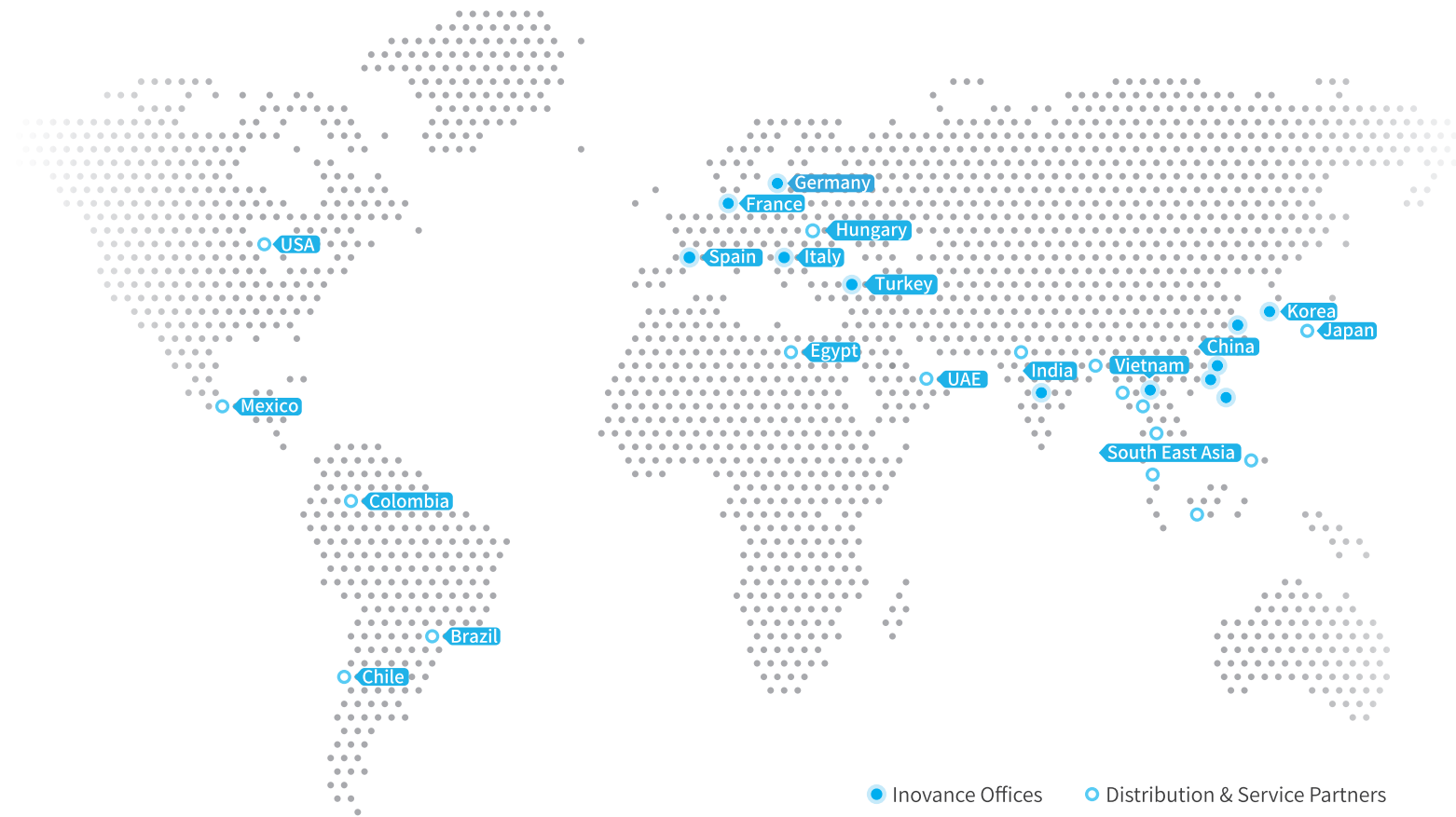


INOVANCE

Easy Series PLC

High performance, compact, EtherCAT-enabled PLC



Advancing industrial technology, for a better world



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



บริษัท นานดีอินเตอร์เทรด จำกัด
NANDEE INTER-TRADE CO., LTD.

314,316,318,320,322 ซอยจันทน์ 32 ถนนจันทน์ แขวงทุ่งวัดดอน เขตสาทร กทม. 10120

☎ : 0-2675-8239
LINE : @nandeeintertrade
f : nandeeintertrade
globe : www.nandee.co.th
✉ : marketing@nandee.co.th
sales@nandee.co.th

EtherCAT

EtherNet/IP

CANopen



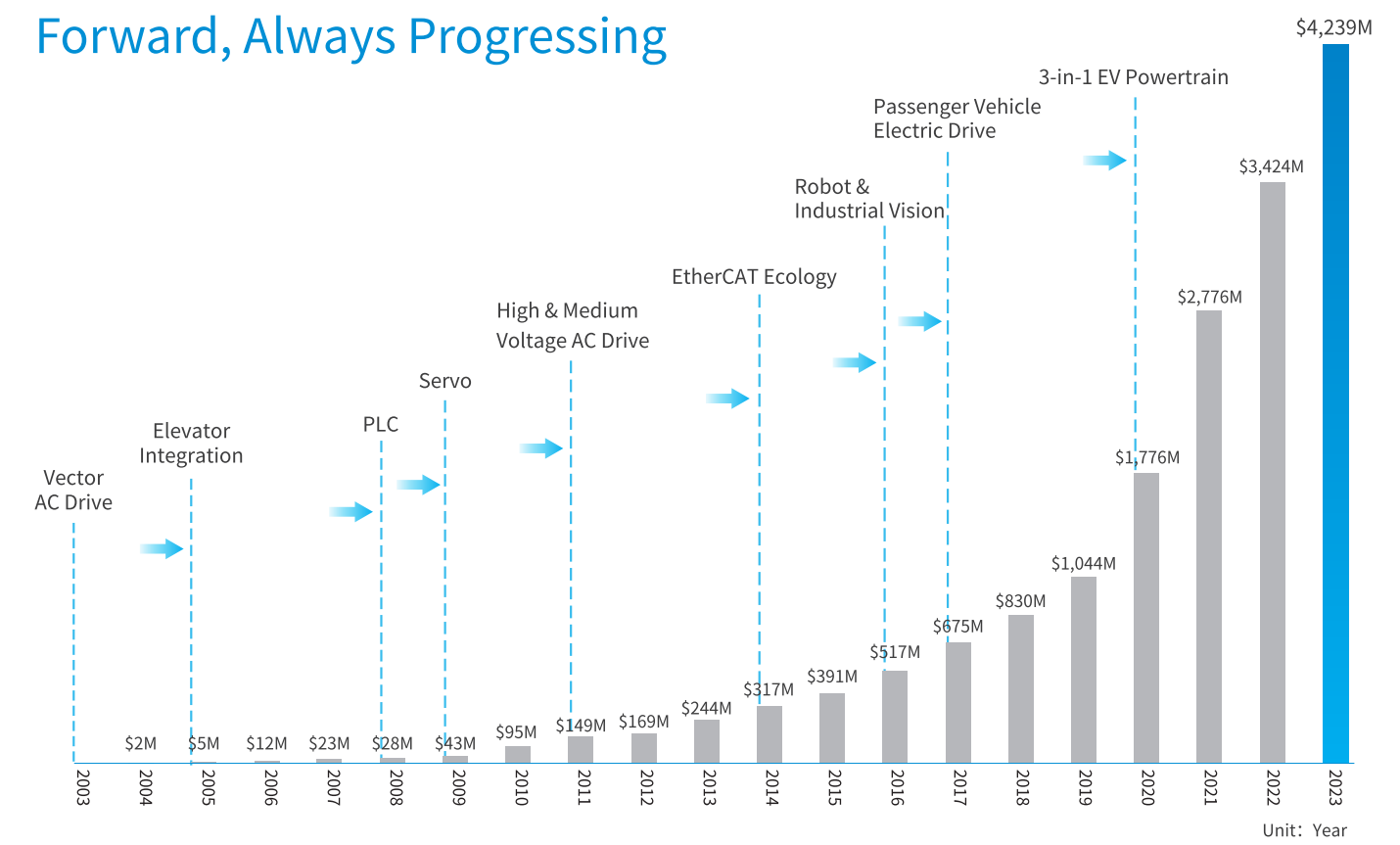


About Inovance

The Inovance Group, founded in 2003, is a rising star in the global industrial automation business and has revenues of \$4.2 in 2023. Inovance is headquartered in Shenzhen, China, and has built a global operation with offices and facilities in Germany, France, Italy, Spain, Turkey, India, and South Korea. Additionally, the company has a strong network of distribution partners around the world.

The company 's flexible production techniques and expert understanding of all industry sectors - from plastics to printing to packaging to iron & steel production - have allowed it to establish globally leading industry-specific business units. Over the years, Inovance has built an engineering team with specialist expertise in industrial automation. This knowledge allows it to form strong partnerships with OEMs and end users, providing ongoing advice about how to get the most out of their automation solutions today, and how to stay prepared for the market and technology changes that are coming in future.

Forward, Always Progressing





2003
founded



IPO:2010
Shenzhen, China



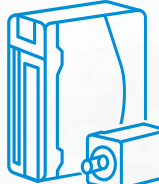
20,000
employees



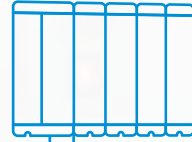
Global
network of offices and distributors



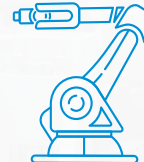
\$4.2+bn
revenues in 2023



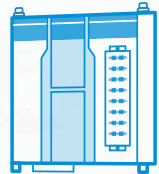
Servo System
4,500,000+
sets delivered in 2023



AC Drive
2,20,000+
sets delivered in 2023



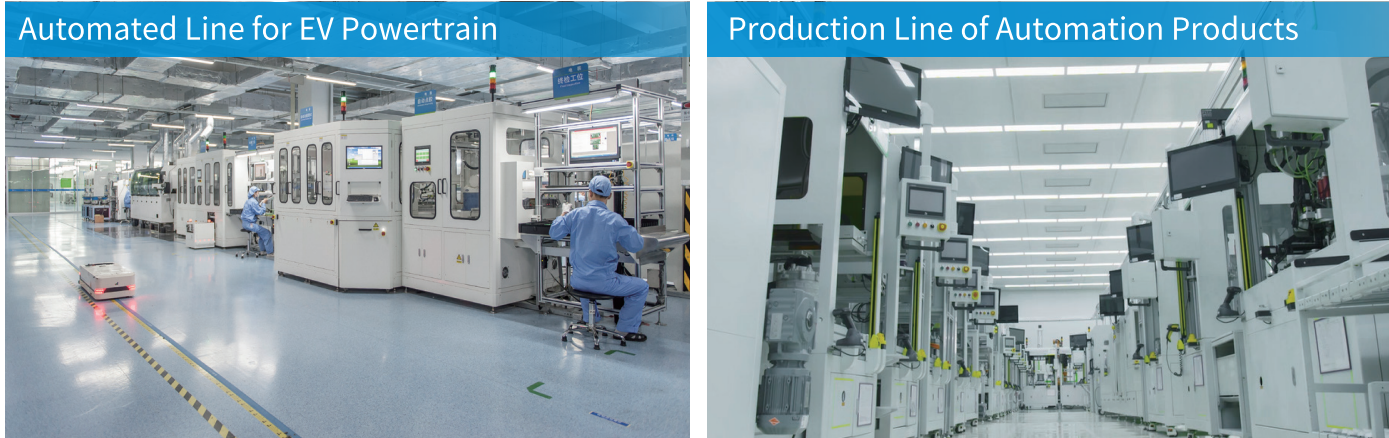
Industrial Robot
22,000+
sets delivered in 2023



Controller
3,400,000+
sets delivered in 2023

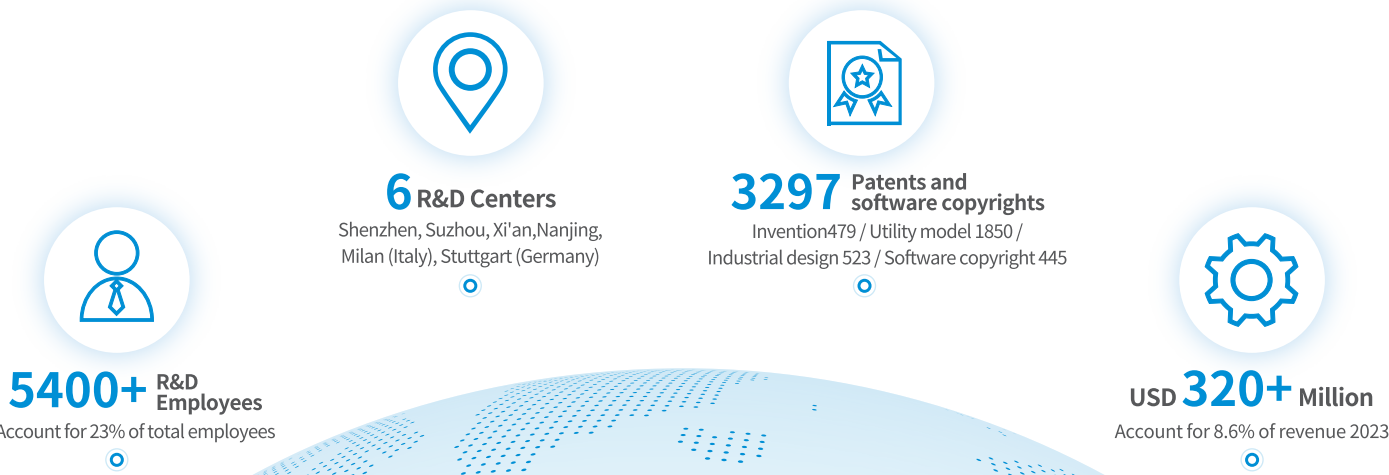
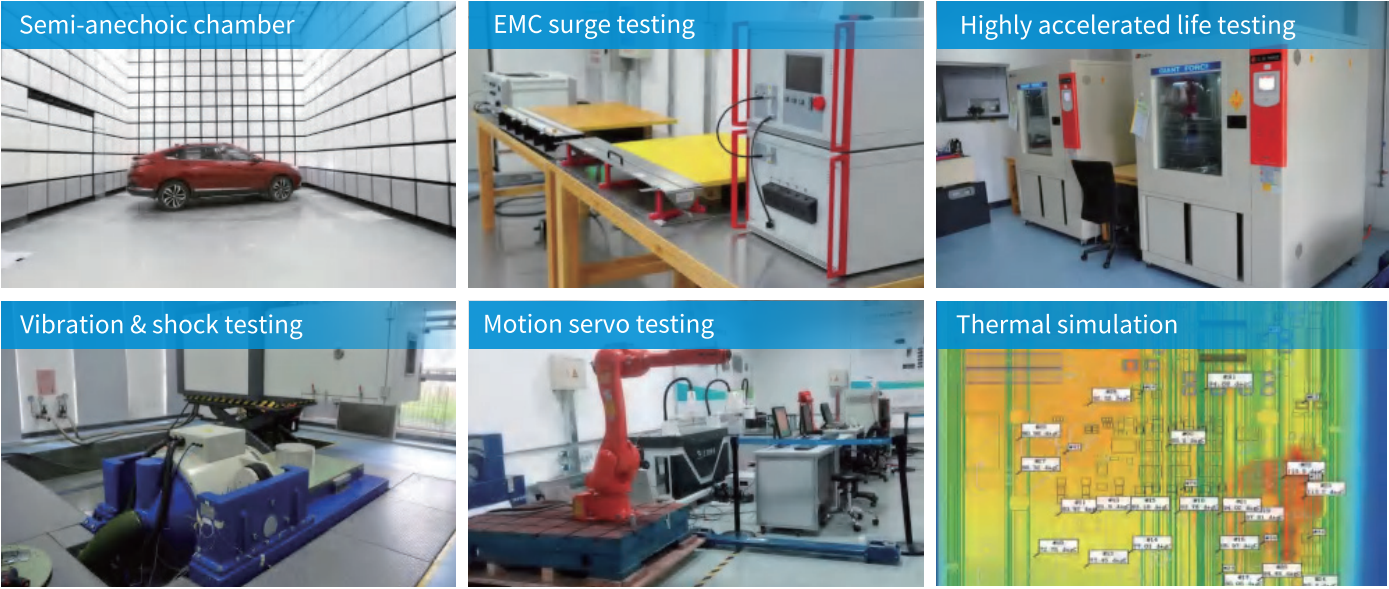
Global Factories

Inovance has built digital factories around the world, including one in India that has been in operation for a decade. In 2022, we started to build the Hungary factory for localized manufacturing in Europe.



Worldwide R&D network

Inovance invests heavily in R&D, enabling the company to continuously release a steady stream of new and innovative products. To ensure that all products meet all key global standards wherever possible, Inovance's R&D teams in Europe, India, and China, all work together seamlessly and virtually on engineering projects. Inovance calls this co-development, and the practice ensures that the best technology knowledge and solutions can be gathered from all around the business; and that they are always implemented and adapted in a way that meets the needs of local markets. The company's commitment to innovation is demonstrated through its headcount: over 20% of Inovance's entire global workforce is in R&D.



Easy Series Compact PLC

GE20 Series Expansion Cards

Expandable CAN bus, RS485, RS232, RTC, digital terminal, and analog terminal



Program download and monitoring;
EtherNet/IP, Modbus TCP, and Socket command

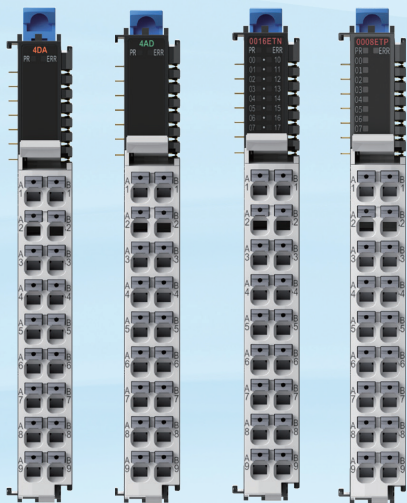
EtherNet/IP™

Supports following devices through routing:
information collection and management system,
PC, HMI, robot, PLC, and other Ethernet devices



GL20 I/O Modules

Five high-speed pulse outputs of 200 kHz,
four for Easy301
Access of up to 16 local modules,eight for
Easy301



Controls 4~5 servo or step motors

EtherCAT®

RS485, free protocol, MODBUS RTU,
master/slave mode
Access of the slave through serial
ports, and access of the HMI,
instrument, apparatus, and sensor



Scan for more
information



Up to 72 EtherCAT slaves,including 32 servo axes

Easy Series Compact PLC

Easy Expansion



Type-C port

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



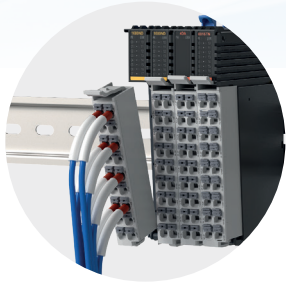
2 expansion slots

Analog, digital, CAN, RS485, TF card and RTC optional



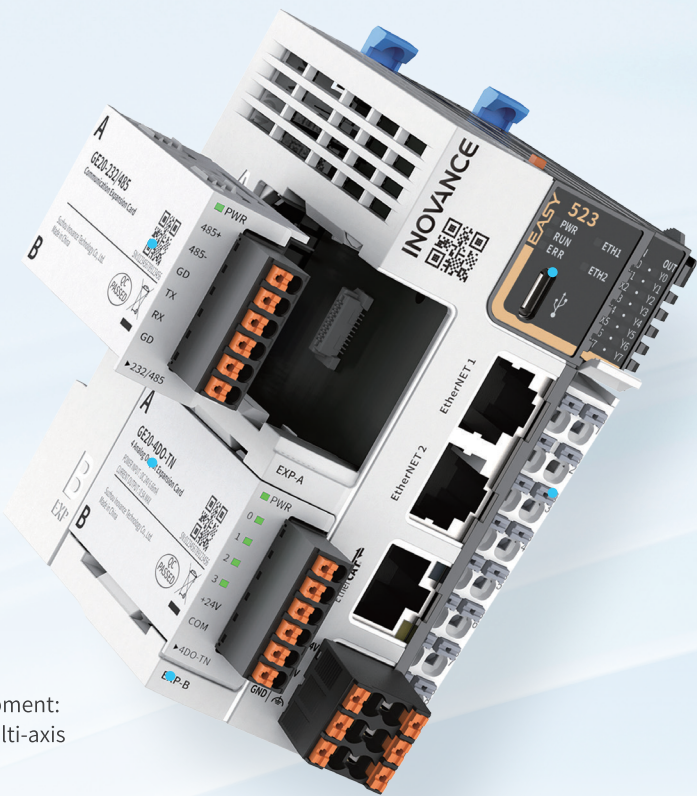
6 models

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



Auto-tuning PID

Integrated auto-tuning and adaptive PID algorithm allowing for quick response



32-axis high-speed bus control

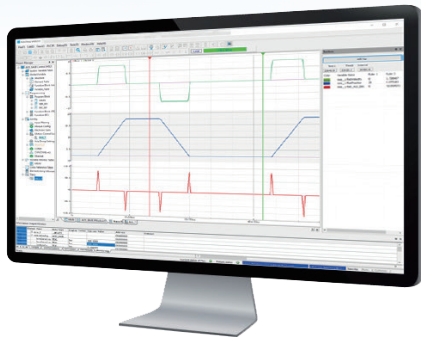
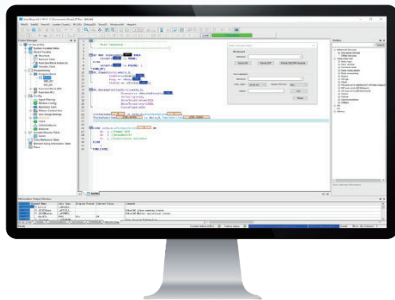
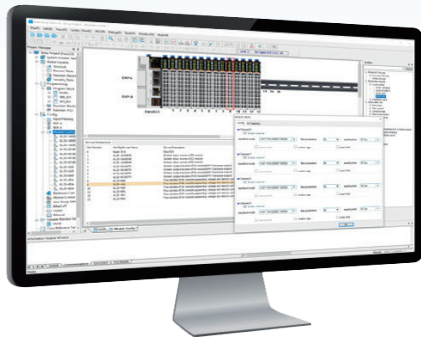
For synchronous motion and complex processes

Easy Programming

- Supports activation and deactivation of local modules/EtherCAT slaves/servo axes by means of variables;
- Supports modification of system parameters by means of program;
- One program covers multiple models, which can be selected easily on the HMI.

Supports **ST** programming, making it easy for engineers to write complex algorithms and logic.

- Supports function block encapsulation and process algorithm reuse;
- Supports automatic scanning, one-key EtherCAT slave configuration, and commissioning-free servo;
- Supports associative input and user-defined variables, which significantly improve program readability;
- Supports offline simulation with IT7000.

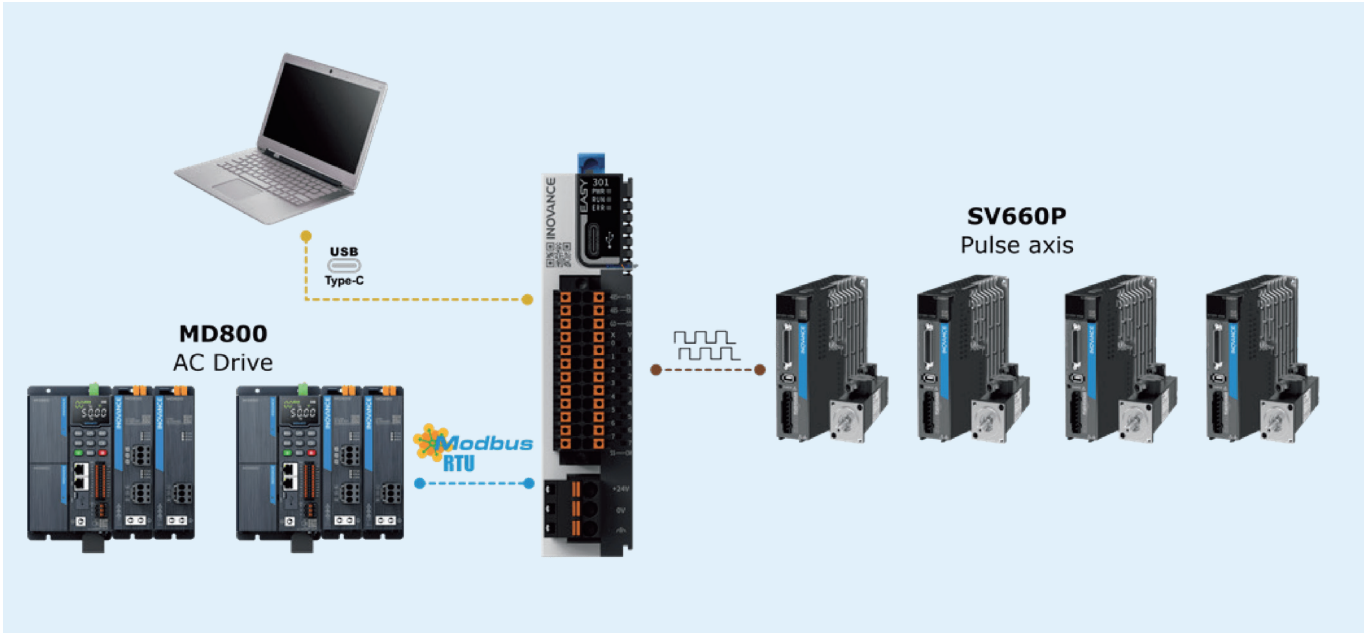


Scalable System Architecture

Multiple Configurations

Easy301

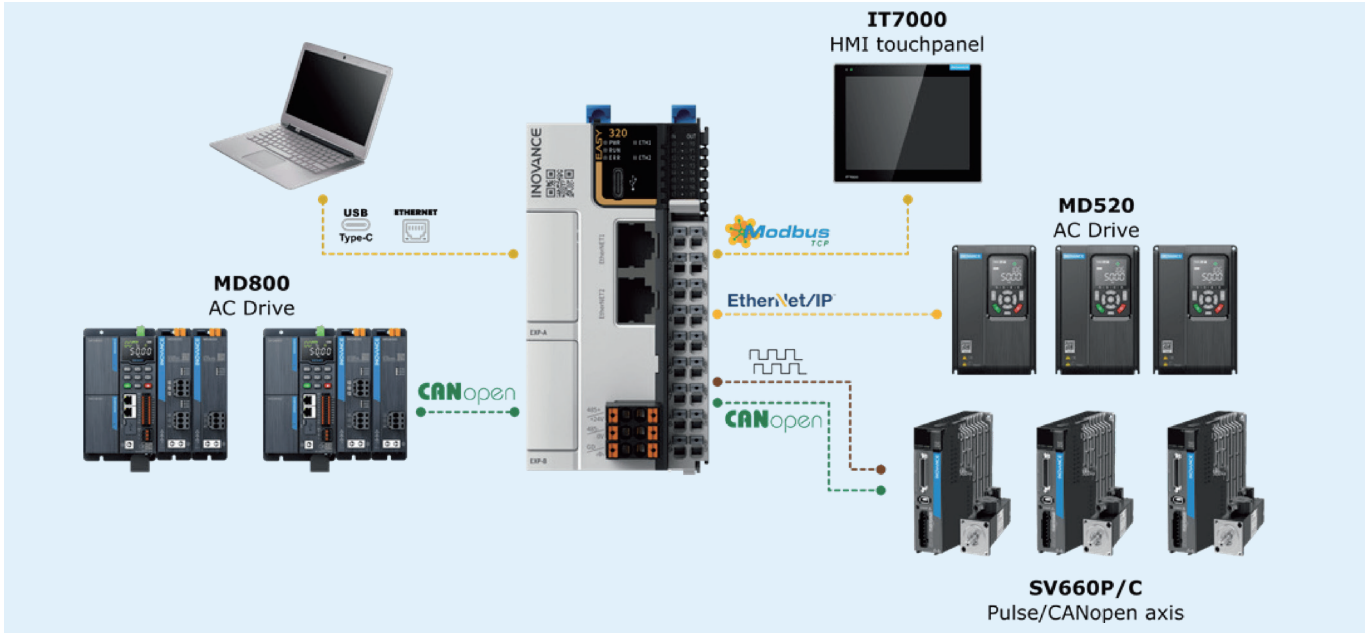
Cost effective architecture using Modbus RTU communication and/or pulses to control the drives.



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

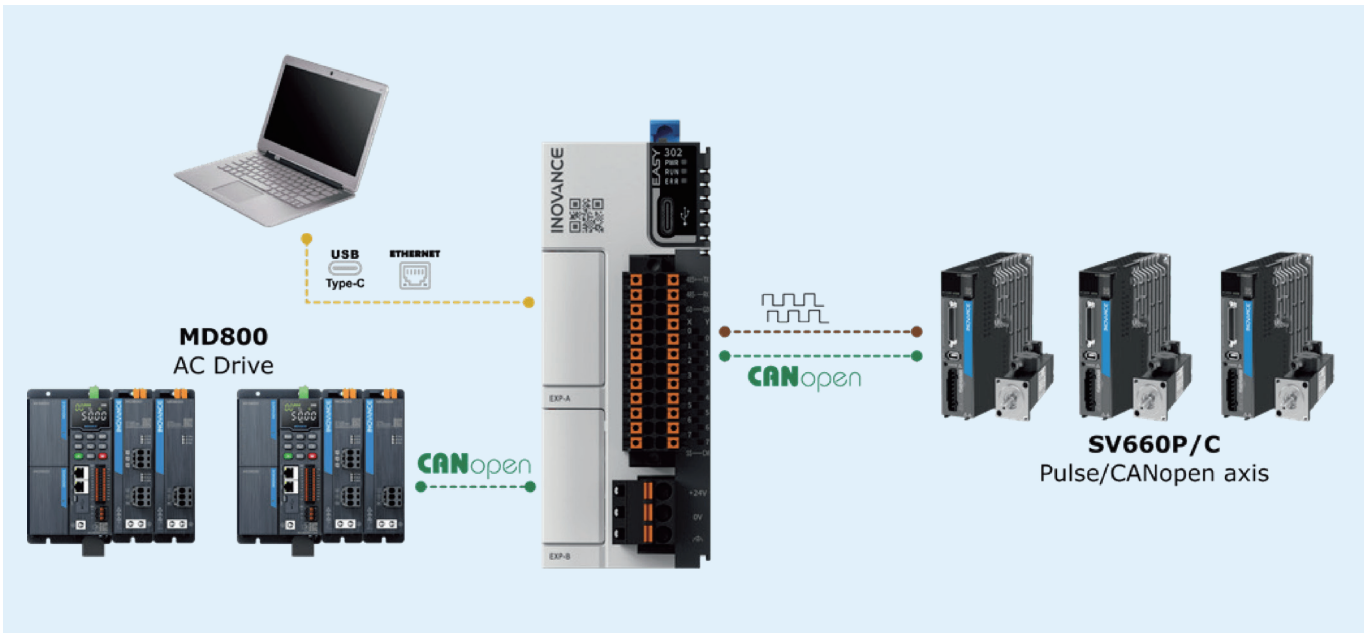
Easy320

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



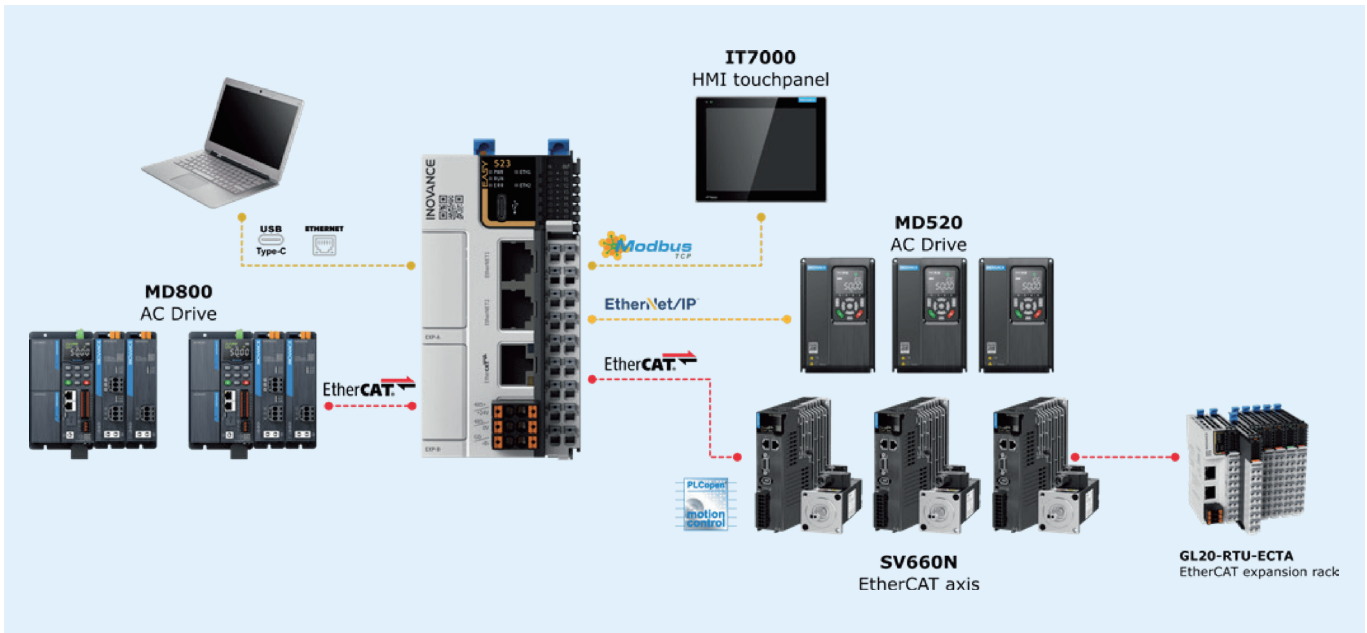
Easy302

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 hart

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)					
Bit command execution time	0.144 μs							0.113 μs					
Word command execution time	0.496 μs							0.384 μs					
Float command execution time	0.496 μs							0.384 μs					
Arithmetic (average)	0.851 μs							0.677 μs					
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	CEUKCA
GE20-4DI-INT		Supports 4-channel digital input	A/B	CEUKCA
GE20-2AD1DA-V-INT		Supports 2-channel analog current/voltage input and 1-channel analog voltage output	A/B	CEUKCA
GE20-2AD1DA-I-INT		Supports 2-channel analog current/voltage input and 1-channel analog current output	A/B	CEUKCA
GE20-232/485-RTC-INT		Supports RTC clock and one RS485 or RS232 channel	B	CEUKCA
GE20-232/485-INT		Supports one RS485 or RS232 channel	A/B	CEUKCA
GE20-RTC-INT		Supports RTC clock	B	CEUKCA
GE20-TF-INT		Supports user program upgrade and firmware upgrade	B	CEUKCA
GE20-CAN-485-INT		Supports CAN and RS485 communication	A	CEUKCA
GE20-TF-RTC-INT		Support TF expansion integrated RTC clock	B	CEUKCA

Communication expansion cards

Item	GE20-232/485-RTC-INT	GE20-232/485-INT	GE20-CAN-485-INT
Apperance			
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	Up to 31 slaves in RS485, with a distance of less than 3 m between adjacent slaves	Up to 31 slaves in RS485, with a distance of less than 3 m between adjacent slaves	Up to 31 slaves in RS485, with a distance of less than 3 m between adjacent slaves 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
Apperance		Apperance	
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
Apperance			
Description	Supports RTC clock	Supports user program upgrade and firm-ware upgrade	Supports user program upgrade and firm-ware 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 ² C	SDIO	I ² C (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
Apperance		
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.

More than "slim"



Applicable to either bus coupler or CPU.

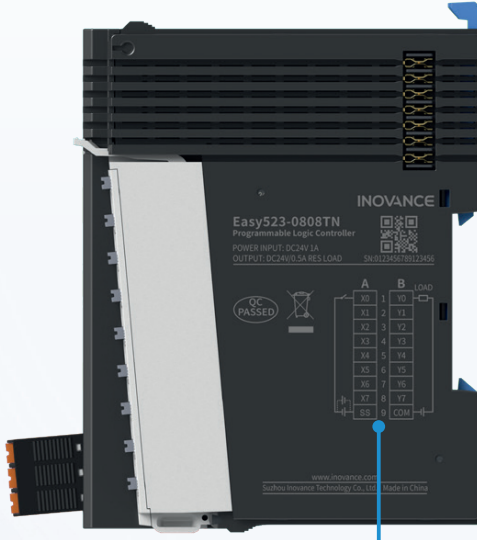


Ultra-slim I/O module as thin as 12mm, for fast installation and replacement.



D-BUS connectors, outperforming traditional surface-mounted connectors by enhanced stability and ten-year lifespan that minimizes downtime

GL20 Series I/O Module Overview



Wiring diagram



I/O LED indicator

Label for each connection terminal

Digital outputs module

Analog outputs module

Digital inputs module

Analog inputs module

Communication module

Others

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

Product Model	Description	Product Model	Description
GL20-RTU-ECT32-INT	EtherCAT slave bus coupler. Up to 16 expansion modules can be added	GL20-0008ETP-INT	8× source (PNP) transistor outputs module. Response time 100 μs
GL20-1600END-INT	16× source (PNP)/sink (NPN) digital inputs module. Input filter from 0.25 ms to 32 ms	GL20-0008ER-INT	8× relay outputs module. Response time 15 ms
GL20-0016ETN-INT	16× sink (NPN) transistor outputs module. Response time 100 μs	GL20-0800END-INT	8× source (PNP)/sink (NPN) digital inputs module. Input filter from 0.25 ms to 32 ms
GL20-0016ETP-INT	16× source (PNP) transistor outputs module. Response time 100 μs	GL20-4PT-INT	4× channel thermal resistance inputs temperature detection module (Pt100, Pt500, Pt1000, Cu100, KTY84, NTC5K, NTC10K)
GL20-4AD-INT	4× analog inputs module (resolution 16 bits, sampling time 250 μs)	GL20-3232ETN-INT	32× source (PNP)/sink (NPN) digital inputs and 32× sink (NPN) transistor outputs module. Response time 100 μs. Input filter from 0.25 ms to 32 ms
GL20-4DA-INT	4× analog outputs module (resolution 16 bits, sampling time 250 μs)	GL20-0032ETN-INT	32× sink (NPN) transistor outputs module. Response time 100 μs
GL20-0808ETN-INT	8× source (PNP)/sink (NPN) digital inputs and 8× sink (NPN) transistor outputs module. Response time 100 μs. Input filter from 0.25 ms to 32 ms	GL20-3200END-INT	32× source (PNP)/sink (NPN) digital inputs module. Input filter from 0.25 ms to 32 ms
GL20-0008ETN-INT	8× sink (NPN) transistor outputs module. Response time 100 μs	GL20-4TC-INT	4× channel thermocouple inputs temperature detection module (thermocouple type: B,E,N,J,K,R,S,T)

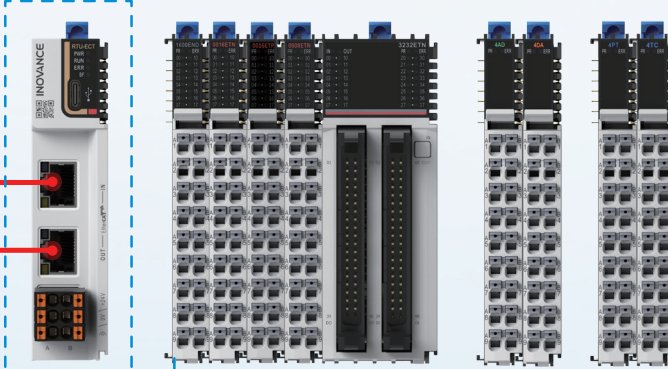
More modules are coming..



EtherCAT

EtherCAT

The Easy 500 series supports distributed I/O expansion through EtherCAT connection with the GL20-RTU-ECT32 bus coupler modules.



GL20-RTU-ECT32

GL20 series modules

