Industrial RS232/RS422/RS485 Serial Device Server

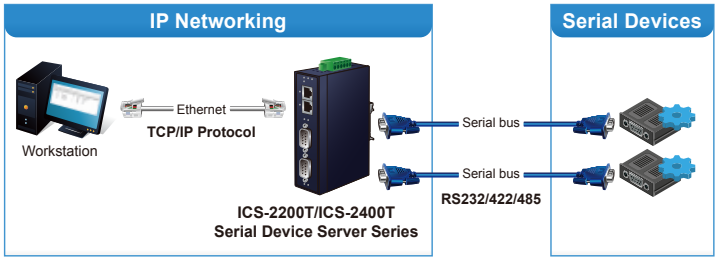


Cost-effective Solution for RS232/422/485 Serial-to-Industrial Ethernet Application

PLANET ICS-2x00T Serial Device Server series is specially designed to convert RS232, RS422 or RS485 serial communication to Industrial Fast Ethernet networking so as to extend the network distance efficiently and inexpensively. There are two 10/100BASE-TX RJ45 ports available in the ICS-2x00T series for your network needs. The ICS-2x00T series is a time-saving and cost-effective solution for users and system integrators to quickly transform their serial devices into the Ethernet network with no need of replacing the existing serial devices and software system.



Convert Multiple Serial Devices to IP Networking



Remote Management

As the ICS-2x00T series provides an easy serial-to-Ethernet connectivity and connection to a TCP/IP network, the remote network system can thus be managed efficiently via its Web, telnet and VCOM management interfaces. It supports both application and serial operation modes for alarm or IP address connection, which saves the network administrator's time in detecting and locating network problems without visual inspection of the cabling and devices. Multiple connection options are available for large networking environment as well.

Serial Interface

- Two/four DB9 interfaces support RS232, 2-wire RS485, 4-wire RS485 and RS422 operation
- Asynchronous serial data rates up to 921600bps
- Data mode including VCOM, RFC2217, TCP Server, TCP Client, UDP, Remote Pair and Serial Telnet modes

Ethernet Interface

- 2-port 10/100BASE-TX RJ45 interface with auto MDI/MDI-X function
- Ethernet ports support Ethernet switch or cascading operation for easy wiring

Management

- IPv4 and IPv6 dual stack management
- Remote Management Interfaces
  - IP-based Web management
  - Telnet console management
  - Windows-based VCOM utility supports searching, monitoring and configuration setting
- IP NTP (Network Time Protocol) and DNS management
- Standard TCP/IP interface and versatile operation modes
- Software Protocol supports ARP, ICMP, TCP/IP, UDP, HTTP server, DHCP client, Telnet server/client
- Serial Operation mode selected via management interface
- Pair Connection mode for connecting two serial devices over a network
- Allows a max. of 4 hosts to be accessed as TCP client mode
- Firmware upgrade via HTTP protocol
- Accessible IP security control to prevent illegal users
- Event notification
  - Remote Syslog server
  - SNMP trap
  - Built-in buzzer
  - Relay output alarm
  - Digital Output (ICS-2400T)
- DHCP client for IP address assignment
- PLANET Smart Discovery utility automatically finds the client devices on the network



Stable Performance under Difficult Environments

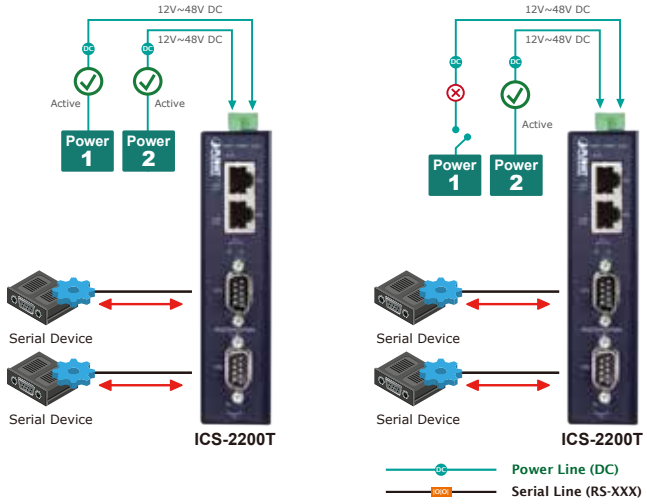
The ICS-2x00T series provides a high level of immunity against electromagnetic interference and heavy electrical surges which are usually found on plant floors or in curbside traffic control cabinets. Its operating temperature ranging from -40 to 75 degrees C allows the ICS-2x00T series to be placed in almost any difficult environment.

The ICS-2x00T series, equipped with compact IP30/IP40 standard metal case, allows either DIN-rail or wall mounting for efficient use of cabinet space. The ICS-2x00T series also provides an integrated power supply source with a wide range of voltages (12 to 48V DC) ideally suitable for worldwide operation with high availability applications requiring dual or backup power inputs.

Dual Power Input for High Availability Network System

The ICS-2x00T series features a strong dual power input system with wide-ranging voltages (12V~48V DC) incorporated into customer's automation network to enhance system reliability and uptime. In the example below, when Power Supply 1 fails to work, the hardware failover function will be activated automatically to keep powering the ICS-2x00T series via Power Supply 2 without any break of operation.

Non-stop Ethernet Service with Dual Power Input & Auto Failover



Effective Alarm Alert for Better Protection

The ICS-2x00T series comes with a Fault Alarm feature which can alert the users when there is something wrong with the Serial Device Server. With this ideal feature, the users would not have to waste time finding where the problem is. It will help to save time and human resource. The ICS-2x00T series provides event alert function to help to diagnose the abnormal device owing to whether or not there is a break of the network connection, or the rebooting response.

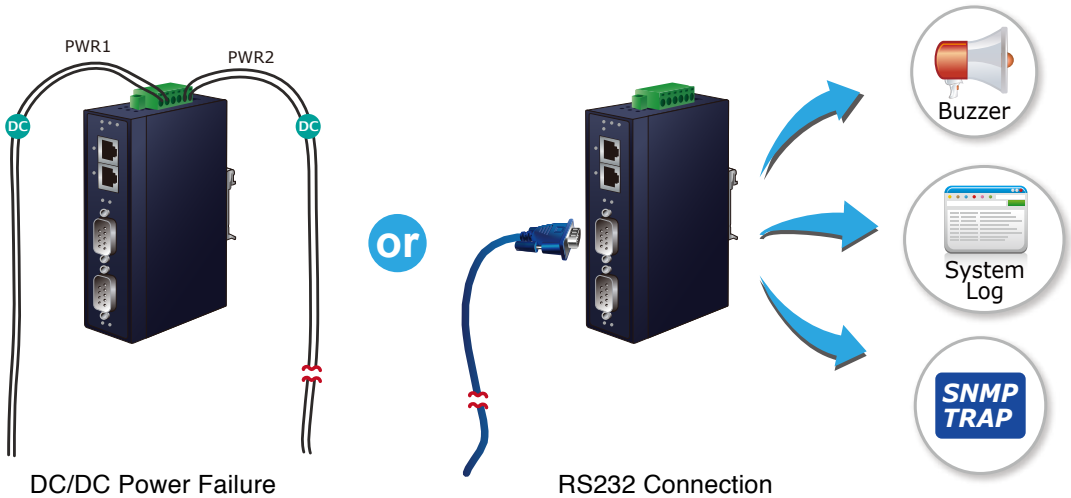
Industrial Case and Installation

- IP30 metal case (ICS-2200T)
- IP40 metal case (ICS-2400T)
- DIN-rail and wall-mount designs
- Redundant power design
  - 12 to 48V DC, redundant power with polarity reverse protect function
- Supports 6000 VDC Ethernet ESD protection
- -40 to 75 degrees C operating temperature
- Free fall, shock-proof and vibration-proof for industries
- Supports extensive LED indicators for network diagnosis
- Reset button for reset to factory default

Digital Input and Digital Output (ICS-2400T)

- 2 Digital Input (DI)
- 2 Digital Output (DO)
- Integrate sensors into auto alarm system
- Transfer alarm to IP network via email and SNMP trap

Fault Alarm Feature



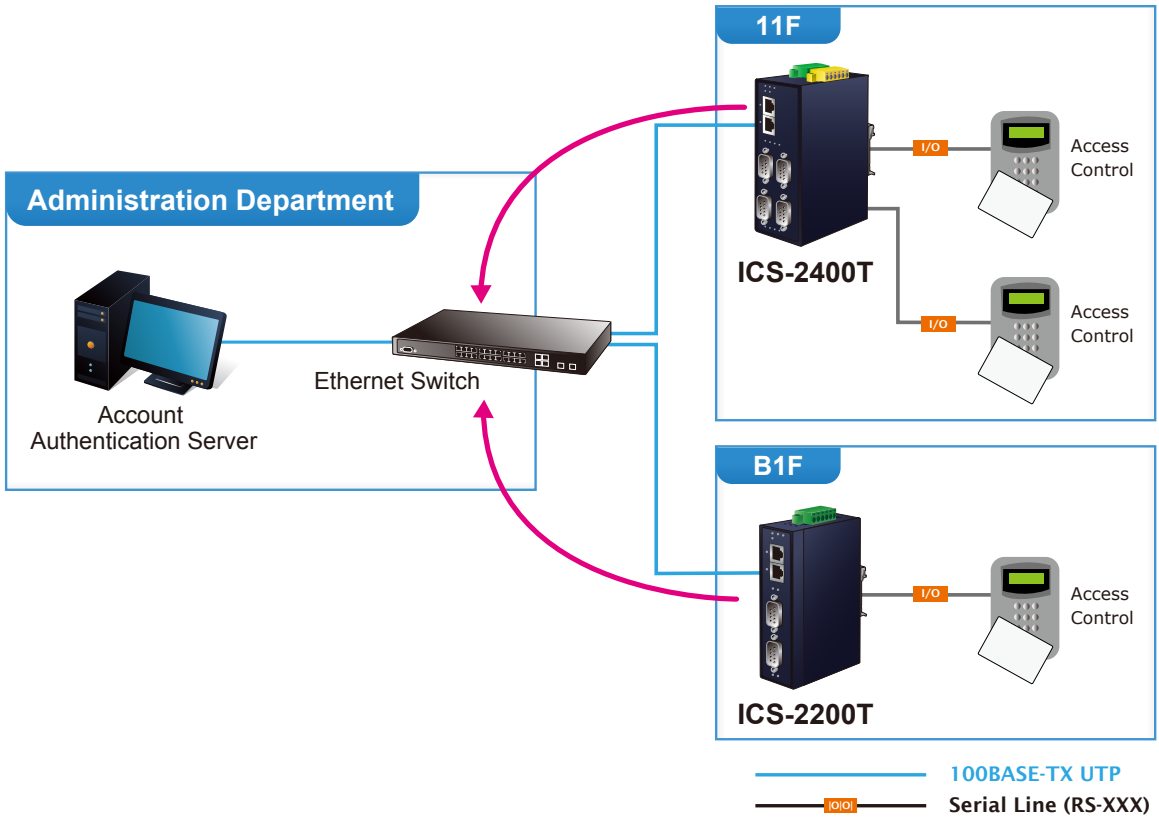
Digital Input and Digital Output for External Alarm

With digital input and digital output on its front panel, an external alarm can help users via the digital input to detect and log external device status (such as door intrusion detector), and then immediately send an event alarm to the administrator. The digital output can be used to alarm the administrator if the ICS-2400T serial port shows DCD, changed DSR or power failure.

Applications

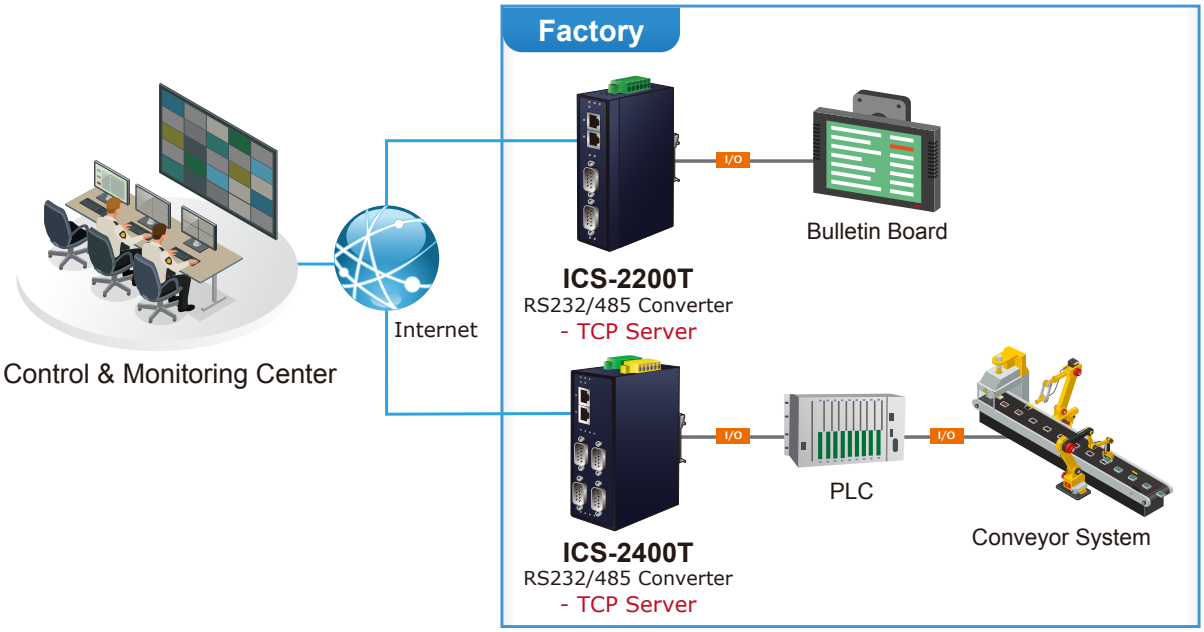
Access Control System – Traditional System Application

Most of the enterprises and government use access control plate and Mifare or RFID to authorize entrance identity. Traditionally, the access control machines use RS232 or RS485 serial interface with their cables connecting to login server. By applying the ICS-2x00T Serial Device Server series, the access control machine is able to extend the network over longer distances via Ethernet interfaces. In addition, the ICS-2x00T series can be linked to an xDSL router to get the internet access capability so that the access control can be set and monitored over the internet.



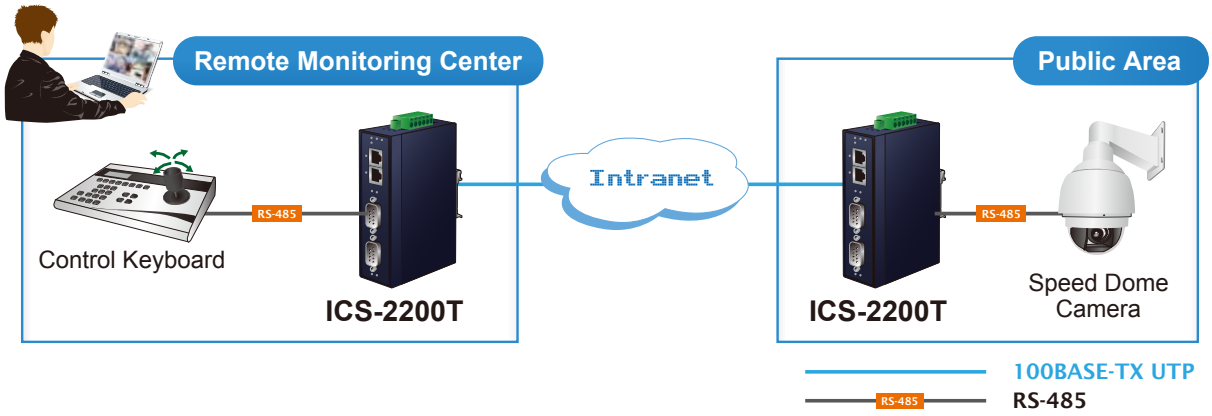
Process Control

To monitor, configure and manage the robotic conveyer including other production machines, PLC (Programmable Logical Control) is required to drive the above manufacturing process. The ICS-2x00T series can be set to the TCP Server mode and connected to the PLC. Thus, the administrator can configure and set command settings through Fast Ethernet intranet to remotely control the PLC, without having to stand by the I/O machine.

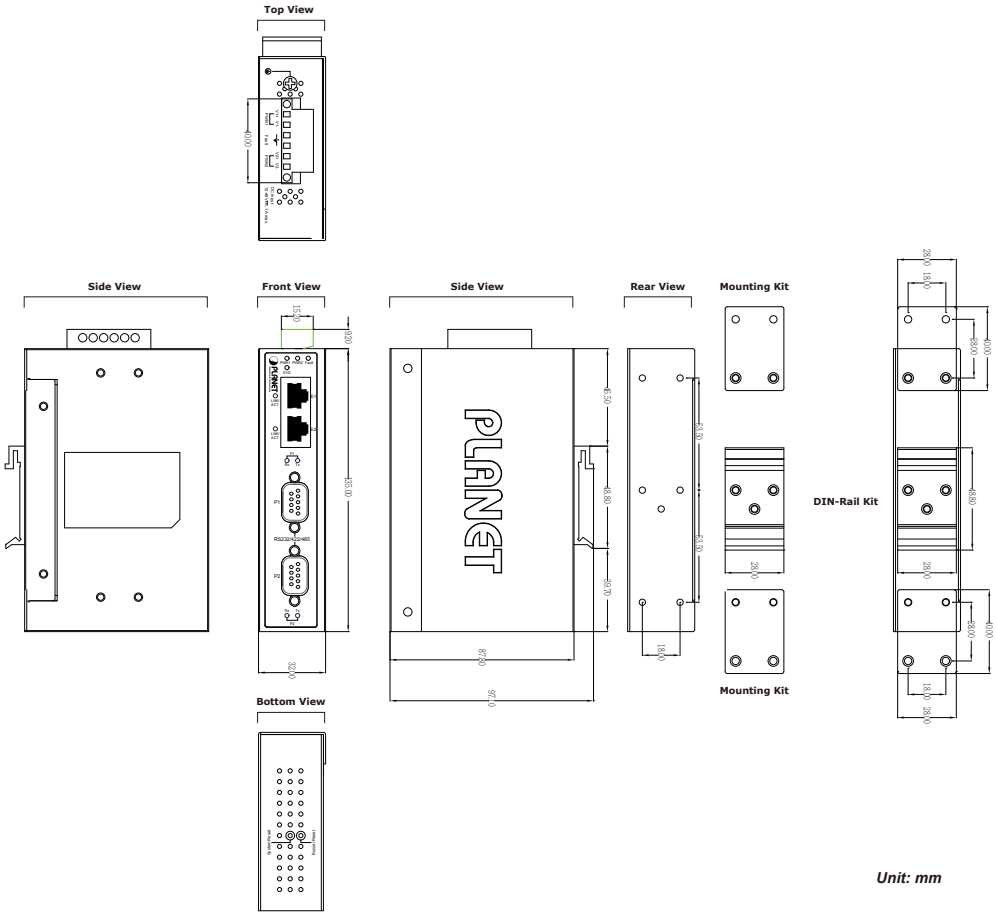


Surveillance Motion Control – Pair Connection Mode

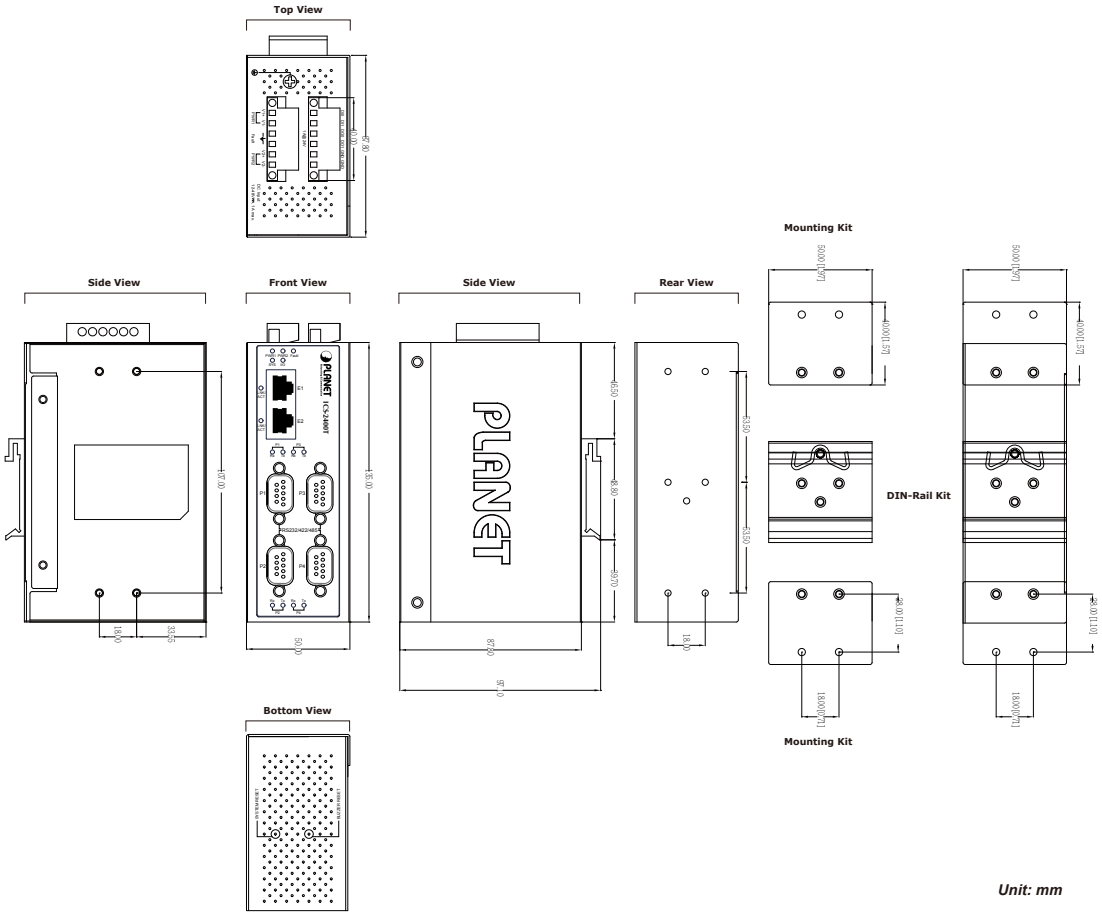
Using pair connection mode via the fiber optical patch cord, the ICS-2x00T series can extend the distance of the deployed devices via RS232, RS422 and RS485 interfaces, making the remote management of these devices from the monitoring center easier and efficient.



Drawing

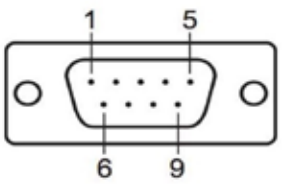


Unit: mm



Unit: mm

Specifications

Product	ICS-2200T	ICS-2400T
Serial Interface		
Serial Ports	2 x DB9 male	4 x DB9 male
Serial Standards	RS232/RS422/4-wire RS485/2-wire RS485	
Baud Rate (Data Rate)	50bps to 921Kbps	
Data Bits	5, 6, 7, 8	
Parity Type	Odd, Even, None, Space, Mark	
Stop Bit	1, 1.5, 2	
Flow Control	RTS/CTS and DTR/DSR (RS232 only) XON/XOFF	
Signals	RS232: TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND RS422: Tx+, Tx-, Rx+, Rx-, GND 4-wire RS485: Tx+, Tx-, Rx+, Rx-, GND 2-wire RS485: Data A (+), Data B (-), GND	
Pin Assignment		
Serial Line Protection	2KV isolation protection 1.5KV (level 2) surge protection 15KV ESD protection	
Ethernet Interface		
Ethernet Ports	2 x RJ45	2 x RJ45
Standard	10/100BASE-TX	
Distance	100m	
Switch Architecture	Store-and-Forward-	
Address Table	1K	
ESD Protection	6KV	
Surge Protection	2KV	
Hardware		
Installation	DIN-rail kit and wall-mount ear	
Enclosure	IP 30 metal	IP40 metal
Dimensions (W x D x H)	32 x 87.8 x 135 mm	50 x 87 x 135 mm
Weight	477g	625g
LED Indicators	System: Power 1, Power 2, Fault, SYS TP Port: Link/Active Serial Port: Tx and Rx	System: Power 1, Power 2, Fault, SYS, I/O TP Port: Link/Active Serial Port: Tx and Rx
Power Requirements	12~48V DC, redundant power with polarity reverse protection function	
Power Consumption	Full Loading 12VDC: 0.326A (3.8 watts) 24VDC: 0.176A (4.2 watts) 48VDC: 0.114A (5.4 watts)	Full Loading 12VDC: 0.419A (5.1 watts) 24VDC: 0.227A (5.4 watts) 48VDC: 0.136A (6.5 watts)
Connector	Removable 6-pin terminal block for power input Pin 1/2 for Power 1, Pin 3/4 for fault alarm, Pin 5/6 for Power 2	
DI and DO	N/A	2 Digital Input (DI): Level 0: -24V~2.1V (±0.1V) Level 1: 2.1V~24V (±0.1V) Input Load to 24V DC, 10mA max. 2 Digital Output (DO): Open collector to 24V DC, 100mA max.

Male DB9	*Pin*	*RS232*	*RS422 RS485-4W*	*RS485-2W*
	1	DCD	TxD+	--
	2	RxD	TxD-	--
	3	TxD	RxD-	Data-
	4	DTR	RxD+	Data+
	5	GND	GND	GND
	6	DSR	--	--
	7	RTS	--	--
	8	CTS	--	--
	9	--	--	--

Alarm	Provides one relay output for power failure Alarm relay current carry ability: 1A @ DC 24V
Reset Button	< 5 sec: System reboot > 5 sec: Factory default
Management	
Management Interfaces	Web management Telnet Console management Windows-based VCOM Utility management PLANET Smart Discovery Utility
IP version	IPv4 and IPv6
Operation Mode	TCP Server TCP Client UDP Client Virtual COM RFC2217 Telnet Server Pair Connection – Remote (Slave) Pair Connection – Local (Master)
Virtual COM Utility Platform Supports	Windows Base Only: Windows XP Windows Server 2003 Windows 7 Windows Server 2008 Windows 8 (Must install the latest version of WinPcap) Windows Server 2012 (Must install the latest version of WinPcap) Windows 10
Alert	Built-in buzzer and RTC
Security	Allow max. 4 accessible IP address hosts/ranges
SNMP MIBs	RFC1213 MIB-II RFC1317 RS232-like MIB
Standards Conformances	
Regulatory Compliance	FCC Part 15 Class A, CE Certification Class A
Stability Testing	IEC60068-2-32 (Free fall) IEC60068-2-27 (Shock) IEC60068-2-6 (Vibration)
Standards	IEEE 802.3 10BASE-T IEEE 802.3u 100BASE-TX IEEE 802.3x flow control and back pressure RFC 768 UDP RFC 793 TFTP RFC 791 IP RFC 792 ICMP RFC 854 Telnet RFC 958 NTP RFC 1591 DNS (client only) RFC 1908 SNMPv2c RFC 2068 HTTP RFC 2131 DHCP Client RFC 2732 Format for Literal IPv6 Addresses in URL's RFC 3315 DHCPv6 Client RFC 3513 IPv6 Addressing Architecture RFC 3596 DNSv6 RFC 4443 ICMPv6 EIA/TIA RS232/422/485
Regulatory Approval	RoHS
Environment	
Operating Temperature	-40 ~ 75 degrees C
Storage Temperature	-40 ~ 85 degrees C
Humidity	5 ~ 95% (non-condensing)

Ordering Information

ICS-2200T	Industrial 2-port RS232/RS422/RS485 Serial Device Server w/ 2KV signal isolation
ICS-2400T	Industrial 4-port RS232/RS422/RS485 Serial Device Server w/ 2KV signal isolation

Related Products

ICS-2102	Industrial RS232/RS422/RS485 over 100BASE-FX Media Converter (Fiber, MM/2km)
ICS-2102S15	Industrial RS232/RS422/RS485 over 100BASE-FX Media Converter (Fiber, SM/15km)
ICS-2105A	Industrial RS232/RS422/RS485 over 100BASE-FX Media Converter (Fiber, vary on SFP module)
ICS-100	RS232/422/485 over Fast Ethernet Media Converter (RJ-45) – 100m
ICS-102	RS232/422/485 over Fast Ethernet Media Converter (SC, MM) – 2km
ICS-102S15	RS232/422/485 over Fast Ethernet Media Converter (SC, SM) – 15km
ICS-105A	RS232/422/485 over Fast Ethernet Media Converter (SFP) – vary on module

PLANET Technology Corporation

11F., No.96, Minquan Rd., Xindian Dist., New Taipei City 231, Taiwan (R.O.C.)

Tel: 886-2-2219-9518 Fax: 886-2-2219-9528

Email: sales@planet.com.tw www.planet.com.tw

PLANET reserves the right to change specifications without prior notice. All brand names and trademarks are property of their respective owners. Copyright © 2019 PLANET Technology Corp. All rights reserved.