



O Small-Size PLC

O Motion Controller

O HMI

O I/O Module

O Software

# **EASY Series**

#### **Compact PLC**

Up to 72 EtherCAT slaves, including 32 servo axes

SV680

STD60

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

Expandable communication, Expandable digital/analog terminals, RTC Program download and monitoring; EtherNet/IP, Modbus TCP, and Socket command

CANODEN EtherNet/IP

INOVANCE

INOVAN

Ether CAT.

MD800

GL20 series

GS20 series

**SCARA** 





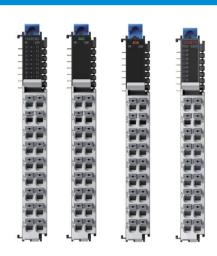
TCP

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



EASY module: Five high-speed pulse outputs of 200 kHz,four for Easy301

Controls 5/4 servo or step motors



Access of up to 16 local modules, eight for Easy301





RS485, free protocol, MODBUS RTU, master/slave mode

Access of the slave through serial ports, and access of the HMI, instrument, apparatus, and sensor

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SV670



Model	Easy301	Easy302	Easy320		EASY502	Easy523	
Product appearance							
		General specifications			General s	specifications	
Program data capacity	128 k-step user program; 1 MB user-defined variables, in whic variables are soft elements	h 128 KB variables, after No. 1000,	are retentive at a power failure and 150 KB		200 k-step user program; 1 MB user-defined variables, in which 128 KB variables, after No. 1000, are retentive at a power failure and 150 KB variables are soft elements	200 k-step user program; 2 MB user-defined variables, in which 128 KB variables, after No. 1000, are retentive at a power failure and 150 KB variables are soft elements	
Ethernet	/	5.66.0.0 or later and with the Aut	or models with the firmware version of oShop version of 4.8.0.0 or later, Modbus d download, and firmware upgrade		1	Supports EtherNet/IP, available for models with the firmware version of 5.66.0.0 or later and with the AutoShop version of 4.8.0.0 or later, Modbus TCP, Socket, program upload and download, and firmware upgrade.	
Number of axes (pulse + bus)	4		5		16	32	
Serial communication	Supports one RS485 channel and one RS232 channel.	and two channels supported by the expansion card.	Supports up to three channels,one supported by the product and two supported by the expansion card.		Supports up to three channels ,one supported by	the product and two supported by the expansion card.	
CAN communication	1		ister and up to 63 slaves, available for models 5.2.0 or later and with the AutoShop version		With the expansion card, one master and up to 63 slaves, available for models with the firmware version of 5.65.2.0 or later and with the AutoShop version of 4.6.5.0 or later, are supported.	With the expansion card, one master and up to 63 slaves are supported. This is available for models with the firmware version of 5.66.0.0 or later and with the AutoShop version of 4.6.4.0 or later.	
EtherCAT communication		Not supported			Supports one cha	nnel and up to 72 slaves	
High-speed input	E	Eight-channel with the frequency o	of 200 kHz		Eight-channel with the frequency of 200 kHz		
High-speed output	4-axis with the frequency of 200 kHz; PWM pulse width modulation supported	5-axis with the frequency of 200 l	kHz; PWM pulse width modulation supported		5-axis with the frequency of 200 kHz	r; PWM pulse width modulation supported	
Expansion module	Supports up to eight local expansion modules.	Supports up to 2	16 local expansion modules.		Supports up to 16	ocal expansion modules.	
Expansion card	/	Supports up	to two expansion cards.		Supports up to	two expansion cards.	
Program language	LD, SFC, FB/FC function (LD), and ST AutoShop version of 4.8.1.0 or later.	,available for models with the firm	ware version of 5.67.0.0 or later and		LD, SFC, FB/FC function (LD), and ST, available for models with the firmware version of 5.67.0.0 or later and AutoShop version of 4.8.1.0 or later.		
Type-C	Supports user program upload and download and firmware upgrade.		nd download and firmware upgrade through nsion card.		Supports user program upload and download and firmware upgrade through the type-C port ,or GE20-TF expansion card.		
Instruction speed		20 k-step user program executed	l in 2 m		20 k-step user program executed in 2 m	20 k-step user program executed in 1.6ms	
Other descriptions	Cam, gear, and interpolation not supported	Cam, gear, an	d interpolation supported		Cam, gear, and interpolation supported		
		Power supply specifica	tions		Power supply specifications		
Input power supply rated voltage of the terminal		24 VDC±10%,21.6 VDC to 26.4	VDC.		24 VDC±10% ,21.6 VDC to 26.4 VDC		
Input power supply rated current of the terminal		1 A, maximum value at 24 V vo	ltage.		1 A , maximum value at 24 V voltage		
24 V input power supply protection	Support	s protection against short circuit a	nd reverse wiring		Supports protection against short circuit and reverse wiring		
		Input specification	ons		Input specifications		
Input type and mode		Digital input, sink/source mo	ode		Digital input, sink/source mode		
Number of input channels	8				8		
Voltage upon power-on		≥ 15VDC			≥ 15VDC		
Voltage upon power-off	≤ 5 VDC				≤ 5 VDC		
Software filter time	Low speed: 2 ms to 1000 ms High speed: 2 us to 1000 us				Low speed: 2 ms to 1000 ms High speed: 2 us to 1000 us		
		Output specification	ons		Output specifications		
Output type		Transistor NPN output			Transistor NPN output		
Number of output channels	8			8			

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## **GE20 SERIES EXPANSION CARD**

GE20 series expansion cards support nine types, including digital input/output, analog input/output, serial communication, clock, and TF expansion cards. Used together with Easy series compact PLCs, the GE20 can meet specific requirements and save space. At most two GE20 series expansion cards are supported by the Easy series PLC.

#### **GE20 Model**

Product Model	Description	Supported Slot	Certification
GE20-4DO-TN	GE20-4DO-TN Supports four sink transistor outputs.		CE
GE20-4DI	Supports four digital inputs.	A/B	CE
GE20-2AD1DA-V	Supports two analog inputs (current/voltage) and one analog voltage output.	A/B	CE
GE20-2AD1DA-I	Supports two analog inputs (current/voltage) and one analog current output.	A/B	CE
GE20-232/485-RTC	Supports RTC clock and one RS485 or RS232 channel.	В	CE
GE20-232/485	Supports one RS485 or RS232 channel.	A/B	CE
GE20-RTC	Supports RTC clock.	В	CE
GE20-TF	Supports user program and firmware upgrade.	В	CE
GE20-CAN-485	Supports CAN and RS485 communications.	А	CE

#### **GE20 Appearance**



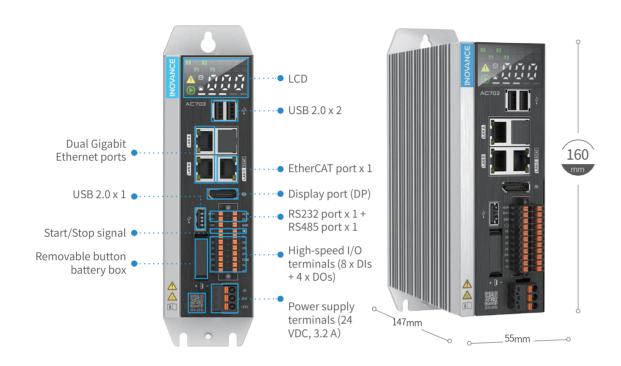
## DIGITAL EXPANSION CARD

#### **GE20-4DO-TN & GE20-4DI**

Item	GE20-4DO-TN	Item	GE20-4DI
Appearance	Appearance		A STATE OF THE PARTY OF THE PAR
Material code	01480033	Material code	01480032
Description	Supports four sink transistor outputs.	Description	Supports four digital inputs.
Supported slot	A/B	Supported slot	A/B
IP rating	IP20	IP rating	IP20
Operating temperature	-20 °C to +55 °C	Operating temperature	-20 °C to +55 °C
Output type	Digital transistor output	Input type	Digital input
Output mode	Sink mode	Input mode	Sink/Source mode
Number of channels	4	Number of channels	4
Output voltage class (resistive load)	24 VDC (20.4 VDC to 26.4 VDC)	Input voltage class	$24{\rm VDC}\pm10\%$ (21.6 VDC to 26.4 VDC)
Output voltage class (inductive load)	0.5 A/point; 1 A/common terminal	Input current upon power-on	Input current > 3.5 mA
Output voltage class (light load)	6 W/24 VDC (total)	Input current upon power-off	Input current < 1.5 mA
Hardware response time upon power-on/power-off	1 W/24 VDC (total)	Input response time	≈ 15 ms (hardware RC filter time)
Leakage current upon power- off	<10 uA	Voltage upon power-on	≥ 15 VDC
Switch frequency	Resistive load: 100 Hz; Switch frequency inductive load: 0.5 Hz; light load: 10 Hz		≤ 5 VDC
Isolation	Photocoupler isolation	Software filter time	Not supported
Protection function	Supports the surge protection device.	Isolation	Photocoupler isolation

# **AC700 Series**

#### **Book-Sized Intelligent Controller**

















#### • Three network ports

EtherCAT port x 1 + Ethernet port x 2; different IP addresses for two Ethernet ports to meet requirements of internal and external network isolation

#### • Data storage upon a power failure

UPS integrated to store data upon a power failure for cost saving

#### Serial port connection

One RS232/RS485 serial port, support Modbus master/slave mode and free protocol

#### • High-speed I/O terminal of 200 kHz

DI x 8 (4 for encoder counting) and DO x 4 (2 for PWM output) to reduce wiring

#### • Real-time information displayed on the high-definition LCD

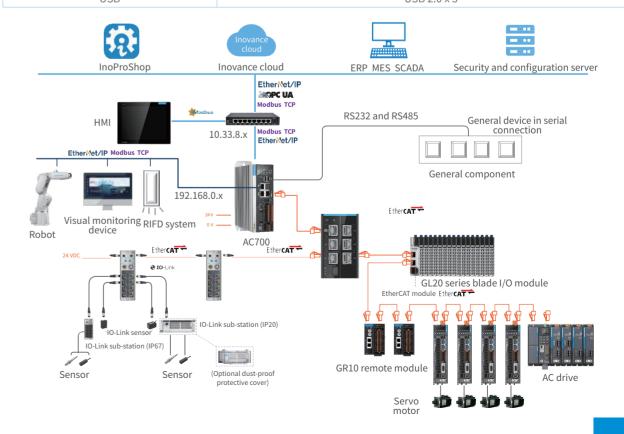
Check DI/DO status, running fault code, PLC running/faulty status, data read/write status, and current CPU load rate

#### • PLC start/stop by external input signal

Start or stop the PLC by external input signal without software

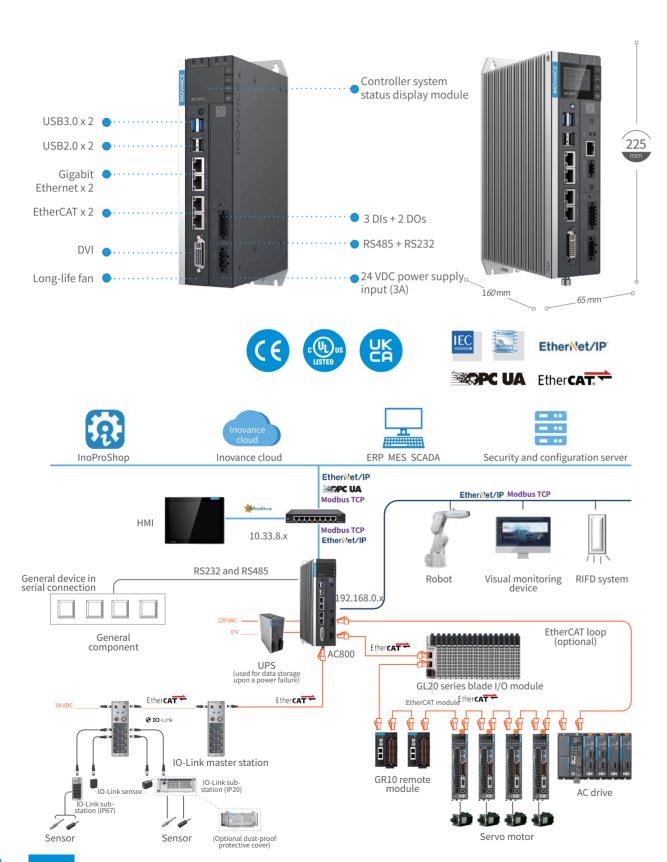
#### **SPECIFICATIONS**

Model	AC702	AC703				
Basic information						
Processor	Intel Co	eleron				
Operating system	Lin	ux				
Programming mode	IEC 61131-3 programming language (LD, ST, SFC, CFC)					
Dimension (H x W x D)	160 mm x 55 r	nm x147 mm				
	Memory					
Memory	128	МВ				
Memory for data storage upon a power failure	5MB; data storage upon a power failure s	supported and no external UPS required				
Memory capacity	4 GB, DDR3L, interfac	e speed of 1600 MT/s				
Hardware capacity	64 GB	SSSD				
Bit memory	5 MB					
	CPU performance					
Bit/Word instruction execution time	Basic LD contact: 4.6 ns	; four operations: 4.7 ns				
Number of motion axes	16	32				
	I/O					
DI	Eight high-speed DIs; 200 kHz; four DIs for e supported and differential input not support					
DO	Four high-speed DOs; 200 kHz; two F	PWM outputs supporting sink mode				
Number of EtherCAT slaves	128 (single channel)	128 (single channel)				
	Communication configuration					
RS232/RS485	RS232 channel x 1, RS485 channel x 1 (supports up to 31 slaves); isolation					
Ethernet (LAN A/LAN B)	1 Gbps; supports TCP/IP, UDP, OPC UA, Socket, Modbus TCP, up to 64 slaves supported, and EtherNet/IP, 64 clients and 32 servers supported; can be used as master and slave simultaneously					
EtherCAT (100 Mbps)	EtherCAT channel x 1 (LAN C)					
USB	USB 2.0 x 3					



# **AC800 Series**

#### High-Performance Intelligent Controller



#### PRODUCT FEATURES

- Built-in Intel Core i7, Core i5, Celeron and other series x86 high-performance processors
- Support six PLCopen programming languages.
- Including PLCopen+CAM+CNC+ROBOT motion control components.
- Dual EtherCAT master networks; 32 axes supported at the EtherCAT cycle of 500 us; 256 axes supported at the EtherCAT cycle of 4 ms
- EtherCAT bus I/O module supported to provide high-speed I/O terminals, ordinary DI/DO terminals, and up to 32,000 points.
- Supports EtherNet/IP, OPC UA, Modbus TCP and other communication protocols to facilitate the construction of multi-level networks.
- Built-in Modbus RTU master/slave protocol; two independent RS485 and RS232 communication ports to work with with traditional equipment.

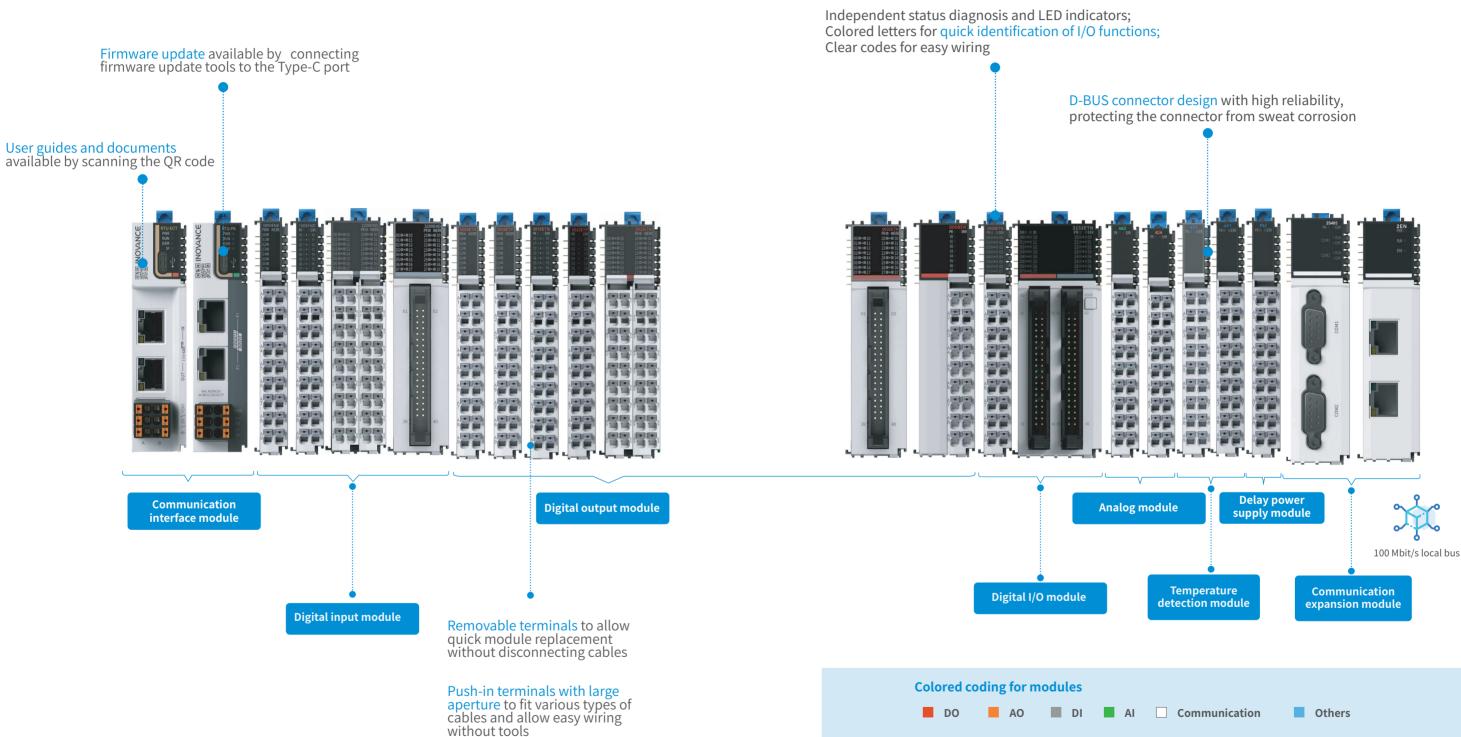
#### **SPECIFICATIONS**

Item	Item AC812		AC802	AC801		
Processor	Intel i7, 2.7 GHz	Intel i5, 2.5 GHz	Intel Celeron, 1.6 GHz	Intel Celeron, 1.6 GHz		
Memory	DDR4-4G	DDR4-4G	DDR4-4G	DDR4-4G		
Hardware	SSD 128 GB	SSD 128 GB	SSD 128 GB	SSD 64 GB		
Display and		Res	erved DVI-D			
interface	Built-in dot-matrix system status display module; supports dot matrix of 128 x 64 and 4 keys					
LAN Ethernet		LAN x 2; supports Mo	odbus TCP, UDP, and OP	PC UA		
EtherCAT bus	EtherCAT master x 2	EtherCAT master x 2	EtherCAT master x 2	EtherCAT master x 1		
Number of axes	128 + 128	128 + 128	64 + 64	48 (32 axes supported simultaneously in 1 ms)		
USB port	USB2.0 x 2; USB3.0 x 2					
Serial communication	RS485 x 1; RS232 x 1					
DI	Three DIs for signal input of specific functions					
DO		Two DOs for signal out	out of system status ind	ications		
Number of long- life fans	2	2	/	/		
User program memory	128 MB	128 MB	128 MB	128 MB		
User data memory	128 MB	128 MB	128 MB	128 MB		
Memory for data storage upon a power failure	5 MB (UPS required)	5 MB (UPS required)	5 MB (UPS required)	5 MB (UPS required)		

# **GL20 Series I/O Module**

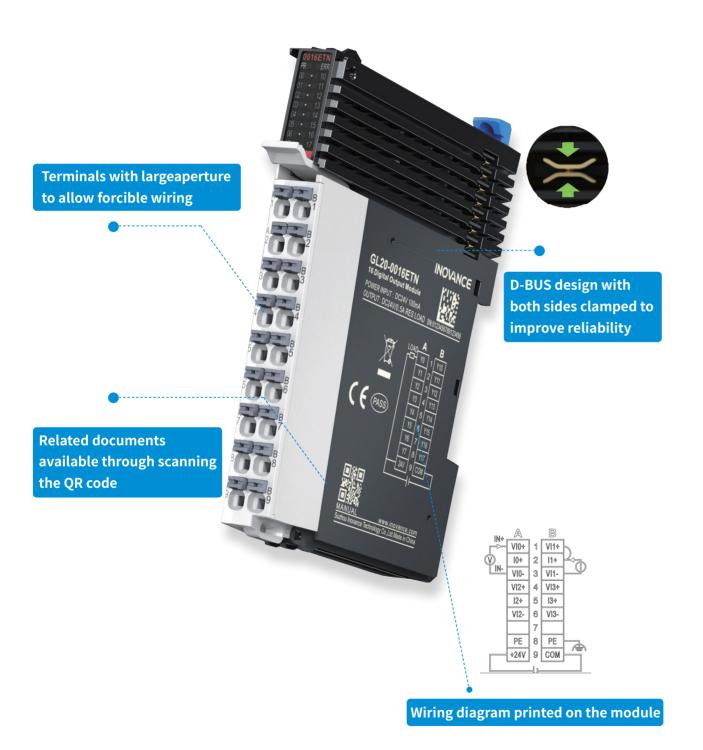
Powerful, Stable, and Efficient Distributed I/O System



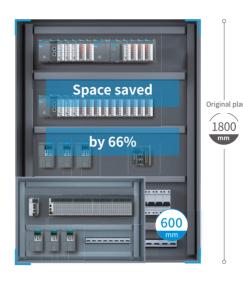


#### **RELIABLE STRUCTURE**

Design lifetime up to ten years to guard long-term stable operation of the product



# COMPACT DESIGN AND SCREW-FREE WIRING



Thickness reduced to 12 mm 2/3 cabinet space saved Space utilization maximized



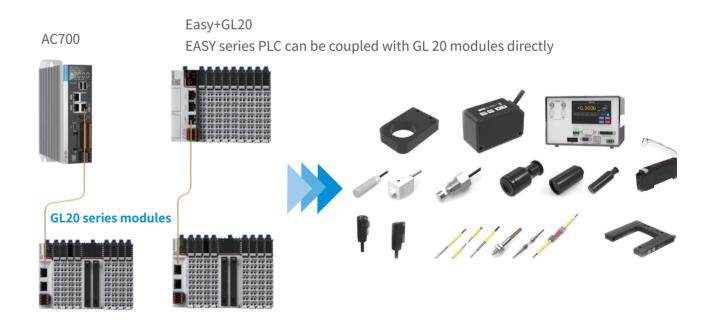
Groove-type mounting terminals to allow toolfree installation



Push-in terminals to allow easy wiring with a gentle push

Terminals with large aperture, 1.5 mm<sup>3</sup>cable, to support forcible wiring

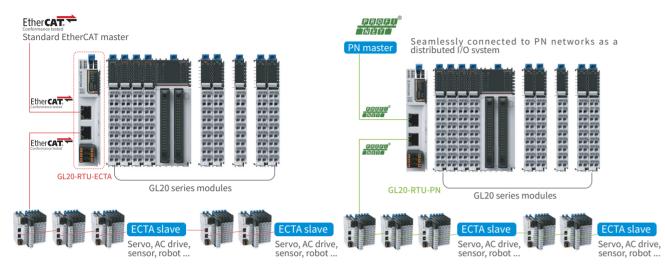
## FLEXIBLE SYSTEM INTEGRATION



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## **SYSTEM TOPOLOGY**

The GL20 series modules can be directly coupled with the Easy series PLCs, or connected to the standard EtherCAT master through the EtherCAT coupler module. Suitable master includes AC series, AM series, Easy500 series, H5U series, PAC series, MTC series of Inovance, as well as any standard EtherCAT masters of other vendors. The GL20 series modules can also be connected to the PN network as a distributed I/O system through the PROFINET coupler module.



EtherCAT Couple	er Specifications	PROFINET Coupler Specifications		
Model	GL20-RTU-ECT	Model	GL20-RTU-PN	
IP rating	IP20	IP rating	IP20	
Certification	CE	Certification	CE	
Rated terminal input voltage	24 VDC (20.4 VDC to 28.8 VDC)	Rated terminal input voltage	24 VDC (20.4 VDC to 28.8 VDC)	
Rated terminal input current	0.6 A (typical@24 V)	Rated terminal input current	0.6 A (typical@24 V)	
Rated bus output voltage	5 VDC (4.75 VDC to 5.25 VDC)	Rated bus output voltage	5 VDC (4.75 VDC to 5.25 VDC)	
Rated bus output current	2A (typical@5 V)	Rated bus output current	2A (typical@5 V)	
Power supply protection	Overcurrent protection, anti- reverse connection protection, surge absorption	Power supply protection	Overcurrent protection, anti- reverse connection protection, surge absorption	
Ambient operating temperature	-20° C to 55° C	Ambient operating temperature	-20° C to 55° C	
Ambient operating humidity	< 95%RH, without condensation	Ambient operating humidity	< 95%RH, without condensation	
Atmosphere	No corrosive gas	Atmosphere	No corrosive gas	
Ambient storage temperature	$-20^{\circ}$ C to $60^{\circ}$ C ( $< 90\%$ RH, without condensation)	Ambient storage temperature	$-20^{\circ}$ C to $60^{\circ}$ C ( $< 90\%$ RH, without condensation)	
Altitude	≤ 2000 m (80 kPa)	Altitude	≤ 2000 m (80 kPa)	
Pollution degree	2 or less	Pollution degree	2 or less	
Immunity	2 kV on power supply line (Conforms to IEC 61000-4-4)	Immunity	2 kV on power supply line (Conforms to IEC 61000-4-4)	
Overvoltage category	II	Overvoltage category	II	
EMC immunity level	Zone B, IEC61131-2	EMC immunity level	Zone B, IEC61131-2	
Vibration resistance	IEC 60068-2-6	Vibration resistance	IEC 60068-2-6	
Shock resistance	IEC 60068-2-27	Shock resistance	IEC 60068-2-27	
Minimum communication cycle	125 us	Minimum communication cycle	1 ms	
Scalability	16 modules supported	Scalability	16 modules supported	

## **ORDER INFORMATION**

Model	Description	Terminal Type				
GL20 series blade I/Os can be expanded through the RTU-ECT module.						
GL20-RTU-ECT	EtherCAT communication interface module, supports any devices under EtherCAT master	Plug-in				
GL20-RTU-PN	PROFINET communication interface module, supports any devices under PROFINET master	Plug-in				
GL20-1600END	16-channel digital input module	Plug-in				
GL20-0016ETN	16-channel digital output module (NPN)	Plug-in				
GL20-0016ETP	16-channel digital output module (PNP)	Plug-in				
GL20-0808ETN	8-channel input 8-channel output module (NPN)	Plug-in				
GL20-0008ETN	8-channel digital output module (NPN)	Plug-in				
GL20-0008ETP	8-channel digital output module (PNP)	Plug-in				
GL20-0800END	8-channel digital input module	Plug-in				
GL20-0008ER	8-channel relay output module	Plug-in				
GL20-4AD	4-channel analog input module	Plug-in				
GL20-4DA	4-channel analog output module	Plug-in				
GL20-4PT	4-channel thermal resistor input temperature detection module	Plug-in				
GL20-4TC	4-channel thermocouple input temperature detection module	Plug-in				
GL20-0032ETN*	32-channel digital output module (NPN, push-in design)	Plug-in				
GL20-3200END*	32-channel digital input module (push-in terminal)	Plug-in				
GL20-0032ETN-M	32-channel digital output module (NPN, one set of MIL connector and connecting cable required)	Plug-in				
GL20-3200END-M	32-channel digital input module (one set of MIL connector and connecting cable required)	Plug-in				
GL20-3232ETN-M	32-channel digital output module (NPN, two sets of MIL connector and con	necting cable required)				
GL20-PS2*	Relay power module (one PS2 module can power additional 16 expansion modules)	Plug-in				
GL20-2S485*	2-channel RS485 communication expansion module (DB9 interface)	Plug-in				
GL20-2EN*	Ethernet module (IP expansion)	Plug-in				
GL20-2SSI*	2-channel SSI encoder module	Plug-in				
GL20-2COM*	2-channel COM module (support for 2 x RS232 / 2 x RS485 / 1 x RS422, push-in design)	Plug-in				
	* Please contact Inovance for the launch time of this product.					
	GL20 Accessories					
Terminal block	Works with GL20-0032ETN-M/GL20-3200END-M/GL20-3232ETN-M	Cross screw				
Terminal block cable	Works with GL20-0032ETN-M/GL20-3200END-M/GL20-3232ETN-M, cable length 0.5 m	-				
Terminal block cable	Works with GL20-0032ETN-M/GL20-3200END-M/GL20-3232ETN-M, cable length 2 m	-				

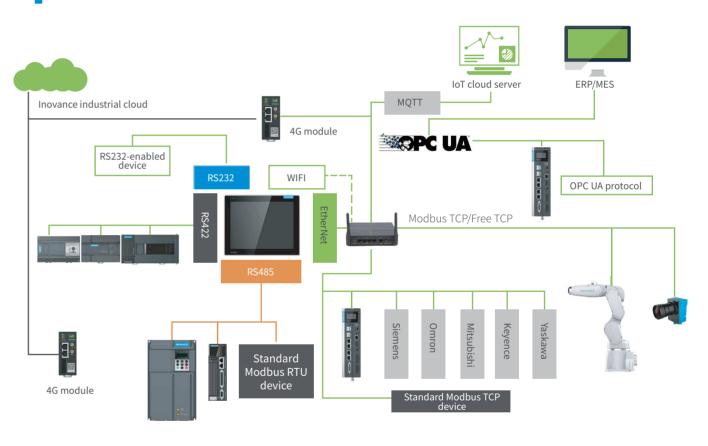


#### **HARDWARE CONFIGURATION**

Model	IT7070E	IT7070T	IT7070S	IT7100E	IT7100S	IT7150E
Display size		7.0"		10.1"		15.0"
Resolution		800*480		1024*600		1024*768
Dimensions L*W*D (mm)		200*146*35		271*213*36		367.8*294.8*53
CPU		Cortex A8 600MHz		Cortex	Cortex A8 1GHz	
RTC	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$
DRAM		128 MB		256 MB DDR3	128 MB DDR3	256 MB DDR3
Flash memory		128 MB		256 MB	128 MB	256 MB
Brightness (cd/ ㎡)		350		350		300
Display color		24-bit true color		24-bit true color		24-bit true color
Backlight		LED		LED		LED
Backlight service life		35,000 hrs		30,000 hrs		50,000 hrs
SD card slot	$\checkmark$	×	×	$\checkmark$	×	$\checkmark$
USB port			1 x U	SB 2.0		
USB download port			1 x Mi	ni USB		
Ethernet port	$\checkmark$	×	×	$\checkmark$	$\checkmark$	$\checkmark$
Serial port	COM1 (RS422/RS485) COM2 (RS232) COM3 (RS485)	COM1 (RS422/RS485) COM2 (RS232)	COM1 (RS422/RS485)	COM1 (RS422/RS485) COM2 (RS232) COM3 (RS485)	COM1 (RS422/RS485)	COM1 (RS422/RS485) COM2 (RS232) COM3 (RS485)
IP rating	Front p	oanel IP65, rear cov	er IP20	Front panel IP65	i, rear cover IP20	Front panel IP65, rear cover IP20

- Highly expansible, meet the customized control needs in different industries with APIs
- Support single-unit and multi-unit network communication through serial port, Ethernet, and WIFI
- Support mainstream PLCs, AC drives, and servo communication protocols from Inovance and other manufacturers, as well as standard Modbus and ModbusTCP protocols
- Support VNC, project HMI anytime, anywhere on mobile devices
- Industrial-grade manufacturing process
- Built-in InoTouchPad configuration software, ensure flexible configuration functions and ease of
- Rich gallery resources and customizable interface style settings, perfect for creating your own user interface

#### **FLEXIBLE NETWORKING SOLUTIONS**

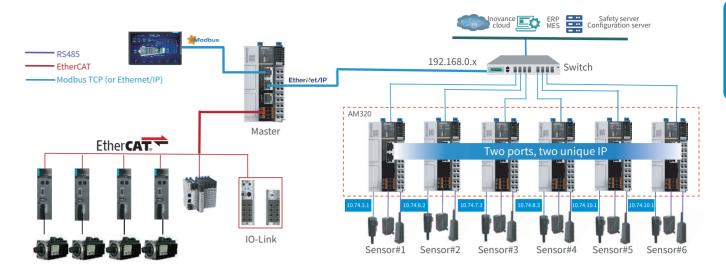


Protocol	INOVANCE products
Modbus	Standard Modbus device
OPC UA	Supports OPC UA Client; Server not supported
MQTT	Supports standard MQTT protocol
Free protocol	Supports connection between Inovance PLCs (H1U/H2U/H3U/H5U) and other third-party devices that support the free protocol, can serve as Master or Slave



# PRODUCT CONFIGURATION

				Series motion control)	AM300 Series (Without EtherCAT motion control)	
	CPU		AM521	AM522	AM320	
Input power			24 V	DC±10%, 1A, short-circui	t / reverse connection protection	
I/O			8-input (source/sink), 8-output (sink)			
Data/progr	am storage cap	acity	10 MB for program, 20 MB for data (512 KB retentive memory)			
Instruction	Bit processing	ginstruction		0.1	143 μs	
processing speed	Word pro instru	0		0.4	0.416 μs	
	RJ45	EtherNet	2 x Ethernet (	built-in switch)	2 x Ethernet (2 independent IP addresses)	
Communication	KJ43	EtherCAT	1 x Et	herCAT	Not supported	
specifications	Number of serial ports		3 x RS485 (1 built-in RS485 port, 2 RS485 ports offered via expansion card)			
	CAN communication		Support for expansion of one communication channel via expansion card (max. 63 slaves)			
	Number of EtherCAT axes		8	16		
EtherCATbus specifications	Number of EtherCAT slaves		Max. 127 EtherCAT slaves		Not supported	
эрестоино	Typical communication cycle		1 ms for synchronization of 4 axes			
Loc	cal pulse axis		4 x pulse axes			
Loca	l encoder axis		8 x encoder axes, supports single-phase CW/CCW			
Scalability	Expansion module		Supports local expansion of full range of GL20 series modules (max. 16), and remote expansion of IO-Link and GL10-GR10 series modules			
Scalability	Expansion card		Supports expansion of GE20 series modules (COM/CAN, digital, analog, TF card, RTC card) via two card slots			
Other interfaces			Type-C (power supply to PLC, upload and download of program)			
Config	uration softwar	9	InoProShop (conforms to IEC 61131-3)			



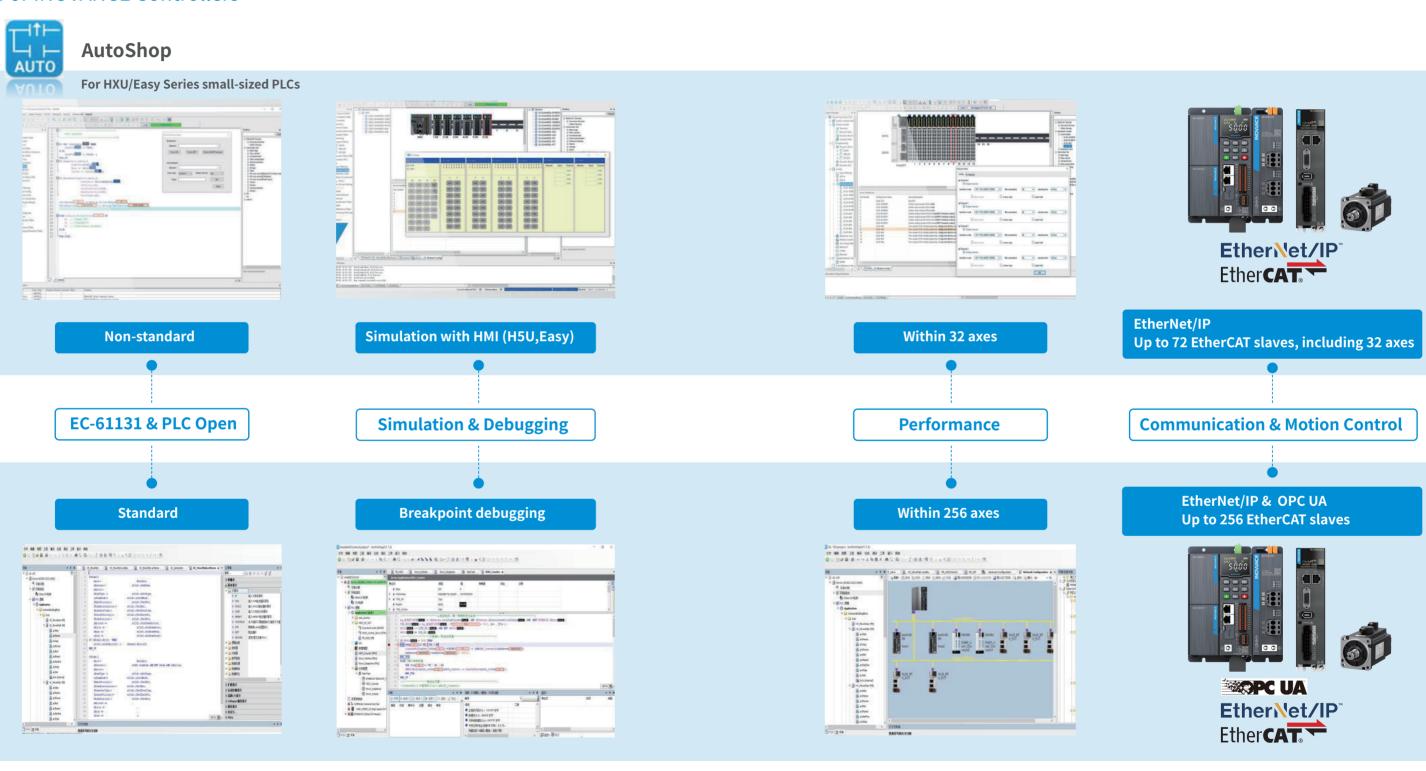
# **INDUSTRY APPLICATIONS**



# 01 CONTROLLERS

# **SOFTWARE**

#### For INOVANCE Controllers







InoProShop

For INOVANCE AM Series mediun-sized PLCs & AC Series intellgent controllers