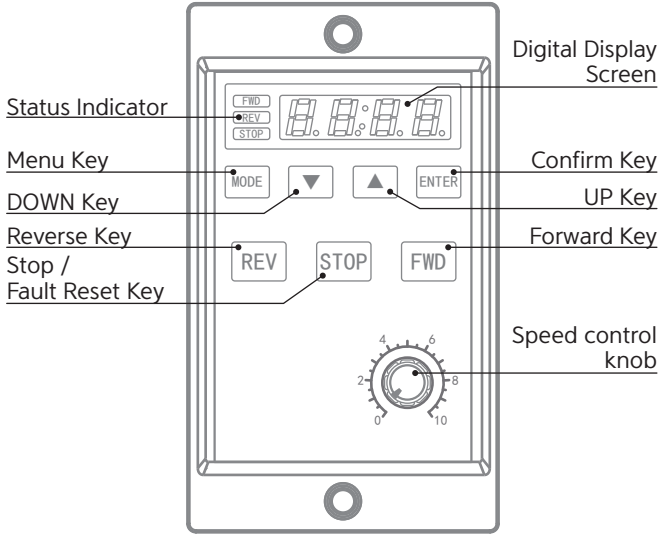


ZF Series Display Governor Type
User Manual

Dear User:

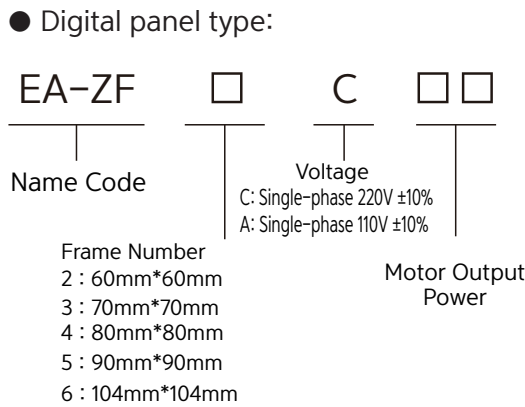
Thank you for purchasing and using this product. To ensure safety and correct operation, please read this manual carefully before use.



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 and slow deceleration;
- Supports panel operation and external switch control;
- The panel rotary knob automatically matches the maximum speed, ensuring convenient and safe speed control;
- Built-in run capacitor;
- 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)

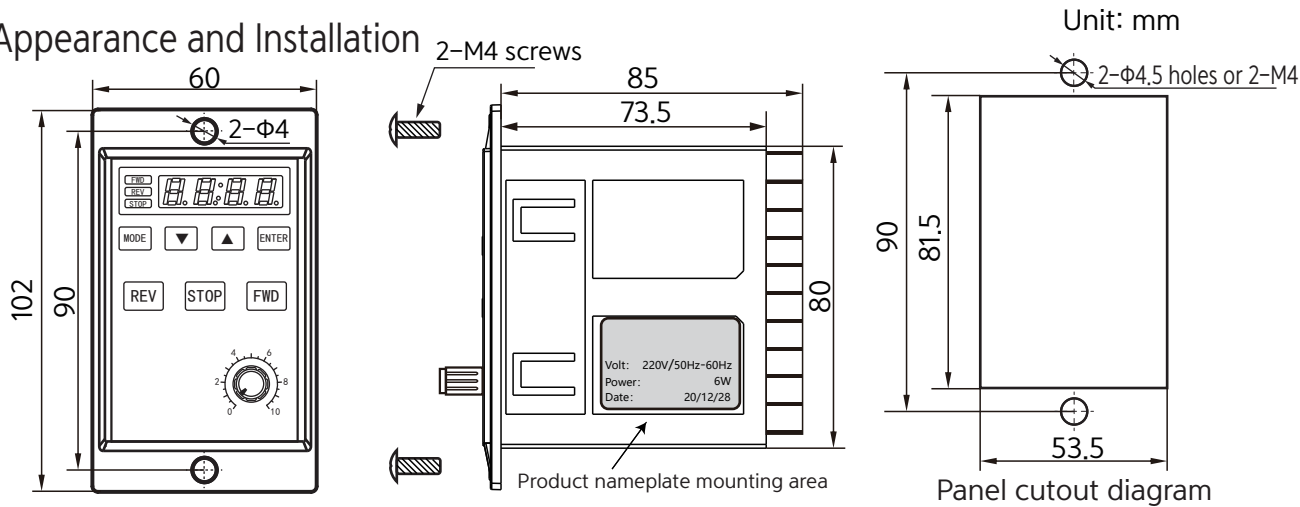
2 Model Definition Rules



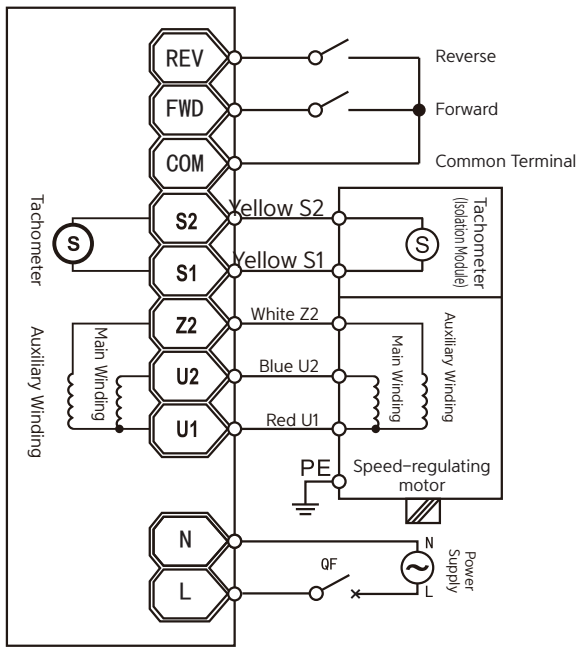
3 Model / Performance Parameter Table

Model	EA-ZF2C -6(A)	EA-ZF3C -15(A)	EA-ZF4C -25(A)	EA-ZF5C -40(A)	EA-ZF5C -60(A)	EA-ZF5C -90(A)	EA-ZF5C -120(A)	EA-ZF6C -120(A)	EA-ZF6C -140	EA-ZF6C -200
Applicable Motor Power	6W	15W	25W	40W	60W	90W	120W	120W	140W	200W
Applicable Motor Type	Speed-regulating motor									
Installation	Digital Panel Type									
Speed Regulation Method	Panel ▲/▼ keys; panel rotary knob									
Run Capacitor	Built-in (integrated inside the speed controller)									
Speed Regulation Range	50Hz: 90-1400 r/min; 60Hz: 90-1700 r/min									
Input Power Supply	Single-phase 110V ±10% / Single-phase 220V ±10%; 50Hz-60Hz									
Operating Environment	-20°C to +40°C (no freezing), below 85% RH (no condensation)									

4 Appearance and Installation



5 Speed Controller Wiring Diagram

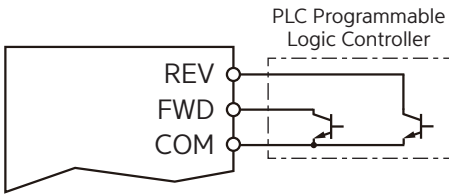


- Rotation direction control
1. Menu Setting: Set Operating Control Mode F-03 to "2" or "3" for external switch control.
 2. Connect "FWD" to "COM" for forward rotation; connect "REV" to "COM" for reverse rotation.

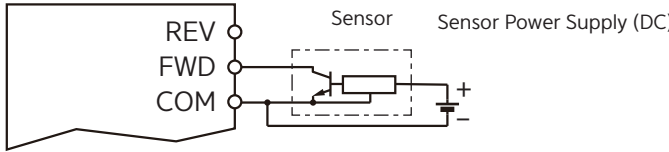
- Motor Selection
- The power rating of the speed-regulating motor must match the applicable motor power rating of the speed controller. Please ensure that the power rating shown on the controller's model label corresponds to the motor's power rating.

- 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 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.



- 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 Speed Controller 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: Panel Rotary Knob	1~2	1	R/W
F-07	Maximum Speed	F-08 (minimum speed) to 1700; limits maximum speed to prevent overspeed and potential damage (1400 r/min at 50Hz; 1700 r/min at 60Hz)	F-08~1700	1400	R/W
F-08	Minimum Speed	90 to F-07 (maximum speed) Limits minimum speed to avoid instability caused by excessively low rotation	90~F-07	120	R/W
F-09	Forward Start Acceleration Time	0.1~10.0 seconds	0.1~10.0	1.0	R/W
F-10	Forward Stop Mode	1: Free stop 2: Deceleration Stop	1~2	1	R/W
F-11	Forward stop deceleration time	0.1~10.0 seconds (effective when F-10 = 2)	0.1~10.0	1.0	R/W
F-12	Reverse start acceleration time	0.1~10.0 seconds	0.1~10.0	1.0	R/W
F-13	Reverse Stop Mode	1: Free stop 2: Deceleration Stop	1~2	1	R/W
F-14	Reverse stop deceleration time	0.1~10.0 seconds (effective when F-13 = 2)	0.1~10.0	1.0	R/W
F-15	Power Frequency Setting	1: Auto-detection by driver 2: Power frequency 50 Hz 3: Power frequency 60 Hz	1~3	1	R/W
F-16	Restore Factory Settings	1: Do not restore 2: Restore	1~2	1	R/W
F-17	Current Adapted Power Frequency	50: Compatible with 50 Hz AC power supply 60: Compatible with 60 Hz AC power supply	50,60	**	RO
F-18	Software Version			*,**	RO
F-19	Terminal Control Operating Mode	1: FWD: Forward rotation; REV: Reverse rotation 2: FWD: Direction; REV: Enable	1~2	1	R/W
F-20	Power-off State Memory for Key Operation	1: Not stored 2: Stored (saves current controller operating state)	1~2	1	R/W
F-21	Digital Input Filter Time	0~1000 ms	0~1000	50	R/W

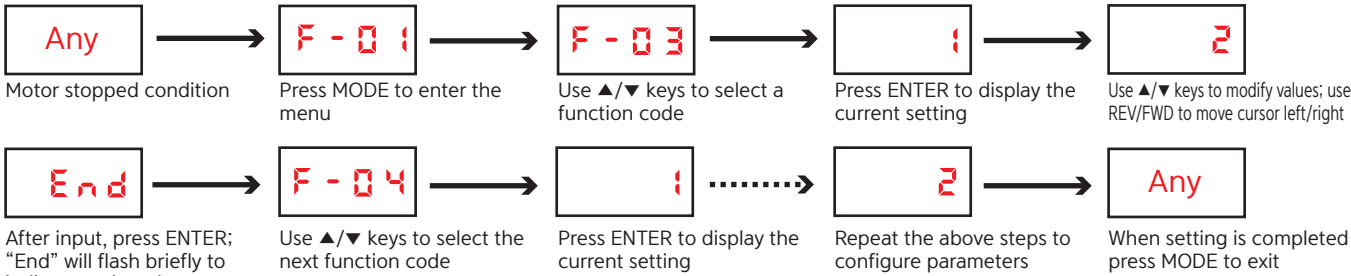
● Fault Maintenance and Status Indication

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 Precautions for Use

- Do not use the device in explosive atmospheres, flammable gas environments, corrosive environments, areas exposed to water, or near combustible materials.
- Avoid continuous vibration and excessive impact.
- During normal operation, the motor housing temperature may sometimes exceed 70°C. Therefore, in environments where the motor may be touched, users must affix the warning label shown below!



- The motor must not operate continuously under overload at low speed for an extended period.
- Ensure that the grounding terminal is properly grounded.
- Installation, wiring, inspection, and related tasks must be performed by qualified technical personnel.