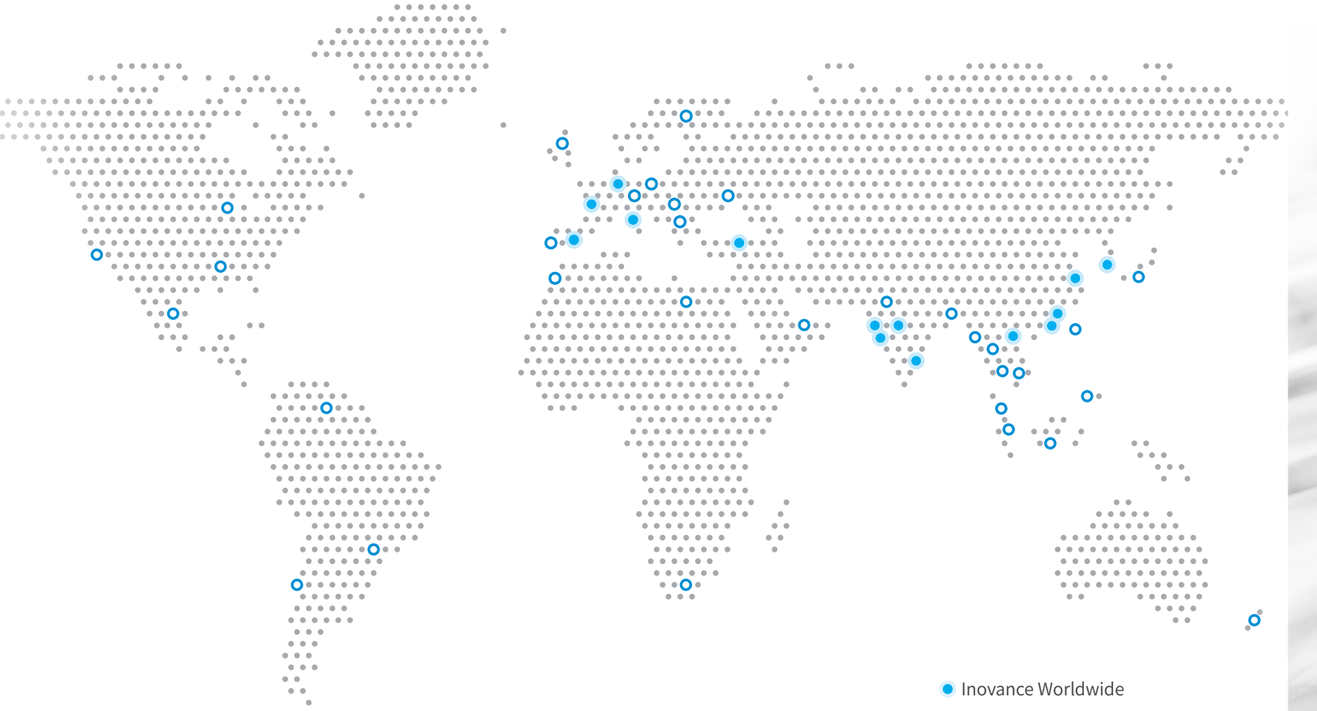
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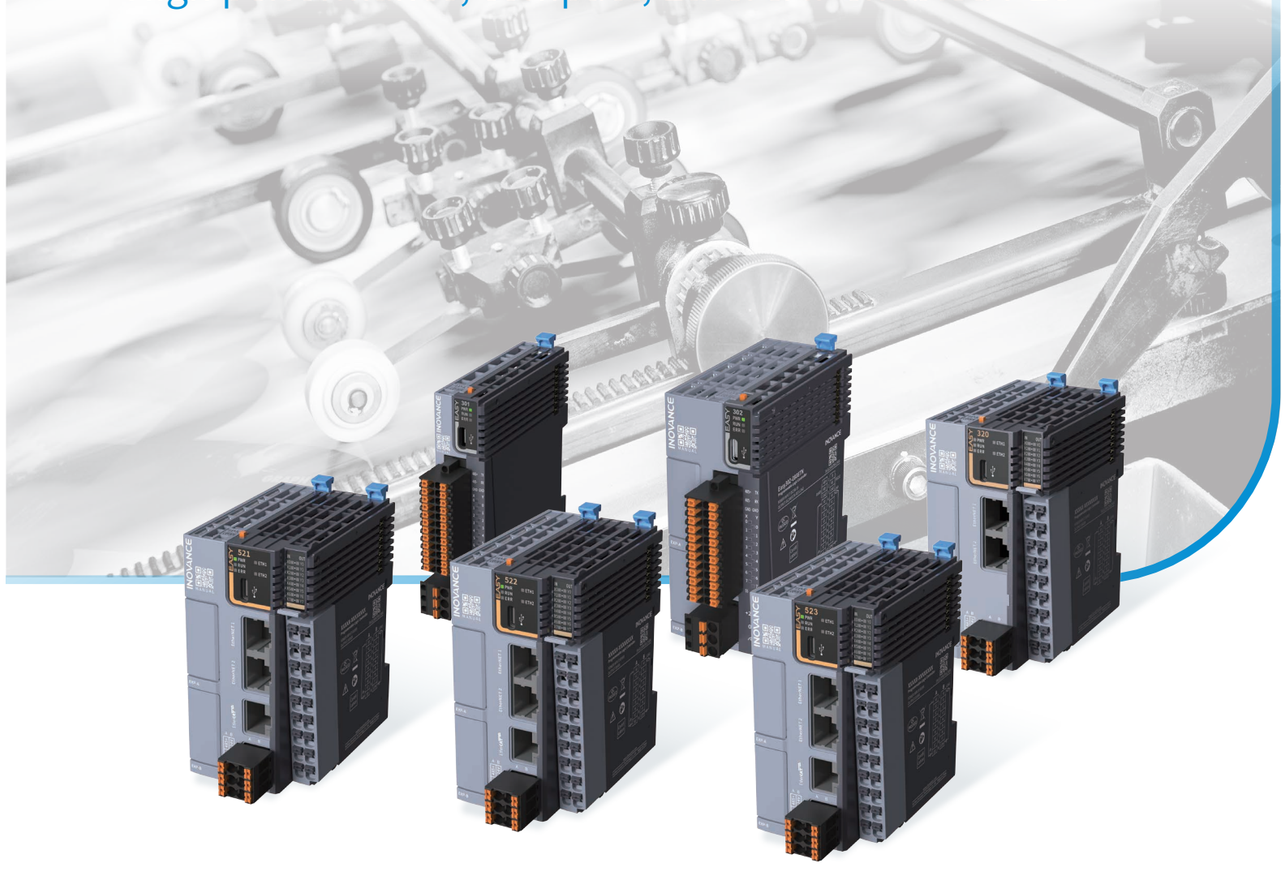
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INOVANCE

Easy Series PLC

High performance, compact, EtherCAT-enabled PLC



Features & functions

- Compact footprint
- Real-time fieldbus
- Simulation mode for offline debugging
- A complete product range – from the simplest to the most complex motion control capable PLC
- PLCopen compliant axis control

OPC UA EtherNet/IP EtherCAT CANopen

CE cULus LISTED UKCA

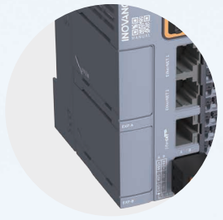
Easy Expansion



Type-C port

The type-C port support programming, uploading/downloading and debugging





2 expansion slots

Analog I/O, digital I/O, CAN, RS485, TF card and RTC optional



6 models

Meet the needs of automation equipment: small footprint, communication, multi-axis motion control,etc



80% higher assembly efficiency

Installation hours reduced by 80% and space saved by 2/3 thanks to the local GL20 series I/O module with push-in terminals that support vertical insertion and tool-free wiring

Easy Control



Quad-core processor

Fast instruction processing in nanoseconds

Multi communications

OPC UA, EtherNet/IP, EtherCAT, serial

32-axis real-time control

For synchronous motion and complex processes

Easy Programming

Ease of use

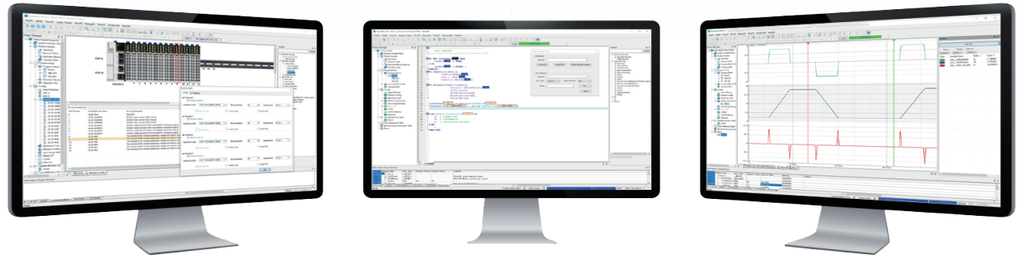
- Graphic interface for device configuration.
- Variant function blocks for shorting commissioning time: standard PLCopen, motion control, auto-turning PID, communication and diagnostic.
- Support auto scanning of EtherCAT slaves

High efficiency

- Supports off-line debugging and simulate with IT7000.
- Supports ST programming, for the improvements of program standardization.
- Supports library development and storage.

Protect users' intellectual property

- Supports program encrypted.
- Supports function block encrypted.
- Safety use with firewall, IP address filtering supported.



Easy Series PLC Overview

Easy300

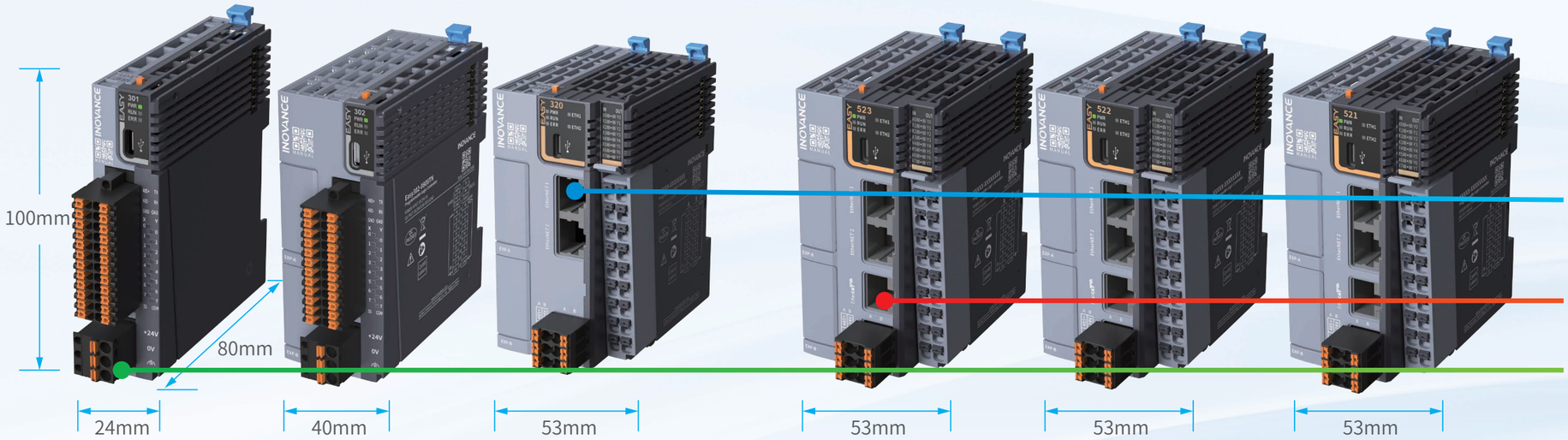
Compact CPU
Easy301
RS232 + RS485

General CPU
Easy302
RS232 + RS485

CPU with Ethernet
Easy320
Dual Ethernet + RS485

Easy500

Motion control CPU with Ethernet
Easy521, Easy522, Easy523
Dual Ethernet + EtherCAT + RS485



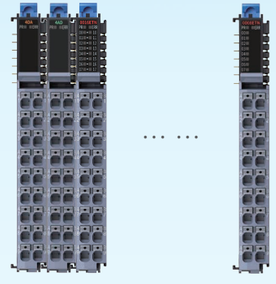
GE20 Series Expansion Cards

Expandable CAN bus, RS485/232, RTC, digital terminal, and analog terminal



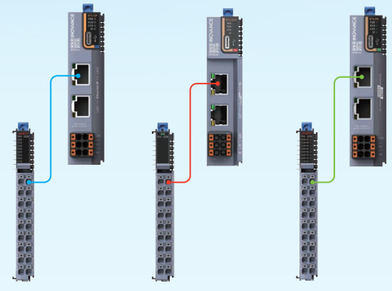
GL20 I/O Modules

Access of up to 16 local modules and up to five 200 kHz high-speed pulse outputs



GL20-RTU Bus Coupler-GL20 Modules

Up to 32 remote expansion modules

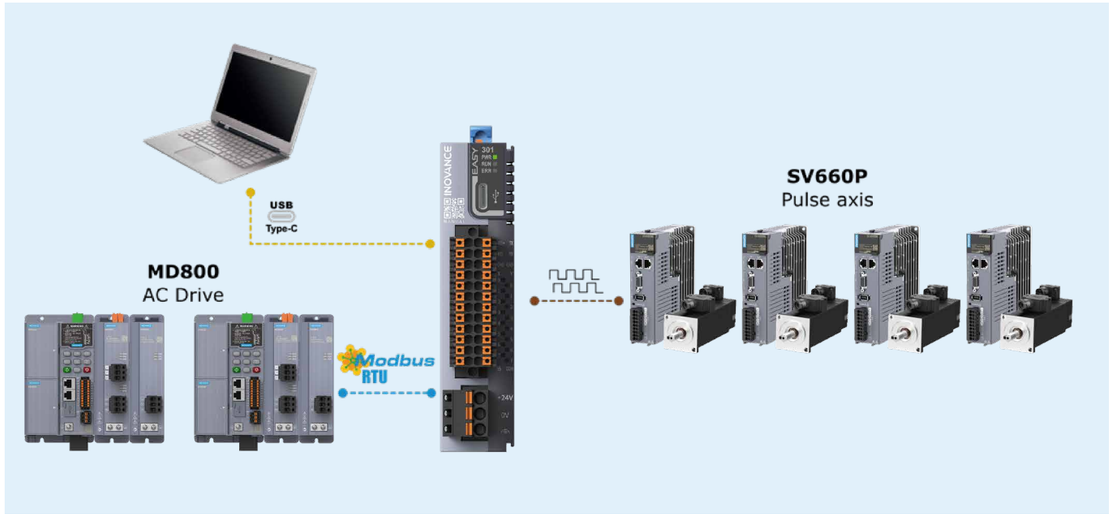


Scalable System Architecture
Multiple Configurations

The Easy PLC series can cover anything from the simplest pulse control architecture to the most complex motion control applications using EtherCAT and Ethernet/IP

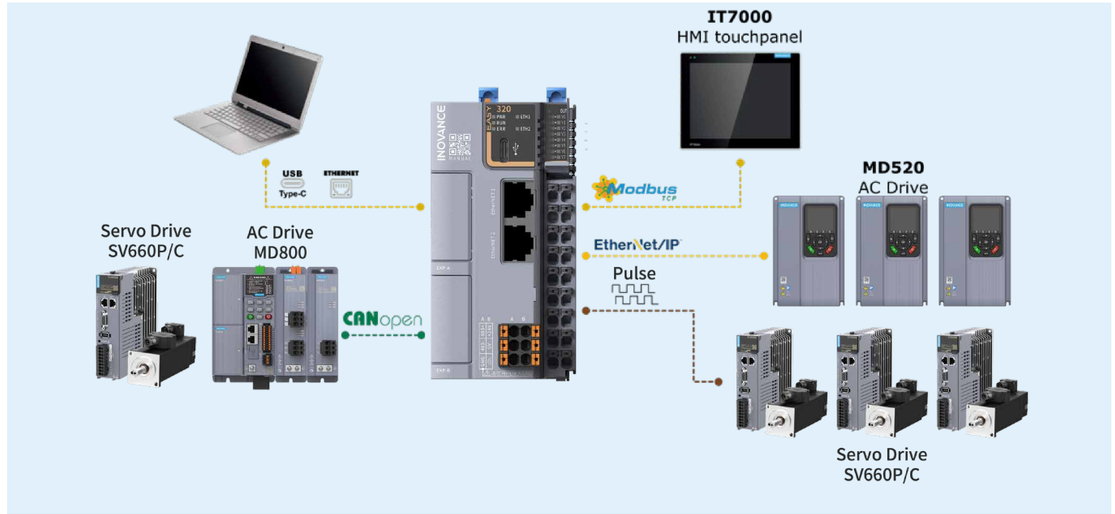
Easy301

Cost effective architecture using Modbus RTU communication and/or pulses to control the drives.



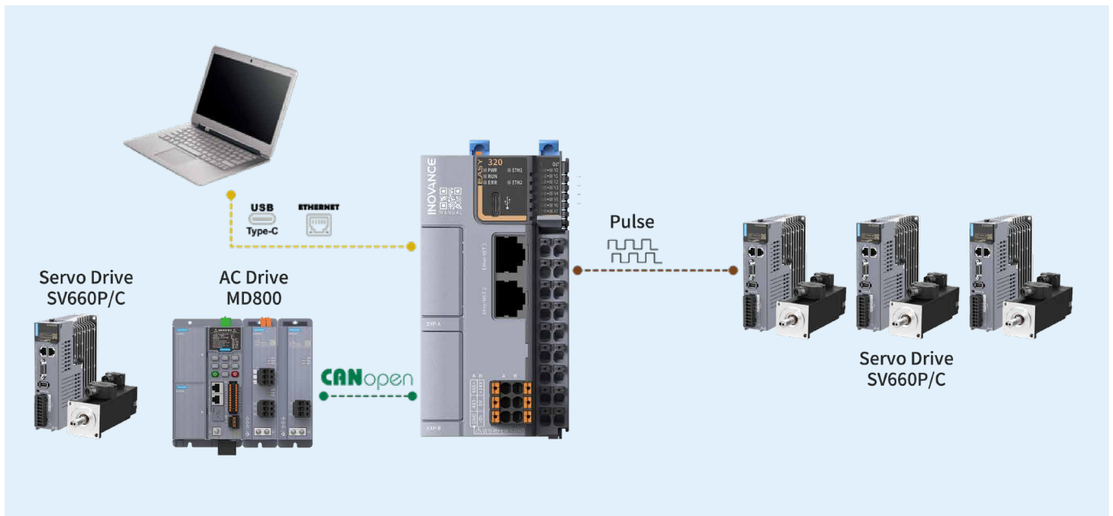
Easy320

Multiprotocol architecture using Ethernet/IP, CANopen communication and/or pulses to control the drives, and Modbus TCP with the HMI touchpanel



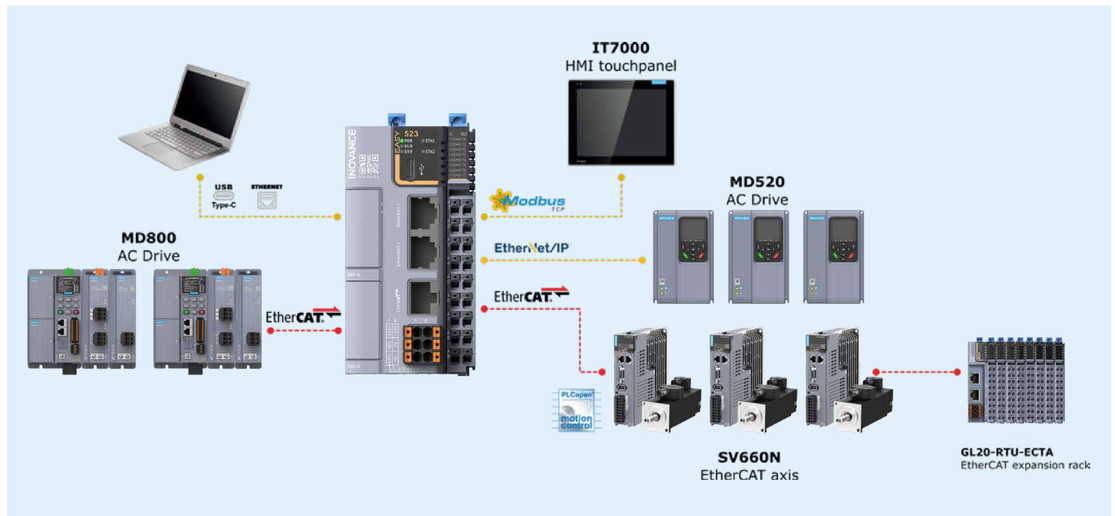
Easy302

Flexible architecture using CANopen communication and/or pulses to control the drives.



Easy523

Powerful motion control architecture using realtime EtherCAT communication and Ethernet/IP to control the drives, and Modbus TCP with the HMI touchpanel



SELECTION CHART

Model		Easy301-******-INT	Easy302-******-INT	Easy320-******-INT		Easy521-******-INT	Easy522-******-INT	Easy523-******-INT
Appearance								
Certification		0808TN	0808TN	0808TN		0808TN	0808TN	0808TN
				0808TP		0808TP	0808TP	0808TP
Dimensions (W×H×D)		24mm×100mm×83mm	40mm×100mm×83mm	53mm×100mm×80mm		53mm×100mm×80mm		
CPU		CORTEX A7 1200MHz				8 pulse control axis+ EtherCAT axis	16 pulse control axis+ EtherCAT axis	32 pulse control axis+ EtherCAT axis
Transistor output type		NPN & PNP				NPN & PNP		
Motion axis		4 pulse control axis	5 pulse control axis			8 pulse control axis+ EtherCAT axis	16 pulse control axis+ EtherCAT axis	32 pulse control axis+ EtherCAT axis
Expansion I/O modules (GL20)		8	16			16		
Expansion slots (GE20)		/	2, support communication/digital IO/analog IO/TF card/RTC			2, support communication/digital IO/analog IO/TF card/RTC		
Ethernet		/	2 ports Modbus TCP up to 32 slaves Ethernet/IP scanner/adapter			2 ports Modbus TCP up to 32 slaves Ethernet/IP scanner/adapter		
EtherCAT		/				1 ports, up to 72 slaves		
Serial communication		1×RS485+1×RS232 Support free protocol, Modbus RTU/ASC up to 16 slaves	1×RS485+1×RS232 Support 1×RS232/485 expansion Support free protocol, Modbus RTU/ASC 16 slaves (recommended)	1×RS485 Support 2×RS232/485 expansion Support free protocol, Modbus RTU/ASC 16 slaves (recommended)		1×RS485 Support 2×RS232/485 expansion Support free protocol, Modbus RTU/ASC 16 slaves (recommended)		
CAN communication		/	1, requires expansion card), supports CANlink/CANopen master/slave(up to 62 slaves			1, requires expansion card), supports CANlink/CANopen master/slave(up to 62 slaves		
Program storage		128K step				200K step		
Data storage		1 Mbyte (128 KB non-volatile)				2 Mbyte (128 KB non-volatile)		
		150 KB soft element, non-volatile after No.1000				150 KB soft element, non-volatile after No.1000		
Instruction execution time		20K step/ 2 ms				20K step/ 1.6ms		
Encoder axis		4 chanel encoder axis (8 × high speed inputs, up to 200kHz)				4 chanel encoder axis (8 × high speed inputs, up to 200kHz)		
Built-in I/Os		8 inputs / 8 outputs				8 inputs / 8 outputs		
Program language		LD, SFC, ST, FB/FC (supports encryption functionality)				LD, SFC, ST, FB/FC (supports encryption functionality)		
Instruction execution time	Bit instruction operation	0.09μs				0.08μs		
	Integer operation	0.338μs				0.232μs		
	Floating-point operation (Double precision)	0.779μs				0.578μs		
Rated power input		24V DC±10% (21.6V DC to 26.4V DC), 1 A (maximum value at 24 V)				24V DC±10% (21.6V DC to 26.4V DC), 1 A (maximum value at 24 V)		
Other interfaces		Type-C	Type-C，TF card (requires TF card expansion module)			Type-C，TF card (requires TF card expansion module)		
Other descriptions		/	CAM, gear, and interpolation supported			CAM, gear, and interpolation supported		

GE20 Series Expansion Card

The GE20 series expansion cards include nine types, covering digital I/O and analog I/O and their combinations, as well as serial communication, clock expansion, and TF card expansion. These cards can precisely suit your needs while saving space. They are compatible with the EASY series compact PLCs, which can support up to two expansion cards.

Product Model		Description	Slot	Certification
GE20-4DO-TN-INT		Supports 4-channel SINK transistor output	A/B	CE UKCA
GE20-4DI-INT		Supports 4-channel digital input	A/B	CE UKCA
GE20-2AD1DA-V-INT		Supports 2-channel analog current/voltage input and 1-channel analog voltage output	A/B	CE UKCA
GE20-2AD1DA-I-INT		Supports 2-channel analog current/voltage input and 1-channel analog current output	A/B	CE UKCA
GE20-232/485-RTC-INT		Supports RTC clock and one RS485 or RS232 channel	B	CE UKCA
GE20-232/485-INT		Supports one RS485 or RS232 channel	A/B	CE UKCA
GE20-RTC-INT		Supports RTC clock	B	CE UKCA
GE20-TF-INT		Supports user program upgrade and firmware upgrade	B	CE UKCA
GE20-CAN-485-INT		Supports CAN and RS485 communication	A	CE UKCA
GE20-TF-RTC-INT		Support TF expansion integrated RTC clock	B	CE UKCA

Communication expansion cards

Item	GE20-232/485-RTC-INT	GE20-232/485-INT	GE20-CAN-485-INT
Picture			
Description	Supports RTC clock and one RS485 or RS232 channel	Supports one RS485 or RS232 channel	Supports CAN and RS485 communication
Slot	B	A/B	A
IP rating	IP20	IP20	IP20
Ambient temperature	–20°C to +55°C	–20°C to +55°C	–20°C to +55°C
RS485/RS232	1	1	1
Termination resistor	Supported; set through DIP switch	Supported; set through DIP switch	No termination resistor for RS485 Built-in termination resistor for CAN
Communication capability	A maximum of 31 nodes are supported	A maximum of 31 nodes are supported	A maximum of 31 nodes are supported Up to 63 slaves in CAN
Baud rate of RS485/RS232	9600 bps, 19200 bps, 38400 bps, 57600 bps, 115200 bps	9600 bps, 19200 bps, 38400 bps, 57600 bps, 115200 bps	9600 bps, 19200 bps, 38400 bps, 57600 bps, 115200 bps
Baud rate of CAN	/	/	1000 kbps: distance < 20 m 500 kbps: distance < 80 m 250 kbps: distance < 150 m 125 kbps: distance < 300 m 100 kbps: distance < 500 m 50 kbps: distance < 1000 m
Clock accuracy	120 sec/month	/	/
Clock format	YYYY/MM/DD/HH/MM/SS	/	/
Built-in battery specifications	CR2302, 3-year life cycle, removable	/	/

Digital expansion cards

Item	GE20-4DO-TN-INT	Item	GE20-4DI-INT
Picture		Picture	
Description	Supports 4-channel SINK transistor output	Description	Supports 4-channel digital input
Slot	A/B	Slot	A/B
IP rating	IP20	IP rating	IP20
Ambient temperature	–20°C to +55°C	Ambient temperature	–20°C to +55°C
Output type	Digital transistor output	Input type	Digital input
Output mode	SINK	Input mode	SINK/SOURCE
Channels	4	Channels	4
Output voltage class (resistive load)	24V DC (20.4V DC to 26.4V DC)	Input voltage class	24V DC±10% (21.6V DC to 26.4V DC)
Output voltage class (inductive load)	0.5 A/point; 1 A/common terminal	Input current at ON	> 3.5 mA
Output voltage class (lamp load)	6 W/24V DC (total)	Input current at OFF	< 1.5 mA
Hardware response time (ON/OFF)	1 W/24V DC (total)	Input response time	Approx. 15 ms (hardware RC filter time)
Leakage current at OFF	< 10 μA	ON voltage	⩾ 15V DC
Switching frequency	100 Hz for resistive load; 0.5 Hz for inductive load; 10 Hz for lamp load	OFF voltage	⩽ 5V DC
Isolation	Photocoupler isolation	Software filter time	Not supported
Protection	Surge suppression	Isolation	Photocoupler isolation

Digital expansion cards

Item	GE20-RTC-INT	GE20-TF-INT	GE20-TF-RTC-INT
Picture			
Description	Supports RTC clock	Supports user program upgrade and firmware upgrade	Supports user program upgrade and firmware upgrade
Slot	B	B	B
IP rating	IP20	IP20	IP20
Ambient temperature	–20°C to +55°C	–20°C to +55°C	–20°C to +55°C
Communication interface	I^2C	SDIO	I^2C (for RTC) /SDIO (for TF)
Clock accuracy	120 sec/month	-	120 sec/month
Clock format	YYYY/MM/DD/HH/MM/SS	-	YYYY/MM/DD/HH/MM/SS
Built-in battery specifications	CR2302, 5-year life cycle, removable	-	3-year life cycle, removable
SD card capacity	-	Up to 32 GB	Up to 32 GB
SD card type	-	TransFlash (Micro SD)	TransFlash (Micro SD)

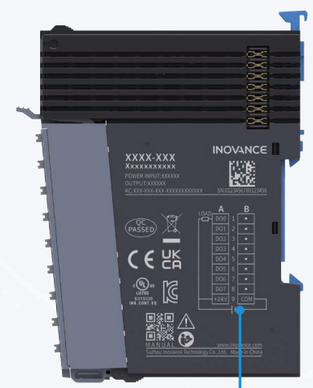
Analog Expansion Cards

Item	GE20-2AD1DA-V-INT	GE20-2AD1DA-I-INT
Picture		
Description	Supports 2-channel analog current/voltage input and 1-channel analog voltage output	Supports 2-channel analog current/voltage input and 1-channel analog current output
Slot	A/B	A/B
IP rating	IP20	IP20
Ambient temperature	–20°C to +55°C	–20°C to +55°C
Input type	Analog input	Analog input
Input mode	Current/Voltage	Current/Voltage
Input channels	2	2
Resolution	12-bit	12-bit
Conversion time	6 ms/channel	6 ms/channel
Input range	0 V to 10 V; 0 mA to 20 mA	0 V to 10 V; 0 mA to 20 mA
Current input impedance	250 Ω	250 Ω
Input accuracy (25°C)	Voltage: ±1%; current: ±1% (full range)	Voltage: ±1%; current: ±1% (full range)
Input accuracy (full temperature range)	Voltage: ±3%; current: ±3% (full range)	Voltage: ±3%; current: ±3% (full range)
Digital input	0 to 20000	0 to 20000
Output type	Analog output	Analog output
Output mode	Voltage	Current
Output channels	1	1
Resolution	12-bit	12-bit
Conversion time	1 ms/channel	1 ms/channel
Voltage output range	0 V to 10 V	0 mA to 20 mA
Voltage output load	> 2 kΩ	0 Ω to 500 Ω
Voltage output accuracy (25°C)	±1% (full range)	±1% (full range)
Voltage output accuracy (full temperature range)	±5% (full range)	±5% (full range)
Digital output	0 to 20000	0 to 20000

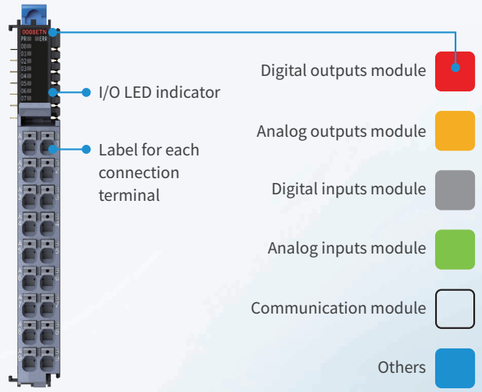
GL20 Series I/O Modules

The GL20 series I/O modules, introduced by Inovance, represent the next generation of modules designed for common bus networks. With an ultra-slim profile of as thin as 12 mm, they achieve as fast response as in microseconds, along with a flexible I/O system and a stable structural design.

The GL20 series I/O modules are designed and continuously improved with the needs of various industries in mind. They have many variants and offer abundant input and output channels, providing extensive customization options for costumers.



Wiring diagram



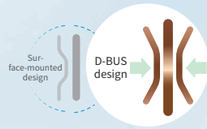
Please note: the colour codes specify the module type



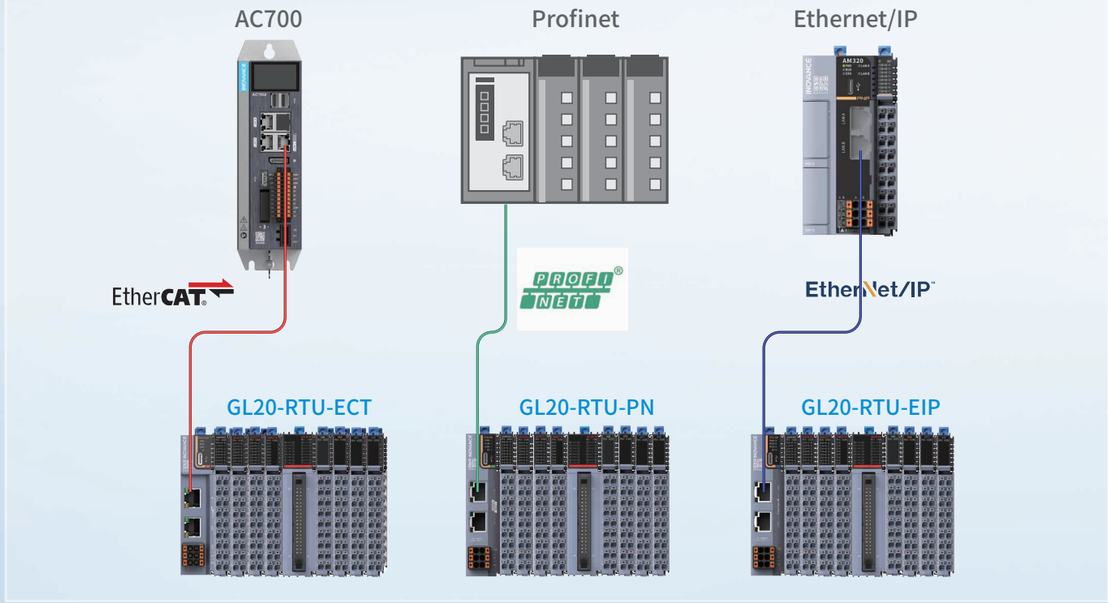
Next-generation GL-LINK local bus, boosting speed to 100 Mbps



Thickness reduced to 12 mm, 2/3 cabinet space saved



D-BUS design, clamped on both sides, more stable than surface-mounted designs



GL20 Series I/O Module Overview

Type	Model	Description	Terminal type	Certification
Bus Coupler	GL20-RTU-ECT32-INT	EtherCAT bus coupler module, supports up to 32 expansion modules.	Push-in	CE, UL, UKCA, KC
	GL20-RTU-PN-INT	PROFINET bus coupler module, supports up to 32 expansion modules	Push-in	CE, UL, UKCA, KC
	GL20-RTU-EIP-INT	EtherNET/IP bus coupler module, supports up to 16 expansion modules	Push-in	CE
Digital Input	GL20-0800END-INT	8 channel digital input module	Push-in	CE, UL, UKCA
	GL20-1600END-INT	16 channel digital input module (NPN/PNP)	Push-in	CE, UL, UKCA, KC
	GL20-3200END-INT	32 channel digital input module	Push-in	CE, KC
	GL20-3200END-M-INT	32 channel digital input module (operated with the cable: XA3210A-40-L0.5M-01, T024-K)	Ejector header	CE, KC
Digital Output	GL20-0004ETP-2A-INT	4 channel digital output module (PNP)	Push-in	CE
	GL20-0008ETN-INT	8 channel digital output module (NPN)	Push-in	CE, UL, UKCA
	GL20-0008ETP-INT	8 channel digital output module (PNP)	Push-in	CE, UL, UKCA
	GL20-0016ETN-INT	16 channel digital output module (NPN)	Push-in	CE, UL, UKCA, KC
	GL20-0016ETP-INT	16 channel digital output module (PNP)	Push-in	CE, UL, UKCA, KC
	GL20-0032ETN-INT	32 channel digital output module (NPN)	Push-in	CE, KC
	GL20-0032ETN-M-INT	32 channel digital output module (NPN) (operated with the cable: XA3210A-40-L0.5M-01, T024-K)	Ejector header	CE, KC
	GL20-0008ER-INT	8 channel digital output module	Push-in	CE
Relay Output	GL20-0004ER-INT	4 channel relay output module (channel separation)	Push-in	CE, UL, UKCA, KC
Digial In/Out	GL20-0404ETP-5V-INT	4 channel DI/DO module(PNP)	Push-in	CE
	GL20-0808ETN-INT	8 channel DI/DO module(NPN)	Push-in	CE, UL, UKCA, KC
	GL20-3232ETN-M-INT	32 channel DI/DO module(NPN)(operated with the cable: XA3210A-40-L0.5M-01, T024-K)	Ejector header	CE, KC
Analog Input	GL20-4AD-INT	4 channel analog input module (Resolution 16 bits, sampling time 250 μs)	Push-in	CE, UL, UKCA, KC
	GL20-8ADV-INT	8 channel analog input module-voltage type	Push-in	CE
	GL20-8ADI-INT	8 channel analog input module-current type	Push-in	CE
Analog Output	GL20-4DA-INT	4 channel analog output module (Resolution 16 bits, sampling time 250 μs)	Push-in	CE, UL, UKCA, KC
	GL20-8DAI-INT	8 channel analog output module-current type	Push-in	CE
	GL20-8DAV-INT	8 channel analog output module-voltage type	Push-in	CE
Temperature Detection	GL20-4PT-INT	4 channel thermal resistance inputs temperature detection module (Pt 100, Pt 500, Pt 1000, Cu 100, KTY 84, NTC 5K, NTC 10K)	Push-in	CE, UL, UKCA, KC
	GL20-4TC-INT	4 channel thermocouple inputs temperature detection module (Thermocouple type: B,E,N,J,K,R,S,T)	Push-in	CE, UL, UKCA, KC

Type	Model	Description	Terminal type	Certification
Power Supply Expansion	GL20-PS2-INT	Extra power supply module. The rated current of the internal bus of the coupler is 2A. If a higher current is required,a combination of the coupler and the power supply unit GL20-PS2 should be used	Push-in	CE, UL, UKCA, KC
Functional I/O	GL20-2SSI-INT	2 channel encoder input module (SSI protocol)	Push-in	CE
	GL20-2HC-INT	2 channel high-speed counting module	Push-in	CE
Communication Expansion	GL20-2S485-INT	2 channel RS485 communication expansion module (Support Inovance PLC)	DB9	CE, UL, KC
	GL20-2S485-MDB-INT	2 channel RS485 communication expansion module (Support third-party PLC)	DB9	CE, UL
	GL20-2SCOM-INT	2 channel RS232/RS485/RS422 communication expansion module (Support Inovance PLC)	Push-in	CE
	GL20-2SCOM-MDB-INT	2 channel RS232/RS485/RS422 communication expansion module (Support third-party PLC)	Push-in	CE
	GL20-1DNM-INT	1 channel DeviceNet master station communication module	Push-in	CE
Options	XA3210A-40-L0.5M-01	40 Pin-I/O extension cable - 0.5m length (Required for GL20-XXXX-M)	-	CE
	XA3210A-40-L2M-01	40 Pin-I/O extension cable - 2m length (Required for GL20-XXXX-M)	-	CE
	T024-K	32 point screw terminal block (Required for GL20-XXXX-M)	-	CE