Chapter 4. INSTALLATION AND WIRING

4.1 Installation

4.1.1 Installation Ambience

This module has high reliability regardless of its installation ambience. But be sure to check the following for system in higher reliability and stability.

1) Ambience Requirements

Avoid installing this module in locations, which are subjected or exposed to:

.Water leakage and dust a large amount of dust, powder and other conductive power, oil mist, salt, of organic solvent

.Mechanical vibrations of impacts transmitted directly to the module body.

.Direct sunlight.

.Dew condensation due to sudden temperature change.

.High or low temperatures (outside the range of 0-55.)

2) Installing and Wiring

.During wiring or other work, do not allow any wire scraps to enter into it.

.Install it on locations that are convenient for operation.

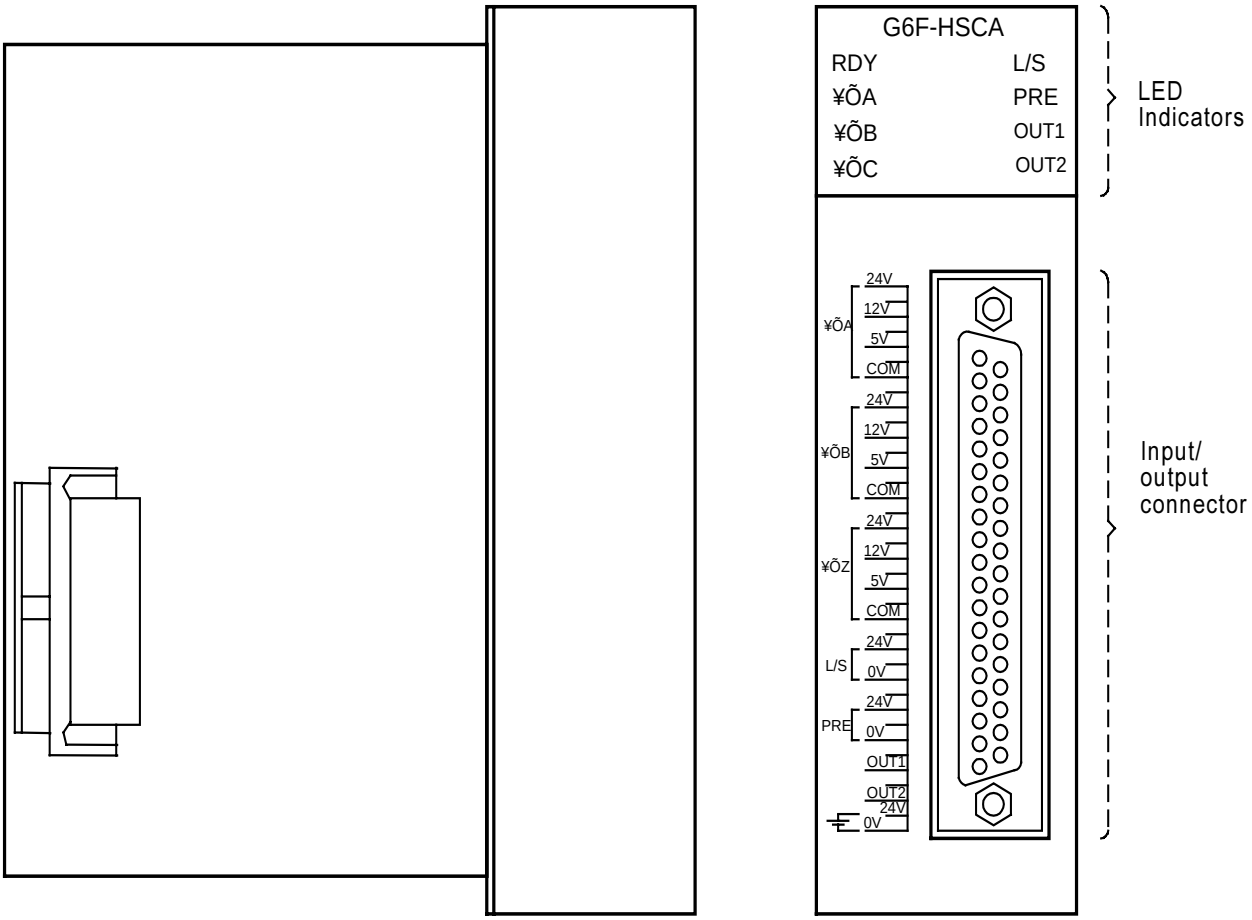
.Make sure that it is not located near high voltage equipment on the same panel.

.Make sure that the distance from the walls of duct and external equipment be 50 mm or more.

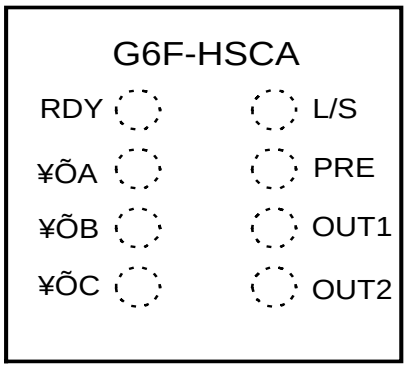
.Be sure to be grounded to locations that have good noise immunity.

4.2 Names of Parts

1) G6F-HSCA



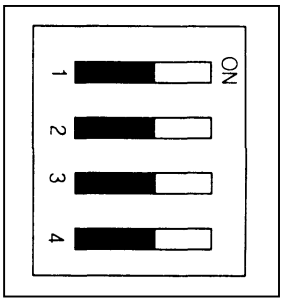
2) LED Indicators



Description
Ready (RDY) Turns on when the power is applied
Phase A Input (ΦA) Turns on when voltage is applied to phase A input terminal.
Phase B Input (ΦB) Turns on when voltage is applied to phase B input terminal
Phase Z Input (ΦZ) Turns on when voltage is applied to phase B input terminal
Limit Switch Input (L/S) Turns on when voltage is applied to limit switch input terminal
Preset Switch Input (PRE) Turns on when voltage is applied to preset switch input terminal
Output 1 (OUT1) Indicate the magnitude comparison result of CMP 1
Output 2 (OUT2) Indicate the magnitude comparison result of CMP 2

4) DIP Switch Setting Part

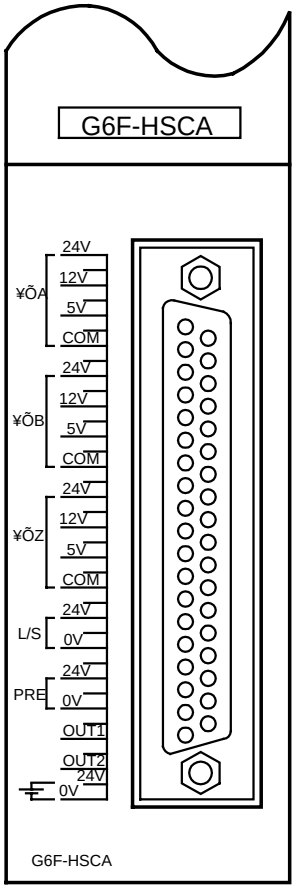
The DIP Switch settings are used for phase-2/ phase-1 operation mode specification, Increment / Decrement count method specification at 1-phase operation, and multiplication specification at 2-phase operation.

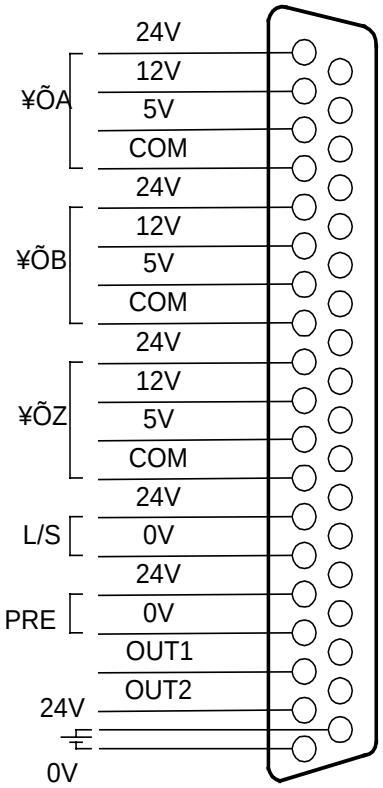


[DIP Switch]

Switch	Functions	
	Status	**Descriptions**
SW 1	ON	Specifies the 2 – phase pulse operation mode.
	OFF	Specifies the 1 – phase pulse operation mode.
SW 2	ON	Specifies the phase B pulse input mode as increment/decrement count method at 1 – phase pulse inputs
	OFF	Specifies the program input mode as increment/decrement count method at 1 – phase pulse inputs
SW 3 SW 4	ON ON	Specifies multiplication 1
	ON OFF	Specifies multiplication 2
	OFF ON	No multiplication is applied
	OFF OFF	Specifies multiplication 4

5) Input / Output Connector

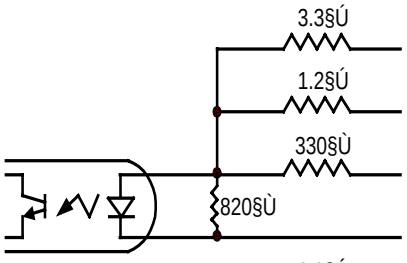
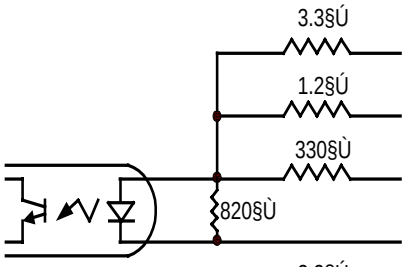
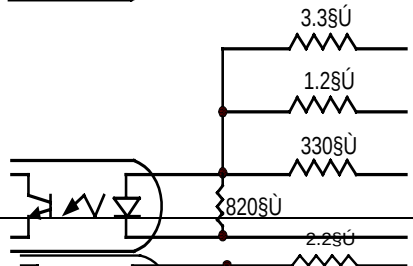
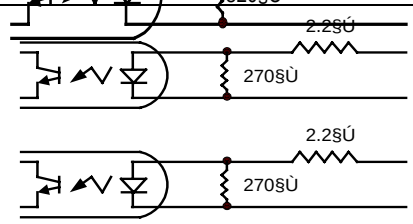
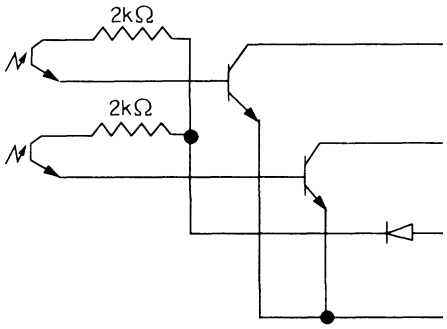




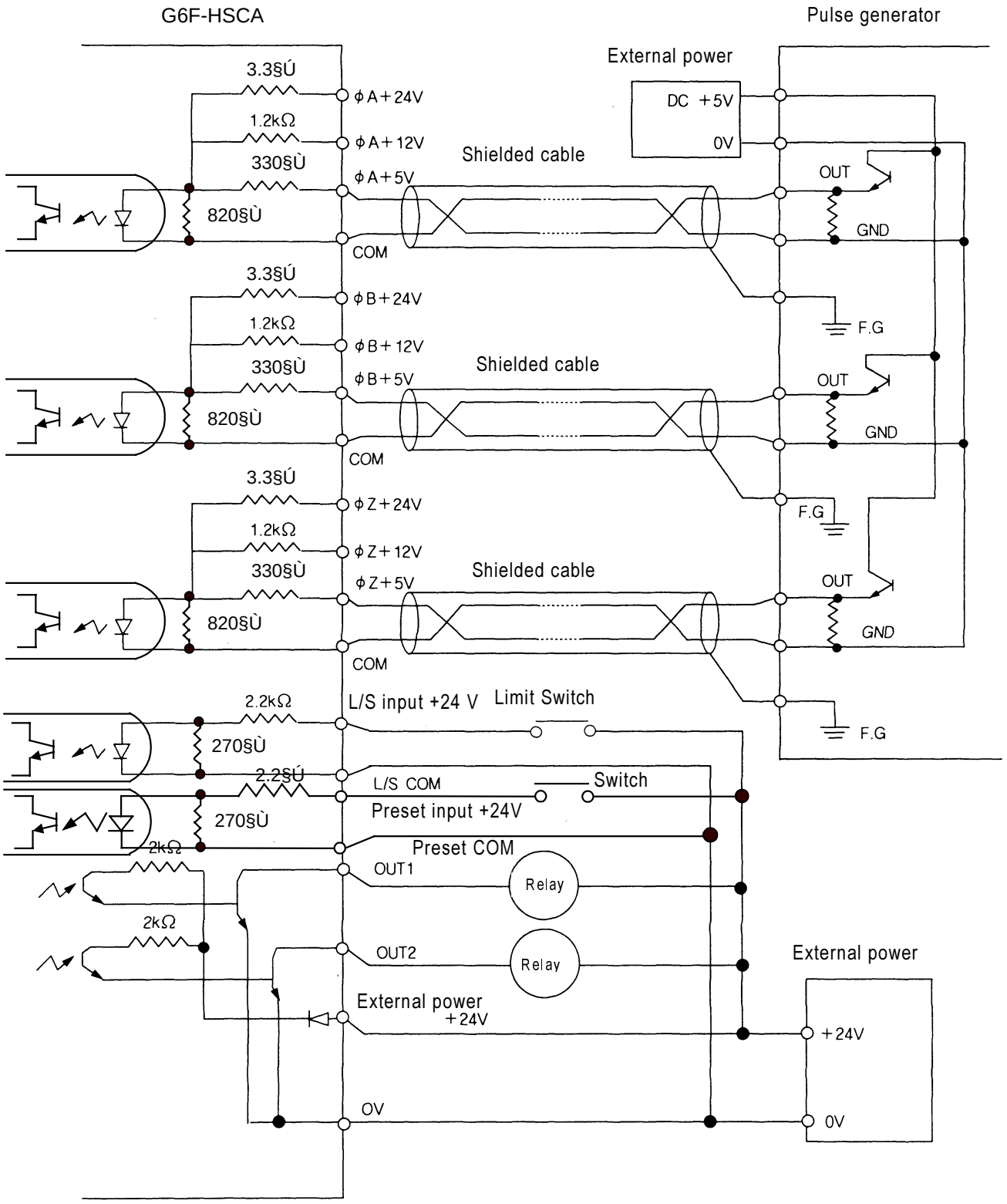
4.3 Interface with External Devices

Table 4.1 shows the list for interface with external devices.

[Table 4.1]: External interface list

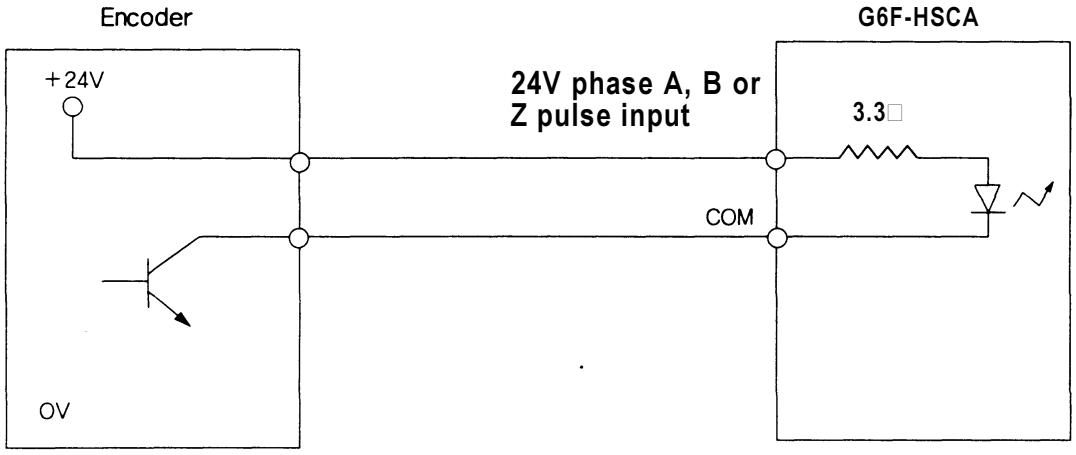
I/O	Internal Current	Terminal pin No.	Signal Name	Operation	Input guarantied Voltage
Input		1	24 V, Phase A pulse input	ON	14~26.4 V
				OFF	2.5 V
		2	12 V, Phase A pulse input	ON	11~13.2 V
				OFF	1.5 V
		3	5 V, Phase A pulse input	ON	4.5~5.5 V
				OFF	0.8 V or less
		4	COM		
		5	24 V, Phase B pulse input	ON	14~26.4 V
				OFF	2.5 V
		6	12 V, Phase B pulse input	ON	11~13.2 V
				OFF	1.5 V
		7	5 V, Phase B pulse input	ON	4.5~5.5 V
				OFF	0.8 V or less
		8	COM		
		9	24 V, Phase Z pulse input	ON	14~26.4 V
				OFF	2.5 V
		10	12 V, Phase Z pulse input	ON	11~13.2 V
				OFF	1.5 V
		11	5 V, Phase Z pulse input	ON	4.5~5.5 V
				OFF	0.8 V or less
		12	COM		
Input		13	L/S input 24 V	ON	19~26.4 V
				OFF	6 V or less
		14	L/S COM		
		15	Preset input 24V	ON	19~26.4 V
				OFF	6 V or less
		16	L/S COM		
Output		17	Open collector output OUT1	Rated output: 24VDC, 200 mA Response time: OFF →ON50.s or less ON→OFF 50.s or less	
		18	Open collector output OUT2		
		37	External power supply output 24 V	Input voltage 10.2 ~ 30 V	
		19	External power supply COM 0 V		

4.4 Wiring Examples of the High-Speed Counter Module (VDC 5, Voltage Out)

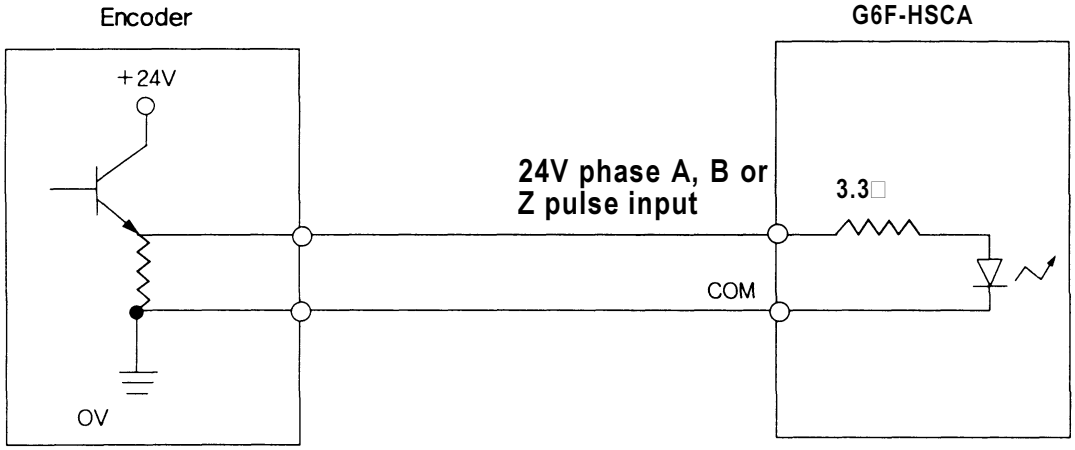


4.5 Output Mode of Encoder

- **Open collector output**



- **Voltage output**



4.6 Wiring Precautions

When using High-speed inputs, take the following precautions against noise in wiring.

1) Be sure to use shielded twisted pair cables and provided class 3 grounding.

2) Separate a twisted pair cable from power cables or I/O line that may generate noise.

3) Use a stabilized power supply for pulse generator.
For 1-phase input, connect count-input signal only to phase A;
For 2-phase input, connect to phases A and B.