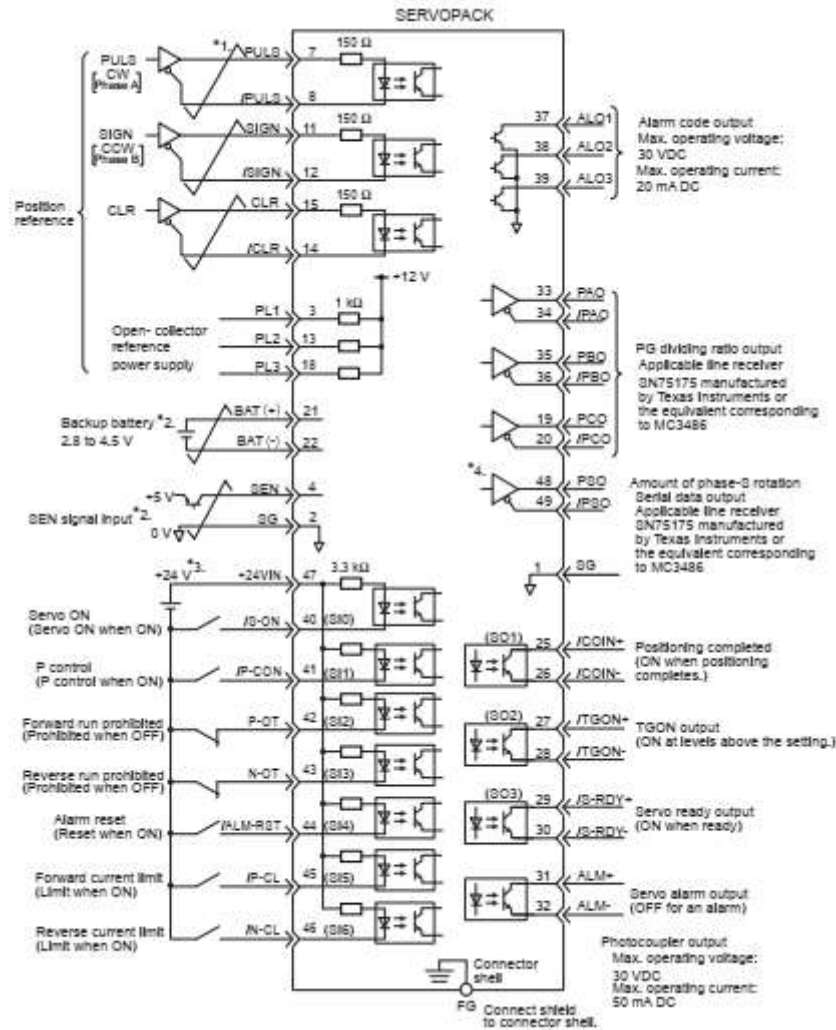


HƯỚNG DẪN SỬ DỤNG YASKAWA SGDM SERIES

1. SƠ ĐỒ ĐẦU NỐI:



Terminal Symbol	Name	Main Circuit Voltage (V)	Maximum Applicable Servomotor Capacity (kW)	Functions
L1, L2	Main circuit power supply input terminal	100	0.03 to 0.2	Single-phase 100 to 115 VAC ^{+10%, -15%} (50/60 Hz) [*]
		200	0.03 to 0.4	Single-phase 200 to 230 VAC ^{+10%, -15%} (50/60 Hz) [*]
L1, L2, L3		200	0.5 to 7.5	Three-phase 200 to 230 VAC ^{+10%, -15%} (50/60 Hz) [*]
U, V, W	Servomotor connection terminals	-	-	Connects to the servomotor.
L1C, L2C	Control circuit power supply input terminal	100	0.03 to 0.2	Single-phase 100 to 115 VAC ^{+10%, -15%} (50/60 Hz) [*]
		200	0.03 to 7.5	Single-phase 200 to 230 VAC ^{+10%, -15%} (50/60 Hz) [*]
⊕	Ground terminals	-	-	Connects to the power supply ground terminals and servomotor ground terminal.

2. CÁC THÔNG SỐ CẦN CÀI ĐẶT:

- Pn000: 0010 – Position control mode.
- Pn200: 0000 – Pulse/Direction (Positive Logic).
- Pn50A: 7170 – Always SON, Disabled Forward Limit.
- Pn50B: 6547 – Disabled Reverse Limit.

3. Bảng mã lỗi:

11.1 Troubleshooting

11.1.1 Alarm Display Table

The relation between alarm displays and alarm code outputs is shown in Table 11.1.

If an alarm occurs, the servomotor can be stopped by doing either of the following operations.

- DB STOP: Stops the servomotor immediately using the dynamic brake.
- COAST TO A STOP: Stops naturally, with no brake, by using the friction resistance of the motor in operation.

Table 11.1 Alarm Displays and Outputs

Alarm Display	Alarm Name	Meaning	Alarm Reset	Alarm Code Output			Servo Alarm (ALM) Output
				ALO1	ALO2	ALO3	
A.02	Parameter Breakdown	EEPROM data of SERVOPACK is abnormal.	N/A	H	H	H	H
A.03	Main Circuit Encoder Error (Not detected for the SERVOPACKs with the capacity of 6.0 kW or more.)	Detection data for power circuit is abnormal.	Available				
A.04	Parameter Setting Error	The parameter setting is outside the allowable setting range.	N/A				
A.05	Combination Error	SERVOPACK and servomotor capacities do not match each other.	Available				
A.09	Dividing Ratio Setting Error *1	The setting of dividing ratio (Pn212) is not acceptable (out of fixed increments), or exceeds the value for the connected, encoder resolution.	N/A				
A.0A	Encoder Model Unmatched *1	The mounted serial encoder is not supported by Σ -II series SERVOPACK.	N/A	L	H	H	H
A.10	Overcurrent or Heat Sink Overheated	An overcurrent flowed through the IGBT. Heat sink of SERVOPACK was overheated.	N/A				
A.30	Regeneration Error Detected	Regenerative transistor or regenerative resistor is faulty.	Available				
A.32	Regenerative Overload	Regenerative energy exceeds regenerative resistor capacity.	Available				
A.33	Main Circuit Power Supply Wiring Error	The power supply to the main circuit does not match the parameter Pn001 setting.	Available				
A.40	Overvoltage *2	Main circuit DC voltage is excessively high.	Available	H	H	L	H
A.41	Undervoltage *2	Main circuit DC voltage is excessively low.	Available				
A.51	Overspeed	The motor speed is excessively high.	Available	L	H	L	H
A.71	Overload: High Load	The motor was operating for several seconds to several tens of seconds under a torque largely exceeding ratings.	Available	L	L	L	H
A.72	Overload: Low Load	The motor was operating continuously under a torque largely exceeding ratings.	Available				
A.73	Dynamic Brake Overload (Not detected for the SERVOPACKs with the capacity of 30 W to 1.0 kW.)	When the dynamic brake was applied, rotational energy exceeded the capacity of dynamic brake resistor.	Available				
A.74	Overload of Surge Current Limit Resistor	The main circuit power was frequently turned ON and OFF.	Available				
A.7A	Heat Sink Overheated (Not detected for the SERVOPACKs with the capacity of 30 W to 1.0 kW.)	The heat sink of SERVOPACK overheated.	Available				

Table 11.1 Alarm Displays and Outputs (Cont'd)

Alarm Display	Alarm Name	Meaning	Alarm Reset	Alarm Code Output			Servo Alarm (ALM) Output
				ALO1	ALO2	ALO3	
A.81	Encoder Backup Error	All the power supplies for the absolute encoder have failed and position data was cleared.	N/A	H	H	H	H
A.82	Encoder Checksum Error	The checksum results of encoder memory is abnormal.	N/A				
A.83	Absolute Encoder Battery Error	Backup battery voltage for the absolute encoder has dropped.	Available				
A.84	Encoder Data Error	Data in the encoder is abnormal.	N/A				
A.85	Encoder Overspeed	The encoder was rotating at high speed when the power was turned ON.	N/A				
A.88	Encoder Overheated	The internal temperature of encoder is too high.	N/A				
A.b1	Reference Speed Input Read Error	The A/D converter for reference speed input is faulty.	Available				
A.b2	Reference Torque Input Read Error	The A/D converter for reference torque input is faulty.	Available				
A.b3	Current Detection Error *1	The current sensor is faulty, the servomotor is disconnected, or the Servo ON command was input while the servomotor was operating.	Available				
A.bF	System Alarm	A system error occurred in the SERVOPACK.	N/A				
A.C1	Servo Override Detected	The servomotor ran out of control.	Available	L	H	L	H
A.C8	Absolute Encoder Clear Error and Multiturn Limit Setting Error	The multiturn for the absolute encoder was not properly cleared or set.	N/A				
A.C9	Encoder Communications Error	Communications between SERVOPACK and encoder is not possible.	N/A				
A.CA	Encoder Parameter Error	Encoder parameters are faulty.	N/A				
A.Cb	Encoder Echoback Error	Contents of communications with encoder is incorrect.	N/A				
A.CC	Multiturn Limit Disagreement	Different multiturn limits have been set in the encoder and SERVOPACK.	N/A				
A.d0	Position Error Pulse Overflow	Position error pulse exceeded parameter (Pn505).	Available	L	L	H	H
A.F1	Power Line Open Phase	One phase is not connected in the main power supply.	Available	H	L	H	H
A.F5 A.F6	Servomotor Disconnection Alarm *1	The servomotor will not operate, or the power is not being supplied to the servomotor, though the Servo ON command was input and the command to the SERVOPACK was valid.	Available	H	L	H	H
CPF00	Digital Operator	Digital operator (JUSP-OP02A-2) fails to communicate with SERVOPACK (e.g., CPU error).	N/A	Not decided			
CPF01	Transmission Error		N/A				
A.--	Not an error	Normal operation status	-	H	H	H	L

* 1. Occurred when only the software version number is later than 32.

* 2. For the SERVOPACK with a capacity of 6.0 kW or more, alarm A.40 indicates detecting excessively high/low voltage in the main circuit.

11.1.2 Warning Display

The relation between warning displays and warning code outputs is shown in table 11.2.

Table 11.2 Warning Displays and Outputs

Warning Display	Warning Name	Meaning	Warning Code Output		
			ALO1	ALO2	ALO3
A.90	Excessive Position Error Warning *	The position errors exceed the setting in Pn51E.	L	H	H
A.91	Overload	This warning occurs before the overload alarms (A.71 or A.72) occur. If the warning is ignored and operation continues, an overload alarm may occur.	L	H	H
A.92	Regenerative Overload	This warning occurs before the regenerative overload alarm (A.32) occurs. If the warning is ignored and operation continues, a regenerative overload alarm may occur.	H	L	H
A.93	Absolute Encoder Battery Voltage Lowered	This warning occurs when the absolute encoder battery voltage is lowered. If the warning is ignored and operation continues, an overload alarm may occur.	L	L	H

* Occurred when only the software version is 32 or later.

Note: Warning code is not output without setting Pn001 = n.1□□□ (Outputs both Alarm Codes and Warning Codes.)