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Autoshop V4.12.0.0

Release Notes

Industrial Automation | New Energy Vehicle | Intelligent Elevator | Intelligent Robot | Digital Energy | Rail Transit

Data code 19012893A02

Preface

Introduction

This document describes general information of AutoShop V4.12.0.0, firmware versions, software versions, compatibility notes, and frequently asked questions, as well as version matching information. Please read through this document before using the product.

More Data

Data Name	Data Code	Description
H5U & Easy Series Programmable Logic Controller Instruction Guide	19012250	Describes the basic instructions and complex instructions used for programming applications, as well as examples of these instructions.
H5U and Easy Series Programmable Logic Controller Programming Guide	19012249	Describes the basic knowledge of PLC programming, quick start guidance, communication, motion control, and the use of high-speed counters.
AutoShop V4.12.0.0 Release Notes (this document)	19012893	Describes general information of AutoShop V4.12.0.0, firmware versions, software versions, compatibility notes, and frequently asked questions, as well as version matching information.

Revision History

Date	Version	Description
March 2026	A02	• Added the V4.12.0.0 Release Notes. • Updated the firmware version and file names in Firmware Information of V4.11.0.0. • Supplemented release notes for V4.11.0.5, V4.10.2.3, and earlier versions.
November 2025	A01	Updated version descriptions in Firmware Information.
September 2025	A00	Initial release.

Access to the Guide

This guide is not in the scope of delivery. If necessary, you can download the PDF file in the following ways:

- Do keyword search under Service and Support at http://www.inovance.com.
- Scan the QR code on the product with your smart phone.
- Scan the QR code below to install My Inovance app, where you can search for and download user guides.



Warranty Disclaimer

If your product becomes defective under normal use conditions, we will offer guaranteed repair services within the warranty period. Maintenance will be charged after the warranty period expires.

Even in the warranty period, a maintenance fee will be charged for repair of the following damage:

- Damage caused by operations not following the instructions in the guide
- Damage caused by fire, flood, or abnormal voltage
- Damage caused by unintended use of the product
- Damage caused by use beyond the specified scope of application of the product
- Damage or secondary damage caused by force majeure (such as natural disaster, earthquake, and lightning strike)

The maintenance fee will be charged according to our latest Price List if not otherwise agreed upon.

For details, see the Product Warranty Card.

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1 Legal Information

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Disclaimer of Liability

Due to continuous updates and improvements of products and technologies, the content of this documentation may not fully match the actual products. In the event of any discrepancies, the actual products shall prevail.

The contents are subject to change without notice due to product upgrade.

Waste Disposal

The storage, use, and disposal of this product (including optional accessories) must comply with local laws and regulations.

Qualified Personnel

The product/system described in this documentation may be operated only by personnel qualified for the specific task in accordance with the relevant documentation, in particular its warning notices and safety instructions.

Qualified personnel can identify the risks of the product/system and prevent possible dangers.

Proper Use of the Product

Proper transportation, storage, assembly, installation, commissioning, operation, and maintenance are required to ensure the safe operation of the product without any problems. The required ambient conditions must be met. All operations must follow the guidelines provided in this documentation.

2 Product Information

2.1 Overview

AutoShop is programming configuration software provided by Inovance for small-sized programmable logic controllers (PLCs). It provides a user-friendly programming and commissioning environment, along with various powerful communication and control functions. AutoShop supports multiple programming languages, including the ladder diagram (LD), sequential function chart (SFC), and structured text (LiteST).

AutoShop has the following features:

- Flexible communication mode: AutoShop can interact with PLCs through COM, USB, and Ethernet, greatly facilitating remote operation and collaborative commissioning through remote functions.
- Powerful network support: AutoShop supports Modbus standard, CANopen, and Inovance CANlink communication configurations, significantly reducing user complexity and improving work efficiency.
- Powerful motion control function: AutoShop offers a rich set of motion control instructions, covering axis positioning, electronic cam, and flying shear/chasing shear.
- Convenient and diverse commissioning methods: AutoShop supports motion profile graphs, monitoring, online modification, oscilloscope, and fault diagnosis, making it easy for users to debug and troubleshoot issues.
- Powerful intellectual property protection: AutoShop provides functions such as upload passwords, download passwords, identifiers, and upload restrictions to effectively protect users' intellectual property.

2.2 Installation Environment

The following table lists the PC requirements for installing the AutoShop programming software.

Item	Requirement
Operating system	• Microsoft Windows 7 (64-bit recommended) • Microsoft Windows 10 (64-bit recommended) • Microsoft Windows 11 (64-bit recommended)
Primary frequency of CPU	4 GHz or above
Memory	4 GB or above
Hard disk	5 GB or above

Follow the installation wizard to install the software. You can specify the installation path during the installation process as needed.



Do not install the software in the same folder as other versions.

3 Release Notes

3.1 Firmware Version

3.1.1 Firmware Information

- Easy52X series

Firmware Version	File Name
Version 6.12.0.x and later	(0302AL79)EASY52x-51xPROPLUS_CPU_6.12.0.x.upgrade (03029844)EASY52x-51xPROPLUS_CPU_6.12.0.x.img

- Easy30X series, Easy320 model, and Easy50X series

Firmware Version	File Name
Version 6.12.0.x and later	(0302AL80)EASY320-30x-50x_CPU_6.12.0.x.upgrade (03029847)EASY320-30x-50x_CPU_6.12.0.x.img

- H5U-A8S

Firmware Version	File Name
Version 6.12.0.x and later	(03027791)H5U-A8S_CPU_6.12.0.x.upgrade (0302AP13)H5U-A8S_CPU_6.12.0.x.zip

- H5U-A8

Firmware Version	File Name
Version 6.12.0.x and later	(03026032)H5U-A8_CPU_6.12.0.x.upgrade (0302AP12)H5U-A8_CPU_6.12.0.x.zip

- H5U-A16

Firmware Version	File Name
Version 6.12.0.x and later	(03026031)H5U-A16_CPU_6.12.0.x.upgrade (0302AP11)H5U-A16_CPU_6.12.0.x.zip

- H5U-A32

Firmware Version	File Name
Version 6.12.0.x and later	(03022814)H5U_CPU_6.12.0.x.upgrade (03022815)H5U_CPU_6.12.0.x.zip

- Easy321 series, Easy321S series, Easy510 series, and Easy511 series

Firmware Version	File Name
Version 6.12.0.x and later	(0302CB40)Easy511-321-321S-30XP_CPU_6.12.0.x.upgrade (0302CF99)Easy511-321-321S-30XP_CPU_6.12.0.x.img

3.1.2 Change Description

3.1.2.1 New Features

- H5U series

Type	Description
Programming	Supported calling of function block array instances by using variable sub-indexes.
Communication	Supported two-dimensional arrays for EtherNet/IP.
	Supported two-dimensional arrays and overall access to the OPC UA structure.
Instruction	Added GRY, GBIN, and GetServoSN instructions.
Motion control	Supported the backlash compensation function, and added the initial speed start mode for MC_FollowPosition, MC_BacklashCompensate, and MC_GearInPos.
System variable	Added the system variable _DevInfoExtend.SN for obtaining the device SN code and the system variable _DevInfoExtend.Name for obtaining the device name.
System	Added support for ISSI norflash.
Fault diagnosis	Supported fault diagnosis for the expansion module.
	Supported fault diagnosis for remote modules by using the GL20-RTU-ETC32 coupler.
	Added an option to disable configuration updates in the event of reversed connection during EtherCAT scan.

- Easy30X series

Type	Description
Programming	Supported calling of function block array instances by using variable sub-indexes.
Communication	Supported two-dimensional arrays for EtherNet/IP.
	Supported two-dimensional arrays and overall access to the OPC UA structure.
	Supported serial communication at the following low baud rates: 600 bps, 1200 bps, 2400 bps, and 4800 bps.
Instruction	Added GRY, GBIN, and GL20_WriteConfigParam instructions.

Type	Description
Motion control	Supported enhanced cam functions (deformed constant-speed cam curve and expanded cam capacity).
	Supported the backlash compensation function, and added the initial speed start mode for MC_FollowPosition, MC_BacklashCompensate, and MC_GearInPos.
System variable	Added the system variable _DevInfoExtend.SN for obtaining the device SN code and the system variable _DevInfoExtend.Name for obtaining the device name.
Fault diagnosis	Supported fault diagnosis for the expansion module.
	Supported fault diagnosis for remote modules by using the GL20-RTU-ETC32 coupler.
	Added an option to disable configuration updates in the event of reversed connection during EtherCAT scan.

NOTE

The Easy301 model does not support the cam functions.

- Easy320 model

Type	Description
Programming	Supported calling of function block array instances by using variable sub-indexes.
Communication	Supported two-dimensional arrays for EtherNet/IP.
	Supported two-dimensional arrays and overall access to the OPC UA structure.
	Supported serial communication at the following low baud rates: 600 bps, 1200 bps, 2400 bps, and 4800 bps.
Instruction	Added GRY, GBIN, and GL20_WriteConfigParam instructions.
Motion control	Supported enhanced cam functions (deformed constant-speed cam curve and expanded cam capacity).
	Supported the backlash compensation function, and added the initial speed start mode for MC_FollowPosition, MC_BacklashCompensate, and MC_GearInPos.
System variable	Added the system variable _DevInfoExtend.SN for obtaining the device SN code and the system variable _DevInfoExtend.Name for obtaining the device name.
Web server	Supported the web server.
	Supported PLC status monitoring, variable read/write, and fault diagnosis by using web browsers.

Type	Description
Fault diagnosis	Supported fault diagnosis for the expansion module.
	Supported fault diagnosis for remote modules by using the GL20-RTU-ETC32 coupler.
	Added an option to disable configuration updates in the event of reversed connection during EtherCAT scan.

- Easy321 series

Type	Description
Programming	Supported calling of function block array instances by using variable sub-indexes.
Communication	Supported two-dimensional arrays for EtherNet/IP.
	Supported two-dimensional arrays and overall access to the OPC UA structure.
	Supported serial communication at the following low baud rates: 600 bps, 1200 bps, 2400 bps, and 4800 bps.
Module	• Added the GE21-232/485 expansion card. • Easy321-3624ER and Easy321-2416ER models: Added support for the GE21-SX expansion card.
Instruction	Added GRY, GBIN, and GL20_WriteConfigParam instructions.
Motion control	Supported enhanced cam functions (deformed constant-speed cam curve and expanded cam capacity).
	Supported the backlash compensation function, and added the initial speed start mode for MC_FollowPosition, MC_BacklashCompensate, and MC_GearInPos.
System variable	Added the system variable _DevInfoExtend.SN for obtaining the device SN code and the system variable _DevInfoExtend.Name for obtaining the device name.
Web server	Supported the web server.
	Supported PLC status monitoring, variable read/write, and fault diagnosis by using web browsers.
Fault diagnosis	Supported fault diagnosis for the expansion module.
	Supported fault diagnosis for remote modules by using the GL20-RTU-ETC32 coupler.
	Added an option to disable configuration updates in the event of reversed connection during EtherCAT scan.

> **NOTE**
>
> The Easy321-3624ER, Easy321-2416ER, and Easy321-1812ERX models do not support the cam functions.

- Easy321S series

Type	Description
Programming	Supported calling of function block array instances by using variable sub-indexes.
Communication	Supported two-dimensional arrays for EtherNet/IP.
	Supported two-dimensional arrays and overall access to the OPC UA structure.
	Supported serial communication at the following low baud rates: 600 bps, 1200 bps, 2400 bps, and 4800 bps.
Module	Added the GE21-232/485 expansion card.
Instruction	Added GRY, GBIN, and GL20_WriteConfigParam instructions.
Motion control	Supported enhanced cam functions (deformed constant-speed cam curve and expanded cam capacity).
	Supported the backlash compensation function, and added the initial speed start mode for MC_FollowPosition, MC_BacklashCompensate, and MC_GearInPos.
Fault diagnosis	Supported fault diagnosis for the expansion module.
	Supported fault diagnosis for remote modules by using the GL20-RTU-ETC32 coupler.
	Added an option to disable configuration updates in the event of reversed connection during EtherCAT scan.
System variable	Added the system variable _DevInfoExtend.SN for obtaining the device SN code and the system variable _DevInfoExtend.Name for obtaining the device name.

> **NOTE**
>
> The Easy321S-3624ER and Easy321S-2416ER models do not support the cam functions.

- Easy50X series

Type	Description
Programming	Supported calling of function block array instances by using variable sub-indexes.
Communication	Supported two-dimensional arrays for EtherNet/IP.

Type	Description
	Supported two-dimensional arrays and overall access to the OPC UA structure.
	Supported serial communication at the following low baud rates: 600 bps, 1200 bps, 2400 bps, and 4800 bps.
Instruction	Added GRY, GBIN, and GL20_WriteConfigParam instructions.
Motion control	Supported enhanced cam functions (deformed constant-speed cam curve and expanded cam capacity: Easy502 supports up to 16 cams).
	Supported the backlash compensation function, and added the initial speed start mode for MC_FollowPosition, MC_BacklashCompensate, and MC_GearInPos.
System variable	Added the system variable _DevInfoExtend.SN for obtaining the device SN code and the system variable _DevInfoExtend.Name for obtaining the device name.
Fault diagnosis	Supported fault diagnosis for the expansion module.
	Supported fault diagnosis for remote modules by using the GL20-RTU-ETC32 coupler.
	Added an option to disable configuration updates in the event of reversed connection during EtherCAT scan.

- Easy510 series

Type	Description
Motion control	Supported enhanced cam functions (deformed constant-speed cam curve and expanded cam capacity).
	Supported the backlash compensation function, and added the initial speed start mode for MC_FollowPosition, MC_BacklashCompensate, and MC_GearInPos.
Communication	Supported EoE setting for the EtherCAT master and slave.
	Supported serial communication at the following low baud rates: 600 bps, 1200 bps, 2400 bps, and 4800 bps.
Instruction	Added GetServoSN and GL20_WriteConfigParam instructions.
Module	Added the GE21-232/485 expansion card.

Type	Description
Commissioning	Added the servo commissioning tool feature with the following functions: • Drive control: Supports software reset, parameter restore, and emergency stop. • Inertia auto-tuning: Supports automatic parameter setting for the servo drive through inertia auto-tuning. • STUNE: Supports simple manual gain adjustment while the servo is receiving references. • Fault information management: Supports scheduled upload of current fault information from the servo drive for troubleshooting. • I/O setting: Supports configuration and monitoring of DI and DO functions, as well as configuration of virtual I/O functions.

- Easy511 series

Type	Description
Programming	Supported calling of function block array instances by using variable sub-indexes.
Communication	Supported two-dimensional arrays for EtherNet/IP.
	Supported two-dimensional arrays and overall access to the OPC UA structure.
	Supported EoE setting for the EtherCAT master and slave.
	Supported serial communication at the following low baud rates: 600 bps, 1200 bps, 2400 bps, and 4800 bps.
Module	Added the GE21-232/485 expansion card.
Instruction	Added GRY, GBIN, GetServoSN, and GL20_WriteConfigParam instructions.
Motion control	Supported enhanced cam functions (deformed constant-speed cam curve and expanded cam capacity).
	Supported the backlash compensation function, and added the initial speed start mode for MC_FollowPosition, MC_BacklashCompensate, and MC_GearInPos.
System variable	Added the system variable _DevInfoExtend.SN for obtaining the device SN code and the system variable _DevInfoExtend.Name for obtaining the device name.
Web server	Supported the web server.
	Supported PLC status monitoring, variable read/write, and fault diagnosis by using web browsers.

Type	Description
Commissioning	Added the servo commissioning tool feature with the following functions: • Drive control: Supports software reset, parameter restore, and emergency stop. • Inertia auto-tuning: Supports automatic parameter setting for the servo drive through inertia auto-tuning. • STUNE: Supports simple manual gain adjustment while the servo is receiving references. • Fault information management: Supports scheduled upload of current fault information from the servo drive for troubleshooting. • I/O setting: Supports configuration and monitoring of DI and DO functions, as well as configuration of virtual I/O functions.
Fault diagnosis	Supported fault diagnosis for the expansion module.
	Supported fault diagnosis for remote modules by using the GL20-RTU-ETC32 coupler.
	Added an option to disable configuration updates in the event of reversed connection during EtherCAT scan.

- Easy52X series

Type	Description
Programming	Supported calling of function block array instances by using variable sub-indexes.
Communication	Supported two-dimensional arrays for EtherNet/IP.
	Supported two-dimensional arrays and overall access to the OPC UA structure.
	Supported EoE setting for the EtherCAT master and slave.
	Supported serial communication at the following low baud rates: 600 bps, 1200 bps, 2400 bps, and 4800 bps.
Web server	Supported the web server.
	Supported PLC status monitoring, variable read/write, and fault diagnosis by using web browsers.
Instruction	Added GRY, GBIN, GetServoSN, and GL20_WriteConfigParam instructions.
Motion control	Supported enhanced cam functions (deformed constant-speed cam curve and expanded cam capacity: Easy523 supports up to 32 cams and Easy522 supports up to 16 cams).
	Supported the backlash compensation function, and added the initial speed start mode for MC_FollowPosition, MC_BacklashCompensate, and MC_GearInPos.
Expansion module	The local bus supports the GL20-2CAN module that supports the CAN free protocol.

Type	Description
System variable	Added the system variable _DevInfoExtend.SN for obtaining the device SN code and the system variable _DevInfoExtend.Name for obtaining the device name.
Commissioning	Added the servo commissioning tool feature with the following functions: • Drive control: Supports software reset, parameter restore, and emergency stop. • Inertia auto-tuning: Supports automatic parameter setting for the servo drive through inertia auto-tuning. • STUNE: Supports simple manual gain adjustment while the servo is receiving references. • Fault information management: Supports scheduled upload of current fault information from the servo drive for troubleshooting. • I/O setting: Supports configuration and monitoring of DI and DO functions, as well as configuration of virtual I/O functions.
Fault diagnosis	Supported fault diagnosis for the expansion module.
	Supported fault diagnosis for remote modules by using the GL20-RTU-ETC32 coupler.
	Added an option to disable configuration updates in the event of reversed connection during EtherCAT scan.

3.1.2.2 Modified Features

- H5U series

Type	Description
System	Improved the responsivity of the interrupt subprogram.

- Easy50X series

Type	Description
Motion control	Supported 1 ms per cycle of 16-axis synchronous control (for Easy502).
System	Improved the responsivity of the interrupt subprogram.
Communication	Updated the default cycle time of EtherCAT to 1 ms and lower limit to 500 μs.
	Added log prompts when SDO errors are uploaded over CANopen.

- Easy320 model, Easy30X, Easy511, Easy321, and Easy321S series

Type	Description
System	Improved the responsivity of the interrupt subprogram.

Type	Description
Communication	Updated the default cycle time of EtherCAT to 1 ms and lower limit to 500 μs.
	Added log prompts when SDO errors are uploaded over CANopen.

- Easy52X series

Type	Description
Motion control	Supported 1 ms per cycle of 16-axis synchronous control (for Easy522 and Easy523).
System	Improved the responsivity of the interrupt subprogram.
Communication	Updated the default cycle time of EtherCAT to 1 ms and lower limit to 500 μs.
	Added log prompts when SDO errors are uploaded over CANopen.

3.1.2.3 Deleted Features

None

3.1.3 Solved Issues

- H5U series

Type	Description
System	Fixed the issue where the configuration file is repeatedly written during IP address setting for H5U and Easy320.
System	Fixed the intermittent issue where data for retentive at power failure could not be read after power-on.
	Fixed the issue where modifying the device IP address fails in cross-router or cross-subnet scenarios.
	Fixed the issue where the EtherCAT cycle time fluctuated significantly when the data recording period is configured as the EtherCAT task period.
	Resolved the issue where TCP/UDP instructions could accidentally close system file handles.
Instruction	Optimized the execution timing of the SerialSR instruction.

- Easy320 model, Easy30X, and Easy50X series

Type	Description
System	Fixed the issue where the configuration file is repeatedly written during IP address setting for H5U and Easy320.

Type	Description
Others	Fixed the issue where unplugging and reconnecting the device network cable does not reset the DHCP lease time under DHCP automatic IP allocation.
System	Fixed the intermittent issue where data for retentive at power failure could not be read after power-on.
	Fixed the issue where modifying the device IP address fails in cross-router or cross-subnet scenarios.
	Fixed the issue where the EtherCAT cycle time fluctuated significantly when the data recording period is configured as the EtherCAT task period.
	Resolved the issue where TCP/UDP instructions could accidentally close system file handles.
Instruction	Optimized the execution timing of the SerialSR instruction.

- Easy511, Easy321, and Easy321S series

Type	Description
System	Fixed the intermittent issue where data for retentive at power failure could not be read after power-on.
	Fixed the issue where modifying the device IP address fails in cross-router or cross-subnet scenarios.
	Fixed the issue where the EtherCAT cycle time fluctuated significantly when the data recording period is configured as the EtherCAT task period.
	Resolved the issue where TCP/UDP instructions could accidentally close system file handles.
Instruction	Optimized the execution timing of the SerialSR instruction.

- Easy52X series

Type	Description
System	Fixed the issue where errors are incorrectly reported for reading data with the dd command when flash bit flips occur but are corrected by the chip ECC.
	Removed the recursion_limit parameter restriction and fixed the common issue of EVO500 VLAN sending timeout.
	Fixed the issue where the ENV partition cannot be used after the first block is bad.
	Resolved communication errors for certain networking in dual IP mode.
	Fixed the issue where setting both network ports to dynamic IP fails (that is, dynamic IP configuration does not work for dual network ports).

Type	Description
Others	Fixed the issue where unplugging and reconnecting the device network cable does not reset the DHCP lease time under DHCP automatic IP allocation.
System	Fixed the intermittent issue where data for retentive at power failure could not be read after power-on.
	Fixed the issue where modifying the device IP address fails in cross-router or cross-subnet scenarios.
	Fixed the issue where the EtherCAT cycle time fluctuated significantly when the data recording period is configured as the EtherCAT task period.
	Resolved the issue where TCP/UDP instructions could accidentally close system file handles.
Instruction	Optimized the execution timing of the SerialSR instruction.

3.2 Software Version

3.2.1 Software Information

Software Version	File Name
AutoShop V4.12.0.0	AutoShop V4.12.0.0 Setup.zip

3.2.2 Change Description

3.2.2.1 New Features

- H5U series

Type	Description
Help and support	Supported login to TechPlanet.
AI assistant	Supported AI Q&A and assisted programming.
Configuration	Supported continuous addition of I/O mappings.
Programming	Supported classification of new folders in the variable table.
	Supported data copy and paste between the variable table and Excel file.
	Supported calling of function block array instances by using variable sub-indexes.

Type	Description
Project	Supported one-click conversion of Siemens projects to AutoShop projects.
Communication	Supported variable settings as two-dimensional arrays and global variable distribution to boards.
System variable	Added the system variable _DevInfoExtend.SN for obtaining the device SN code and the system variable _DevInfoExtend.Name for obtaining the device name.
Instruction	Added GRY, GBIN, and GetServoSN instructions.
Motion control	Supported the backlash compensation function, and added the initial speed start mode for MC_FollowPosition, MC_BacklashCompensate, and MC_GearInPos.
Commissioning	Added pre-monitoring configuration validation.
	Supported automatic identification of uploaded device models.
	Supported batch online modification for multiple devices within the same project.
Others	Supported deletion of recent project access records.
	Supported version upgrade by using a patch package.

- Easy510 series, Easy511 series, and Easy52X series

Type	Description
Help and support	Supported login to TechPlanet.
AI assistant	Supported AI Q&A and assisted programming.
Configuration	Supported continuous addition of I/O mappings.
Module	Easy511 series: Added support for the GE21-232/485 expansion card.
Programming	Supported classification of new folders in the variable table.
	Allowed data copy and paste between the variable table and Excel file.
	Supported calling of function block array instances by using variable sub-indexes.
Project	Supported one-click conversion of Siemens projects to AutoShop projects.
Web server	Supported the web server.
Communication	Supported EoE setting for the EtherCAT master and slave.
	Supported firmware upgrade for the servo by using AutoShop.
	Supported variable settings as two-dimensional arrays and global variable distribution to boards.

Type	Description
System variable	Added the system variable _DevInfoExtend.SN for obtaining the device SN code and the system variable _DevInfoExtend.Name for obtaining the device name.
Instruction	Added GRY, GBIN, GetServoSN, and GL20_WriteConfigParam instructions.
Motion control	Supported enhanced cam functions (deformed constant-speed curve and expanded cam capacity: Easy523 supports up to 32 cams and Easy522 supports up to 16 cams).
	Supported the backlash compensation function, and added the initial speed start mode for MC_FollowPosition, MC_BacklashCompensate, and MC_GearInPos.
	SVD60N: Added support for -1, -2, and -3 homing modes.
Commissioning	Added the AXIS_CTRL function block for HMI axis commissioning.
	Added the servo commissioning tool feature with the following functions: • Drive control: Supports software reset, parameter restore, and emergency stop. • Servo parameters: Supports display and editing of servo parameters. • Black box commissioning: Supports device operation analysis and fault diagnosis by analyzing existing device information. • Inertia auto-tuning: Supports automatic parameter setting for the servo drive through inertia auto-tuning. • STUNE: Supports simple manual gain adjustment while the servo is receiving references. • Fault information management: Supports scheduled upload of current fault information from the servo drive for troubleshooting. • I/O setting: Supports configuration and monitoring of DI and DO functions, as well as configuration of virtual I/O functions.
	Supported the serial port commissioning assistant for convenient serial port frame capture.
	Supported pre-monitoring configuration validation.
	Supported automatic identification of uploaded device models.
	Supported batch online modification for multiple devices within the same project.
Others	Supported quick export of EtherCAT configuration information.
	Supported deletion of recent project access records.
	Supported version upgrade by using a patch package.

- Easy30X series, Easy320 model, Easy321 series, Easy321S series, and Easy50X series

Type	Description
Help and support	Supported login to TechPlanet.

Type	Description
AI assistant	Supported AI Q&A and assisted programming.
Configuration	Supported continuous addition of I/O mappings.
Module	• Easy321 and Easy321S series models: Added support for the GE21-232/485 expansion card. • Easy321-3624ER and Easy321-2416ER models: Added support for the GE21-SX expansion card.
Programming	Supported classification of new folders in the variable table.
	Allowed data copy and paste between the variable table and Excel file.
	Supported calling of function block array instances by using variable sub-indexes.
Project	Supported one-click conversion of Siemens projects to AutoShop projects.
Web server	Supported the web server.
Communication	Supported variable settings as two-dimensional arrays and global variable distribution to boards.
System variable	Added the system variable _DevInfoExtend.SN for obtaining the device SN code and the system variable _DevInfoExtend.Name for obtaining the device name.
Instruction	Added GRY, GBIN, and GL20_WriteConfigParam instructions.
Motion control	Supported enhanced cam functions (deformed constant-speed curve and expanded cam capacity: Easy502 supports up to 16 cams).
	Supported the backlash compensation function, and added the initial speed start mode for MC_FollowPosition, MC_BacklashCompensate, and MC_GearInPos.
Commissioning	Supported pre-monitoring configuration validation.
	Supported automatic identification of uploaded device models.
	Supported batch online modification for multiple devices within the same project.
Others	Supported deletion of recent project access records.
	Supported version upgrade by using a patch package.

NOTE

The following models do not support the cam functions:

- Easy301 model
- Easy321-3624ER, Easy321-2416ER, and Easy321-1812ERX models
- Easy321S-3624ER and Easy321S-2416ER models

- H30 model
  No new features.
- HMI model ITU7000 series
  No new features.

3.2.2.2 Modified Features

- H5U and Easy series

Type	Description
Module	IO coupler slots support the following modules: GL20-1600END-5V, GL20-8TC, GL20-4LC-PID, GL20-4TC-ISO, and GL20-0032ETP.
Configuration	Integrated the archived XML files of the servo and AC drive into AutoShop. Added a complete device list: STD60N, SVD60N, MD500, MD520, MD630N, MD800, SV670, SV605, and SV660ND.
	Optimized the "I/O mapping" configuration page.
Programming	Optimized the incremental paste function in ladder diagrams.
Motion control	Supported flexible setting of the slave axis start point in the electronic cam table and allowed acceleration configuration.
Commissioning	Optimized the function of writing monitored values.

- Easy510 series, Easy511 series, and Easy52X series

Type	Description
Module	The following local modules are supported: GL20-1600END-5V, GL20-8TC, GL20-4LC-PID, GL20-4TC-ISO, GL20-0032ETP, and GL20-2CAN. **Note**: Only the Easy52X series supports the GL20-2CAN module.
	IO coupler slots support the following modules: GL20-1600END-5V, GL20-8TC, GL20-4LC-PID, GL20-4TC-ISO, and GL20-0032ETP.

Type	Description
Configuration	Integrated the archived XML files of the servo and AC drive into AutoShop. Added a complete device list: STD60N, SVD60N, MD500, MD520, MD630N, MD800, SV670, SV605, and SV660ND.
	Optimized the "I/O mapping" configuration page.
Programming	Optimized the incremental paste function in ladder diagrams.
	Supported shared variables between PLC and HMI.
Motion control	Supported flexible setting of the slave axis start point in the electronic cam table and allowed acceleration configuration.
	Supported online curve commissioning for axes.
Commissioning	Optimized the function of writing monitored values.

3.2.2.3 Deleted Features

None

3.2.3 Solved Issues

H5U and Easy series

Description	Corrective Measures
The "Replace All" function is not available for the H1U/H2U/H3U project.	Make the "Replace All" function take effect.
Soft element search in the SFC program fails.	Make the soft element search in the SFC program functional.
After the H3U project is downloaded and then uploaded, project comments are displayed as garbled characters.	Correct the display of project comments (H3U comment byte limit up to 16 bytes and then 5 characters after modification).
When the computer time zone is changed to North America and region to English, no project can be created in a Chinese system.	Allow project creation in this scenario.
Defining a two-dimensional array in the variable table fails to write initial values or comments for member variables.	Ensure that initial values and comments for two-dimensional array members are written successfully.
When the number of soft element comments in the project is large, opening the project or the soft element table is sluggish.	Optimize serialization of the soft element table to reduce lags.

Description	Corrective Measures
OPC UA access fails when a structure in the project contains Chinese variables.	Ensure that OPC UA access works normally when the structure contains Chinese variables.

3.3 Device Description File Version

- XML file versions for EtherCAT slaves

Model	Version	File Name
ES810N_ECAT_v1.3	v1.3	ES810-Ecat_v1.3.xml
IS620N_ECAT_v2.6.9	v2.6.9	IS620N-Ecat_v2.6.9.xml
IS810_1Axis_V1.04	V1.04	IS810_1Axis_V1.04.xml
IS810_2Axis_V2.04	V2.04	IS810_2Axis_V2.04.xml
SV510N_ECAT_v1.1.4	v1.1.4	SV510N-Ecat1.1.4.xml
SV520N-Ecat_v0.1.2	v0.1.2	SV520N-Ecat_v012.xml
SV820_3Axis_V3.03	V3.03	SV820N-3Axis-V3.04.xml
SV820_4Axis_V4.04	V4.04	SV820N-4AXis-V4.04.xml
GR10-4ADE_1.4.5.0	1.4.6.0	4ADE_4DAE_8TCE_1.4.6.0.xml
GR10-4DAE_1.4.5.0	1.4.6.0	4ADE_4DAE_8TCE_1.4.6.0.xml
GR10-8TCE_1.4.6.0	1.4.6.0	4ADE_4DAE_8TCE_1.4.6.0.xml
AM600-2HCE_1.4.5.0	1.4.7.0	GR10_AM600_RECT_HCE1.4.7.0.xml
GL10-RTU-ECTA_2.0.7.0	2.0.7.0	GL10-AM600-RTU-ECTA_2.0.7.0.xml
AM600_0808ETNE_1.4.5.0	1.4.5.0	GR10-AM600-0808-1616ETNE_1.4.5.0.xml
GR10_0808ETNE_1.4.5.0	1.4.5.0	GR10-AM600-0808-1616ETNE_1.4.5.0.xml
AM600_1616ETNE_1.4.5.0	1.4.5.0	GR10-AM600-0808-1616ETNE_1.4.5.0.xml
GR10_1616ETNE_1.4.5.0	1.4.5.0	GR10-AM600-0808-1616ETNE_1.4.5.0.xml
GR10_1616ERE_BD_1.3.0.0	1.3.0.0	GR10-AM600-0808-1616ETNE_1.4.5.0.xml
AM600-4PME_1.1.3.0	1.1.3.0	AM600_RECT_PME1.1.2.0.xml
GR10-4PME_1.1.3.0	1.1.3.0	AM600_RECT_PME1.1.2.0.xml
GR10-2PHE_1.1.3.0	1.1.3.0	AM600_RECT_PME1.1.2.0.xml
SV630_1Axis_03713	03713	SV630_EOE_1Axis_03713.xml

Model	Version	File Name
SV660_1Axis_V0.08	V0.08	SV660_1Axis_V0.08.xml
SV635_1Axis_03415	03415	SV635_EOE_1Axis_03415.xml
GR10-2WTE_1.1.0.3	1.1.0.3	GR10-AM600-2WTE1.1.0.3.xml
GS20-ECT-8L 1.0.5.3	1.0.5.3	INOVANCE GS20-ECT-8LV1.0.5.3.xml
GR10-EC-3SW(IN,X2,X3)_1.5.0.0	1.5.0.0	GR10-EC-3SW_6SW_1.5.0.0.xml
GR10-EC-6SW(IN,X2,X3)_1.5.0.0	1.5.0.0	GR10-EC-3SW_6SW_1.5.0.0.xml
GR10-EC-6SW(X1,X2,X3)_1.5.0.0	1.5.0.0	GR10-EC-3SW_6SW_1.5.0.0.xml
GR20T-ECT-0808EMN_1.1.1.0	1.1.1.0	GR20T-ECT-0808-1616EMN_1.1.1.0.xml
GR20T-ECT-1616EMN_1.1.1.0	1.1.1.0	GR20T-ECT-0808-1616EMN_1.1.1.0.xml
GR20-1OP_1.2.0.0	1.2.0.0	GR20-1OP-N_1.2.0.0.xml
GL20-RTU-ECT_1.3.21.0	1.3.21.0	GL20(GL20S)-RTU-ECT32_3.0.14.0.xml
GL20(GL20S)-RTU-ECT32_3.0.14.0	3.0.14.0	GL20(GL20S)-RTU-ECT32_3.0.14.0.xml
GR20T-ECT-1616EMN-E_1.0.3.0	1.0.3.0	INOVANCE-GR20T-ECT-1616EMN-E-1.0.3.0.xml
STD60N_1Axis_257_06008	C011A	(0302CJ25)STD60N_1Axis_v08_0304_Small Automation Stepping Customized.xml
SV660_1Axis_00916	C010D	SV660N(EOE)_1Axis_v16_0304.xml
SVD60_1Axis_16001	C012D	SVD60N_1Axis_v01_0823.xml
SV600EN_1Axis_257_02903	H0E-96 = 029.03	INOVANCE_SV600EN_1Axis_257_V0.03.xml
SV630N_1Axis_257_03717	H0E-96=37.17	INOVANCE_SV630N_1Axis_257_V0.17.xml
SV600E1Axis_02902	C012B	(0302BG56)SV600EN_V02_20240415.xml
MD500_1Axis_V1.07	V1.07	MD500_1Axis_V1.07.xml
MD520CIA402(EOE)_1Axis_V1.17	V1.17	INOCANCE_MD520CIA402(EOE)_1Axis_V1.17.xml
MD630N_1Axis_V0.07	V0.07	INOVANCE_MD630N_1Axis_V0.07.xml
MD800_9Axis_V0.26	V0.26	INOVANCE_MD800_9Axis_V0.26.xml

- CANopen devices

Model	Version	File Name
MD380/MD500 V1.11	V1.11	000003B9000B01070001000B.eds
MD380/MD500V1.12	V1.12	MD380-MD500-CANOpen V8.1.eds

Model	Version	File Name
MD810 INV_V1.2	V1.2	000003B9000B011200010002.eds
MD810 INV_V1.5	V1.5	000003B9000B011200010005.eds
MD810 INV_V3.0	V3.0	MD810-CANOpen-INV V3.0.eds
MD810_REC_VC.2	VC.2	000003B9000B0112000C0004.eds
MD810_REC_V12.4	V12.4	MD810-CANOpen-REC V13.0.eds
MD810_REC_V13.0	V13.0	000003B9000D010719203800.eds
IS620 V056	V056	000003B9000D010719203800.eds
SV630C_V1.1	V1.1	SV630C_V1.1.eds
SV660C_V1.1	V1.1	SV660C_V1.1.eds
IS810_V1.1	V1.1	IS810_V1.1.eds

3.4 Compatibility Description

Firmware versions of V6.12.0.x and later versions are compatible with function of 3.1 Firmware Version.

4 Version Matching Information

4.1 V4.11.0.5

New Features

- Added four horizontal 30-channel analog modules: Easy511-1812TNX, Easy321-1812TNX, Easy321-1812TPX, and Easy321-1812ERX.
- Adapted to the GL20-2CAN module.

Solved Issues

- Fixed the issue where writing comments in the soft element table is slow.
- Fixed the issue where incremental copy and paste operations by right-click in the program are executed incorrectly.
- Fixed the issue where pre-compilation fails in the project and the fault cannot be located by double-click.
- Fixed the issue where the read-write operations are abnormal for the one-dimensional arrays nested in the EIP/OPC UA structures.
- Fixed the issue where the CLEAR and SizeOfAry instructions do not support two-dimensional arrays but the compiler does not intercept the use of the arrays.
- Fixed the issue where project creation fails after the time zone and language on the computer are changed.

4.2 V4.11.0.0

4.2.1 Firmware Version

4.2.1.1 Firmware Information

- Easy523/Easy522/Easy521

Firmware Version	File Name
6.11.0.1 or later	(0302AL79)EASY52x-51xPROPLUS_CPU_6.11.0.1.upgrade (03029844)EASY52x-51xPROPLUS_CPU_6.11.0.1.img

- Easy320/Easy302/Easy301, Easy502/Easy501

Firmware Version	File Name
6.11.0.1 or later	(0302AL80)EASY320-30x-50x_CPU_6.11.0.1.upgrade (03029847)EASY320-30x-50x_CPU_6.11.0.1.img

- H5U-A8S

Firmware Version	File Name
6.11.0.1 or later	(03027791)H5U-A8S_CPU_6.11.0.1.upgrade (0302AP13)H5U-A8S_CPU_6.11.0.1.zip

- H5U-A8

Firmware Version	File Name
6.11.0.1 or later	(03026032)H5U-A8_CPU_6.11.0.1.upgrade (0302AP12)H5U-A8_CPU_6.11.0.1.zip

- H5U-A16

Firmware Version	File Name
6.11.0.1 or later	(03026031)H5U-A16_CPU_6.11.0.1.upgrade (0302AP11)H5U-A16_CPU_6.11.0.1.zip

- H5U-A32

Firmware Version	File Name
6.11.0.1 or later	(03022814)H5U_CPU_6.11.0.1.upgrade (03022815)H5U_CPU_6.11.0.1.zip

- Easy511/Easy321/Easy321S

Firmware Version	File Name
6.11.0.1 or later	(0302CB40)Easy511-321-321S-30XP_CPU_6.11.0.1.upgrade (0302CF99)Easy511-321-321S-30XP_CPU_6.11.0.1.img

4.2.1.2 Change Description

New Features

- Easy523/Easy522/Easy521, Easy511

Type	Description
Instruction	Added support for EtherCAT communication interrupt subroutines.

- Easy523/Easy522/Easy521, Easy320/Easy302/Easy301, Easy502/Easy501, H5U-A32/H5U-A16/H5U-A8/H5U-A8S, Easy511/Easy321/Easy321S

Type	Description
Instruction	Added support for the MC_GearInPos instruction to specify the gear chasing direction.

Type	Description
	Added support for the SerialSend and SerialRcv instructions to simultaneously call full-duplex communication after serial communication mode is switched to RS232/RS422.
Communication	TCP instructions now support disconnection timeout detection.
	Added support for the MC_ResetFollowingError instruction to reset following errors.
	Added support for the SysHc_NTPClient instruction to access the NTP server for time calibration.
	Added the user project AB backup mechanism to ensure project download integrity in poor communication environments.

- H5U-A32/H5U-A16/H5U-A8/H5U-A8S, Easy502/Easy501, Easy511

Type	Description
Communication	Added support for detecting sporadic and continuous EtherCAT frame loss and support for online slave scanning.

- Easy523/Easy522/Easy521, Easy320/Easy302/Easy301, Easy502/Easy501, Easy511/Easy321/Easy321S

Type	Description
System	Added support for detecting PLC internal pointer/array out-of-bounds, wild pointer operations, and memory leaks.
	Added support for using system variables to restart the CANopen master.
	Added support for using system variables to modify the CAN port baud rate.

- Easy523/Easy522/Easy521

Type	Description
System	Added support for the EtherNet2 port to have independent IP address configuration.

- Easy320/Easy302/Easy301, Easy502/Easy501, Easy511/Easy321/Easy321S

Type	Description
System	Added the AutoFEL feature to block flashing of mismatched firmware from different images.

Modified Features

Easy523/Easy522/Easy521, Easy320/Easy302/Easy301, Easy502/Easy501, H5U-A32/H5U-A16/H5U-A8/H5U-A8S, Easy511/Easy321/Easy321S

Type	Description
Instruction	Improved the execution efficiency of basic LD instructions, reducing the PLC scan cycle.

Removed Features

None

4.2.1.3 Solved Issues

- Easy523/Easy522/Easy521

Type	Description
System	Fixed the issue where upgrade fails when a bad block exists in Flash.
	Fixed the issue where the default gateway is lost when network parameters are configured while a network node does not exist.
	Fixed the issue where the system encounters stack errors and freezes when Type-C cable is in poor contact.

- Easy320/Easy302/Easy301, Easy502/Easy501

Type	Description
System	Fixed the issue where the system crashes when the CAN cable is connected inversely.

- Easy523/Easy522/Easy521, Easy320/Easy302/Easy301, Easy502/Easy501, H5U-A32/H5U-A16/H5U-A8/H5U-A8S, Easy511/Easy321/Easy321S

Type	Description
Instruction	Fixed occasional state machine lockup in the MB_Master instruction.
Communication	Fixed occasional SDO write failure on a single axis during long-term operation with 8 axes at a 1 ms synchronization cycle, which caused homing failure.

4.2.2 Software Version

4.2.2.1 Software Information

Software Version	File Name
AutoShopV4.11.0.0	AutoShop V4.11.0.0 Setup.zip

4.2.2.2 Change Description

New Features

H5U and Easy series

Type	Description
Instruction cascading	Instructions now have EN and ENO pins to facilitate cascading of instructions.
Instruction pin support for logical expressions	Instruction and function block input/output parameters now support logical expressions.
Multiple data types	Added support for two-dimensional arrays, dual-variable sub-indexing, and enumeration variables.
REGION instruction	The REGION instruction now supports grouping of ST code with nesting capability.
F1 precise jump	Pressing F1 jumps directly to the exact location of the selected instruction in the help manual.
Project archive management	After a user shares a project, other users can run the project even without dependent files.
Number base switching	In monitoring mode, the display base of monitored variables can be quickly switched with shortcut buttons.
SFTP function	The SFTP service now can be enabled for PLCs.
CANopen master restart	Added the system variable _CANOpen.RestartMaster used to control CANopen master restart.
CAN baud rate modification through programming	Added support for using system variables to modify the CAN port baud rate.
Compatibility with customized serial Modbus protocol	Added support for using the _MbMstEx.CompatMode system variable to enable/disable parsing of customized Modbus data.
IoT network diagnostic	Added network diagnostic functions for Ethernet, EtherNet/IP, OPC UA, EtherCAT, and OS.

Modified Features

H5U and Easy series

Type	Description
Modbus communication	When the PLC acts as a Modbus master for broadcast communication (accessing station 0), it supports function codes 05 and 06.
PROFINET communication	Added the system variable _tagPNStack.connected used to indicate PROFINET connection status.
Serial baud rate	Added baud rate options for onboard serial ports and GE expansion cards on the Easy series.

Removed Features

None

4.2.2.3 Solved Issues

H5U and Easy series

Description	Corrective Measures
In English operating systems, system variable table data was missing, and the _SYS_COM_SAVE table lacked fields, causing compilation errors.	Added system variable table data to the XML file.
Abnormal calculation of OPC UA variables in the compact runtime caused false compilation errors.	Fixed OPC UA variable calculation logic to accurately count variables.
Online compilation of projects was extremely slow.	Optimized left-side tree nodes: changes are now fully processed before the view is refreshed.
Using the ZSET instruction with parameters ss[0] and ss [aa] caused PLC crash.	Added interception for mixed use of numeric literals and variable indices.
Excessive publicly exposed structure members in network properties caused the background service to freeze and the PLC to crash.	The background checks the version number; if it is earlier than the compatible version, the background does not deploy the version and reports an error.
Easy320 project could not be opened when the project path/name was too long.	Switched to Unicode encoding; the system limit for Chinese characters in paths is now doubled.
After exporting the variable table, modifying comments and re-importing caused compilation errors.	Supported canceling the forced uppercase logic for complex types such as structures.
Hardware positive/negative limit switches for axes were sometimes reversed (probabilistic issue).	For servo drives with hidden hardware limit switches, hardware limit data is no longer issued.
In English operating systems, "Jump to Definition" in LD did not work, and the translation of "Jump to Definition" was inconsistent between LD and ST.	Unified the translation.
Data loss occurred when a recipe is exported and then re-imported.	REAL-type data in scientific notation was previously treated as strings and filtered out; now scientific notation is correctly converted to floating-point type.
In English operating systems, creating/opening Easy301 projects resulted in errors.	Replaced with the latest XML file.

4.2.2.4 Exceptional Operation Prompt

H5U and Easy series

Description	Corrective Measures
Garbled characters appear and the application becomes unusable after conversion from Traditional to Simplified Chinese.	Check whether multiple conversions have been performed, as this step may require manual annotation.

4.2.3 Device Description File Version

- XML file versions for EtherCAT slaves

Model	Version	File Name
ES810N_ECAT_v1.2	V1.2	ES810-Ecat_v1.2.xml
IS620N_ECAT_v2.6.8	V2.6.8	IS620N-Ecat_v2.6.8.xml
IS810_1Axis_V1.02	V1.02	IS810_1Axis_V1.02.xml
IS810_2Axis_V2.02	V2.02	IS810_2Axis_V2.02.xml
SV510N_ECAT_v1.1.3	V1.1.3	SV510N-Ecat1.1.3.xml
SV520N-Ecat_v0.1.2	V0.1.2	SV520N-Ecat_v012.xml
SV820_3Axis_V3.03	V3.03	SV820N-3Axis-V3.04.xml
SV820_4Axis_V4.04	V4.04	SV820N-4Axis-V4.04.xml
GR10-4ADE_1.4.4.0	1.4.4.0	4ADE_4DAE_8TCE_1.4.5.0.xml
GR10-4DAE_1.4.4.0	1.4.4.0	4ADE_4DAE_8TCE_1.4.5.0.xml
GR10-8TCE_1.4.5.0	1.4.5.0	4ADE_4DAE_8TCE_1.4.5.0.xml
AM600-2HCE_1.4.5.0	1.4.5.0	GR10_AM600_RECT_HCE1.4.5.0.xml
AM600-RTU-ECTA_2.0.7.0	2.0.7.0	GR10_AM600_RECT_HCE1.4.5.0.xml
GL10-RTU-ECTA_2.0.7.0	2.0.7.0	GL10-AM600-RTU-ECTA_2.0.7.0.xml
AM600_0808ETNE_1.4.5.0	1.4.5.0	GR10-AM600-0808-1616ETNE_1.4.5.0.xml
GR10_0808ETNE_1.4.5.0	1.4.5.0	GR10-AM600-0808-1616ETNE_1.4.5.0.xml
AM600_1616ETNE_1.4.5.0	1.4.5.0	GR10-AM600-0808-1616ETNE_1.4.5.0.xml
GR10_1616ETNE_1.4.5.0	1.4.5.0	GR10-AM600-0808-1616ETNE_1.4.5.0.xml
GR10_1616ERE_BD_1.3.0.0	1.3.0.0	GR10-AM600-0808-1616ETNE_1.4.5.0.xml
AM600-4PME_1.1.3.0	1.1.3.0	AM600_RECT_PME1.1.2.0.xml
GR10-4PME_1.1.3.0	1.1.3.0	AM600_RECT_PME1.1.2.0.xml

Model	Version	File Name
GR10-2PHE_1.1.3.0	1.1.3.0	AM600_RECT_PME1.1.2.0.xml
SV630_1Axis_03713	03713	SV630_EOE_1Axis_03713.xml
SV660_1Axis_V0.08	V0.08	SV660_1Axis_V0.08.xml
SV635_1Axis_03413	03413	SV635_EOE_1Axis_03413.xml
GR10-2WTE_1.1.0.3	1.1.0.3	GR10-AM600-2WTE1.1.0.3.xml
GS20-ECT-8L 1.0.5.3	1.0.5.3	INOVANCE GS20-ECT-8LV1.0.5.3.xml
GR10-EC-3SW(IN,X2,X3)_1.5.0.0	1.5.0.0	GR10-EC-3SW_6SW_1.5.0.0.xml
GR10-EC-6SW(IN,X2,X3)_1.5.0.0	1.5.0.0	GR10-EC-3SW_6SW_1.5.0.0.xml
GR10-EC-6SW(X4,X5,X6)_1.5.0.0	1.5.0.0	GR10-EC-3SW_6SW_1.5.0.0.xml
GR20T-ECT-0808EMN_1.1.1.0	1.1.1.0	GR20T-ECT-0808-1616EMN_1.1.1.0.xml
GR20T-ECT-1616EMN_1.1.1.0	1.1.1.0	GR20T-ECT-0808-1616EMN_1.1.1.0.xml
GR20-1OP_1.2.0.0	1.2.0.0	GR20-1OP-N_1.2.0.0.xml
GL20-RTU-ECT_1.3.21.0	1.3.21.0	GL20(GL20S)-RTU-ECT32_3.0.14.0.xml
GL20(GL20S)-RTU-ECT32_3.0.14.0	3.0.14.0	GL20(GL20S)-RTU-ECT32_3.0.14.0.xml
GR20T-ECT-1616EMN-E_1.0.3.0	1.0.3.0	INOVANCE-GR20T-ECT-1616EMN-E-1.0.3.0.xml

- EDS file versions for CANopen devices

Model	Version	File Name
MD380/MD500 V1.11	V1.11	000003B9000B01070001000B.EDS
MD380/MD500V1.12	V1.12	MD380-MD500-CANOpen V8.1.eds
MD810 INV_V1.2	V1.2	000003B9000B011200010002.EDS
MD810 INV_V1.5	V1.5	000003B9000B011200010005.EDS
MD810 INV_V3.0	V3.0	MD810-CANOpen-INV V3.0.eds 000003B9000B0112000C0002.EDS
MD810_REC_VC.2	VC.2	000003B9000B0112000C0004.EDS
MD810_REC_V12.4	V12.4	MD810-CANOpen-REC V13.0.eds
MD810_REC_V13.0	V13.0	000003B9000D010719203800.EDS
IS620 V056	V056	000003B9000D010719203800.EDS
SV630C_V1.1	V1.1	SV630C_V1.1.eds

Model	Version	File Name
SV660C_V1.1	V1.1	SV660C_V1.1.eds
IS810_V1.1	V1.1	IS810_V1.1.EDS

- GSD file versions for PROFINET devices

Model	Version	File Name
H5U	V2.31	GSDML-V2.31-inovance-H5U-20230403
EASY	V2.31	GSDML-V2.31-inovance-EASY-20230801.xml
EASY-RTU	V2.31	GSDML-V2.31-inovance-EASY-RTU-20250108.xml

4.2.4 Compatibility Description

Function	Firmware Version Compatibility
BYTE data type	V6.1.0.0 and later
EASY splitter	V6.3.0.0 and later
OPC UA	V6.3.0.0 and later
EN/ENO function	V6.11.0.0 and later
SFTP function	V6.11.0.0 and later
EtherNet/IP coupler mode setting	V6.11.0.0 and later
Disabling modules through EtherCAT	V6.1.0.1 and later
Batch setting alias through EtherCAT	V6.3.0.0 and later
Data log	V6.4.0.0 and later

4.3 V4.10.2.3

New Features

- Added support for Easy series horizontal small-sized PLC models: Easy511-2416TN, Easy511-3624TN, Easy321-2416TP/TN, Easy321-2416ER, Easy321-3624TP/TN, and Easy321-3624ER.
- Added support for GE21 series expansion card models: GE21-CAN-485, GE21-TF-RTC, and GE21-RTU.
- Easy321 and Easy511 series models support switching to coupler mode, allowing quick configuration of the PLC as a PN coupler.
- The built-in Ethernet port of Easy511-2416TN and Easy511-3624TN models supports switching between EtherNet and EtherCAT modes.

- Communication settings support simultaneous modification of IP information for Easy511 series models with dual Ethernet ports.
- Added support for project conversion between H3U/H5U/Easy series models and the newly added Easy321/Easy511 models.

4.4 V4.10.2.0

New Features

Type	Description
Project management	Added the F1 shortcut for online help, enabling one-click access to corresponding documentation.
	Optimized permission management: • Added support for encrypting the entire project. • PLC login password can be set in the project and downloaded together with the program, eliminating the need to encrypt each PLC separately.
	Added the data logging feature, which can be set using the AutoShop software tool. Current values of variables or registers can be recorded and saved in .CSV format to the SD card mounted on the PLC.
	Added the automatic program backup feature, supporting saving the currently running PLC program to an SD card using instructions.
	Added the batch program upgrade feature, supporting batch program upgrades for identical PLC devices on the same LAN using AutoShop.
	Optimized the operation window: Window tabs are moved to the top of the interface; the maximum number of open windows is increased to 32.
	Added PID wizard, supporting PID auto-tuning configuration using the wizard.
Expansion modules and features	Added GL20 series module models: GL20-0004ER, GL20-0004ETP-2A, GL20-PS2, GL20-2HC, GR20T-1616EMN-E, GL20-8DAV, GL20-8DAI, and GR10-EC-3SW.
	Added support for enabling/disabling the GL20-RTU-ECT32 module.
	Added support for EtherCAT slave scanning without stopping.
	H5U series: Added support for enabling/disabling GL10 series local expansion modules using system variables.
Project editing	Added support for assigning initial values to newly created library variables.
	Optimized LD editor usability: Improved the comment display and editing functions.
	Optimized ST assignment usability.
Communication	Added CIP communication instructions to improve the usability and flexibility of EtherNet /IP communication operations.
	OPC UA: Added support for offline commissioning.
	Added support for time zone setting.

Type	Description
	Optimized the Ethernet diagnosis feature to provide IP address conflict detection and network storm detection.
	Added support for enabling/disabling CANopen slaves using instructions.
	Easy series: Added support for MC protocol slaves.
	Easy series: Added support for the CAN free protocol.
	Easy series: Expanded the serial free protocol send/receive buffer to 4096 bytes.
	Easy52X models: Added support for EtherCAT sporadic frame loss detection and continuous frame loss detection.

4.5 V4.10.1.1

Solved Issues

- Fixed the issue where element comments could not be displayed after being written.
- Fixed communication exceptions caused by H1U/H3U Modbus configuration data.
- Fixed the issue where mapping data would be lost upon reopening of the axis configuration page if "Auto Mapping" was not selected.
- Fixed the issue where importing GL20 coupler XML would cause the local module list in the toolbox to disappear after software restart.

4.6 V4.10.1.0

New Features

Type	Description
Communication	The Easy series supports the OPC UA server (see the user guide for communication specifications).
EtherCAT optimization	The Easy series supports the GR10-EC-6SW splitter (up to three levels).
	Simple slaves are supported, enabling compatibility with GR20T horizontal I/O, SMC valve terminals, and WAGO couplers.
	The overview interface supports setting EtherCAT alias in a centralized manner.
	The axis unit conversion interface supports setting user-defined units.
Firewall	The Easy series supports the network firewall function with IP address filtering. The PLC can only be discovered and accessed by specified Ethernet client devices.
LD editor	AutoShop supports inserting ST execution blocks in the LD editor.
Module power consumption detection	Added GL20 module power consumption detection.
Instruction	The Easy and H5U series support immediate input/output related instructions.

Type	Description
Instructions in EtherCAT profile control mode	Added MC_MoveBufferPP, a multi-segment positioning instruction in profile position mode.
	Added MC_TorqueControlPT, a profile torque instruction.
	The MC_SetOverride instruction now supports the speed override function in profile control mode.
Modbus communication	The retry limit for Modbus communication can be set to 0.
	When a PC with multiple network interface cards (NICs) connects to the PLC, NICs can be filtered.
	Multicast is supported in UDP communication.
	Added string and array instructions in the ST editor.

4.7 V4.10.0.0

New Features

- Added the project comparison function.
- Added support for the Easy-PN function.
- Added basic data types and structured data types (BOOL, BYTE, STRING) to EtherNet/IP.
- Enabled slot module fault diagnosis for GL20 modules.
- Added support for GL20-2SCOM and GL20-2S485 remote modules.
- Added support for GL20-2SSI local and remote modules.
- Added instructions in profile control mode for the Easy5 series.
- Added support for Modbus renaming and sorting.
- Added SCALE_X, NORM_X, ROUND, TRUNC, CEIL, and FLOOR instructions for EtherNet/IP simulation.
- Added PID_ATC and PID_AT instructions.
- Added Modbus communication serial port instructions for ST.
- Added LiteST instructions: LEN, LEFT, RIGHT, CONCAT, DELETE, INSERT, FIND, REPLACE, ClearString, AryMax, AryMin, ArySearch, SizeOfAry, AryMove, AryExchange, and Clear.
- Added support for comparison using strings in ST.

Modified Features

- Optimized the IOLink slave configuration interface.
- Optimized the TRACE function.

4.8 V4.8.2.4

New Features

- Added the software version number for the help documentation in Chinese.
- Added a standard mode option for the ADDA expansion card.

Solved Issues

- Fixed the issue where creating, renaming, or deleting a variable monitoring table would cause the project management interface to refresh to the top.
- Fixed a series of errors caused by setting the open flag to FALSE when saving a folder.
- Fixed the issue where, after a duplicate FB/FC file is imported, the existing FB/FC file with the same name is not overwritten.
- Fixed EtherNet/IP I/O mapping data refresh exceptions.
- Fixed the issue where the intermediate folder is deleted before the file export instruction is executed.
- Fixed the issue where, when an FB/FC file with the same name but different letter cases is imported, the name conflict is not handled.
- Modified the method for reading GL20 device information.
- Removed automatic sorting from the English/Traditional Chinese Combo dropdown controls.
- Fixed compilation crash when EtherNet/IP IDs conflicts.
- Fixed the issue where FBST/FCST could export instruction lists after encryption.
- Fixed the issue where, for bus servo axes with "Auto Mapping" not selected, input mapping configuration would shift after the project is closed and reopened.

4.9 V4.8.2.3

New Features

- Added the function to export member-bound soft elements together when exporting the variable table.
- Added string and byte data types for exporting the HMI variable table.

Solved Issues

- Fixed the issue where opening an old project that contains data values in the new background software would cause a crash, as the one-click upload/download function added in V4.8.2.0 introduced an extra selection column field in the soft element value file, which old projects lack.
- Fixed the upload bug for REAL-type soft elements in one-click upload/download. Fixed the crash when opening EtherCAT in the English version.
- Fixed the issue where, after opening a project created before V4.8 in a software version later than V4.8, changing the PDO selection would cause the slave station to fail to enter the OP state.
- Fixed the memory leak during EtherCAT saving and parsing.

- Fixed the issue where newly created projects had no folder information when uploaded after being downloaded.
- Fixed the issue where subprograms were not sorted by name.
- Fixed the issue where projects were automatically saved after the empty folders were deleted.
- Fixed the invalid COM frame interval in the English version.
- Fixed the issue where disabling the local module of H5U was ineffective, and the right-click property options were inconsistent with the Simplified Chinese version.

4.10 V4.8.2.2

Modified Features

Updated offline commissioning.

Solved Issues

Fixed the issue where some encrypted FB files were rewritten as unencrypted when opened.

4.11 V4.8.2.1

New Features

- Added the BYTE variable and specific union data type.
- Added encrypting function blocks (FBs)/functions (FCs).
- Added the folder feature for program blocks, function blocks, and functions.
- Added support for GL20-2SCOM and GL20-2S485 local expansion modules.
- Added support for the GR10-EC-6SW branch module and the GS20-ECT-8L module.
- Added support for Chinese characters in EtherNet/IP tag naming. Tags can be created directly in the variable table.
- Added support for "struct[idx].xx" type variables.
- Added support for H5U-PN.
- Added support for Modbus-RTU/TCP instructions: SerialSend, SerialRcv, MB_Master, and MB_Client.
- Added support for the MC_GearInPos instruction.
- Added the following explicit conversion instructions in the "Instruction Description (LiteST)" section: INT_TO_BYTE, DINT_TO_BYTE, BOOL_TO_BYTE, REAL_TO_BYTE, BYTE_TO_<TYPE>, and TO_BYTE.

4.12 V4.8.1.0

New Features

- Easy series: Added support for LiteST.

- Optimized the LiteST compilation efficiency by introducing the incremental compilation mechanism at backend.
- Added GL20 modules:
  - Easy series host: GL20-3232ETN, GL20-0032ETN, GL20-3200END, and GL20-4TC are supported.
  - GL20-RTU-ECT coupler: GL20-3232ETN, GL20-0032ETN, GL20-3200END, and GL20-4TC are supported.
  - Added upper/lower limits for AD, DA, PT, and TC.
  - Added a new voltage conversion range for AD and DA.
- Added SV680N.

4.13 V4.8.0.2

Modified Features

Updated the guide.

4.14 V4.8.0.1

New Features

- **H5U series**
  - Supports the LiteST language.
  - Supports the EtherNet/IP slave feature.
  - Supports modifying the target speed during operation using MC_SetOverride.
  - Supports modifying the gear ratio of the local encoder axis using variables:
    - ENC_SetLineRotationMode for setting the linear rotation mode of the local encoder axis.
    - ENC_SetUnit for setting the gear ratio of the local encoder axis.
  - Supports disabling local modules on H5U.
  - Optimized serial port operation:
    - Added ability to cancel free protocol serial port operation (supports setting serial port completion conditions).
    - Added system variables for setting serial port parameters (station number, baud rate, parity, data bits, and stop bits).
- **Easy series**
  - Supports the EtherNet/IP and EtherNet/IP slave features.
  - Supports modifying the gear ratio of the local encoder axis using variables:
    - ENC_SetLineRotationMode for setting the linear rotation mode of the local encoder axis.
    - ENC_SetUnit for setting the gear ratio of the local encoder axis.
  - Optimized serial port operation:
    - Added ability to cancel free protocol serial port operation (supports setting serial port completion conditions).
    - Added system variables for setting serial port parameters (station number, baud rate, parity, data bits, and stop bits).

4.15 V4.6.5.0

New Features

- Easy series host: New modules, including GL20-0808TN, GL20-0008ER, GL20-0008ETN, GL20-0008ETP, GL20-0800END, and GL20-4PT are supported.
- GL20-ECAT coupler: GL20-0808TN, GL20-0008ER, GL20-0008ETN, GL20-0008ETP, GL20-0800END, and GL20-4PT are supported.

4.16 V4.6.4.0

New Features

The Easy300 series and Easy50x series support CAN (the Easy52X series does not support CAN).

Solved Issues

- Added password and identification code verification for H3U upload. This resolved the issue where an upload failure is reported when users attempt to access monitoring.
- Fixed monitoring and online modification lag on poor networks.
- Fixed the issue where refreshing the variable table caused variable comments to be overwritten by structure comments.

4.17 V4.6.3.0

New Features

- The H5U series supports EtherNet/IP.
- New modules:
  - Added GL20-0016ETP for the Easy series host.
  - Added GL20-0016ETP for the GL20-ECAT coupler.
  - Added the weighing module GR10-2WTE.
- New instructions:
  - Sorting instructions: SORTC, DSORTC, SORTR, and DSORTR.
  - Ramp instructions: RAMP and DRAMP.
  - Ellipse interpolation instruction: MC_MoveEllipse.
  - Upgraded the PID instruction with the temperature control algorithm.

Modified Features

Optimized the configuration for disabling Modbus serial slave and Modbus TCP slave.

4.18 V4.6.0.0

New Features

- The following Easy series models are supported: Easy501, Easy502, Easy521, Easy522, Easy523, Easy301, Easy302, and Easy320.
- The Easy series host supports the following expansion cards: GE20-232/485-RTC, GE20-4DI, GE20-2AD1DA-I, GE20-RTC, GE20-232/485, GE20-4DO-TN, GE20-2AD1DA-V, and GE20-TF.
- The Easy series host supports the following new modules: GL20-1600END, GL20-0016ETN, GL20-4AD, and GL20-4DA.
- The GL20-ECAT coupler supports GL20-1600END, GL20-0016ETN, GL20-4AD, and GL20-4DA.

Modified Features

Optimized Easy encoder axis operation:

- Encoder axes are consolidated in the Easy series, with no distinction made between local and remote encoder axes.
- Encoder axis operation instructions are unified as ENC_xxx in the Easy series.

Solved Issues

- Fixed the simplified/traditional Chinese system environment switching issues in the H5U and Easy series:
  - Supports converting H5U/Easy series simplified Chinese projects to traditional Chinese.
  - Supports converting H5U/Easy series traditional Chinese projects to simplified Chinese.
- Fixed the issue where online modification might trigger error 9111.
- Fixed compilation errors caused by incorrect mapping types when third-party EtherCAT slaves contains BYTE type.

4.19 V4.4.0.0

New Features

Type	Description
Model	The H5U-A8 and H5U-A16 models are added.
EtherCAT and axis control	Automatic EtherCAT slave startup is supported.
	The axis group feature is supported.
	Axis names can be used for the Axis parameter in MC/HC instructions, and axis group names for the Group parameter.
	Axis settings: PLCopen state machine handling when limits are active
	Axis settings: Hardware limit logic is added.
Online modification	H5U: SFC projects can be modified online.

Type	Description
Array sub-index	Instruction operands support array subscript variables, for example, arr[n].
Structure	Soft elements can be bound to structure variables.
Others	Trace supports triggered sampling.
	The 0808/1616ETNE modules support interface configuration in output stopped state.
	Login permission management is supported.
	H5U-down files are supported.
	Multi-network interface card selection is supported.
	H5U supports project conversion between traditional and simplified Chinese.

Optimizations

Type	Description
Window	The software logo is updated.
	Software icons adopt a modern flat design style.
Online modification	The online modification speed is optimized.
Ladder Diagram (LD) editing	Shortcuts are provided for quick continuous input of multiple contacts and quick coil instruction input. Parameters can be left empty during input, with empty parameters displayed as "???".
	Quick switching of contacts and coil instruction types is supported.
	Abbreviated instruction input is supported, for example, entering "L" instead of "LD"; entering "L M0" is equivalent to entering "LD M0".
	Double-clicking different parts of a long instruction automatically selects the corresponding instruction/parameter part in the instruction editing window.

Solved Issues

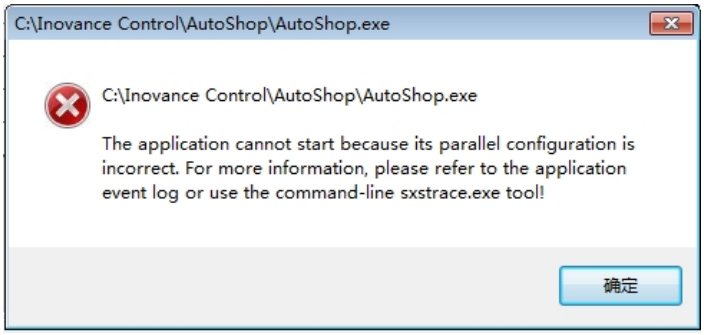
Type	Description
Third-party EtherCAT compatibility	Device identification failure caused by incorrect serial numbers.
	OMRON XML display language issue – defaulted to Japanese.
	Inability to match Kinco servo.
	Incorrect hexadecimal display when IO mapping is UINT.
	Inability to display properly when the PDO data type is array.
	Fixed XML parsing issues with third-party devices such as Estun.

5 FAQ

5.1 "Incorrect Parallel Configuration" During AutoShop Startup

Symptom

During AutoShop startup, a pop-up window prompts "Incorrect parallel configuration", as shown in the figure below.



- **Possible Cause 1**

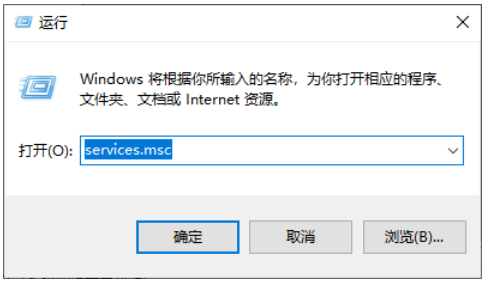
The Windows Modules Installer service is disabled.

Solution

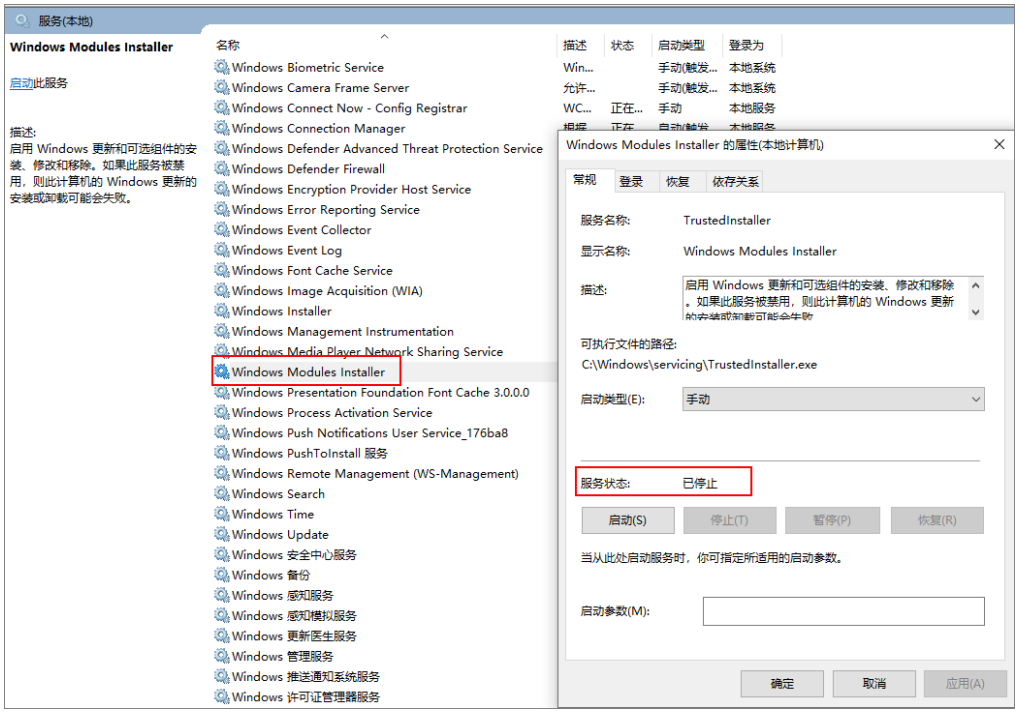
1. Click the Start menu on the PC, and then choose Windows System > Run.



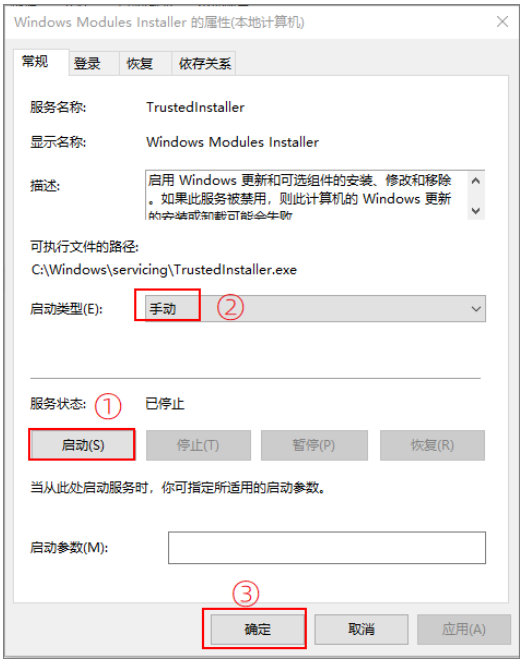
2. In the Run dialog box, type "services.msc" and click OK to open the Services (Local) window.



3. In the Services (Local) window, double-click Windows Modules Installer to check if the service status is St opped (indicating it is disabled).



4. Click Start, set Startup type to Manual, click OK, and restart the computer.

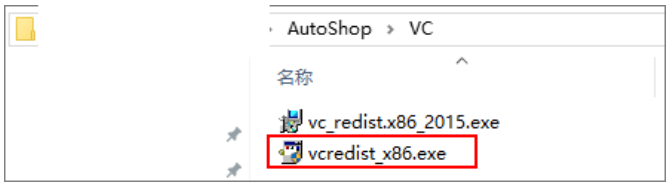


- **Possible Cause 2**

  Missing VC runtime libraries.

  Solution

  Navigate to the VC folder in the AutoShop installation directory, double-click vcredist_x86.exe to install it, and restart the computer.



- **Possible Cause 3**

  Missing system runtime libraries.

Solution

Use tools such as 360 Security or Kingsoft PC Doctor to scan and repair system DLLs, and then restart the computer.

5.2 "SWbemObjectSet: Invalid Class" During AutoShop Installation

Symptom

During AutoShop installation, an error pop-up window prompts "SWbemObjectSet: Invalid class", as shown in the figure below.

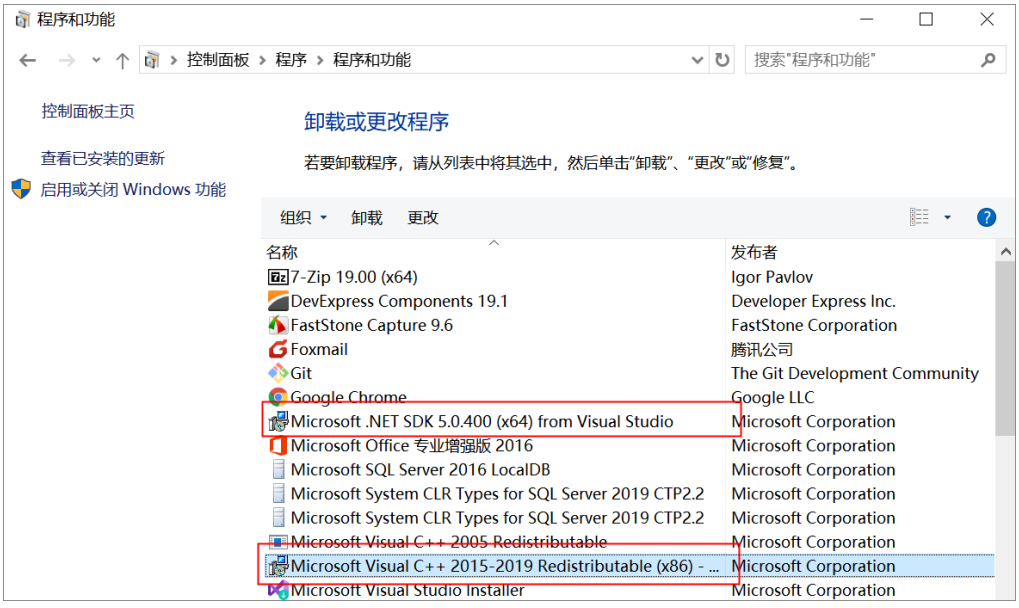


Possible Cause

Incomplete VC runtime libraries or .Net Framework libraries, or corrupted WMI.

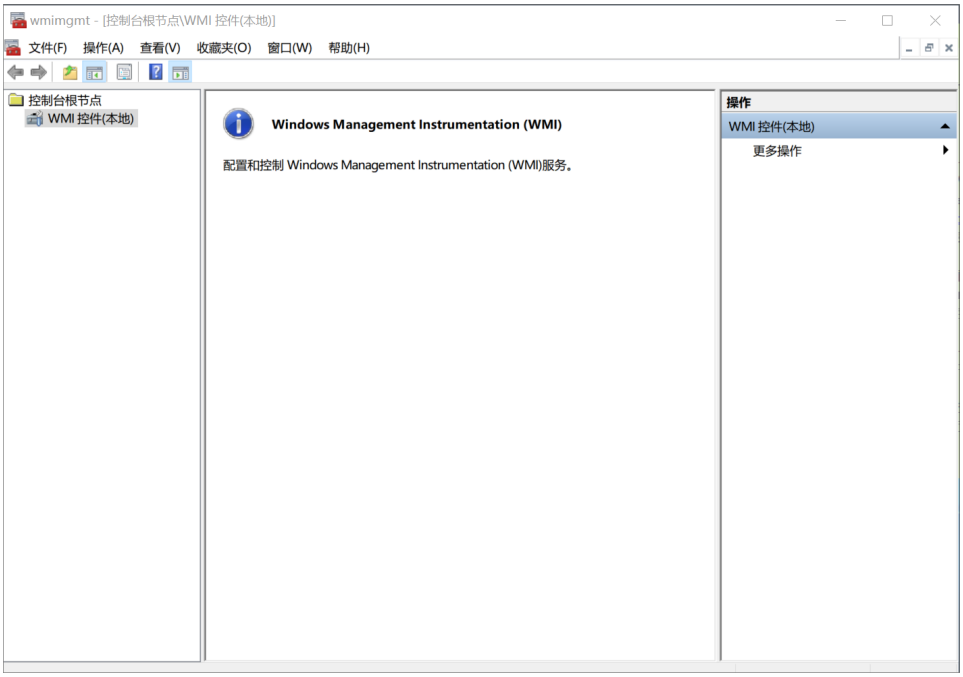
Solution

1. Choose Control Panel > Programs and Features. Check whether the .Net Framework libraries and VC runtime libraries are complete. If any item is missing, download and install it from the Microsoft website, or reinstall the libraries.

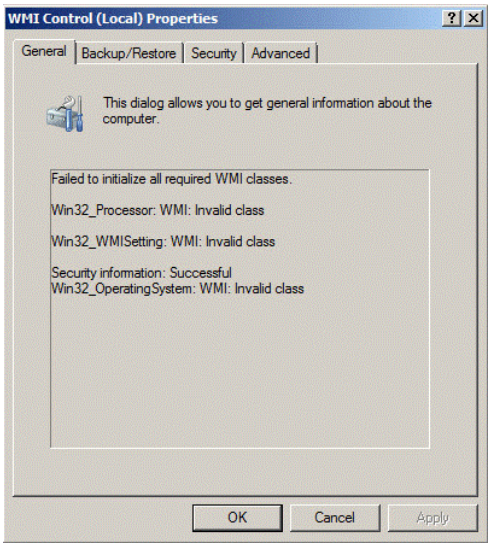


2. If the VC runtime libraries and .Net Framework libraries are complete but the error persists, check WMI.

a. Press Win+R, type "wmimgmt.msc" in the Run dialog box, and click OK to open the WMI Manager.



b. Right-click WMI Control (Local) and select Properties. If the following dialog is displayed, it indicates WMI is corrupted.



c. Contact Inovance technical support to obtain the MOF script.



d. Right-click the downloaded script and select Run as administrator. After running the script, reopen the WMI Control (Local) Properties dialog. If no error appears, it indicates WMI has been repaired. Click OK.

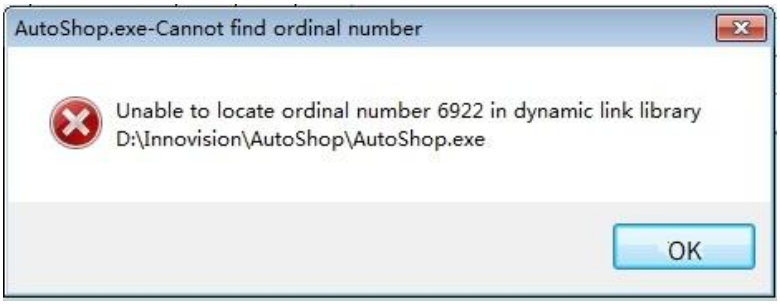


e. Retry installing AutoShop.

5.3 "Unable to Locate Ordinal Number" During AutoShop Installation

Symptom

During AutoShop installation, a pop-up window prompts "Unable to locate ordinal number".



Possible Cause

Corrupted DLLs or DirectX components.

Solution

1. Use tools such as 360 Security or Kingsoft PC Doctor to scan and repair system DLLs, and then restart the computer.
2. If the issue persists, contact Inovance technical support to obtain the DirectX Repair tool.

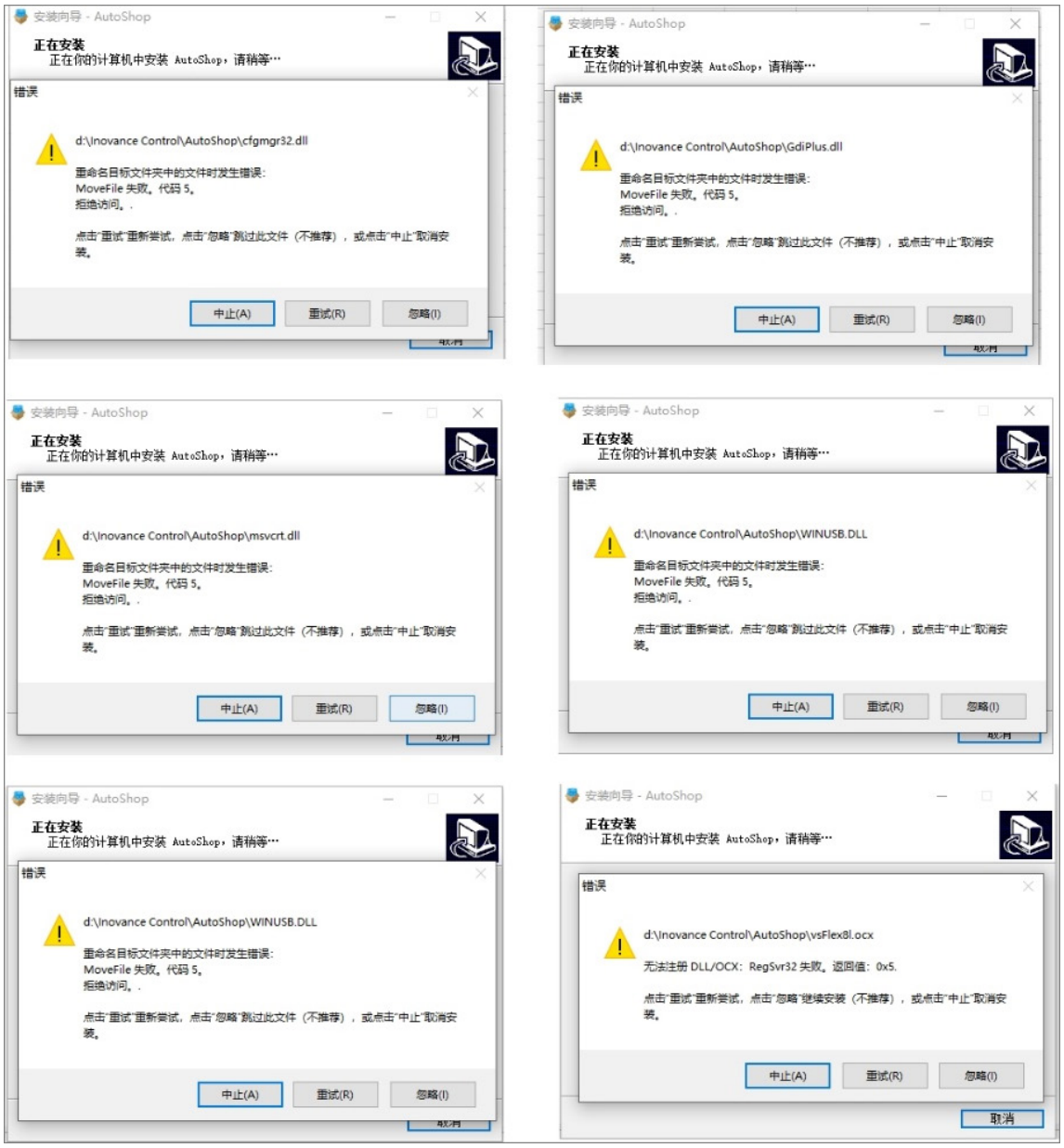


3. Run the tool to repair DirectX.
4. Restart the computer after repair.

5.4 "MoveFile Failed" or "Failed to Register DLL/OCX: RegSvr32 Failed" During AutoShop Installation

Symptom

During AutoShop installation, a pop-up window prompts "MoveFile failed" or "Failed to register DLL/OCX: RegSvr32 failed", as shown in the figure below.



Possible Cause

The current user account lacks permissions to write to the AutoShop installation directory, or security software is blocking the operation.

Solution

- Run the installer with administrator privileges.
- Temporarily disable antivirus/security software (such as 360 Security) during installation.

Service and Support

Should you encounter a safety accident during the use or operation of the product, or face challenges in operating and maintaining the equipment, which remain unresolved after the relevant documentation is consulted, we provide multiple channels to ensure prompt resolution.

- Channel #1: Contact service@inovance.com.
-
- Channel #2: Visit https://www.inovance.com/global to access document downloads, after-sales support, spare parts ordering, repair applications, and authenticity verification services.
- Channel #3: Download My Inovance app (https://zshc-eu.inovance.com/download-pc/) where you can access products info and documentation, and query product parameters.

We are committed to providing you with quick and professional technical support, and we look forward to your satisfaction and trust.

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