INOVANCE

INOVANCE PLC & HMI

CE

About INOVANCE

The Inovance Group was founded in 2003 in Shenzhen, a city in one of China's most successful Special Economic Zones. It made its initial public offering on the Shenzhen Stock Exchange in 2010* and has since been tracked by Forbes as an SME with most potential. Rapid growth in sales revenues and staff numbers led to the Group's selection for the Forbes 2016 Best under a Billion list, which highlights Asia-Pacific companies with less than $1bn in sales but consistently high top and bottom line gains.
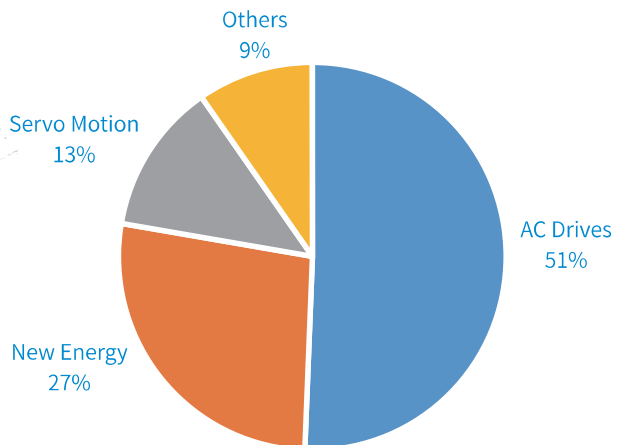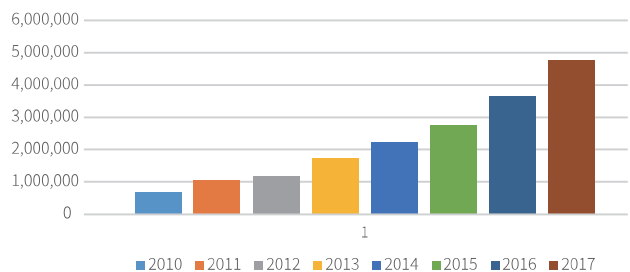
As a young and dynamic organization, the Group has established an effective structure on which to realize its promising future. Its aim is to become one of the leading providers of industrial automation products and solutions, something that it believes can best be achieved by helping more and more customers to succeed in their own objectives through close cooperation as partners.

Customers find more than just products when they work with the Inovance Group. They gain access to world-class manufacturing facilities and highly skilled sector-specialists. It is this combination of flexible production techniques and in-depth understanding of the requirements of a given sector that enables business units within the Group to deliver comprehensive solutions. Monarch is one such business unit, specializing in providing Elevator & Escalator control solutions.

Forward, Always Progressing

The Inovance Group continues to move forward and in 2017 achieved sales revenues of USD 710M, a year-on-year growth of 30%. Through sustained innovation, the Group delivers new technology products for the industrial automation market and pursues new opportunities in the New Energy sectors of Electric Vehicle and Light Rail Transit inverters. Since its foundation in 2003, Inovance has delivered several millions of power inverters to a wide spectrum of industries and has made significant progress in delivering cost-competitive control solutions.

Sales from 2010 (IPO) to 2017

Delivering Solutions to Industry.

The Group's business units focus on specific industries and deliver total solutions for:

Inova Automation was founded in 2012 to promote and export the Group's products internationally and aims to develop an outstanding technical support organization. With an international export office established in Hong Kong, other offices followed in the important markets of India, Turkey, Iran, and Italy, through which European technology is now feeding into the Group's engineering design processes for next gen global products.
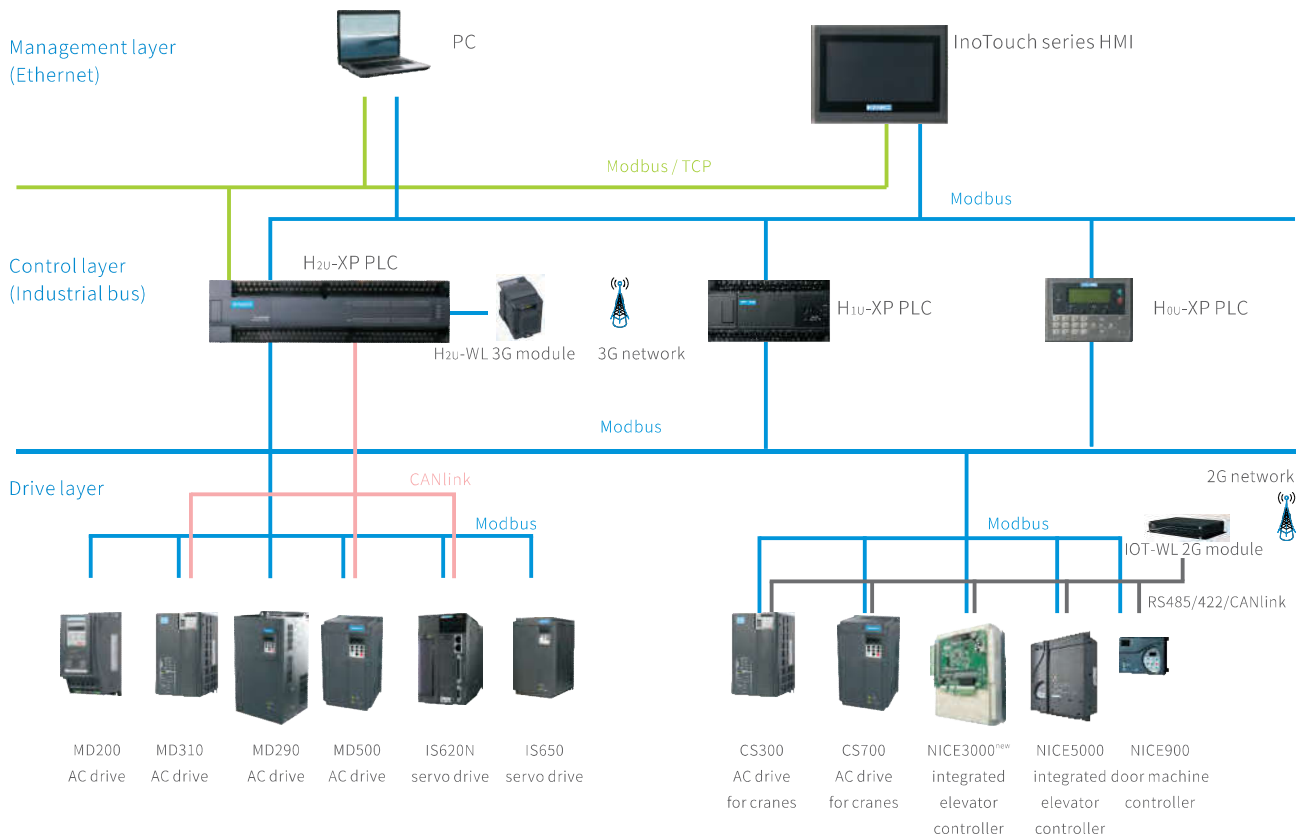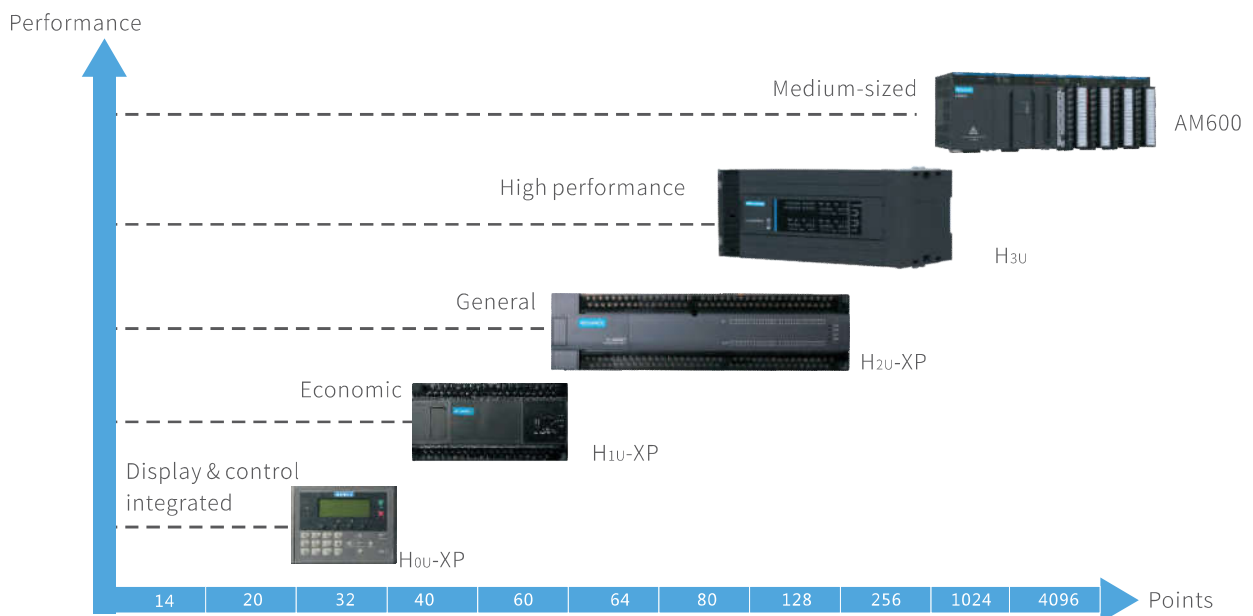
(*Stock name INOVANCE) stock code 300124

- Elevators & Escalators
- Plastic Injection Machines
- Textile Machines
- Air Compressors
- Hoist & Cranes
- Print and Packaging
- Robotics
- Electric Vehicles
- Light Rail Transit
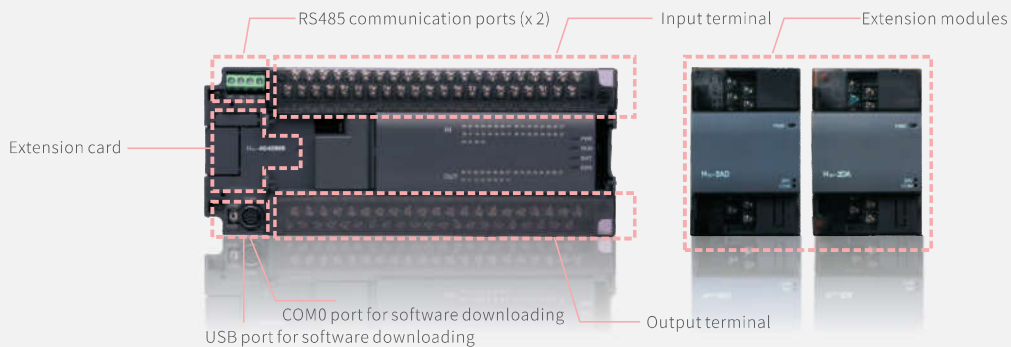
General Product Network

Management layer (Ethernet)

PC

InoTouch series HMI

Modbus / TCP

Modbus

Control layer (Industrial bus)

H2U-XP PLC

H2U-WL 3G module

3G network

H1U-XP PLC

H0U-XP PLC

Modbus

Drive layer

CANlink

Modbus

Modbus

2G network

IOT-WL 2G module

RS485/422/CANlink

| MD200 AC drive | MD310 AC drive | MD290 AC drive | MD500 AC drive | IS620N servo drive | IS650 servo drive |
| CS300 AC drive for cranes | CS700 AC drive for cranes | NICE3000new integrated elevator controller | NICE5000 integrated elevator controller | NICE900 door machine controller |

Control Product Family

Performance

Medium-sized — AM600

High performance — H3U

General — H2U-XP

Economic — H1U-XP

Display & control integrated — H0U-XP

| 14 | 20 | 32 | 40 | 60 | 64 | 80 | 128 | 256 | 1024 | 4096 | Points |

Product Overview

H₂U-XP PLC

- Provide multi-channel high frequency/speed I/O ports, and various motion and positioning control functions;
- Support USB downloading and CANlink networking, configured with 3 separate communication ports (extensible to 4); Provide various communication protocols and instructions, which facilitates system integration;
- Provide sub-program encryption and protection to user program uploading to protect user's property rights.
- Provide large program memory with up to 16k steps; automatically save momery data upon power failure;
- Support up to 128 sub-programs and 21 interrupt sub-programs, with fast computing speed;
- Integrate large capacity power which can provide power directly to sensors, HMI and external auxiliary relays.

RS485 communication ports (x 2)   Input terminal   Extension modules

Extension card

COM0 port for software downloading
USB port for software downloading

Output terminal

| 01 | Powerful Functions | 02 | Individualization | 03 | Extensibility |

Support requirement of various external events and control, with strong computing capability.

Instruction guide is provided for complex instructions, and communication uses via table configuration.

Read various physical quantity modules at high speed; extensible to 256 points I/O and 32 remote modules.

H₁U-XP PLC

- Provide multi-channel high frequency/speed I/O ports, and various motion and positioning control functions;
- Provide 3 separate communication ports, Support USB downloading, and provide various communication protocols;
- With strong networking capability, supporting CANlink networking and Modbus communication, which facilitates system integration;
- Provide communication configuration function which is normally configured on a medium-sized PLC;
- Provide completed encryption function, protecting user's property rights;
- Provide large program memory with up to 8k steps;
- User programs and all elements retentive upon power failure are stored permanently stored;
- Real-time clock can be retained for at least a week after power failure, without using a battery.

H₀U-XP Industrial Controller

- Integrate PLC and text together;
- Support 6 high speed inputs and 2 high speed pulse outputs (transistor output);
- Configured with 2 serial RS485 ports and 1 USB ports, supporting CANlink network;
- Configured with 25 function keys, function of which can be defined;
- AutoShop and HTodEditor software can be used to download software from PLC and TOD.

Operator interface

InoTouch Series HMI

- Exquisite and vivid display, with sizes including 4.3", 7", 10" and 10.4";
- High speed ARM processor, with up to 16 MB memory for user programs and 32 MB memory for user data;
- Configured with 3 serial ports, 2 USB ports and 1 LAN port;
- Powerful and faster communication realized by using Inovance Qlink protocol;
- Use of U disk realizes large-capacity data storage and upgrade of HMI and PLC programs;
- Flexible penetrating communication makes PLC programing easy and simple.

I/O Terminals

01	Input
02	Output
03	Communication
04	Power supply

- High speed count: provide up to six 100kHz high speed inputs (quadruplicated frequency)
- Selectable signal input type: Sourcing and Sinking
- High speed output: provide up to eight 100kHz high speed outputs
- Convenient mounting and dismounting: plug-in terminals makes installation and wiring simple
- Equipped with three communication ports, embedded with various communication protocols
- Extendable CAN communication port, which supports CAN and CANlink communication
- Wide power supply input: 100 to 240 VAC; able to provide 24 VDC output, output current up to 700mA

Extension Card Performance
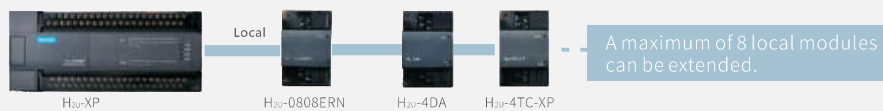
01	Communication card
02	Analog card

- Support RS422, RS232, RS485, CAN and Ethernet communication

- H_{1U}-4A-BD: 2 inputs — voltage/current output; 2 outputs — voltage output
- H_{2U}-6A-BD: 4 inputs — 2 current inputs, 2 voltage inputs; 2 outputs — voltage/current output

Local/Remote Extension Modules & Extension Cards

01	I/O extension module
02	Analog extension module
03	Temperature control extension module

- I/O extension modules include input modules, output modules, and mixed ./O modules. A total of 15 I/O extension modules are provided, makeing configuration flexible and economic.
- Analog extension modules voltage/current input and output modules, and mixed voltage/current I/O modules. These modules are capable of collecting various analog quantities in actual industrial applications.
- This module is able to get temperature from type K/J thermocouple or Pt100 thermistor and input it to PLC. PLC or temperature control module embedded with PID instruction can then control the target value.
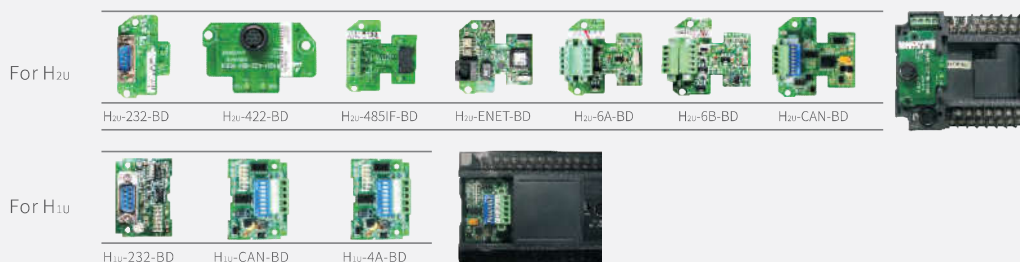
■ H_{2U} local extension modules

Local

H_{2U}-XP H_{2U}-0808ERN H_{2U}-4DA H_{2U}-4TC-XP

A maximum of 8 local modules can be extended.

■ H_{2U} remote extension modules

H_{2U}-CAN-BD H_{2U}-XP   CANlink H_{2U}-0808ERDR H_{2U}-4DAR H_{2U}-4TCR-XP

A maximum of 62 remote modules can be extended.

■ H_{1U} remote extension modules

H_{1U}-CAN-BD H_{1U}-XP   CANlink H_{2U}-0016ERDR H_{2U}-4ADR H_{2U}-4PTR-XP

A maximum of 62 remote modules can be extended.

■ Extension cards

For H_{2U}

H_{2U}-232-BD H_{2U}-422-BD H_{2U}-485IF-BD H_{2U}-ENET-BD H_{2U}-6A-BD H_{2U}-6B-BD H_{2U}-CAN-BD

For H_{1U}

H_{1U}-232-BD H_{1U}-CAN-BD H_{1U}-4A-BD

H₂ᵤ-XP/H₁ᵤ-XP Function Description

High speed Input

X000 to X005: capable of counting, pulse capturing and interrupt input

6 high speed counter (Max. freq. 60 kHz)

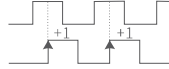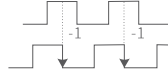High speed counter (total freq. ≤ 70 kHz)

Input side

3 types: single-phase single-input, single-phase dual-input, dual-phase dual-input
Nonstandard models are compatible with single-phase 100 kHz
or dual-phase 50 kHz high speed pluses.

Settable quadruplicated frequency input (dual-phase counter)

Type of High Speed Counter		Pulse Input Signal Format	
Single-phase single-input		Counting input / Direction — UP — DOWN	
Single-phase dual-input		UP +1 +1 +1 / DOWN -1 -1 -1	
Dual-phase dual-input	1 time	Phase A / Phase B +1 +1 Forward	Phase A / Phase B -1 -1 Reverse
	4 times	Phase A +1 +1 +1 +1 +1 / Phase B +1 +1 +1 +1 Forward	Phase A -1 -1 -1 -1 -1 / Phase B -1 -1 -1 -1 -1 Reverse

High speed differential signal input via differential-to-OC conversion module

Differential encoder (ABZ)

H₂ᵤ-2DC

H₂ᵤ-XP
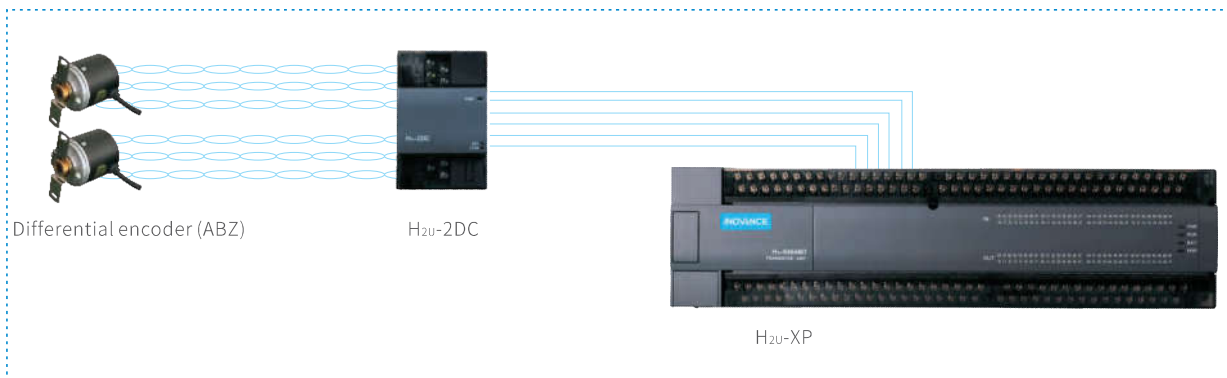
High speed Output

Three separate 100 kHz high speed pulse outputs
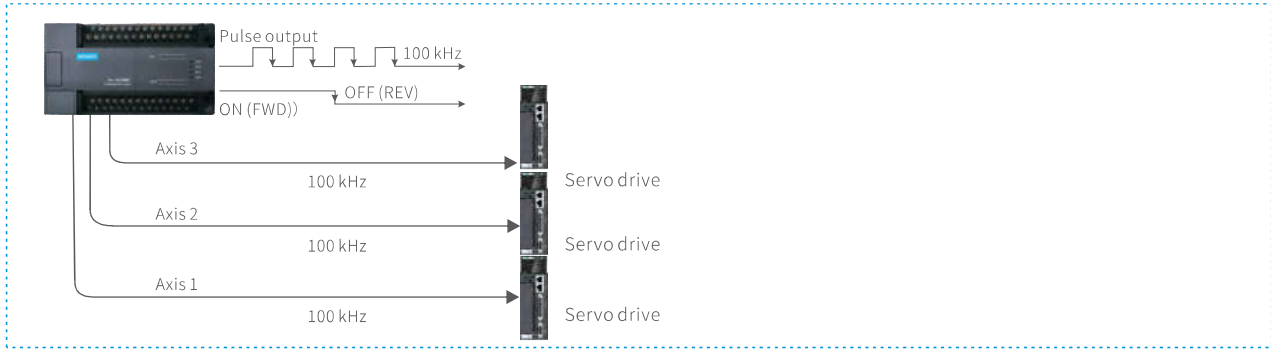
Pulse output

100 kHz

OFF (REV)

ON (FWD))

Axis 3

100 kHz

Servo drive

Axis 2

100 kHz

Servo drive

Axis 1

100 kHz

Servo drive

PLSY (pulse output)

PLSR (pulse output with accel/decel)
DRVI (relative position control)
DRVA (absolute position control)

Conveyor

Servo drive

H2U PLC

Sensor

Conveyor

Servo drive

H2U PLC

■ Pulse output interrupt

F

Running frequency

No. of pulses

Output interrupt response

T

Stop output

■ Pulse output interrupt

Accel/Decel time and frequency set separately

F

F2

No. of pulses

Output interrupt response

Accel time

Decel time

F1

Start

Stop

T

■ Pulse output forced to be enabled

F

Cmd 1 stops

Forced enabled

T

Cmd 1 RUN (same port)

Cmd 2 RUN (same port)

Cmd 2 RUN End

■ Pulse output forced to be enabled

F

F3

F2

No. of pulses

No. of pulses

F1

Cmd 1 Start

Cmd 2 Start

Cmd 1 End

Cmd 2 End

T

■ Output pulses and frequency adjustable

F

Change frequency and pulses

Reference frequency

T

Cmd enabled

Change point

Target 1

Target 2

■ Accel/Decel pulses adjustable

F

F2

No. of pulses

Accel time

Accel time

F1

Start

Change of pulses

End

End after change

T

H₂ᵤ-XP/H₁ᵤ-XP Function Description

Communication Performance

Various Types of Communication Ports

Support various types of communication protocols, which reduces user's costs.

■ H2U-XP

COM2: (RS485) 1:1; N:N; Modbus RTU/ASC (master/slave); PClink; Qlink; HMI monitoring protocol; free communication protocol

COM1: (RS485) 1:1; N:N; Modbus RTU/ASC (master/slave) PClink; Qlink; HMI monitoring protocol; free communication protocol

Extension cards:

H2U-CAN-BD: (CAN) CAN; CANlink

H2U-232-BD: (RS232) Modbus RTU/ASC (master/slave)

H2U-485IF-BD: (RS485 isolation) Modbus RTU/ASC (master/slave)

H2U-422-BD: (RS422) PClink; Modbus RTU/ASC (master/slave)

H2U-ENET-BD: (Ethernet) Modbus/TCP

Note: Any of these cards cannot be used with COM1 at the same time.

Mini USB: (bottom) for programing & commissioning

COM0: (RS422) Modbus RTU/ASC (slave); Qlink; HMI monitoring protocol

Note: Qlink — Inovance HMI and PLC automatically communicate with each other at high speed when they use Modbus communication.
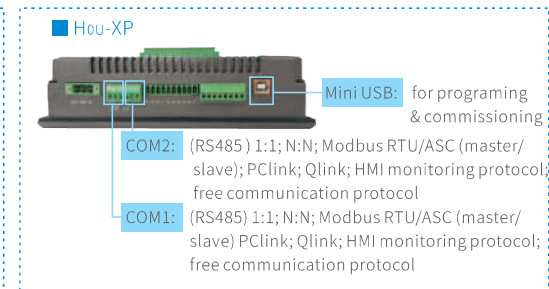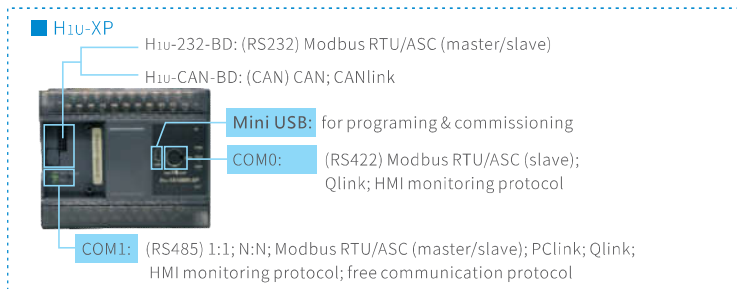
■ H1U-XP

H1U-232-BD: (RS232) Modbus RTU/ASC (master/slave)

H1U-CAN-BD: (CAN) CAN; CANlink

Mini USB: for programing & commissioning

COM0: (RS422) Modbus RTU/ASC (slave); Qlink; HMI monitoring protocol

COM1: (RS485) 1:1; N:N; Modbus RTU/ASC (master/slave); PClink; Qlink; HMI monitoring protocol; free communication protocol

■ H0U-XP

Mini USB: for programing & commissioning

COM2: (RS485) 1:1; N:N; Modbus RTU/ASC (master/slave); PClink; Qlink; HMI monitoring protocol; free communication protocol

COM1: (RS485) 1:1; N:N; Modbus RTU/ASC (master/slave) PClink; Qlink; HMI monitoring protocol; free communication protocol

Modbus Master/Slave Protocol

Our PLC can exchange data with a device that supports Modbus. As a master, the PLC can be programed via instructions or configuration. Programing via configuration requires no instructions but simply selecting data sheets in the software.
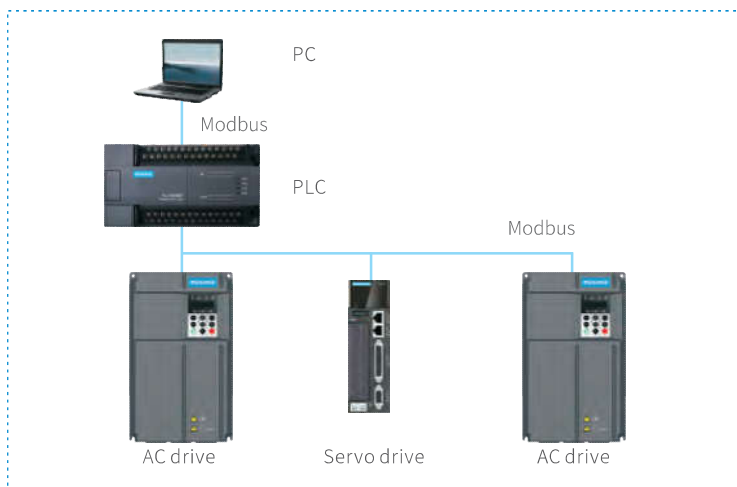
N:N Netowrk Protocol

With this N:N protocol, one master PLC can form a network with a maximum of 7 slave PLCs for data exchange. This greatly simplifies workload of programing for complicated systems and distributed control. Besides, the communication verification function is strengthened.

PC

Modbus

PLC

Modbus

AC drive   Servo drive   AC drive

PLC1

PLC2

PLC8

N:N RS485
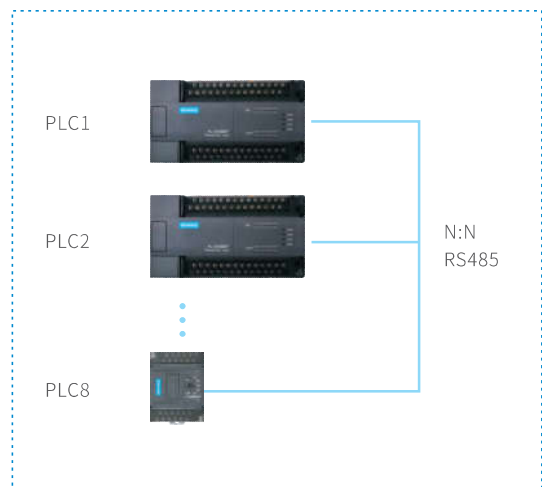
RS Instruction

User can write the free communication protocol of a random device via RS instruction.

1:1 Parallel Protocol

Two PLC can exchange data with each other at high speed. Highly reliably 1:1 redundancy backup is realized by master/slave configuration. In this case, if a PLC becomes faulty, operations can be transfered and continued to the standby PLC.

CANlink Communication Protocol

■ Provide CAN communication instructions;

■ Use Inovance CANlink protocol which facilitas programing and can realize fast connection between Inovance PLCs, AC drives and servo drives.
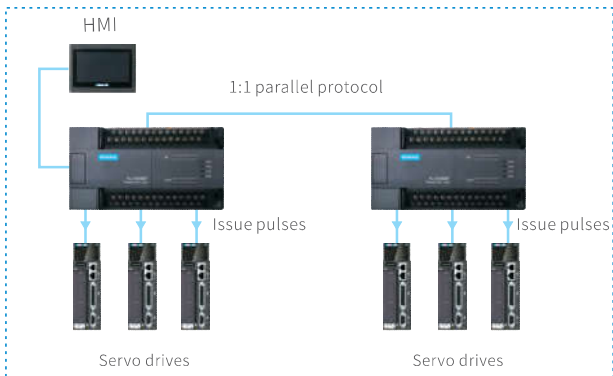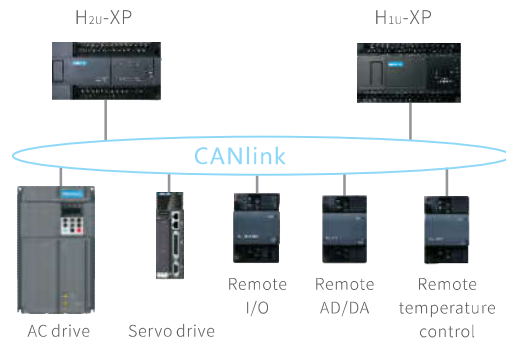
■ Programing via CANlink communication significantly improves efficiency of the application system.

Global Downloading & Commissioning of PLC Programs

Software update, monitoring and commissioning can be performed to a remote PLC via LAN, WAN or 3G/GPRS networks. Joint operation by various parties can also be realized. These greatly reduce workload of engineers since onsite commissioning is not required.

Note: This function works as of the following versions: H2u-XP V24138, H1u-XP V26130 and Autoshop V1.41.
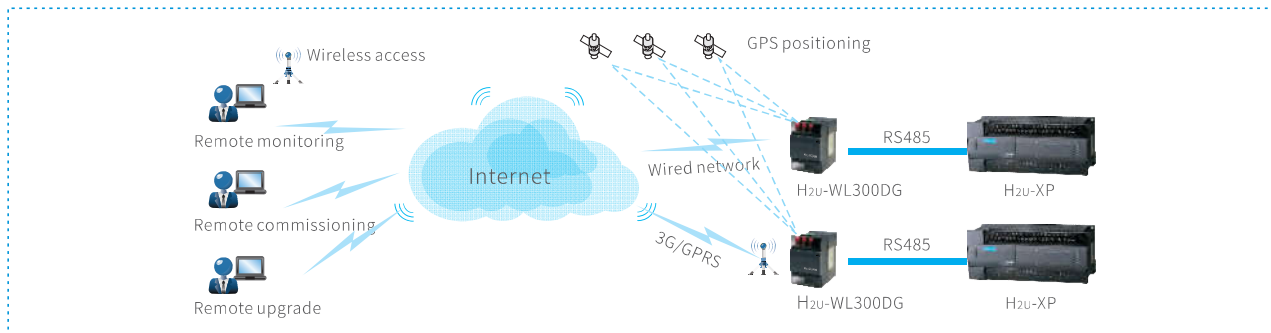
Reliable User Program Encryption

■ Password verification conducted by PLC, avoiding possibility of password decoding;

■ PLC software supports upload encryption, download encryption and sub-program encryption;

■ Each password contains 8 ASCII characters. System automatically locks the password if 10 wrong passwords have been input;

■ Package downloading function enables providing a package file without source codes for a third party to download;

■ Four encrypted sub-programs can be preset to protect user's own control techniques and to prevent unauthorized access;

■ Program and data storage is maintenance free;

■ Unique PLC identifiers effectively guarantees binding of user programs to the PLC, which prevents unauthorized usage.

Complete Instruction Sets

H2u supports floating point arithmetic instructions, positioning instructions and special application instruction.
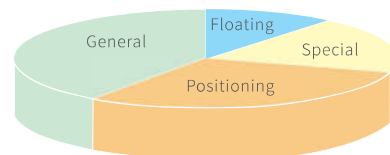
EMOV	Binary floating point number data transmission
EXP	Caculate index of binary floating point number
LOGE	Caculate natural logarithm of binary floating point number
LOG	Caculate common logarithm of binary floating point number
ASIN	Caculate SIN^{-1} of binary floating point number
ACOS	Caculate COS^{-1} of binary floating point number
ATAN	Caculate TAN^{-1} of binary floating point number
RAD	Convert binary floating point number from angle to radian
DEG	Convert binary floating point number from radian to angle
SINH	Caculate SINH of binary floating point number
COSH	Caculate COSH of binary floating point number
TANH	Caculate TANH of binary floating point number

Introduction to AutoShop

User-friendly Programing Interface

AutoShop adapts common programming interface, which is powerful, flexible, and easy to use. User can realize PLC program edititing and compiling, monitoring, commissioning, and etc.

Sub-programs and interrupt sub-programs are compiling separately from the main program, which facilitates division of work by multiple persons. Besides, sub-programs can be imported and exported, which means they can be re-used in different projects. User can be benefited from sharing and re-utilization of programs.
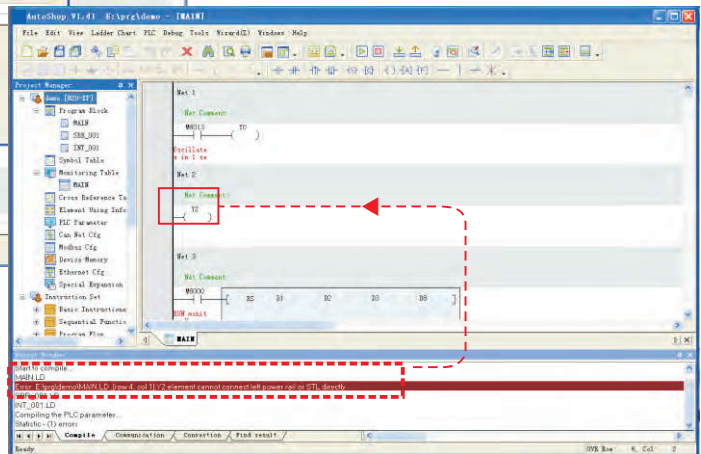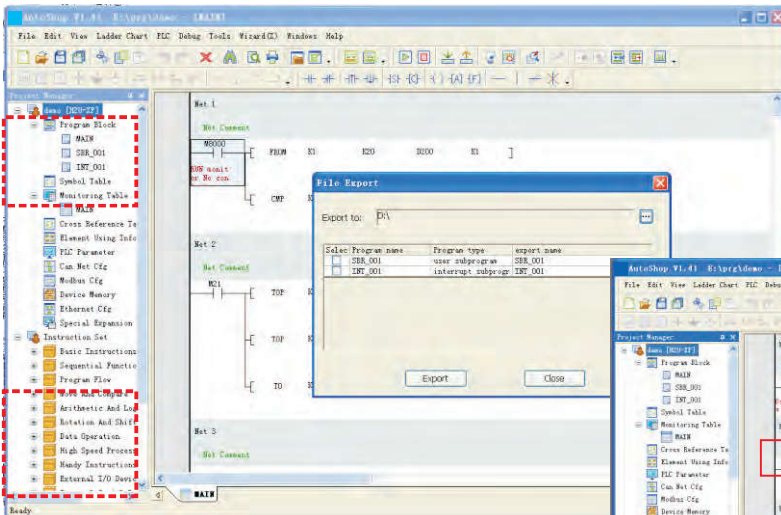
Programming Help & Debugging Guide

■ Memory instructions are not needed;

■ Press F1 during programming and you will get help;

■ Debugging guidd is provided when compiling user programs.

Powerful Instruction Guide

Instruction guide is provided for certain complex instructions, including PID instructions, high speed counter instructions, high speed pulse output instructions, positioning instructions.

Easy-to-use Extension Module Configuration

Configuration of extension modules can be quickly finished via configuration guides, through which module parameters can be easily set.
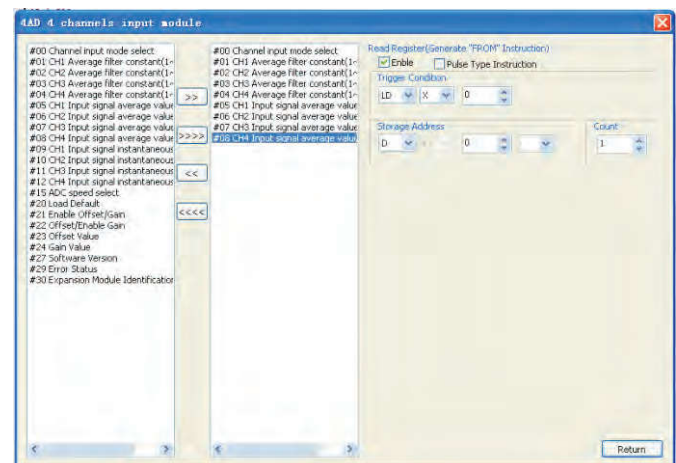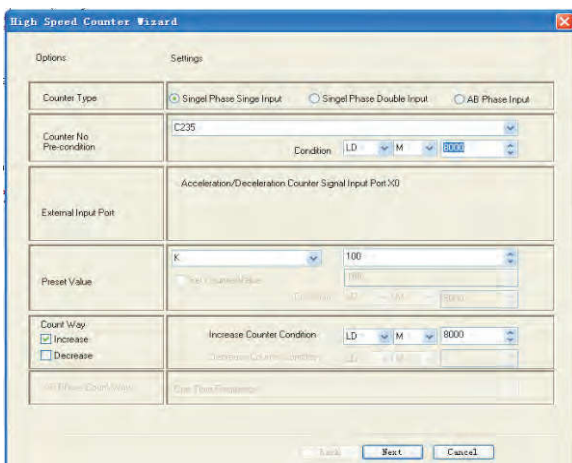
Convenient Serial Port, CANlink, Modbus and Ethernet Configuration

Different from the traditional communication programing via ladder diagrams, Autoshop uses configuration sheets to preset the required parameters and variables. These configuration sheets are downloaded to PLC together with user programs. PLC then automatically reads and writes such parameters and variables.

Autoshop provides convenient serial port, CANlink, Modbus and Ethernet configuration. Thus, communication can be fast realized without writing a single instruction.

Advantages of communication configuration:

■ Significantly simplify user programs and speed up communication;

■ Improve communication efficiency since PLC system program automatically reads and outputs data;

■ Speed up user program scanning;

■ Execution speed is not affected even when external communication fault exists.
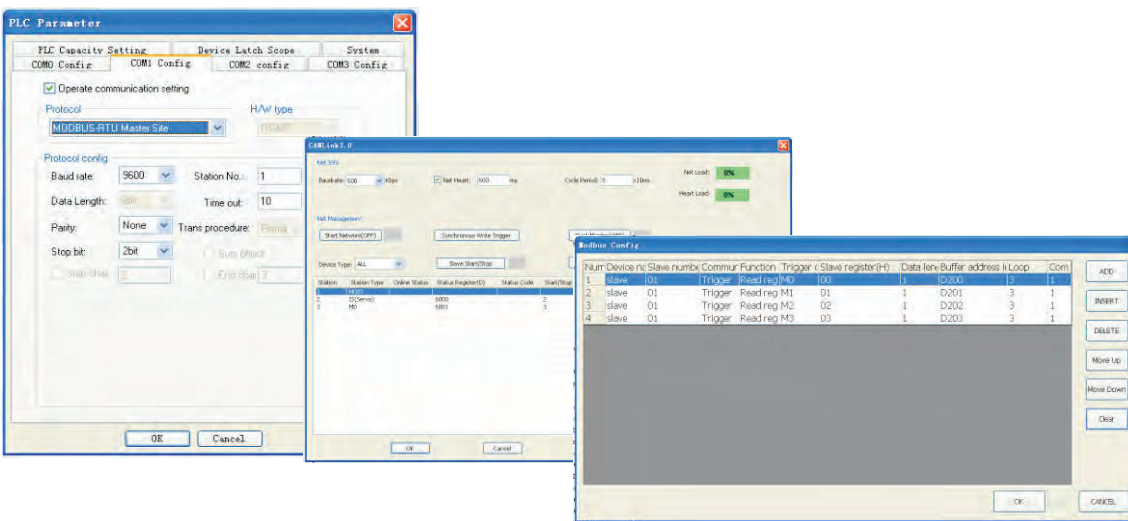
Flexible Monitoring

Autoshop provides three monitoring modes: real-time monitoring, element monitoring and fast monitoring. Fast monitoring sheet can be used simutaneously with ladder diagrams, which facilitates program commissioning.

Logics and Register Monitor

Element values can be obtained continuously and displayed as curves which reflect the change tendency of element M or D in a certain period.

PC

PLC programing cable

PLC oscilloscope

PLC
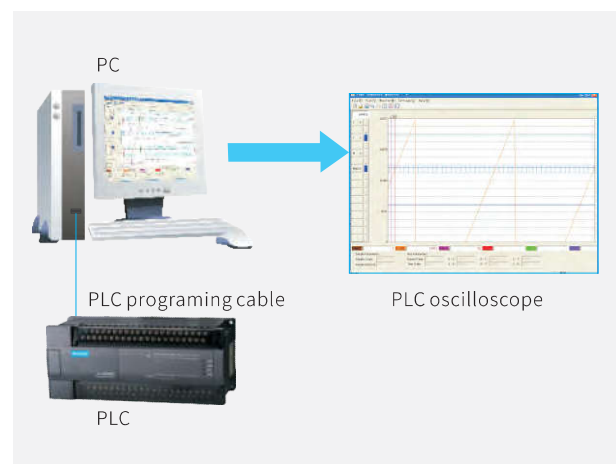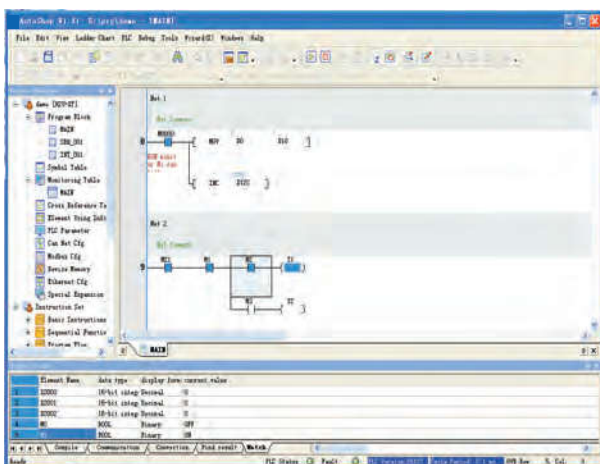
Description of MTQ/MTP/8AB/8A91G PLC

01 / MTQ Model

MTQ model PLC provides six 100 kHz pulse inputs and five 100 kHz pulse outputs.

High speed input

Six high speed inputs provide counting, pulse capturing, interrupt input and pulse density detection functions.

High speed output

- Five separate 100 kHz pulse outputs;
- Each output provide interrupt function;
- Number of pulses can be adjusted during running;
- Accel/Decel can be set separately via accel/decel control instructions;
- Immediate pulse output enabled can be controlled.

Five separate axes, 100 kHz (max.) pulse output

Pulse output 100 kHz
ON (FWD) OFF (REV)

Axis 5
Axis 4 — 100 kHz — Servo drive
— 100 kHz — Servo drive
Axis 1
— 100 kHz — Servo drive

02 / MTP Model

MTP model PLC provides eight 100 kHz pulse outputs.

High speed output
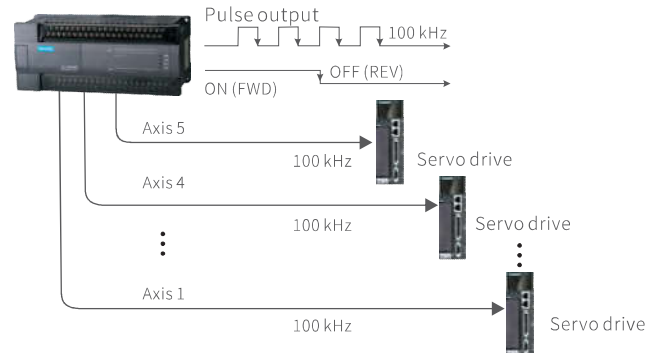
- Eight separate 100 kHz pulse outputs;
- Each output provide interrupt function;
- Number of pulses can be adjusted during running;
- Accel/Decel can be set separately via accel/decel control instructions;
- Immediate pulse output enabled can be controlled.

Eight separate axes, 100 kHz (max.) pulse output

Pulse output 100 kHz
ON (FWD) OFF (REV)

Axis 8 — Servo drive
— 100 kHz — Servo drive
Axis 7
— 100 kHz — Servo drive
Axis 1
— 100 kHz
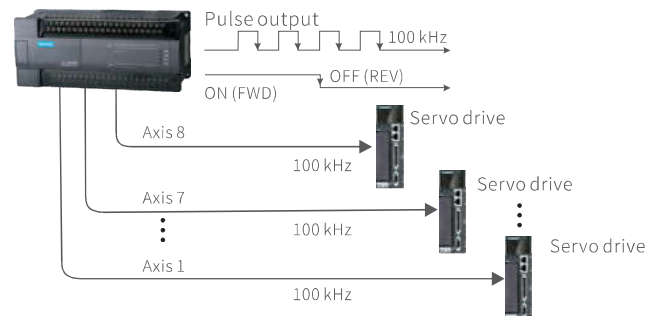
03 / 8AB Model

- H$_{2U}$-4040MR-8AB model PLC: 8-channel AB phase inputs, 40-points inputs, 40-point relay outputs.

This PLC can realize 8-channel AB phase high speed counting. Frequency reaches up to 100 kHz for single-phase counting and 20 kHz for dual-phase counting.

AB encoder 1   2   3 ••• 7   8

04 / 8A91G Model

- Designed based on the HW and SW platform of H$_{2U}$-1616MR-XP; DI x8; DO x10 (two of them are transistor outputs, able to output high-speed pulses); relay output x8 (allowable max. current 8A, in-built voltage-dependent resistors); AO x 1 (0-10V);
- Two temperature detection channels, using PT100 sensors;
- Two pressure detection channels, using 4-20 mA transmitter signals;
- With phase sequence detection function for AC power supply, applicable to 100-690 VAC power supply;
- Two current and phase loss detection ports for 3-phase motor protection, using Cts;
- Four independent serial communication ports, realizing parallel communication simultaneously with HMI, Host/3G module, AC drive or other PLC;
- With CANlink 3.0 and Ethernet extension functions, USD downloading and monitoring function, supporting extension of remote modules.

GPRS to IOT
DI x8
PT100 temp. sensor (x2)
4-20mA pressure transmitter (x2)
COM1 to host PC
COM0 to HMI
Power supply
Phase sequence detect
COM3 for AC drive control
Extensible CANlink3.0 communication
COM2 N:N parallel communication
3-phase motor current detect
Control output (2T+8R)
CT1   CT2
Contactor
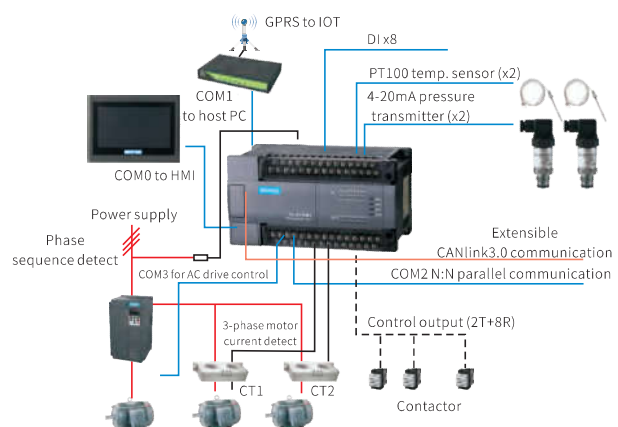
InoTouch Series HMI

Penetrating Communication

Traditonally, a communication cable needs to be plugged in and out between the HMI and PLC so as to commissioning the HMI or PLC software on PC. This method is inconvenent and may cause damage of the communication port due to repetitive plug-in and plug-out operations.

Inovance HMI communicates with PC via USB or Ethernet. In this case, uploading/downloading and monitoring of PLC programs can be performed on PC without pulling out the communication cable between HMI and PLC. This greatly reduces workload of commissioning.

PC traverses the HMI and directly communicates with PLC for software uploading/downing and monitoring.
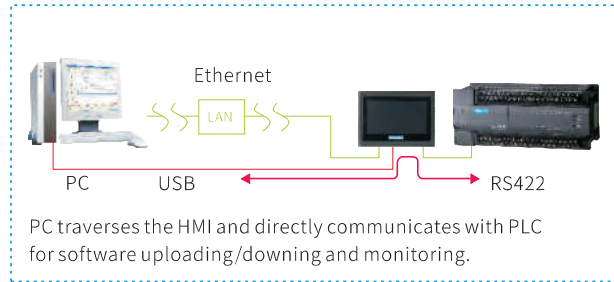
HMI-PLC Fast Communication via Qlink

Qlink communication: When Inovance HMI communicates with PLC Modbus protocol, the communication automatically speeds up.
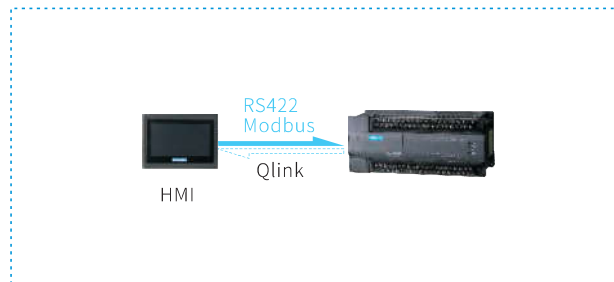
Program Update via U Disk

HMI fireware, screen programs and recipe data of HMI can be conveniently updated by plugging in a U disk that stores such data. PLC programs can also be updated in this way when an Inovance PLC is used together with the HMI. This function specially facilitates software downloading applications with large amount of production equipment.
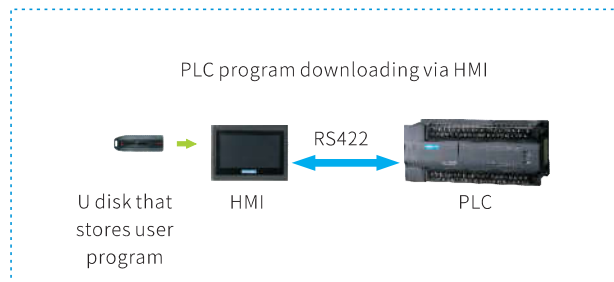
HMI Program Off-line Simulation

HMI screen programs can be simulated and commissioned on PC, without using the PLC.
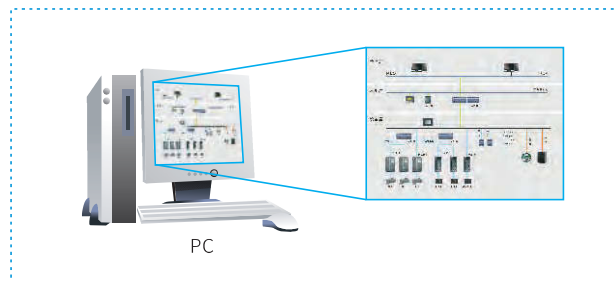
HMI Program On-line Simulation

Connect a PLC to PC with a serial port programing cable. Then, HMI operations can be simulated on PC. For instance, communication between the HMI and PLC can be simulated on PC, which facilitates system commissioning.

Product Selection

H2U-XP PLC

H2U-1010MR/T-XP   H2U-1616MR/T-XP   H2U-3624MR/T-XP

H2U-2416MR/T-XP   H2U-3232MR/T-XP

H2U-4040MR/T-XP   H2U-6464MR/T-XP

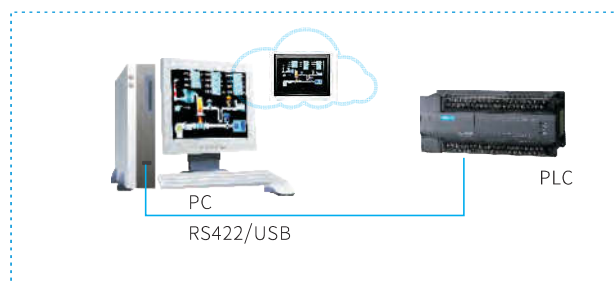| Model	Description
H2U-1010MR-XP	I/O: 10 inputs 10 outputs, 20-point relay output (60K x2/10Kx4 high speed inputs)
H2U-1010MT-XP	I/O: 10 inputs 10 outputs, 20-point transistor output (60K x2/10K x4 high speed inputs; 100K x3 high speed outputs)
H2U-1616MR-XP	I/O: 16 inputs 16 outputs, 32-point relay output (60K x6 high speed inputs)
H2U-1616MT-XP	I/O: 16 inputs 16 outputs, 32-point transistor output (60K x6 high speed inputs; 100K x3 high speed outputs)
H2U-2416MR-XP	I/O: 24 inputs 16 outputs, 40-point relay output (60K x2/10K x4 high speed inputs)
H2U-2416MT-XP	I/O: 24 inputs 16 outputs, 40-point transistor output (60K x2/10K x4 high speed inputs; 100K x2 high speed outputs)
H2U-3624MR-XP	I/O: 36 inputs 24 outputs, 60-point relay output (60K x2/10K x4 high speed inputs)
H2U-3624MT-XP	I/O: 36 inputs 24 outputs, 60-point transistor output (60K x2/10K x4 high speed inputs; 100K x2 high speed outputs)
H2U-3232MR-XP	I/O: 32 inputs 32 outputs, 64-point relay output (60K x2/10Kx4 high speed inputs)
H2U-3232MT-XP	I/O: 32 inputs 32 outputs, 64-point transistor output (60K x2/10Kx4 high speed inputs; 100K x3 high speed outputs)
H2U-4040MR-XP	I/O: 40 inputs 40 outputs, 80-point relay output (60K x2/10Kx4 high speed inputs)
H2U-4040MT-XP	I/O: 40 inputs 40 outputs, 80-point transistor output (60K x2/10Kx4 high speed inputs; 100K x3 high speed outputs)
H2U-6464MR-XP	I/O: 64 inputs 64 outputs, 128-point relay output (60K x2/10Kx4 high speed inputs)
H2U-6464MT-XP	I/O: 64 inputs 64 outputs, 128-point transistor output (60K x2/10Kx4 high speed inputs; 100K x3 high speed outputs)
H2U-3232MTQ	I/O: 32 inputs 32 outputs, 64-point transistor output (100K x6 high speed inputs; 100K x5 high speed outputs)
H2U-3232MTP	I/O: 32 inputs 32 outputs, 64-point transistor output (100K x8 high speed outputs)
H2U-4040MR-8AB	I/O: 40 inputs 40 outputs, 80-point relay output (100K x8 AB-phase high speed outputs)
H2U-1616MTS	I/O: 16 inputs 16 outputs, 32-point transistor output (dedicated for hydropower industry)
H2U-8A91G-XP	Dedicated controller with analog I/O: DI x8, DO x10, AI x9, AO x1, SCI x4

H1u-XP PLC

| H1u-0806MR/T-XP | H1u-1410MR/T-XP | H1u-1614MR/T-XP | H1u-2416MR/T-XP | H1u-3624MR/T-XP |

Model	Description
H1u-0806MR-XP	I/O: 8 inputs 6 outputs, 14-point relay output (60K x2/10K x4 high speed inputs)
H1u-0806MT-XP	I/O: 8 inputs 6 outputs, 14-point transistor output (60K x2/10K x4 high speed inputs; 100K x3 high speed outputs)
H1u-1208MR-XP	I/O: 12 inputs 8 outputs, 20-point relay output (60K x2/10K x4 high speed inputs)
H1u-1208MT-XP	I/O: 12 inputs 8 outputs, 20-point transistor output (60K x2/10K x4 high speed inputs; 100K x3 high speed outputs)
H1u-1410MR-XP	I/O: 14 inputs 10 outputs, 24-point relay output (60K x2/10K x4 high speed inputs)
H1u-1410MT-XP	I/O: 14 inputs 10 outputs, 24-point transistor output (60K x2/10K x4 high speed inputs; 100K x3 high speed outputs)
H1u-1614MR-XP	I/O: 16 inputs 14 outputs, 30-point relay output (60K x2/10K x4 high speed inputs)
H1u-1614MT-XP	I/O: 16 inputs 14 outputs, 30-point transistor output (60K x2/10K x4 high speed inputs; 100K x3 high speed outputs)
H1u-2416MR-XP	I/O: 24 inputs 16 outputs, 40-point relay output (60K x2/10K x4 high speed inputs)
H1u-2416MT-XP	I/O: 24 inputs 16 outputs, 40-point transistor output (60K x2/10K x4 high speed inputs; 100K x3 high speed outputs)
H1u-2820MR-XP	I/O: 28 inputs 20 outputs, 48-point relay output (60K x2/10K x4 high speed inputs)
H1u-2820MT-XP	I/O: 28 inputs 20 outputs, 48-point transistor output (60K x2/10K x4 high speed inputs; 100K x3 high speed outputs)
H1u-3624MR-XP	I/O: 36 inputs 24 outputs, 60-point relay output (60K x2/10K x4 high speed inputs)
H1u-3624MT-XP	I/O: 36 inputs 24 outputs, 60-point transistor output (60K x2/10K x4 high speed inputs; 100K x3 high speed inputs)

H0U-XP

H0U-0808MR-XP

Model	Description
H0U-0808MR-XP	8 inputs 8 outputs (relay output); RS485 port x2; USB port x1;
H0U-0808MRT-XP	8 inputs 8 outputs (4 transistor & 4 relay outputs: 100K x2 high speed outputs); RS485 port x2; USB port x1
H0U-1616MR-XP	16 inputs 16 outputs (relay output); RS485 port x2; USB port x1
H0U-1616MRT-XP	16 inputs 16 outputs (4 transistor & 12 relay outputs: 100K x2 high speed outputs); RS485 port x2; USB port x1
H0U-0808MR-XP-6AT	8 inputs 8 outputs (relay output); RS485 port x2; USB port x1; support 6AT analog card
H0U-0808MRT-XP-6AT	8 inputs 8 outputs (4 transistor & 4 relay outputs: 100K x2 high speed outputs); RS485 port x2; USB port x1; support 6AT analog card
H0U-1616MR-XP-6AT	16 inputs 16 outputs (relay output); RS485 port x2; USB port x1; support 6AT analog card
H0U-1616MRT-XP-6AT	16 inputs 16 outputs (4 transistor & 12 relay outputs: 100K x2 high speed outputs); RS485 port x2; USB port x1; support 6AT analog card

Note:

6AT: 2 voltage/current analog inputs (current: 0 to 20mA/4 to 20mA; voltage: -10 to 10V)

2 voltage/current analog outputs (current: 0 to 20mA/4 to 20mA; voltage: -10 to 10V)

2 temperature detectors (supporting both Pt100 and TC detection), which are switched over via the internal data register.

HMI

IT6043T   IT6070T   IT6070E   IT6100E

Model	Description
IT6043T	4.3" HMI:USB(Type B)x1, Serial port x 3
IT6070T	7.0'' HMI: USB (Type A) x 1, USB (Type B) x 1, Serial port x 3
IT6070E	7.0'' HMI: USB (Type A) x 1, USB (Type B) x 1, Serial port x 3, Ethernet port x 1
IT6100E	10.1'' HMI: USB (Type A) x 1, USB (Type B) x 1, Serial port x 3, Ethernet port x 1

H2U-XP Extension Modules

Model	Description	Applicable PLC	
		H1U-XP	H2U-XP
H2U-0016ERN	16-point relay output module (local)	—	✓
H2U-0016ETN	16-point transistor output module (local)	—	✓
H2U-1600ENN	16-point input module (local)	—	✓
H2U-0800ENN	8-point input module (local)	—	✓
H2U-0008ERN	8-point relay output module (local)	—	✓
H2U-0008ETN	8-point transistor output module (local)	—	✓
H2U-0404ERN	4-point digital input & 4-point relay output module (local)	—	✓
H2U-0404ETN	4-point digital input & 4-point transistor output module (local)	—	✓
H2U-0808ERN	8-point digital input & 8-point relay output module (local)	—	✓
H2U-0808ETN	8-point digital input & 8-point transistor output module (local)	—	✓
H2U-2AD	2-channel voltage/current input module (local)	—	✓
H2U-2DA	2-channel voltage/current output module (local)	—	✓
H2U-4AD	4-channel voltage/current input module (local)	—	✓
H2U-4DA	4-channel voltage/current output module (local)	—	✓
H2U-4PT-XP	4-channel thermistor input module (local)	—	✓
H2U-4TC-XP	4-channel thermocouple input module (local)	—	✓
H2U-4AM	2-channel voltage/current input & 2-channel voltage/current output module (local)	—	✓
H2U-6AM	4-channel current input & 2-channel voltage/current output module (local)	—	✓
H2U-6CM	4-channel voltage input & 2-channel voltage/current output module (local)	—	✓
H2U-2DC	Differential-to-OC (2 groups) output conversion module	✓	✓
H2U-0016ERDR	16-point relay output module (remote)	✓	✓
H2U-0016ETDR	16-point resistor output module (remote)	✓	✓
H2U-1600ENDR	16-point input module (remote)	✓	✓
H2U-0808ERDR	8-point digital input & 8-point relay output module (remote)	✓	✓
H2U-0808ETDR	8-point digital input & 8-point transistor output module (remote)	✓	✓
H2U-4ADR	4-channel voltage/current input module (remote)	✓	✓
H2U-4DAR	4-channel voltage/current output module (remote)	✓	✓
H2U-4PTR-XP	4-channel thermistor input module (remote)	✓	✓
H2U-4TCR-XP	4-channel thermocouple input module (remote)	✓	✓

Product Selection

Extension Cards

Model	Description	Applicable PLC	
		H_{1U}-XP	H_{2U}-XP
H_{1U}-CAN-BD	H_{1U} CAN communication card (for remote module)	✓	—
H_{1U}-232-BD	RS232 communication card	✓	—
H_{1U}-4A-BD	4A AI extension card (2 voltage/current inputs, 2 voltage outputs)	✓	—
H_{2U}-232-BD	RS232 communication card	—	✓
H_{2U}-422-BD	RS422 communication card	—	✓
H_{2U}-485IF-BD	RS485 communication card (isolated power supply)	—	✓
H_{2U}-CAN-BD	H_{2U} CAN communication card (for remote module)	—	✓
H_{2U}-ENET-BD	Ethernet communication card	—	✓
H_{2U}-6A-BD	6A AI extension card (2 voltage inputs, 2 current inputs, 2 voltage/current outputs)	—	✓
H_{2U}-6B-BD	6B AI extension card (4 current inputs, 2 voltage/current outputs)	—	✓

PLC/HMI Communication Cables

Model	Description
H_{2U}-232-CAB	RS232 download cable for PLC
H_{2U}-EXP-CAB	PLC extension cable
H_{2U}-BAT	PLC battery
IT5-USB-CAB	Download cable for HMI
IT5-H_{2U}-CAB	Connection cable between Inovance PLC and HMI

Product Configuration & Performance

H2U-XP/H1U-XP Series PLC

Technical Specifications

Item		H1U-XP	H2U-XP
Operation control mode		Circular scanning, interrupt commands	
I/O control mode		Batch processing (when executing END instruction); instant refresh I/O	
Programing language		Step ladder, instruction list and SFC	
Max. memory capacity		16K steps (including notes file register)	
Tyep of instructions	SFC & STL	27 sequence instructions, 2 step ladder instructions	
	Applied instruction	128 instructions	**298** instructions
Processing speed	Basic instruction	0.098 µs/instruction	
	Applied instruction	0.4 to hundreds of µs/instruction	
I/O points	Total input points (with extension)	X000 to X377 (octal)	256 points
	Total output points (with extension)	Y000 to Y377 (octal)	256 points
	Total I/O points (with extension)	Octal	256 points
Auxiliary relay	General use ※1	M0 to M383: 384 points	M0 to M499: 500 points
	Retentive use ※2	M384 to M3072: 2688 points	M500 to M1023: 524 points
	Retentive use ※3	—	M1024 to M3071: 2048 points
	Speical use	M8000 to M8511: 512 points	M8000 to M8511: 512 points
Status register	Initialization	S0 to S9	Retentive
	General use ※1	S10 to S499	
	Retentive use ※2	S500 to S899	
	Signal use ※2	S900 to S999	
Timer (time limit)	100 ms	T0 to T199: 200 points (0.1 to 3,276.7s)	
	10 ms	T200 to T245: 46 points (0.01 to 327.67s)	
	1 ms accumulative ※3	T246 to T249: 4 points (0.001 to 32.767s)	
	100 ms accumulative ※3	T250 to T255: 6 points (0.1 to 3276.7s)	
Counter	16-bit single direction ※1	C0 to C99: 100 points (0 to 32767 counting)	
	16-bit single direction ※2	C100 to C199: 100 points (0 to 32767 counting)	
	32-bit dual-direction ※1	C200 to C219: 20 points (-2147483648 to +2147483647 counting)	
	32-bit dual-direction ※2	C220 to C234: 15 points (-2147483648 to +2147483647 counting)	
	32-bit high speed dual-direction ※2	C235 to C255: 21 points (-2147483648 to +2147483647 counting)	
Data register (two registers: 32 bit)	16-bit (general use) ※1	D0 to D127: 128 points	D0 to D199: 200 points
	16-bit (retentive use) ※2	D128 to D7999: 7872 points	D200 to D511: 312 points
	16-bit (retentive use) ※3	—	D512 to D7999: 7488 points (File register can be set at a unit of 500 points after D1000.)
	16-bit (special use)	D8000 to D8511: 512 points	D8000 to D8511: 512 points
	16-bit (indexed addressing)	V0 to V7, Z0 to Z7: 16 points	
Pointer	CALL and CJ jump	P0 to P127: 128 points	
	Input interrupt	I00X to I50X: 6 points	
	Timing interrupt	I6XX to I8XX: 3 points	
	Counting interrupt	I010 to I060: 6 points	
Nesting	Main control	N0 to N7: 8 points	
Constant	Decimal (K)	16 bit: -32,768 to +32,767; 32 bit: -2,147,483,648 to +2,147,483,647	
	Hexadecimal (H)	16 bit: 0 to FFFF; 32 bit: 0 to FFFFFFFF	

※1 Non-battery storage area: can be set as "Battery storage area".

※2 Battery storage area: can be set as "Non-battery storage area".

※3 Fixed battery storage area: storage feature cannot be changed.

Product Configuration & Performance

H2U-XP/H1U-XP Series PLC

Electrical Specifications

Electrical Input Specifications

Item		High Speed Input (X0 to X7)	Common Input
Signal input mode		Sourcing, sinking	
Electrical parameter	Detection voltage	18 to 30 V	
	Input impedance	3.3 kΩ	4.3 kΩ
	Input being ON	Input current > 4.5 mA	Input current > 3.5 mA
	Input being OFF	Input current < 1.5 mA	Input current < 1.5 mA
Filtering	Digital filtering	Terminals X0 to X7 provide digital filtering. Filtering time can be adjusted from 0 to 60 ms.	
	Hardware filtering	I/O terminals except X0 to X7 provide hardware filtering. Filtering time is about 10 ms.	
High speed function		X0 to X5: capable of high speed counting, interruption and pulse capturing; X0 and X1: max. counting frequency up to 60 kHz; X2 to X5: max. counting frequency up to 10 kHz (some can reach 60 kHz)	
Common terminal		Common terminal is S/S. Signal input mode is sinking when S/S is connected to 24V power. Signal input mode is sourcing when S/S is connected to COM.	

Electrical Output Specifications

Item		Relay Output	Transistor Output
Loop power voltage		≤ 250 VAC, ≤ 30 VDC	5 to 30 VDC
Circuit insulation		By relay	Optocoupler
Operation indication		LED ON when relay output contact closes	LED ON when optocoupler is driven
Open-circuit leakage current		/	< 0.1 mA/30 VDC
Minimum load		2 mA/5 VDC	5 mA (5 to 30 VDC)
Max. output current	Resistive load	2 A/1 point; 8 A/4 points using a COM; 8 A/8 points using a COM	Y0 to Y2: 0.5 A/point; Others: 0.5 A/points; 0.8 A/4 points; 1.6 A/8 points
	Inductive load	220 VAC, 80 VA	Y0 to Y2: 7.2 W/24 VDC; Others: 12 W/24 VDC
	Illumination load	220 VAC, 100W	Y0 to Y2: 0.9 W/24 VDC; Others: 1.5 W/24 VDC
ON response time		Max. 20 ms	Y0 to Y2:10 µs; Others: 0.5 ms
OFF response time		Max. 20 ms	
Y0/Y1/Y2 output frequency		/	Each channel: 100 kHz
Output common terminal		Each group uses a common terminal. Groups are isolated with each other.	
Fuse protection		No	

Extension Modules

Digital I/O Extension Modules

■ Digital I/O modules include input modules, output modules and mixed I/O modules. A total of 15 I/O extension modules are provided, makeing configuration flexible and economic.

■ Note: H1U-XP can only be extended with remote modules (max. 62 modules); H2U-XP can be extended with both local and remote modules (max. 8 local and 62 remote modules).

Input Module	Output Module	Mixed I/O Module

H₂U-1600ENN
H₂U-1600ENDR
H₂U-0800ENDR

H₂U-0016ERN
H₂U-0016ERDR
H₂U-0016ETN
H₂U-0016ETDR
H₂U-0008ERN
H₂U-0008ETN

H₂U-0404ERN
H₂U-0404ETN
H₂U-0808ERN
H₂U-0808ERDR
H₂U-0808ETN
H₂U-0808ETDR

Item		Common Input	
Signal input mode		Sourcing, sinking Signal input mode is sinking when S/S is connected to 24V power. Signal input mode is sourcing when S/S is connected to COM.	
Electricalparameter	Detection voltage	24Vdc	
	Input impedance	4.3kΩ	
	Input being ON	3.5mA Min	
	Input being OFF	1.5mA Max	
Filtering	Digital filtering	No	
	Hardware filtering	Filtering time: about 10 ms	
Common terminal		Only one common terminal: S/S	
Item		**Common Output**	**Transistor Output**
Loop power voltage		≤ 250 VAC, ≤ 30 VDC	5 to 24 VDC
Circuit insulation		By relay	Optocoupler
Operation indication		LED ON when relay output contact closes	LED ON when optocoupler is driven
Open-circuit leakage current		/	< 0.1 mA/30 VDC
Minimum load		2 mA/5 VDC	5 mA (5 to 24 VDC)
Max. output current	Resistive load	2 A/1 point; 8 A/4 points using a COM; 8 A/8 points using a COM	0.5 A/points; 0.8 A/4 points; 1.6 A/8 points
	Inductive load	220 VAC, 80 VA	12 W/24 VDC
	Illumination load	220 VAC, 100 W	1.5 W/24 VDC
ON response time		Max. 20 ms	Max. 0.5 ms
OFF response time		Max. 20 ms	
Output common terminal		Each group uses a common terminal. Groups are isolated with each other.	
Fuse protection		No	

Extension Modules

Analog Extension Modules

Analog extension modules voltage/current input and output modules, and mixed voltage/current I/O modules. These modules are capable of collecting various analog quantities in actual industrial applications.

■ AD: Convert analog (voltage/current) signals from external device into digital signals

■ DA: Converts digital signals from PLC into analog (voltage/current) signals

Voltage/Current Input Module	Voltage/Current Output Module	Voltage/Current I/O Module
H₂ᵤ-2AD H₂ᵤ-4AD H₂ᵤ-4ADR	H₂ᵤ-2DA H₂ᵤ-4DA H₂ᵤ-4DAR	H₂ᵤ-4AM H₂ᵤ-6AM H₂ᵤ-6CM

Item	AD	Description
Voltage input signal level	AD(R): -10 to 10 VDC AM(R)/CM(R): 0 to 10 VDC	User sets the corresponding BFM according to the connected signal type.
Voltage channel input impedance	200 kΩ	
Current input signal	AD(R): -20 to 20 mA AM(R)/CM(R): 0 to 20 mA	
Current sampling resistance	250 Ω	
I/O channels	H₂ᵤ-4AD(R): 4 channels, 4 inputs H₂ᵤ-2AD(R): 2 channels, 2 inputs H₂ᵤ-4AM(R): 4 channels, 2 inputs 2 outputs H₂ᵤ-6AM(R): 6 channels, 4 inputs 2 outputs H₂ᵤ-6CM(R): 6 channels, 4 inputs 2 outputs	
Input signal frequency	< 10 Hz	
Conversion speed	4 ms/channel (normal speed) 2.1 ms/channel (max.)	
Digital output	Default: AD(R): -2000 to 2000 AM(R)/CM(R): 0 to 2000	Allowable range: AD(R): -10000 to 1000 AM(R)/CM(R): 0 to 10000
Resolution	Voltage input 5 mV, current input 20 µA	

Item	DA	Description
Voltage output signal level	-10V to 10 VDC	User sets the corresponding BFM according to the connected signal type.
External load impedance	2 kΩ	
Current output signal	0 to 20 mA	
External load impedance	< 500 Ω	
Output channels	H₂ᵤ-4DA(R): 4 channels, 4 outputs H₂ᵤ-2DA(R): 2 channels, 2 outputs	
Conversion speed	8 ms/channel	
Digital input	Default: -2000 to 2000	Allowable range: -10000 to 10000
Resolution	Voltage output: 5 mV	Corresponds to 10 V/2000
	Current output: 20 µA	Corresponds to 20 mA /1000
Precision	±1% full range (12-bit data)	
Occupied I/O points	No	
Isolation	Analog circuit and digital circuit are isolated with optocoupler. Analog circuit and external power supply are isolated with DC/DC. Analog input signal channels are not isolated with each other.	

Extension Modules

Temperature Control Extension Modules (Embedded with PID)

This module is able to get temperature from type K/J thermocouple or Pt100 thermistor and input it to PLC.

PLC or temperature control module embedded with PID instruction can then control the target value.

Temperature Control Extension Module	3G/WLAN Remote Access Extension Module
H₂ᵤ-4PT-XP H₂ᵤ-4PTR-XP H₂ᵤ-4TC-XP H₂ᵤ-4TCR-XP	H₂ᵤ-WL300DG

Item	4PT(R)	
Temperature detection sensor	Pt100	Cu50
Temperature detection range	Celsius degree: -200°C to +846°C Fahrenheit: -392F to +1554.8F	Celsius degree: -50°C to +150°C Fahrenheit: -58F to +302F
Input channels	4 channels	—
Conversion speed	15 ms/channel	—
Digital output	12 bit: -2048 to +2047	—
Resolution	0.1°C	—
Precision	±1% full range	—
Occupied I/O points	8 points	—
Isolation	Analog circuit and digital circuit are isolated with optocoupler. Analog circuit and external power supply are isolated with DC/DC. Analog input signal channels are not isolated with each other.	

Item	4TC(R)	
	Celsius Degree	Fahrenheit
Temperature detection sensor	Type K/J thermocouple	
Temperature detection range	Type K: -100°C to +1200°C Type J: -100°C to +600°C	Type K: -148F to +2192F Type J: -148F to +1112F
Input channels	4 channels	
Conversion speed	240 ms/4 channel	S900 to S999: 100 points
Digital output	Type K: -1000 to +12000 Type J: -1000 to +6000	Type K: -1480 to +21920 Type J: -1480 to +11120
Resolution	0.1°C	0.1F
Precision	±0.5% full range +1°C	
Occupied I/O points	8 points	
Isolation	Analog circuit and digital circuit are isolated with optocoupler. Analog circuit and external power supply are isolated with DC/DC. Analog input signal channels are not isolated with each other.	

Item		H₂ᵤ-WL300DG
3G communication	GSM frequency band	EDGE/GPRS/GSM:1900/1800/900/850MHz
	UMTS frequency band	HSUPA/HSDPA/WCDMA 2100/1900/850 (900) MHz
	RxDiv frequency band	2100/1900/850 (900) MHZ
GPS	Certification	CCC, CE
	Precision	5mCEP
WIFI	Wireless standard	802.11 b/g
	Transmission speed	Max. 54 Mbps
	Frequency range	2.400 to 2.484 GHz
	Encryption mode	WEP, TKIP (WPA), AES/CCMP (WPA2)
Video input	Signal	CVBS composite signal
Ethernet	Transmission speed	10M/100M self-adaption
RS485	Transmission speed	Baud rate ≤ 115,200 bps

Extension Cards

Communication Extension Cards

| H1U-CAN-BD | H1U-232-BD | H2U-232-BD | H2U-422-BD | H2U-485IF-BD | H2U-CAN-BD | H2U-ENET-BD |

Analog Extension Cards
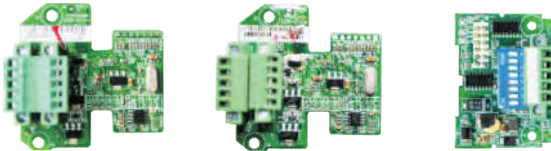
| H2U-6A-BD | H2U-6B-BD | H1U-4A-BD |

Item		Parameter		Description
AI	Input channels	2/4 channels		
	Signal level (differential mode)	H1U-4A-BD	Ch 1/2: 0 to 10 V, 0 to 20 mA	Ch 1/2 provide voltage or current signal input.
		H2U-6A-BD	Ch 1/2: 0 to 10V Ch 3/4: 0 to 20 mA	Ch 1/2 provide voltage signal input. Ch 3/4 provide current signal input.
		H2U-6B-BD	Ch 1/2/3/4: 0 to 20 mA	Ch 1/2/3/4 provide current signal input.
	Allowable common mode voltage	5 Vpp		
	Input impedance	$\geqslant 100\,k\Omega$		
	ADC sampling resolution	12 bit		
	Quantization error	0.3%		
	Sampling speed	1 ms/channel		Sampling rate can be adjusted.
AO	Output channels	2 channels		
	Signal level	0 to 10 VDC, 0 to 20 mA		H1U-4A-BD: only voltage output H2U-6A-BD & H2U-6B-BD: voltage and current output
	DAC resolution	12 bit		
	Allowable min. load for voltage signals	$2\,k\Omega$		
	Allowable load resistance for current signals	250 to 500 Ω		
	Refresh rate	1 ms		DA response time is dependent on user program scan.
	Working power supply	-5V, +5V, +24V		Provided by PLC basic module

Other Extension Cards

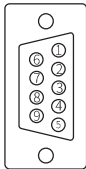| H2U-8ET2AMR-BD | ITC-NXXA1410MTA | ITC-NXXA0202EA |

Model	Description
H2U-8ET2AMR-BD	Remote extension card: DI x4, DO x4, AI x1, AO x1
ITC-NXXA1410MTA	Plate-type PLC with 24-point transistor output
ITC-NXXA0202EA	Analog extension card: voltage/current AI x2, voltage AO x2, wtih CAN function

Pin Layout

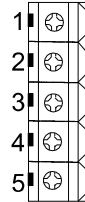## Extension Cards

### Extension cards for H₂ᵤ series PLC

■ H₂ᵤ-232-BD

Pin No.	Sig. Name	Function Description
1	CD	Check data carrier (input)
2	RXD	Receive data (input)
3	TXD	Send data (output)
4	DTR	Send data request (output)
5	GND	Signal ground
6	DSR	Send enabled (input)
7, 8	-	7&8 connected internally
9	-	No internal connection

■ H₂ᵤ-485IF-BD

Pin No.	Sig. Name	Function Description
1	RA	RS485 RXD+ signal
2	RB	RS485 RXD- signal
3	TA	RS485 TXD+ signal
4	TB	RS485 TXD- signal
5	GND	signal ground

■ H₂ᵤ-6A-BD
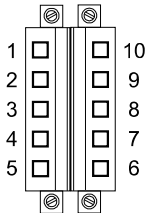
Pin No.	Sig. Name	Function Description
1	V1+	Ch1 voltage sig. input
2	V2+	Ch2 voltage sig. input
3	I3+	Ch1 cur. sig. sampling resistor
4	I4+	Ch2 cur. sig. sampling resistor
5	GND	Common input grounding
6	GND	Common output grounding
7	IO1+	Ch1 current output
8	VO1+	Ch1 voltage output
9	IO2+	Ch2 current output
10	VO2+	Ch2 voltage output

■ H₂ᵤ-6B-BD
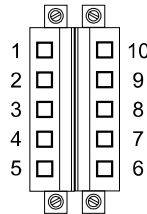
Pin No.	Sig. Name	Function Description
1	I1+	Ch1 current sig. input
2	I2+	Ch2 current sig. input
3	I3+	Ch3 current sig. input
4	I4+	Ch4 current sig. input
5	GND	Common input grounding
6	GND	Common output grounding
7	IO1+	Ch1 current output
8	VO1+	Ch1 voltage output
9	IO2+	Ch2 current output
10	VO2+	Ch2 voltage output

■ H₂ᵤ-422-BD
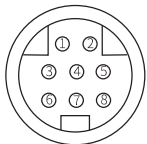
Pin No.	Sig. Name	Function Description
1	RB	RS485 RXD- signal
2	RA	RS485 RXD+ signal
3	GND	Signal ground
4	TB	RS485 TXD- signal
5	VDD	5V+
6	NC	NC
7	TA	RS485 TXD+ signal
8	NC	NC
Metal shield	GND	Signal ground

■ H₂ᵤ-CAN-BD
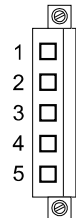
Pin No.	Sig. Name	Function Description
1	+24V	To positive of external 24V
2	CANH	CAN signal (high)
3	PGND	To shielding layer
4	CANL	CAN signal (low)
5	0V	To negative of external 24V

Extension cards for H₁ᵤ series PLC

■ H₁ᵤ-232-BD
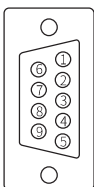
Pin No.	Sig. Name	Function Description
1	—	Check data carrier (input)
2	RXD	Receive data (input)
3	TXD	Send data (output)
4	—	Send data request (output)
5	GND	Signal ground
6	—	Send enabled (input)
7, 8	—	7&8 connected internally
9	—	No internal connection
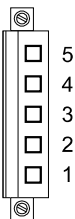
■ H₁ᵤ-4A-BD
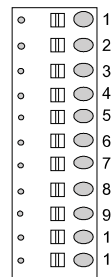
Pin No.	Sig. Name	Function Description
1	24V+	To positive of external 24V
2	0V	To negative of external 24V
3	V1+	Ch1 voltage input Ch1 current input
4	I1+	Short-connect with V1+
5	V/I1-	Ch1 voltage/current input
6	V2+	Ch2 voltage input
7	I2+	Ch2 current input Short-connect with V2+
8	V/I2-	Ch2 voltage/current input
9	VO1+	Ch1 voltage output
10	VO2+	Ch2 voltage output
11	VO-	Common voltage output

■ H₁ᵤ-CAN-BD

Pin No.	Sig. Name	Function Description
1	+24V	To positive of external 24V
2	CANH	CAN signal (high)
3	PGND	To shielding layer
4	CANL	CAN signal (low)
5	0V	To negative of external 24V

Mounting Dimensions

H2U-XP

Mounting hole Ø5 x 4
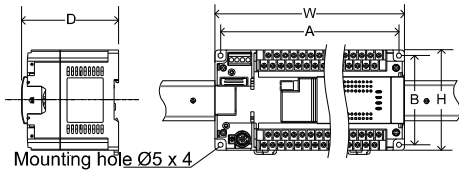
Model	Total Points	Mounting Dimensions		External Dimensions W x H x D (mm)
		A (mm)	B (mm)	
H2U-1010MR/MT-XP	20	120	80	130 x 90 x 88
H2U-1616MR/MT-XP	32	160	80	170 x 90 x 88
H2U-2416MR/MT-XP	40	160	80	170 x 90 x 88
H2U-3624MR/MT-XP	60	210	80	220 x 90 x 88
H2U-3232MR/MT-XP	64	210	80	220 x 90 x 88
H2U-4040MR/MT-XP	80	275	80	285 x 90 x 88
H2U-6464MR/MT-XP	128	340	80	350 x 90 x 88

H1U-XP

Mounting hole Ø4.5 x 2
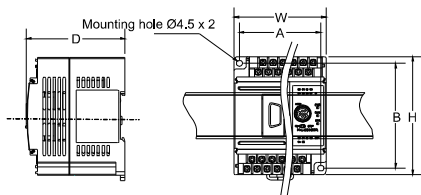
Model	Total Points	Mounting Dimensions		External Dimensions W x H x D (mm)
		A (mm)	B (mm)	
H1U-0806MR/MT-XP	14	62	80	70 x 90 x 75
H1U-1208MR/MT-XP	20	83	80	93 x 90 x 75
H1U-1410MR/MT-XP	24	83	80	93 x 90 x 75
H1U-1614MR/MT-XP	30	100	80	110 x 90 x 75
H1U-2416MR/MT-XP	40	123	80	133 x 90 x 75
H1U-2820MR/MT-XP	48	138	80	148 x 90 x 75
H1U-3624MR/MT-XP	60	169	80	179 x 90 x 75

Extension Modules

Mounting hole Ø5 x 2

35mm DIN handdown groove
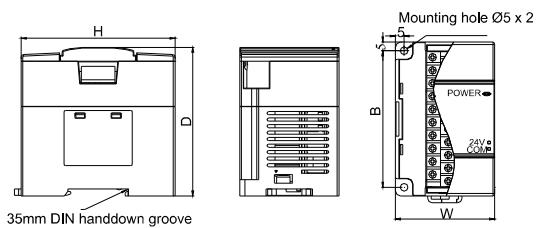
Model	Mounting Dimensions		External Dimensions W x H x D (mm)
	A (mm)	B (mm)	
H2U-0800ENN	—	80	45 x 90 x 87
H2U-0008ER(T)N			
H2U-0404ER(T)N			
All other extension modules	—	80	58 x 90 x 87

H0U-XP

200mm
42mm
146mm
Fixed keyhole

191mm
75.0
4-M4
137mm
VESA Mounting hole
75.0
37.5

Hole size (191+1) x (137+1)
138mm
192mm

HMI

W
D
H
Fixed keyhole

W
37.5
M4
VESA mounting hole
75
D
H

Hole size (W+1) x (H+1)
H+1
W+1
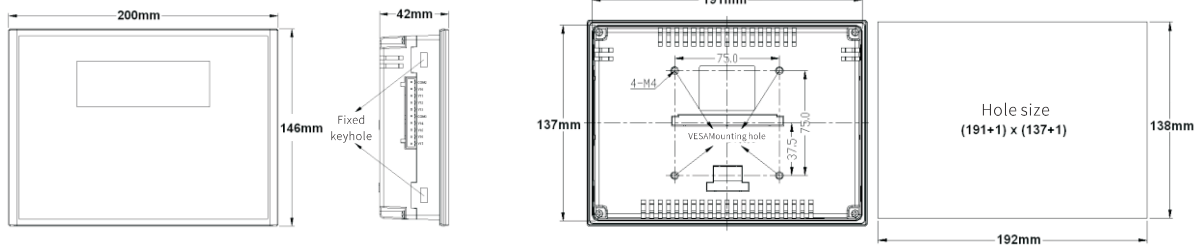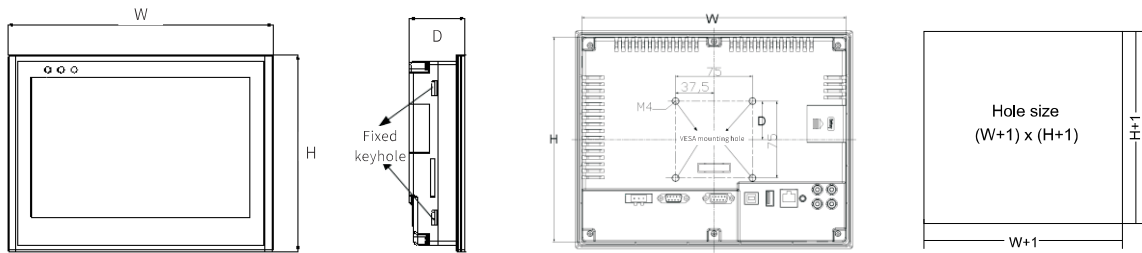
Model	Size of Screen	Product Specifications			Recommended Hole Size	
		External Dimensions W x H x D (mm)	NEMA-4 Mounting W x H (mm)	VESA Mounting Position D (mm)	W+1 (mm)	H+1 (mm)
IT6043T	4.3"	128×102×35	118×92	不支持	119	93
IT6070T / IT6070T-D	7.0"	200×146×42	191×137	/	192	138
IT6070E / IT6070E-D	7.0"	200×146×42	191×137	/	192	138
IT6100E / IT6100E-D	10.1"	271×213×40	258×200	75×75	259	201

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