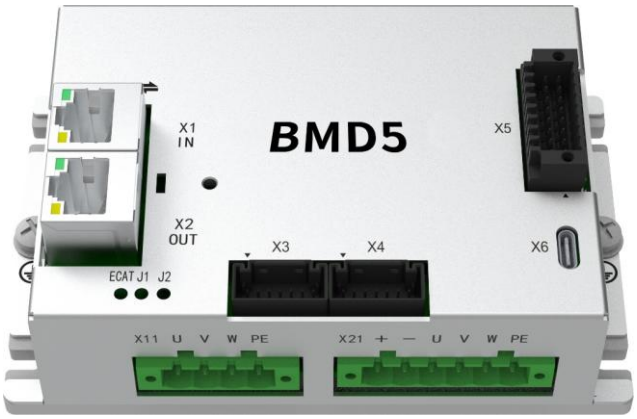
Datasheet
BMD5 FieldBus Multi-axis Drive

Highlights

FieldBus Multi-axis Drive

- **Cost-Effective Design**
  - Compact structure saves installation space
  - Simplified wiring reduces material costs
  - Quick installation improves overall efficiency

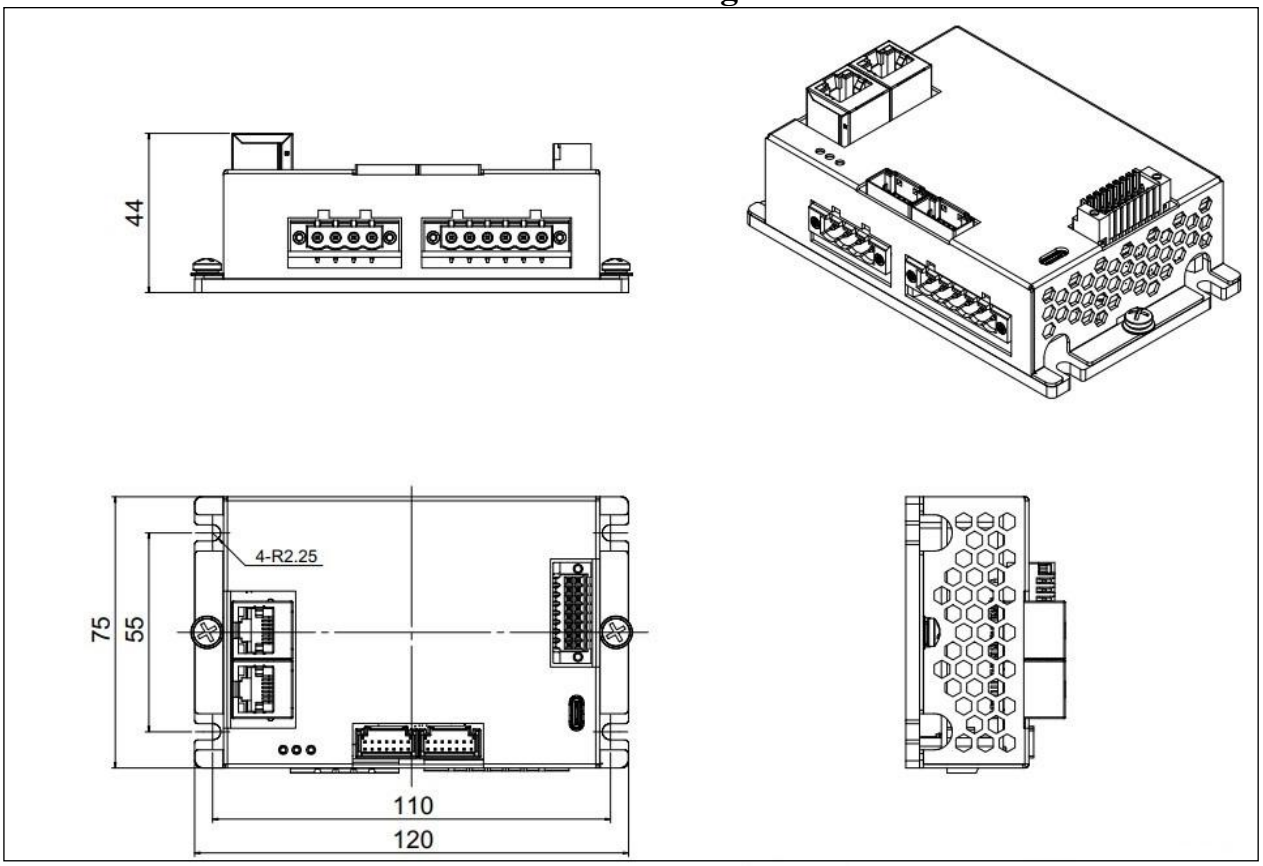


- **Efficient and Easy to Use**
  - Multi-axis commissioning from one interface simplifies the workflow
  - Commission multiple axes through a single Ethernet cable and avoid repeated plugging and unplugging
  - Equipped with intelligent commissioning software; supports automatic parameter tuning and guided setup
- **Rich Functions**
  - Supports chip-level high-performance gantry synchronization, with control accuracy consistent with single-axis control
  - Flexible support for both flexible and rigid gantry applications
  - Provides synchronous position control, speed control, synchronous phase search, homing, stop, and other functions
- **Compatible with Multiple Encoder Types**
  - Supports multiple encoder protocols (Tamagawa, BiSS-C, EnDat 2.2, ABZ incremental, Hall) for diverse application scenarios
- **Supports Force/Torque Control**
  - High-precision current feedback components enable closed-loop force/torque control
  - Low fluctuation and smooth operation meet high-precision control requirements
- **Suitable for Multiple Industries**
  - Meets the needs of specialized applications such as wafer handling, circular conveyor transport, and ZR motors

1. Specifications

FieldBus Multi-axis Drive			
Model			**BMD5-2A03-D60-ZE-C06**
Main Power Supply			12~60 VDC
Rated Output Current			1.5/3 Arms
Maximum Output Current			4.5/9 Arms
Cooling Method			Natural cooling
Dimension：(Width x Height x Depth)			75 mm × 120 mm × 44 mm
I/O Interface	**Digital Input**		6 channels, opto-isolated, 12-24V, delay <1ms, supports NPN and PNP wiring methods
	Digital Output		4 channels, opto-isolated, OC output 5~30V, 50mA, delay <1ms
	Analog Input	**Number of Channels**	1 channel
		Voltage Range	-10 V~+10 V
		Input Resolution	16 bit
		Bandwidth	10 KHz
HMI	**Commissioning Interface**	**Communication Interface**	USB, Type-C port
		Commissioning Software	DriveMaster
	Status Display		Axis system status LED x2, EtherCAT communication status LED x1
Encoder Interface	**Asynchronous Serial Encoder**		Tamagawa，Panasonic
	Synchronous Serial Encoder		BiSS-C
	ABZ Incremental		A, B, Z differential signals, maximum frequency 20 MHz
	Hall Sensor		TTL single-ended input signal
EtherCAT	**Minimum Communication Cycle**		250 μs
	Apply industry standards		CiA402/CoE
	Synchronization Type		SYNC0 Event synchronization, Free Run (only supports PP operation mode)
	Operation Mode		CSP/CSV/CST/PP/PV/PT/HM
Operating Environment	**Operating Temperature and Relative Humidity**		0 ℃ to 45 ℃ without derating; 45 ℃ to 55 ℃ with derating; 10%-95% RH (non-condensing)
	Storage Temperature and Relative Humidity		-40 ℃ to 65 ℃; 10%-90% RH (non-condensing)
	Vibration		2 Hz to 9 Hz, amplitude 1.5 mm; 9 Hz to 200 Hz, acceleration: 0.5 g
	Altitude		Below 1000 m above sea level
Compliance Standards	**Electrical Safety Standard**		EN 61800-5-1
	EMC Standard		EN 61800-3
Physical Specifications	**Mounting Method**		Wall-mounted installation
	Protection Rating		IP20

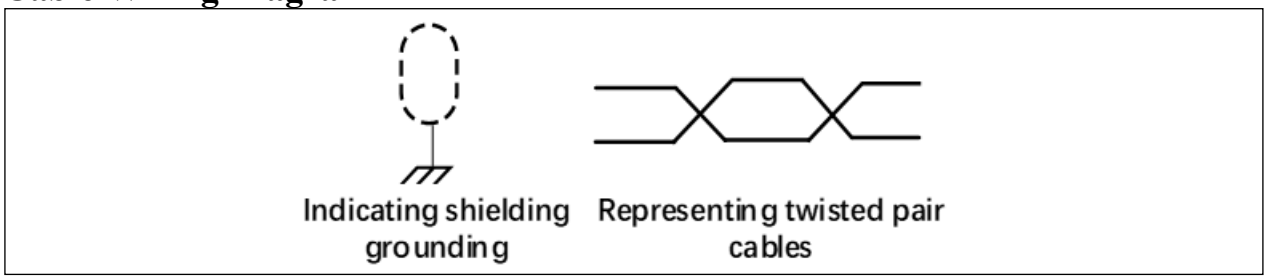
2. FieldBus Multi-axis Drive Dimension Drawing



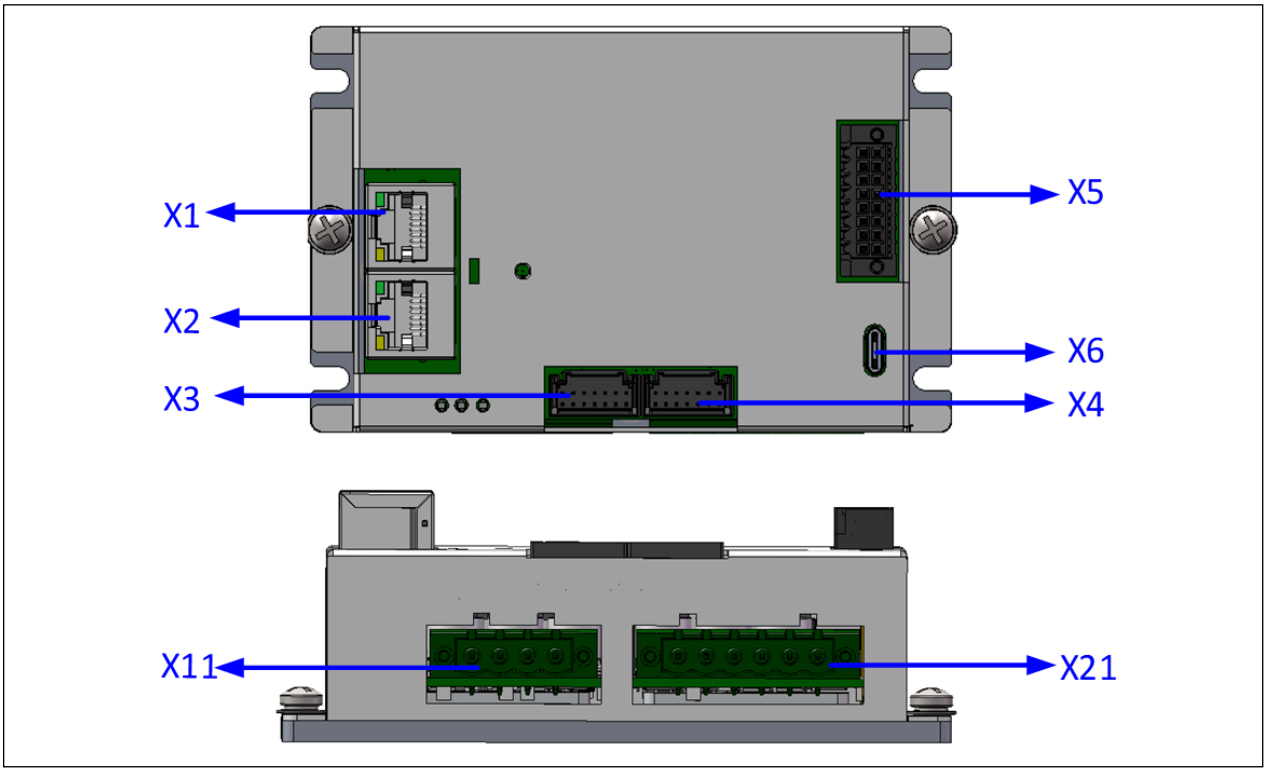
Note:

1. All dimensions are in millimeters.
2. For dimensions not shown in the drawing, please contact the sales team.

3. Cable Wiring Diagram

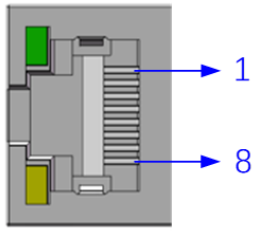


4. Port Locations and Names

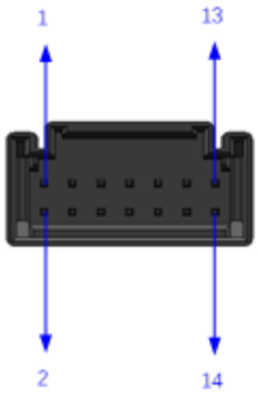


Port	Function
X1	EtherCAT-IN communication port
X2	EtherCAT-OUT communication port
X3	Axis 1 encoder port
X4	Axis 2 encoder port
X5	DI/DO port
X6	Commissioning port
X11	Axis 1 motor power output port
X21	Power input port and Axis 2 motor power output port

4.1 EtherCAT Communication Port (X1/X2)

Terminal Diagram	Pin	Name	Description
	Pin 1	TX+	Data transmit +
	Pin 2	TX-	Data transmit -
	Pin 3	RX+	Data receive +
	Pin 4	-----	NC
	Pin 5	-----	NC
	Pin 6	RX-	Data receive -
	Pin 7	------	NC
	Pin 8	------	NC

4.2 Axis 1 / Axis 2 Encoder Port (X3/X4)

Terminal Diagram	Pin	Name	Description
	Pin 1	A+/DATA+	Encoder incremental A+ signal / serial data signal +
	Pin 2	A-/DATA-	Encoder incremental A- signal / serial data signal -
	Pin 3	B+/CLK+	Encoder incremental B+ signal / serial clock signal +
	Pin 4	B-/CLK-	Encoder incremental B- signal / serial clock signal -
	Pin 5	Z+	Encoder incremental Z+ signal
	Pin 6	Z-	Encoder incremental Z- signal
	Pin 7	+5V	5 V power supply positive
	Pin 8	GND	5 V power supply negative
	Pin 9	+5V	5 V power supply positive
	Pin 10	GND	5 V power supply negative
	Pin 11	HALL-U	Hall U-phase signal
	Pin 12	HALL-V	Hall V-phase signal
	Pin 13	HALL-W	Hall W-phase signal
	Pin 14	PE	Protective earth

4.3 DI/DO Port (X5)

Terminal Diagram	Pin	Name	Description
	Pin 1	AIN-	Analog input signal -
	Pin 2	AIN+	Analog input signal +
	Pin 3	GND	Signal ground
	Pin 4	GND	Signal ground
	Pin 5	DI2	Digital input signal DI2
	Pin 6	DI1	Digital input signal DI1
	Pin 7	DI4	Digital input signal DI4
	Pin 8	DI3	Digital input signal DI3
	Pin 9	DI6	Digital input signal DI6
	Pin 10	DI5	Digital input signal DI5
	Pin 11	DO-COM	Digital output signal common terminal
	Pin 12	DI-COM	Digital input signal common terminal
	Pin 13	DO2	Digital output signal DO2
	Pin 14	DO1	Digital output signal DO1
	Pin 15	DO4	Digital output signal DO4
	Pin 16	DO3	Digital output signal DO3

4.4 Commissioning Port (X6)

Terminal Diagram	Description
	Use a Type-C commissioning cable for the commissioning port

4.5 Axis 1 Motor Power Output Port (X11)

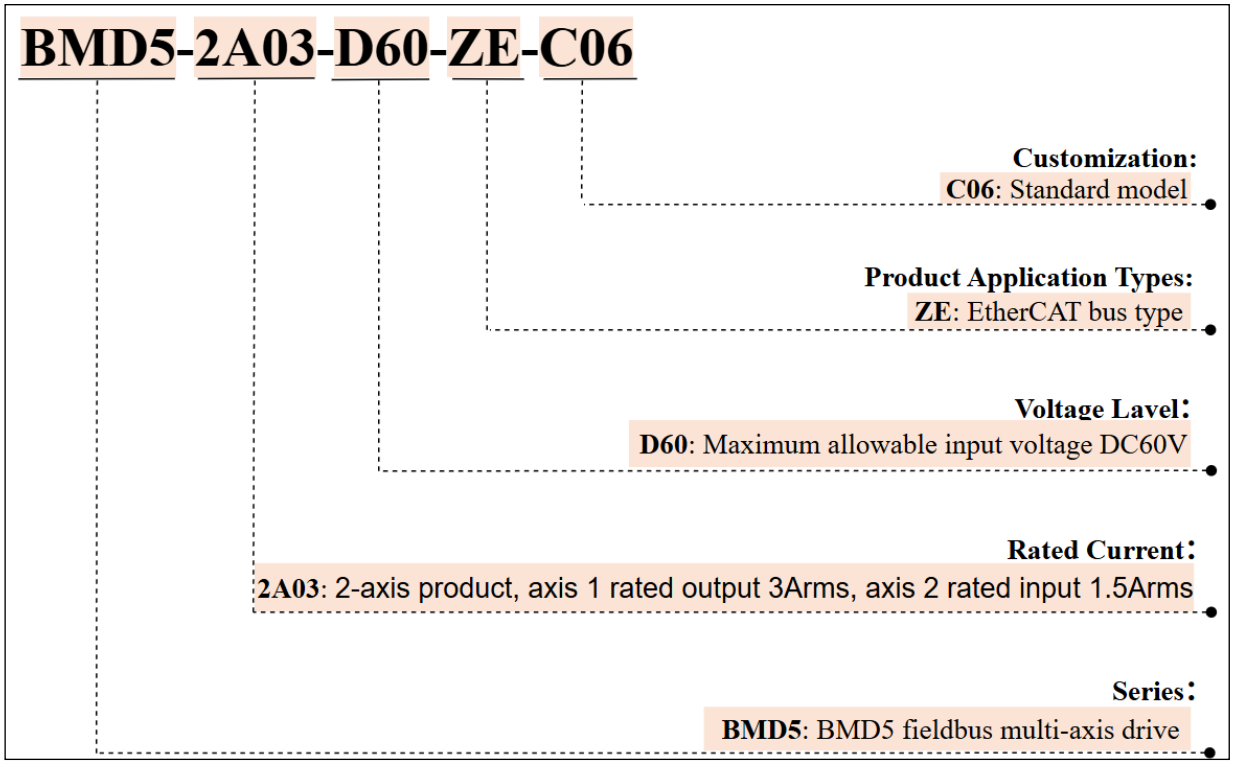
Terminal Diagram	Pin	Name	Description
	**Pin 1**	U	Motor power output port
	Pin 2	V	
	Pin 3	W	
	Pin 4	PE	Protective earth

4.6 Power Input Port and Axis 2 Motor Power Output Port (X21)

Terminal Diagram	Pin	Name	Description
	**Pin 1**	DC+	Power input port (DC 12 V-60 V)
	Pin 2	DC-	
	Pin 3	U	Motor power output port
	Pin 4	V	
	Pin 5	W	
	Pin 6	PE	Protective earth

5. Model Name

5.1 BMD5



Note:

1. For customization, please contact the sales team for more information.