

Wiring example

Driver Frame Type Symbol (Frame A, B, C, D)

For details, refer to the Instruction Manual.

● Wiring of main circuit

Circuit Breaker (NFB)

Protects the power lines.
Shuts off the circuit when overcurrent passes.

Noise Filter (NF)

Prevents external noise from the power lines.
And reduces an effect of the noise generated by the servo driver.

Magnetic Contactor (MC)

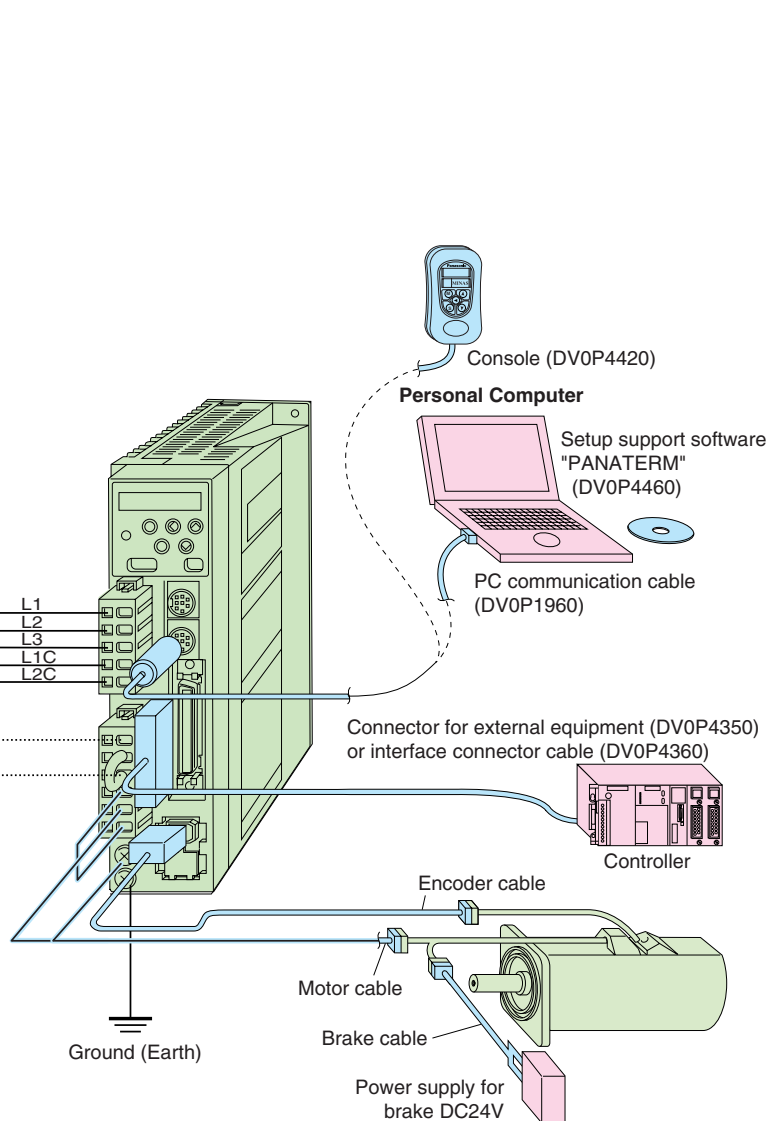
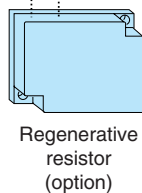
Turns on/off the main power of the servo driver.
Surge absorber to be used together with this.

Reactor (L)

Reduces harmonic current of the main power.

Pin RB1, RB2 and RB3 ...

- RB2 and RB3 to be kept shorted for normal operation.
- When the internal regenerative resistor capacity has shortage, disconnect between RB2 and RB3, then connect an external regenerative resistor between RB1 and RB2. (Note: that no regenerative resistor is equipped in Frame A and B type.)



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Parts customer to prepare

Driver Frame Type Symbol (Frame E, F)

For details, refer to the Instruction Manual.

● Wiring of main circuit

Circuit Breaker (NFB)

Protects the power lines.
Shuts off the circuit when overcurrent passes.

Noise Filter (NF)

Prevents external noise from the power lines.
And reduces an effect of the noise generated by the servo driver.

Magnetic Contactor (MC)

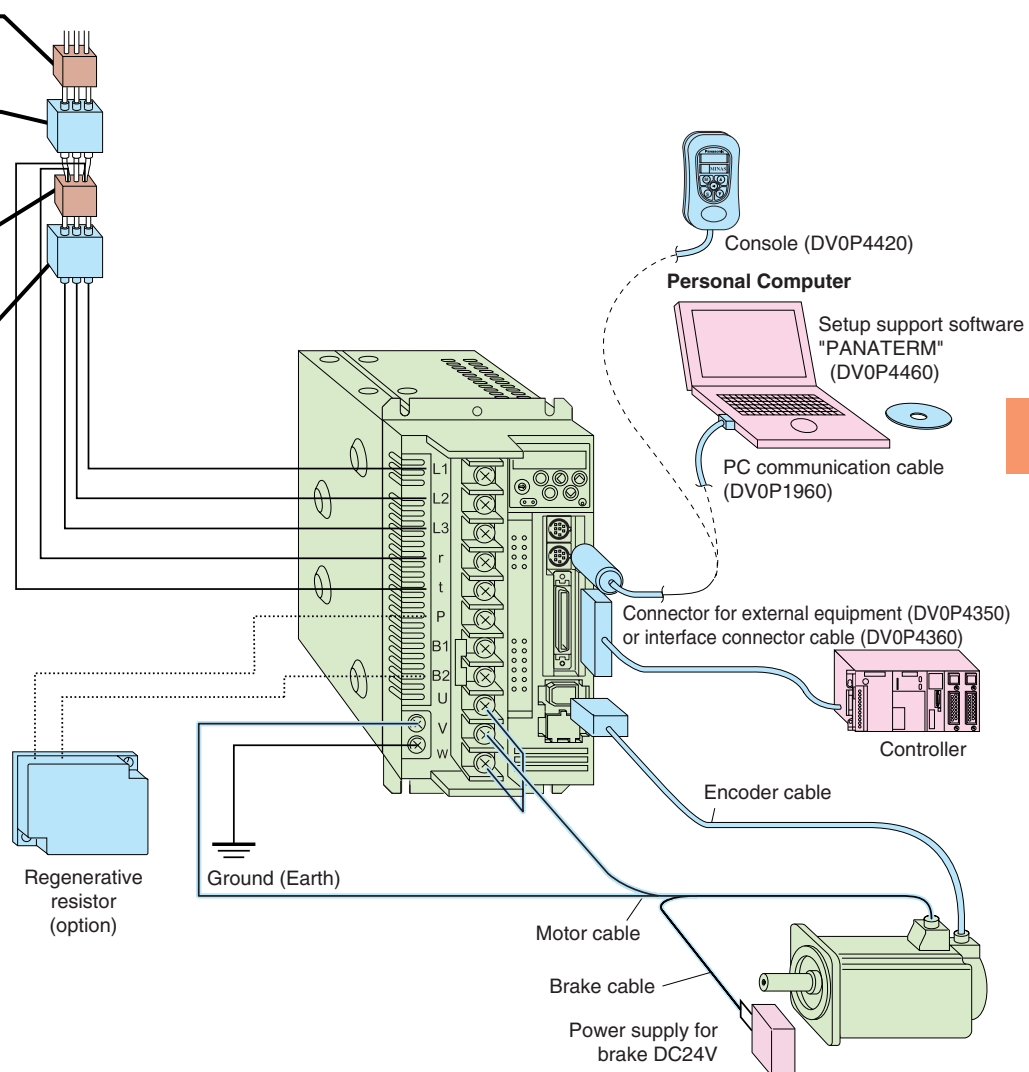
Turns on/off the main power of the servo driver.
Surge absorber to be used together with this.

Reactor (L)

Reduces harmonic current of the main power.

P, B1 and B2 ...

- B1 and B2 to be kept shorted for normal operation.
- When the internal regenerative resistor capacity has shortage, disconnect between B1 and B2, then connect an external regenerative resistor between P and B2.



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Parts customer to prepare

Wiring example

Driver Frame Type Symbol (Frame G)

For details, refer to the Instruction Manual.

● Wiring of main circuit

Magnetic Circuit Breaker (MCB)

Used to protect the power lines: overcurrent will shutoff the circuit.

Noise filter (NF)

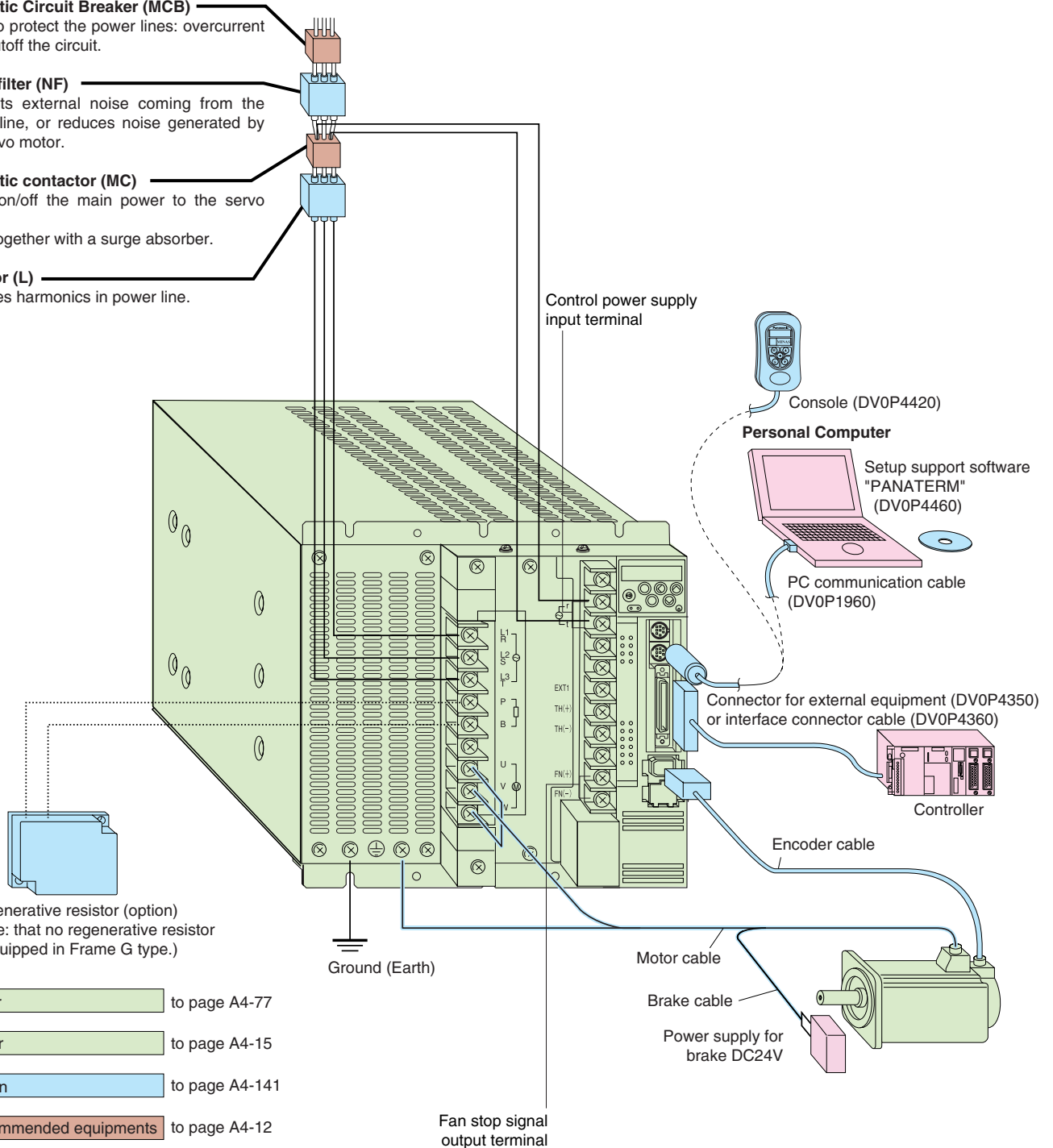
Prevents external noise coming from the power line, or reduces noise generated by the servo motor.

Magnetic contactor (MC)

Turns on/off the main power to the servo motor. Used together with a surge absorber.

Reactor (L)

Reduces harmonics in power line.



Regenerative resistor (option)
(Note: that no regenerative resistor is equipped in Frame G type.)

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Parts customer to prepare

● List of recommended peripheral equipments

Power supply voltage	Applicable motor		Power capacity (at rated load)	Circuit breaker (rated current)	Noise filter	Surge absorber	Noise filter (signal)	Magnetic contactor (Contact)	Cable diameter (Main circuit)	Cable diameter (control circuit)	Connector					
	Series	Output														
Single phase, 100V	MSMD	50W	Approx. 0.4kVA	BBW2102 (10A)	DVOP4170	DVOP4190	DVOP1460	BMFT61041N (3P+1a)	0.75mm ² to 2.0mm ² AWG14 to 18		Connection to exclusive connector					
	MSMD	100W										Approx. 0.5kVA				
	MQMA	200W														
Single phase, 200V	MSMD	400W	Approx. 0.9kVA		DVOP4180			DVOP4220				DVOP1450	BMFT61842N (3P+1a)	2.0mm ² AWG14	0.75mm ² AWG18	
	MSMD	100W														
	MAMA	100W	Approx. 0.3kVA													
	MQMA	200W		Approx. 0.5kVA												
	MSMD	400W	Approx. 0.9kVA													
	MQMA	400W		Approx. 0.9kVA												
Single/3-phase, 200V	MAMA	400W	Approx. 0.9kVA		BBW3152 (15A)	DVOP4180	DVOP1460	BMFT61842N (3P+1a)	2.0mm ² AWG14	0.75mm ² AWG18						
	MFMA	400W		Approx. 1.1kVA												
	MHMA	500W										Approx. 1.3kVA				
	MSMD	750W	Approx. 1.6kVA													
	MAMA	750W		Approx. 1.8kVA												
	MDMA	1.0kW	Approx. 1.8kVA													
	MHMA	1.0kW		Approx. 2.3kVA												
	MGMA	900W	Approx. 2.3kVA													
	MSMA	1.0kW		Approx. 2.3kVA												
	MSMA	1.5kW	Approx. 2.3kVA													
MDMA	1.5kW	Approx. 2.3kVA														
MFMA	1.5kW		Approx. 2.3kVA													
MHMA	1.5kW	Approx. 2.3kVA														
3-phase, 200V	MSMA		2.0kW	Approx. 3.3kVA	BBW3302 (30A)	DVOP4220	DVOP1450	BMF6352N (3P+2a2b)	3.5mm ² AWG12		Terminal block M5 11.0 or smaller 					
	MDMA	2.0kW	Approx. 3.8kVA													
	MHMA	2.5kW			Approx. 3.8kVA											
	MFMA	2.0kW	Approx. 4.5kVA													
	MGMA	2.0kW		Approx. 4.5kVA												
	MSMA	3.0kW	Approx. 4.5kVA													
	MDMA	3.0kW		Approx. 6.0kVA												
	MHMA	3.0kW	Approx. 6.0kVA													
	MGMA	3.0kW		Approx. 6.8kVA												
	MSMA	4.0kW	Approx. 6.8kVA													
	MDMA	4.0kW		Approx. 7.5kVA												
	MHMA	4.0kW	Approx. 7.5kVA													
	MGMA	4.5kW		Approx. 7.5kVA												
	MSMA	5.0kW	Approx. 9.0kVA													
MDMA	5.0kW	Approx. 9.0kVA														
MHMA	5.0kW		Approx. 11kVA													
MGMA	6.0kW	Approx. 11kVA														
MDMA	7.5kW		Approx. 11kVA													
MHMA	7.5kW	Approx. 11kVA														

- Select a single and 3-phase common specifications corresponding to the power supplies.
- Listed circuit breaker and magnetic contactor are manufactured by Panasonic Electric Works.
To conform to EC Directives, install a circuit breaker which conforms to IEC and UL Standards (Listed, (UL) marked) between noise filter and power supply without fail.
- For details of noise filter, refer to Page A4-138.

<Remarks>

- Select a circuit breaker and noise filter which match to the capacity of power supply (including a load condition).
- Terminal block and earth terminals
 - Use a copper conductor cables with temperature rating of 60°C or higher.
 - Earth terminals for Frame A to D are M4 and M5 for Frame E to G.
 - Larger tightening torque for screws than the max. value (M4 : 1.2 N·m, M5 : 2.0 N·m) may damage the terminal block.
 - Mounting screws on the cover of terminal block for frames E to G and screw on acrylic cover of terminal block for frame G should be tightened with 0.2 N·m torque.
- Application of torque larger than 0.2 N·m may damage the thread on the driver.
- Use an earth cable with the same diameter as that of the main circuit cable.
If the diameter of the main circuit cable is 1.6mm² or less, use an earth cable with a diameter of 1.6mm² (AWG14).
- Use the attached exclusive connector for A to D-frame, and maintain the peeled off length of 8 to 9mm.
- Tighten the screws of the connector, CN X5 for the host controller with the torque of 0.3 to 0.35 N·m.
- Larger torque than 0.35N·m may damage the connector at the driver side.

<Caution>

Do not turn on power without first positively tightening all terminal block screws, otherwise, loose contacts may generate heat (smoking, firing).