ATX-P

High Performance
Precision Control
General Purpose Type
Transducer Screwdriver Controller

Instruction Sheet

(1) General precautions

Thank you for purchasing this product. This instruction sheet provides information about the CHP ATX-P series transducer screwdriver controllers. Before using this product, read the instruction sheet to ensure the correct use of the product. Keep this sheet handy for quick reference whenever needed. Before finishing reading this sheet, follow these instructions.

- Make sure the installation location is free of corrosive and inflammable gas or vapor.
- Do not disassemble the controller or change the wiring when the power is on.

For more information about the ATX-P series controllers, refer to the Transducer Screwdriver System user manual. To download the user manual, visit CHP website at www.CHPTools.com. If you have any questions during operation, contact our local distributors or CHP Customer Service. The instruction sheet may be revised without prior notice. Contact our distributors or download the latest version at CHP website.

(2) Safety precautions

Pay special attention to the following safety precautions at all times during inspection, installation, wiring, operation, maintenance, and examination of the controller.

The controller is marked with following safety symbols.

DANGER	**Danger. It might have potential danger to cause severe or fatal injuries for personnel if the instructions are not followed.**
WARNING	**Warning. It might cause moderate injury to personnel, or lead to severe damage, malfunction of product if the instructions are not followed.**

Installation

DANGER

- Do not expose the product to an environment containing corrosive and inflammable gas or vapor, or other foreign matter to reduce the risk of electric shock or fire.
- The controller for transducer screwdriver must be correctly grounded.
- Before connecting or removing the DC cable, ensure to turn off controller power and unplug its power connector.

(3) Wire selection

The recommended wires for ATX-P series controller are listed as follows:

Controller model No.	Wire gauge	RS485 Terminal	I/O Terminal
ATX-P1	24 - 16 AWG	PCB CONNECTOR-PLUG 3.5MM /300V /8A /6P	PCB CONNECTOR-PLUG 3.5MM /300V /8A /32P
ATX-P2			

(4) Ambient conditions of installation

WARNING

Ambient condition for installing and operating the transducer screwdriver system: the environment should be free of devices that generate excessive heat; no water, vapor, dust, and oily dust; no corrosive and inflammable gas or liquids; no airborne dust or metal particles; and the environment should be solid without vibration and interference of electromagnetic noise.

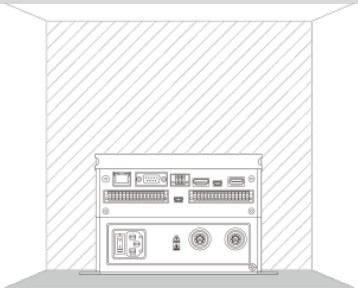
Ambient condition for operating the transducer screwdriver: the ambient temperature for operation is between 0°C (32°F) and 40°C (104°F). The environment should be free of devices that generate excessive heat; no water, vapor, dust, and oily dust; no corrosive and inflammable gas or liquids; no airborne dust or metal particles.

(5) Mounting direction and space

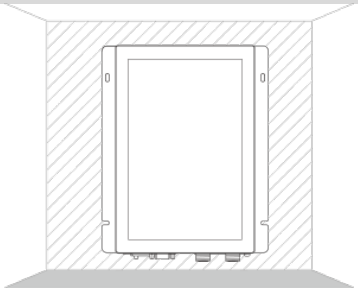
Precautions:

- Mount the controller in the correct orientation according to the following illustrations with the mounting side on a table surface or vertically on the wall. Incorrect mounting orientation may result in malfunction.
- For better ventilation and cooling, allow sufficient clearance space (at least 5 cm) between the controller and the adjacent objects and the wall, or overheating may result in machine malfunction.

Correct

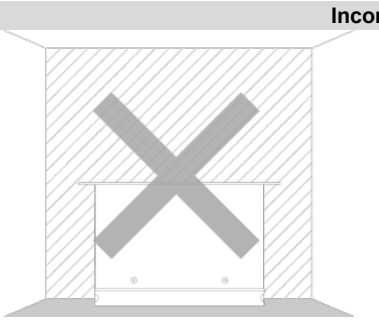


Placed on the table surface - with the operation panel side up

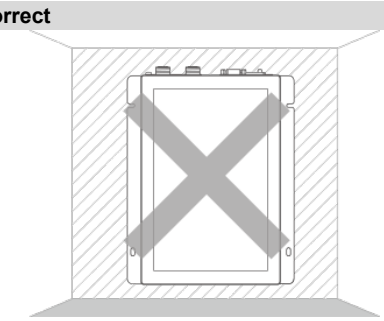


Mounted vertically on the wall - with the terminal connector side down (use the M4 screws for mounting)

Incorrect



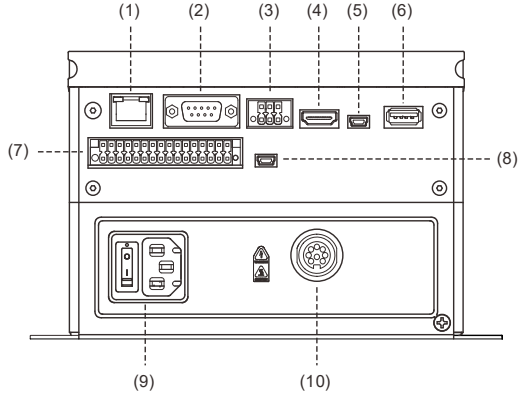
Placed on the table surface - with the operation panel side down



Mounted vertically on the wall - with the terminal connector side up

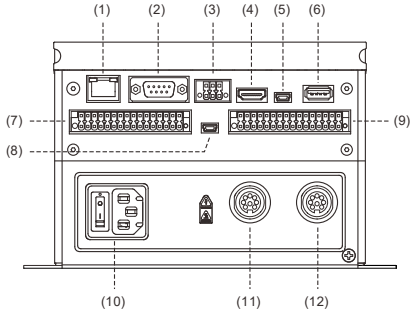
(6) Wiring

- ATX-P1 Connectors



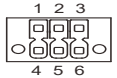
No.	Description	No.	Description
(1)	Standard RJ45 connector: connects to the PC/PLC/HMI	(6)	HOST connector: a. Accesses to the tightening data (tightening parameters and tightening results) b. Connects to the barcode scanner
(2)	Standard RS-232 connector: supports barcode scanners	(7)	DI/DO port (Tool 1)
(3)	RS-485 connector (two signal pairs): connects to the expansion device that supports RS-485	(8)	SLAVE-B connector: for screwdriver firmware update
(4)	HDMI output connector: connects to the external display for synchronizing the operation screen	(9)	AC socket with switch
(5)	SLAVE-A connector: for HMI software and firmware update	(10)	Tool connector (Tool 1)

■ ATX-P2 Connectors



No.	Description	No.	Description
(1)	Standard RJ45 connector: connects to the PC/PLC/HMI	(7)	DI/DO port (Tool 1)
(2)	Standard RS-232 connector: supports barcode scanners	(8)	SLAVE-B connector: for screwdriver firmware update
(3)	RS-485 connector (two signal pairs): connects to the expansion device that supports RS-485	(9)	DI/DO port (Tool 2)
(4)	HDMI output connector: connects to the external display for synchronizing the operation screen	(10)	AC socket with switch
(5)	SLAVE-A connector: for HMI software and firmware update	(11)	Tool connector (Tool 1)
(6)	HOST connector: a. Accesses to the tightening data (tightening parameters and tightening results) b. Connects to the barcode scanner	(12)	Tool connector (Tool 2)

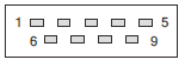
■ RS485 pin assignment



Pin	Signal	Description	Pin	Signal	Description
1	D1-	Transmit / Receive -	4	D1+	Transmit / Receive +
2	GND	-	5	NC	N/A*
3	D2-	Transmit / Receive -	6	D2+	Transmit / Receive +

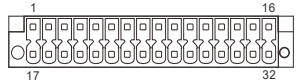
Note: N/A represents this pin is for internal use only. Do not connect this pin, or it may damage the controller.

■ RS232 pin assignment



Pin	Description	Pin	Description
1	-	6	-
2	RXD	7	RTS
3	TXD	8	CTS
4	-	9	-
5	GND	-	-

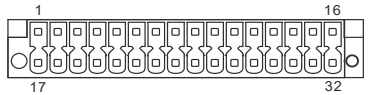
■ DIGITAL I/O-1 pin assignment



Pin	Signal	Description	Pin	Signal	Description
1	DO_24V_A	Power output + (24V ± 10%)	17	DO_A8_NC	Relay NC
2	DO_A1+	Digital output +	18	DO_A8_COM	Relay COM
3	DO_A1-	Digital output -	19	DO_A8_NO	Relay NO
4	DO_A2+	Digital output +	20	DI_A1	Digital input
5	DO_A2-	Digital output -	21	DI_A2	Digital input
6	DO_A3+	Digital output +	22	DI_A3	Digital input
7	DO_A3-	Digital output -	23	DI_A4	Digital input
8	DO_A4+	Digital output+	24	DI_A5	Digital input
9	DO_A4-	Digital output -	25	DI_A6	Digital input
10	DO_A5+	Digital output +	26	COM_A+	Common pin for DI_A1 to DI_A6
11	DO_A5-	Digital output -	27	DI_A7+	Digital input +
12	DO_A6+	Digital output +	28	DI_A7-	Digital input -
13	DO_A6-	Digital output -	29	DI_A8+	Digital input +
14	DO_A7_NC	Relay NC	30	DI_A8-	Digital input -
15	DO_A7_COM	Relay COM	31	NC	N/A*
16	DO_A7_NO	Relay NO	32	PGND	Power output - (24V ± 10% GND)

Note: N/A represents this pin is for internal use only. Do not connect this pin, or it may damage the controller.

■ DIGITAL I/O-2 pin assignment



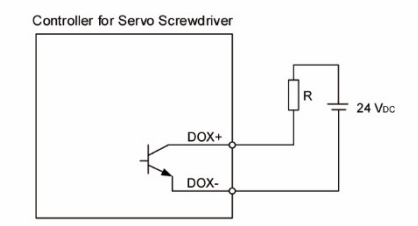
Pin	Signal	Description	Pin	Signal	Description
1	DO_24V_B	Power output + (24V ± 10%)	17	DO_B8_NC	Relay NC
2	DO_B1+	Digital output +	18	DO_B8_COM	Relay COM
3	DO_B1-	Digital output -	19	DO_B8_NO	Relay NO
4	DO_B2+	Digital output +	20	DI_B1	Digital input
5	DO_B2-	Digital output -	21	DI_B2	Digital input
6	DO_B3+	Digital output +	22	DI_B3	Digital input
7	DO_B3-	Digital output -	23	DI_B4	Digital input
8	DO_B4+	Digital output +	24	DI_B5	Digital input
9	DO_B4-	Digital output -	25	DI_B6	Digital input

10	DO_B5+	Digital output +	26	COM_B+	Common pin for DI_B1 to DI_B6
11	DO_B5-	Digital output -	27	DI_B7+	Digital input +
12	DO_B6+	Digital output +	28	DI_B7-	Digital input -
13	DO_B6-	Digital output -	29	DI_B8+	Digital input +
14	DO_B7_NC	Relay NC	30	DI_B8-	Digital input -
15	DO_B7_COM	Relay COM	31	PGND	Power output - (24V ± 10% GND)
16	DO_B7_NO	Relay NO	32	PGND	Power output - (24V ± 10% GND)

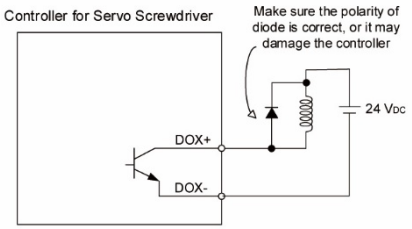
■ Interface wiring diagrams

DO wiring:

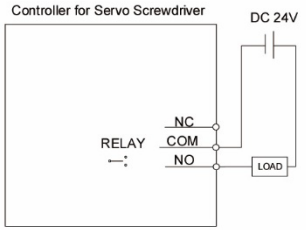
C1: the controller uses an external power supply and the resistor is for general load.



C2: the controller uses an external power supply and the resistor is for inductive load.



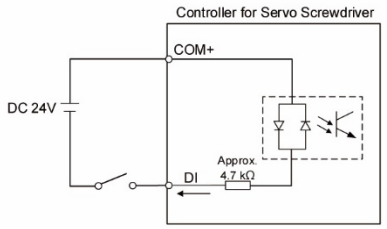
C3: wiring for the relay. The controller uses an external power supply and the resistor is for general load.



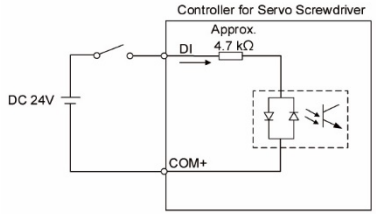
DI wiring: input signals by relay or open collector transistor.

Conditions of DI On / Off:
ON: 15V - 24V; condition: input current = 8 mA.
OFF: 5V or below; the input current must not be higher than 0.5 mA.

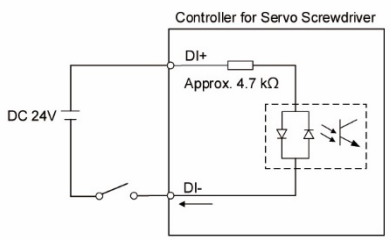
C4: NPN transistor (SINK mode) (DI_A1 to DI_A6, DI_B1 to DI_B6)



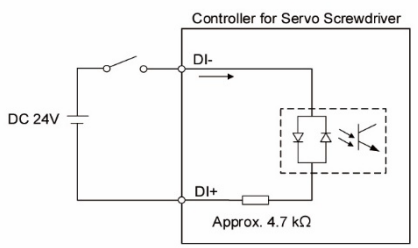
C5: PNP transistor (SOURCE mode) (DI_A1 to DI_A6, DI_B1 to DI_B6)



C6: NPN transistor (SINK mode), without using the shared COM+ for input (DI_A7/A8/B7/B8)



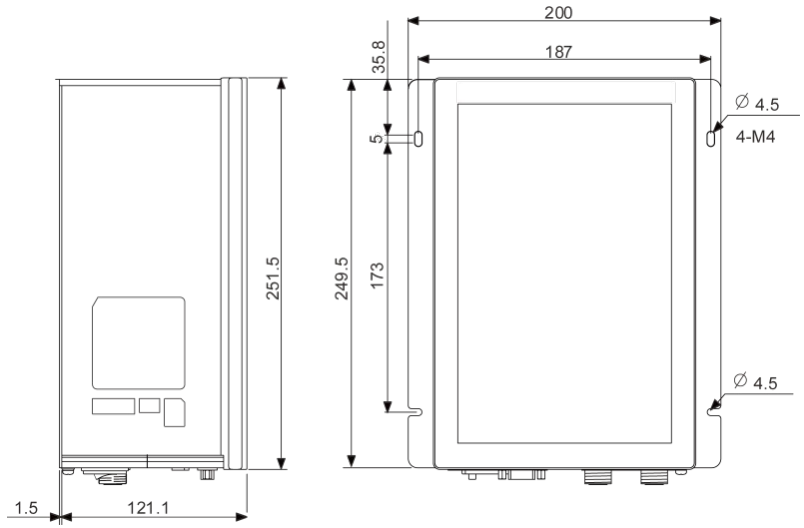
C7: PNP transistor (SOURCE mode), without using the shared COM+ for input (DI_A7/A8/B7/B8)



(7) Dimension and weight of the controller

ATX-P1

ATX-P2



Note: the dimensions are in the unit of mm.

Weight of the controller	4.06 kg
Tightening torque for mounting the controller (M4 screws)	6 to 8 kgf.cm

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