

High-Voltage Sensorless Motor Driver

EA-DRVC14-120S2-R

EA-DRVC14-200S2-R



Features

- High-voltage input Single-phase AC220 V input, compatible with 200-240 V AC, 50/60 Hz power supply.
- Two power classes 120 W model with 0.8 A output and 200 W model with 1.2 A output.
- Sensorless control Closed-loop speed control for sensorless rollers; no encoder or Hall feedback is required.
- Speed setting Speed can be adjusted by the panel knob or through RS485 Modbus (RTU) communication.
- Terminal control Forward / reverse operation through dry-contact DI1 and DI2 terminals with COM common.
- Fault output / protection One DO1 fault output (24 V / 50 mA) with undervoltage, overvoltage, overload, overcurrent, and phase-loss protection.

Product Model

EA-DRVC14-120S2-R / EA-DRVC14-200S2-R

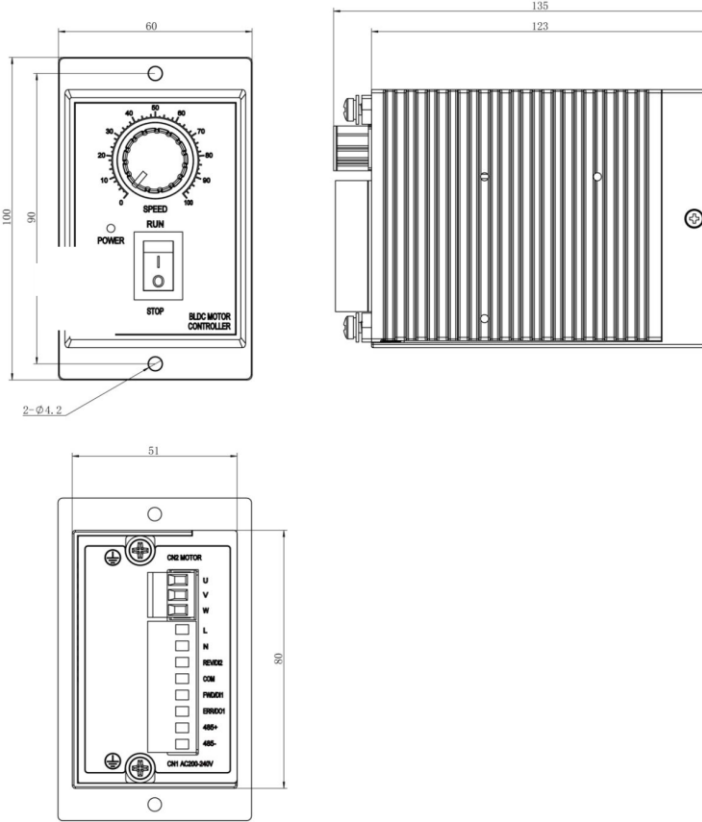
Mark	Description	Content
1	Company	EA : Misumi
2	Type	DRV : Sensorless motor driver
3	Series	C14 : C14 Series
4	Power	120 : Max. output power 120 W 200 : Max. output power 200 W
5	Voltage	S2 : High voltage AC220 V
6	Function	R : RS485 Modbus (RTU) communication

External Dimensions

Unit: mm

Environmental Requirements

Item	Req.
Ambient Temp.	-10 to +40°C Derate above +40°C; max. +50°C
Humidity	≤85% RH operation ≤90% RH storage/transport, no condensation
Altitude	≤1000 m standard Derating required above 1000 m
Protection	IP20
Vibration / Impact	Continuous vibration and excessive shock prohibited

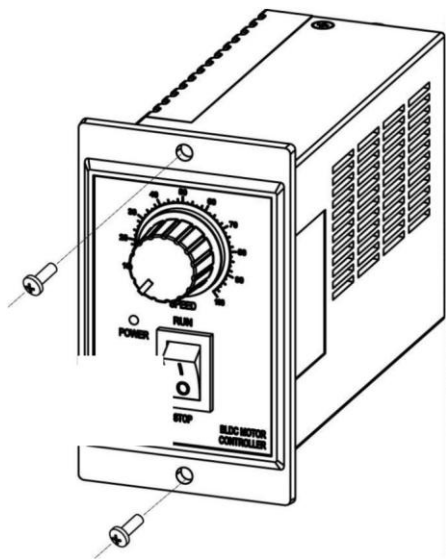


Installation & Fixing

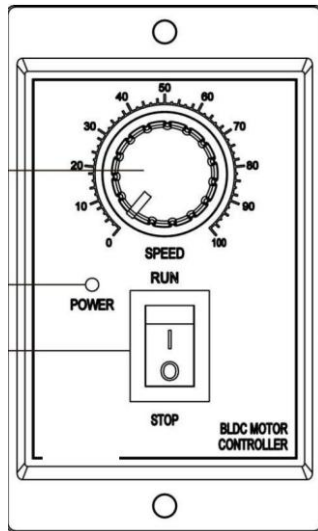
Installation Steps

- Install by embedded panel mounting on a metal surface with good heat dissipation.
- Use reliable grounding through the driver grounding screw to prevent electric shock.
- Fasten the driver with M4 screws (M4×12 recommended, GB 9074.8-1988).
- Keep at least 15 mm spacing when multiple drivers are installed side by side.
- Do not pull the motor-driver cable tight; tighten all mounting screws securely.

Do not use in explosive, flammable, corrosive, or water-contact environments.



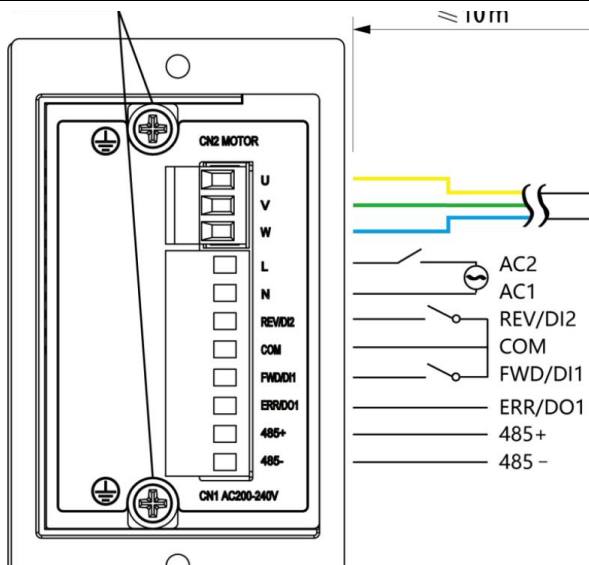
Panel Description



Panel Functions

- Speed control knob: rotate clockwise to increase speed and counterclockwise to decrease speed.
- Run/Stop switch: switch to RUN to start the motor; switch to STOP to decelerate and stop.
- Power / run indicator: shows power status and operating status.
- Factory default speed reference: panel knob adjustment; RS485 communication can also set speed.

Connection & Operation



Terminal Operation

- Short FWD/DI1 to COM for forward rotation.
- Short REV/DI2 to COM for reverse rotation.
- Use an external switch, relay, or NPN PLC output for start/stop control.
- Recommended motor-to-driver cable length: less than 10 m.
- Always turn off power before wiring and ground the driver reliably.

Terminal	Function
L / N	AC220 V power input
DI2	Reverse input
COM	Input/output common terminal, 0 V
DI1	Forward input
DO1	Fault output, open-collector
485+ / 485-	RS485 Modbus communication
U / V / W	Motor phase output; yellow / green / blue wires

Status Display & Fault Maintenance

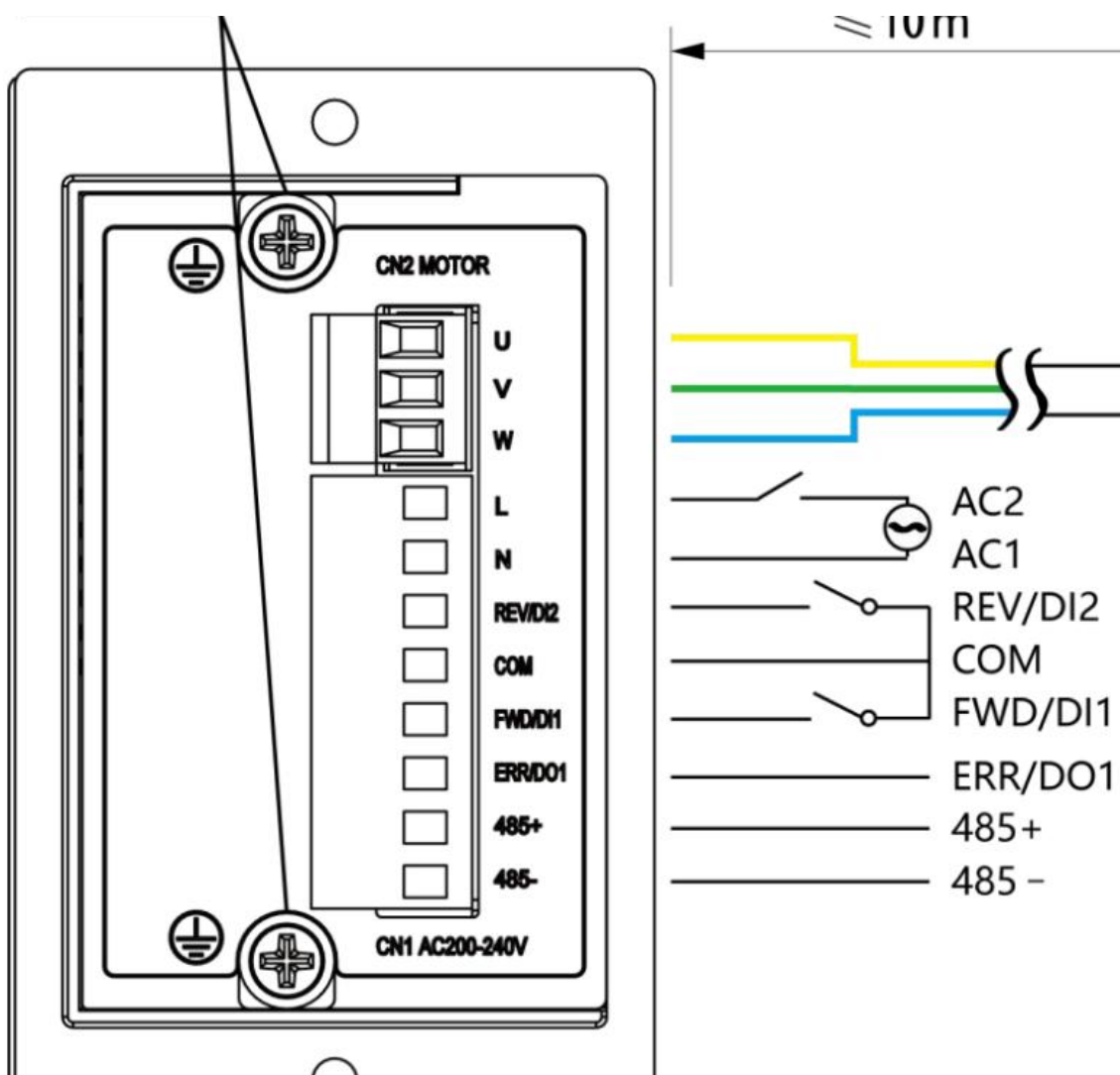
Fault indication: one green flash = 5; one red flash = 1. Fault code = green flashes × 5 + red flashes.

Code	Fault	Typical Cause	Main Action
E.OCH	Hardware overcurrent	Fast acceleration/deceleration, low voltage, sudden load, phase short, or external interference.	Increase accel/decel time; check input voltage, load, motor cable and interference source.
E.OC	Software overcurrent	Sudden load, phase-to-phase short circuit, or strong interference.	Check load status; check/replace motor cable or motor; remove interference source.
E.OL	Motor overload	Motor power too high, stall, or sudden load change.	Set motor rated current; reduce load; check motor and machinery.
E.OC1 / E.OC2 / E.OC3	U/V/W phase overcurrent	Phase current abnormal or U/V/W output phase loss.	Check power input and U/V/W connections; check cable and motor.
E.OV1	Bus overvoltage	Input voltage too high, rapid forward/reverse switching, or regenerative operation.	Check supply voltage; increase switching time; add external braking if needed.
E.LV	Bus undervoltage	Supply voltage too low, voltage drop, acceleration too fast, or hardware abnormality.	Check power input; increase acceleration time; reset fault or seek support.
E.LOC	Stall fault	Load too large or motor jammed.	Check mechanical connection and motor connection cable.
E.OH	Driver overheating	Load too large, insufficient derating/cooling, or hardware abnormality.	Cool down the unit; use with derating; seek technical support if repeated.
E.POUT	Motor phase loss	U/V/W output phase loss or driver hardware abnormality.	Check driver-to-motor wiring; seek technical support if unresolved.

RS485 Modbus (RTU) Quick Settings

Item	Quick Note
Protocol	MODBUS-RTU; supported function codes: 0x03 read, 0x06 write single register, 0x10 write multiple registers.
Default communication	Baud rate 19200 bps, 8 data bits, no parity, 1 stop bit (N,8,1).
Slave address	Default address 01; available address range 1-247, 0 is broadcast address.
Communication wiring	Use RS485 twisted-pair cable; connect 485+ to A and 485- to B. Keep communication and power cables separated.
Maintenance reminder	Disconnect power before maintenance; trial run after troubleshooting; do not disassemble the driver for unauthorized repair.

■ Wiring Diagram



Key Wiring Notes

- AC220 V single-phase input via L / N (200–240 V AC, 50/60 Hz).
- Motor phase output: U / V / W.
- DI1 = Forward, DI2 = Reverse, COM = 0 V common terminal.
- DO1 = Fault output; 485+ / 485- = RS485 Modbus (RTU).
- Recommended motor-to-driver cable length: less than 10 m.
- Turn off power before wiring and ensure reliable grounding.

Terminal Mapping

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L / N	AC220 V power input
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