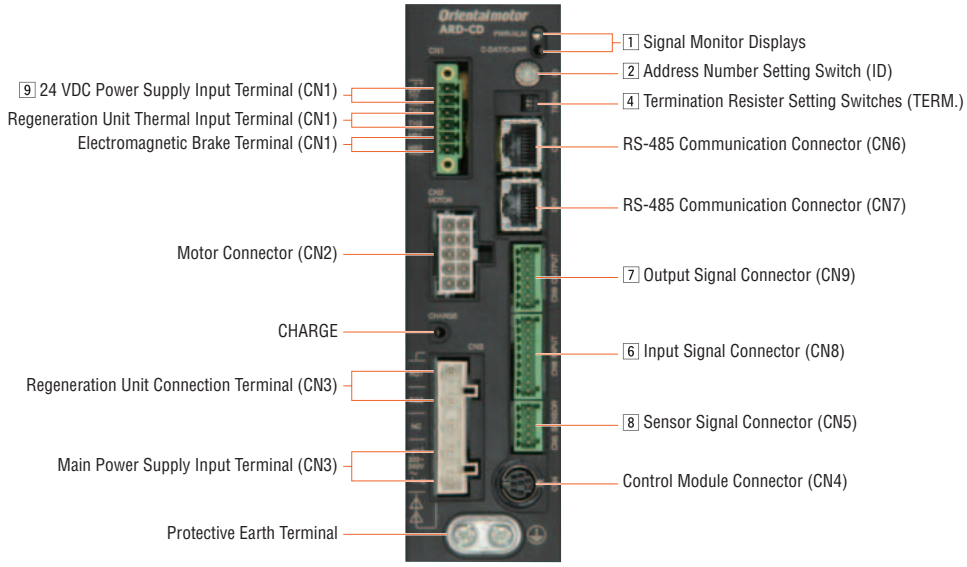
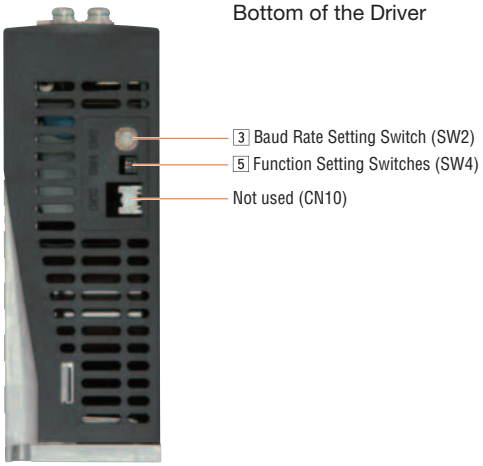
Connection and Operation (Built-In Controller Package)

Names and Functions of Driver Parts



Bottom of the Driver



1 Signal Monitor Displays

◇LED Indicators

Indication	Color	Function	When Activated
PWR	Green	Power Supply Indication	Lights when 24 VDC power is on.
ALM	Red	Alarm Indication	Blinks when protective functions are activated.
C-DAT	Green	Communication Indication	Blinks or illuminate when communication data is received or sent.
C-ERR	Red	Communication Error Indication	Illuminates when there is an error with communication data.

2 Address Number Setting Switch (ID)

Indication	Switch Name	Function
ID	Address Number Setting Switch	Set the address number for RS-485 communication (Factory Setting: 0).

3 Baud Rate Setting Switch (SW2)

Indication	Switch Name	Function
SW2	Baud Rate Setting Switch	Set the baud rate for RS-485 communications (Factory Setting: 7).

◇Setting the Baud Rate for RS-484 Communications

No.	Baud Rate (bps)
0	9600
1	19200
2	38400
3	57600
4	115200
5~6	Not used
7	Factory setting
8~F	Not used

4 Termination Resister Setting Switches (TERM.)

Indication	No.	Function
TERM.	1	Set the termination resister (120 Ω) for RS-485 communication (Factory setting: OFF).
	2	OFF: No termination resister ON: Set the termination resister

✻Please use the same settings for both No. 1 and No. 2.

5 Function Setting Switches (SW4)

Indication	No.	Function
SW4	1	This sets the address number in combination with the address number setting switch (ID) (Factory setting: OFF).
	2	This sets the protocol for RS-485 communication (Factory setting: OFF).

◇RS-485 Communication Protocol Setting

No. \ Destination	–	Modbus RTU Mode
2	OFF	ON

6 Input Signal Connector (CN8)

Indication	Pin No.	Signal Name	Initial Value	
CN8	1	IN0	HOME	This performs the return-to-home operation.
	2	IN1	START	This performs the positioning operation.
	3	IN2	M0	The operating data number is selected using 3 bits.
	4	IN3	M1	
	5	IN4	M2	
	6	IN5	FREE	Stop motor excitation and release the electromagnetic brake.
	7	IN6	STOP	This stops the motor.
	8	IN7	ALM-RST	This resets the current alarm.

✻Assigned functions are set by means of the parameter settings. The above is the initial value. For details, refer to the User's Manual.

The following input signals can be assigned to input terminals IN0～7.

Input Signal								
0: Not used	5: SSTART	10: MS2	17: C-ON	27: HMI	36: R4	41: R9	46: R14	51: M3
1: FWD	6: +JOG	11: MS3	18: STOP	32: R0	37: R5	42: R10	47: R15	52: M4
2: RVS	7: −JOG	12: MS4	24: ALM-RST	33: R1	38: R6	43: R11	48: M0	53: M5
3: HOME	8: MS0	13: MS5	25: P-PRESET	34: R2	39: R7	44: R12	49: M1	
4: START	9: MS1	16: FREE	26: P-CLR	35: R3	40: R8	45: R13	50: M2	

7 Output Signal Connector (CN9)

Indication	Pin No.	Signal Name	Initial Value	
CN9	1	OUT0	HOME-P	Output when the motor is home.
	2	OUT1	END	Output when the positioning operation has finished.
	3	OUT2	AREA1	Output when the motor is in area 1.
	4	OUT3	READY	Output when driver operation preparations have finished.
	5	OUT4	WNG	The driver's warning status is output.
	6	OUT5	ALM	The driver's alarm status is output (normally closed).

✻ Assigned functions are set by means of the parameter settings. The above is the initial value. For details, refer to the User's Manual.

The following output signals can be assigned to output terminals OUT0～5.

Output Signal							
0: Not used	7: −JOG_R	16: FREE_R	36: R4	43: R11	50: M2_R	63: SLIT_R	71: TLC
1: FWD_R	8: MS0_R	17: C-ON_R	37: R5	44: R12	51: M3_R	65: ALM	72: TIM
2: RVS_R	9: MS1_R	18: STOP_R	38: R6	45: R13	52: M4_R	66: WNG	73: AREA1
3: HOME_R	10: MS2_R	32: R0	39: R7	46: R14	53: M5_R	67: READY	74: AREA2
4: START_R	11: MS3_R	33: R1	40: R8	47: R15	60: +LS_R	68: MOVE	75: AREA3
5: SSTART_R	12: MS4_R	34: R2	41: R9	48: M0_R	61: −LS_R	69: END	80: S-BSY
6: +JOG_R	13: MS5_R	35: R3	42: R10	49: M1_R	62: HOMES_R	70: HOME-P	82: MPS

8 Sensor Signal Connector (CN5)

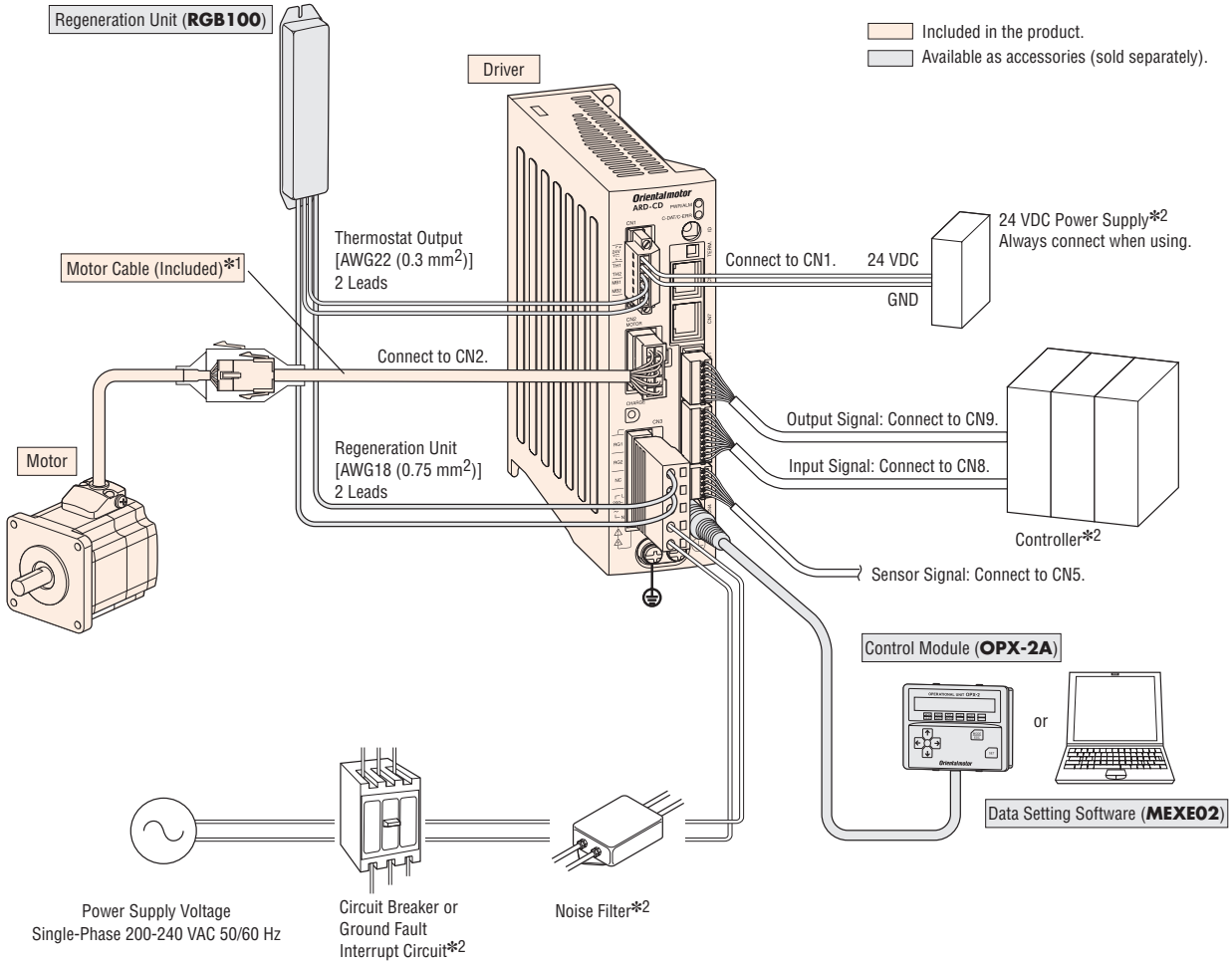
Indication	Pin No.	Signal Name	Initial Value
CN5	1	+LS	+Side Limit Sensor Input
	2	−LS	−Side Limit Sensor Input
	3	HOMES	Mechanical Home Sensor Input
	4	SLIT	Slit Sensor Input
	5	IN-COM2	Common for Sensor

9 24 VDC Input/Regeneration Unit Thermal Input/Electromagnetic Brake Connction Terminal (CN1)

Indication	I/O	Terminal Name	Content
24V+	Input	24 VDC Power Input Terminal+	This is the power supply for the driver's control circuit terminal. Always connect when using.
24V−		24 VDC Power Input Terminal−	
TH1		Regeneration Unit Thermal Input Terminal	Connects the accessory regeneration unit **RGB100** (sold separately). Short circuit between the terminals when no regeneration unit is connected.
TH2		Regeneration Unit Thermal Input Terminal	
MB1	Output	Electromagnetic Brake Connection Terminal−	This connects the electromagnetic brake line of an electromagnetic brake type motor.
MB2		Electromagnetic Brake Connection Terminal+	

●Connection Diagram

◇Connection to Peripheral Equipment

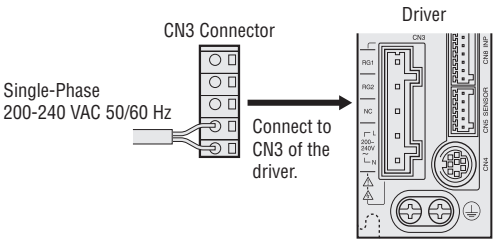


*1 Each model comes with a motor cable 1, 2 or 3 m long. If you need a cable of a different length or a flexible cable, select an appropriate cable from among the accessories (sold separately). Keep the wiring distance between the motor and driver to 30 m max.

*2 Not supplied.

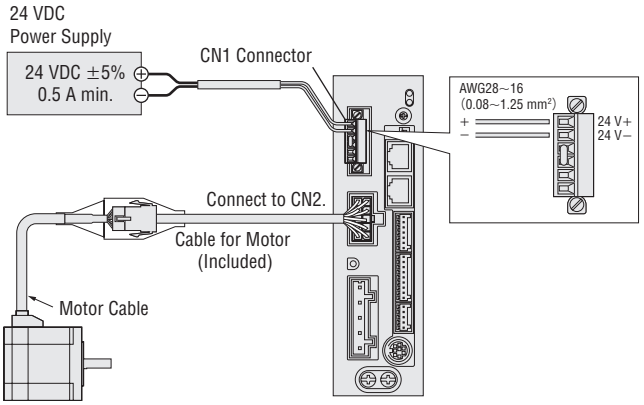
◇Connecting a Main Power Supply

Use the following cable for the power supply line;
3-core cable of AWG16 to 14 (1.25 to 2.0 mm²)

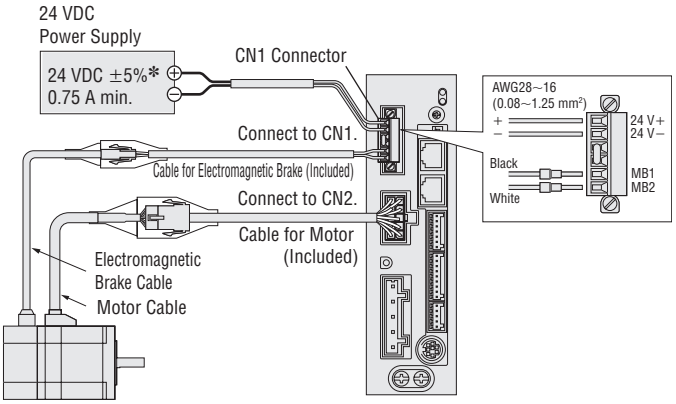


◇Connecting the Control Power Supply

Provide a 24 VDC power supply.



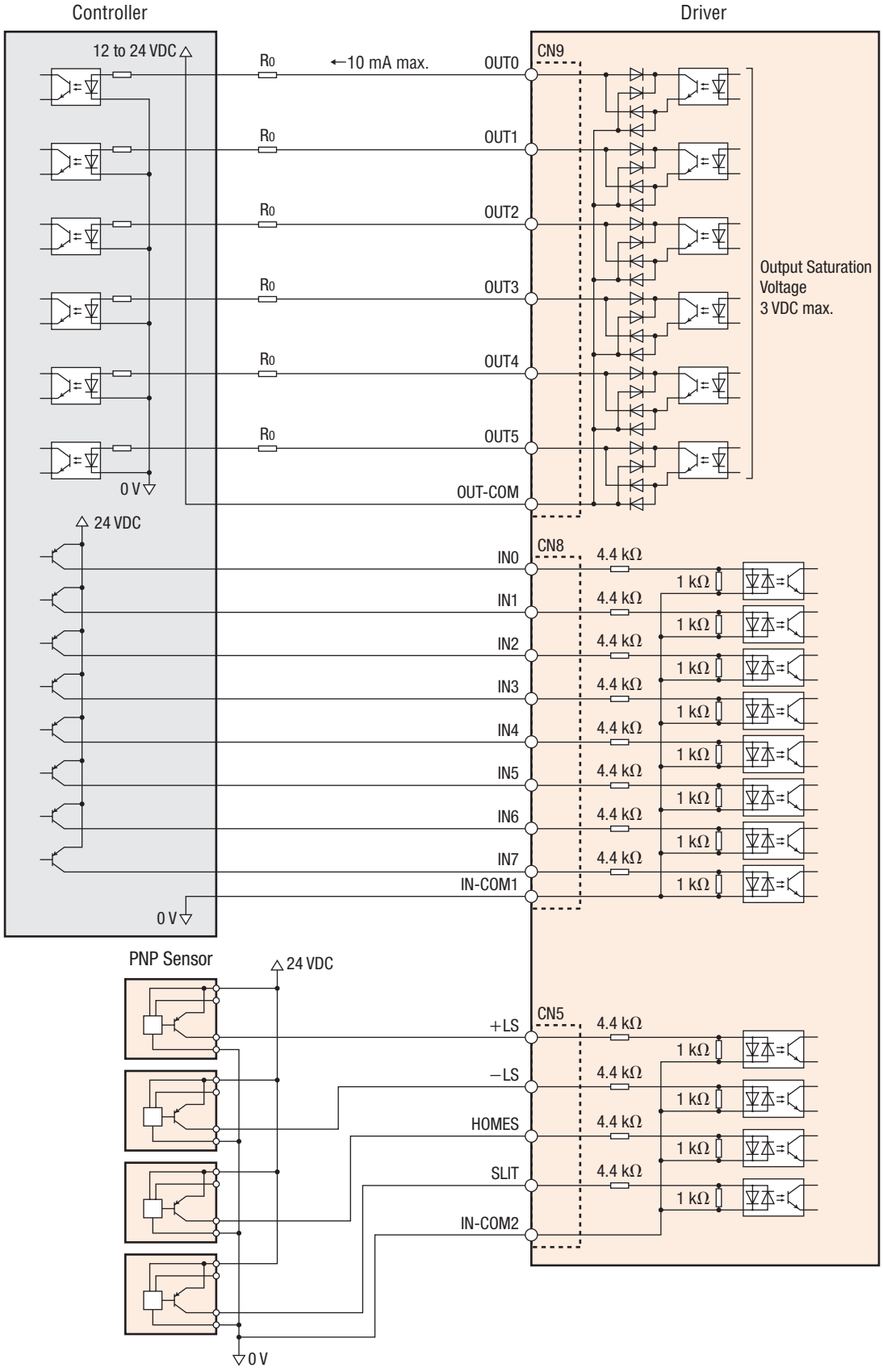
◇Connecting the Electromagnetic Brake



*If the distance between the motor and driver is extended to 20 m or longer, use a power supply of 24 VDC ±4%.

◇Connecting to a Host Controller

• Connecting to a Current Source Output Circuit

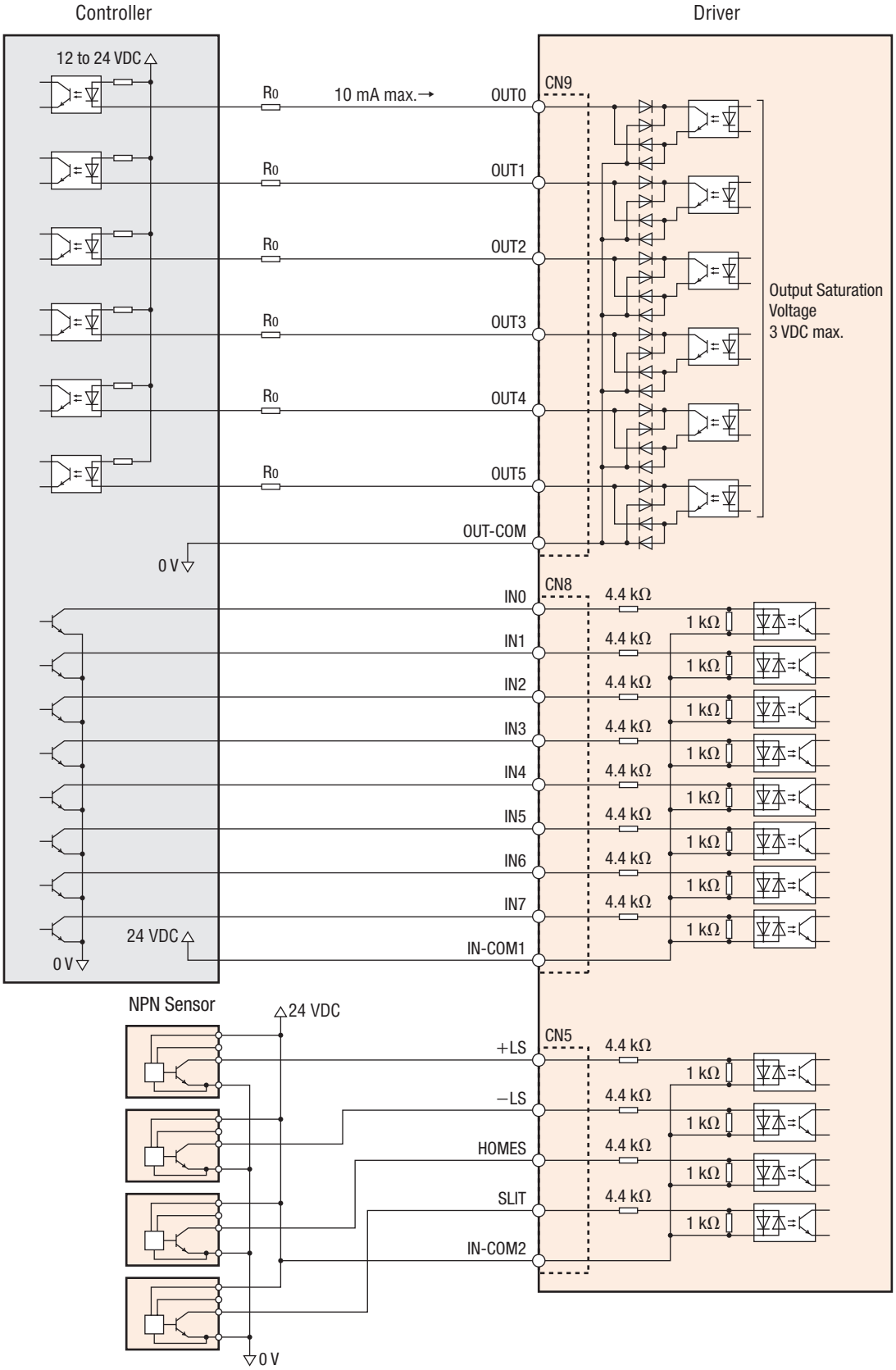


Note

- Use input signals at 24 VDC.
- Use output signals at 24 VDC or less. If the current exceeds 10 mA, connect an external resistor R_O.
- The saturation voltage of the output signal is 3 VDC max.
- Provide a minimum distance of 200 mm between the signal lines and power lines (AC lines, motor lines). Do not run the signal lines in the same duct as power lines nor bundle them with power lines.
- If noise generated by the motor cable or power supply cable causes a problem with the specific wiring or layout, shield the cable or use ferrite cores.

◇Connecting to a Host Controller

• Connecting to a Current Sink Output Circuit



Note

- Use input signals at 24 VDC.
- Use output signals at 24 VDC or less. If the current exceeds 10 mA, connect an external resistor R_0.
- The saturation voltage of the output signal is 3 VDC max.
- Provide a minimum distance of 200 mm between the signal lines and power lines (AC lines, motor lines).
  Do not run the signal lines in the same duct as power lines nor bundle them with power lines.
- If noise generated by the motor cable or power supply cable causes a problem with the specific wiring or layout, shield the cable or use ferrite cores.