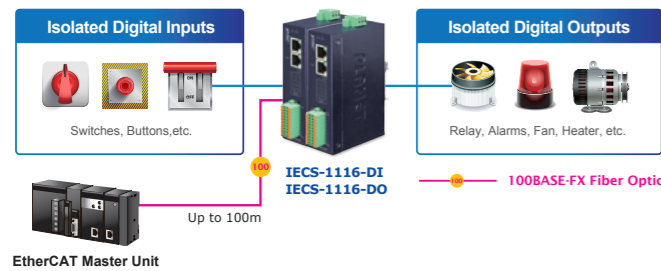## Industrial EtherCAT Slave I/O Modules

Powering the Digital Transformation with EtherCAT

PLANET IECS-1116-DI and IECS-1116-DO are industrial EtherCAT slave I/O modules equipped with the EtherCAT protocol for today's distributed industrial applications. The IECS Series provides high-density digital input/output channels and is protected with 3750V DC isolation. Its compact size and DIN-rail mounting make installation in a cabinet easy. Pluggable terminal blocks and LED indicator help users to maintain and set up their system.

Isolated Digital Inputs — Switches, Buttons, etc.

IECS-1116-DI / IECS-1116-DO

Isolated Digital Outputs — Relay, Alarms, Fan, Heater, etc.

100BASE-FX Fiber Optic

EtherCAT Master Unit — Up to 100m

EtherCAT Slave		
Model	IECS-1116-DI	IECS-1116-DO
Product Image		
Hardware	10/100/1000BASE-T	2 one IN, one OUT	
	DI	16 Dry (Source), Wet (Sink/Source)	-
	DO	-	16 Open Collector (Sink) 700mA/Channel
Power	Inputs	9V~48VDC	
	Connector	3-pin terminal block	
Mechanical	Dimensions (W x D x H)	135 x 86 x 32 mm	
	Mounting	DIN-rail, wall-mountable	
Environment	Operating Temperature	-40~75 degrees C	
	Operating Humidity	10~95% (non-condensing)	
Protocol		EtherCAT	

Serial over Cellular Gateways

Making Network Connection Easy with 4G LTE Cellular Gateway

PLANET ICG-2420 and ICG-2510 Series are reliable, secure and high-bandwidth communications industrial-grade cellular gateways for demanding mobile applications, M2M (machine-to-machine) and IoT deployments. They feature 4G LTE (Long Term Evolution), 2.4G/5G Wi-Fi, Ethernet ports, serial console port, DI and DO interfaces, and VPN technology bundled in a compact yet rugged metal case. They establish a fast cellular connection between Ethernet and serial port equipped devices.

Industrial Cellular Gateways				
Model	ICG-2420-LTE	ICG-2420G-LTE	ICG-2510W-LTE	ICG-2510WG-LTE
Product Image				
Hardware LAN	3 10/100BASE-TX		5 10/100/1000BASE-T	
WAN	1	1	1	1
WLAN	-	-	2.4G/5G	2.4G/5G
DI & DO	2 DI & 1 DO	2 DI & 1 DO	2 DI & 1 DO	2 DI & 1 DO
GPS	-	●	-	●
COM Port	2*RS232/1*RS485	2*RS232/1*RS485	1*RS232/RS485	1*RS232/RS485
Multi Band Support EU Model	FDD LTE B1/B3/B5/B7/B8/B20 (2100/1800/850/2600/900/800) TDD LTE B38/B40/B41(2600/2300/2500) WCDMA B1/B5/B8(2100/850/900) GSM/EDGE B3/B8 (1800/900)			
US Model	FDD LTE B2/B4/B12 (1900/AWS1700/700) WCDMA B2/B4/B5 (1900/AWS1700/850)		FDD LTE B2/B4/B12 (1900/AWS1700/700) WCDMA B2/B4/B5 (1900/AWS1700/850)	
LTE	20MHz bandwidth: 150Mbps (DL), 50Mbps (UL)		20MHz bandwidth: 100Mbps (DL), 50Mbps (UL)	
Power Inputs	10~32V DC		9~36V DC	
Connector	3-pin terminal block		6 pin 3.5mm terminal block	
Consumption	7 watts		7 watts	
Mechanical Dimensions (W x D x H)	60 x 106 x 110 mm		115.7 x 133 x 45 mm	
Enclosure	IP40 aluminum		IP30 metal	
Mounting	DIN rail kit		DIN rail	
Environment Operating Temperature	-20 ~ 70 degrees C		-35 ~ 75 degrees C	
Operating Humidity	5 ~ 95% (non-condensing)		95% (non-condensing)	
Regulatory Emissions	FCC Part 15 Class A, CE		FCC Part 15 Class A, CE	
Stability	Static Route, Open VPN, DDNS, TR069, IP Filter, SMTP		Static Route, Open VPN, DDNS, TR069, IP Filter, SMTP	
Management Interface	Console, Web, telnet and SSHv2		Console, Web, telnet	
SNMP	v1, v2c, v3 and trap		v1, v2c, v3 and trap	
System Log	System Log and Remote Syslog		System Log and Remote Syslog	

PLANET
Networking & Communication

Industrial Automation
Realizing Connectivity to the IoT

RS232/RS422/RS485 Serial Device Servers
► ICS-2100T / ICS-2105AT / ICS-2200T / ICS-2400T ICS-2102T / ICS-2102TS

IPv4 IPv6 | WEB Management | VCOM Utility | DI/DO | Isolation | 75C -40C

RS232/RS422/RS485 Modbus Gateway
► MG-110 / MG-115AT / MG-120

10M 100M | WEB Management | RS232 422/485 | Modbus RTU ASCII | Modbus TCP

Industrial EtherCAT Slave I/O Modules
► IECS-1116-DI / IECS-1116-DO

75C -40C | Anti-Surge | Distributed Clocks | 9-48V DC | EtherCAT

Serial over Cellular Gateways
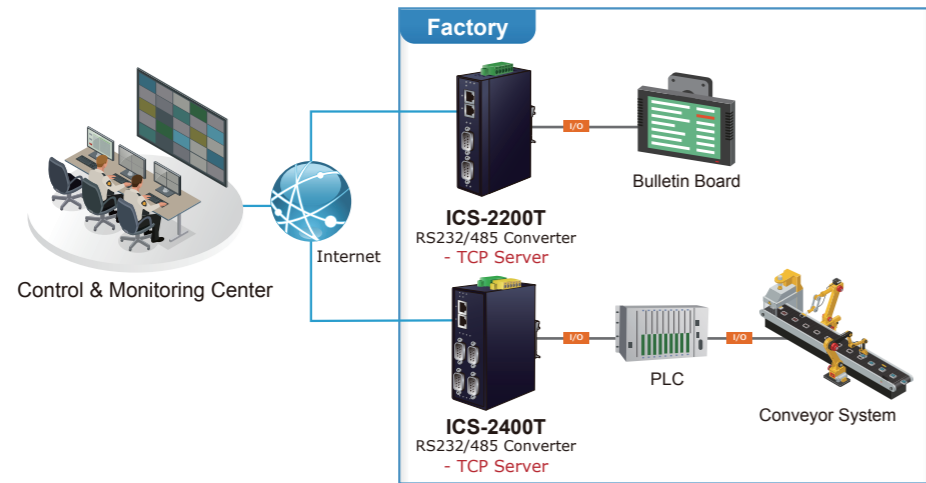► ICG-2510WG-LTE

4G LTE | Dual SIMs | Wi-Fi | VPN | Modbus TCP | GPS

RS232/RS422/RS485 Serial Device Servers

Industrial Automation and Data Exchange for Industrial 4.0 Infrastructure

PLANET ICS Serial Device Server Series is specially designed to convert RS232, RS422 or RS485 serial communication to IoT and TCP/IP networking. It makes the connected legacy serial devices become IP-based facilities and is able to connect to the industrial Ethernet network allowing serial and Ethernet communications to connect efficiently and inexpensively. The ICS Series is a time-saving and cost-effective solution with no need of replacing the existing serial equipment and software system.

RS232/RS422/RS485 Modbus Gateways

Economical Solution for Industrial Modbus TCP/RTU/ASCII Network Integration

To fulfill the demand of automation and data exchange for industrial 4.0 infrastructure, PLANET MG and IMG Modbus Gateway Series can act as a conversion bridge between the RS233/422/485 equipment with the Modbus RTU/ASCII Protocol and the administrator workstations that run the Modbus TCP/IP Protocol.

The advantage of having the MG and IMG Series is to assist users to build an industrial environment between the Modbus TCP/IP Protocol and the Modbus RTU/ASCII Protocol easily, thus offering an application solution to the industrial control equipment without Ethernet ports.

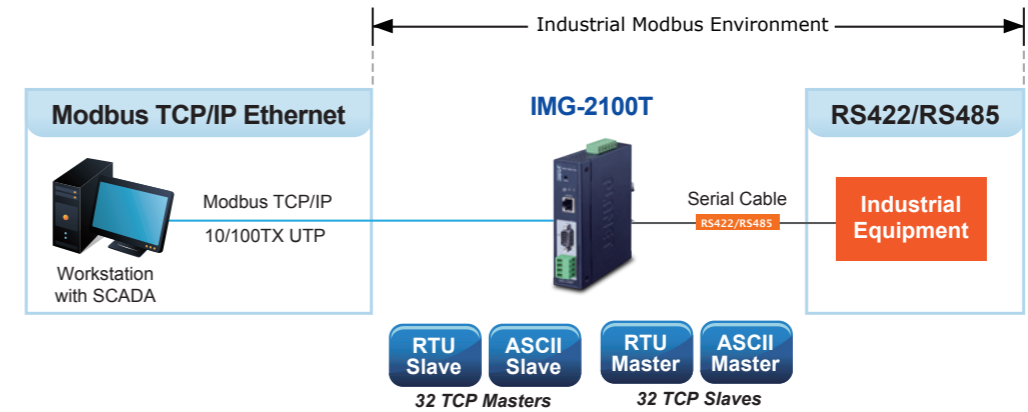|		Standard Serial Device Servers			Industrial Serial Device Servers				
Model		ICS-100 ICS-105A	ICS-110 ICS-115A	ICS-120	ICS-2100 ICS-2105A	ICS-2100T ICS-2105AT	ICS-2102T ICS-2102TS	ICS-2200T	ICS-2400T
Product Image									
Serial Port	Interface	1 x RS232/422/485	1 x RS232/422/485	1 x RS232/422/485	1 x RS232/422/485	1 x RS232/422/485	1 x RS232/422/485	2 x RS232/422/485	4 x RS232/422/485
	Connector	1 x DB9	1 x DB9	2 x DB9	1 x DB9 for RS232 1 x 4-pin terminal block for RS422/485			2 x DB9	4 x DB9
	Baud Rate	100bps to 921kbps	50bps to 921kbps	50bps to 921kbps	100bps to 921kbps	50bps to 921kbps		50bps to 921kbps	
	Data Bits	5,6,7,8	5,6,7,8	5,6,7,8	5,6,7,8	5,6,7,8	5,6,7,8	5,6,7,8	5,6,7,8
	Stop Bits	1,1.5,2	1,1.5,2	1,1.5,2	1,1.5,2	1,1.5,2	1,1.5,2	1,1.5,2	1,1.5,2
	Flow Control	None, RTS/CTS, Xon/Xoff			None, RTS/CTS, Xon/Xoff			None, RTS/CTS, Xon/Xoff	
	Isolation	-	-	-	-	-	-	2KV	2KV
	Operation Mode	Virtual COM port, TCP server, UDP server, UDP client, pair connection	Virtual COM port, TCP server, UDP server, UDP client, pair connection, RFC2217, Telnet server, Modbus converter	Virtual COM port, TCP server, UDP server, UDP client, pair connection	Virtual COM port, TCP server, UDP server, UDP client, pair connection, RFC2217, Telnet server, Modbus converter				
LAN Port	Standard	ICS-100/ICS-110/ICS-120: 10/100BASE-TX ICS-105A/ICS-115A: 100BASE-FX			ICS-2100/ICS-2100T/ICS-2200T/ICS-2400T: 10/100BASE-TX ICS-2105A/ICS-2105AT/ICS-2102T/ICS-2102TS: 100BASE-FX				
	Connector	ICS-100: RJ45 ICS-105A: SFP	ICS-110: RJ45 ICS-115A: SFP	RJ45	ICS-2100: RJ45 ICS-2105A: SFP	ICS-2100T: RJ45 ICS-2105AT: SFP	Duplex SC	2 x RJ45	2 x RJ45
	Max. Distance	ICS-100/ICS-110 : 100m ICS-105A/ICS-115A: May vary on module		100m	ICS-2100/ICS-2100T: 100m ICS-2105A/ICS-2105AT: May vary on module		ICS-2102T: 2km ICS-2102TS: 30km	100m	100m
	Protection	1KV ESD	6KV ESD	6KV ESD	1KV ESD	6KV ESD	6KV ESD	6KV ESD	6KV ESD
Power	Power Input	DC 5V	DC 5V	DC 5V	Dual DC 12-48V	Dual DC 9-48V or AC 24V		Dual DC 12-48V	
	Power Interface	DC jack	DC jack	DC jack	Removable terminal block			Removable terminal block	
	Power Consumption	5.5 watts max.	5.5 watts max.	5.5 watts max.	10.1 watts max.	5 watts max.	5 watts max.	5.4 watts max.	6.5 watts max.
Mechanical	Dimensions (W x D x H)	94 x 70 x 26 mm			32 x 87 x 135 mm				56 x 87 x 135 mm
	Enclosure	metal	metal	metal	IP30 metal	IP30 metal	IP30 metal	IP30 metal	IP40 metal
	Installation	Wall-montable, chassis installation		Wall-mountable	Wall-mountable, DIN-rail mounting				
Environment	Operating Temperature	0~50 degrees C	-10~60 degrees C	-10~60 degrees C	-10~60 degrees C	-40~75 degrees C	-40~75 degrees C	-40~75 degrees C	-40~75 degrees C
Regulatory	Emissions	FCC, CE	FCC, CE	FCC, CE	FCC, CE	FCC, CE	FCC, CE	FCC, CE	FCC, CE
	Stability	-	-	-	IEC60068-2-32 (free fall), IEC60068-2-27 (shock), IEC60068-2-6 (vibration)				
Management	Interface	IPv4 Web management	IPv4/IPv6 Web, telnet and SNMP management	IPv4 Web management	IPv4/IPv6 Web, telnet and SNMP management				
	Utility	VCOM utility, PLANET Smart Discovery			VCOM utility, PLANET Smart Discovery				

		Modbus Gateway		Industrial Modbus Gateway					
Model		MG-110 MG-115A	MG-120	IMG-110T	IMG-120T	IMG-2100T IMG-2105AT	IMG-2102T IMG-2102TS	IMG-2200T	IMG-2400T
Product Image									
Serial Port	Interface	1 x RS232/422/485		1 x RS422/485	2 x RS422/485	1 x RS232/422/485	1 x RS232/422/485	2 x RS232/422/485	4 x RS232/422/485
	Connector	1 x DB9	2 x DB9	1 x 5-pin terminal block	2 x 5-pin terminal block	1 x DB9 for RS232 1 x 4-pin terminal block for RS422/485		2 x DB9	4 x DB9
	Baud Rate	50bps to 921kbps		300bps to 115200bps		50bps to 921kbps			
	Priority Type	None, Odd, Even, Space, Mark				None, Odd, Even, Space, Mark			
	Isolation	-	-	-	-	-	-	2KV	2KV
	Multi-master and Multi-drop	Master mode: 32 TCP slaves Slave mode: 32 TCP masters		Master mode: 32 TCP slaves Slave mode: 16 TCP masters		Master mode: 32 TCP slaves Slave mode: 32 TCP masters		Master mode: 32 TCP slaves Slave mode: 32 TCP masters	
	Operation Mode	Modbus RTU Master/ Modbus RTU Slave/ Modbus ASCII Master/ Modbus ASCII Slave							
LAN Port	Standard	MG-110/MG-120: 10/100BASE-TX MG-115A: 100BASE-FX		10/100BASE-TX		IMG-2100T/IMG-2200T/IMG-2400T: 10/100BASE-TX IMG-2105AT/IMG-2102T/IMG-2102TS: 100BASE-FX			
	Connector	MG-110: RJ45 MG-115A: SFP	RJ45	1 x RJ45	1 x RJ45	IMG-2100T: RJ45 IMG-2105AT: SFP	Duplex SC	2 x RJ45	2 x RJ45
	Max. Distance	MG-110/MG-120: 100m MG-115A: May vary on module		100m	100m	IMG-2100T: 100m IMG-2105AT: May vary on module	IMG-2102T: 2km IMG-2102TS:30km	100m	100m
	Protection	6KV ESD	6KV ESD	1KV ESD	1KV ESD	6KV ESD	6KV ESD	6KV ESD	6KV ESD
Power	Power Input	DC 5V	DC 5V	DC 9-48V	DC 9-48V	Dual DC9-48V or AC 24V		Dual DC 12-48V	
	Power Interface	DC jack	DC jack	Removable terminal block		Removable terminal block			
	Power Consumption	5.5 watts max.		1.61 watts max.	2 watts max.	5 watts max.	5 watts max.	5.4 watts max.	6.5 watts max.
Mechanical	Dimensions (W x D x H)	94 x 26 x 70 mm		69 x 22 x 100 mm		32 x 87 x 135 mm			56 x 87 x 135 mm
	Enclosure	metal	metal	IP40 metal	IP40 metal	IP30 metal	IP30 metal	IP30 metal	IP40 metal
	Installation	Wall-montable, chassis installation	Wall-mountable	Wall-mountable	Wall-mountable	Wall-mountable, DIN-rail mounting			
Environment	Operating Temperature	-10~60 degrees C		-40~75 degrees C	-40~75 degrees C	-40~75 degrees C	-40~75 degrees C	-40~75 degrees C	-40~75 degrees C
Regulatory	Emissions	FCC, CE	FCC, CE	FCC, CE	FCC, CE	FCC, CE	FCC, CE	FCC, CE	FCC, CE
	Stability	-	-	IEC60068-2-32 (free fall), IEC60068-2-27 (shock), IEC60068-2-6 (vibration)					
Management	Interface	IPv4 Web, telnet and SNMP management		IPv4 Web management		IPv4 Web, telnet and SNMP management			
	Utility	MBVCOM utility, PLANET Smart Discovery		Modbus Gateway Utility, Discovery Utility		MBVCOM utility, PLANET Smart Discovery			