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USER MANUAL

H100

Industrial Ethernet Bus Controller

Please read this manual carefully and keep it for future maintenance.

WINROLLER TECHNOLOGY

catalogue

1. About this document

This instruction manual describes the following versions of the H100

- H100-24 for 24V motor rollers
- H100-48 for 48V motor rollers.

The following text is uniformly represented by "controller".

This instruction manual is designed to provide users with a comprehensive understanding of the functions and characteristics of the controller, to ensure the correct use of the controller, and is suitable for on-site installation, commissioning and maintenance personnel.

Users of the controller should have received professional technical training and possess the appropriate safety and technical qualifications.

1.1 Glossary

Terminology	**Description**
PLC	Industrial Programmable Logic Controller
FOC	Magnetic field directional control or vector control, a highly efficient motor control strategy.
ZPA	Zero-pressure accumulation, goods on the conveyor line that is stop and go without collision, is a highly efficient conveyor control method
PNP/NPN	Level type of digital signal. PNP signal is connected to the "+" of the power supply when valid; NPN signal is connected to the "-" of the power supply when valid
PROFINET	Introduced by PROFIBUS International (PI), the new generation of automation bus standards based on industrial Ethernet technology
ETHERNET/IP	The Industrial Ethernet protocol, developed by Rockwell Automation and managed by ODVA, can be used in process control and other automation applications as part of the Common Industrial Protocol (CIP)

Electronic brake	When the brake is activated, the stator coil is energized with DC current and the coil generates a magnetic field. There is motion between the rotor and stator, which is equivalent to a conductor tangent magnetic field, and the magnetic field and the already existing magnetic field will have a reaction force.
Free brake	The motor roller supply circuit inside the controller is disconnected , becomes an open circuit, allowing the rotor to continue to rotate until the mechanical load stops it automatically.
Servo brake	When the run signal disappears, the controller uses the motor roller's Hall sensors to determine the position of the rotor and feeds current into the motor coil to maintain the rotor's position.
Speed open-loop /closed-loop	Speed open-loop, the roller speed decreases when the load increases; Speed closed-loop, the roller speed does not vary with load when the load is within the rated torque of the roller
RJ45	A kind of information socket connector in the wiring system. The connector consists of a plug (crystal head) and a socket (module), and the plug has 8 grooves and 8 contacts.

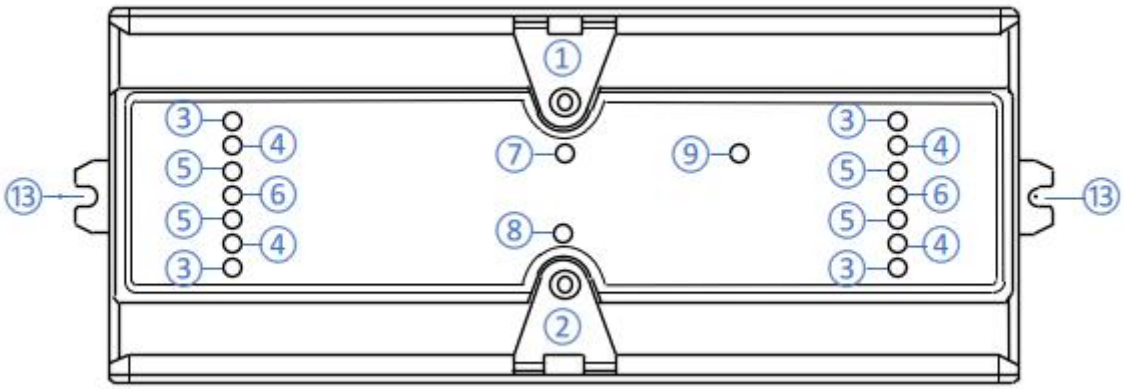
1.2 Symbols

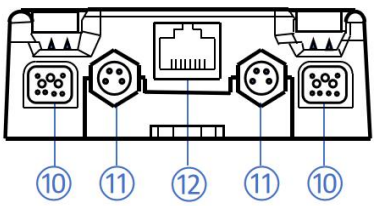
Attention or Warning. Indicates that there is a risk of damage to persons and product and need caution. If avoidance measures are not followed, it may lead to unexpected consequences.

Prompts for useful or important information.

2. Product Specifications

2.1 Hardware Interface





① Motor power cord fixing plate

② Logic power cord fixing plate

③ Motor indicator

④ Sensor indicator

⑤ Auxiliary I/O indicator

⑥ Ethernet connection indicator

⑦ Power supply indicator

⑧ Logic power indicator

⑨ Network status indicator

⑩ Motor interface

⑪ Sensor interface

⑫ Network interface

⑬ Controller fixing site

2.1.1 Power supply interface

The H100 has two power supply interfaces. The upper end to drive the motor, and the bottom to power the control logic. Both of them use ASI flat wires,connected by a piercing connector, and compress using the fixing plate.

It is recommended to use 2.5mm^2 wire diameter cable for power supply, and 1.5mm^2 wire diameter cable can be used for control logic power supply.

The power supply for the H100-48 is 48V, the power supply for the H100-24 is 24V, and the logic supply for both is 24V.

Both two power supplies are **positive (brown) facing down and negative (blue) facing up**, so be careful not to connect them in reverse.The **H100-48** has different voltages for the power and logic supplies, so be careful not to connect them incorrectly.

The motor power and logic power supplies of the H100-24 are both 24 V. Since the controller can drive 4 motors at the same time and there may be large power fluctuations during operation, It is recommended to use independent power sources to connect the power and logic power sources separately. While ensuring stable power supply, it will be workable to connect the power supply only.

2.1.2 Motor interface

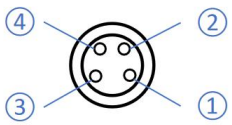
H100 has 4 motor interface, which can drive 4 motor rollers at the same time. The motor interface is a special interface for Winroller motor roller. The following table shows the motor roller models supported by the controller :

Controller	Supported motorized rollers
H100-24	await a decision
H100-48	await a decision

2.1.3 Sensor interface

The H100 has 4 sensor interfaces, each of which has four pins that are used to connect the power supply "+", power supply "-", sensor signals and auxiliary digital input and output signals.
The sensor interface uses an M8 4-pin female connector.
The following table shows the sensor interface definitions:

pin	signal	description
1	24V+	The controller output 24V power supply positive pole
2	AUX	Auxiliary digital inputs and outputs
3	GND	24V Power Supply Negative pole
4	SENSOR	Sensor Signal Input



The sensor signal supports both PNP and NPN types, and configuration must be done using the conveyor tool before use.

Auxiliary digital input/output pins can be configured as either inputs or outputs. When configured as input signals, they need to be set to PNP/NPN type, just like the sensor signals.

When the auxiliary digital input/output pins are used as inputs, they can be used for sensor signals, switch signals, or PLC signals. When used as outputs, they can control LEDs, peripheral devices, and other signal outputs.

Pin 1 and Pin 3 serve as the positive and negative terminals of the power supply , short-circuiting or reversing the connection may damage the sensor interface and peripherals. Please be careful when using.

When using the ZPA function, the sensor signal can only be connected to pin 4. If it is connected to pin 2, the program can not be correctly recognized cargo in place and control the operation of the conveyor.

2.1.4 Ethernet interface

There is an RJ45 Ethernet interface on the left and right sides of the controller for communication between the controller and PLC and between different controllers.

In environments with electromagnetic noise, it is recommended to use shielded cables to avoid data loss or other unintended consequences during communication.

2.1.5 Indicator light

The controller has a total of 17 LEDS to indicate the status of the power supply, motors, sensors, network, etc.

The following table defines the status of each indicator:

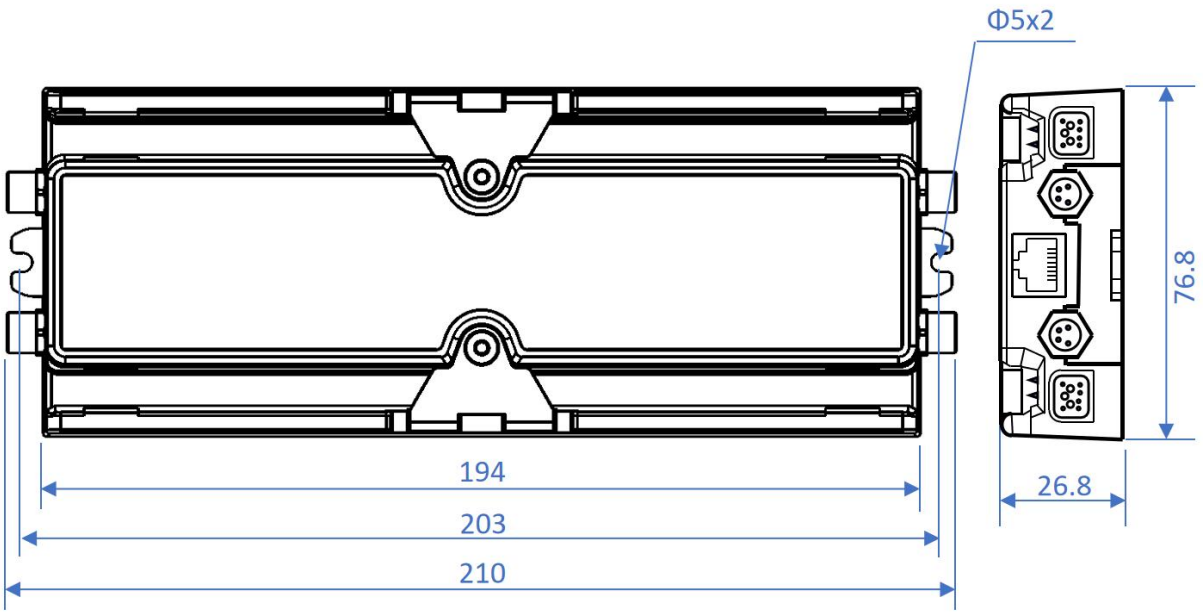
No.	name	state	description
③	Motor indicator	off	This circuit is forbided
		yellow/green	Motor roller connected properly
		red	Motor roller operation is faulty or not connected properly
④	Sensor indicator	off	Sensor signal not detected
		yellow/green	Sensor signal detected
⑤	Auxiliary I/O indicator	off	No input or output signal
		yellow/green	Input or output signal present
⑥	Ethernet connection indicator	off	No Ethernet connection
		yellow/green	Ethernet connection available
⑦	Power supply indicator	off	No power supply
		yellow/green	Normal power supply voltage
		red	Power supply over-voltage or under-voltage
⑧	Logic Power Indicator	off	No power supply
		yellow/green	Normal power supply voltage
		red	Power supply over-voltage or under-voltage
⑨	Network Status Indicator	off	No network communication
		blue	Bluetooth connection
		green	Normal bus communication
		red	Bus communication failure

2.2 Technical parameters

The following table shows the technical parameters of the controller:

Mode	**H100-48：48VDC**	**H100-24：24VDC**
Power supply rated voltage	48VDC	24VDC
Power supply voltage range	44 to 52VDC	18 to 30VDC
Logic power supply rated voltage	24VDC	
Logic power supply voltage range	18 to 30VDC	
Motor drive current	Rated current: 4x1.75=7A	Rated current: 4x3.5=14A
	Starting current: 4x3.8=15.2A	Starting current: 4x7.5=30A
	Blocking current: 4x2.5=10A	Blocking current: 4x5=20A
Logic control current	Controller max. 0.2A + connected sensors/actuators = 1.6A	
Motor overheat protection	105℃	
Control overheat protection	85℃	
Current protection	fuse: 4x10A	
IP grade	IP20	
Operating ambient temperature	-25 to 40℃	
Storage ambient temperature	-40 to 85℃	
Operating ambient humidity	5% to 95% RH（No condensation）	
Operating ambient air	non-corrosiveness gas	
Operating vibration intensity	0.5G	
Installation site	interior	

2.3 Dimensions



unit: mm

3. Installation

3.1 Controller Installation

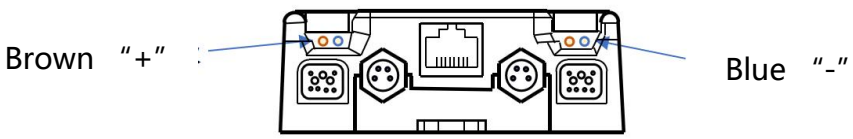
Please ensure that the controller is installed correctly to avoid damage to the controller or malfunctioning.

- The controller should be mounted on a flat bracket to ensure that the controller is not distorted or deformed by external forces during or after installation.
- Secure with two M4 screws in the screw holes on the left and right sides of the controller heat sink.
- The nuts of the fixing screws should not be too high so as not to interfere with the connection of the network cable.
- The controller should not be installed in an environment that is completely sealed by metal, as this will block the wireless signal and cause the Bluetooth function to malfunction.
- After installing the controller, avoid drilling holes in metal brackets near the controller to prevent metal shavings from falling into the controller, resulting in a short circuit and damage to the controller.

3.2 Electrical connections

3.2.1 Connect the power supply

Use 3G3G-FL type flat cable for the power supply. Before piercing and during the process of pressing down the cover plate and securing it with screws, the power cable should be laid flat in the controller's cable groove. This ensures that the piercing pins can puncture the power cable and hit the center of the core correctly.



The DC power supply shall comply with the following safety standards:

- China standard: GB4706.1
- USA standard: UL60950-1, IEC60950-1
- Canada standard: CSAC22.2 No.60950-1

The output power of the DC power supply should be sufficient to provide a maximum of 30A (4 rollers activated at the same time) for each controller.

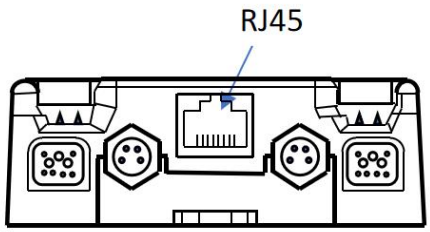
Power should be supplied to the controller only after all mechanical installation and electrical connections have been made to avoid damage to the controller.

All power supplies must share a common ground,the negative terminals are connected together, so that there is no voltage difference that would cause current to flow through the bus.

Equipment components such as power supplies should be well grounded to help eliminate static electricity.

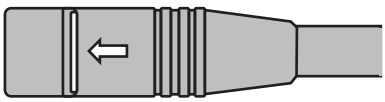
3.2.2 Connect the bus

The H100 has two RJ 45 Ethernet interface, Link L and Link R. The RJ 45 connects the network cable by the standard interface definition. Since H100 has built-in switches, H100 can be connected in various bus topology.



3.2.3 Connect the motor roller

The motor roller plug arrow (see picture below) inserts the controller motor interface facing up in the direction of the arrow.



The motor roller plug should be inserted into the marking line position in front of the white line, otherwise the motor roller may not work.

3.2.4 Connect the sensors

The sensor is connected to the sensor interface using the M8 4-pin male, and the nut is tightened after the plug is inserted.

Input feature parameters:

Input voltage	0V – 24V DC
Input resistance	≥15kΩ
Switching threshold	≥15V high，≤5V low

Output feature parameters:

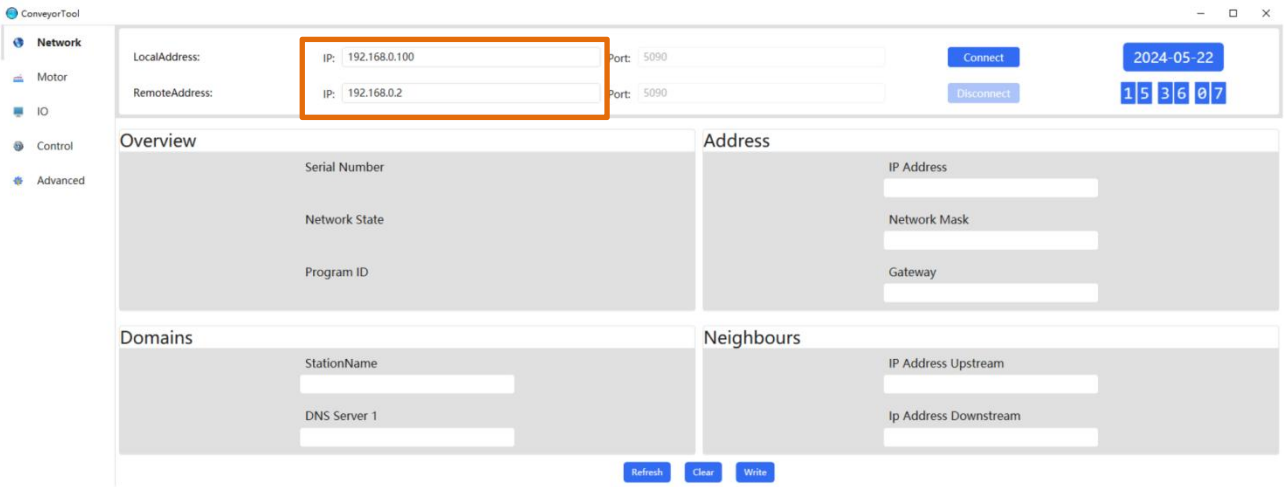
Output voltage	24V DC ± 10%
Max output current	≤100mA
PNP mode output voltahe “1”	≥15V@100mA
NPN mode output voltage “1”	≤5V@100mA

Input and output terminals are not electrically isolated. Before connecting, ensure that pin signals correspond correctly.

4.Parameter configuration

4.1 Configuration interface

Run ConveyorTool.exe under Windows system, if there is no running environment for your operating system, for Windows 64-bit system, you need to install windowsdesktop-runtime-6.0.30-win-x64.exe. The interface of ConveyorTool is as below after you open it:

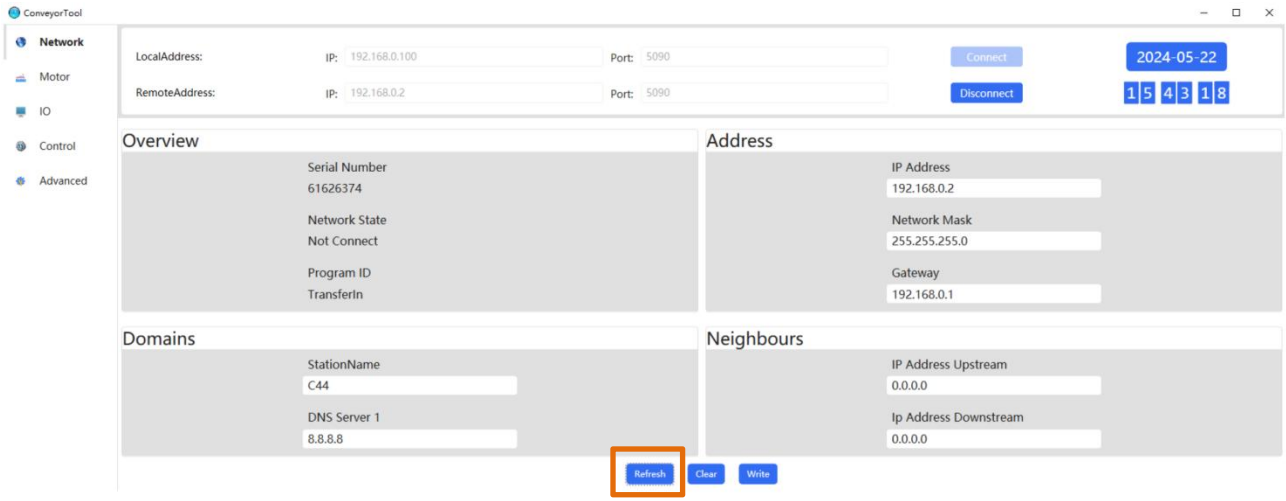


The factory default IP address of the H100 is 192.168.0.2, and the default subnet mask is 255.255.255.0. The H100 and the computer are connected via the Ethernet network. After setting the local IP address of the computer and fill in the IP address of the controller, connect the controller.

All the parameters should be set in the motor stop state, otherwise it may cause an unexpected result.

4.2 Network settings

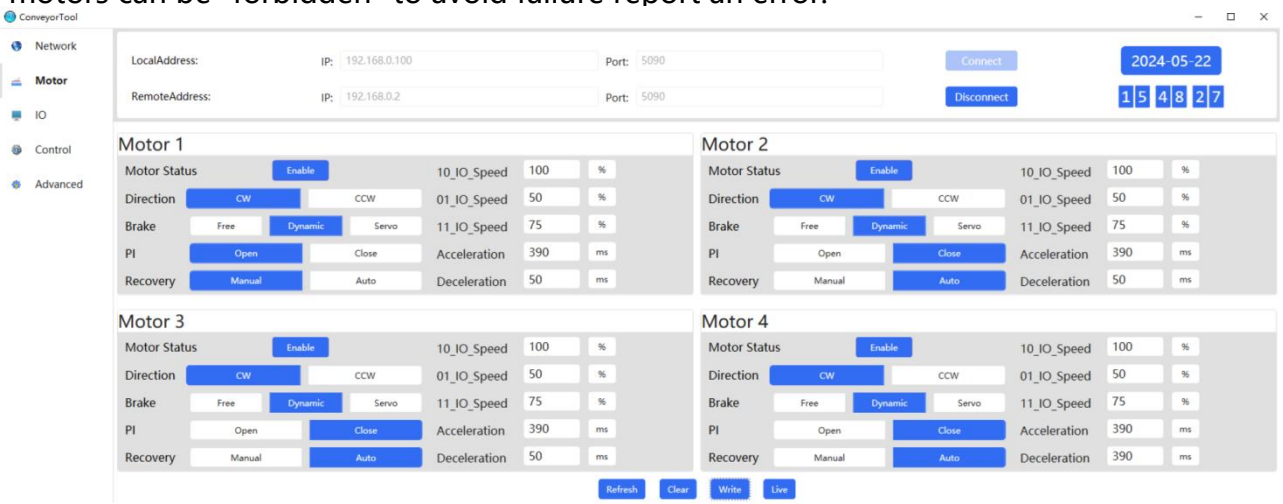
After the computer and the controller are successfully connected, click "Refresh" below the Network column to display the device information and network parameters of the currently connected controller. See the following figure:



The IP address and site name can be set, but you need to make sure they are unique. Neighboring upstream and downstream controller IP address parameters for ZPA control.

4.3 Motor parameters

In the Motor column, you can examine, clear and modify the motor parameters, or directly control the start and stop of the motor and examine the motor status. H100 supports 4 motors, which can set the parameters of each motor separately. Unused motors can be "forbidden" to avoid failure report an error.



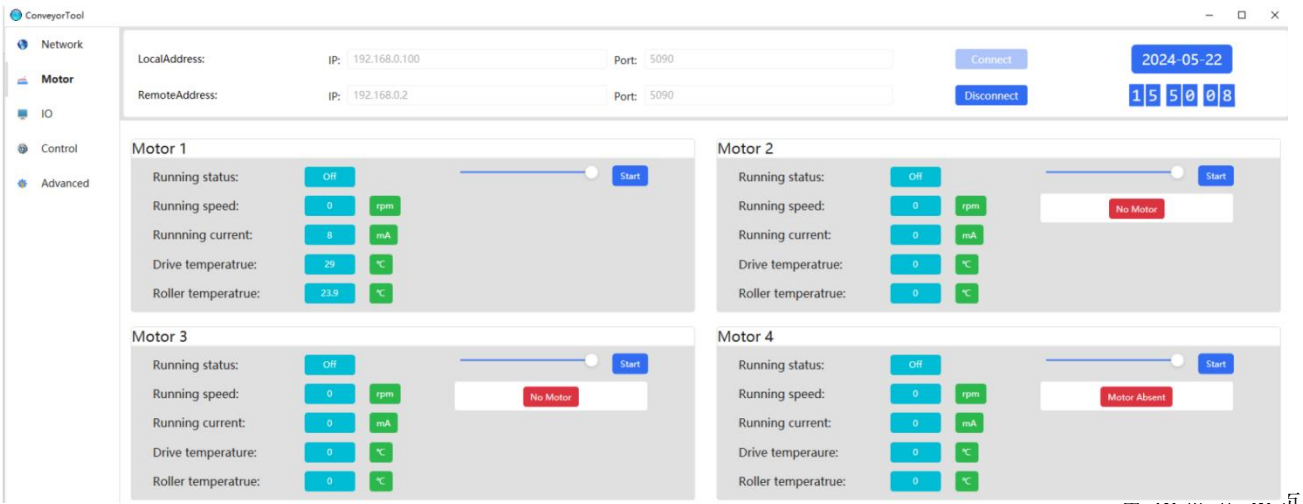
When the PLC communicates with the H100 in Full Mode and Normal Mode, via "10_IO_Speed" sets the maximum speed, the parameter is valid in the range of 0-100.

When the PLC communicates with the H100 in Tiny Mode, only three gear speeds can be controlled, "10_IO_Speed", "01_IO_Speed", and "11_IO_Speed. The "10_IO_Speed", "01_IO_Speed" and "11_IO_Speed" parameters are valid in the range 0-100. See Chapter 5 "Process Data".

The minimum acceleration time can be set to 390ms and the minimum deceleration time can be set to 50ms.

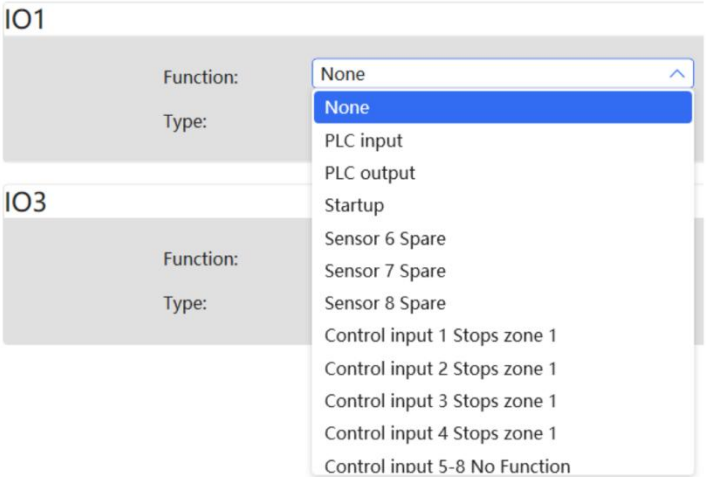
Manual recovery or automatic recovery can be selected for faults in motor operation.

Click the "Live" button to control the start and stop of the motor, and examine real-time data such as motor status, running speed, current, controller temperature, and motor temperature.



4.4 Digital I/O

Auxiliary digital I/O (AUX), the function can be selected from the drop down menu in the control column. See figure below:



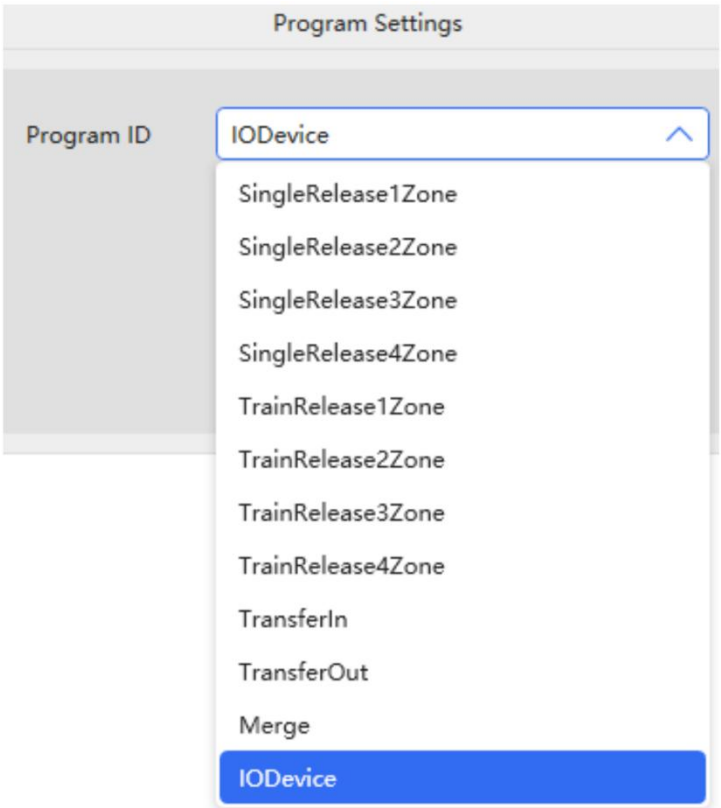
Auxiliary digital I / O functions are described in the following table:

function	description
None	no function
PLC input	input signal from the PLC
PLC output	output signal sent to the PLC
Startup	activating signal
Sensor 6 Spare	reserve
Sensor 7 Spare	reserve
Sensor 8 Spare	reserve
Control input 1 Stops zone 1	zone 1 stops
Control input 2 Stops zone 1	zone 2 stops
Control input 3 Stops zone 1	zone 3 stops
Control input 4 Stops zone 1	zone 4 stops
Control input 5-8 No Function	no function
Control output 1 zone 1 Occupied	zone 1 is occupied
Control output 2 zone 1 Occupied	zone 2 is occupied
Control output 3 zone 1 Occupied	zone 3 is occupied
Control output 4 zone 1 Occupied	zone 4 is occupied
Control output 5-8 No Function	functionless

function	description
Handshake in up	Handshake signals sent to neighboring controllers
Handshake in down	
Handshake in left	
Handshake in right	
Handshake out up	
Handshake out down	
Handshake out left	
Handshake out right	

4.5 Control program

The drop-down menu for the Program Setting item in the CONTROL column allows you to select the control program. See the figure below :



4.5.1 ZPA

Zero Pressure Accumulation (ZPA) on the conveyor line can be achieved with both single release and train release.

The single release is carried out independently in each zone, while the train release is carried out almost simultaneously over a large area.

With the ZPA program, the H100 can control up to 4 zones, each of which can be stopped by an external input signal or by the PLC. The conveyances are carried out in sequence from upstream to downstream, with zone 1 as the starting zone.

If the goods to be conveyed are removed in the stop zone, the roller will continue to convey as soon as timer 4 (T4) has expired. If the goods are placed in the zone sensor area while T4 is in the precess of timing, the conveyor process will start immediately.

The goods leave one zone sensor and must reach the next zone sensor area within the Timer 2 (T2) time. If T2 times out, the upstream zone will stop conveying. Once T2 finishes timing, the idle zone can be conveyed into a new goods.

If the goods remains in the zone sensor area for the T2 timeout, the roller stops at the end of the T2 timeout and starts again after the same T2 timeout. This process will be repeated until the goods are transported out of the sensor area.

After the goods leave the zone sensor, the rollers in that zone will continue to rotate for Timer 3 (T3) time.

Single release

The single-piece release is executed independently in each zone. 4 timers are defined as follows :

timer	description	factory setting (ms)
T1	Connection monitoring	200
T2	Monitor the transmission of goods	4000
T3	Roller continued running time	5000
T4	Fault reset time	1000

In single-piece release mode, the T1 parameter cannot be modified.

Train Release

Train release mode, operation almost simultaneously in all interconnected sections.
4 timers are defined as follows:

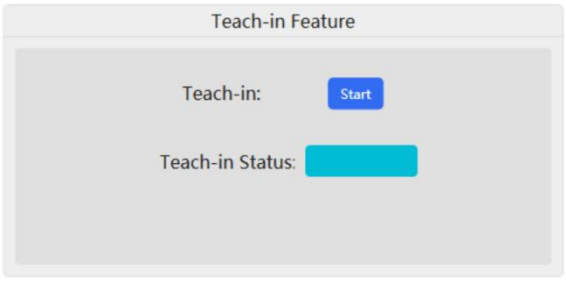
timer	description	factory setting (ms)
T1	Connection monitoring	100
T2	Monitor the transmission of goods	4000
T3	Roller continued running time	5000
T4	Fault reset time	1000

4.5.2 I/O device

Under the "I / O device" control program, the controller is directly controlled by the higher-layer system such as PLC. See Chapter 5, " Process Data, for details.

4.6 Teach

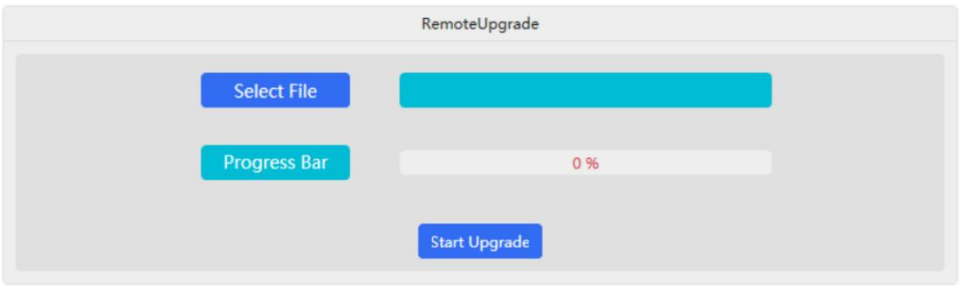
After configuring the parameters of the controller that is connected to the computer, click on the "Start" button in the "Teach in" box of the control column， parameters of controller connected via the bus but not through a switch can be configured with one click. See the figure below:



After configuration, the node names and IP addresses will increment starting from the currently connected controller on the computer, with other parameters remaining consistent with the current controller.

4.7 Firmware Upgrade

In the Advanced column, select the firmware (.bin file) that can be upgraded, and click "Start Upgrade" to start upgrading.See the figure below:



After the upgrade is complete, other controllers connected to the current controller via the bus and within the same network segment will also be upgraded automatically.

4.8 Mobile terminal configuration

omit

5. Process Data

The process data transferred between the PLC and the controller is categorized into Full Mode, Normal Mode and Tiny Mode, each of which consists of two major parts: input mirroring and output mirroring.

5.1 Full mode

Full mode can transfer all data.

5.1.1 Input

The input process mirroring contains 4 parts, including sensors, digital I/O, motor status and others, and the data allocation address is shown in the table below:

Byte	Bit	Category	Designation	Type	Comments
0	0.0	Sensors	Sensor 1	BOOL	True = sensor active
0	0.1	Sensors	Sensor 2	BOOL	
0	0.2	Sensors	Sensor 3	BOOL	
0	0.3	Sensors	Sensor 4	BOOL	
0	0.4	Digital I/O	Aux 1	BOOL	True = auxiliary input/output active
0	0.5	Digital I/O	Aux 2	BOOL	
0	0.6	Digital I/O	Aux 3	BOOL	
0	0.7	Digital I/O	Aux 4	BOOL	
1	1.0	Motors	Roller 1 Error	BOOL	True = motor error, False = motor OK
1	1.1	Motors	Roller 2 Error	BOOL	
1	1.2	Motors	Roller 3 Error	BOOL	
1	1.3	Motors	Roller 4 Error	BOOL	
1	1.4	Controller	Controller Error	BOOL	True = Controller error
1	1.5	Spare	Spare	BOOL	
1	1.6	Spare	Spare	BOOL	
1	1.7	Spare	Spare	BOOL	
2		Motor states RD 1	SpeedPos 1	INT8	Actual target speed/position (-100...0...100 per cent/ -90...0...90, 123...127 degrees)
3		Motor states RD 2	SpeedPos 2	INT8	
4		Motor states RD 3	SpeedPos 3	INT8	
5		Motor states RD 4	SpeedPos 4	INT8	
6		Motor states RD 1	MotorCurrent1	UINT16	Average current in mA
8		Motor states RD 2	MotorCurrent2	UINT16	
10		Motor states RD 3	MotorCurrent3	UINT16	
12		Motor states RD 4	MotorCurrent4	UINT16	

Byte	Bit	Category	Designation	Type	Comments
14		Motor states RD 1	MotoTempreature1	UINT16	Tempreature in 0.1℃
16		Motor states RD 2	MotoTempreature1	UINT16	
18		Motor states RD 3	MotoTempreature1	UINT16	
20		Motor states RD 4	MotoTempreature1	UINT16	
22		System state	Voltage_Motor	UINT16	"Motor power" voltage in mV
24		System state	Voltage_Logic	UINT16	"Power logic + sensors" voltage in mV
26		Control inputs	Spare	BYTE	
27		Control outputs	Spare	BYTE	
28		Handshake signals	Spare	BYTE	
29		Zone States	Spare	BYTE	
30		Zone States	Spare	BYTE	
31		Spare	Spare	BYTE	

5.1.2 Outputs

The output process mirroring contains a total of 3 parts, digital I/O, motor and others, and the data allocation address is shown in the following table:

Byte	Bit	Category	Designation	Type	Comments
0	0.0	Digital I/O	Aux 1	BOOL	True = auxiliary output active
0	0.1	Digital I/O	Aux 2	BOOL	
0	0.2	Digital I/O	Aux 3	BOOL	
0	0.3	Digital I/O	Aux 4	BOOL	
1		Motor RD 1	SpeedPos 1	INT8	Target speed/position (-100...0...100 per cent 1) / -90...0...90, 123...127 degrees)
2		Motor RD 2	SpeedPos 2	INT8	
3		Motor RD 3	SpeedPos 3	INT8	
4		Motor RD 4	SpeedPos 4	INT8	
5		Control inputs overwrite	Spare	UINT8	
6		Control outputs overwrite	Spare	UINT8	
7		Handshake signal overwrite	Spare	UINT8	

5.2 Normal Mode

Compared to the full mode, the normal mode cannot transfer data such as motor current, motor temperature, and power supply voltage.

5.2.1 Input

The input process mirroring contains 4 parts, including sensors, digital I/O, motor status and others, and the data allocation address is shown in the table below:

Byte	Bit	Category	Designation	Type	Comments
0	0.0	Sensors	Sensor 1	BOOL	True = sensor active
0	0.1	Sensors	Sensor 2	BOOL	
0	0.2	Sensors	Sensor 3	BOOL	
0	0.3	Sensors	Sensor 4	BOOL	
0	0.4	Digital I/O	Aux 1	BOOL	True = auxiliary input/output active
0	0.5	Digital I/O	Aux 2	BOOL	
0	0.6	Digital I/O	Aux 3	BOOL	
0	0.7	Digital I/O	Aux 4	BOOL	
1	1.0	Motors	Roller 1 Error	BOOL	True = motor error, False = motor OK
1	1.1	Motors	Roller 2 Error	BOOL	
1	1.2	Motors	Roller 3 Error	BOOL	
1	1.3	Motors	Roller 4 Error	BOOL	
1	1.4	Controller	Controller Err	BOOL	True = Controller error
1	1.5	Spare	Spare	BOOL	
1	1.6	Spare	Spare	BOOL	
1	1.7	Spare	Spare	BOOL	
2		Motor states RD 1	SpeedPos 1	INT8	Actual target speed/position (-100...0...100 per cent/ -90...0...90, 123...127 degrees)
3		Motor states RD 2	SpeedPos 2	INT8	
4		Motor states RD 3	SpeedPos 3	INT8	
5		Motor states RD 4	SpeedPos 4	INT8	

5.2.2 Outputs

The output process mirroring contains a total of 3 parts, digital I/O, motor and others, and the data allocation address is shown in the following table:

Byte	Bit	Category	Designation	Type	Comments
0	0.0	Digital I/O	Aux 1	BOOL	True = auxiliary output active
0	0.1	Digital I/O	Aux 2	BOOL	
0	0.2	Digital I/O	Aux 3	BOOL	
0	0.3	Digital I/O	Aux 4	BOOL	

Byte	Bit	Category	Designation	Type	Comments
1		Motor RD 1	SpeedPos 1	INT8	Target speed/position (-100...0...100 per cent 1) / -90...0...90, 123...127 degrees)
2		Motor RD 2	SpeedPos 2	INT8	
3		Motor RD 3	SpeedPos 3	INT8	
4		Motor RD 4	SpeedPos 4	INT8	

5.3 Tiny Mode

Compared to the normal mode, the tiny mode cannot transfer real-time motor speed data, The PLC controls the motor speed with 2bit data.

5.3.1 Input

The input process mirroring contains 4 parts, including sensors, digital I/O, motor status and others, and the data allocation address is shown in the table below:

Byte	Bit	Category	Designation	Type	Comments
0	0.0	Sensors	Sensor 1	BOOL	True = sensor active
0	0.1	Sensors	Sensor 2	BOOL	
0	0.2	Sensors	Sensor 3	BOOL	
0	0.3	Sensors	Sensor 4	BOOL	
0	0.4	Digital I/O	Aux 1	BOOL	True = auxiliary input/output active
0	0.5	Digital I/O	Aux 2	BOOL	
0	0.6	Digital I/O	Aux 3	BOOL	
0	0.7	Digital I/O	Aux 4	BOOL	
1	1.0	Motors	Roller 1 Error	BOOL	True = motor error, False = motor OK
1	1.1	Motors	Roller 2 Error	BOOL	
1	1.2	Motors	Roller 3 Error	BOOL	
1	1.3	Motors	Roller 4 Error	BOOL	
1	1.4	Controller	Controller Err	BOOL	True = Controller error
1	1.5	Spare	Spare	BOOL	
1	1.6	Spare	Spare	BOOL	
1	1.7	Spare	Spare	BOOL	

5.3.2 Outputs

The output process mirroring contains a total of 3 parts, digital I/O, motor and others, and the data allocation address is shown in the following table:

Byte	Bit	Category	Designation	Type	Comments
0	0.0	Digital I/O	Aux 1	BOOL	True = auxiliary output active
0	0.1	Digital I/O	Aux 2	BOOL	
0	0.2	Digital I/O	Aux 3	BOOL	
0	0.3	Digital I/O	Aux 4	BOOL	
0	0.4	Motors	MotorDIR 1	BOOL	True = reverse main direction
0	0.5	Motors	MotorDIR 2	BOOL	
0	0.6	Motors	MotorDIR 3	BOOL	
0	0.7	Motors	MotorDIR 4	BOOL	
1	1.0	Motors	MotorSpeedA 1	BOOL	Speed for motor:Note1 MotorSpeedA = 0, MotorSpeedB = 0, Motor Stop MotorSpeedA = 1, MotorSpeedB = 0, Speed = 100% MotorSpeedA = 0, MotorSpeedB = 1, Speed = 50% MotorSpeedA = 1, MotorSpeedB = 1, Speed = 75% Note1: The speed associated with MotorSpeedA and MotorSpeedB can be modified by tools.
1	1.1	Motors	MotorSpeedB 1	BOOL	
1	1.2	Motors	MotorSpeedA 2	BOOL	
1	1.3	Motors	MotorSpeedB 2	BOOL	
1	1.4	Motors	MotorSpeedA 3	BOOL	
1	1.5	Motors	MotorSpeedB 3	BOOL	
1	1.6	Motors	MotorSpeedA 4	BOOL	
1	1.7	Motors	MotorSpeedB 4	BOOL	

Only 3 gear motor speeds can be set in tiny mode, the value of each speed can be configured via ConveyorTool, see Section 4.1.3.