BLE FLEX

New Release of the **BLE** Series **RS-485** Communication Type Connecting to various Host Systems

A **RS-485** Communication Type has been added to the Standard Brushless Motor **BLE** Series. It can be connected to various host systems contributing to a smooth system configuration. It can be controlled entirely from a host system because operation, configuration, and monitoring are fed back to the host system.

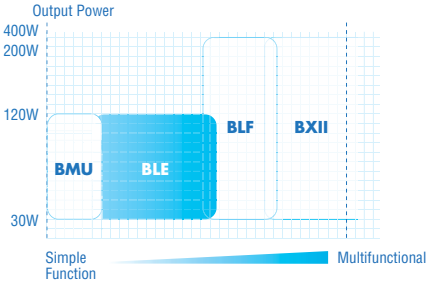
- Features of the Brushless Motor **BLE** Series
  - Brushless Motor – Basic Features
    - Wide Speed Control Range from Low to High Speed
    - Compact yet Powerful
    - Excellent Speed Stability
    - Contributes to Energy Savings
  - Special Functions and Features of the **BLE** Series
- FLEX Features of the Flex **RS-485** Communication Type
  - Flexible Connection with the Host System
    - I/O Control
    - Modbus Control
    - Industrial Network Control (via Network Converter)
  - Advantages of the RS-485 Communication Type

FLEX What is FLEX?

FLEX is a collective name for products that support Industrial Network control via I/O control, Modbus (RTU) control, and network converters. These products enable simple connection and simple control, shortening the total lead time for system configuration.

BLE Series, the new standard of Brushless DC Motors

The brushless DC motor series have various output powers and functions. The **BLE** Series has a speed control range of 100~4000 r/min and sets a new standard for the Oriental Motor brushless DC motors.
It provides easy-to-use speed control, high output power, geared types and accessories.



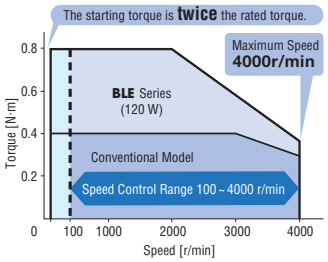
Position of each Brushless DC Motor Series

Features of Brushless DC Motors - BLE Series

Features of standard Brushless DC Motors

Speed Control Range of 100 to 4000 r/min and Speed Ratio of 1:40

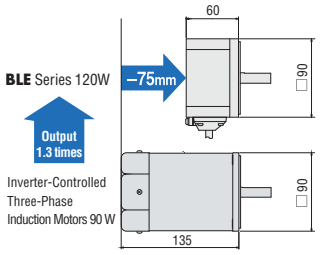
Compared with the conventional model, the speed control range is greatly expanded.
Use in high-speed applications even at the maximum speed of 4000 r/min is possible.



Speed Control Range **BLE** Series: 100 to 4000 r/min (speed ratio 1:40)
Conventional Model: 300 to 3000 r/min (speed ratio 1:10)

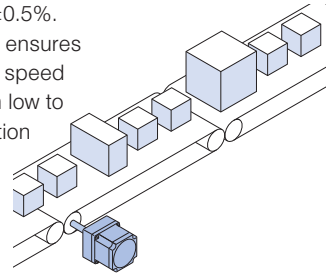
Compact yet Powerful

Brushless motors have slim bodies and provide high power due to permanent magnets being used in the rotor. For example, the overall length is 75 mm shorter and the output power is 1.3 times higher than that of three-phase induction motors with a frame size of 90 mm. Using brushless motors can contribute to downsizing of equipment.



Excellent Speed Stability

The speed regulation (load) is ±0.5%.
For this reason, this mechanism ensures that the motor drives at a stable speed over its entire speed range from low to high, even when the load condition fluctuates.



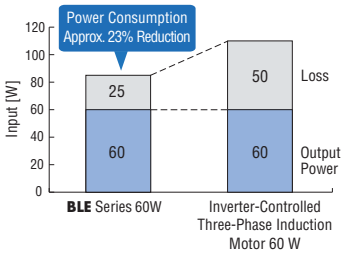
Conventional Model		**BLE** Series*	
Load	-1%	Load	±0.5%
Voltage	±1%	Voltage	±0.5%
Temperature	±1%	Temperature	±0.5%

*During Analog Setting

Contributes to Energy Savings

Brushless motors, which incorporates permanent magnets in the rotor, generate little secondary loss from the rotor. This allows for power consumption to be reduced by approximately 23% compared with inverter-controlled threephase induction motors*. This contributes to energy savings with equipment.

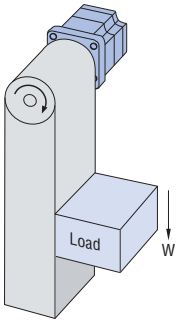
* When output power is 60 W



Functions and features of the **BLE** Series

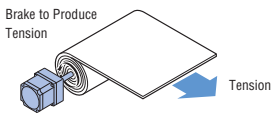
Speed Control During Vertical Operation is Possible

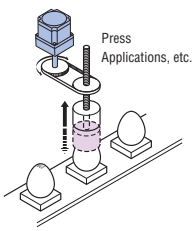
The electromagnetic brake type motor enables stable speed control even during vertical operation (gravitational operation).
The electromagnetic brake is automatically controlled via the driver in accordance with ON/OFF of the operation command signal. When the power supply is turned off (or when a power failure occurs), the motor stops instantly to hold the load in place.



Limiting the Motor Output Torque

The motor output torque can be suppressed in accordance with the application and use condition.





Long Life Gearhead Rated Life of 10000 Hours

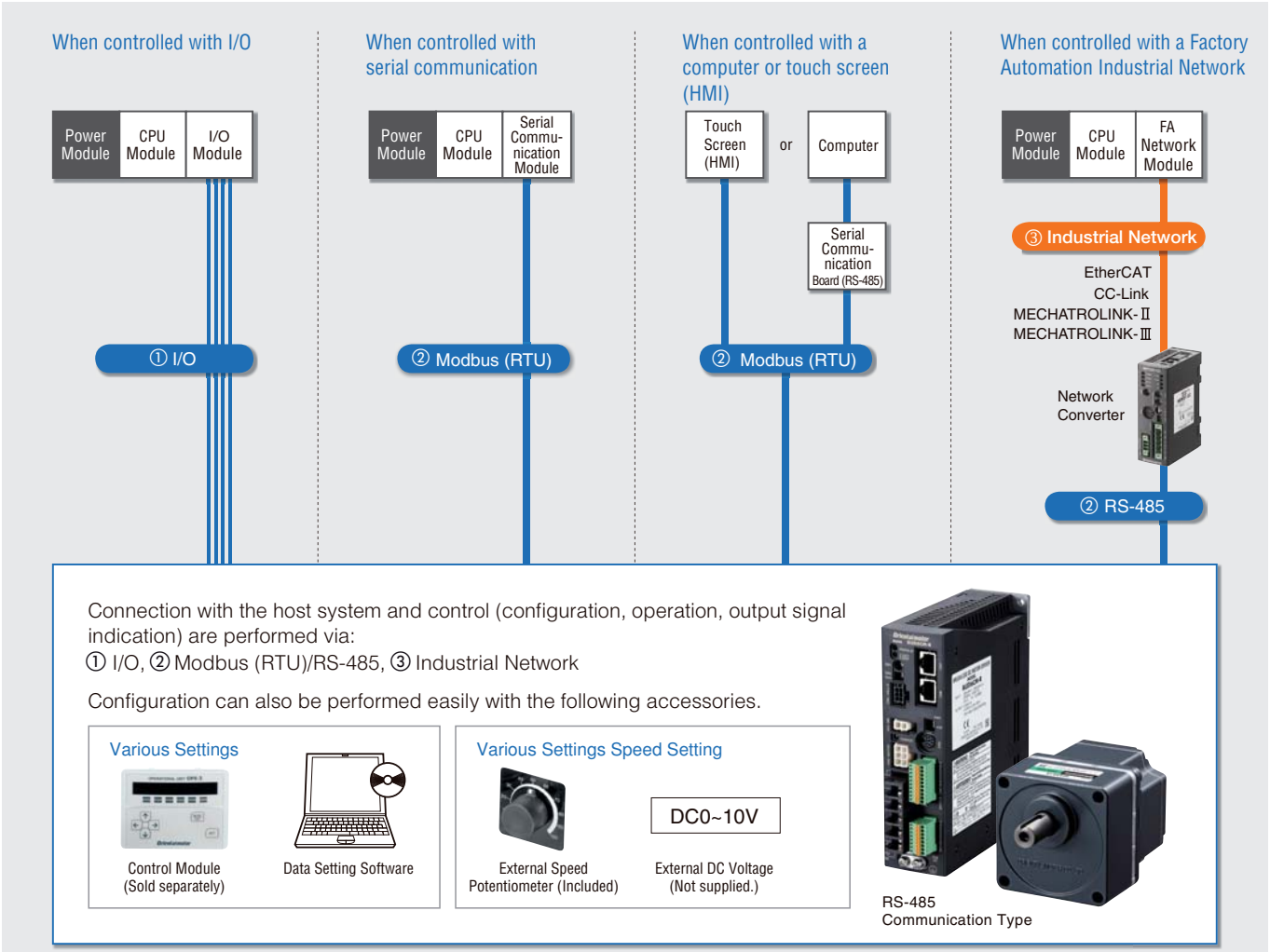
The rated life of the parallel shaft gearhead and hollow shaft flat gearhead is 10000 hours. The parallel shaft gearhead has a long life that is twice as long as that of a conventional model.

Features of the RS-485 Communication Type

FLEX Compatible – Connect to Various Host Systems

In addition to the conventional I/O control, Industrial Network control is now possible using Modbus (RTU) or network converters.

RS-485 Communication Type



① I/O

Connect directly to a switch box or PLC to construct an operation system controlled via I/O communication.

② Modbus (RTU)/RS-485

RS-485 communication can be used to set operating data and parameters and input operation commands.
Up to 31 drivers can be connected to a serial communication unit. The motor has a function that enables multiple shafts to be started simultaneously.
The Modbus (RTU) protocol is supported and can be used to connect to panel computers and PCs.

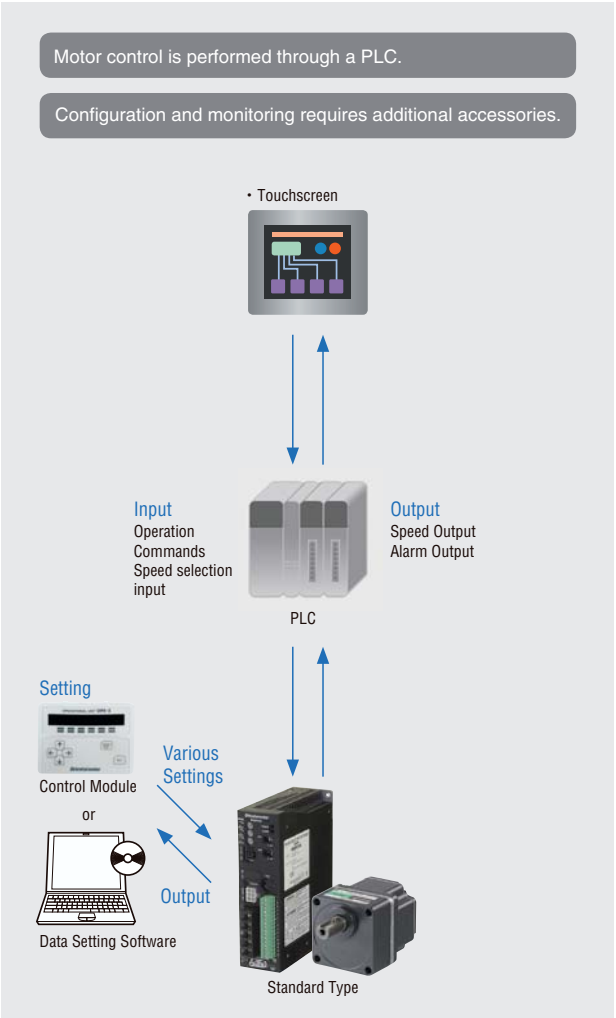
③ Industrial Network

Using a network converter (sold separately) enables support with EtherCAT communication, CC-Link communication and MECHATROLINK communication. These can be used to set operating data and parameters and input operation commands.

Advantages of the RS-485 Communication Type

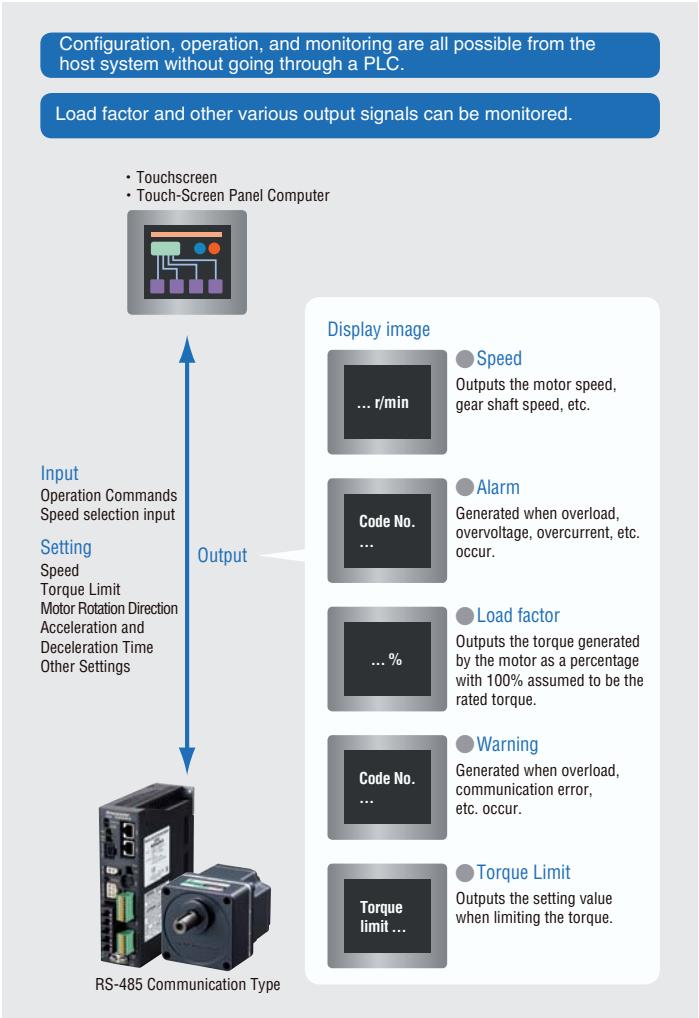
The **BLE** Series FLEX RS-485 Communication Type can be controlled entirely from a host system because operation, configuration, and monitoring are fed back to the host system. When the control of touchscreen or touch-screen panel computer is used, load factor and other various output signals can be monitored.

Standard Type



The motor is controlled through inputs received from a switch box, PLC, or the like.
The motor outputs motor speed, alarm, and other signals to the host system.

RS-485 Communicacion Type



The motor can be controlled directly from the host system such as a touchscreen or touch-screen panel computer.
The motor outputs its operating status such as motor speed and load factor to the host system to help improve equipment reliability.

Lineup of the **BLE** Series

You can select a product that best suits your equipment from the following three types.

Standard Type

FLEX RS-485 Communication Type

Motor Types

Combination Type and Parallel Shaft Gearhead

Combination Type - Hollow Shaft Flat Gearhead

Round Shaft Type

Standard or with electromagnetic brake

Frame size · Output Power: ☐60 mm · 30 W, ☐80 mm · 60 W, ☐90 mm · 120 W