

Cyber-Hardened **PRODUCT** Selection Guide



Safeguarding Critical Infrastructure
with **IEC 62443-4-2** Certified
Ethernet Switch



ISO 9001
ISO 14001

Since 1993

Building Smart Transmission to Connect Beautiful Life

Connecting the world with smart, reliable communications that make life better and safer — today and in the future

About Us

Founded in 1993, CTC Union Technologies is a Taiwan-based designer and manufacturer of industrial-grade networking solutions for mission-critical applications. ISO 9001 and ISO 14001 certified, and compliant with IEC 62443 cybersecurity standards, we deliver secure and reliable designs.

With in-house R&D and manufacturing, our portfolio spans Industrial Ethernet, PoE, and EN 50155 / IEC 61850-3 certified switches, engineered for rugged, temperature-resistant performance in harsh environments. Backed by 30+ years of telecom expertise, CTC Union drives innovation in access switches and FTTP CPE solutions, enabling global customers to build resilient, future-ready network.

Brand Advantage

- **Technology & Innovation**

Leveraging advanced Ethernet and optical transmission technologies, CTC Union delivers reliable networking solutions for carriers, enterprises, and industrial-grade telecom applications.

- **Quality & Certification**

Strict quality control and certified compliance ensure long-term reliability across design, manufacturing, and deployment.

- **Global Technical Support**

24/7 worldwide technical support covering pre-sales, post-sales, and RMA services, backed by experienced engineers to ensure fast and professional issue resolution.

- **Strong Value & Flexible Portfolio**

CTC Union offers a comprehensive portfolio from telecom-grade to industrial-grade Ethernet solutions, balancing performance, reliability, and cost efficiency.



Environment Policy



CTC Union is committed to minimizing environmental impact through continuous improvement of our products and manufacturing processes. All products are free of chlorofluorocarbons (CFCs) and fully compliant with RoHS 2.0 and ISO 14000 environmental management standards since 2007.

We adopt lead-free soldering technologies, comply with global environmental regulations, and actively pursue long-term energy-saving and carbon-reduction initiatives—striving to achieve a sustainable balance between industrial development and environmental responsibility.

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IEC 61850-3 Layer 3/2 Modular Ethernet Switch

The IEC 61850-3 Layer 3 & Layer 2 Ethernet switch series provides up to 24 Gigabit Ethernet ports with flexible configurations for Gigabit copper ports and SFP slots. Compliant with IEC 62439-3 seamless redundancy protocols, the switches also feature four 10G SFP+ uplink ports to ensure high-bandwidth and uninterrupted network communications. Redundant power inputs further enhance system reliability and network backbone availability.

Designed for smart grids and substations, this series enables robust Ethernet communication deployment across critical infrastructure applications. The entire series features advanced cybersecurity protection as a standard, integrated with full Managed Switch functionality to deliver a secure, scalable, and high-performance industrial network backbone solution.



Model Name	IPR-AMG2404X-HRP	IPS-AMG2404X-HRP
Managed		
	Layer 3	Layer 2
Ethernet Interface		
Total Ports (Max)	28	28
SFP 1G/10G Base-X	4	4
Modular Slot	3	3
Power & Alarm Relay		
Dual Power Input	100~240VDC /100~135VDC or 24/48VDC	100~240VDC /100~135VDC or 24/48VDC
Alarm Relay	V	V
Physical		
Housing / IP Rating	Metal / IP30	Metal / IP30
Dimension (D x W x H) (mm)	355 x 440 x 44	355 x 440 x 44
19" 1U Rackmount	V	V
Certification		
Industrial Cybersecurity	IEC 62443-4-1, IEC 62443-4-2	IEC 62443-4-1, IEC 62443-4-2
Safety	EN62368-1	EN62368-1
Power Substation	IEC 61850-3, IEEE1613	IEC 61850-3, IEEE1613
CE / FCC	V	V
Shock / Freefall / Vibration	V	V
Operating Temperature		
-40 ~ 85°C	V	V



Module Name	IPM-A8GT	IPM-A8GS
100/1000Base-X SFP		8
10/100/1000Base-T(X) RJ45	8	

IEC 61850-3 Layer 3 Managed Ethernet Switch

IEC 61850-3 Ethernet switches are designed for power substation environments and fully comply with IEC 61850-3 and IEEE 1613 standards. They support redundant power inputs of 24/48 VDC and 110/220 VDC/VAC to ensure stable and reliable network operation. Optimized for real-time power automation, the switches deliver zero packet loss, and IEEE 1588 v2 time synchronization, with strong immunity to electromagnetic interference in harsh environments.

By providing advanced cybersecurity protection across all models, this series of Layer 3 and Layer 2 managed switches delivers a secure, high-performance, and scalable networking solution for smart grids and critical infrastructure.



Model Name	IPR-AGS2404XSM-8C	IPR-AG2404XSM-8C	IPR-AG804SM-HPR
Managed			
	Layer 3	Layer 3	Layer 3
Ethernet Interface			
Total Ports (Max)	28	28	12
RJ45 10/100/1000 Base-T		16	8
RJ45/SFP Combo	8	8	
SFP 100/1000 Base-X	16		
SFP 100/1G/2.5G Base-X			4
SFP 1G/10G Base-X	4	4	
Power & Alarm Relay			
Dual Power Input	100~240VDC /100~135VDC or 24/48VDC	100~240VDC /100~135VDC or 24/48VDC	100~240VDC /100~135VDC or 12/24/48VDC
Alarm Relay	V	V	V
Physical			
Housing / IP Rating	Metal / IP30	Metal / IP30	Metal / IP30
Dimension (D x W x H) (mm)	355 x 440 x 44	355 x 440 x 44	109 x 65 x152
19" 1U Rackmount	V	V	
Din-Rail Kit			V
Wall Mount Kit			Optional
Certification			
Industrial Cybersecurity	IEC 62443-4-1, IEC 62443-4-2	IEC 62443-4-1, IEC 62443-4-2	IEC 62443-4-1, IEC 62443-4-2
Safety	EN62368-1	EN62368-1	EN62368-1
Power Substation	IEC 61850-3, IEEE1613	IEC 61850-3, IEEE1613	IEC 61850-3, IEEE1613
EN50121-4	V	V	V
EN61000-6-2/EN61000-6-4	V	V	V
CE / FCC	V	V	V
Shock / Freefall / Vibration	V	V	V
Operating Temperature			
-40 ~ 85°C	V	V	V

IEC 61850-3 Managed Ethernet Switch



Model Name	IPS-AGS2404XSM-8C	IPS-AG2404XSM-8C	IPS-AG804SM-HPR
Managed			
	Layer 2	Layer 2	Layer 2
Ethernet Interface			
Total Ports (Max)	28	28	12
RJ45 10/100/1000 Base-T		16	8
RJ45/SFP Combo	8	8	
SFP 100/1000 Base-X	16		
SFP 100/1G/2.5G Base-X			4
SFP 1G/10G Base-X	4	4	
Power & Alarm Relay			
Dual Power Input	100~240VDC /100~135VDC or 24/48VDC	100~240VDC /100~135VDC or 24/48VDC	100~240VDC /100~135VDC or 12/24/48VDC
Alarm Relay	V	V	V
Physical			
Housing / IP Rating	Metal / IP30	Metal / IP30	Metal / IP30
Dimension (D x W x H) (mm)	355 x 440 x 44	355 x 440 x 44	109 x 65 x152
19" 1U Rackmount	V	V	
Din-Rail Kit			V
Wall Mount Kit			Optional
Certification			
Industrial Cybersecurity	IEC 62443-4-1, IEC 62443-4-2	IEC 62443-4-1, IEC 62443-4-2	IEC 62443-4-1, IEC 62443-4-2
Safety	EN62368-1	EN62368-1	EN62368-1
Power Substation	IEC 61850-3, IEEE1613	IEC 61850-3, IEEE1613	IEC 61850-3, IEEE1613
EN50121-4	V	V	V
EN61000-6-2/EN61000-6-4	V	V	V
CE / FCC	V	V	V
Shock / Freefall / Vibration	V	V	V
Operating Temperature			
-40 ~ 85°C	V	V	V

EN50155 L3/L2 Managed PoE Switch

CTC Union's EN50155 Cyber-Hardened L3/L2 Series is an intelligent industrial switch designed for railway rolling stock applications, featuring 12 Gigabit M12 X-code Ethernet ports. It integrates advanced Layer 3 routing and Layer 2 switching with smart PoE management, including automatic power detection, reset, and scheduling. It also incorporates certified cybersecurity to safeguard critical railway communications. Built for extreme environments, it resists vibration and shock, supports isolated 24–110VDC power inputs, and delivers PoE through voltage boosting for onboard powered devices, ensuring seamless compatibility with vehicle power systems.



Model Name	ITR-AG804TM-8PHE24i	ITR-AG804TM-8PHE-WVi	ITP-AG804TM-8PHE24i	ITP-AG804TM-8PHE-WVi
Managed				
	Layer 3	Layer 3	Layer 2	Layer 2
Ethernet Interface				
Total Ports	12	12	12	12
10/100/1000 Base-T M12	12	12	12	12
PoE Standard				
IEEE802.3af/at	8	8	8	8
Power Budget	60W	60W	60W	60W
Power & Alarm Relay				
Dual Power Input	24/48VDC	24/48/72/96/110VDC	24/48VDC	24/48/72/96/110VDC
Physical				
Housing / IP Rating	Metal / IP40	Metal / IP40	Metal / IP40	Metal / IP40
Dimension (D x W x H) (mm)	116.5 x 184.6 x 118	116.5 x 184.6 x 118	116.5 x 184.6 x 118	116.5 x 184.6 x 118
Wall Mount	V	V	V	V
Certification				
Industrial Cybersecurity	IEC 62443-4-1 IEC 62443-4-2	IEC 62443-4-1 IEC 62443-4-2	IEC 62443-4-1 IEC 62443-4-2	IEC 62443-4-1 IEC 62443-4-2
EN50155	V	V	V	V
EN50121-4	V	V	V	V
EN45545-2	V	V	V	V
EN61000-6-2 / EN61000-6-4	V	V	V	V
CE / FCC	V	V	V	V
Shock / Freefall / Vibration	V	V	V	V
Operating Temperature				
-40 ~ 75°C	V	V	V	V

Layer 3 DIN-Rail Ethernet Switches

The industrial grade Layer 3 DIN-Rail type switch series is designed for harsh environments and mission-critical networks. With a fanless design and support for RIP and OSPF Layer 3 routing, it ensures reliable operation under demanding conditions. The DIN-Rail type series provides flexible port options with 8 to 16 Gigabit Ethernet UTP ports and 4 10G SFP+ slots, delivering high-performance transmission of video, voice, and data. Within this series, the A804 Series integrates Cybersecurity protection, while other models offer full Managed Switch functionality, making the series a comprehensive solution for secure, scalable, and high-performance industrial network backbones.



Model Name	IGR-A804XSM-8PH	IGR-A804SM-8PH24	IGR-A804SM-8PH	IGR-A1606SM-16PH	IGR-A804SM
Ethernet Interface					
Total Ports	12	12	12	22	12
RJ45 10/100/1000 Base-T	8	8	8	16	8
SFP 100/1G/2.5G Base-X		4	4		4
SFP 100/1G/2.5G/5G/10G Base-X	4			6	
PoE Standard					
IEEE802.3af/at	8	8	8	16	
Power Budget	240W	180W	240W	360W	
Power, Alarm Relay & IO					
Dual Power Input	48VDC	24/48VDC	48VDC	48VDC	12/24/48VDC
Alarm Relay	V	V	V	V	V
Physical					
Housing / IP Rating	Metal / IP30	Metal / IP30	Metal / IP30	Metal / IP30	Metal / IP30
Dimension (D x W x H) (mm)	109 x 65 x 152	109 x 65 x 152	109 x 65 x 152	135.6 x 100 x 160	109 x 65 x 152
Din Rail Kit	V	V	V	V	V
Wall Mount Kit	Optional	Optional	Optional	Optional	Optional
Certification					
Industrial Cybersecurity	IEC 62443-4-1 IEC 62443-4-2	IEC 62443-4-1 IEC 62443-4-2	IEC 62443-4-1 IEC 62443-4-2	IEC 62443-4-1 IEC 62443-4-2	IEC 62443-4-1 IEC 62443-4-2
Safety	UL61010-2-201 EN62368-1	UL61010-2-201 EN62368-1	UL61010-2-201 EN62368-1	EN62368-1	UL61010-2-201 EN62368-1
EN50121-4	V	V	V	V	V
EN61000-6-2 / EN61000-6-4	V	V	V		V
CE / FCC	V	V	V	V	V
Shock / Freefall / Vibration	V	V	V	V	V
Operating Temperature					
-10 ~ 60°C	V	V	V	V	V
-40 ~ 75°C	V	V	V	V	V

Managed PoE Switch

CTC Union's Industrial PoE switches offer up to 8 Gigabit PoE ports with PoE/PoE+ support, delivering up to 30W per port. Their fanless design and robust IP30 housings make them ideal for DIN rail or wall mounting. Among the lineup, the A804 Series integrates Cybersecurity features to ensure secure and reliable operation. With a complete lineup - Including unmanaged, managed, fiber uplink, and SFP-port models - these switches meet diverse industrial network requirements.



Model Name	IGS-A402SM-4PB	IGS-A804SM-8PH	IGS-A804SM-8PH24	IGS-A804XSM-8PH	IFS-A804GSM-8PH	IFS-A804GSM-8PH24
Ethernet Interface						
Total Ports	6	12	12	12	12	12
RJ45 10/100 Base-TX	4			8	8	8
RJ45 10/100/1000 Base-T		8	8			
SFP 100M/1G Base-X	2				4	4
SFP 100M/1G/2.5G Base-X		4	4			
SFP 100M/1G/2.5G/5G/10G Base-X				4		
PoE Standard						
IEEE802.3af/at/bt	4					
IEEE802.3af/at		8	8	8	8	8
Power Budget	300W	240W	180W	240W	240W	180W
Power, Alarm Relay & IO						
Dual Power Input	48VDC	48VDC	24/48VDC	48VDC	48VDC	24/48VDC
Alarm Relay	V	V	V	V	V	V
Physical						
Housing / IP Rating	Metal / IP30	Metal / IP30	Metal / IP30	Metal / IP30	Metal / IP30	Metal / IP30
Dimension (D x W x H) (mm)	135 x 48.6 x 196.5	109 x 65 x 152	109 x 65 x 152	109 x 65 x 152	109 x 65 x 152	109 x 65 x 152
Din Rail Kit	V	V	V	V	V	V
Wall Mount Kit	Optional	Optional	Optional	Optional	Optional	Optional
Certification						
Industrial Cybersecurity	IEC 62443-4-1 IEC 62443-4-2	IEC 62443-4-1 IEC 62443-4-2	IEC 62443-4-1 IEC 62443-4-2	IEC 62443-4-1 IEC 62443-4-2	IEC 62443-4-1 IEC 62443-4-2	IEC 62443-4-1 IEC 62443-4-2
Safety	EN62368-1	UL61010-2-201 EN62368-1	UL61010-2-201 EN62368-1	UL61010-2-201 EN62368-1	UL61010-2-201 EN62368-1	UL61010-2-201 EN62368-1
EN50121-4	V	V	V	V	V	V
EN61000-6-2 / EN61000-6-4		V	V	V	V	V
CE / FCC	V	V	V	V	V	V
Shock / Freefall / Vibration	V	V	V	V	V	V
Operating Temperature						
-10 ~ 60°C	V	V	V	V	V	V
-40 ~ 75°C	V	V	V	V	V	V

Ethernet Managed Switches

CTC Union's Industrial Ethernet switches offer 5 to 20 fiber/UTP ports and deliver industrial-grade reliability with network redundancy. The managed switches provide advanced features to meet most network requirements, including IEEE1588, IPv6, SSL/SSH, IGMP/MLD, DHCP, and support advanced ITU G.8032 or proprietary u-Ring for redundancy. These switches also operate over a wide temperature range. Among the lineup, the A804 Series integrates Cybersecurity features to ensure secure and reliable operation. The complete lineup-including managed, fiber uplink, and SFP models-satisfies diverse industrial network deployment needs.



Model Name	IGS-A804SM	IFS-A804GSM
Ethernet Interface		
Total Ports	12	12
RJ45 10/100 Base-T		8
RJ45 10/100/1000 Base-T	8	
SFP 100/1G Base-X		4
SFP 100/1G/2.5G Base-X	4	
Power & Alarm Relay		
Dual Power Input	12/24/48VDC	12/24/48VDC
Alarm Relay	V	V
Physical		
Housing / IP Rating	Metal / IP30	Metal / IP30
Dimension (D x W x H) (mm)	109 x 65 x 152	109 x 65 x 152
Din Rail Kit	V	V
Wall Mount Kit	Optional	Optional
Certification		
Industrial Cybersecurity	IEC 62443-4-1 IEC 62443-4-2	IEC 62443-4-1 IEC 62443-4-2
Safety	UL61010-2-201 EN62368-1	UL61010-2-201 EN62368-1
EN50121-4	V	V
EN61000-6-2 / EN61000-6-4	V	V
CE / FCC	V	V
Shock / Freefall / Vibration	V	V
Operating Temperature		
-10 ~ 60°C	V	V
-40 ~ 75°C	V	V



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