KYLAND

Smart Control Solutions

Enabling Software Defined Control

SMART CONTROLLER

Smart Controller

Modular Controller & IO

Motion Controller (Codesys)

IoT Edge Controller

Power Automation Server

Software:

NewPre3101/3102 Smart Controller

Highly reliable industrial design

- Exclusive Thermal Design: Utilizing premium conductive materials and a fanless architecture to ensure an industrial wide-temperature range of -40 to 60°C.
- Compliance and Protection: Meets EMC standards and offers an IP40 protection rating, suitable for demanding industrial applications.

Powerful and scalable system

- Processor: Powered by Intel's high-performance eighth/ninth-generation Core processors and compatible with Xeon E-series processors
- Graphics Support: Accommodates high-performance standalone graphics cards, with a maximum power support of 300W and a maximum card length of 240mm. Compatible with most low, medium, and high-end graphics cards available on the market.
- I/O Interface: Includes 4 x 100/1000BASE-T(X) RJ45, HDMI, VGA, DP, 8 x USB3.0, 2 x RS232, 2 x RS232/485/422, 2 x CAN, 8 x DI, and 8 x DO.
- Expandability: Provides PCIe x16 and PCIe x1 expansion slots, supports 4G/5G/WIFI expansion, and meets various connectivity requirements.

Industrial Control

- Development Platform: The pre-installed graphical control development platform, MaVIEW, supports IEC61131-3, as well as C++ and Python.
- Real-Time and Motion Control: Offers a strong real-time guarantee, supports motion control, and is compatible with CANopen, Modbus RTU, Modbus TCP, EtherCAT, EtherNet/IP, Profinet, AUTBUS*1, as well as custom serial port/CAN/TCP protocols and commonly used industrial communication protocols like OPC UA and MQTT.

Video Monitoring

- Camera Support: Provides compatibility for connecting to network cameras that comply with ONVIF and RTSP protocols, and supports up to 64 high-definition network videos simultaneously.
- NVR Software: Through NVR software, the system supports the preview, storage, and playback of 4 x 4K high-definition network videos and offers 4K/8K high-definition resolution output.

Visual Analytics

- Industrial Video: Supports up to 12 x industrial GigE Vision videos.
- Deep Integration: The platform allows for the deep integration of visual analysis and control services, unifying the machine vision algorithm with the control development platform as a standard function library. This ensures the real-time performance and stability of data communication.

Edge Computing

- Big Data Support: Supports big data processing capabilities, including data collection, storage, and model analysis. The system is compatible with third-party applications on Windows/Linux and supports edge micro-cloud and edge-cloud collaboration.

Note: *1 Compatible with AUTBUS conversion module, model ANY3311.

PRODUCT SPECIFICATIONS

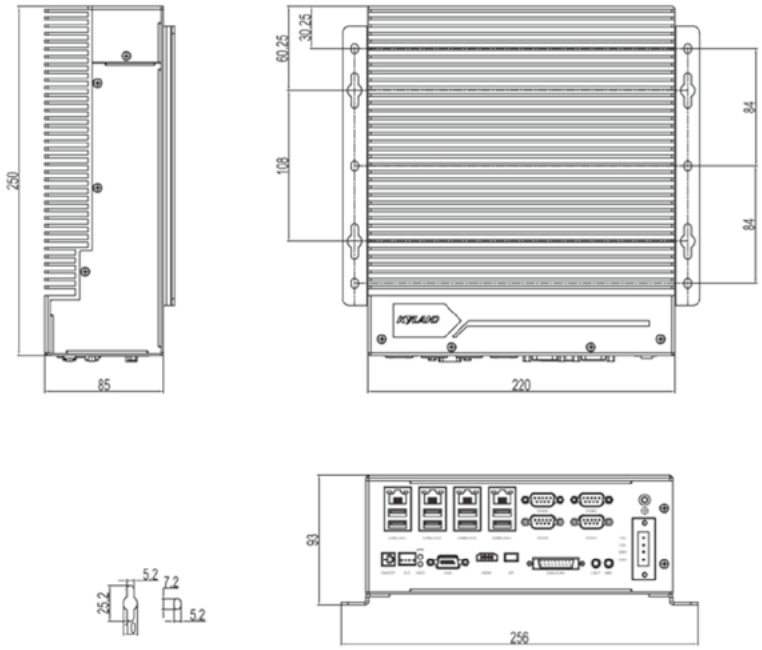
		NewPre3101	NewPre3102
Main System	CPU	Intel Core™ 8th/9th Gen or Socket-based (LGA1151)	
	Memory	Dual-slot design, supporting up to 64GB DDR4	
	Storage	1 x mSATA SSD available 1 x SATA 2.5-inch removable HDD expansion 1 x M.2 (NVMe) HDD expansion	
	Onboard GPU	Standard Intel® UHD Graphics 630	
Interface	Network interface	4 x 100/1000BASE-T(X),RJ45,supports PCIe module expansion	
	USB	8 x USB3.0,supports PCIe module expansion	
	Serial port	4 x DB9,(2 x RS-232,2 x RS232/485/422),isolated, supports PCIe module expansion	
	CAN (Optional)	2 CAN, supports PCIe module expansion	
	I/O (Optional)	8 x DI/8 x DO,isolated, 24V NPN/PNP input, NPN output	
	Display interface	Onboard 1 x HDMI, 1 x VGA, 1 x mini DP	
	Audio interface	1 x Mic in,1 x Line out	
	Extension slot	1 x mini PCIe slot, supporting 4G/WIFI/mSATA 1 x M.2 slot, supporting 5G 1 x M.2 slot, supporting NVME/SATA	1 x PCIe x16 slot, 1 x PCIe x4 slot 1 x M.2 slot, supporting 5G 1 x M.2 slot, supporting NVME/SATA 1 x PCIe x16 slot, 1 x PCIe x4 slot
GPU Extension	Graphics card	None	Max Length 240mm supports up to 300W graphics card
Power Supply	Input Voltage	12VDC	
	Terminal Connection	4-pin 5.08mm pitch plug-in terminal	
	Power Consumption	Main unit consumption < 80W, independent GPU power supply	
Mechanical Structure	Enclosure	Metal	
	Cooling Method	Passive cooling, fanless for the main unit, GPU fan cooling	Main UnitNone fan,Graphics Card fan Cooling
	Protection Level	IP40 (MAIN UNIT)	
	Dimensions (mm)	220x85x250(W x H x D)	220x185x320(W x H x D)
	Total Weight	5.7Kg	9.5Kg
	Mounting Method	Flat surface mounting, wall-mounted	
Environment	Working temperature	-40 ~ 60°C (main Unit)	
	Storage temperature	-40 ~ 85°C	
	Humidity	5 ~ 95% Non-condensing	
Standard	EMI	FCC CFR47 Part 15, EN55022/CISPR22, Class A	
	EMC	IEC 61000-4-2 (ESD), Air: ±8KV;Contact: ±6kV IEC 61000-4-3 (RS), 10V/m(80MHz ~ 2GHz) IEC 61000-4-4 (EFT), DC Power Port:±2kV,Singal Port:±2kV IEC 61000-4-5 (Surge), Power Port:±1kV/DM,±2kV/CM, Singal Port:±1kV (line to line),Singal Port:±2kV (line to earth) IEC 61000-4-6 (CS), Signal ports: 0.15-80MHz at 10V/m, Powerports: 0.15-80MHz at 10V/m	
	Mechanical	IEC60068-2-6 (VIBRATION), IEC60068-2-27 (SHOCK), IEC60068-2-32 (FREE FALL)	

ORDERING INFORMATION

Part Number	Description
NewPre3101-i7-9700-M5D3W0-0404A	i7 9700/32GB DDR4/1T 2.5"SSD/USB3.0 x8/LAN x4
NewPre3101-i7-9700TE-M5D3W0-0404E	i7 9700TE/32GB DDR4/1T 2.5"SSD/USB3.0 x8/LAN x4 1350
NewPre3101-i7-8700T-M5D3W0-0404A	i7 8700T/32GB DDR4/1T 2.5"SSD/USB3.0 x8/LAN x4
NewPre3101-i7-8700T-M5D3W5-0404A	i7 8700T/32GB DDR4/1T 2.5"SSD/USB3.0 x8/LAN x4/5G
NewPre3101-i7-8700T-M5D3W0-0404C2A16DIO	i7-8700T/32GB DDR4/1T2.5" SSD/LAN x4/CAN x2/DI x8/DO x8
NewPre3102-P3434-M5-D2	i7 9700/32GB DDR4/512GB 2.5" SSD/USB3.0 x8/LAN x4/PCIE x16/PCIE X4
NewPre3102-i7-8700T-M5D3W0-0404A	i7 8700T/32GB DDR4/1T 2.5"SSD/USB3.0x8/LAN x4/PCIE x16/PCIE X4
NewPre3102-i7-8700T-M5D3W5-0404A	i7 8700T/32GB DDR4/1T2.5"SSD/USB3.0 x8/LAN x4/PCIE x16/PCIE X4/5G
NewPre3102-i7-8700T-M5D3W0-0404C2A16DIO	i7-8700T/32GB DDR4/1T2.5" SSD/LAN x4/RS232 x4/PCIE X16 x1/PCIE X4x1/DI x8/DO x8

Part Number	Description
NM-4ETH	4x100/1000BASE-T(X),RJ45,PClex1
NM-GTX1050Ti	GPU expansion card,GTX1050TI, PClex16
NM-G2	GPU expansion card, RTX2060super, PClex16
NM-G3	GPU expansion card,RTX2080super, PClex16
NM-RTX3060	GPU expansion card,RTX3060, PClex16
NM-G3+	GPU expansion card,RTX3070.PClex16
NM-G4	GPU expansion card,RTX3080.PClex16

DIMENSIONS



NewPre200 Smart Controller

Compact & Mighty Design

- Onboard Intel® Celeron® J1900 Quad Core 2.0 GHz processor
- Supports 2 x DDR3L 1066/1333 SO-DIMM socket, up to 8GB
- Compact form factor with fan-less design, operating temperature ranges from -5~55°C
- Dual independent display DP and DVI-I
- Rich I/O Interfaces with 2 x mini-PCIe slots for optional Wi-Fi/3.5G/4G LTE/fieldbus modules
- CE/FCC, LVD, UL60950 ready

Popular OS Supported

- Windows 7, 32-bit/64-bit
- Windows Embedded Standard 7, 32-bit/64-bit
- Linux Kernel version 3.8.0
- Winux-RT

Versatile Expansion Capability

2 x mini-PCIe slots support the following modules:

- PROFIBUS
- PROFINET
- DeviceNET
- EtherCAT
- EtherNet/IP
- CANopen
- SERCOS III master
- LAN
- Wi-Fi
- 3.5G/4G LTE
- mSATA

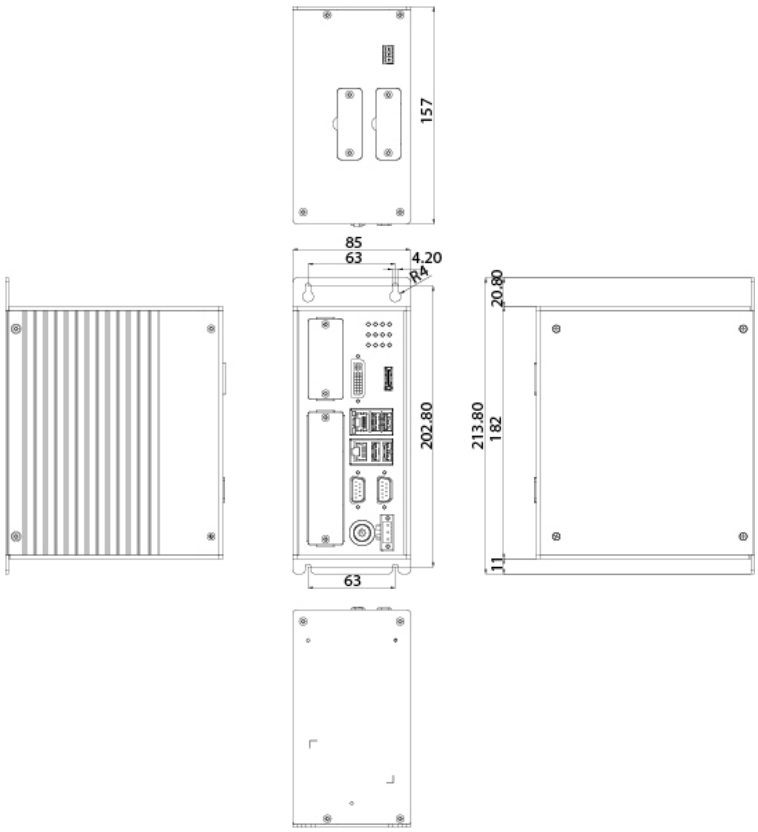
PRODUCT SPECIFICATIONS

NewPre200		
Main System	CPU	Onboard Intel® Celeron® J1900 Quad Core 2.0GHz
	Memory	2 x DDR3L 1066/1333 SO-DIMM socket, supports up to 8GB
	Storage	1 x 2.5" SSD/HDD (SATA 2.0) - front accessible
Interface	Display Interface	1 x DVI-I, 1 x DP, independent display
	Network Interface	2 x Intel® I210-AT GbE LAN ports, support WoL, teaming and PXE
	USB	1 x USB3.0 (900mA each), 3 x USB2.0 (500mA each)
	Serial port	2 x RS232/422/485 support auto flow control
	SIM card	1 x SIM card holder
	Expansion slot	2 mini-PCIe slots for optional Wi-Fi/3.5G/4G LTE/fieldbus modules
Power Supply	Input voltage	Typical 24V DC input with ±20% range, with reverse polarity protection
Mechanical Structure	Enclosure	Aluminum and metal chassis
	Heat dissipation	Natural cooling, fan-less
	Dimension (mm)	85 x 157 x 214mm (W x D x H)
	Weight	3KG
	Mount	Wall mount
Environment	Operating temperature	-5 ~ 55°C (main machine)
	Storage temperature	-20 ~ 85°C
	Humidity	10 ~ 93% non-condensing
Standard	EMI	EN 61000-6-4:2007+A1:2001 / FCC 47 Part 15 B
	EMC	IEC61000-4-2 (ESD), Air: 8KV; Con tact: 4kV IEC61000-4-3 (RS), 10V/m (80MHz ~ 2.7GHz) IEC61000-4-4 (EFT), AC Power Port: 2kV, DC Power Port: 2kV, Singal Port: 1kV IEC61000-4-5 (Surge), AC Power Port: 1kV/DM, 2kV/CM, DC Power Port: 0.5kV/DM, 0.5kV/CM, Singal Port: 1kV/CM IEC61000-4-6 (CS), Signal ports: 0.15-80MHz at 10V/m, Power ports: 0.15-80MHz at 10V/m
	Mechanical	IEC60068-2-64 (vibration) IEC60068-2-27 (shock) IEC60068-2-32 (Free fall)
Certificate	CE, FCC, LVD, UL60950	

ORDERING INFORMATION

Part Number	Description
NewPre200	NewPre200 Intel Atom® J1900 Quad Core 2.0GHz fan-less system
DDR3L 8GB	DDR3L 1866 SO-DIMM 8GB
SSD 2.5 128GB	SSD 2.5 SATAIII 128G MLC
SSD 2.5 256GB	SSD 2.5 SATAIII 256G MLC
SSD 2.5 512GB	SSD 2.5 SATAIII 512G MLC
Power Adapter & Cord	Power Adapter & Cord for NewPre200

DIMENSION DIAGRAM



NewPre300 Smart Controller

Compact & Mighty Design

- Supports 6th generation Intel® Core™ i7/i5/i3 LGA socket type processors
- Supports 2 x DDR4 2133 SO-DIMM socket, up to 16GB
- Compact form factor with fan-less design, operating temperature ranges from -5~55°C
- Dual independent display HDMI and DVI-D
- Rich I/O Interfaces with 2 x mini-PCIe socket for optional Wi-Fi/3.5G/4G LTE/fieldbus modules
- CE/FCC, LVD ready

Popular OS Supported

- Windows 7, 32-bit/64-bit
- Windows 10 Enterprise 64-bit
- Linux Kernel version 3.8.0
- Winux-RT

Versatile Expansion Capability

2 x mini-PCIe slots support the following modules:

- PROFIBUS
- PROFINET
- DeviceNET
- EtherCAT
- EtherNet/IP
- CANopen
- SERCOS III master
- LAN
- Wi-Fi
- 3.5G/4G LTE
- mSATA

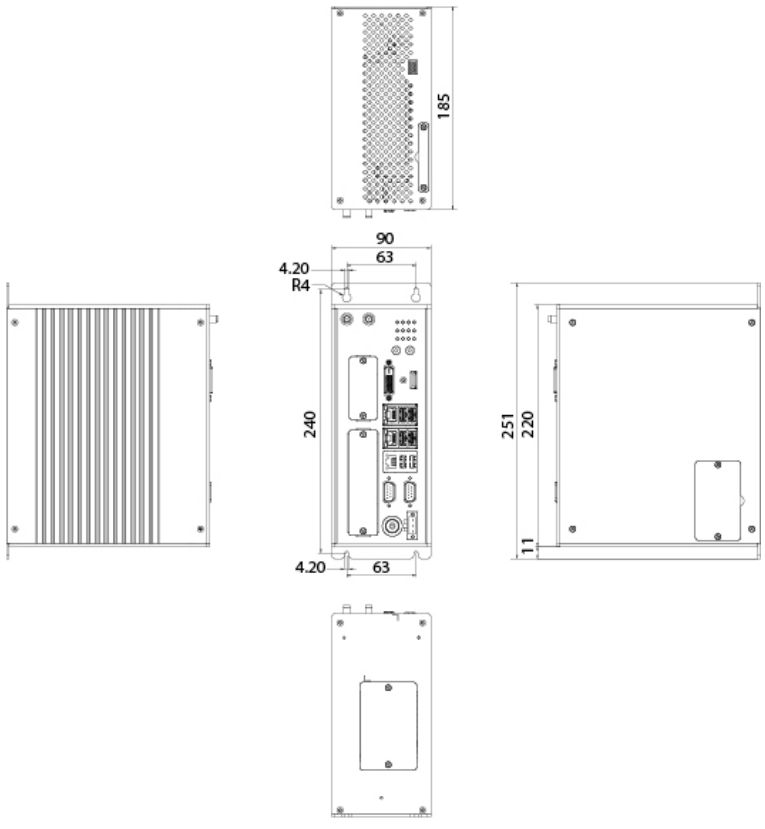
PRODUCT SPECIFICATIONS

NewPre300		
Main System	**CPU**	Supports 6th generation Intel® Core™ i7/i5/i3 LGA socket type processors: - Core™ i7-6700TE, Quad Core, 2.4GHz, 8M Cache (maximum frequency 3.4GHz if turbo boost enabled) - Core™ i5-6500TE, Quad Core, 2.3GHz, 6M Cache (maximum frequency 3.3GHz if turbo boost enabled) - Core™ i3-6100TE, Quad Core, 2.7GHz, 4M Cache (no turbo boost) - Pentium G4400TE, Dual Core, 2.4GHz, 3M Cache (no turbo boost) - Celeron® G3900TE, Dual Core, 2.3GHz, 2M Cache (no turbo boost)
	Memory	2 x DDR4 2133 SO-DIMM socket, supports up to 16 GB
	Storage	1 x CFast (SATA 3.0) 1 x 2.5" HDD (external, SATA 3.0) 1 x 2.5" HDD (internal, SATA 3.0) 1 x mSATA (via internal mini-PCIe socket)
Interface	**Display Interface**	1 x HDMI, 1 x DVI-D, independent display
	Network Interface	3 x Intel® I210-IT GbE LAN ports, support WoL, teaming and PXE
	USB	4 x USB3.0 (900mA each), 2 x USB2.0 (500mA each)
	Serial port	2 x RS232/422/485 auto with 2.5KV Isolation
	SIM card	1 x SIM card holder
	Expansion slot	2 mini-PCIe slots for optional Wi-Fi/3.5G/4G LTE/fieldbus modules
Power Supply	**Input voltage**	Typical 24V DC input with ±20% range, with reverse polarity protection
Mechanical Structure	**Enclosure**	Aluminum and metal chassis
	Heat dissipation	Natural cooling, fan-less
	Dimension (mm)	90 x 185 x 251mm (W x D x H)
	Weight	5KG
	Mount	Wall mount
Environment	**Operating temperature**	-5 ~ 55°C (main machine)
	Storage temperature	-20 ~ 85°C
	Humidity	10 ~ 93% non-condensing
Standard	**EMI**	EN 61000-6-4:2007+A1:2001 / FCC 47 Part 15 B
	EMC	IEC61000-4-2 (ESD), Air: 8KV; Con tact: 4kV IEC61000-4-3 (RS), 10V/m (80MHz ~ 2.7GHz) IEC61000-4-4 (EFT), AC Power Port: 2kV, DC Power Port: 2kV, Singal Port: 1kV IEC61000-4-5 (Surge), AC Power Port: 1kV/DM, 2kV/CM, DC Power Port: 0.5kV/DM, 0.5kV/CM, Singal Port: 1kV/CM IEC61000-4-6 (CS), Signal ports: 0.15-80MHz at 10V/m, Power ports: 0.15-80MHz at 10V/m
	Mechanical	IEC60068-2-64 (vibration) IEC60068-2-27 (shock) IEC60068-2-32 (Free fall)
Certificate	**CE, FCC, LVD, UL60950**	

ORDERING INFORMATION

Part Number	Description
NewPre300	NewPre300 barebone fan-less system
Intel i7-6700TE	Intel Core™ i7-6700TE, Quad Core, 2.4GHz, 8M Cache (maximum frequency 3.4GHz if turbo boost enabled)
Intel i5-6500TE	Intel Core™ i5-6500TE, Quad Core, 2.3GHz, 6M Cache (maximum frequency 3.3GHz if turbo boost enabled)
Intel i3-6100TE	Intel Core™ i3-6100TE, Quad Core, 2.7GHz, 4M Cache (no turbo boost)
Intel Pentium G4400TE	Intel Pentium G4400TE, Dual Core, 2.4GHz, 3M Cache (no turbo boost)
Intel Celeron G3900TE	Intel Celeron® G3900TE, Dual Core, 2.3GHz, 2M Cache (no turbo boost)
DDR4 8GB	DDR4 2666 SO-DIMM 8GB
SSD 2.5 128GB	SSD 2.5 SATAIII 128G MLC
SSD 2.5 256GB	SSD 2.5 SATAIII 256G MLC
SSD 2.5 512GB	SSD 2.5 SATAIII 512G MLC
Power Adapter & Cord	Power Adapter & Cord for NewPre300

DIMENSION DIAGRAM



Modular Controller & IO

NewPre3200 Modular Controller

Extreme Performance in Miniaturization

- An efficient, fanless heat dissipation design ensures industrial-grade performance in a wide temperature range from -40 to 70°C.
- Complies with EMC standards, IP40 protection rating, meets the requirements of harsh industrial application scenarios.
- The size of 155mm x 100mm x 90mm is suitable for one-handed rail installation and operation.

Flexible module expansion

- Local Expansion: Supports local expansion modules, KYIO-H, including DI, DO, AI, AO, RTD, etc.

Simplified Integration

- Unified Device: A single Modular Edge Universal Controller replaces the traditional setup consisting of controllers, entry-level machine vision systems, HMI industrial computers, and edge computing gateways. This leads to fewer devices on-site, reduced system footprint, and lower power consumption.
- Pre-Installed Operating System: Comes with the pre-installed Winux-RT Operating System, featuring an internal virtual data bus that supports machine vision, industrial AI, PLC, motion control, human-machine monitoring, and 5G for various real-time and non-real-time applications.
- Graphical Control Development: Pre-installed MaVIEW graphical control development platform that supports IEC61131-3 as well as C++ and Python.
- Real-Time Guarantees: Capable of supporting a minimum cycle time of 50us for high-level real-time control.
- Motion Control: Supports PLCopen single-axis management, single-axis movement, multi-axis electronic gear coupling, electronic cams, cam profiles, etc. Supports multi-axis spatial arc and spatial linear interpolation.
- Communication Protocols: Supports Modbus RTU, Modbus TCP, EtherCAT, EtherNet/IP, Profinet, AUTBUS*1, and also custom serial/TCP protocols like OPC UA and MQTT.
- Redundancy: Supports dual-machine hot backup redundancy.
- Compatibility: Compatible with Windows/Linux desktop operating systems and supports third-party applications.

Note: *1 Requires AUTBUS conversion module, model ANY3311

PRODUCT SPECIFICATIONS

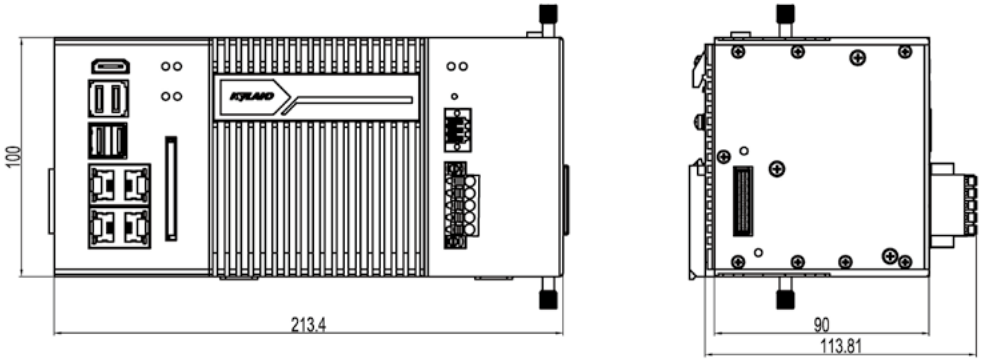
	NewPre3200	
Computing	CPU	Intel 8th Gen Core i7/i5 processor
	Memory	8/16GB DDR4,DDR4
	Storage	Standard 128GB CFast, optional mSATA HDD
	Non-Volatile Storage	64KB (Optional)
Interface	Display Interface	Onboard 1 x HDMI, supports 1080P
	USB	2 x USB2.0, 2 x USB3.1
	Ethernet	4 x 100/1000BASE-T,RJ45
	Expansion Slots	Located on the right side of the Power Supply module, supports KYIO-H modules.
	Serial Ports	Located in the Power Supply module, 1 x RS232, 1 x RS485

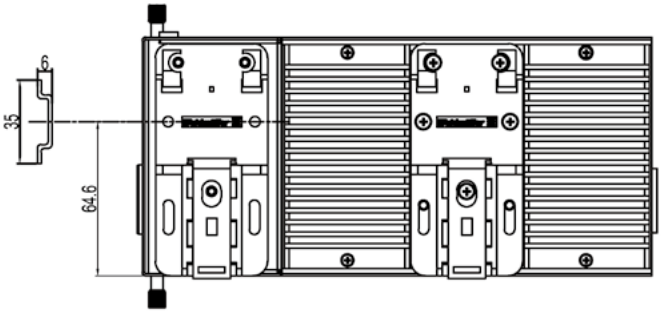
Power Supply	Input	24VDC (18~ 36 VDC), terminal, with Power Supply isolation and redundancy support
	Output	DC 24VDC, 12VDC, backplane bus
	Main UnitPower Consumption	<50W
Mechanical Structure	Mechanical Structure	Aluminum Enclosure
	Protection Level	IP40
	Dimensions (mm)	Computing Module: 155 x 100 x 90 (W x H x D) Power Supply Module: 58 x 100 x 90(W x H x D)
	Total Weight	2.5kg
	Mounting Method	Rail-mounting
Environmental Conditions	Operating Temperature	-40 ~ 70ºC
	Storage Temperature	-40 ~ 85ºC
	Humidity	5 ~ 95% Non-condensing
	Cooling	Fanless
Industry Standards	EMI	FCC CFR47 Part 15,EN55022/CISPR22,Class A
	EMC	IEC 61000-4-2 (ESD), Air: ±8KV;Contact: ±6kV IEC 61000-4-3 (RS), 10V/m(80MHz ~ 2GHz) IEC 61000-4-4 (EFT), DC Power Port:±2kV,Singal Port:±2kV IEC 61000-4-5 (Surge), Power Port:±1kV/DM,±2kV/CM, Singal Port:±1kV (line to line),Singal Port:±2kV (line to earth) IEC 61000-4-6 (CS), Signal ports: 0.15-80MHz at 10V/m, Powerports: 0.15-80MHz at 10V/m
	Mechanical	IEC60068-2-6 (VIBRATION), IEC60068-2-27 (SHOCK), IEC60068-2-32 (FREE FALL)

ORDERING INFORMATION

Optional Module KYIO			
KYDI-1601H	16-ch DI module	**KYAO-0801 H**	8-ch current output module
KYDO-1202 H	12-ch DC DO module	**KYAO-0802 H**	8-ch voltage output module
KYAI-0801 H	8-ch current input module	**KYRTD-0601 H**	6-ch hot resistance input module
KYAI-0802H	8-ch voltage input module		

DIMENSIONS





NewPre5100 Modular Controller

Secure and Manageable

- Pre-installed operating system with 100% self-owned kernel module source code.
- MaVIEW control development platform is fully independently developed, not secondary development.

Compact and Reliable

- Fanless design, -40℃-70℃ wide temperature operation
- Compliant with EMC Level 3, IP40 protection, meeting rigorous industrial application requirements.
- 100mm height is suitable for single-hand rail installation

Flexible Module Expansion

- Provide terminals for expanding KYIO-H modules including DI, DO, AI, AO, RTD, and other modules.
- Support 4G/5G expansion, meeting various connectivity requirements.

High-performance Control

- Pre-installed graphical control & development platform MaVIEW, supports IEC61131-3 and C++.
- Strong real-time performance supports 1ms control cycle.
- Support motion control with PLCopen monopodium management, monopodium motion, multi-axis electronic gear coupling, ECAM, tappet, etc. Supports multi-axis spatial arc interpolation, spatial linear interpolation.

Extensive Industrial Protocols

- Support CANopen, Modbus RTU, Modbus TCP, EtherCAT, Ethernet/IP, Profinet. Supports custom Serial Port/CAN/TCP communication. Supports common industrial communication protocols such as OPC UA, MQTT.
- Support Kyland proprietary AUTBUS real-time communication protocol.

PRODUCT SPECIFICATIONS

NewPre5100		
Computation	**CPU**	Loongson 2k1000, Dual-core, 1GHz clock frequency
	RAM	2GB. Optional: 4GB
Storage	**Standard Storage**	256MB
	Storage Expansion	Optional, 128GB, mSATA
	Power Loss Protection	Optional, 128KB.
Control Software Capability	**Controller Computation Cycle Redundancy**	Configurable, minimum 1ms Support hot standby redundancy controller configuration.
Mechanical Structure	**Case**	Metal
	Heat Dissipation Method	Passive cooling, fanless
Main Interface	**Display Port**	1*HDMI
	USB	2*USB2.0
Network Interface	**Ethernet**	Support 100/1000BASE-T, RJ45. Optional 2 ports, 4 ports
	AUTBUS	Support 1*AUTBUS, optional
Other Communication Interface	**Serial Port**	Support RS232, RS485, CAN. Optional 2*485+1*232+1*CAN, 1*485+1*232+2*CAN, 4*CAN, 4*485, 2*485+2*CAN
	Wireless Extension	Optional 4G/5G extension
I/O Interface	**Local I/O**	Optional, support 9*DI+6*DO, 3DO+4*PI+4*PO
	I/O Extension	Support Extension Kyland KYIO modules. Support distributed IO Extension
Power	**Input**	24VDC (20 ~ 28 VDC), powered by KYPM-DC24
	Output	DC 24VDC,12VDC, Backplane Bus
	Host Power Consumption	15W
Mechanical Structure	**Mechanical Structure**	Aluminum Casing
	Ingress Protection Rating	IP40
	dimensions mm	195 x 100 x 94(W×H×D), contains power supply module
	Overall weight of the device	1.7Kg
	Installation Method	Rail installation
Environment	**Operating Temperature**	-40ºC ~ 70ºC
	Storage Temperature	-40ºC ~ 85ºC
	Humidity	5% ~ 95% no condensation
	Heat Dissipation	Fanless
Industry Standard	**EMI**	FCC CFR47 Part 15, EN55022/CISPR22, Class A
	EMS	IEC 61000-4-2 (ESD), Air: ±8KV; Contact: ±6kV IEC 61000-4-3 (RS), 10V/m (80MHz ~2GHz) IEC 61000-4-4 (EFT), DC Power Port: ±2kV, Singal Port: ±2kV IEC 61000-4-5 (Surge), Power Port: ±1kV/DM, ±2kV/CM, Singal Port: ±1kV (line to line), Singal Port: ±2kV (line to earth, IEC 61000-4-6 (CS), Signal ports: 0.15-80MHz at 10V/m, Power ports: 0.15-80MHz at 10V/m
	Mechanical	IEC60068-2-6(vibration) IEC60068-2-27(shock) IEC60068-2-32(free fall)

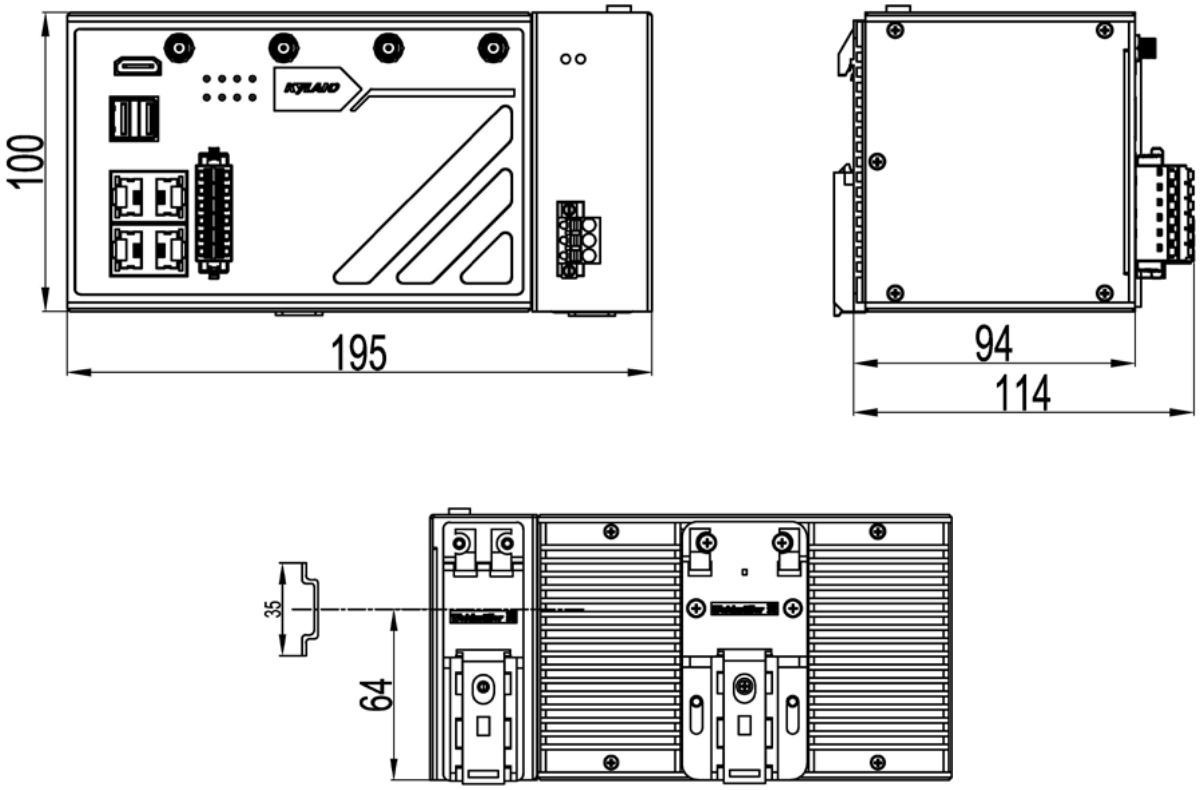
PRODUCT SELECTION GUIDE

Optional Typical Models	Description
NewPre5100-L2K1-M2D0W4-0403C1A	Loongson 2k1000- RAM 4G-256KB Ferroelectric – Hard Drive 128G+256M- Support 4G-4 Enternet Ports -1CAN-1RS232-2RS485(Equipped with H-Type IO and Power Supply)
NewPre5100-L2K1-M1D2MW0A-0200A	Loongson 2k1000- RAM 2G-256KB Ferroelectric -256M Onboard Storage -AUTBUS-2 Ethernet Ports (Equipped with H-Type IO and Power Supply)
NewPre5100-L2K1-M1D0W0-0402C2B	Loongson 2K1000-2G RAM -128G Hard Drive -4 Ethernet Ports -2CAN2RS485(Equipped with C -Type IO and Power Supply)

KYIO-H PRODUCT SELECTION GUIDE

High speed IO Product Selection			
KYDI-1601H	16-channel DI module	**KYAO-0802H**	8-channel voltage output module
KYDO-1202 H	12-channel DC DO module	**KYRTD-0601 H**	6-channel thermistor input module
KYAI-0801 H	8-channel current input module	**KYAO-0801 H**	8-channel current output module
KYAI-0802H	8-channel voltage input module		

DIMENSION DIAGRAM

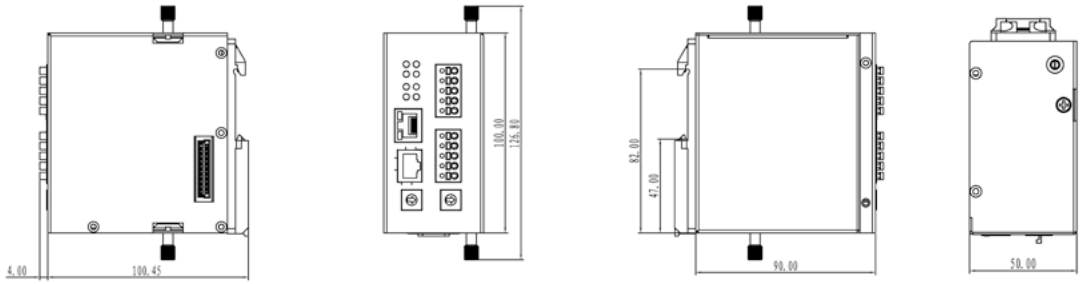


KYIO-H Remote I/O

RCM MODULE SPECIFICATIONS

KYRCM-0000H		
Interface	Network port	1x10/100BASE-T,RJ45
	Serial port	1xRS485
	CAN	1xCAN
	Extension slot	Support Kyland KYIO module, up to support 10 extension modules:
Communication	Protocol	CANopen Modbus RTU Master/Slave mode Modbus TCP Slave mode
Management and Maintenance	Support WEB management	

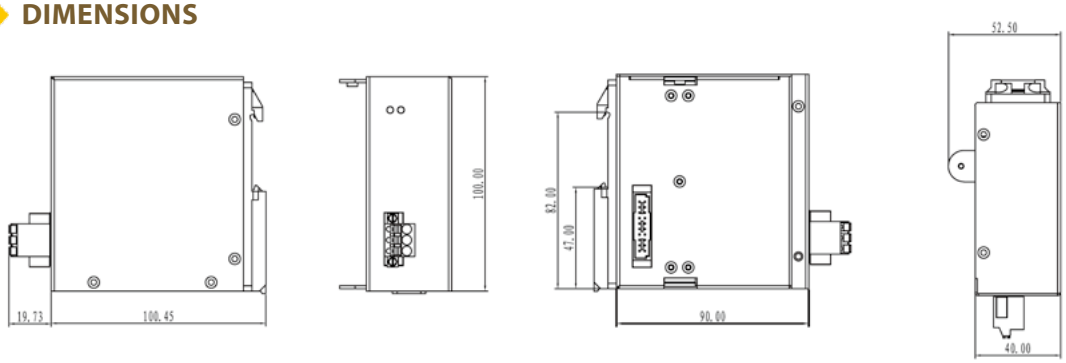
DIMENSIONS



PM POWER MODULE SPECIFICATIONS

KYPM-K12V10W01 Power Module		
Power Supply	Power input	24VDC (-15%~+20%)
	Power interface	Phoenix terminal block
	Bus output voltage	12VDC
	Output current	2.5A@12V
	Module consumption	6W

DIMENSIONS



I/O MODULE SPECIFICATIONS

KYDI-1601H	
Channel Number	16
Signal Type	24VDC, support PNP and NPN
Isolation Withstand Voltage	1500VDC@1min@5mA
Voltage and Consumption at System Side	1.5W@12V±10%
Voltage and Consumption at Filed Side	0.5W@24V, +20%/-15%

KYDO-1202H	
Channel Number	12
Signal Type	24VDC, support PNP and NPN
Isolation Withstand Voltage	1500VDC@1min@5mA
Voltage and Consumption at System Side	1.5W@12V±10%
Voltage and Consumption at Filed Side	0.5W@24V, +20%/-15%

KYAI-0801/0802H	
Channel Number	8
Signal Type	0~22 mA/±10V
Analog Accuracy	±0.1%@(25℃)±0.3%@(-40~75℃)
Isolation Withstand Voltage	1500VDC@1min@5mA
Voltage and Consumption at System Side	1.2W@12V±10%
Voltage and Consumption at Filed Side	0.5W@24V, +20%/-15%

KYAO-0801/0802H	
Channel Number	8
Signal Type	0~22 mA/±10V
Analog Accuracy	±0.1%@(25℃)±0.4%@(-40~75℃)
Isolation Withstand Voltage	1500VDC@1min@5mA
Voltage and Consumption at System Side	1.2W@12V±10%
Voltage and Consumption at Filed Side	0.5W@24V, +20%/-15%

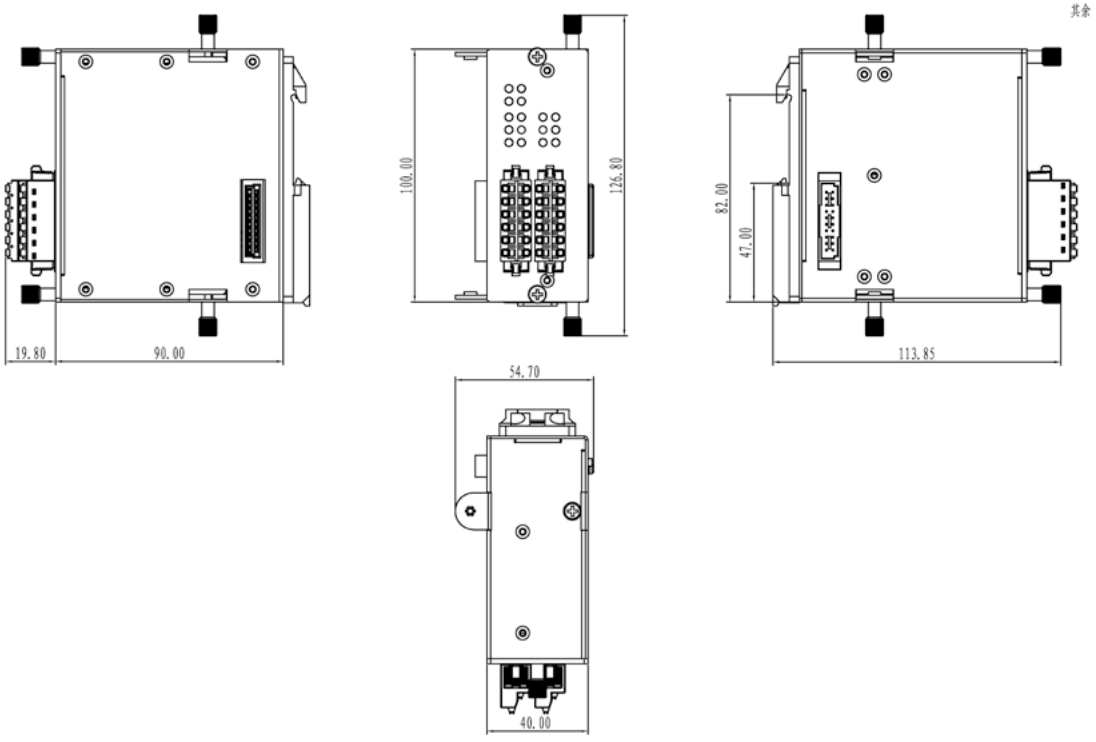
KYRTD-0601H	
Channel Number	6
Signal Type	0..500Ω range. Support PT100, Cu100, Ni120, Resistance acquisition, support 2/3/4 wires.
Analog Accuracy	0~500Ω: ±0.1%(10~45℃), ±0.4% (-40~85℃)
Isolation Withstand Voltage	1500VDC@1min@5mA
Voltage and Consumption at System Side	1.2W@12V±10%
Voltage and Consumption at Filed Side	1.5W@24V, +20%/-15%

GENERAL SPECIFICATIONS

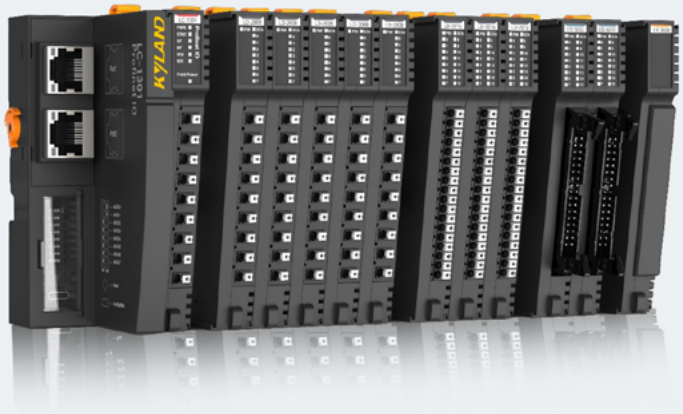
Mechanical Structure	Mechanical structure	Aluminum enclosure
	IP class	IP30
	Dimensions	40x100x90 (WxHxD); KYRCM: 50x100x90(WxHxD)
	Weight	500g
	Mounting	DIN rail
Environment	Working temperature	-40 ~ 75℃
	Storage temperature	-40 ~ 85℃
	Humidity	5 ~ 95% No condensation
Standard	EMI	IEC61000-6-4/CISPR 22
	EMC	IEC61000-4-2(ESD), ±6kV(contact), ±8kV(air), IEC61000-4-3(RS),10V/m(80MHz-1GHz) IEC61000-4-4(EFT), DC Power Port: ±1kV, Singal Port: ±1kV IEC61000-4-5 (Surge), Power Port: ±1kV/DM, ±2kV/CM, Singal Port: ±1kV(line to line), Singal Port: ±2kV(line to earth) IEC61000-4-6(CS), Signal ports: 0.15-80MHz at 10V/m, Powerports: 0.15-80MHz at 10V/m IEC61000-4-8(Power frequency magnetic field), 30A/m
	Mechanical	IEC60068-2-6(vibration) IEC60068-2-27(impact) IEC60068-2-32(Free fall)

Order Information			
KYDI-1601H	16 channels DI module	**KYAO-0802H**	8 channels voltage output module
KYDO-1202H	12 channels DC DO module	**KYRTD-0601H**	6 channels hot resistance input module
KYAI-0801H	8 channels current input module	**KYPRCM-0000H**	Remotely IO communication module
KYAI-0802H	8 channels voltage input module	**KYPM-K12V10W01**	24VDC power module (Required)
KYAO-0801H	8 channels current output module		

DIMENSIONS



KYIO-L Remote I/O



Highly Reliable Industrial Design

- Exclusive heat dissipation design profile. Utilizing High-Quality thermal conductive materials. Ensuring industrial wide temperature range design of -40~85℃ .
- Compliance with EMC Standards, IP20 Protection Level. Meets stringent requirements of industrial application.

Support Multiple Communication Protocols

- The network coupler module supports a variety of protocols, including ProfiNet, Modbus RTU, Modbus TCP, EtherCAT, Ethernet/IP, CANopen and more.
- By using the communication module, it is possible to achieve CANopen and serial port master communication extension.

Variety of Modules, flexible compatibility

- The coupler module can support up to 32 IO modules.
- The coupler module supports a wide range of input/output modules (DI, DO, AI, AO, RTD, TC, PI, PO, Mixed I/O Modules etc.)
- The coupler module can be expanded by using extension modules.

Elegant and Polished Exterior Design

- The coupler module dimensions are 115x51.5x75mm.
- The IO module dimensions are 115x14x75mm.
- Compact Size and modules are easy to disassemble.
- Distributed ultra-thin design. Saving installation space.

Easy Connect Wiring Design

- The terminals are designed with light-guiding holes.
- Terminal with spring, easy for connect.

Channel diagnostics

- The module is equipped with a set of indicator lights that accurately display the module and channel's operational.

Protection Design

- Reverse polarity protection
- Three-Terminal Isolation, Two-Point Grounding

High-Speed Backplane Bus

- Utilize of High-Speed Backplane Bus
- Support for 1ms refresh cycle
- A single coupler module can accommodate up to 32 IO modules.

COUPLER MODULE STANDARD SPECIFICATIONS

Specifications	LC-2101	LC-3101	LC-1101	LC-1301	LC-1201	LC-1401
Communication Protocols	Modbus-RTU/ASCII	CANopen DS401	Modbus-TCP	Profinet IO Device	EtherCAT	Ethernet/IP
System Power Supply	Power Supply: 9-36VDC (Nominal 24VDC)					
	Protection: Over-current Protection, Reverse polarity protection					
Module Power Consumption	30mA@24VDC	50mA@24VDC		110mA@24VDC		
Internal Bus Supply Current	Max: 2.5A@5VDC			Max: 2A@5VDC		
Isolation	Power Supply from System to Field: Isolation					
Field Power Supply	Power Supply: 22-28V (Nominal 24VDC)					
Field Power Supply Current	Maximum DC Current: 8A					
Supported Module Number	32 modules					
Wire Diameter	Max.1.0mm^2(AWG 17)					
Installation Method	35mm DIN Rail Mounting					
Dimensions	115x51.5x75mm					
Weight	130g					
Operating Temperature	-40~85˚C					
Environmental Humidity	5% - 95% non-Condensing					
Protection Rating	IP20					

COUPLER MODULE COMMUNICATION SPECIFICATIONS

Model	Type	Specifications
LC-2101	Network Protocols	Modbus-RTU/ASCII
	Process Data Area	Maximum Sum of Input and Output is 8192 bytes
	Function Code	01 / 02 / 03 / 04 / 05 / 06 / 15 / 16
	Baud Rate	2400~115200 bps
	Station Number	1~63(DIP Switch Configuration),64~247(Software Configuration)
	Interface	5-Pin Screw Terminal
	Data Bit	7,8
	Parity Bit	No Parity, Odd Parity, Even Parity
	Stopping Bit	1,2
	Maximum Bus Length	1200m (RS485, 2400 Baud Rate)
	Terminal Resistor and Biasing Resistor	DIP Switch Configuration

Model	Type	Specifications
LC-2101	Network Protocols	Modbus-TCP
	Process Data Area	Maximum Sum of Input and Output is 8192 bytes
	Diagnostic Functionality	Support
	Client Connections Number	5
	TCP Keepalive	Support
	Modbus Application Watchdog	Support(by default on, 30 second)
	Function Code	01/02/03/04/05/06/15/16/23
	Network Interface	2 RJ45 Interfaces
	Connection Speed	10/100Mbps, Auto-Negotiation, Full Duplex
	Maximum Bus Length	100m
	IP Address Configuration	DIP Switch or IO Config Configuration Software
LC-1301	Network Protocols	Profinet IO Device
	Process Data Area	Maximum Input: 1440 bytes, Maximum Output: 1440 bytes
	RT	Supported, Minimum Period: 1ms
	IRT	Not supported
	MRP	Not supported
	MRPD	Not supported
	IO Diagnostic Error	Supported (Diagnostic OB82)
	Network Interface	2 RJ45 Interfaces
	Connection Speed	10/100Mbps, Auto negotiation, Full Duplex
	Maximum Bus Length	100m
	Profinet Device Name	DIP Switch Configuration or Profinet Monitor for Modifying Device Name
LC-1201	Network Protocols	EtherCAT
	Process Data Area	Maximum Input: 1024 bytes, Maximum Output: 1024 bytes
	Network Interface	2 RJ45 Interfaces
	Connection Speed	10/100Mbps, Auto negotiation, Full Duplex
	Maximum Bus Length	100m
LC-1401	Network Protocols	Ethernet/IP
	Maximum Input Length	504 bytes (per assembly instance)
	Maximum Output Length	504 bytes (per assembly instance)
	Maximum Explicit Message Connection Count	10
	Maximum Implicit Message Connection Count	5
	Maximum CIP Connection Count	10
	Network Interface	2 RJ45 Interfaces
	Connection Speed	10/100Mbps, Auto negotiation, Full Duplex
	Maximum Bus Length	100m
LC-3101	Network Protocols	CANopen DS401
	Connection Interface	5-Pin Terminal Block
	Station Address	DIP Switch Setting (1-127)
	Process Data Configuration Interface	Maximum Input: 512 Bytes
		Maximum Output: 512 Bytes
		Type-C
	Transfer Rate	10 kbit/s, 20 kbit/s, 50 kbit/s, 100 kbit/s, 125 kbit/s, 250 kbit/s, 500 kbit/s, 800 kbit/s,1000 kbit/s

DI MODULE SPECIFICATIONS

Specifications		LD-1308	LD-1016	LD-3108	LD-3016	LD-5032
General Specifications	Power	Max.52mA@ 5.0Vdc	Max.60mA@ 5.0Vdc	Max.85mA@ 5.0Vdc	Max.60mA@ 5.0Vdc	Max.70mA@ 5.0Vdc
	Isolation	I/O to Internal Bus: Opto-isolator(3KVrms)				
	Field Power Supply	Rated Voltage: 24Vdc, Input Range: 22~28Vdc				
	Wiring	I/O Wiring: Max.1.0mm^2(AWG 17)				34P Horn Socket 2.54mm
	Installation Method	35mm DIN Rail Mounting				
	Dimensions	115x14x75mm				
	Weights	65g				
	Operating Temperature	-40~85˚C				
	Environmental Humidity	5% to 95% non-condensing				
	Protection Rating	IP20				
	Channel Number	8-channel PNP input	16-channel PNP input	8-channel NPN input	16-channel NPN input	32-channel NPN/PNP input
	Indicator Lights	8 -channel input Indicator Lights	16 -channel input Indicator Lights	8 -channel input Indicator Lights	16 -channel input Indicator Lights	32 -channel input Indicator Lights
	Turn On oltage	Min.10Vdc to Max.28Vdc				High Input: Min. 10Vdc to Max. 28Vdc (Common Terminal: 0Vdc) Low Input: Min. 0Vdc to Max. 14Vdc (Common Terminal: 24Vdc)
	Cutoff Voltage	Max.5Vdc				Input High Input: Max. 5Vdc (Common Terminal: 0Vdc) Low Input: Min.19Vdc (Common Terminal: 24Vdc)
	Inrush Current	Max.5mA/-channel @28V				
	Input Impedance	>7.5kΩ				
	Input Delay	OFF to ON: Max.3ms				
		ON to OFF: Max.2ms				
	Filtering Time	Default 10ms				
	Sampling Frequency	500Hz				
	Counting Frequency	<200Hz				

DO MODULE SPECIFICATIONS

Specifications		LD-4016	LD-4032
General Specifications	Power	Max.75mA@5.0Vdc	Max.175mA@5.0Vdc
	Isolation	I/O to Internal Bus: Opto-isolator(3KVrms)	
	Field Power Supply	Rated Voltage: 24Vdc	
		Input Range: 22~28Vdc	
	VCLAMP Voltage	Rated Voltage: 24Vdc	
		Input Range: 12~36V	
	Wiring	I/O Wiring: Max.1.0mm^2(AWG 17)	
	Installation Method	35mm DIN Rail Mounting	
	Dimensions	115x14x75mm	
	Weights	65g	
Environment Specifications	Operating Temperature	-40~85˚C	
	Environmental Humidity	5% to 95% non-condensing	
	Protection Rating	IP20	
Output Specifications	Channel Number	16-channel NPN Output	32-channel NPN Output
	Indicator Lights	16-channel Output Indicator Lights	32-channel Output Indicator Lights
	Rated Current	Single-channel Output: Max.1000mA in the meantime Output: Max.500mA	Single-channel Output: Max .1000mA/16-channel in the meantime Output: Max.500mA/32-channel in the meantime Output: Max.300mA
	leakage current	Maximum: 10uA	
	On-State Resistance	Typical Value: 500mΩ	
	Output Delay	OFF to ON: Max 100 us / ON to OFF: Max 150 us	
	Protection Functions	Over-temperature shutdown: Typical value 160°C Over-current protection: Typical value 1.8A Short circuit protection: Supported on the new hardware version Interlock protection: 4 channels in one group	

Specifications		LD-2104	LD-2008	LD-2016	LD-2116	LD-2032
General Specifications	Power	Max.30mA@5.0Vdc	Max.80mA@5.0Vdc	Max.175mA@5.0Vdc	Max.175mA@5.0Vdc	Max .185mA@5. 0Vdc
	Isolation	I/O to Internal Bus: Opto-isolator(3KVrms)				
	Field Power Supply	Rated Voltage: 24Vdc				
		Input Range: 12~30Vdc				
	Wiring	I/OWiring:Max.1.0mm2(AWG 17)				34P Horn Connecter 2.54mm
	Installation Method	35mm DIN Rail Mounting				
	Dimensions	115x14x75mm				
	Weights	65g				
Environment Specifications	Operating Temperature	-40~85˚C				
	Environmental Humidity	5%~95% RH (Non-condensing)				
	Protection Rating	IP20				

Output Specifications	**Channel Number**	4-channel PNP Output	8-channel PNP Output	16-channel PNP Output	16-channel PNP Output (Independent power supply)	32-channel PNP Output
	Indicator Lights	4-channel Output Indicator Lights	8-channel Output Indicator Lights	16-channel Output Indicator Lights	16-channel Output Indicator Lights	32-channel Output Indicator Lights
	Ampacity	Typical value: 2.2A	Typical value: 500mA	Typical value: 500mA	Typical value: 500mA	Typical value: 300mA
	Leakage Current	Maximum value: 10uA	Maximum value: 100uA	Maximum value: 10uA	Maximum value: 10uA	Maximum value: 10uA
	Output Impedance	<90mΩ	<280mΩ	<200mΩ	<200mΩ	<200mΩ
	Output Delay	OFF to ON:Max .5us	OFF to ON: Max.100us	OFF to ON: Max.100us	OFF to ON: Max.100us	OFF to ON: Max.100us
Output Specifications		ON to OFF:Max .200us	ON to OFF: Max.150us	ON to OFF: Max.150us	ON to OFF: Max.150us	ON to OFF: Max.150us
	Protection Functions	Thermal shutdown: Typical value150˚C	Thermal shutdown: Typical value135˚C	Thermal shutdown: Typical value135˚C	Thermal shutdown: Typical value135˚C	Thermal shutdown: Typical value 135˚C
		Overcurrent protection: Typical value 12A	Overcurrent protection: Typical value1.1A	Overcurrent protection: Typical value1.1A Short circuit protection	Overcurrent protection: Typical value1.1A Short circuit protection	Overcurrent protection: Typical value1.1A Short circuit protection

Specifications		**LD-8008**
General Specifications	**Power**	Max.280mA@5.0Vdc
	Isolation	I/O to Internal Bus: Coil isolation(1600VAC)
	Field Power Supply	Not used
	Wiring	I/O Wiring: Max.1.0mm2(AWG 17)
	Installation Method	35mm DIN Rail Mounting
	Dimensions	115x14x75mm
	Weights	65g
Environment Specifications	**Operating Temperature**	-40~85˚C
	Environmental Humidity	5% to 95% non-condensing
	Protection Rating	IP20
Output Specifications	**Channel Number**	8-channel NO relay outputs
	Indicator Lights	8-channel Output Indicator Lights
	Maximum Switching Current	2A
	Maximum switching Voltage	250VAC/220VDC
	Maximum Switching Power	62.5VA/60W
	Contact resistance	≤100mΩ
	Output Delay	ON to OFF:Max.3ms/OFF to ON:Max.3ms
	Mechanical Durability	$1x10^8$ cycles
	Electrical Durability	$1x10^5$ cycles
	Vibration	10Hz~55Hz 3.3mm double amplitude
	Shock	Intensity: 980m/s2 / Stability: 735m/s2

AI MODULE SPECIFICATIONS

Specifications		LA-3008
General Specifications	Power	Max.100mA@5.0Vdc
	Isolation	I/O to Internal Bus: Opto-isolator(3KVrms)
	Field Power Supply	Not used
	Wiring	I/OWiring: Max.1.0mm2(AWG 17)
	Installation Method	35mm DIN Rail Mounting
	Dimensions	115x14x75mm
	Weights	65g
Environment Specifications	Operating Temperature	-40~85℃
	Environmental Humidity	5%~95% RH (Non-condensing)
	Protection Rating	IP20
Output Specifications	Channel Number	8-channel Voltage input
	Indicator Lights	8-channel input Indicator Lights
	Input Voltage Range	0~5VDC,0~10VDC,±5VDC,±10VDC
	Resolution	15 Bit/16 Bit
	Accuracy	±0.3%@25℃ /±0.5@-40~85℃
	Sampling Rate	1ms/8-channel
	Input Impedance	1MΩ
	Common Terminal	Common-ground input
	Channel Disabled	Supported
	Diagnostic Function	Channel disable fault value: -32767 Overflow: 32767 (supported only in standard mode) Underflow: -32768 (supported only in standard mode)

Specifications		LA-1004	LA-1008	LA-1108
General Specifications	Power	Max.65mA@5.0Vdc		
	Isolation	I/O to internal bus: Magnetic isolation (2.5KVrms) /Power Isolation: DC-DC		
	Wiring	I/O Wiring: Max.1.0mm^2 (AWG 17)		
	Installation Method	35mm DIN Rail Mounting		
	Dimensions	115x14x75mm		
	Weights	65g		
Environment Specifications	Operating Temperature	-40~85℃		
	Environmental Humidity	5% to 95% non-condensing		
	Protection Rating	IP20		

Output Specifications	**Channel Number**	4-channel input current	8-channel input current	
	Indicator Lights	4 LED-channel status indicator lights	8 LED-channel status indicator lights	
	Input Range	Maximum: 0~23.5mA		Maximum: -23.5~23.5mA
	Resolution	15 Bit		
	Acquisition Accuracy	±0.3% of full scale, @25˚C /±0.5% full scale, @-20~70˚C		
	Sampling Rate	6ms/4-channel (Filter level 0)	12ms/8-channel	28ms/8-channel
Output Specifications	**Data format**	16-bit signed integer		
	Diagnostic Function	——		Standard mode: Overflow 32767, Standard mode: Underflow -32768, Channel disabled: -32767

AO MODULE SPECIFICATIONS

Specifications		**LA- 4004**	**LA-4008**	**LA-2004**
General Specifications	**Power**	Max 500 mA@5.0Vdc		
	Isolation	I/O to internal bus: Electromagnetic Isolation(3KVrms)		
	Wiring	I/O Wiring: Max.1.0mm2(AWG 17)		
	Installation Method	35mm DIN Rail Mounting		
	Dimensions	115x14x75mm		
	Weights	65g		
Environment Specifications	**Operating Temperature**	-40~85˚C		
	Environmental Humidity	5%~95% RH (Non-condensing)		
	Protection Rating	IP20		
Output Specifications	**Channel Number**	4-channel Voltage Output	8-channel Voltage Output	4-channel Current Output
	Indicator Lights	4-channel Output Indicator Lights	8-channel Output Indicator Lights	4-channel Output Indicator Lights
	Output Voltage/ Current Range	>5kΩ		Max.1KΩ
	Load Resistance	16 bits		
	Resolution	±0.1% (full scale)@25˚C		
	Accuracy	±0.3(full scale)@-40~85˚C		
	Conversion Time	1ms/every channel		2ms/every channel
	Diagnostic	Overtemperature/Overcurrent State Monitoring		Open Circuit or Overload, Field Power Supply error
	Overcurrent Protection	20mA		
	Common Terminal	Common ground Output		0V common ground, Non-isolated between channels

RTD MODULE SPECIFICATIONS

Specifications		LA-7003	LA-7004
General Specifications	Power	Max.35mA@5.0Vdc	Max.65mA@5.0Vdc
	Isolation	I/O to internal bus: Magnetic Isolation(2.5KVrms)	
	Field Power Supply	Not used	
	Wiring	I/O Wiring: Max.1.0mm2(AWG 17)	
	Installation Method	35mm DIN Rail Mounting	
	Dimensions	115x14x75mm	
	Weights	65g	
Environment Specifications	Operating Temperature	-40~85℃	
	Environmental Humidity	5%~95% RH (Non-condensing)	
	Protection Rating	IP20	
Input Specifications	Channel Number	3-channel Thermistor Input	4-channel Thermistor Input
	Indicator Lights	3 green LED	4 green LED
	Resolution	15 bits	
	Sensor type	PT100	
	Measurement Range	-240~880℃	
	Measurement Accuracy	0.5℃	
	Conversion Rate	400ms/3-channel	
	Diagnostic function	32766: Sensor not connected or disconnected -32766: Short circuit condition 32765: Chip failure 32767: Temperature overflow -32768: Temperature underflow	

TC MODULE SPECIFICATIONS

Specifications		LA-9004	LA-9008
General Specifications	Power	Max.50mA@5.0Vdc	Max.60mA@5.0Vdc
	Isolation	I/O to internal bus: Magnetic Isolation(2.5KVrms)	
	Field Power Supply	Not used	
	Wiring	I/O Wiring: Max.1.0mm^2(AWG 17)	
	Installation Method	35mm DIN Rail Mounting	
	Dimensions	115x14x75mm	
	Weights	65g	
Environment Specifications	Operating Temperature	-40~85˚C	
	Environmental Humidity	5%~95% RH (Non-condensing)	
	Protection Rating	IP20	
Input Specifications	Channel Number	4-channel Thermocouple Input	8-channel Thermocouple Input
	Indicator Lights	4 Input Indicator Lights	8 Input Indicator Lights
	Sensor type	J / K / E / T / S / R / B / N type thermocouples	
	Acquisition Accuracy	±0.3% of full scale, @25˚C	
		±0.5% full scale, @-40~85˚C	
	Sampling Rate	70ms/4-channel	
	Measurement Range	J Type -210~1200˚C / K Type -270~1370˚C / E Type-270~1000˚C / T Type-270~400˚C / S Type -50~1760˚C /R Type-50~1760˚C / B Type 100~1820˚C / N Type -270~1300˚C	
	Data format	16-bit signed integer	
	Diagnostic function	-32767: Thermocouple type not selected (disable this channel)	
		32766: Open circuit or disconnected	
		32767: Temperature overflow	
		-32768: Temperature underflow	
		32765: ADC chip failure	
		32764: Cold junction compensation conversion fault value	

POSITION MEASUREMENT MODULE SPECIFICATIONS

Specifications		LP-1002	LP-3002	LP-7002	LP-5002	
General Specifications	Power	Max.65mA@5.0Vdc				
	Isolation	I/O to internal bus: Magnetic Isolation(3KVrms)				
	Field Power Supply	Rated Voltage: 24Vdc, Input Range: 20~28Vdc				
	Wiring	I/O Wiring: Max.1.0mm^2(AWG 17)				
	Installation Method	35mm DIN Rail Mounting				
	Dimensions	115x14x75mm				
	Weights	65g				
Environment Specifications	Operating Temperature	-40~85℃				
	Environmental Humidity	5% to 95% non-condensing				
	Protection Rating	IP20				
Input Specifications	Channel Number	2-channel Encoder				
	Indicator Lights	16 channels input Indicator Lights				
	Encoder signal types	ABZ input standard: 5V DC, range ±10%	ABZ input standard: 24Vdc, range ±10%	Differential input, voltage output range 0-5V.	SSI absolute value input.	
	Encoder Input Impedance	Internal pull-up or pull-down resistor 4.7K.		——	Data frame length	10-40 bits
	Encoder Filter Time	Configurable, default 0.5us			Length	32 bits maximum
	Encoder Counting Frequency	<1.5MHz		<10MHz	Format	Gray code or binary
	Encoder Multiplication Mode	x1/x2/x4			LSB/MSB	Configurable
	Encoder measurement functionality	Measurement of load speed or input signal frequency			SSI Encoder clock frequency	≤2MHz
	DI Turn on Voltage	Min.5Vdc to Max.28Vdc				
	DI Turn Off Voltage	Max.2.7Vdc				
	DI Inrush current	Max.5mA/Channel @28V				
	DI Input Impedance	>10.0kΩ				
	DI Input Delay	OFF to ON: Max.3ms				
		ON to OFF: Max.2ms				
	DO Output Voltage	24V, Range ±10%				
	DO Output Current	Max.500mA				
	DO Output Leakage Current	Max.5uA				

MIXED DIGITAL INPUT/OUTPUT MODULE SPECIFICATIONS

Specifications		LD-0008			
General Specifications	Power	Max.85mA@5.0Vdc			
	Isolation	I/O to Internal Bus: Opto-isolator(3KVrms)			
	Field Power Supply	Rated Voltage: 24Vdc			
		Input Range: 22~28Vdc			
	Wiring	I/O Wiring: Max.1.0mm^2(AWG 17)			
	Installation Method	35mm DIN Rail Mounting			
	Dimensions	115x14x75mm			
	Weights	65g			
Environment Specifications	Operating Temperature	-40~85˚C			
	Environmental Humidity	5% to 95% non-condensing			
	Protection Rating	IP20			
Input Specifications	Channel Number	8-channel NPN/PNP bidirectional Input	Output Specifications	Channel Number	8-channel NPN/PNP Output
	Indicator Lights	8-channel input Indicator Lights		Indicator Lights	8-channel Output Indicator Lights
	Turn On Voltage	High input: Min.10Vdc to Max.28Vdc (Common terminal:0Vdc) Low input: Min.0Vdc to Max.14Vdc (Common terminal:24Vdc)		Ampacity	Typical value: 0.5A
	Turn off Voltage	High input:Max.5Vdc (Common terminal:0Vdc) Low input: Min.19Vdc (Common terminal:24Vdc)		Leakage current	Maximum value: 10uA
	Inrush current	Max.5mA/channel @28V			
	Input Impedance	>7.5kΩ		Output Impedance	<200mΩ
	Input Delay	OFF to ON: Max.3ms		Output Delay	OFF to ON: Max.100us
		ON to OFF: Max.2ms			ON to OFF: Max.150us
Input Specifications	Filter Time	Default time: 10ms		Protection Functions	Over Temperature Protection: Typical value135˚C
	Sampling Frequency	500Hz			Over-Current Protection: Typical value1.1A
	Counting Frequency	<200Hz			Short circuit protection

COMMUNICATION SUBMODULE SPECIFICATIONS

Specifications		KYIO-LS-1211	KYIO-LS-1111
General Specifications	Power	Max.50mA@5.0Vdc	
	Isolation	I/O to Internal Bus: Opto-isolator(3KVrms)	
	Field Power Supply	Rated Voltage: 24Vdc	
		Input Range: 22~28Vdc	
	Wiring	I/O Wiring: Max.1.0mm²(AWG 17)	
	Installation Method	35mm DIN Rail Mounting	
	Dimensions	115x14x75mm	
	Weights	65g	
Environment Specifications	Operating Temperature	-40~85℃	
	Environmental Humidity	5% to 95% non-condensing	
	Protection Rating	IP20	
Input Specifications	Channel Number	1	1
	Interface	RS485/RS232/RS422	CAN
	Protocol	Modbus RTU/ASCII	CANopen
	Operating Mode	Modbus master, slave, and transparent pass-through	Master Mode
	Master/Slave/ Transparent Modes Universal Communication Specifications	Baud rate: 300bps-500Kbps; Data bits: 7, 8 bits; Parity: None, Odd, Even parity Stop bits: 1, 2 bits; Character spacing: 1.5t-200t	
	Master Communication Specifications	Read data processing mode: Keep the last input value, Clear the input value. Data output mode: Polling, Event-triggered (data change) Module control enable: Disable, Enable Module control mode: Level-triggered, Rising edge-triggered. Power-on event output: Enable, Disable	Supported number of slave: 16 Baud rate: 10K~1Mbps Mode: PDO, SDO, Heartbeat, NMT, EMCY, Network scan PDO number: Default disabled, Automatically assigned if supported PDO COB-ID: Default disabled, Automatically assigned if supported Reset: One-click reset, Restore to factory settings
	Slave Communication Specifications	Slave ID: Customizable, default is 1. Response time: Customizable, default is 50	
	Transparent Mode Specifications	Byte order conversion: Disable and Enable	

COUPLER MODULE ORDERING INFORMATION

Product Model	Model Specification
KYIO-LC-3101	CANopen slave/64 TPDOs/64 RPDOs/Operating voltage 24VDC
KYIO-LC-1201	EtherCAT protocol/32 slots/ maximum total input of 1024 bytes/ maximum total output 1024 bytes
KYIO-LC-1401	EtherNet/IP protocol/32 slots/maximum total input of 504 bytes/ maximum total output 504 bytes
KYIO-LC-2101	Modbus-RTU protocol/32 slots/ maximum total input and output 8192 bytes
KYIO-LC-1101	Modbus-TCP protocol/32 slots/maximum total input and output 8192 bytes/2 RJ45 Interfaces/Max supported 5 Modbus-TCP client simultaneous access
KYIO-LC-1301	Profinet protocol/32 slots/maximum total input of 1440 bytes/ maximum total output 1440 bytes/supported RT/Not supported Ring

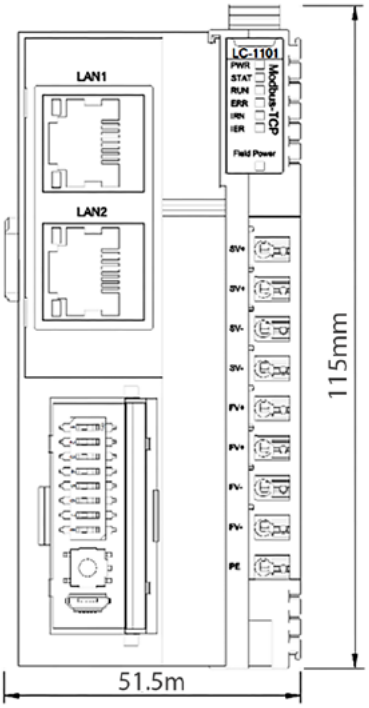
EXPANSION MODULE ORDERING INFORMATION

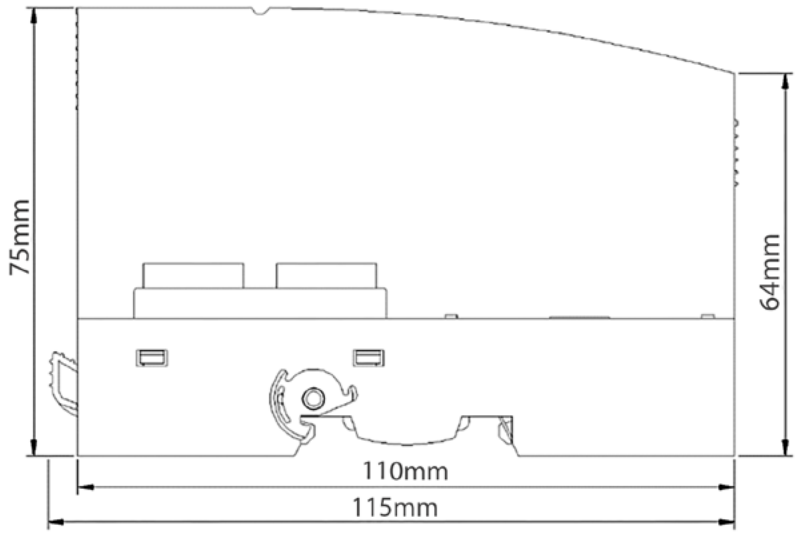
Product Model	Model Specification
KYIO-LX-7032	Rail installation/32-channel horn connector/Spring Wiring
KYIO-LX-4006	6-channel Field Power Supply distribution module 0V+24V+PE
KYIO-LX-4009	9-channel Field Power Supply distribution module 0V+24V
KYIO-LX-4018	18-channel Field Power Supply distribution module 0V
KYIO-LX-4118	18-channel Field Power Supply distribution module 24V
KYIO-LX-4218	18-channel Field Power Supply distribution module PE
KYIO-LX-4108	Field Power Supply expansion module (8A)/No configuration required
KYIO-LX-1005	Bus expansion master module/Not exceeding 8 meters/No more than 5 stops
KYIO-LX-6108	Power supply expansion module (system power) input 24VDC/ Output 5VDC/2A; Field Power Supply input 24VDC/ Output 24VDC/8A)
KYIO-LX-6008	Power supply expansion module (system power) input 24VDC/ Output 5VDC/2A; Field Power Supply input 24VDC/ Output 24VDC/8A)/No configuration required/No Slot occupied/No Diagnostic function
KYIO-LX-2005	Bus expansion slave module/Not exceeding 8 meters/Not more than 5 stations
KYIO-LX-3000	Terminal module/No configuration required/Required
KYIO-LX-8002	2-meter length/Flame-retardant material/Soft cable/Both ends with female horn connectors

IO MODULE ORDERING INFORMATION

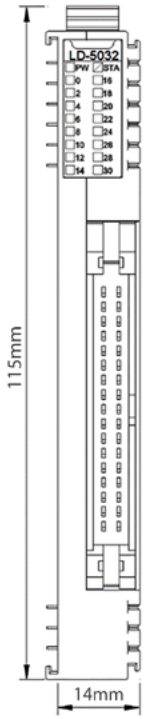
Product Model	Model Specification
KYIO-LD-1308	8-channel digital input/Sink/24VDC/Supports counting function (maximum clocking frequency of 200Hz) /PNP
KYIO-LD-1016	16-channel digital input/Sink//24VDC/Supports counting function (maximum clocking frequency of 200Hz) /PNP
KYIO-LD-3108	8-channel digital input/Source/24VDC/Supports counting function (maximum clocking frequency of 200Hz) /NPN
KYIO-LD-3016	16-channel digital input/Source/24VDC/Supports counting function (maximum clocking frequency of 200Hz) /NPN
KYIO-LD-5032	32-channel digital input/Bidirectional/With KYIO-LX-7032/34 Pin male horn connector/24VDC/Supports counting function (maximum clocking frequency of 200Hz)
KYIO-LD-2104	4-channel digital output/Source/5.5-40VDC Single channel maximum 3.3A/4-channel maximum per channel 2A/Channels can be used in parallel/PNP
KYIO-LD-2008	8-channel digital output/Source/24VDC/0.5A/PNP
KYIO-LD-2016	16-channel digital output/Source/24VDC/0.5A/PNP
KYIO-LD-2116	16-channel digital output/Source/24VDC/0.5A/PNP/Independent power supply
KYIO-LD-2032	32-channel digital output/Source/24VDC/0.5A/With KYIO-LX-7032/34 Pin male horn connector/PNP
KYIO-LD-8008	8-channel relay output (9~30VDC@2A/110Vac@0.55A/250Vac@0.25A)
KYIO-LD-4016	16-channel digital output/sink/24VDC/0.5A/NPN
KYIO-LD-4032	32-channel digital output/24VDC/NPN/Can be used to boot device/electromagnetic protection/Overcurrent protection/ With KYIO-LX-7032/34 Pin male horn connector/
KYIO-LD-0008	8-channel digital input/24VDC/PNP or NPN & 8-channel digital output/24VDC
KYIO-LA-1004	4-channel analog input/0&4-20mA/15-bit/Single Terminal
KYIO-LA-1008	8-channel analog input/0&4-20mA/15-bit/Single Terminal
KYIO-LA-1108	8-channel analog input/-20-20mA/15-bit/Single Terminal
KYIO-LA-3008	8-channel analog input/0~5VDC/-5~5VDC/0~10VDC/-10~10 VDC/15-bit/Single Terminal
KYIO-LA-2004	4-channel analog output/0&4-20mA/16-bit/Single Terminal
KYIO-LA-4004	4-channel analog output/0~5VDC/-5~5VDC/0~10VDC/-10~10VDC/16-bit/Single Terminal
KYIO-LA-4008	8-channel analog output/0~5VDC/-5~5VDC/0~10VDC/-10~10VDC/16-bit/Single Terminal
KYIO-LA-7003	3-channel RTD input (PT100)
KYIO-LA-7004	4-channel RTD-PT100 Temperature Acquisition Module
KYIO-LA-7006	6-channel RTD input RTD-PT100/Non-isolated acquisition accuracy between channels<=0.5-C
KYIO-LA-9004	4-channel TC input (J/K/E/T/S/R/B/N/C)
KYIO-LA-9008	8-channel TC input (J/K/E/T/S/R/B/N/C)/15bit
KYIO-LP-3002	2-channel Encoder/24V input/Quadrature Decoder/Direction Pulse/high-speed counting/2-channel DI/2-channel DO/ 2-wire 24VDC output/32bit/Maximum output Frequency 1.5MHz
KYIO-LP-7002	2-channel Encoder/Differential input/Quadrature Decoder/Direction Pulse/high-speed counting/2-channel DI/2-channel DO/32bit/Maximum Input Frequency 10MHz
KYIO-LP-5002	2-channel Encoder/SSI input/Each channel supports SSI absolute encoder signal input/1 digital signal input/Input Voltage 5VDC or 24VDC/Each channel supports 1 digital output signal/Output Voltage 5VDC/
KYIO-LP-1002	2-channel Encoder/5V Input/Quadrature Decoder/Direction Pulse/high-speed counting/2-channel DI/2-channel DO/ 2-wire 5V Output/32bit/Maximum output Frequency 1.5MHz
KYIO-LP-4002	2-channel 4-wire PWM output Module/24V Single Terminal/Switching Frequency≤200KHz
KYIO-LS-1111	1-channel CANopen communication module supports CANopen master mode
KYIO-LS-1211	1-channel serial communication module (RS232/RS485/RS422/Support Modbus-RTU/ASCII/"Master-Slave mode/ Transparent mode

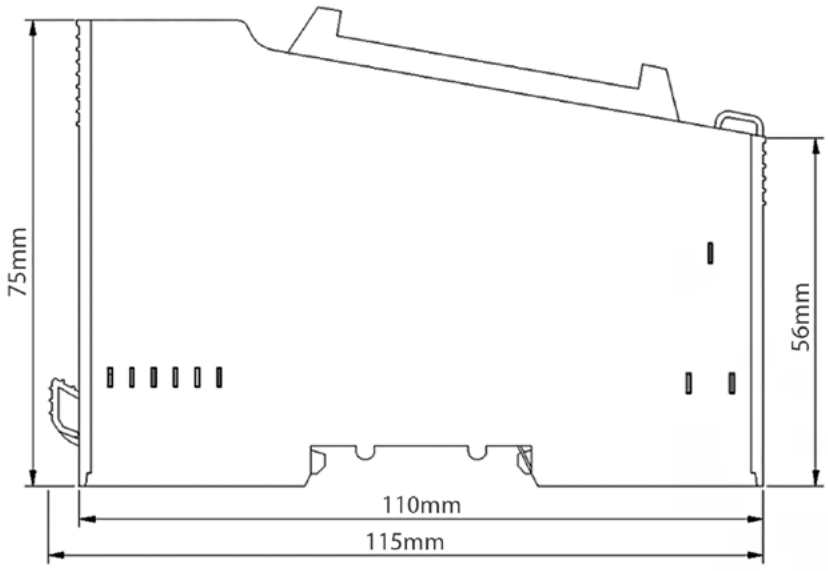
COUPLER MODULE DIMENSION DRAWING





IO MODULE DIMENSION DRAWING





Motion Controller (Codesys)

KYAC311 Series

► MOTION CONTROLLER
► FANLESS DESIGN

FEATURES

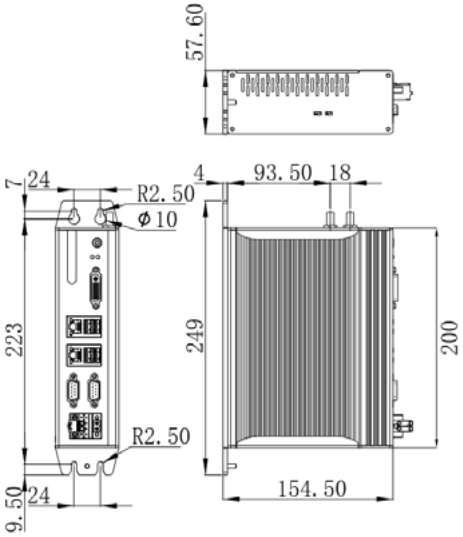
- Powerful performance with an Intel x86 4-core processor.
- Supports up to 32-axis motion control with 1ms cycle time
- With an optimized BIOS kernel to meet real-time control requirements
- EtherCAT supports up to 32 slave device
- System task jitter within 35us
- Complies with IEC61131-3 standard and PLCopen specifications
- Supports industrial protocols such as EtherCAT, Ethernet/IP, OPC UA, and ModbusTCP
- Integrated with two serial ports, switch flexibly between RS232 and RS485
- Dual power redundant design to ensure stable power supply
- Supports a wide operating temperature -20 ~ 60℃

SPECIFICATIONS

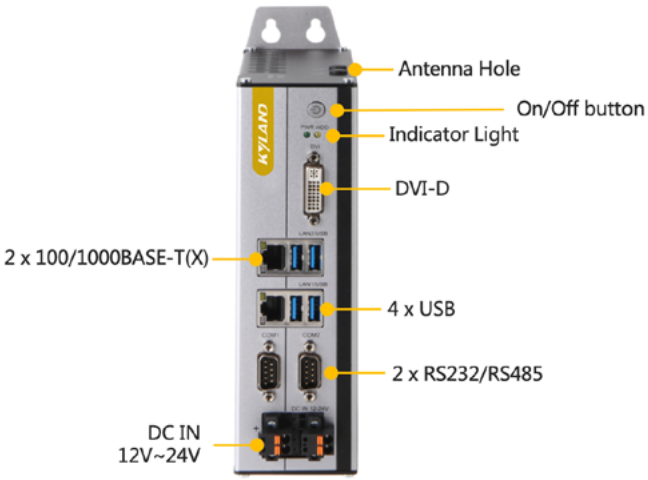
KYAC311-E3MA		
Hardware Specification	CPU	Intel® Celeron J1900, 2.0GHz, 4 Cores/4 Threads, 2MB L2 Cache
	TDP	10W
	BIOS	AMI UEFI 64Mbit
	Memory	8GB DDR4
	Storage	128GB SSD mSATA
	USB	1 x USB3.0, 3 x USB2.0
		Onboard built-in 1 x USB2.0, support hardware encryption
	COM	2 x DB9, RS232/RS485 configurable RS485 support automatic flow control, RS232 with ESD protection (air-gap discharge: ±8KV, contact discharge: ±6KV)
	Network Interface	2 x 100/1000BASE-T(X), Intel I210
	DVI-D	Max resolution 1920 x 1080
	Expansion Slot	1 x miniPCIe with SIM Tray
	Watchdog	1~255 Levels programmable

Software Specification	RTE	Codesys RTE 3.5.18
	Operating System	Windows 10
Power Supply	Input Voltage	DC12~24V ±10%, Overcurrent, overvoltage and reverse connection protection
	Consumption	Max 45W
Mechanical Structure	Structure	Fanless design, supports wall-mounted or DIN-Rail installation
	Dimensions	(L)200mm x (W)154.5mm x (H)57.6mm
	Weight	1.6Kg
Environment	Operating Temperature	-20ºC ~ 60ºC
	Storage Temperature	-40ºC ~ 80ºC
	Humidity	5~95% (No condensation)
	Vibration	5~500Hz, 1.5Grms IEC60068-2-64
	Impact	20G (duration 11ms half sine wave) IEC60068-2-27
	EMC	CE/FCC Class A

DIMENSIONS



INTERFACE



ORDERING INFORMATION

P/N	Description
KYAC311-E3MAW0SM	J1900/8G/128G SSD/WIN10/Softmotion
KYAC311-E3MAW0SMTW	J1900/8G/128G SSD/WIN10/Softmotion/Target &Web Visu

KYAC323 Series

► MOTION CONTROLLER
► POWERFUL PERFORMANCE

FEATURES

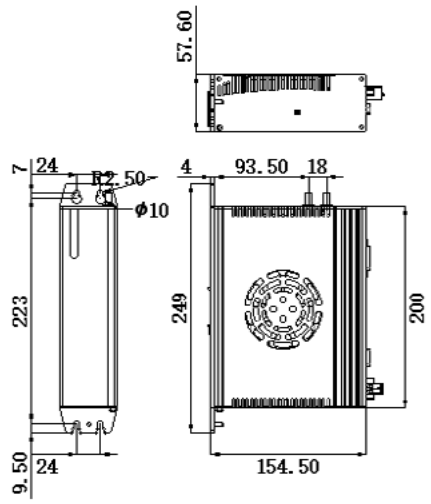
- Powerful performance with an Intel CORE I3/I5/I7 processor
- With an optimized BIOS kernel to meet real-time control requirements
- EtherCAT supports up to 128 slave device
- System task jitter within 25us
- Complies with IEC61131-3 standard and PLCopen specifications
- Supports industrial protocols such as EtherCAT, Ethernet/IP, OPC UA, and ModbusTCP
- Integrated with two serial ports, switch flexibly between RS232 and RS485
- Dual power redundant design to ensure stable power supply
- Supports a wide operating temperature -20 ~ 60℃

SPECIFICATIONS

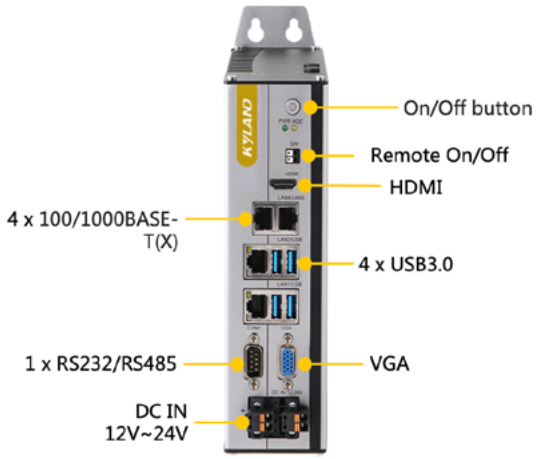
Specifications		KYAC323-33MB	KYAC323-341B	KYAC323-341B	KYAC323-341B	KYAC323-73MB	KYAC323-741B	KYAC323-752B
Hardware Specification	CPU	I3-8100		I5-6400		I7-8700		
	TDP	Max 65W						
	BIOS	AMI UEFI 64Mbit						
	Memory	8GB	16GB	8GB	16GB	8GB	16GB	32GB
	Storage	128GB	256GB	128GB	256GB	128GB	256GB	512GB
	USB	4 x USB3.0						
		Onboard built-in 1 x USB2.0, support hardware encryption						
	COM	2 x DB9, RS232/RS485 configurable RS485 support automatic flow control, RS232 with ESD protection (air-gap discharge: ±8KV, contact discharge: ±6KV)						
	Network Interface	4 x 100/1000BASE-T(X), Intel I210						
	VGA	Max resolution 1920 x 1080						
	HDMI	Max resolution 3840 x 2160						
	Expansion Slot	2 x miniPCIe, with SIM Tray						
	Watchdog	1~255 Levels programmable						

Software Specification	**RTE**	Codesys RTE 3.5.18
	Operating System	Windows 10
Power Supply	**Input Voltage**	DC12~24V ±10%, Overcurrent, overvoltage and reverse connection protection
	Consumption	Max 120W
Mechanical Structure	**Structure**	Supports wall-mounted or DIN-Rail installation
	Dimensions	(L)200mm x (W)154.5mm x (H)57.6mm
	Weight	1.9Kg
Environment	**Operating Temperature**	-20ºC ~ 60ºC
	Storage Temperature	-40ºC ~ 80ºC
	Humidity	5~95% (No condensation)
	Vibration	5~500Hz, 1.5Grms, IEC60068-2-64
	Impact	20G(duration 11ms, half sine wave), IEC60068-2-27
	EMC	CE/FCC Class A

DIMENSIONS



INTERFACE



ORDERING INFORMATION

P/N	Description
KYAC323-33MBW0SM	I3-8100/8G/128G SSD/WIN10/Softmotion
KYAC323-33MBW0SMTW	I3-8100/8G/128G SSD/WIN10/Softmotion/Target &Web Visu
KYAC323-53MAW0SM	I5-6400/8G/128G SSD/WIN10/Softmotion
KYAC323-541AW0SMTW	I5-6400/16G/256G SSD/WIN10/Softmotion/Target &Web Visu
KYAC323-73MBW0SM	I7-8700/8G/128G SSD/WIN10/Softmotion
KYAC323-741BW0SM	I7-8700/16G/256G SSD/WIN10/Softmotion
KYAC323-752BW0SM	I7-8700//32G/512G SSD/WIN10/Softmotion
KYAC323-73MBW0SMTW	I7-8700//8G/128G SSD/WIN10/Softmotion/Target &Web Visu
KYAC323-741BW0SMTW	I7-8700//16G/256G SSD/WIN10/Softmotion/Target &Web Visu
KYAC323-752BW0SMTW	I7-8700//32G/512G SSD/WIN10/Softmotion/Target &Web Visu

IoT Edge Controller

NewPre2100 IoT Edge Controller

Robust Performance

- It uses a quad-core ARM Cortex-A53 processor with a 1.6GHz frequency, 2GB DDR4 memory, and 4GB eMMC. It provides computing resources for various industrial field applications, such as edge node data acquisition, protocol conversion, real-time control, agile connectivity, machine vision, intelligent applications, security, and privacy protection.

Highly Reliable Industrial Design

- Adopting an industrial-grade, fanless design and featuring a rail-type installation, it is capable of operating in a wide temperature range of -40 to 70℃, making it suitable for both indoor and outdoor installation environments. It is compliant with EMC standards and has an IP40 protection level.

Rich Industrial Protocols

- Supports multiple network modes, including 3G, 4G, and 5G, as well as Wi-Fi.
- Supports 2x RS485/232/422, 6x 10/100/1000Base-T(X) RJ45 interfaces, supports 2x CAN, supports 2x DI, 2x DO.
- Supports diverse, rapidly customizable interfaces.

Quick Network Deployment

- Equipped with intelligent communication and connectivity functions, it supports both static and dynamic routing protocols.
- Supports the establishment of dynamic VPN tunnels for easy and secure VPN network construction.
- Enables device management platforms for efficient administration of a large number of remotely connected devices.

Security

- Features a firewall that aids in network security protection.
- Supports multiple VPN encryption modes, such as IPSec and OpenVPN, to ensure secure data transmission.

Convenience

- The equipment supports local web configuration and cloud-based equipment management.

Multi-Protocol Conversion

- Comes with embedded rich industrial protocols, including Modbus TCP, Modbus RTU, CANopen, S7, PPI, CAN, Profinet, OPC UA, MQTT, among other commonly used industrial communication protocols.
- Supports custom protocols and third-party extensions.
- Allows for dynamic loading as needed for seamless protocol conversion.

Business Integration

- Supports software-defined control to realize PLC control, data analysis, and machine vision applications.

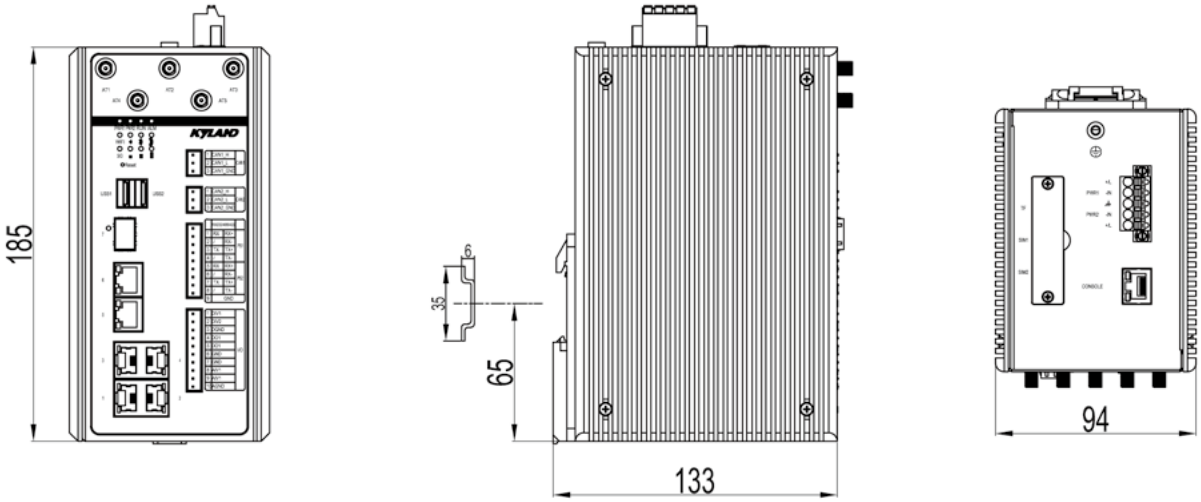
PRODUCT SPECIFICATIONS

		NewPre2100-N1043A-M1D6MW3	NewPre2100-N1043A-M1D6MW0
Main System	CPU	4x Cortex-A53,1.6 GHz	
	Memory	2GB DDR4	
	Storage	4GB eMMC	
Interface	Network Interface	6 x 10/100/1000Base-T(X),RJ45 Interface	
	USB	2 x USB3.0	
	Serial Ports	2 x RS485/232/422	
	CAN	2 x CAN	
	IO	2 x DI/2 x DO	
	Console Debugging Port	RJ45	
Power Supply	Input Voltage	24VDC(18-72VDC)	
	Terminal Connection	5-pin 5.08mm pitch plug-in terminals	
	Power Consumption	<25W	
	Overload Protection	Supported	
	Reverse Polarity Protection	Supported	
	Redundancy Protection	Supported	
Mechanical Structure	Enclosure	Metal	
	Cooling Method	Passive cooling, fanless for the main unit, GPU fan cooling	
	Protection Level	IP40	
	Dimensions (mm)	94 x 185 x 123(W x H x D)	
	Mounting Method	Rail-mounting	
Environment	Operating Temperature	-40 ~ 70℃	
	Storage Temperature	-40 ~ 85℃	
	Relative Humidity	5 ~ 95% Non-condensing	
Standard	EMI	FCC CFR47 Part 15, EN55022/CISPR22, Class A	
	EMS	IEC 61000-4-2 (ESD), Air: ±8KV;Contact: ±6kV IEC 61000-4-3 (RS), 10V/m(80MHz ~ 2GHz) IEC 61000-4-4 (EFT), DC Power Port:±2kV,Singal Port:±2kV IEC 61000-4-5 (Surge), Power Port:±1kV/DM,±2kV/CM, Singal Port:±1kV (line to line),Singal Port:±2kV (line to earth) IEC 61000-4-6 (CS), Signal ports: 0.15-80MHz at 10V/m, Power ports: 0.15-80MHz at 10V/m	
	Mechanical	IEC60068-2-6 (Vibration), IEC60068-2-27 (Shock), IEC60068-2-32 (Free Fall)	
5G	Networking Modes	SA/NSA	Not supported
	Network Standards	5G NR/LTE-FDD/LTE-TDD/WCDMA	Not supported
	Frequency Bands	Sub-6Ghz, Millimeter Wave	Not supported
	Antenna	SMA Interface (external thread, internal hole), 4 pieces	Not supported
	SIM Card	Dual cards, drawer-type slots	Not supported
WI-FI	Standard and Frequency Bands	Supports IEEE802.11b/g/n, 2.4G, AP mode, Station mode. Supports IEEE802.11ac, 5.8G, AP mode, Station mode.	Not supported
	Security Encryption	Supports multiple encryption methods, including WEP, WPA, and WPA2.	Not supported
	Transmitting Power	26dBm(11b),21.5dBm(11g) 20dBm(11n),16dBm(11ac)	Not supported
	Reception Sensitivity	<-72dBm@54Mpbs	Not supported
	Antenna	SMA Interface (external thread, internal hole), 1 piece	Not supported

ORDERING INFORMATION

Part Number	Description
NewPre2100-N1043A-M1D6MW3-0602C2A4DIO	6x10/100/1000BASE-T(X), 2x RS232/485/422, 2xCAN, 2xDI, 2xDO, 1xWIFI, 1x5G
NewPre2100-P521-M1-D0-WO-E6S222220-L2-L2	6x 10/100/1000BASE-T(X), 2x RS232/485/422, 2xCAN, 2xDI, 2xDO, 2xAI, 2x USB3.0
NewPre2100-P521-M1-D0-W5-E65222220-L2-L2	6x10/100/1000BASE-T(X), 2xRS232/485/422, 2xCAN, 2xDI, 2xDO, 2xAI, 2xUSB3, 01x5G

DIMENSIONS



NewPre2300 IoT Edge Controller

Powerful Performance

- Equip with ARM dual-core Cortex-A72 + quad-core Cortex-A53 processors, with a clock frequency of 1.8GHz, 4GB DDR3 memory, and 32GB eMMC FLASH, providing computational resources for various industrial-grade on-site applications such as edge data collection, protocol conversion, real-time control and machine vision.

High-reliability Industrial Design

- Adopt industrial grade fanless design with rail installation and operates within a wide temperature range of -20 ℃ to 60 ℃ . Suitable for indoor installation environments. Comply with EMC Level 3 standards and IP40 protection rating.

Rich IO Interface

- Support multiple network modes: 3G/4G/5G, WI-FI interface and 2 x 10/100/1000Base-T(X) Ethernet ports. Also support 2 x RS485 and 2 x RS232 serial communication ports, 8 x DI (Digital Input) and 8 x DO (Digital Output) interfaces.

Fast Network Deployment

- Rich intelligent communication capabilities.
- Support device management platform to efficiently manage a large number of distributed remotely accessed devices.
- Support local web configuration and cloud-based device management.

Visual Analysis

- Equip with a quad-core ARM Mali-T860 GPU, which supports OpenGL ES 1.1/2.0/3.0/3.1 and OpenCL.
- Support 4K VP9 and 4K 10-bit H265/H264 video decoding at up to 60fps.

Extensive Industrial Protocols

- The module is equipped with a set of indicator lights that accurately display the module and channel's operational.

Protection Design

- Embed an extensive set of industrial protocols, including Modbus TCP, Modbus RTU, S7, PPI, EtherCAT, EtherNet/IP, OPC UA, MQTT.
- Support custom protocols and third-party extensions.

Services Integration

- Support software-defined control, enabling integration of multiple functionalities such as data collection, control, edge computing and machine vision into a single solution.

PRODUCT SPECIFICATIONS

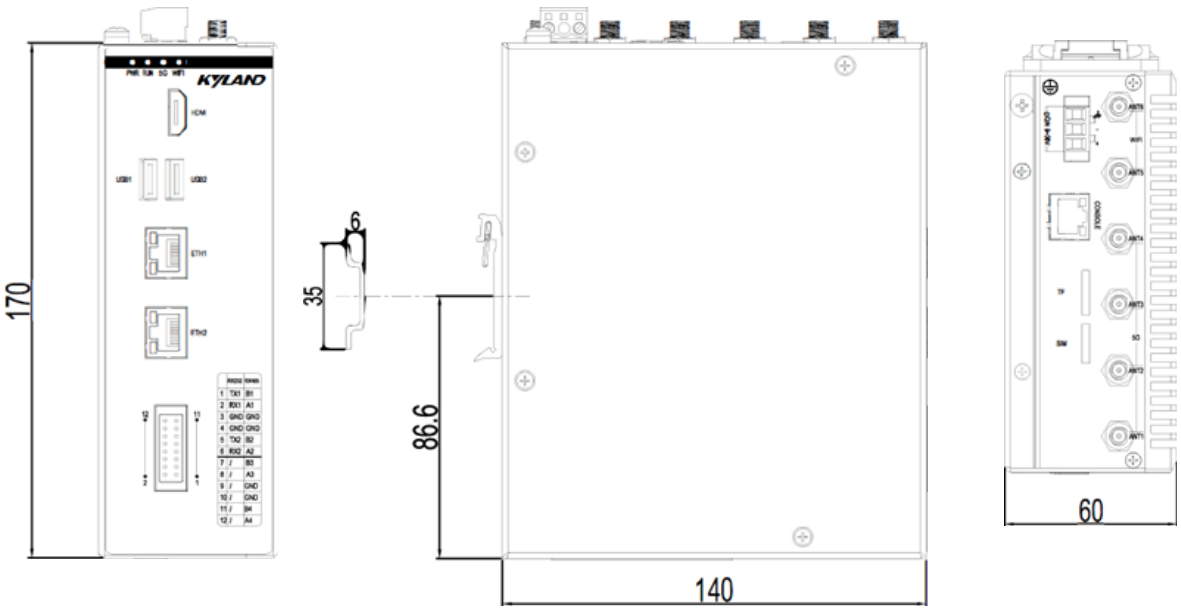
NewPre2300-R3399		
Main System	CPU	2 x Cortex-A72 + 4 x Cortex-A53, Maximum clock frequency is 1.8GHz.
	RAM	4GB LPDDR3
	Storage	32GB eMMC
	GPU	Quad-core ARM Mali-T860 GPU
	Video Processor	Supports 4K VP9 and 4K 10-bit H265/H264 formats video decoding
Interface	Network Interface	2 × 10/100/1000Base-T(X)
	USB	USB2.0 × 1, USB3.0 × 1
	Serial Port	2 × RS485, 2 × RS232
	IO	8 × DI, 8 × DO (optional)
	CAN Interface	1× CAN (optional)
	Display Port	1× HDMI
Power	Input Voltage	24 V DC
	Input Terminals	3-pin 5.08mm pitch pluggable terminal block connector
	Power	<20W
	Overload Protection	Support
	Reverse polarity protection	Support
Mechanical Structure	Case	Metal
	Heat Dissipation Method	Passive cooling, fanless
	IP Rating	IP40
	Dimensions mm	140x170x60 mm (W x H x D)
	Installation Method	Rail-type
Environment	IP Rating Operating Temperature	-20℃ ~ 60℃
	Storage Temperature	-40℃ ~85℃
	Relative Humidity	5% ~95% no condensation
Industry Standard	EMI	FCC CFR47 Part 15, EN55022/CISPR22, Class A
	EMS	IEC 61000-4-2 (ESD), Air: ±8KV; Contact: ±6kV IEC 61000-4-3 (RS), 10V/m (80MHz ~2GHz) IEC 61000-4-4 (EFT), DC Power Port: ±2kV, Singal Port: ±2kV IEC 61000-4-5 (Surge), Power Port: ±1kV/ DM, ±2kV/CM, Singal Port: ±1kV (line to line), Singal Port: ±2kV (line to earth) IEC 61000-4-6 (CS), Signal ports: 0.15-80MHz at 10V/m, Power ports: 0.15-80MHz at 10V/m
	Mechanical	IEC60068-2-6(vibration) IEC60068-2-27(shock) IEC60068-2-32(free fall)
5G (Optional)	Network Mode	5G NR/LTE-FDD/LTE-TDD/WCDMA
	Network Protocol	Sub-6Ghz
	Frequency Band	SMA Interface (external thread/internal hole), 4 pieces
	Antenna	Drawer Card Socket
	SIM Card	Rail-type

WI-FI Optional	**Standards and Frequency Band**	Support IEEE802.11b/g/n, 2.4G Frequency Band. Support AP mode, Station mode Support IEEE802.11ac, 5.8G Frequency Band, Support AP mode, Station mode
	Security Encryption	Support multiple encryption methods such as WEP, WPA, and WPA2
	Transmit Power	26dBm (11b), 21.5dBm (11g), 20dBm (11n), 16dBm (11ac)
	Receiver Sensitivity	<-72dBm@54Mpbs
	Antenna	SMA Interface (external thread/internal hole), 2 pieces

PRODUCT SELECTION GUIDE

Device Model	Specifications
NewPre2300-R3399-M2D9MW0-0204A	2 network ports, 4 serial ports, 2USB, HDMI, simplified version
NewPre2300-R3399-M2D9MW3-0204A	2 network ports, 4 serial ports, 2USB, HDMI, 5G, WIFI
NewPre2300-R3399-M2D9MW3-0204C01A16DIO	2 network ports, 4 serial ports, 1CAN, 8DI8DO, 2USB, HDMI, WIFI, 5G
NewPre2300-R3399-M2D9MW5-0204C01A16DAI	2 network ports, 4 serial ports, 1CAN,8DI8DO,2USB, HDMI,5G, Support NPU accelerator card
NewPre2300-R3399-M2D9MW5-0204C01A16DIO	2 network ports, 4 serial ports, 1CAN,8DI8DO,2USB, HDMI,5G

DIMENSION DIAGRAM

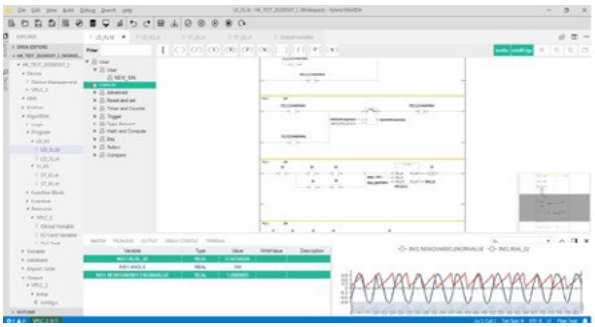


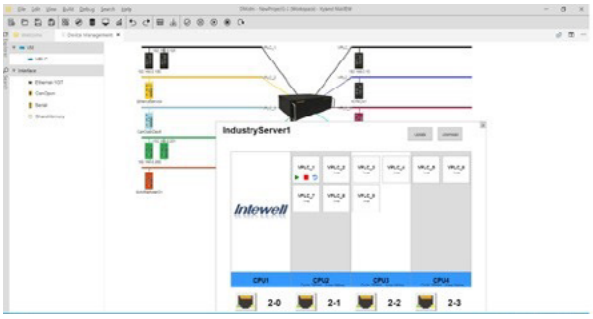
Power Automation Server

Hyperie 8300

INTRODUCTION

Kyland's Hyperie 8300 is a power automation platform, equipped with various data interfaces, built-in hundreds of protocols, integrated soft-PLC control functions and SCADA/HMI functionality, pre-installed Winux-RT Hypervisor for real-time virtualization, open platform for customized APPs, making it an ideal solution for automation system of transmission/distribution substation, distributed PV power generation, wind power, thermal energy storage, etc.





Data Collection and Concentration

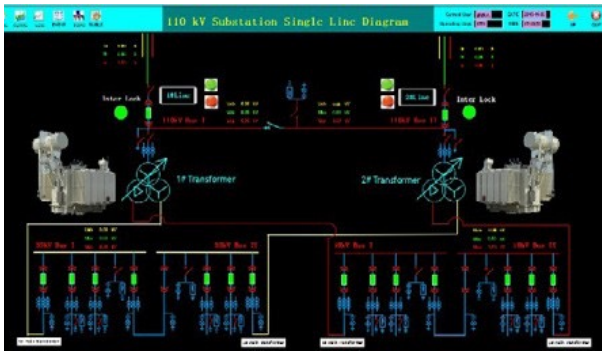
- Multi-kinds of interfaces for extension connectivity: Ethernet copper and fiber port, serial port, DI/DO, IRIG-B, HDMI, VGA, USB
- Multi-protocol IEDs data acquisition, processing, storage; multi-protocol conversion, data forwarding and breakpoint continuation transfer
- Built-in hundreds of protocols for communication with various substation devices, compliant with the majority protocols within substation automation, such as IEC61850 Server/Client, IEC60870-5-101/103/104, DNP3.0, Modbus TCP/RTU, SEL faster, ABB Spabus, Alstom Courier, etc.

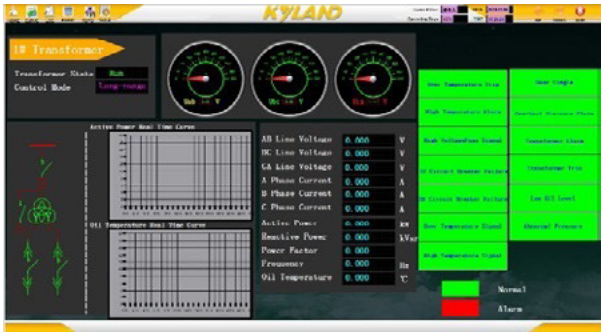
Control Platform

- Integrates Drag-and-drop graphical programming development suite
- Compliance with IEC61131 programming standard and support the IEC61131-3 programming language of ST, FDB, LD
- Support C++, MatLab/Simulink programming
- Support SNMP v1/v2/v3

Powerful SCADA/HMI Functionality

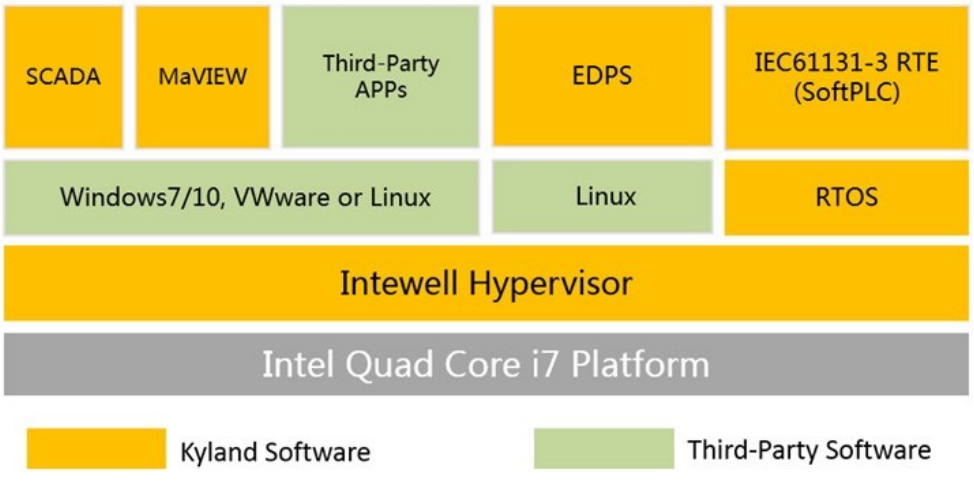
- Collect the operation status, communication status, operating parameters, failure report and other information of system devices
- Monitoring the operation status and fixed value data of the primary and secondary system, protection device and fault recorder in a friendly and visually way
- Support professional and practical HMI development tool and provide comprehensive and professional graphics,
- Multi-kinds of interfaces for extension connectivity: Ethernet copper and fiber port, serial port, DI/DO, IRIG-B, HDMI, VGA, USB
- Multi-protocol IEDs data acquisition, processing, storage; multi-protocol conversion, data forwarding and breakpoint continuation transfer
- Built-in hundreds of protocols for communication with various substation devices, compliant with the majority protocols within substation automation, such as IEC61850 Server/Client, IEC60870-5-101/103/104, DNP3.0, Modbus TCP/RTU, SEL faster, ABB Spabus, Alstom Courier, etc.
- reports, curves/charts, statistical analysis and event alarm/recording for power applications.
- Alarm information management and alarm classification assist operator in alarm event location.
- User permission management functions, capable of setting user groups and access right by region, restricting the operation of protection devices in operators, restricting the access right of system devices etc.





Pre-install Winux-RT Hypervisor with real-time virtualization

- Quad Core Intel i7 processor platform provides powerful and flexible computing ability to support real-time applications
- Virtualize up to 20 software-defined RTOS on a single CPU platform, allowing simultaneous operation of real time OS and Non-real time OS with isolation
- Support the event response time of 2μs and the minimum cycle time of 50μs to achieve high-real time control
- Install Windows/Linux on virtualized core, compatible with Windows and Linux-based APPs
- Multi-protocol IEDs data acquisition, processing, storage; multi-protocol conversion, data forwarding and breakpoint continuation transfer

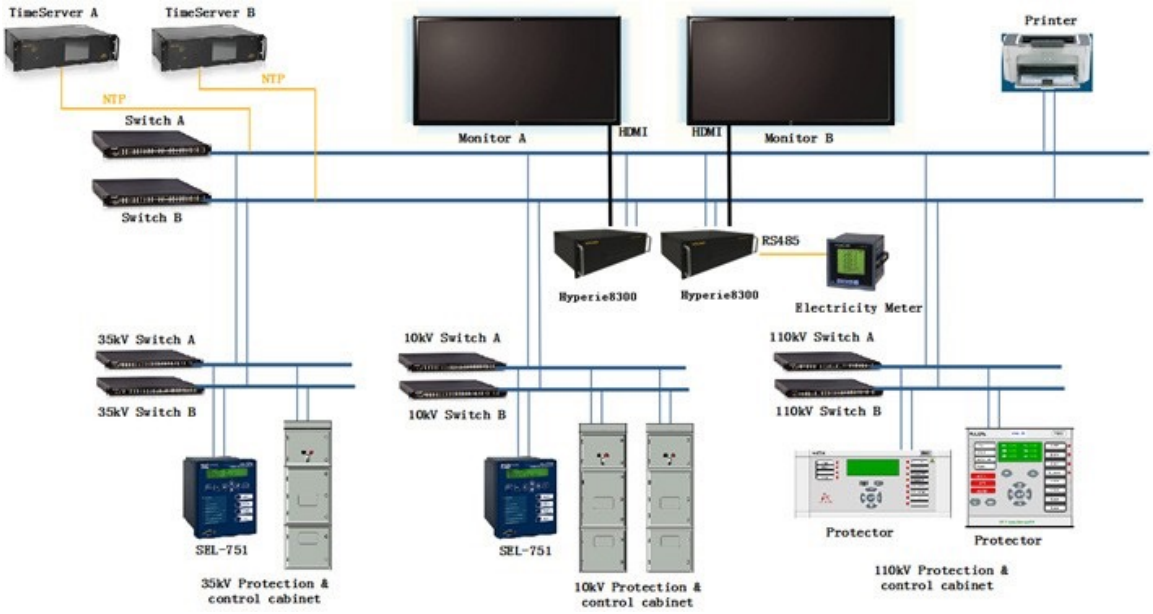


TECHNICAL SPECIFICATION

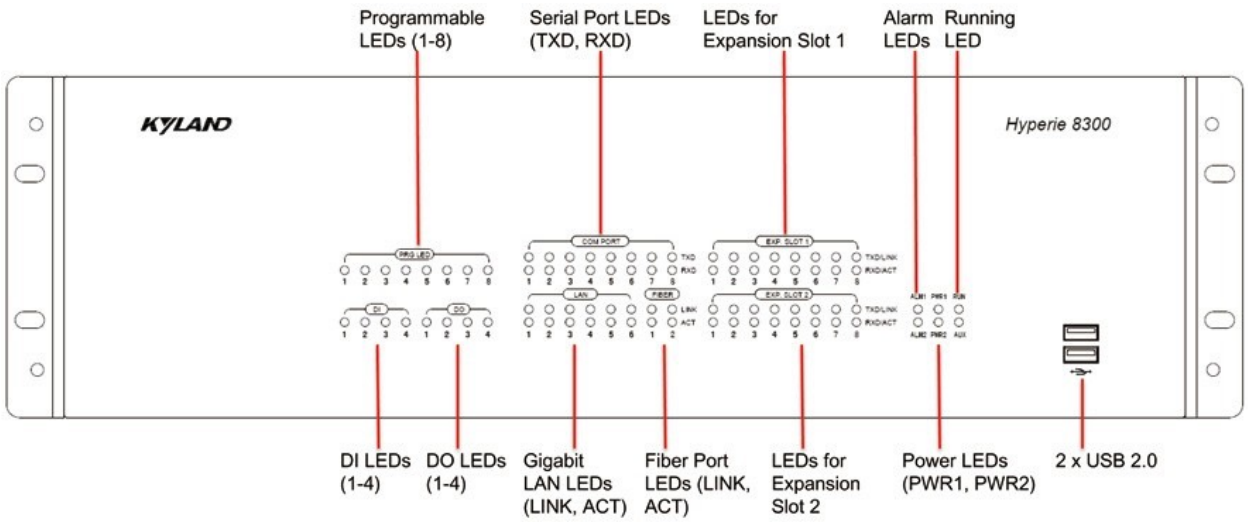
Processor, Memory and Storage	
CPU	Intel® CoreTM i7-8665UE Quad Core
RAM	16GB/32GB DDR4 SODIMM
Storage Slot	2.5" SSD slots x 2
Interface	
Ethernet Ports	6 x 10/100/1000Base-T(X) RJ45 ports 2 x Gigabit SFP slots for fiber SFP module
Serial Ports	8 x RS232/RS485 ports, DB9/terminal connector, 2.5KV isolation and 2KV surge protection
DIDO	4 x DI, 4 x DO
IRIG-B	1 x IRIG-B IN, 1 x IRIG-B OUT
Console	RS232, DB9
Alarm Contact	2 x programmable normally close (NC) dry contact outputs for system failure alarm, 5A@250VAC 5A@30VDC 2 x power loss alarm contacts, 5A@250VAC 5A@30VDC
USB	2 x USB2.0 (front), 3 x USB3.0 (rear)
Display	1 x VGA, 2 x HDMI
Expansion Slot	
2 expansion slots for optional Ethernet RJ45/ fiber port, DIDO and serial port modules	
LED	
System	Run: RUN Power: PWR1, PWR2 Alarm: ALM1, ALM2
Programmable LED 1-8	
LAN	2 per RJ45/SFP port (LINK, ACT)
Serial	2 per port (TXD, RXD)
DIDO	1 per port
Power Supply	
Input Range	85VAC~264VAC/100VDC~360VDC redundant power supplies
Power Button	ON/OFF
Power Loss Alarm	Support
Power Consumption	Max 50W
Physical Characteristics	
Housing	Metal, fanless
Dimension	483mm x 133mm x 330mm
Weight	9kg
Mounting	19 inch Rack mounting
Environmental Limits	
Operating temperature	40˚C to + 75˚C
Storage temperature	40˚C to + 85˚C
Ambient Relative Humidity	5% to 95% (non-condensing)

Protocol	
Server	IEC 61850-8-1 Server (MMS/GOOSE) IEC 60870-5-101 IEC 60870-5-103 IEC 60870-5-104, Single or redundant, DNP 3.0 Serial and LAN/WAN Modbus RTU and TCP/IP Multi-Vender Meter protocol CDT
Client	IEC 61850-8-1 Client (MMS/GOOSE) Courier SEL Fast Meter IEC 60870-5-101 IEC 60870-5-103 IEC 60870-5-104, Single or redundant DNP 3.0 Serial and LAN/WAN Modbus RTU and TCP/IP Multi-Vender Meter protocol CDT
Standards	
IEC61850-3 and IEEE1613	

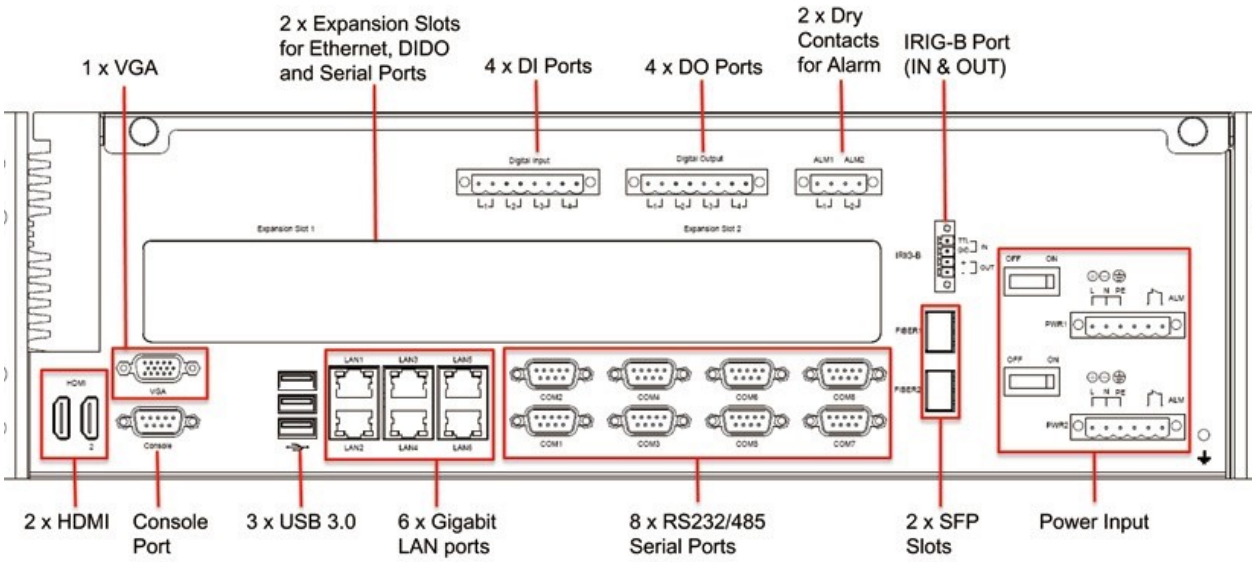
SUBSTATION AUTOMATION NETWORK



FRONT AND REAR VIEW



Front View



Rear View

ORDERING INFORMATION

Model Name	Description
Hyperie8300	CPU Intel i7-8665UE 1.7GHz, 8MB cache, Quad Core, includes: 6 x 10/100/1000Base-T(X) RJ45 ports, 8 x RS232/RS485 ports, 4DI and 4DO, 2 x Gigabit SFP slots, 2 x programmable normally close (NC) dry contact outputs, 5 x USB, 2 x HMI, 1 x VGA, 85VAC~264VAC / 100VDC~360VDC, redundant power supplies, -40℃ to + 75℃ operating temp.

Expansion Module (Support up to 2 Modules)

Model Name	Description
HYM-8D-232/485	Serial port module with 8 x RS232/485 serial ports, terminal connectors
HYM-8DI8DO	DI/DO module with 8 x DI and 8 x DO
HYM-2GX	Ethernet port module with 2 x 1000Base-X SFP slots
HYM-6GE	Ethernet port module with 6 x 10/100/1000Base-T(X) RJ45 ports
NewPre2300-R3399-M2D-9MW3-0204C01A16DIO	2 network ports, 4 serial ports, 1CAN, 8DI8DO, 2USB, HDMI, WIFI, 5G

Selectable Features

Model Name	Description
16GB DDR4	16GB DDR4 SODIMM
32GB DDR4	32GB DDR4 SODIMM
256GB SSD	256GB MLC SSD
512GB SSD	512GB MLC SSD
1TB SSD	1TB MLC SSD
Operating System	WINDOWS 10
	Linux

Software

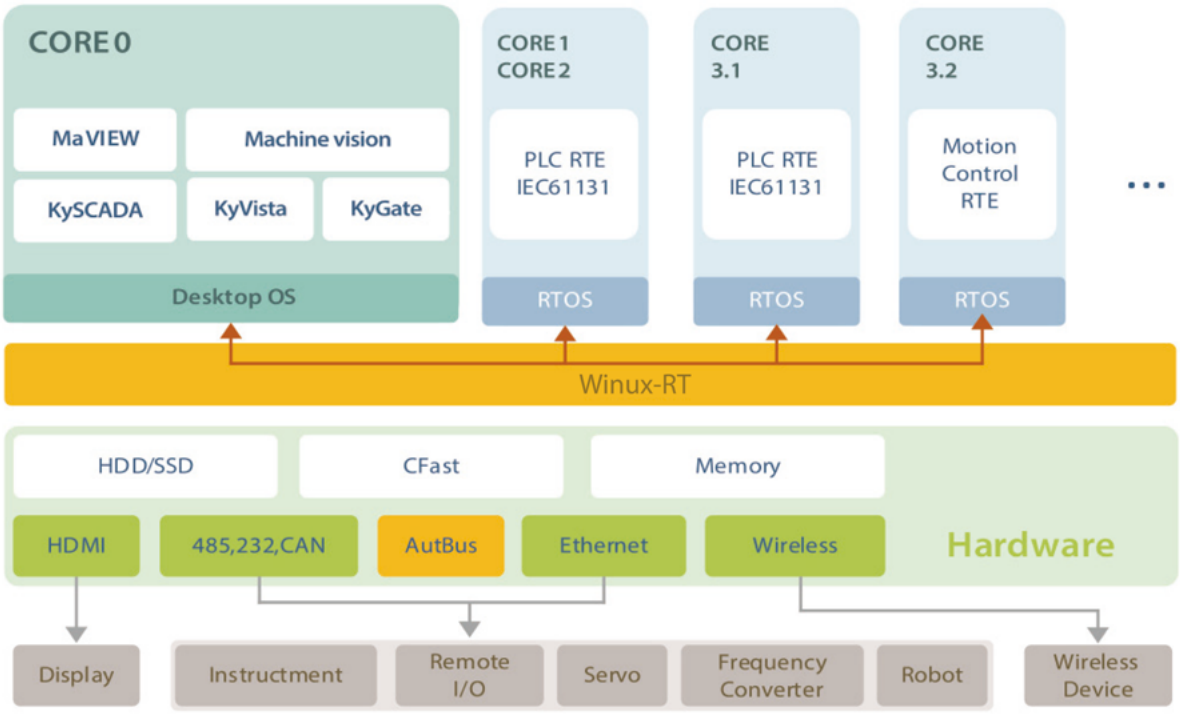
Winux-RT

Hybrid Operating System for Industrial Applications

Winux-RT is developed by Kedong (Guangzhou) Software Technology Ltd. (a wholly owned subsidiary of Kyland) for Industrial Applications. It is a micro-kernel based Operating System with modular design, so it can be easily customized for different applications. Winux-RT abstracts physical hardware and I/O interfaces so it can virtualize the machine (through the hypervisor). The hypervisor manages and allocates the system's resources, so that it can enable the system to host several instances simultaneously but still assure each instance and application real-time, secure, deterministic and reliable.

Winux-RT has been developed and evolved for more than 20 years and holds 60+ patents and 30+ copyrights. It is widely deployed to numerous mission critical industry sectors like smart manufacturing, railway, energy, robotics,...etc., and it's been proven reliable and secure in the long and sustaining applications.

SYSTEM STRUCTURE



FEATURES

- Reliable: more than 20 years track record of operation
- Real-time: micro-second level response time
- Micro-kernel: virtualizes hardware resources and enables software-defined management
- Hybird: enables one-machine with multiple real-time and non-real-time instances hybrid operation, so it can integrate edge computing, motion control, data acquisition, AI,...etc. in one machine.

SPECIFICATIONS

Function		Description
OS Feature	CPU	Supports x86, ARM, MIPS
	Micro-kernel	Micro-kernel design with simple and neat footprints. Kernel codes within 10,000 lines. Easy to verify and validate the security and reliability
	Virtualization	Supprots Windows and Linux non-real-time instances
		Supports up to 20 real-time instances and 3 non-real-time instances
		Supports interal virtual data bus for cross-instance data communications
	Multi-core processor	Supports multi-core processor operation
	Operation mode	Supports AMP, SMP, BMP mode and 32bit/64bit operation
Real-time Hypervisor	Scheduling	Priority and Timing hybrid scheduling
		Supports up to 256 priority
	Multi-task management	Preemptive scheduling and Timing scheduling
		Supports up to 256 priority
		Supports priority inheritance, priority ceiling to prevent priority reversal
	File System	Supports FAT16, FAT32, YAFFS, nfs
		Supports flash, emmc, ram, USB, SATA…etc. media types
		Supports file system corruption prevention after power outage
	POSIX	Compatible with POSIX 1003.1b (ISO/IEC 9945-1)
	Shell	Compatible with most Linux shell operations
	Network stack	Supprots IPv4/IPv6 and standard sockets
		Supports static and dynamic routing
		Supports ftp, telnet, tftp, httpd, sntp, snmp…etc.
	USB	Supports USB1.1, 2.0
Development Tools	Intewell DEVELOPER	Supports virtual instance life cycle management, including instance create, allocate, deploy, terminate, power-on/off, reboot, sleep, suspend, resume and rebuild operations
		Supports design, development, debugging, simulation, and deployment functions. Full GUI design, easy to use
		Supports simulation tools for different CPU architectures
	Monitoring tool	Provies CPU usage, network traffic, file system performance, signal usage, schedulling staus, process staus and message queue monitoring
Ecosystem	Industrial APP	Natively supports Kyland MaVIEW, KySCADA, KyGate, KyVista, KyMOM, AHM tools
	Industrial protocol	Supports Modbus TCP/RTU, CANopen, EtherCAT, EtherNet/ IP, PROFINET, AUTBUS, OPC

PRODUCT INFORMATION

Winux-RT OS	Winux-RT Operating System
Winux-RT DEVELOPER	Winux-RT IDE and Hypervisor tool

MaVIEW Industrial Automation Software

- Completely independent research and development, non-derivative development, no third-party authorization required.
- Usability: Supports drag-and-drop graphical programming and programming languages of IEC61131-3. It also provides offline simulation function, which conforms to the usage habits of most automation engineers.
- Supports multiple programming languages: C/C++/Python
- Provides library developer tool support for engineers to develop the desired libraries themselves.
- Cross-platform support: IDE supports Windows, Linux, and the domestic Kylin operating system.
- RTE supports RT Linux, VxWorks, and domestically-developed Winux-RT operating systems.
- Multi-protocol Support: Compatible with Modbus TCP/RTU, CANopen, EtherCAT, Ethernet/IP, Profinet./Configurable serial ports /TCP/CAN/OPC UA/ Enthernet/IP/MQTT/SHM/PHB/AUTBUS and other protocol.

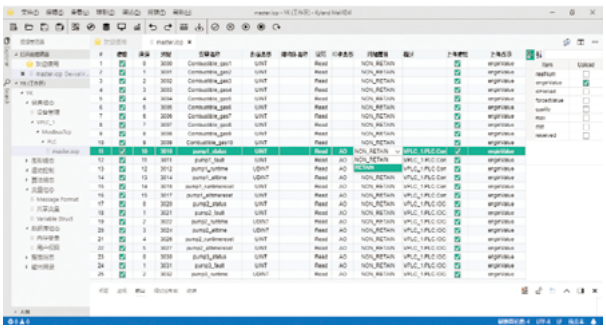
High Reliability

Controller Redundancy

- Synchronization: Real-time synchronization of algorithmic projects and configuration files. Runtime data is synchronized in single cycles, as well as with master-slave algorithm execution sequences.
- Real-time Diagnostics: The primary and backup controllers are diagnosed in real-time, enabling quick decision-making for switching based on diagnostic results.
- Switching Time: Redundant controller switching time is less than two computation cycles.

Power Loss Data Retention

- **Configurable Data Retention:** The runtime configuration allows for the selection of data that requires retention following a power outage.
- **Periodic Storage:** Supports the periodic saving of data requiring retention to non-volatile storage mediums.

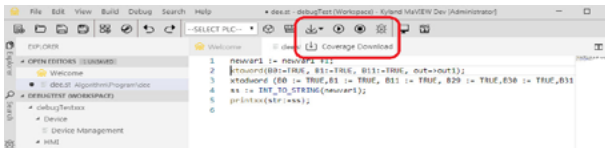


Incremental Deployment

- Modifications and Additions: Supports compiling modifications and appending new content. Changes are non-disruptively deployed online and incrementally added to the existing database without halting the controller's operation.

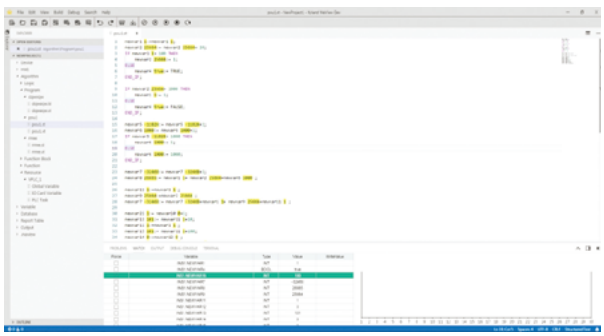
Off-line Simulation

- Variable Monitoring: Supports variable watchlists, allowing for the free addition of variable monitoring points.
- Batch Assignments: Supports simultaneous assignment to multiple variables for rapid program modifications.
- Variable Visualization: Intuitively displays the real-time running status of variable points in engineering projects.



Multi-PLC Engineering

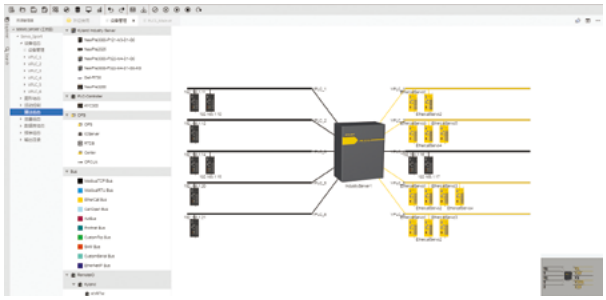
- Multi-device and Multi-PLC Support: Offers fast, efficient, and robust interfaces for applications involving multiple PLCs, facilitating inter-PLC communication.



User-Friendly

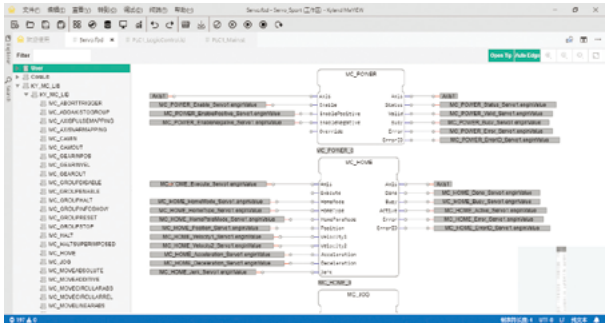
Graphical Programming

- **Device Configuration:** Provides a fully graphical interface for device configuration management.
- **Variable Configuration:** Offers an intuitive and clean tabular interface for variable configuration.
- **Graphical Programming Interface:** Features a flexible and user-friendly graphical programming interface.



Advanced Motion Control Features

- **Single and Multi-Axis Control:** Supports PLCopen for single-axis management and motion, as well as multi-axis electronic gear coupling, electronic cams, and camming.
- **Interpolation:** Supports multi-axis spatial circular and linear interpolation.
- **Axis Control:** A single real-time system supports up to 32 single-axis controls and up to 10 electronic cam tables.

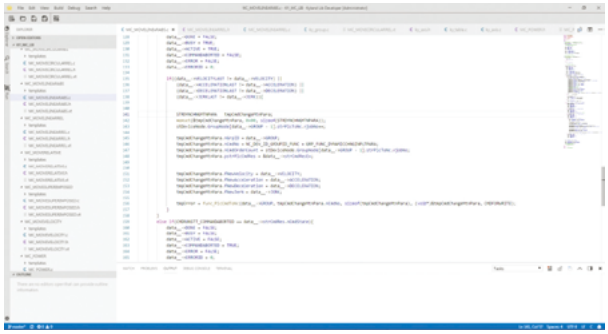


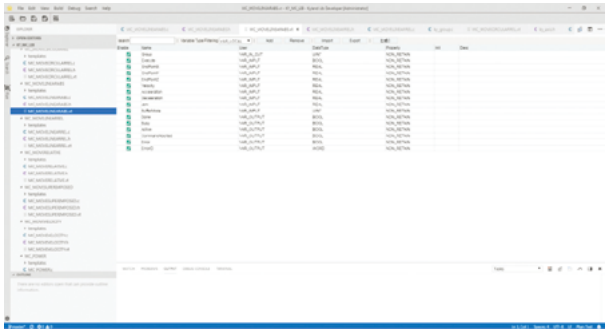
IEC61131-3/C++ Programming

- **Standardized Language Elements:** Supports resources, tasks, global variables, and Program Organization Units (POUs) such as functions and function blocks.
- **Data Types:** Supports basic and composite data types as specified in the standard.
- **Function Blocks:** Includes standard functions and function blocks, such as math libraries, timing, counting, and type conversions.
- **Multilingual Interoperability:** Facilitates cross-language interoperability between the supported languages.

Library Development Tools

- **Libdeveloper Tool:** Supports C/C++ development through the Libdeveloper tool, which can run on real-time kernels and function as blocks on a PLC.
- **MATLAB Support:** Utilize MATLAB/Simulink for designing and validating custom algorithms, and export C++ source code to create functional blocks that are interoperable with other languages (ST, FBD, LD).

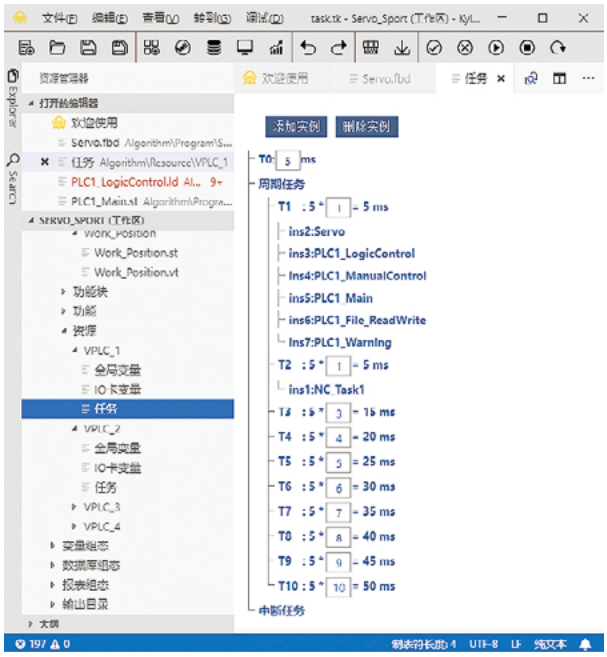




Powerful Functionality

High Real-time Task Scheduling

- Supports three types of tasks: periodic tasks, interrupt tasks, and loop tasks, based on priority preemption.



Open Ecosystem

IDE Cross-platform Compatibility

- Windows Series
- Linux Series: Ubuntu, Fedora, CentOS (in development)
- Kylin Operating System (in development)

Cross-platform Compiler

- X86
- MIPS
- ARM

Cross-platform RTE (Run-Time Environment)

- RT Linux
- VxWorks (communication not supported)
- Winux-RT
- Windows System Simulation

Inter-station Communication

- Inter-station communication supports dual network transmission to ensure that data can be reliably delivered, thereby enhancing the fault tolerance of inter-station communication functionality.
- Supports the transmission of data from a single station to multiple stations as well as the reception of data from multiple stations at a single station. Enables flexible station grouping and supports up to 128 control stations for inter-station communication.

Shared Memory

- Under the same hardware device, supports PLC-non-real-time, PLC-PLC, and non-real-time-non-real-time shared memory communication, offering a convenient configuration interface.

TSN Support (Time-Sensitive Networking)

- Supports IEEE802.1AS, capable of synchronizing the local clock with the TSN system clock to sub-microsecond levels.
- Supports OPC UA subscription and publishing mechanisms.
- Supports TSN precise time scheduling, allowing for the sending of specific messages based on allocated time-scheduling windows.

Rich Protocol Support

- Supports standard protocols such as Modbus TCP, Modbus RTU, EtherCAT, CANopen, Profinet, AUTBUS bus protocol, Ethernet/IP, OPC UA, MQTT, etc.
- Supports custom protocols.
- Supports secondary development in accordance with protocol module development specifications.

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V5.3