLAN I/O Device Servers provides flexibility when used across a wide array of environments. Individual digital channels can be configured as either inputs or outputs. Analog Inputs can support a broad range of voltage or current type devices including industrial grade temperature sensors such as thermocouples and RTDs.

Models with integrated solid state relays can be used to control remote contact closures.

Automated response to alarm conditions

IOLAN SDS I/O Device Servers have the capability of measuring input conditions and intelligently alerting enterprise resources such as central TCP/IP based applications, Syslog, SNMP or individuals via email. By instantly generating alerts when pre-defined threshold levels have been exceeded, alarm notifications can be passed along when needed. This eliminates the packet based overheads associated with polled environments.

Rugged Industrial-Grade Design

Compact and protective metal enclosure for wall mount or DIN rail mounting environments. Industrial grade unit protection is provided through optical isolation of I/O channels of 2000 Vrms, Ethernet isolation of 1500 Vrms, open/short detection logic on RTD/Thermocouple inputs and 15,000 volts electrostatic discharge protection across all serial pins.

Advanced IP Technology

With support for Next Generation IP (IPv6) the IOLAN range provides organizations with investment protection to meet this rapidly growing standard.

Demand for IPv6, which is compatible with IPv4 addressing schemes, is driven by the need for more IP address. With the implementation and rollout of advanced cellular networks, a robust method is needed to handle the huge influx of new IP addressable devices on the Internet. In fact, the US Department of Defense has mandated that all equipment purchased be IPv6 compatible. In addition, all major Operating Systems such as Windows, Linux, Unix and Solaris, as well as routers, have built-in support for IPv6.

It is therefore important for end users and integrators to select networking equipment that incorporates the IPv6 standard. The IOLAN line with support for IPv6 already built in, is the best choice in serial to Ethernet technology.

Lifetime Warranty

The Perle IOLAN SDS is backed by the best service and support in the industry including Perle's unique lifetime warranty. Since 1976 Perle has been providing its customers with networking products that have the highest levels of performance, flexibility and quality.

Technical Specs for Perle I/O Device Servers

IOLAN SDS TD4, SDS TA4, SDS TD2R2, SDS TT4, SDS A4R2, SDS A4D2, SDS D2

Main Processor MPC852T, 66 Mhz, 87 MIPS

Memory

RAM MB	32
Flash MB	8
I/O Processor	
	ATMEG48, 16 MIPS
Network/Ethernet	
	1 x 10/100Mb RJ45
	1.5 KV magnetic isolation
I/O Connectors	
	Removable terminal blocks
Digital I/O	
	2 or 4 channels depending on model
	software selectable as inputs or outputs
	optical isolation of 2000V rms
Digital Input	
Dry Contact	Logic 0 = open. Logic 1= close to GND
Wet Contact	Logic 0 = 0-3VDC, Logic 1= 10VDC-30VDC
Digital Output	
	Open collector to 30VDC (source, sink or both)
	200 mA max load
	Digital out (DO) or pulse mode
Relay	
	Form C type SPDT
Contact rating	1A@30VDC, 0.5A @AC: 120VAC
Breakdown voltage	500 VAC (50/60 Hz)
Relay on time	7 msec; Relay off time: 3 msec.

Total switching time	10 msec.
Insulation resistance	1000 MW minimum at 500 VDC
Analog Input	
Channels	2 or 4 differential
	16-bit resolution
Input range	±150 mVDC, ±500 mVDC, ±1 VDC, ±5 VDC, ±10 VDC, 0-20 mA, 4-20 mA
Optical Isolation	3000 VDC
Fault and overvoltage protection	up to ±35 V
Sampling rate	10 samples/sec.
Input impedance	20 M Ohm
Accuracy	±0.1% or better
Zero drift	±5 µV/° C
Span drift	±25 ppm/° C
CMR @ 50/60 Hz	90 dB min
Thermocouple Input	
Types	J, K, T, E, R, S, B
Isolation voltage	2000 VDC
Sampling rate	10 samples/sec.
Accuracy	±0.15% or better
Zero drift	±5 µV/° C
Span drift	±25 ppm/° C

CMR @ 50/60 Hz	130 dB
RTD (Resistance Temperature Detector)	
Channels	4 differential inputs
Input type	PT100, PT1000, Ni 518
Optical Isolation	2000 VDC
Sampling rate	10 samples/sec
Accuracy	±0.05% or better
Zero drift	±2.5 µV/° C
Span drift	±25 ppm/° C
CMR @ 50/60 Hz	130 dB
Protocols	
	IPV6, IPV4, TCP/IP, Reverse SSH, SSH, SSL, IPsec/IPv4, IPsec/IPv6, CIDR, RIPV2/MD5, ARP, RARP, UDP, UDP Multicast, ICMP, BOOTP, DHCP, TFTP, SFTP, SNTP, Telnet, raw, reverse Telnet, MODBus/TCP, LPD, RCP, DNS, WINS, HTTP, HTTPS, SMTP, SNMPV3, PPP, PAP/CHAP, SLIP, CSLIP
Security and Authentication	
	SSHV1 and SSHV2
	SSL V3.0/TLS V1.0, SSL V2.0
	SSL Server and SSL client mode capability
IPSec	NAT Traversal, ESP authentication protocol
Encryption	AES (256/192/128), 3DES, DES, Blowfish, CAST128, ARCFOUR(RC4), ARCTWO(RC2)
Hashing Algorithms	MD5, SHA-1, RIPEMD160, SHA1-96, and MD5-96
Key exchange	RSA, EDH-RSA, EDH-DSS, ADH

X.509 Certificate verification	RSA, DSA
	Certificate authority (CA) list
	Local database
	RADIUS Authentication and Accounting
	TACACS+, LDAP, NIS, Kerberos
	RSA SecureID-agent or via RADIUS
	IP Address filtering
	Disable unused daemons
Management	
	Web browser or secure web browser via https (SSL/TLS)
	Windows Server 2003/2008 MS - SAC : GUI access to text-based Special Administrative Console
	Perle DeviceManager software to manage single or multiple device servers
	CLI – Telnet, SSH, shared console port
	Menu
	SNMP, MIB II, Perle MIB, read and write capabilities
	SYSLOG
	Easy Configuration Wizard
Failsafe mode	Default outputs if loss of communication occurs
Port Buffering	256k local, SYSLOG, NFS or 3DES encrypted to NFS server
	Set a personalized factory default for IOLANs
Serial Port (S)	
	Software selectable EIA/RS-232/422/485
	DB9M connector
	Full modem and hardware flow control on RS-232

50bps to 230Kbps for EIA-232

up to 230Kbps for EIA-422/485

Customizable baud rate support for unique speed requirements

SUN Break Safe

Full bidirectional modem support

15Kv ESD protection on all signals

EIA 232 full duplex

EIA 422 full duplex

EIA 485 4 wire, full duplex

EIA 485 2 wire, half duplex, with echo

EIA 485 2 wire, half duplex, without echo

Indicators

Power/Ready

Network Link activity

Serial Transmit and Receive data LEDs

Dimensions, Weight

Dimensions (L x W x H): 12.7 x 9.2 x 4.5 (cm)

Weight 0.5 kg

Power

9-30V DC on terminal blocks.

Optional AC adapters available from Perle (barrel connector will need to be removed)

p/n 04030674 (USA), 04030671 (UK), 04030672 (EU)

TruePort: Fixed TTY/COM port emulation software.

[TruePort com/tty redirector](#) for serial based applications on Windows, Linux, Solaris, SCO, HP UX, NCR UNIX and AIX. Perle supports the most comprehensive driver set in the industry. For a complete list of all the latest drivers click [here](#).

Environmental

Operating Temperature -40°C to 74°C, -40°F to 165°F

Storage Temperature -40°C to 85°C, -40°F to 185°F

Reach, RoHS and WEEE Compliant

Approvals

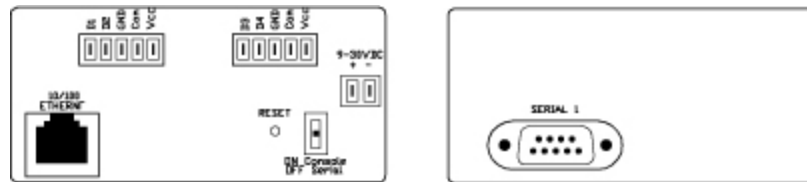
FCC Part 15A, CE, CAN/CSA 22.2, UL/CN 60950, EN 55022 Class A, EN 55024 Class A, CFR 47, ICES-003, IEC 60950-1

Warranty

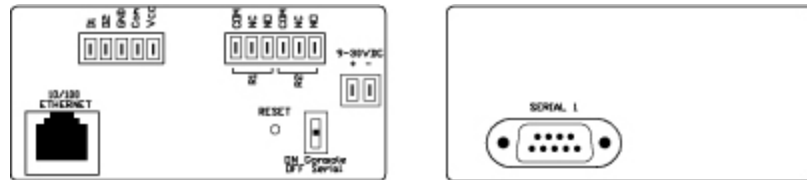
Limited Lifetime Warranty

Line Art

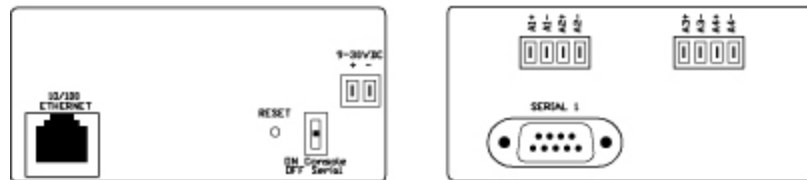
IOLAN SDS1 TD4 – 4 Digital I/O and 1 RS-232/422/485 Serial Port



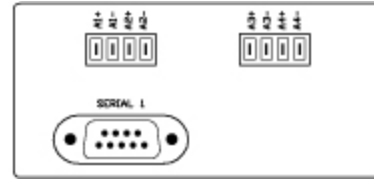
IOLAN SDS1 TD2R2 – 2 Digital I/O, 2 Relay outputs and 1 RS-232/422/485 Serial Port



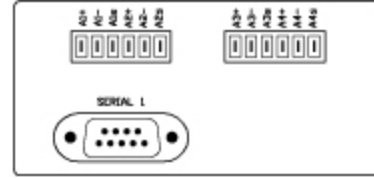
IOLAN SDS1 TA4 – 4 Analog Inputs and 1 RS-232/422/485 Serial Port



IOLAN SDS1 TT4 – 4 Thermocouple/RTD sensor inputs and 1 RS-232/422/485 Serial Port



IOLAN SDS1 TA4R2 – 4 Analog inputs and 2 Relay Outputs and 1 RS-232/422/485 Serial Port



IOLAN SDS1 TA4D2 – 4 Analog inputs and 2 Digital I/O and 1 RS-232/422/485 Serial Port

