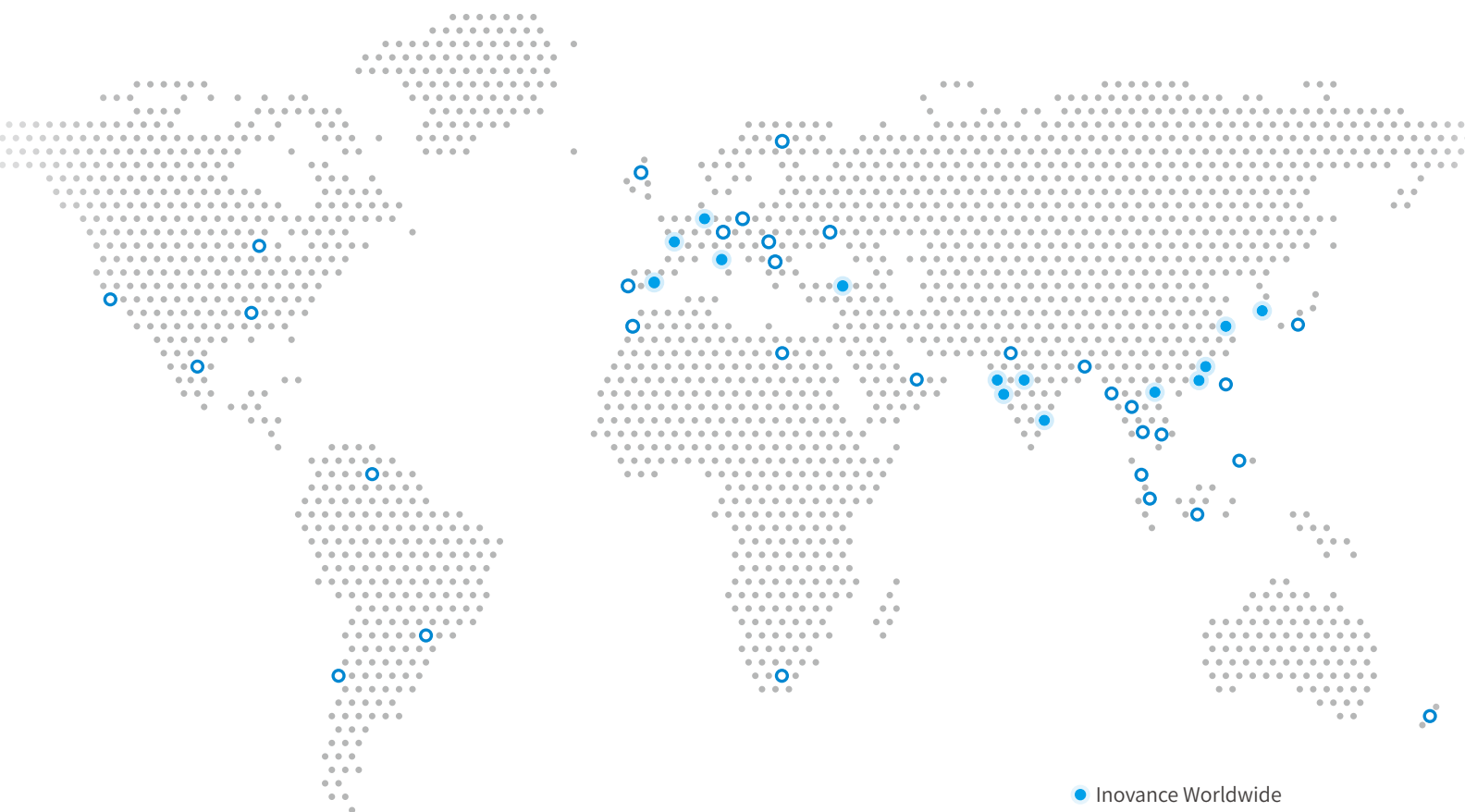


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# INOVANCE

## 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



# Easy Expansion



## Type-C port

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



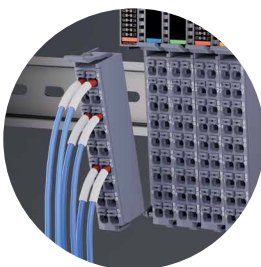
## 2 expansion slots

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



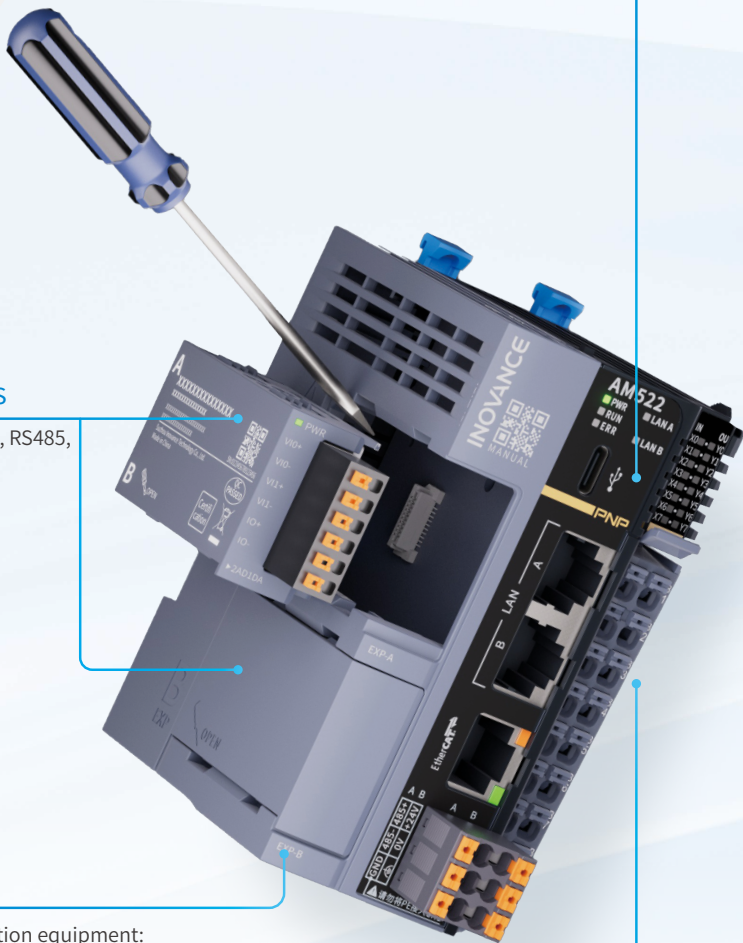
## 6 models

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

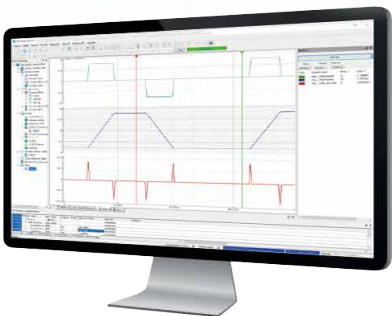
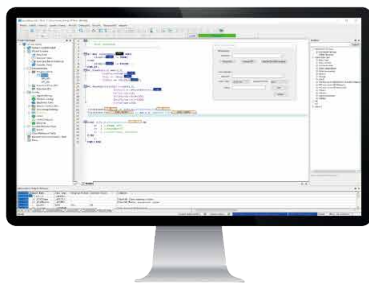
- Graphic interface for device configuration.
- Variant function blocks for shorting commissioning time: standard PLCopen, motion control, auto-turning PID, communication and diagnostic.
- Support auto scanning of EtherCAT slaves

## 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

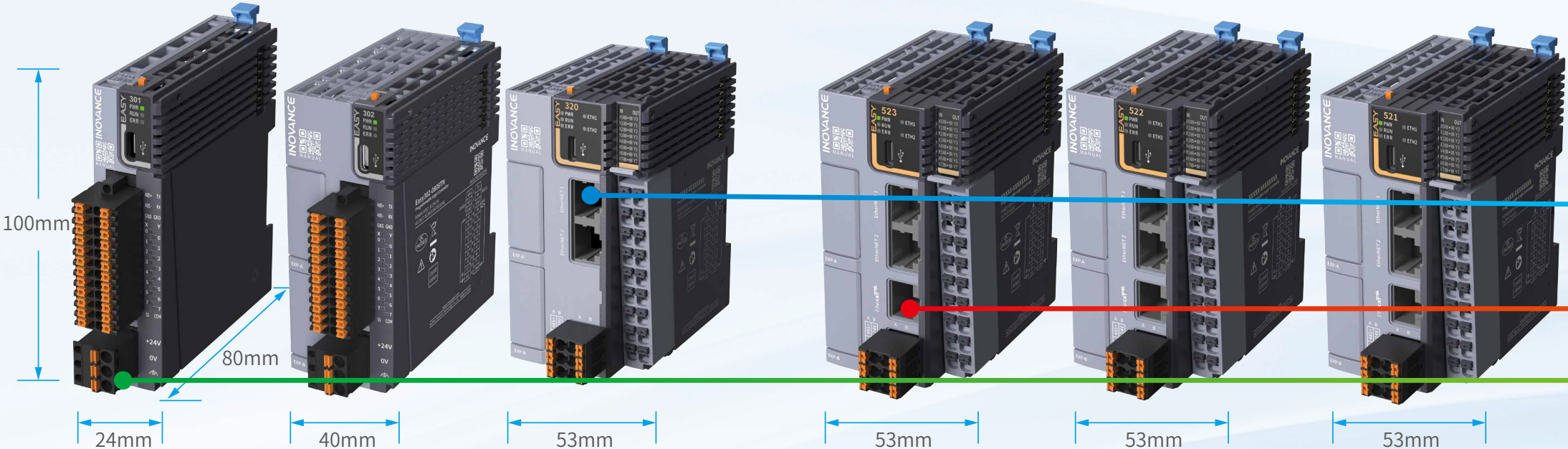
Compact CPU  
Easy301  
RS232 + RS485

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



EtherNet/IP™

Standard Ethernet communication  
P&N slaves



Real-time communication

Serial communication

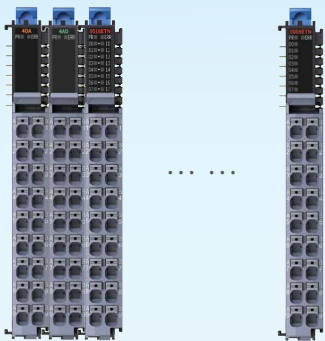
## GE20 Series Expansion Cards

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



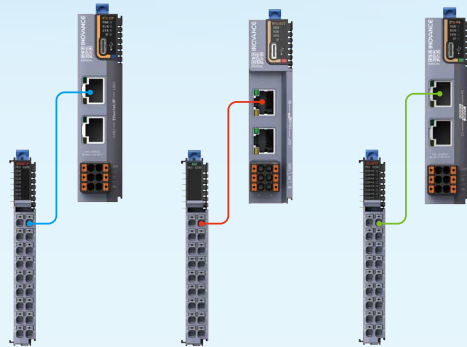
## GL20 I/O Modules

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

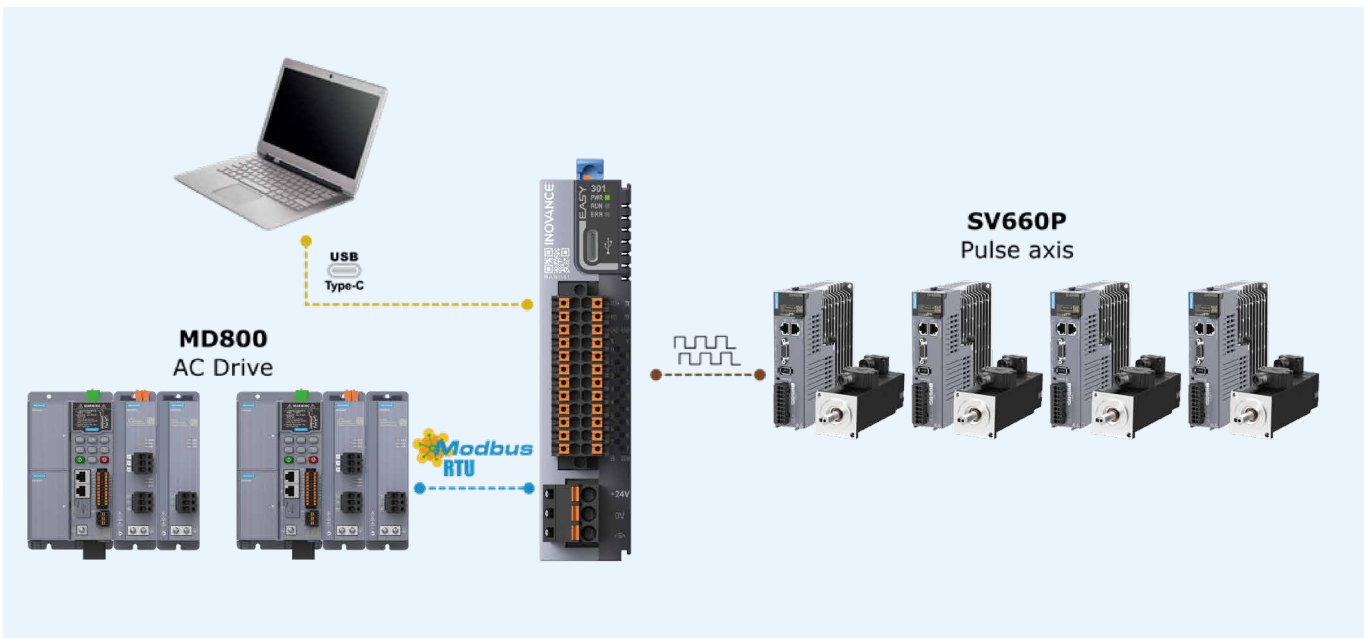


# Scalable System Architecture

## Multiple Configurations

### Easy301

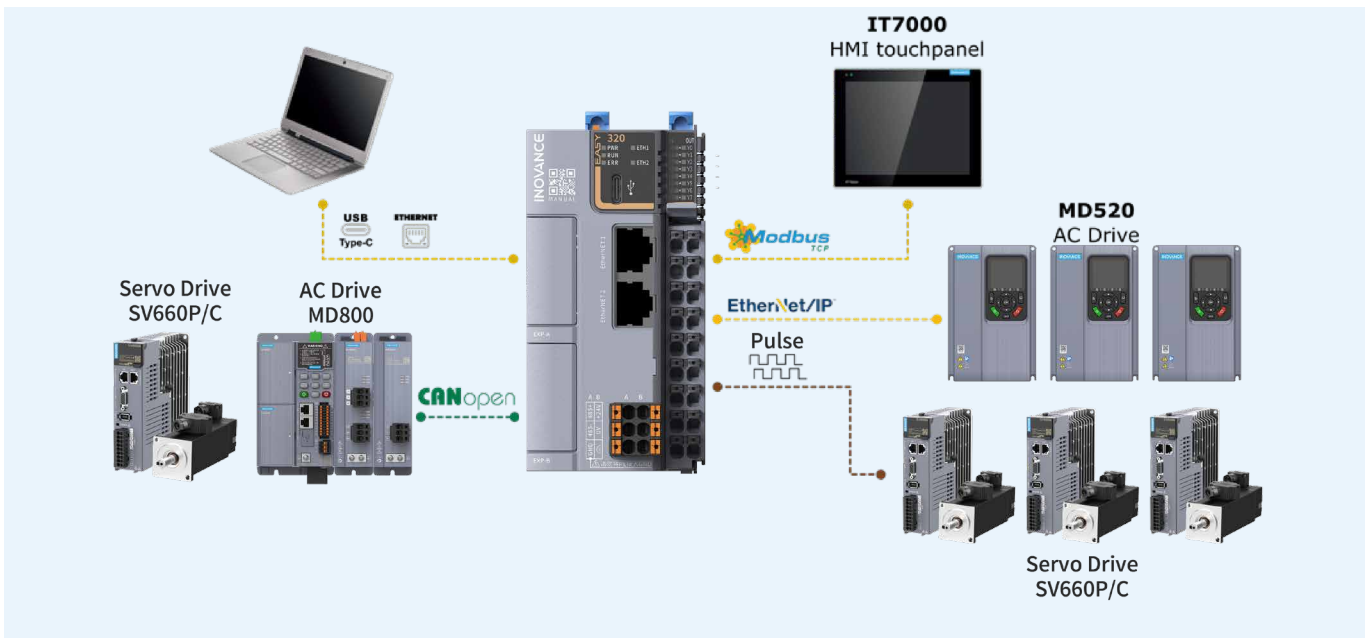
Cost effective architecture using Modbus RTU communication and/or pulses to control the drives.



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

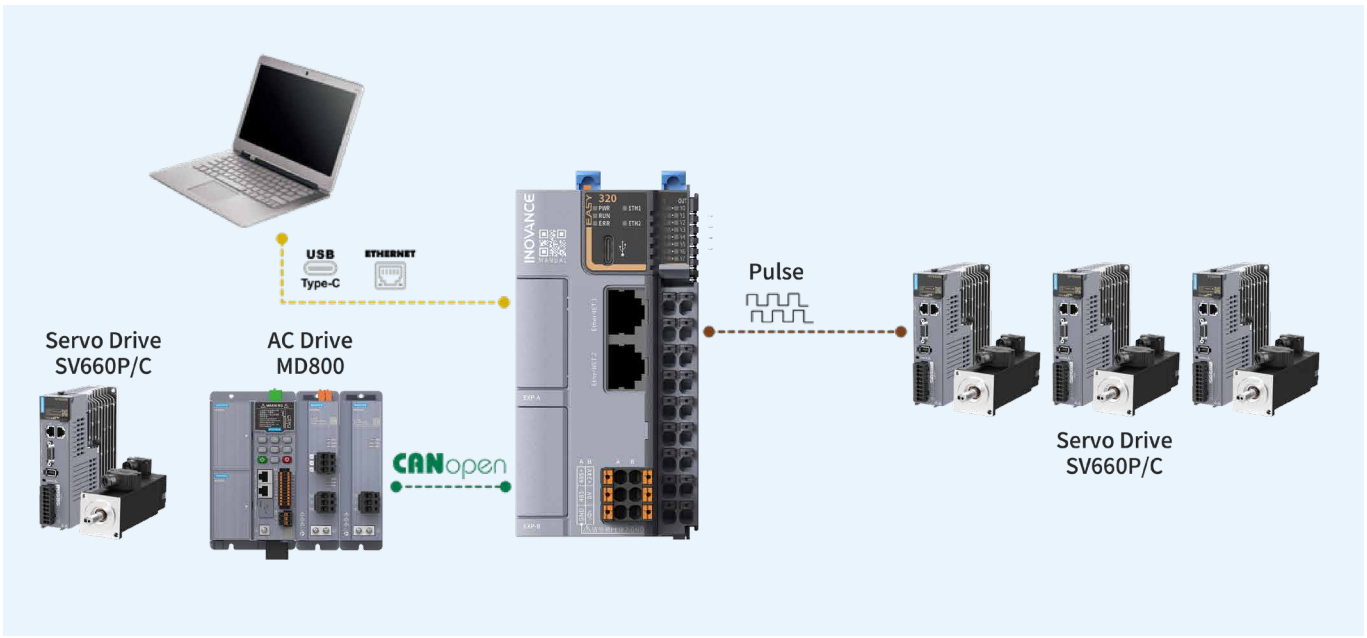
### Easy320

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



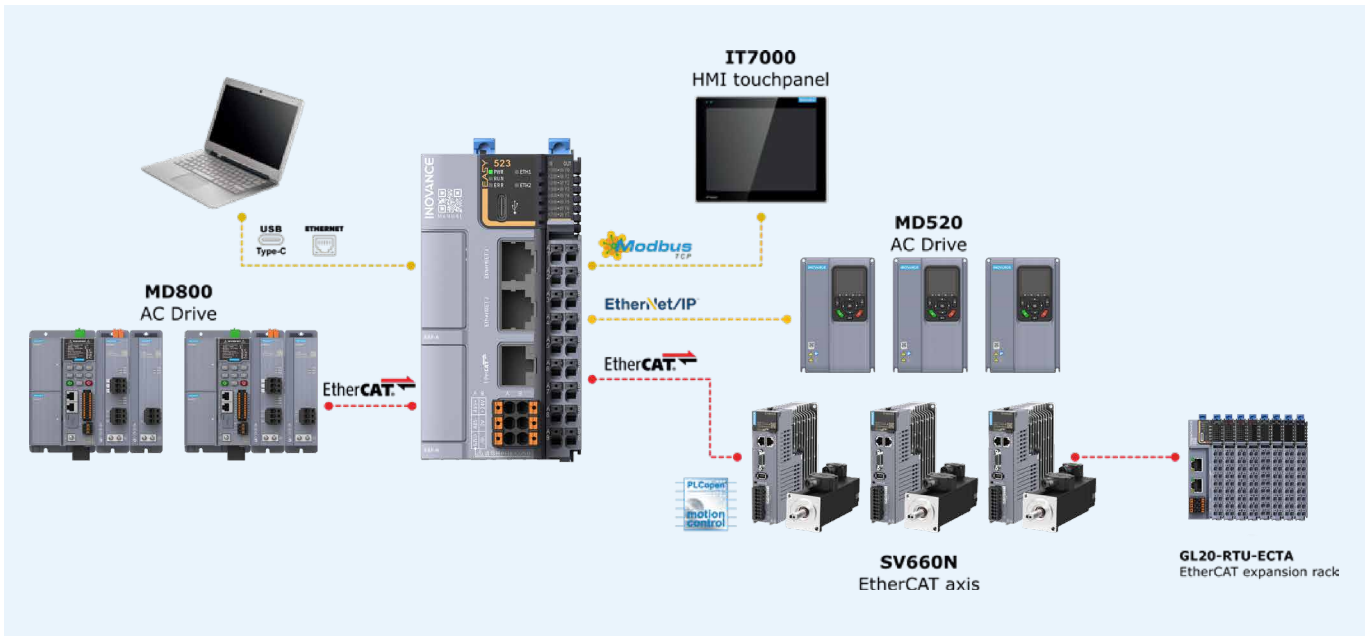
### Easy302

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<br>Modbus TCP up to 32 slaves<br>Ethernet/IP scanner/adapter                                                     |                                                                                                                                                                       |                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                 |  | 2 ports<br>Modbus TCP up to 32 slaves<br>Ethernet/IP scanner/adapter                                         |                                                                                                                                                                                                                                                                                                                                                 |                                                                                     |                                                                                                                                                                                                                                                                                                                                                 |                                                                                     |                                                                                                                                                                                                                                                                                                                                                 |
| EtherCAT                     |                                             | /                                                                                 |                                                                                                                                                                     |                                                                                                                          |                                                                                                                                                                       |                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                 |  |                                                                                                              |                                                                                                                                                                                                                                                                                                                                                 | 1 ports, up to 72 slaves                                                            |                                                                                                                                                                                                                                                                                                                                                 |                                                                                     |                                                                                                                                                                                                                                                                                                                                                 |
| Serial communication         |                                             | 1×RS485+1×RS232<br>Support free protocol, Modbus RTU/<br>ASC<br>up to 16 slaves   |                                                                                                                                                                     | 1×RS485+1×RS232<br>Support 1×RS232/485 expansion<br>Support free protocol, Modbus RTU/<br>ASC<br>16 slaves (recommended) |                                                                                                                                                                       | 1×RS485<br>Support 2×RS232/485 expansion<br>Support free protocol, Modbus RTU/<br>ASC<br>16 slaves (recommended) |                                                                                                                                                                                                                                                                                                                                                 |  | 1×RS485<br>Support 2×RS232/485 expansion<br>Support free protocol, Modbus RTU/ASC<br>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  | 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                                                                                                                                                                |
|---------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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<br>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<br>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<br>500 kbps: distance < 80 m<br>250 kbps: distance < 150 m<br>125 kbps: distance < 300 m<br>100 kbps: distance < 500 m<br>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 <sup>2</sup> C                                                                      | SDIO                                                                                  | I <sup>2</sup> 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

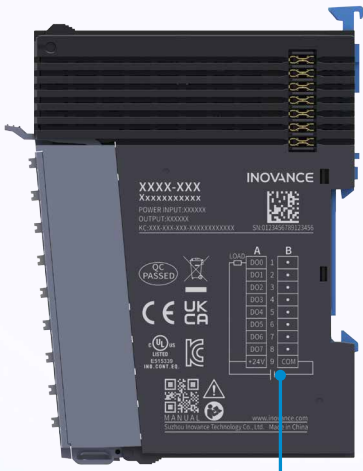
| Item                                             | GE20-2AD1DA-V-INT                                                                   | GE20-2AD1DA-I-INT                                                                   |
|--------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| 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

I/O LED indicator

Label for each connection terminal

Digital outputs module

Analog outputs module

Digital inputs module

Analog inputs module

Communication module

Others

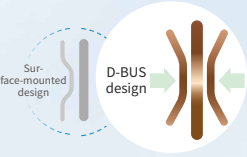
Please note: the colour codes specify the module type



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



EtherCAT

GL20-RTU-ECT



Profinet

PROFINET

GL20-RTU-PN



Ethernet/IP

EtherNet/IP

GL20-RTU-EIP

# 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               |