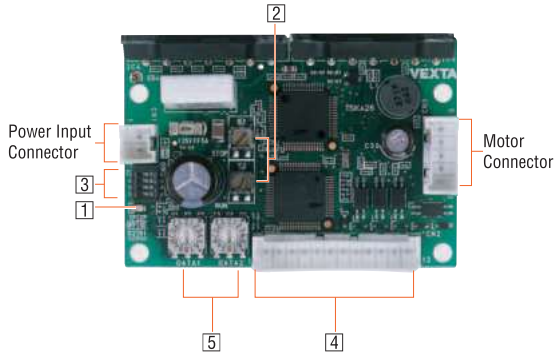


Connection and Operation (Pulse Input Package)

Names and Functions of Driver Parts



1 Power Input Display

Color	Function	When Activated
Green	Power supply indication	Lights when power is on.

2 Current Adjustment Potentiometers

Indication	Potentiometer Name	Function
RUN	Motor run current potentiometer	For adjusting the motor running current.
STOP	Motor stop current potentiometer	For adjusting the motor current at standstill.

3 Function Select Switches

Indication	Switch Name	Function
1P/2P	Pulse input mode switch	Switches between 1-pulse input and 2-pulse input.
OFF/SD	Smooth drive function switch	Enables or disables the smooth drive function.
R2/R1	Resolution select switch	Switches the basic step angle between R1 and R2.

4 Input/Output Signals

Indication	Input/Output	Pin No.	Signal Name	Function
CN2	Input	1	Pulse signal (CW pulse signal)	Operation command pulse signal (The motor will rotate in the CW direction when in 2-pulse input mode.)
		2		
		3	Rotation direction signal (CCW pulse signal)	Rotation direction signal Photocoupler ON: CW, Photocoupler OFF: CCW (The motor will rotate in the CCW direction when in 2-pulse input mode.)
		4		
		5	All windings off signal	Cuts the output current to the motor and allows the motor shafts can be rotated manually.
		6		
		7	Step angle select signal	Switches to step angle set in DATA1 and DATA2.
		8		
		9	Automatic current cutback release signal	This signal is used to disable the automatic current cutback function.
		10		
Output		11	Excitation timing signal	Outputs signals when the excitation sequence is at STEP "0".
		12		

5 Step Angle Setting Switches

Indication	Switch Name	Function
DATA1	Step angle setting switch	Each switch can be set to the desired resolution from the 16 resolution levels.
DATA2		

R1				R2			
DATA1 DATA2	Microsteps/ Step 1	Resolution 1	Step Angle 1	DATA1 DATA2	Microsteps/ Step 2	Resolution 2	Step Angle 2
0	1	500	0.72°	0	×2.5	200	1.8°
1	2	1000	0.36°	1	×1.25	400	0.9°
2	2.5	1250	0.288°	2	1.6	800	0.45°
3	4	2000	0.18°	3	2	1000	0.36°
4	5	2500	0.144°	4	3.2	1600	0.225°
5	8	4000	0.09°	5	4	2000	0.18°
6	10	5000	0.072°	6	6.4	3200	0.1125°
7	20	10000	0.036°	7	10	5000	0.072°
8	25	12500	0.0288°	8	12.8	6400	0.05625°
9	40	20000	0.018°	9	20	10000	0.036°
A	50	25000	0.0144°	A	25.6	12800	0.028125°
B	80	40000	0.009°	B	40	20000	0.018°
C	100	50000	0.0072°	C	50	25000	0.0144°
D	125	62500	0.00576°	D	51.2	25600	0.0140625°
E	200	100000	0.0036°	E	100	50000	0.0072°
F	250	125000	0.00288°	F	102.4	51200	0.00703125°

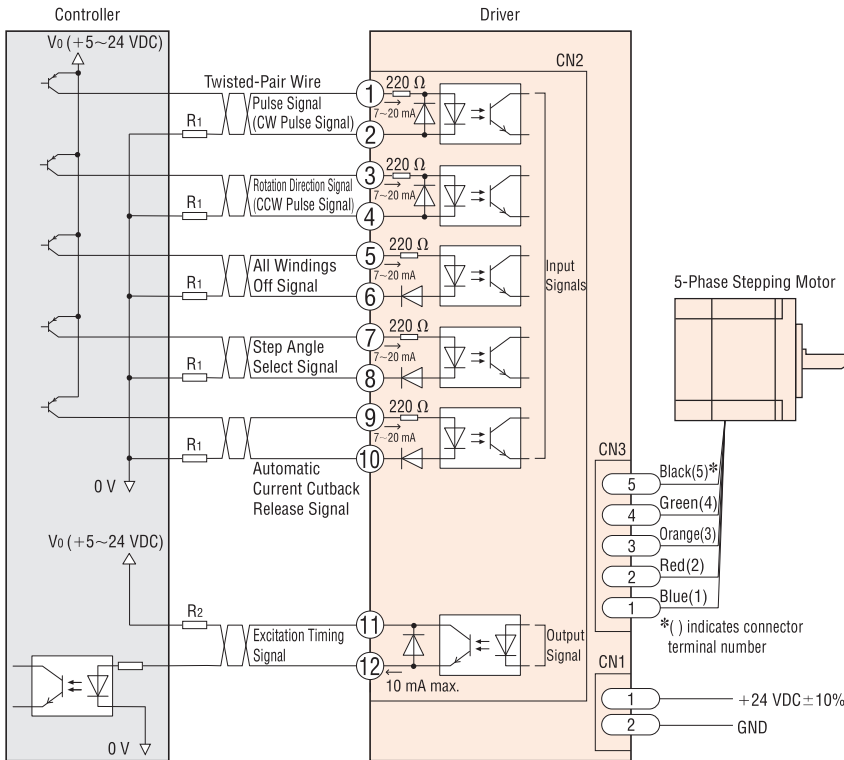
Note

- The step angle is calculated by dividing the basic step angle by the number of microstep. The above figures are based on a basic step angle of 0.72°.
- With the 0.36° high-torque type, the basic step angle and resolution are 0.36° and 1000 (microsteps/step 1), respectively.
- If you are using a geared type, the step angle divided by the gear ratio becomes the actual step angle.
- The number of microstep that can be switched by the "Step Angle Select" signal are limited to those selected in step angles 1 and 2.
- Do not change the "Step Angle Select" signal input or step angle setting switch while the motor is operating. It may cause the motor to misstep and stop.

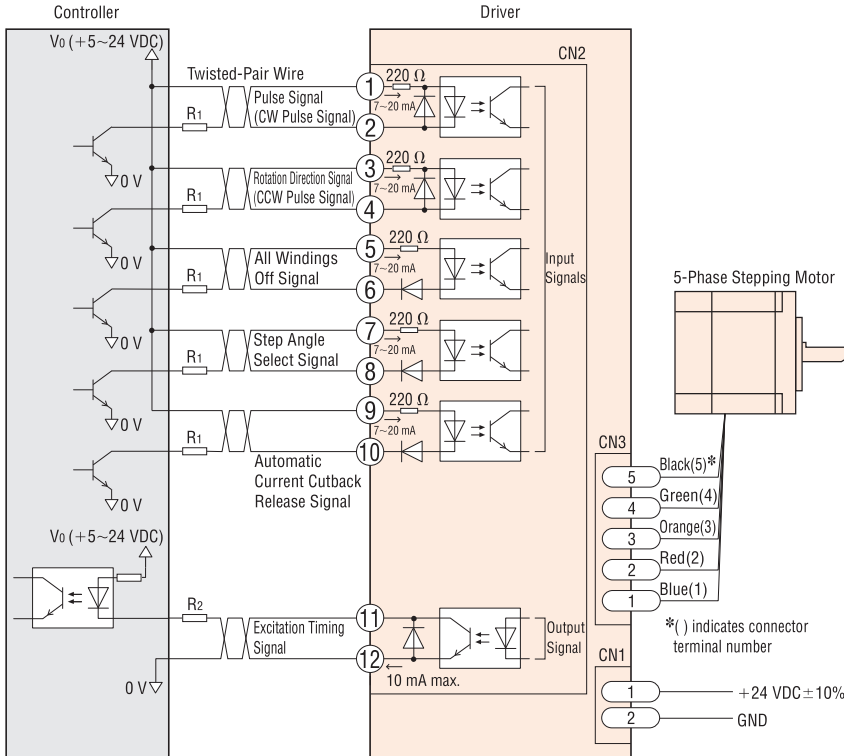
● Connection Diagram

◇ Connecting to a Host Controller

● Connecting to a Current Source Output Circuit



● Connecting to a Current Sink Output Circuit



Notes on Wiring

◇ I/O Signal Connection

- **Input Signal**
Direct connection is possible when 5 VDC is applied. If a voltage exceeding 5 VDC is applied, connect an external resistor R_1 so that the current becomes 7 to 20 mA.
Example: When V_0 is 24 VDC, R_1 : 1.5 to 2.2 k Ω , 0.5 W min.
- **Output Signal**
Check the specifications of the connected device and if the current exceeds 10 mA, connect an external resistor R_2 .
- Use AWG24 to 22 (0.2~0.3 mm²) twisted-pair wires.
- Since the maximum transmissible frequency drops as the pulse line becomes longer, keep the wiring length as short as possible (within 2 m).
Technical reference → Page G-46
- Provide a distance of 100 mm min. between the I/O signal lines and power lines (power supply lines, motor lines, etc.).

◇ Power Supply Connection

- Use AWG22 (0.3 mm²) wires.
- Incorrect polarities of the DC power-supply input will lead to driver damage.
Make sure that the polarity is correct before turning power on.

◇ Extension of Motor Cable

- Use min. AWG22 (0.3 mm²) wires.

◇ General

- A separate hand crimp tool is required to crimp the included connector and lead wire. The accessory connection cable set (sold separately) comes with all lead wires already crimped.
- If noise generated by the motor cable or power supply cable causes a problem with the specific wiring or layout, try shielding the cables or using ferrite cores.

Introduction

0.36°/Geared
AR
AC Input Motor & Driver

0.36°/Geared
AR
0.72°/Geared
RK

0.36°/Geared
AR
0.36°/10.72°/
Geared
CRK

1.8°/Geared
RK
DC Input Motor & Driver

0.9°/1.8°/Geared
CMK

0.72°
PK

1.8°/Geared
High-Torque
PKP
Motor Only

0.9°/1.8°/Geared
PK

Controllers
5G80301Y

Accessories