DINGS'
Precision Motion Specialist

VER 1.4 **Technical Manual**

DS-CLS9-FRS4-01

Table of Contents

1. Main Specification

Project	Content	Remarks
Model	DS-CLS9-FRS4-01	
power supply	DC 24V~48V ±10%	
Rated output current	DS-CLS9-FRS4-01　3.0A (0 -peak)	Continuous current
Maximum output current	DS-CLS9-FRS4-01　4.5A (0 -peak)	Instantaneous current
Control object motor	Encoder 2-phase bipolar stepper motor	
Drive mode	PWM constant current drive	
I/O	[Input] ☐ Pulse, direction input (configurable as digital input) ☐ Digital input 5 ☐ Encoder input (A, B, Z) [Output] ☐ 4 digital outputs ☐ Coded signal output (differential A, B, Z)	The rest of the input/output can be freely configured via communication, except that the encoder output is fixed.
Digital input details	/SV ON (Servo On) /RESET (alarm reset) /START (motor start/stop) /JOG (motor jog) /HOME (zero point)	
Digital output details	/IN POTISION /ALARM	
LED indication	Status, fault	
communication I/F	RS485, up to 32 nodes	MODBUS RTU protocol, baud rate: 19200bps (default) or according to the agreement
Control Method	Position control mode Torque control mode	According to pulse positioning, according to RS485 communication positioning
Dimensions (mm)	134（L）×77（W）×34（H）	Without terminal block
weight	About 350g	Without terminal block
Operating temperature/humidity	0～45℃，85%RH or less	Prevent condensation
Storage temperature	0～85℃，85% or less	Prevent condensation
Ambient gas	Prevent corrosive gases	

2. Dimensions (mm)
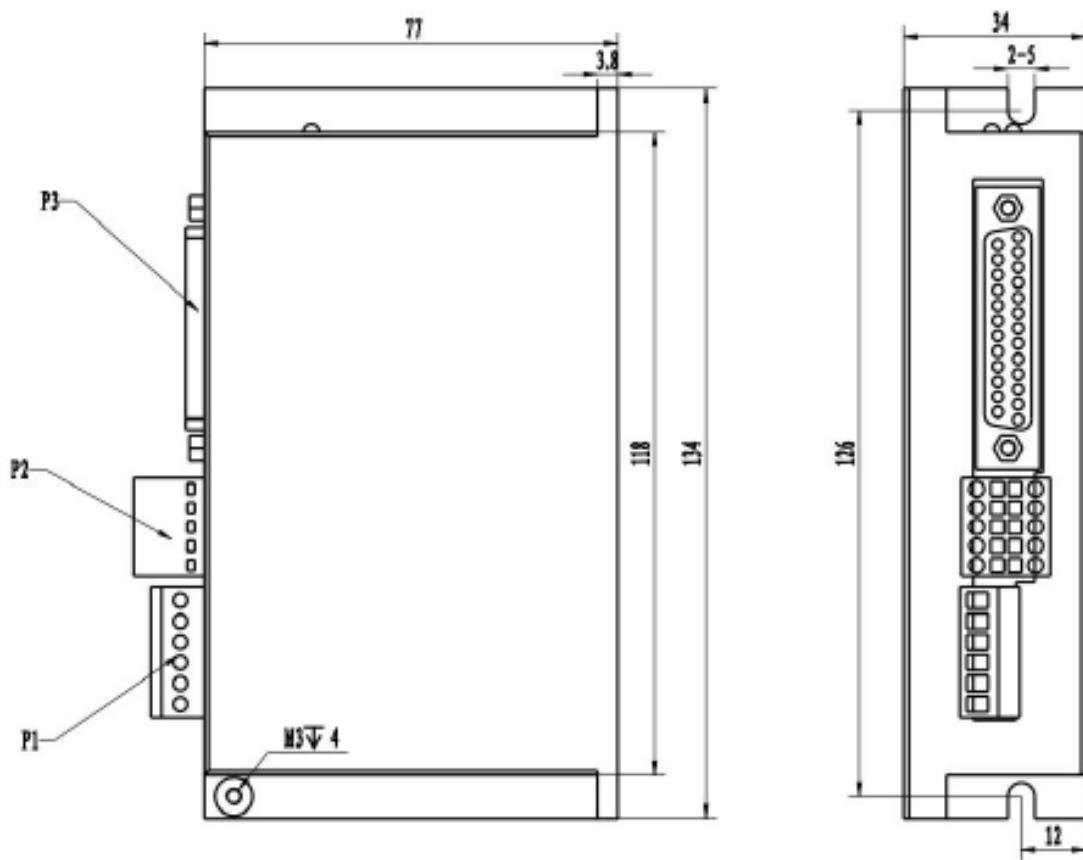
3. Connector Specification Table

3.1 CN1 (Power & Motor)

Pin	Signal name
6	A+
5	A-
4	B+
3	B-
2	GND
1	V+ (DC24V or 48V)

3.2 CN2 (Encoder IN)

Pin.	Signal name	Pin.	Signal name
1	A+	2	A-
3	B+	4	B-
5	Z+	6	Z-
7	+5V	8	0V
9	FG	10	NC
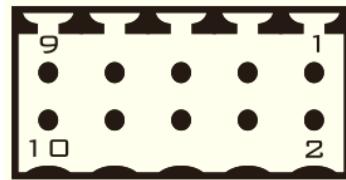
3.3 CN3 (I/O)

i	Notes	18-23 feet are encoder output {differential output}, optional, please specify when ordering

Pin.	Signal name	Pin.	Signal name	Pin.	Signal name	Pin.	Signal name
1	+COM(24V)	7	IN3	14	CW+	20	Encoder B+
2	NC	8	IN4	15	CW-	21	Encoder B-
3	NC	9	IN5	16	CCW+	22	Encoder Z+
4	NC	10	OUT1	17	CCW-	23	Encoder Z-
5	IN1	11	OUT2	18	Encoder A+	24	FG
6	IN2	12	OUT3	19	Encoder A-	25	-COM（0V）
		13	OUT4				

See the position of each pin from the perspective of the insertion surface
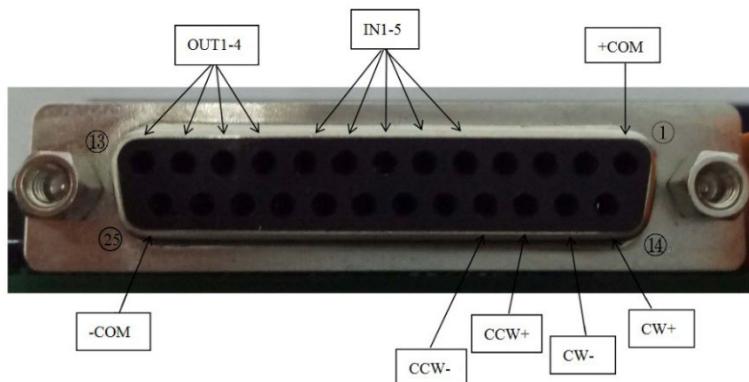
3.4   CN4 (IN) / CN5 (OUT) (RS 485)

Pin.	Signal name	Pin.	Signal name
1	NC	2	GND
3	A Input (RS485)	4	NC
5	NC	6	B Input (RS485)
7	Terminating resistor（CN5）	8	Terminating resistor（CN5）

Standard : RJ45 Type × 2

See the position of each pin in a face-to-face view

i **Notes**	When using multiple serial connections, the terminal resistance is the short-circuit when the last CN5 pins 3 and 8 are short-circuited, and the 6-pin and 7-pin are short-circuited. Remark : CN4 does not contain terminating resistor
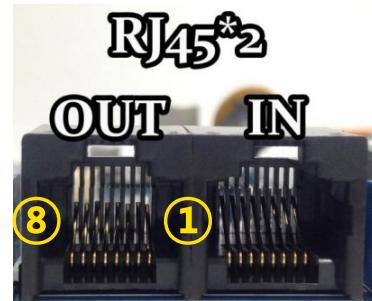
4. Input Circuit Diagram

4.1   Command Pulse Input Circuit (Differential Drive)
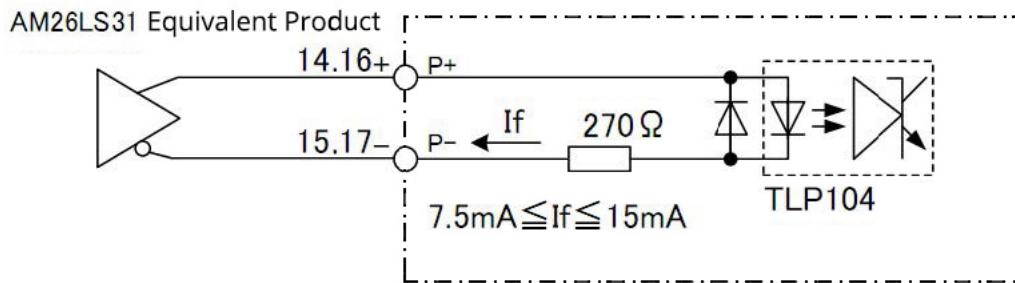
4.2   Command Pulse Input Circuit (Open Collector)
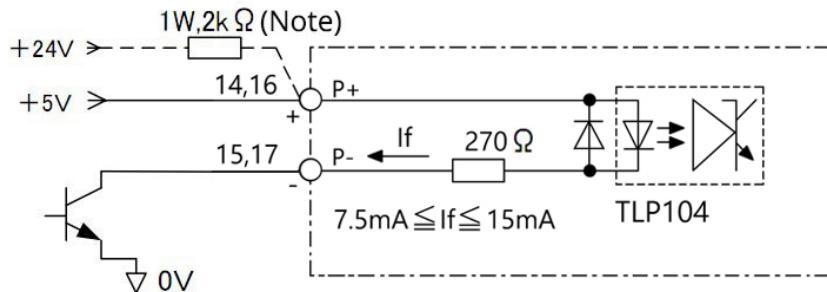
i **Notes**	This product is compatible with +5V/+24V Signal and it does not need current limit resistor when 5V power input.

4.3 Sensor, Digital Input Circuit (Contact)
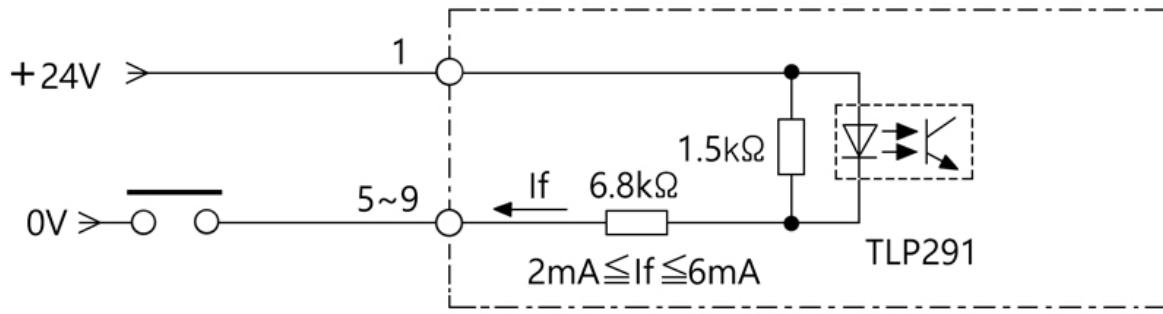
4.4 Sensor, Digital Input Circuit (Collector Output)
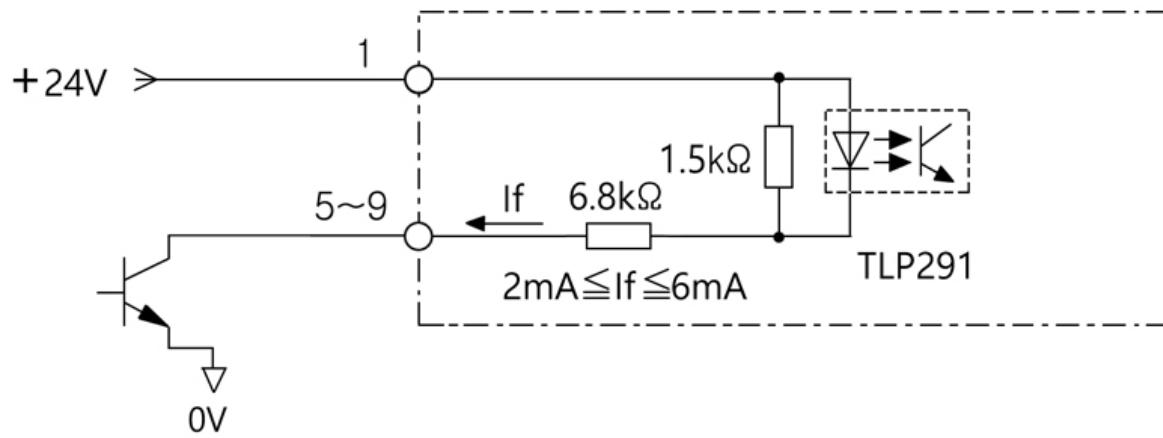
5. Output Circuit Diagram

5.1 Digital Output Circuit (Relay Connection)
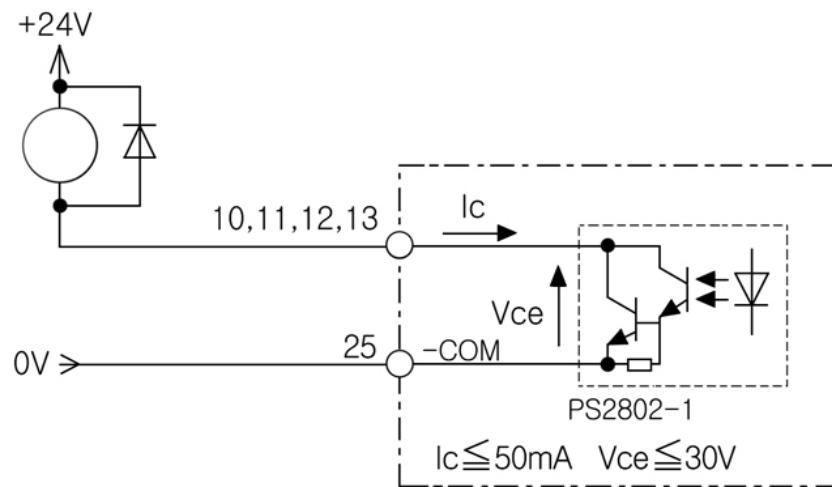
| | i | Notes | When connects relay, diodes at both ends of relay (similar to IN4007) are required. |

5.2 Digital Output Circuit (Opto-Coupler Connection)
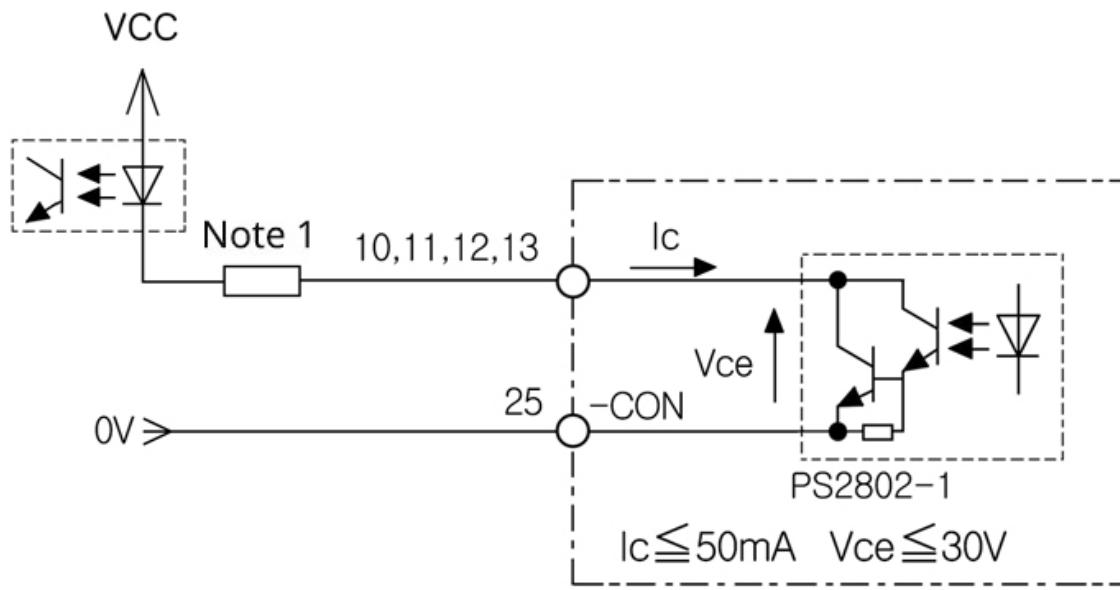
5.3 Differential Output Circuit (Encoder Output)
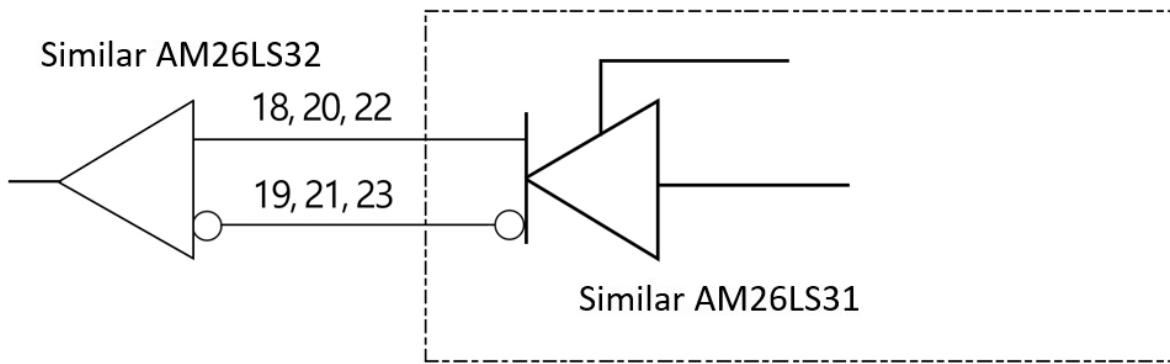
⚠ Caution	There is no opto-coupler isolation for encoder output. Before power on, please confirm whether the wiring is correct and there is short circuit. So as to avoid any damaging the upper computer and driver by introducing the 24V power supply on the CN3 port.

6. Pulse & Direction Input Sequence Diagram

Input Signal Waveform and Timing (1 Pulse Mode)

STEP Input Port
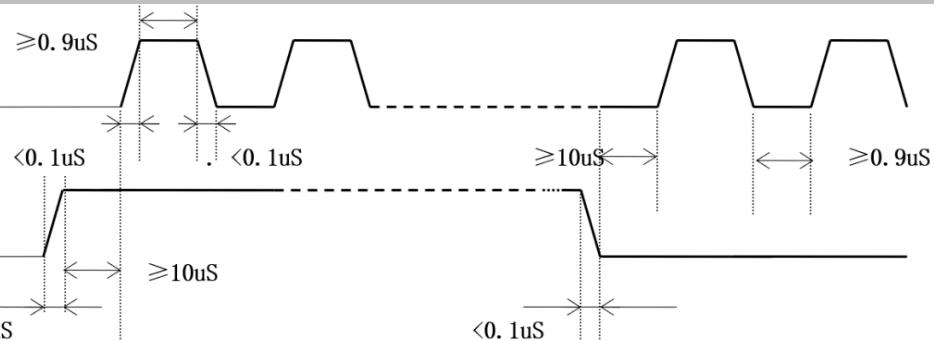
DIR Input Port
(Low Level forward rotation,

High level reverse rotation)

Input Signal Waveform and Timing (2 Pulse Mode)

STEP Input Port
(pulse Input Forward)
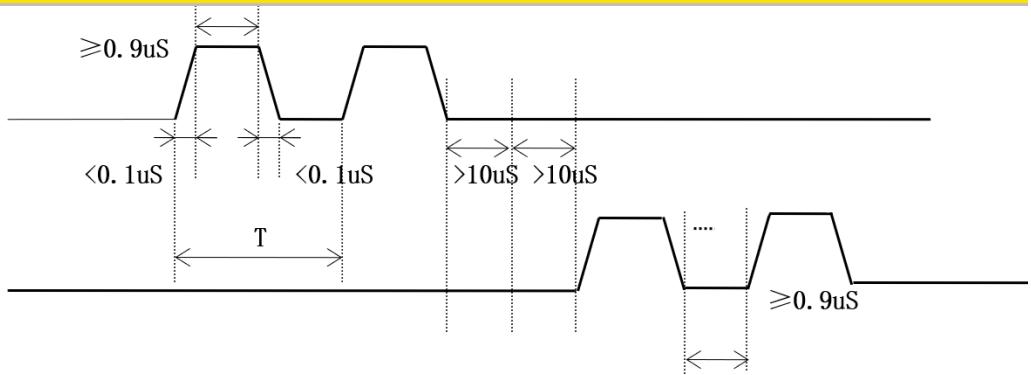
DIR Input Port
(Pulse Input Backward)

ℹ	**Notes**	When the driver is set to one-pulse control, CW is the STEP pulse input port and CCW is the DIR (direction) input port.

7. Indicator Light

7.1 Status Indication

	Mode	Complete the corresponding blinking (0.5 second low level, 0.5 second high level) times in different states, complete 2 seconds high level, and then recycle.

Status function	Green light	Communication code	Description
Stopping	flicker	2	On enable, motor phase lock but motor is not running
Running	Constantly bright	3	Drive is running
Enable disconnection	flicker	1	Enable disconnection, motor can be free

7.2 Error Indication

	Mode	Complete the corresponding blinking (0.5 second low level, 0.5 second high level) times in different states, complete 2 seconds high level, and then recycle.

Alarm function	Red light	Communication code	Description
Motor overcurrent	Flashing once	10	Motor phase current overcurrent or driver failure
Motor phase loss	2 flashes	11	Motor wiring is abnormal
Motor overcurrent	5 flashes	12	Exceeded the set number of compensations
Undervoltage	4 flashes	13	Power input is less than 18V
Overpressure	3 flashes	14	Power input is greater than 60V
Other alarm	Other	Other	

Warning function	Red light	Communication code	Description
Location out of tolerance	Constantly bright	25	Position deviation is greater than the set value

8. Control Parameter

ℹ️	Notes	Informal version of communication parameters, some parameters are fixed and not open.

8.1   Controller Basic Status (Class 01)

Adr	word	content	Elaborate	Range / unit
0100	1	Motor current	Motor real-time current value	0.1%A
0101	1	Input voltage	Current input voltage	1%V
0104	2	Set up segmentation	Set segmentation value	ppr
0106	1	Pulse mode	1 is pulse + direction mode, 2 is double pulse mode	1-2
0108	1	error code	Code at the time of alarm, see 1-2 for content, and display "0" for no fault	-
0109	1	Operating status	Drive running status, see 1-1	-
0110	1	hardware version	Drive hardware version	-
0111	1	Software version	Drive software version	-
0117	2	current position	target location	pulse
0119	1	Actual speed display	-	0.01rps
0126	2	Actual location	Run real-time location	pulse
0174	1	IO select multiple run paragraphs	-	-
0176	1	Multi-segment writing error No	-	-
0178	1	Multi-stage operation	-	-

0135	1	Input port status	Data bits	Bit 7	....	Bit 1	Bit 0
			Input port	IN 7	....	IN 2	IN 1

0136	1	Output port status	Data bits	Bit 3	....	Bit 2	Bit 0
			Output port	Out 4	Out 3	Out 2	Out 1

8.2 Basic Parameter Setting (Class 02)

Adr	word	content	Elaborate	Range / unit
0201	1	Motor direction switching	Select the motor running direction	0～1
0206	1	User instructions	Set when the motor is stopped 1: user parameter reset 2: Clear the alarm (except for some hardware failure alarms) 3: drive restart	0~5
0213	1	Half-flow ratio	Stop current ratio (effective in open loop mode)	10%~120%
0217	1	Motor control mode	0: open loop 1: closed loop Default: 1 *After changing the parameters, the power must have to turn off and on.	0～1
0224	1	Angular filtering	The smaller the value, the smoother the motor runs, but the higher the delay	1~700
0234	1	Digital filtering	Filter coefficient of input pulse. The larger the value, the lower the input frequency response.	1~15
0241	1	Input Current	Set current	100~4500 0.1A~-4.5A
0242	2	Set up segmentation	Pulses per revolution	200~102400 ppr
0244	1	Pulse mode	1: Pulse + direction mode 2: double pulse mode	1~2
0245	1	Half-flow time	Delay time when the motor stops running and enters half flow state (open loop mode is valid)	1~32767 ms
0283	1	Percentage of positive torque set value	In torque mode Torque = Input Current (0241) * Percentage (0283) Forward operation to set torque output Default value: 50	0~120%
0284	1	Percentage of reverse torque set value	In torque mode Torque = Input Current (0241) * Percentage (0284) When running in reverse, to set the torque output Default value: 50	0~120%
0285	1	Percentage of return to torque origin set value	In torque mode Torque = Input Current (0241) * Percentage (0285) When the torque force returns to the origin, the torque output is set Default value: 80	10~120%
0286	1	Moment detection time	In torque mode Torque reaches detection time Default value: 10	1~10000 ms
0287	1	Torque mode running speed	In torque mode Run forward at set speed and torsion comes to a stop	-5000~5000 0.01~20rps
0296	1	Selection of operating mode	0: external pulse 1: internal pulse 5: Torque mode 6: Position down mode Default: 0 Note: After the function is modified, you need to power off and restart	0~1
0298	1	Mailing address	Default: 1	1~255
0299	2	Communication baud rate	Default: 19200	1600~115200

8.3 Closed-Loop Parameter Setting (Class 04)

Adr	word	content	Elaborate	Range / unit
0246	1	Encoder resolution	Resolution = number of encoder lines x 4	200~65535
0247	2	In-place pulse width	Reach the target position and close the distance, output the signal in place Default: 0	1~1000 Encoder resolution
0251	1	Speed loop Kp	Speed loop Kp	0～30000
0252	1	Speed loop Ki	Speed loop Ki	0～30000
0255	1	Position loop Kp	Position loop Kp	0～30000
0258	1	Position tolerance threshold	In encoder resolution	0～30000

8.4 Control Parameters (Class 05)

Adr	word	content	Elaborate	Range / unit
0301	1	Starting frequency	Default:100	1~2000 0.01~20 rps
0302	1	Stop frequency	Default:100	1~2000 0.01~20 rps
0303	1	Acceleration	Default:100	5~10000 rps^2
0304	1	deceleration	Default:100	5~10000 rps^2
0305	1	Return to origin mode	Return to origin mode, 0: clockwise return to origin 1: counterclockwise to the origin 2: Positive limit back to the origin 3: inverse limit back to the origin 6: Forward torque back to the origin 7: reverse torque back to the origin 8: Clockwise Z pulse returns to the origin 9: Counterclockwise Z pulse back to the origin Default value: 0	0~1
0306	1	Fixed-length running speed	Default: 1000	1~5000 0.01~50rps
0307	1	Speed mode running speed	In speed mode, the running direction is consistent with the speed direction Default: 1000	-5000~5000 -50~50rps
0308	1	Jog running speed	Default: 1000	1~5000 0.01~50rps
0309	1	Home speed	Default: 1000	1~5000 0.01~50rps
0310	1	Creeping speed	Running speed after hitting the origin Default: 1000	1~5000 0.01~50rps
0311	2	Home offset	Default: 0	-2000000000 ~2000000000 pulse

0313	2	Output pulse	Running stroke Absolute position mode: run to the specified position Relative position mode: travel setting offset stroke Default: 0	-2000000000~ 2000000000 pulse
0317	2	Positive soft limit	Default: 2000000000 Note: It is invalid during return to origin	-2000000000~ 2000000000 pulse
0319	2	Negative soft limit	Default: -2000000000 Note: It is invalid during return to origin	-2000000000~ 2000000000 pulse
0321	2	Set current position	Default: 0	-2000000000~ 2000000000 pulse
0323	1	control commands	0: empty 1: Absolute running, running to the set distance, running direction is determined by distance plus or minus, speed plus or minus value is invalid, it is effective to modify target position during running 2: Relative running, running at a set distance and running speed. The running direction is determined by the distance plus or minus. The speed plus or minus value is invalid. Modifying the movement distance during running is invalid 3: Speed mode 4: Jog forward 5: Reverse jog 6: deceleration and stop 7: Emergency stop 8: Set the current position, which can only be set when the motor is stopped 12: Back to origin 13: Alarm clear 14: Multi-segment data verification 15: Multi-segment data storage 16: Multi-segment data starts 17: Multiple data pauses 18: End of multiple segments of data Default: 0	0~29
0324	1	Internal control switch	<table><tr><td>Bit 4</td><td>Bit 3</td><td></td></tr><tr><td>0</td><td>0</td><td>Communication command mode</td></tr><tr><td>0</td><td>1</td><td>Input signal command mode</td></tr><tr><td>1</td><td>0</td><td>Multi-segment program command mode (by input signal or communication)</td></tr></table>Default: Bit 4 =0 , Bit 3=0 communication command mode *After changing the parameters, the power must have to turn off and on.	0-65535
0327	1	Number of paragraphs	Default: 1	1~32
0328	1	Multiple selection	Default: 0 Note: If IO port is configured with multi-segment selection function, IO configuration multi-segment selection is preferred	0~31

8.5   Input Block Designation (Class 06)

Adr	word	content	Elaborate	Range/unit
0400	1	IN1 function selection	0: empty 1: Absolute running, running to the set distance, running direction is determined by distance plus or minus, speed plus or minus value is invalid, it is effective to modify target position during running 2: Relative running, running at a set distance and running speed. The running direction is determined by the distance plus or minus. The speed plus or minus value is invalid. Modifying the movement distance during running is invalid 3: Speed mode 4: Jog forward 5: Reverse jog 6: deceleration and stop 7: Emergency stop 8: Set the current position, which can only be set when the motor is stopped 9: positive limit 10: Negative limit 11: Origin signal 12: Back to origin 13: Alarm clear 14: Multi-segment data verification 15: Multi-segment data storage 16: Multi-segment data starts 17: Multiple data pauses 18: End of multiple segments of data 20: Enable 25: IO port configuration multi-stage selection Bit0 26: IO port configuration multi-stage selection Bit1 27: IO port configuration multi-stage selection Bit2 28: IO port configuration multi-stage selection Bit3 29: IO port configuration multi-stage selection Bit4 Default: 0	0~30
0401	1	IN2 function selection	The setting content is the same as IN1 (default value: 0)	0~30
0402	1	IN3 function selection	The setting content is the same as IN1 (default value: 0)	0~30
0403	1	IN4 function selection	The setting content is the same as IN1 (default value: 0)	0~30
0404	1	IN5 function selection	The setting content is the same as IN1 (default value: 0)	0~30
0405	1	IN6 Function selection (CCW port)	The setting content is the same as IN1 (default value: 0) (When external pulse, the port function is invalid)	0~30
0406	1	IN7 Function selection (CW port)	The setting content is the same as IN1 (default value: 0) (When external pulse, the port function is invalid)	0~30
0429	1	Universal digital input logic		
0410	1	Pseudo communication settingIN1	0: OFF (initial value 0) 1: ON (trigger the action of IN1 configuration)	0~1

| Adr	word	content	Elaborate	Range / unit
0411	1	Pseudo communication settingIN2	0: OFF (initial value 0) 1: ON (trigger the action of IN2 configuration)	0~1
0412	1	Pseudo communication settingIN3	0: OFF (initial value 0) 1: ON (trigger the action of IN3 configuration)	0~1
0413	1	Pseudo communication settingIN4	0: OFF (initial value 0) 1: ON (trigger the action of IN4 configuration)	0~1
0414	1	Pseudo communication settingIN5	0: OFF (initial value 0) 1: ON (trigger the action of IN5 configuration)	0~1
0415	1	Pseudo communication settingIN6	0: OFF (initial value 0) 1: ON (triggers the action configured by IN6) (During external pulse, the function of the pseudo communication port is disabled)	0~1
0416	1	Pseudo communication settingIN7	0: OFF (initial value 0) 1: ON (trigger the action of IN7 configuration) (During external pulse, the function of the pseudo communication port is disabled)	0~1

8.6   Output Block Specification (Class 07)

Adr	word	content	Elaborate	Range / unit
0420	1	OUT1 function selection	100: universal port 101: Alarm output function: There is an output signal when there is no alarm, and there is no output signal when there is an alarm. 102: In place signal 103: Enable control output: There is an output signal when offline, and no output signal when enabled. (Default: 101)	100~104
0421	1	OUT2 function selection	The setting content is the same as OUT 1 (default: 100)	100~104
0422	1	OUT3 function selection	The setting content is the same as OUT 1 (default: 100)	100~104
0423	1	OUT4 function selection	The setting content is the same as OUT 1 (default: 100)	100~104
0428	1	Universal digital output control	Output port function selection <table><tr><td>Data bit</td><td>Bit3</td><td>Bit2</td><td>Bit1</td><td>Bit0</td></tr><tr><td>Output port</td><td>OUT4</td><td>OUT3</td><td>OUT2</td><td>OUT1</td></tr></table>	
0430	1	Digital output logic	Corresponding output port logic <table><tr><td>Data bit</td><td>Bit3</td><td>Bit2</td><td>Bit1</td><td>Bit0</td></tr><tr><td>Output port</td><td>OUT4</td><td>OUT3</td><td>OUT2</td><td>OUT1</td></tr></table>	

9. Modbus-RTU Example

9.1   Running Motor

9.1.1 Absolute Position Mode
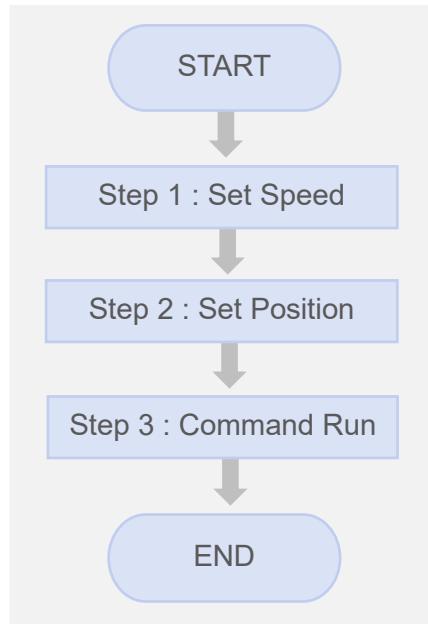
Step	Add.	Word	Content	Range	Unit
1	0306	1	Running Speed	1 ~ 5000	0.01 rps
2	0313	2	Target Position	-2,000,000,000 ~ 2,000,000,000	pulse
3	0323	1	Control Command	0 ~ 18	-

● **Example. 1**

Step 1 : Set Speed

Slave ID	1 (0x01)	Driver ID
Function	6 (0x06)	Write Single Register
Address	306 (0x0132)	Running Speed
Data	1200 (0x04B0)	1200 = 12 RPS = 720 RPM
CRC	0x8D2A	CRC-16

Request

Slave ID	Function	Starting Address		Data		CRC 16	
		Hi	Lo	Hi	Lo	Lo	Hi
0x01	0x06	0x01	0x32	0x04	0xB0	0x2A	0x8D
CRC 16							

Response

Slave ID	Function	Starting Address		Data		CRC 16	
		Hi	Lo	Hi	Lo	Lo	Hi
0x01	0x06	0x01	0x32	0x04	0xB0	0x2A	0x8D
CRC 16							

Example. 2

Step 2 : Set Position		
Slave ID	**1 (0x01)**	**Driver ID**
Function	16 (0x10)	Write Multi Register
Address	313 (0x0139)	Target Position
Quantity	2 (0x02)	Quantity of Registers
Data	5000 (0x00001388) -5000 (0xFFFFEC78)	5000 pulse -5000 pulse

Request

Slave ID	Function	Starting Address		Quantity of Registers		Byte Count	Data 1		Data 2		CRC 16	
		Hi	Lo	Hi	Lo		Hi	Lo	Hi	Lo	Lo	Hi
0x01	0x10	0x01	0x39	0x00	0x02	0x04	0xEC	0x78	0xFF	0xFF	0x88	0x78
CRC 16												

Response

Slave ID	Function	Starting Address		Quantity of Registers		CRC 16	
		Hi	Lo	Hi	Lo	Lo	Hi
0x01	0x10	0x01	0x39	0x00	0x02	0x90	0x39
CRC 16							

Example. 3

Step 3 : Command Run		
Slave ID	**1 (0x01)**	**Driver ID**
Function	6 (0x06)	Write Single Register
Address	323 (0x0143)	Command Run
Data	01 (0x0001)	1 : Absolute running
CRC	0x23F8	CRC-16

Request

Slave ID	Function	Starting Address		Data		CRC 16	
		Hi	Lo	Hi	Lo	Lo	Hi
0x01	0x06	0x01	0x43	0x00	0x01	0xB8	0x22
CRC 16							

Response

Slave ID	Function	Starting Address		Data		CRC 16	
		Hi	Lo	Hi	Lo	Lo	Hi
0x01	0x06	0x01	0x43	0x00	0x01	0xB8	0x22
CRC 16							

9.1.2　Relative Position Mode
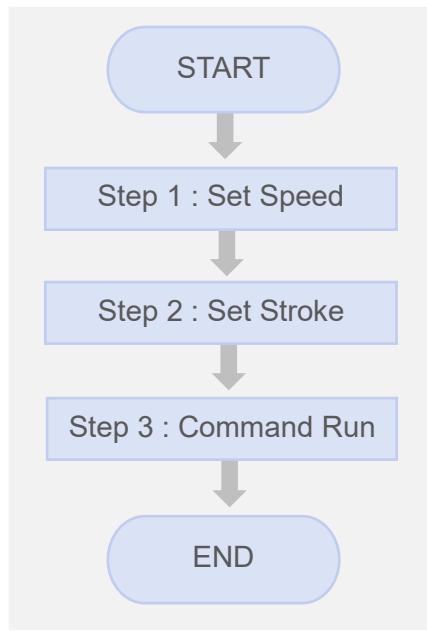
Step	Add.	Word	Content	Range	Unit
1	0306	1	Running Speed	1 ~ 5000	0.01 rps
2	0313	2	Running Stroke	-2,000,000,000 ~ 2,000,000,000	pulse
3	0323	1	Control Command	0 ~ 18	-

● **Example. 1**

Step 1 : Set Speed		

Slave ID	1 (0x01)	Driver ID
Function	6 (0x06)	Write Single Register
Address	306 (0x0132)	Running Speed
Data	1200 (0x04B0)	1200 = 12 RPS = 720 RPM
CRC	0x8D2A	CRC-16

Request

Slave ID	Function	Starting Address		Data		CRC 16	
		Hi	Lo	Hi	Lo	Lo	Hi
0x01	0x06	0x01	0x32	0x04	0xB0	0x2A	0x8D
		CRC 16					

Response

Slave ID	Function	Starting Address		Data		CRC 16	
		Hi	Lo	Hi	Lo	Lo	Hi
0x01	0x06	0x01	0x32	0x04	0xB0	0x2A	0x8D
		CRC 16					

● **Example. 2**

Step 2 : Set Stroke		

Slave ID	1 (0x01)	Driver ID
Function	16 (0x10)	Write Multi Register
Address	313 (0x0139)	Running Stroke
Quantity	2 (0x02)	Quantity of Registers
Data	5000 (0x00001388) -5000 (0xFFFFEC78)	5000 pulse -5000 pulse

Request

Slave ID	Function	Starting Address		Quantity of Registers		Byte Count	Data 1		Data 2		CRC 16	
		Hi	Lo	Hi	Lo		Hi	Lo	Hi	Lo	Lo	Hi
0x01	0x10	0x01	0x39	0x00	0x02	0x04	0x13	0x88	0x00	0x00	0xB9	0xEF
CRC 16												

Response

Slave ID	Function	Starting Address		Quantity of Registers		CRC 16	
		Hi	Lo	Hi	Lo	Lo	Hi
0x01	0x10	0x01	0x39	0x00	0x02	0x90	0x39
CRC 16							

● **Example. 3**

Step 3 : Command Run		

Slave ID	1 (0x01)	Driver ID
Function	6 (0x06)	Write Single Register
Address	323 (0x0143)	Command Run
Data	02 (0x0002)	2 : Relative running
CRC	0x23F8	CRC-16

Request

Slave ID	Function	Starting Address		Data		CRC 16	
		Hi	Lo	Hi	Lo	Lo	Hi
0x01	0x06	0x01	0x43	0x00	0x02	0xF8	0x23
CRC 16							

Response

Slave ID	Function	Starting Address		Data		CRC 16	
		Hi	Lo	Hi	Lo	Lo	Hi
0x01	0x06	0x01	0x43	0x00	0x02	0xF8	0x23
CRC 16							

9.2 Read Motor Status

9.2.1 Read Current Position
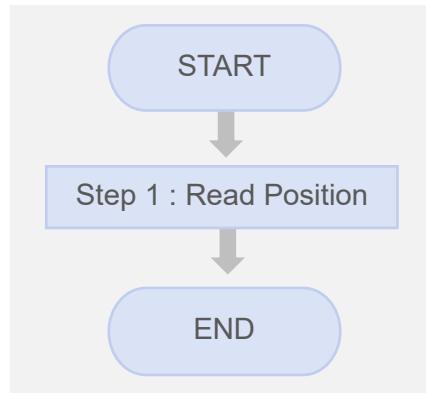
Step	Add.	Word	Content	Range	Unit
1	0117	2	Current Position	-2,000,000,000 ~ 2,000,000,000	pulse

● **Example**

Step 1 : Read Current Position

Slave ID	1 (0x01)	Driver ID
Function	3 (0x03)	Read Register
Address	117 (0x0075)	Current Position
Quantity	2 (0x02)	Quantity of Registers

Request

Slave ID	Function	Starting Address		Quantity of Registers		CRC 16	
		Hi	Lo	Hi	Lo	Lo	Hi
0x01	0x03	0x00	0x75	0x00	0x02	0xD5	0xD1
CRC 16							

Response   IF : current position = 5000 (0 x 00001388)

Slave ID	Function	Byte Count	Read Registers 126		Read Registers 127		CRC 16	
			Hi	Lo	Hi	Lo	Lo	Hi
0x01	0x03	0x04	0x13	0x88	0x00	0x00	0x7E	0x9D
CRC 16								

9.2.2 Read Current Speed
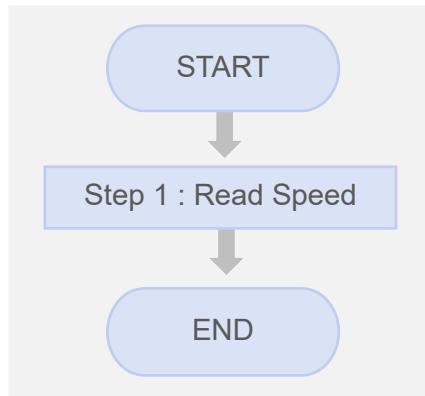
Step	Add.	Word	Content	Range	Unit
1	0119	1	Current Speed	1 ~ 5000	0.01 RPS

● **Example**

Step 1 : Read Current Speed

Slave ID	1 (0x01)	Driver ID
Function	3 (0x03)	Read Register
Address	119 (0x0077)	Current Speed
Quantity	1 (0x01)	Quantity of Registers

Request

Slave ID	Function	Starting Address		Quantity of Registers		CRC 16	
		Hi	Lo	Hi	Lo	Lo	Hi
0x01	0x03	0x00	0x77	0x00	0x01	0x34	0x10
		CRC 16					

Response — IF : current speed = 1200 (0 x 04B0)

Slave ID	Function	Byte Count	Read Registers 119		CRC 16	
			Hi	Lo	Lo	Hi
0x01	0x03	0x02	0x04	0xB0	0xBB	0x30
		CRC 16				

9.3   Read Alarm Status

9.3.1   Alarm Status
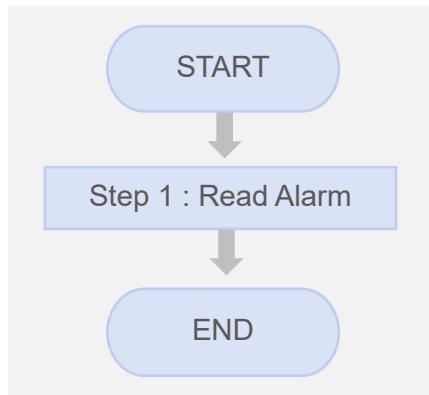
Step	Add.	Word	Content	Range	Unit
1	0108	1	Alarm Status	-	-

● **Example**

Step 1 : Read Alarm Status

Slave ID	1 (0x01)	Driver ID
Function	3 (0x03)	Read Register
Address	108 (0x006C)	Alarm Status
Quantity	1 (0x01)	Quantity of Registers

Request

Slave ID	Function	Starting Address		Quantity of Registers		CRC 16	
		Hi	Lo	Hi	Lo	Lo	Hi
0x01	0x03	0x00	0x6C	0x00	0x01	0x44	0x17
CRC 16							

Response   **IF : alarm status = 11 (0 x 000B) = Motor phase loss**

Slave ID	Function	Byte Count	Read Registers 176		CRC 16	
			Hi	Lo	Lo	Hi
0x01	0x03	0x02	0x00	0x0B	0xF9	0x83
CRC 16						

10. In the GUI Program

10.1   Pulse Mode Setting

10.1.1   Pulse mode setting in the [Control] tab
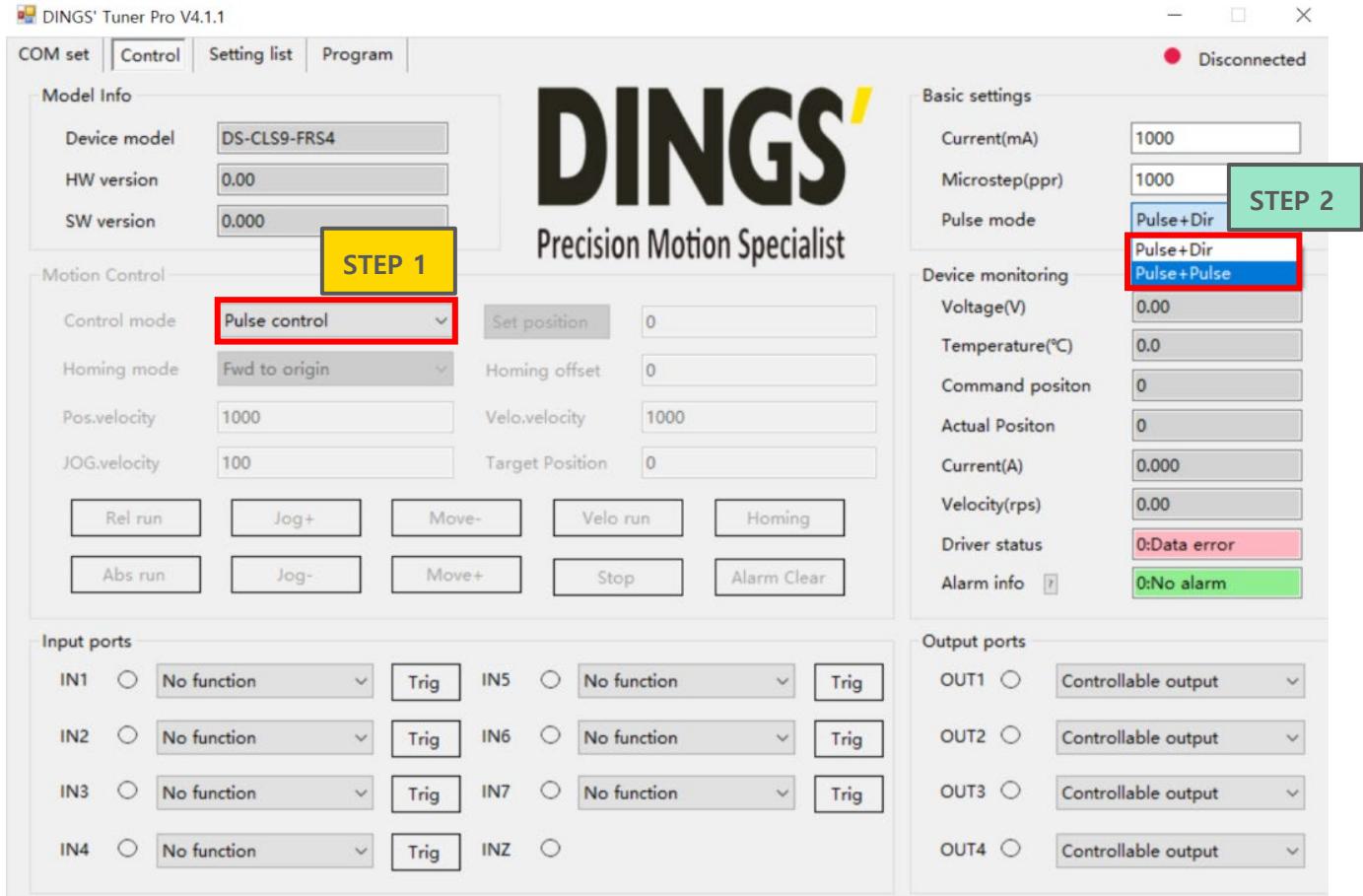
*In the [Control] tab, automatically saves parameters, if you make changes.

STEP 1	Set pulse control mode

STEP 2	Set pulse mode type
	   *1 pulse mode : pulse + DIR
	   *2 pulse mode : CW pulse + CCW pulse

10.1.2　Pulse mode setting in the [Parameter List] tab

STEP 1	Add#296 Control mode 0 : Pulse control mode

STEP 2

Add#244 Pulse mode

STEP 2

1 : 1 Pulse mode [Pulse + Dir]

2 : 2 Pulse mode [CW Pulse + CCW Pulse]

STEP 3

STEP 3   Click [Write] button, Parameters saves

11. Brake Using Method

11.1　Brake Output Circuit Diagram

Driver Status	Driver OUT Sig.	Motor Status
Servo ON	ON	Motor Run
Servo Off of Alarm	OFF	Motor Braking
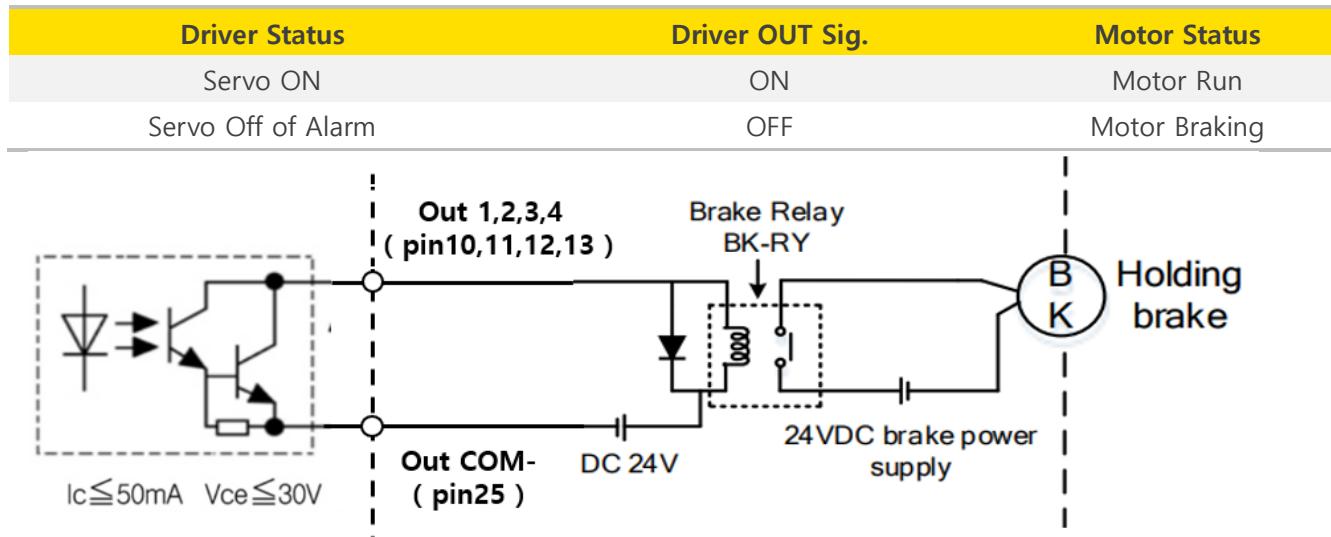
11.2　Output Port Parameter Setting

	Select brake output port
STEP 1	OUT1 -> pin10 OUT2 -> pin11 OUT3 -> pin 12 OUT4 -> pin13 Please choose one of OUT and assign pin accordingly
STEP 2	Set output function 　103 : Servo-ON

STEP 3	Set output port logic Bit
	Output port > Value
	Out1(Bit0) > 1
	Out2 (Bit1) > 2
	Out3 (Bit2) > 4
	Out4 (Bit3) > 8

![DINGS' Precision Motion Specialist]

International Customer
Person in Charge : Daniel Jang
daniel@dingsmotion.com
No. 2850 Luheng Road, Changzhou Economic Development Zone, Jiangsu Province, China
+86-519-85177825, 85177826

North America Customer
Person in Charge : Nicolas Ha
sales@dingsmotionusa.com
335 Cochrane Circle Morgan Hill, CA 95037
+1-408-612-4970

China Customer
Person in Charge : Sweet Shi
info@dingsmotion.com
No. 2850 Luheng Road, Changzhou Economic Development Zone, Jiangsu Province, China
+86-519-85177825, 85177826

DINGS' Precision Motion Specialist

📞 +86-0519-8517 7825

📠 +86-0519-8517 7807

📍 No. 2850 Luheng Road, Changzhou Economic Development Zone, Jiangsu Province, China

🏠 www.dingsmotion.com