

A23 Series Brake–Attached Type
User Manual

Dear User:

Thank you for purchasing and using this product. To ensure safety and correct operation, please read this manual carefully before use.

1 Functions and Features

- Uses MCU digital control technology and offers rich functions and excellent performance;
- Equipped with a digital display menu for quick and convenient parameter adjustment;
- Display scaling can be set according to user needs; the system automatically converts and displays the target value;
- Supports slow acceleration, slow deceleration, quick stop, and 3–speed operation;
- Supports external switch control and 0–5 V analog control;
- Analog control automatically matches the maximum speed for convenient and safe speed regulation;
- Automatically detects the input power frequency;
- Stall protection prevents damage to the motor or speed controller during stall conditions. (This function protects against stall overload but cannot protect against non-stall overload)

2 Precautions for Use

- Before use, please check whether the packaging is intact, whether the nameplate matches the purchased model, and whether all accessories are included.
Accessories: M4*10 screws – 2 pcs.
- Installation, wiring, inspection, and related tasks must be performed by qualified technical personnel.
- When controlling a brake speed-regulating motor with the speed controller, an isolation magnetic module must be installed; otherwise, the motor cannot start or operate normally.
- Please follow this manual or the wiring label on the rear cover for correct wiring; otherwise, malfunction or danger may occur.
- Do not disassemble the device or alter wiring while the power is on, as this may result in electric shock.
- For first-time use, please perform a no-load test run to confirm all functions operate normally, and adjust the required parameters.
- Do not use the device in explosive atmospheres, flammable gas environments, corrosive environments, areas exposed to water, or near combustible materials.
- Avoid continuous vibration or excessive impact, as this may damage the device.
- For devices requiring grounding, ensure the grounding terminal is properly connected.
- During normal operation, the motor housing temperature may sometimes exceed 70°C. Therefore, in environments where the motor may be touched, please attach a “Caution: High Temperature” warning label as shown in the illustration on the right.

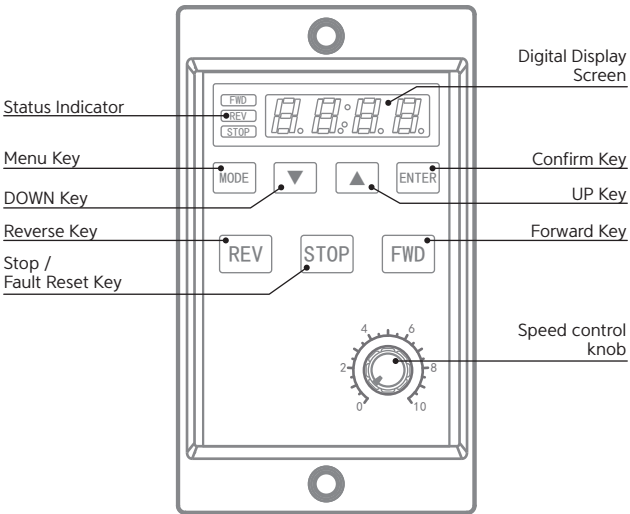


3 Model / Performance Parameter Table

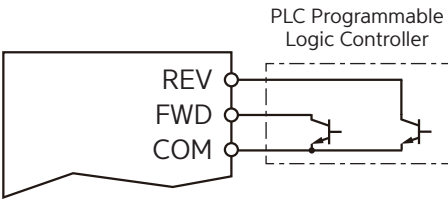
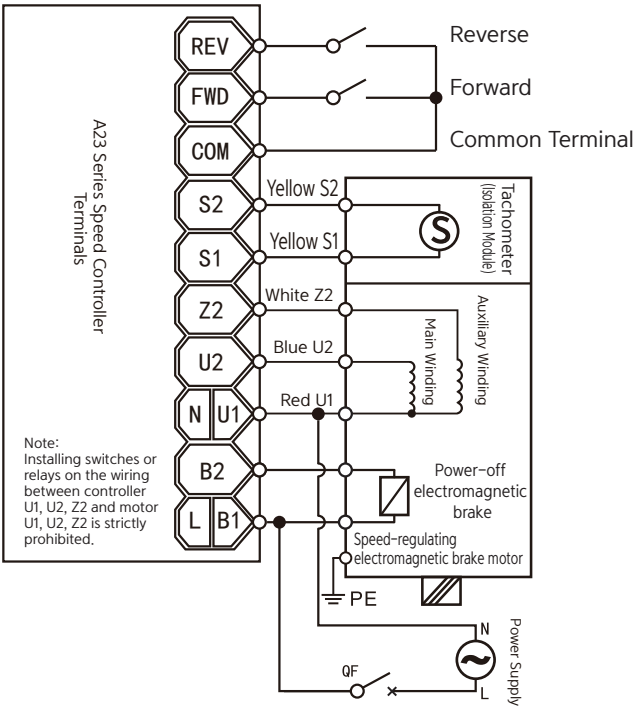
Model	EA-A23S2-□□							
Model Definition	Product Type: EA	Series: A23	Power Supply: S1 Single-phase 110V ±10% S2 Single-phase 220V ±10%			Applicable Motor Power: □□(W)		
Applicable Motor Type	Speed-regulating electromagnetic brake motor (with isolation magnetic module)							
Applicable Motor Power	6W	15W	25W	40W	60W	90W	120W	140W
Installation Method	Panel-mounted							
Motion Control Functions	Panel or external switch control; speed regulation; slow acceleration; slow deceleration; power-off braking							
Speed Adjustment Methods	Panel ▲/▼ keys; panel rotary knob							
Speed Adjustment Range	50Hz: 90–1400 r/min; 60Hz: 90–1700 r/min							
Run Capacitor	Built-in							
Input Power Supply	Single-phase 220V ±10%; 50Hz–60Hz							
Operating Environment	Ambient Temperature: –10℃ ~ +40℃ (no freezing); Ambient Humidity: Below 85% (no condensation); Altitude below 1000 m							

4 Panel Description

Name	Function
Indicator	Indicates operating status
Digital Display	Four-digit display for parameter and setting values
MODE Key	Enter or exit menu mode
ENTER Key	Display and confirm setting values
▼/▲ Keys	Adjust parameters during key control; adjust settings in menu mode
FWD/REV Key	Controls forward/reverse rotation; changes digits in menu mode
STOP Key	Stop operation; fault reset
Rotary Knob	Adjust parameters in knob control mode



5 Driver Wiring Diagram



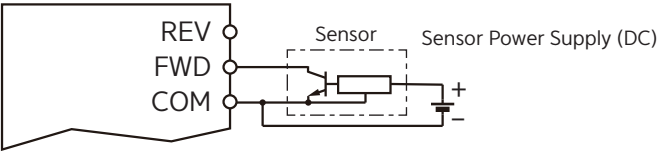
- FWD and REV Controlled by PLC
PLC Output Type: NPN or open-collector transistor output;
Menu Setting: Set Operating Control Mode F-03 to “2” or “3” for external switch control.

- Rotation Direction Control
1. Menu Setting: Set Operating Control Mode F-03 to “2” or “3” for external switch control.
2. Connect “FWD” to “COM” for forward rotation; connect “REV” to “COM” for reverse rotation.

- Motor Selection
Brake-type speed-regulating motors must be equipped with an isolation magnetic module assembly. The power rating of the speed-regulating motor must match the applicable motor power rating of the speed controller. Please ensure that the power rating shown on the controller’s model label corresponds to the motor’s power rating.

- Power Supply
Power supply voltage must match the rated voltage of the controller. QF is a circuit breaker that protects the speed controller and the speed-regulating motor in the event of a short circuit.

Power Supply Voltage	Motor Power	QF Current Rating
220V	6–90W	1A
220V	120–200W	2A
110V	6–90W	2A
110V	120W	4A



- FWD and REV are controlled by sensors (such as photoelectric switches)
Switch Output Type: Three-wire NPN transistor output;
Menu Setting: Set Operating Control Mode F-03 to “2” or “3” for external switch control.

(Technical Data) EA Series Economy–Type Speed Controller

6 Driver Menu ● Function Code List (R/W: Read/Write; RO: Read-Only)

Function Code	Name	Parameter Description	Setting Range	Default Value	Modification Allowed
F-01	Display Content	1: Motor speed setting 2: Scaled speed setting	1~2	1	R/W
F-02	Scaling factor setting	Scaling factor 1.0~999.9 Scaled speed setting = Motor speed setting / Scaling factor	1.0~999.9	1.0	R/W
F-03	Operation Control Mode	1: Panel Operation Control 2: External Switch Control; panel STOP key disabled 3: External Switch Control; panel STOP key enabled	1~3	1	R/W
F-04	Rotation Mode	1: Forward and reverse rotation allowed 2: Forward rotation allowed, reverse rotation prohibited 3: Reverse rotation allowed, forward rotation prohibited	1~3	1	R/W
F-05	Rotation Direction	1: Normal direction 2: Reverse direction	1~2	1	R/W
F-06	Speed Regulation Methods	1: Speed control using panel UP/DOWN keys 2: Speed control using panel rotary knob	1~2	1	R/W
F-07	Maximum Speed	From F-08 (minimum speed) to 1700 r/min Limit the maximum speed to prevent overspeed and potential damage.	F-08~1700	1400	R/W
F-08	Minimum Speed	90 to F-07 (maximum speed) Limit the minimum speed to prevent instability caused by operating at excessively low speed.	90~F-07	120	R/W
F-09	Motor start delay after releasing the power-off electromagnetic brake during forward start	0.0~2.0 seconds: If acceleration overshoot occurs during startup, the value may be fine-tuned and increased by approximately 0.1 second.	0.0~2.0	0.0	R/W
F-10	Forward start acceleration time	0.1~10.0 seconds: A longer time results in smoother start-up and a longer starting duration; a shorter time results in faster, more abrupt start-up and a shorter starting duration.	0.1~10.0	1.0	R/W
F-11	Forward Stop Mode	1: Power-off Electromagnetic Braking Stop 2: Free stop 3: Deceleration Stop When power-off electromagnetic braking is selected, the motor stops quickly and braking is applied. If free deceleration stopping results in the motor stopping too quickly, slow deceleration stopping may be selected instead.	1~3	1	R/W
F-12	Brake application delay during forward stop	0.0~5.0 seconds: (Effective when F-11 = 1) When the motor stops, it first decelerates freely within the set time period, and braking is applied afterward.	0.0~5.0	0.0	R/W
F-13	Forward stop deceleration time	0.1~10.0 seconds (effective when F-11 = 3)	0.1~10.0	1.0	R/W
F-14	Motor start delay after releasing the power-off electromagnetic brake during reverse start	0.0~2.0 seconds: If acceleration overshoot occurs during startup, the value may be fine-tuned and increased by about 0.1 second.	0.0~2.0	0.0	R/W
F-15	Reverse start acceleration time	0.1~10.0 seconds	0.1~10.0	1.0	R/W
F-16	Reverse Stop Mode	1: Power-off Electromagnetic Braking Stop 2: Free stop 3: Deceleration Stop When power-off electromagnetic braking is selected, the motor stops quickly and braking is applied. If free deceleration stopping results in the motor stopping too quickly, slow deceleration stopping may be selected instead.	1~3	1	R/W
F-17	Brake application delay during reverse stop	0.0~5.0 seconds: (Effective when F-16 = 1) When the motor stops, it first decelerates freely within the set time period, and braking is applied afterward.	0.0~5.0	0.0	R/W
F-18	Reverse stop deceleration time	0.1~10.0 seconds (effective when F-16 = 3)	0.1~10.0	1.0	R/W
F-19	Power Frequency Setting	1: Auto-detection by driver 2: Power frequency 50 Hz 3: Power frequency 60 Hz	1~3	1	R/W
F-20	Restore Factory Settings	1: Do not restore 2: Restore	1~2	1	R/W
F-21	Current Adapted Power Frequency	50: Compatible with 50 Hz AC power supply 60: Compatible with 60 Hz AC power supply	50,60	**	RO
F-22	Software Version			*,**	RO

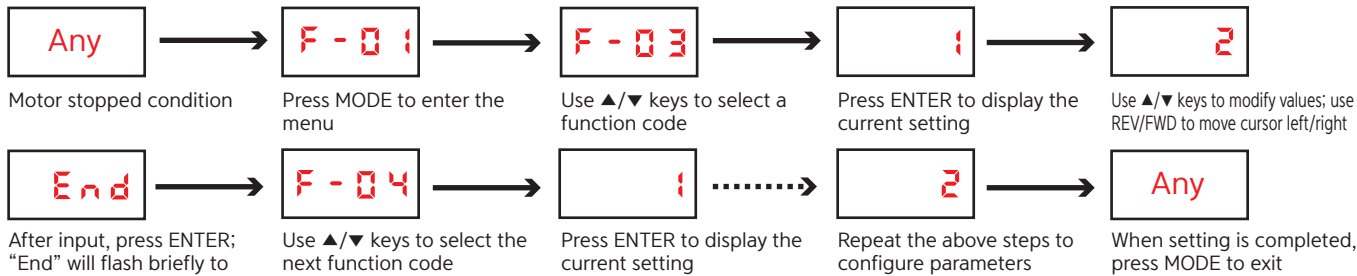
● Fault Maintenance and Status Indication

Display	Name	Cause	Solution
Fault Code	E.LOC	Motor Stall Fault	Check the wiring between the speed controller and the motor; inspect for mechanical faults; reset using the STOP key
	E.EEP	Parameter storage fault	Power cycle to clear the alarm
Warning Code	S.run	The motor is currently running; function codes cannot be modified	Stop the motor with the STOP key before making changes
	S.not.	This key is currently disabled	Modify function code F-03, F-04 or F-06
	S.Err	The driver is currently in a fault state	Clear the fault and try again
	S.loc	The keys are currently locked	Press DOWN and ENTER simultaneously to unlock

(Technical Data) EA Series Economy–Type Speed Controller

7 Menu Editing

● For safety reasons, parameter editing is only allowed when the motor is stopped; editing is disabled during operation.



Note: When the driver is in operation or stop display mode, pressing MODE and ENTER simultaneously will lock the keys. All key functions (motor control and menu entry) are disabled. Press DOWN and ENTER simultaneously to unlock and restore key functions.

8 Appearance and Installation

