

BLDC SPEED CONTROL UNIT

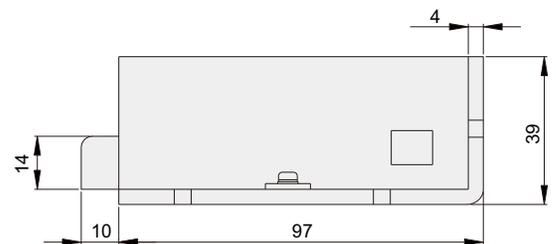
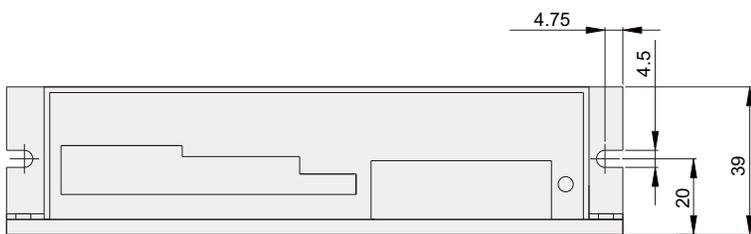
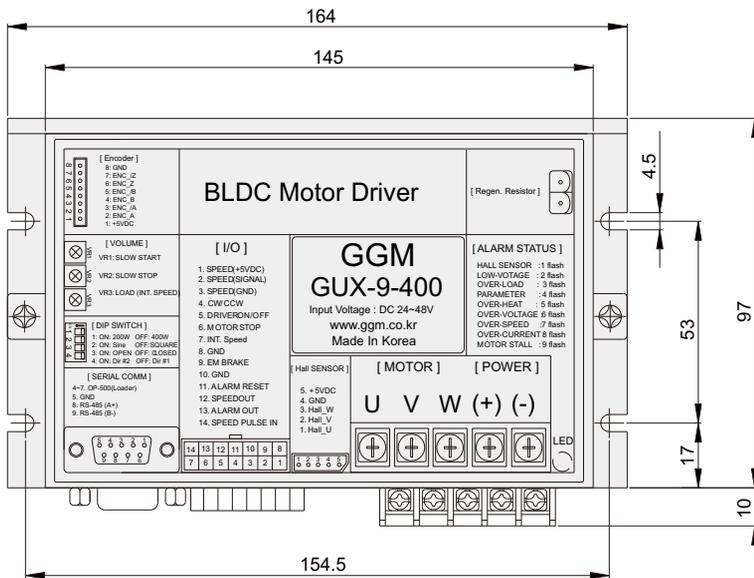
GUX

GUX-9-400

X Series motor applied product

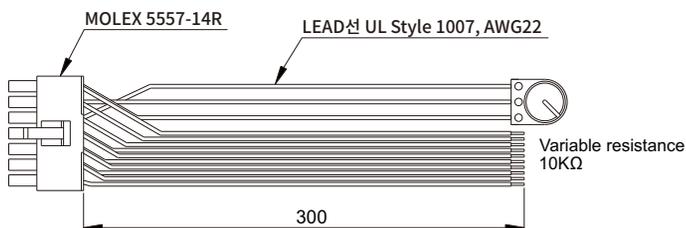
Product appearance

■ Driver main part outside view

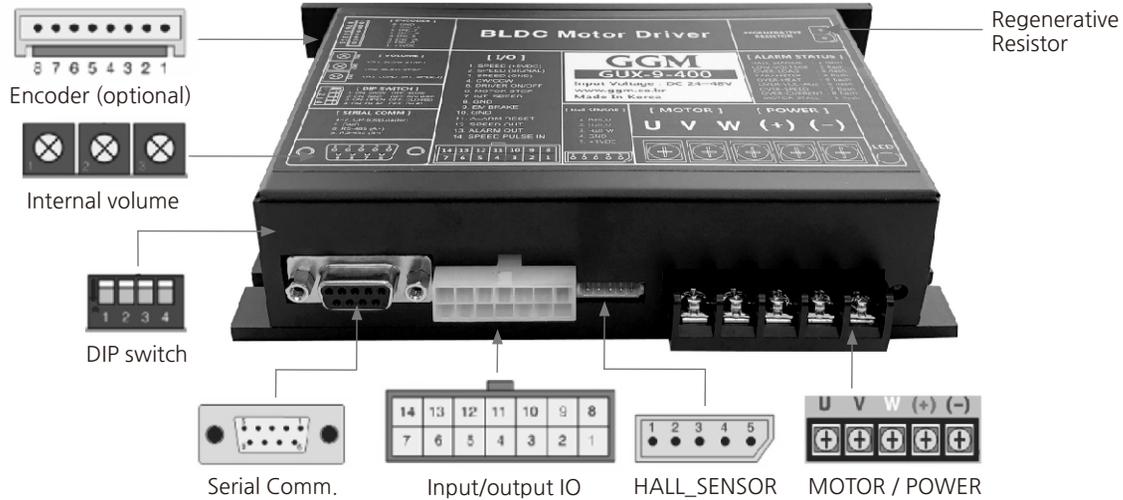


[Accessory]

■ Driver input signal cable, External volume



→ Name and functions of each part



Internal volume setting	
1	SLOW START
2	SLOW STOP
3	LOAD (INT. SPEED)

DIP switch	
1	ON:200W, OFF:400W
2	ON:Sine wave OFF:Square wave
3	ON:OPEN, OFF:CLOSE
4	ON:Communication control OFF:I/O Control

Serial communication	
1,2,3	Not Used
4	OP-500 (+5VDC)
5	OP-500 (GND)
6	OP-500 (RX)
7	OP-500 (TX)
8	RS-485 (A+)
9	RS-485 (B-)

Hall sensor	
1	Hall_U (BROWN)
2	Hall_V (WHITE)
3	Hall_W (ORANGE)
4	GND (GREEN)
5	+5VDC (YELLOW)

Motor and power	
U	MOTOR_U (BLUE)
V	MOTOR_V (PURPLE)
W	MOTOR_W (GRAY)
+	V+ (200W-DC24V/400W-DC48V)
-	GND

1.Specifications

Item	Contents		Note
Rated output[W]	200W	400W	
Input power[V]	DC 24V (±10%)	DC 48V (±10%)	
Rated current[A]	13 Arms	11 Arms	
Maximum current[A]	25 Arms	18 Arms	
External dimensions (mm)	164 X 97 X 39		
Communication	RS485		
Range of speed control	100 ~ 4,000 r/min (Speed regulation less than ±1%)		

2. LED specifications

Item	LED indication	Note
Hall sensor alarm	Flashes once every 6 seconds (red)	
Low voltage alarm	Flashes twice every 6 seconds (red)	
Overload alarm	Flashes 3 times every 6 seconds (red)	
Parameter alarm	Flashes 4 times every 6 seconds (red)	
Overheating alarm	Flashes 5 times every 6 seconds (red))	
Overvoltage alarm	Flashes 6 times every 6 seconds (red)	
Overspeed alarm	Flashes 7 times every 6 seconds (red)	
Overcurrent alarm	Flashes 8 times every 6 seconds (red)	
Stall alarm	Flashes 9 times every 6 seconds (red)	
Normal	Control ON status: Green ON Control OFF status: OFF Motor operation status: Blue ON	

3. Specifications for DIP switch and internal volume

Item	Pin No.	Contents	Note
DIP switch	1	ON : 200W, OFF: 400W	
	2	ON : Sine wave, OFF: Square wave	
	3	ON : OPEN (Output in proportion to the input voltage value without controlling speed feedback) OFF : CLOSE (Output in proportion to the speed reference voltage value using the speed feedback control)	Default setting OFF
	4	ON : Communication control OFF : I / O control	Default setting OFF
Internal volume	1	Adjust acceleration time	
	2	Adjust deceleration time	
	3	Adjust load factor / Adjust speed at the time of initializing the speed(SPEED INI)	

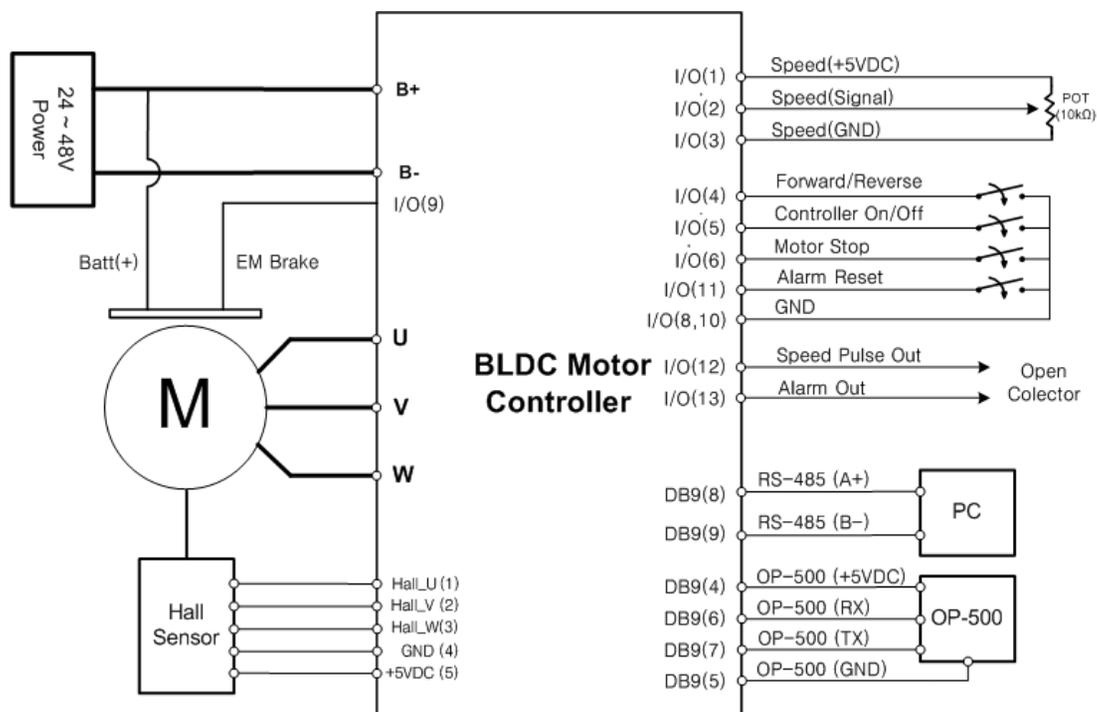
4. Specifications for motor and other connectors

Specifications for connectors	Pin No.	Symbol	Contents	Note
MOTOR/POWER [BR-900MB-5]	1~3	U, V, W	Motor power line	
	4	V+	24V, 48V	
	5	GND	Ground	
HALL_SENSOR [LAB0640-5]	1~3	Hu,Hv,Hw	Hall sensor signal	
	4,5	Gnd, 5V	Hall sensor power	
Input/output I/O [LAD1140-14]	1~14	-	Refer to the details of input/output signals	
Serial Comm. [DB9 (Female)]	1~3	-	Not USED	
	4,5	Power	OP-500(+),OP-500(-)	OP option
	6,7	RS-232	Packet reception packet transmission	
	8,9	RS-485	T/R+, T/R-	
Encoder [SMAW200-8]	1,8	+5,GND	Encoder power	Option YEONHO
	2~7		Encoder signal	
Regenerative Resistor [TB39R-02P]				
Input/output I/O [LAD1140-14]			Input and output control signal line Refer to the attached specifications in the details	

5. Input and output I/O specification

Pin No.	Name of signal	Color	Contents
1	+5V	Red	Direct current power for speed setting (+5V) / This is used as the power input of variable resistance for receiving this power supply from the external source and entering the speed, and it is prohibited to use it for any other purpose. 10KΩ (1/4W or higher) is used when the external variable resistance is used.
2	SPEED IN	Orange	Direct current power input for speed setting/ Change the motor speed up to the maximum speed in proportion to (0~5VDC).
3	GND	Black	GND
4	CW/CCW	Yellow	Decides the motor direction. CW direction if the input is "Low" (GND connection). CCW direction if the input is "High" (no GND connection).
5	START	White	If the input is "Low" (GND connection), the motor control function is enabled(Motor rotation ready). If the input is "High" (no GND connection) during motor rotation, the motor will stop automatically.
6	STOP	Blue	If the input is "Low" (GND connection) during motor rotation, the motor is stopped by the deceleration brake.
7	INT_SPEED	Brown	If the input is "Low" (GND connection), the speed is set using the internal volume (#3). If the input is "High" (no GND connection), the speed is set using the external volume.
8	GND	Black	GND
9	EM BRAKE	Green	Electromagnetic brake operation port
10	GND	Black	GND
11	ALARM Reset	Gray	This eliminates the cause of an alarm and forcibly resets the alarm. If the input is "Low" (GND connection), the alarm is reset.
12	SPEED_OUT	Pink	Outputs a signal pulse when the motor rotates. (Outputs 15 signal pulses per one motor rotation.)
13	ALARM_OUT	Purple	When an alarm occurs, the output is changed to "Low"(0V). Normal operation status is "High".

6. Wiring diagram



7. Function

■ Input voltage

200W motor : DC 24V (±10%)

400W motor : DC 48V (±10%)

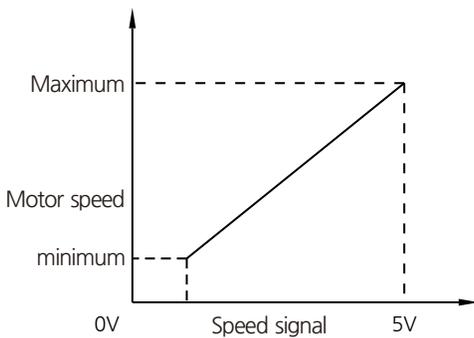
■ Speed control

If I/O No. #7 input is "High" (5V), the motor speed is changed up to the maximum speed in proportion to the external volume (I/O#2) input voltage (0~5VDC).

10KΩ (1/4W or higher) is used when the external variable resistance is used.

If I/O No. #7 input is "Low" (GND connection), the motor speed is changed up to the maximum speed in proportion to input volume (Vol#3) input voltage (0~3.3VDC).

(Apply after changing the I/O No. #7 setting and resetting Power On)



■ Motor direction control

If I/O No. #4 input is "Low" (GND connection), the motor rotates in the direction of CW (motor shaft direction).

If I/O No. #4 input is "High" (no GND connection), the motor rotates in the direction of CCW (motor shaft direction).

■ Controller ON/OFF control

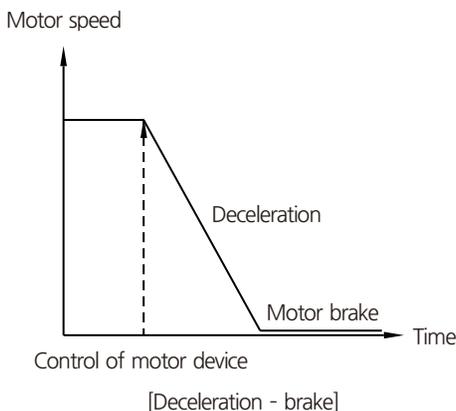
If I/O No. #5 input is "Low" (GND connection), the motor control function is enabled. (LED Green ON)

(Motor rotation ready)

Motor operation begins according to the external volume input value. If the input is "High" (no GND connection) during motor rotation, the motor stops automatically.

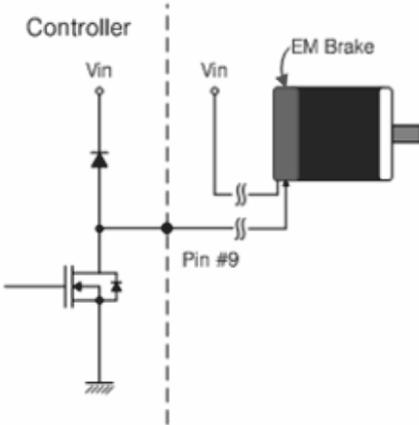
■ Motor stop control

If I/O No. #6 input is "Low" (GND connection) during motor rotation, the motor stops (deceleration brake is not maintained).



■ Electromagnetic brake control

- Electromagnetic brake wiring
(Connect the power supply line to the control power (+) and the other line to I/O No. #9.)
- When the motor operates after Control ON, the electromagnetic brake is activated.
- When the motor stop operates after Control OFF, the electromagnetic brake is turned off.



■ Output signal

Output of motor speed pulse	Output of alarm signal
<p>I/O #12 outputs a signal pulse when the motor rotates. (Outputs 15 signal pulses per motor rotation.)</p>	<p>When an alarm occurs, the I/O #13 output is changed to "Low"(0V).</p>