New

JOYSTICK ENCODER

CJ25

FEATURES

- Multi-function device … Joystick, optical encoder, and push switch functions in one package.
- Suitable size for panels. Smooth operational feel.
- Long life … Joystick 500K cycles, encoder & switch 1M cycles
- RoHS compliant

RoHS compliant

APPLICATIONS

Operation panels for;

- Medical device
- Broadcast equipment
- Surveillance camera etc.

PART NUMBER DESIGNATION

CJ25 - 4 20 1 0

- Series name
- Joystick
  - 4 : 4 Directions
  - 8 : 8 Directions
- Encoder
  - 20 : 20 Positions (5P/R)
- Push switch function
  - 1 : With push switch
- Interface
  - 0 : Connector

LIST OF PART NUMBERS

Part number	Joystick	Encoder	Push switch function	Interface
CJ25-42010	4 directions	20 Positions(5P/R)	With push switch	Connector
CJ25-82010	8 directions			

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JOYSTICK ENCODER

■ STANDARD SPECIFICATIONS

● Electrical characteristics

Encoder

Input voltage	DC5 V ± 5 %
Input current	20mA maximum at 5V
Output wave form	Incremental signal (Square wave)
Pulses Per Rotation	5P/R
Maximum frequencies response	10Hz
Output	Open collector,Pull-up resistor 2.2KΩ
Output Code	2-Bit, Channel A/B,Phase difference 90°
Output Signal	High : 3.8V minimum Low : 0.4V maximum
Output Sink Current	6mA minimum

Joystick

Input current	5mA maximum at 5V
Output Code	2-Bit (X,Y)
Output Signal	Neutral : 2.5±0.5V High : 4.5V minimum Low : 0.5V maximum

Switch

Rating	DC5V, 10mA
Contact Resistance	10Ω maximum
Contact Bouncing	Switching : 4ms make Non-switching : 10ms break

● Mechanical characteristics

Mounting Torque	1.17N · m maximum (12kgf · cm maximum)
Actuator Strength	19.6N maximum (2kg maximum)
Max. Shaft Pull-out Strength	98N maximum (10kg maximum)
Max. Shaft Push-out Strength	98N maximum (10kg maximum)

Encoder

Click Torque	9.8±4.9mN · m (100±50gf · cm)
Clicks Per Rotation	20
Rotational Life	1 million cycles

Joystick

Angle of Throw	All directions 9±2°
Operating Force	X,Y 1.47±0.74N (150±75gf)
Joystick Life	500,000 actuation each in directions (X, Y)

Switch

Operating Force	3.43±1.47N (350±150gf)
Stroke	0.5±0.2mm
Switching Life	1 million cycles

● Environmental characteristics

Operating Temp. Range	0°C ~ + 50°C
Storage Temp. Range	–20 ~ 80°C

■ RELIABILITY TEST

Test item		Test conditions	
Vibration	Power OFF	Amplitude : 1.52mm or 98.1m/s2 (10G) whichever is smaller. 10 ~ 500Hz excursion 15 min/cycle, 8 cycles each for X, Z, directions.	
Shock	Power OFF	3 times each in directions (X, Z) at 490m/s2 (50G), 11ms.	
High temperature exposure	Power OFF	80 °C 96 h	(To be measured after leaving samples for 1 h at normal temperature and humidity after the test.)
	Power ON	50 °C 96 h	
Low temperature exposure	Power OFF	– 20 °C 96 h	
	Power ON	0 °C 96 h	
Humidity	Power OFF	40 °C Relative humidity 90 ~ 95 % 96 h (To be measured after wiping out moisture and leaving samples for 1 h at normal temperature and humidity after the test.)	
Thermal shock	Power OFF	To be done 10 cycles with the following condition (To be measured after leaving samples for 1 h at normal temperature and humidity after the test.) 80 °C 0.5 h、– 20 °C 0.5 h	

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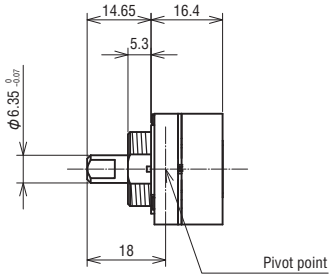
OUTLINE DIMENSIONS

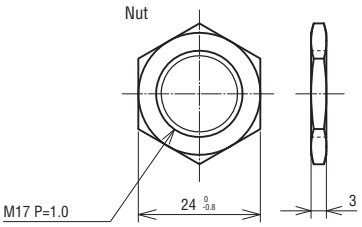
Unless otherwise specified, tolerance: ± 0.4 (Unit: mm)

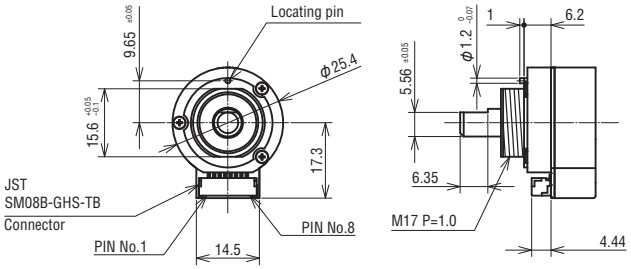
PIN ASSIGNMENT

Pin No.	Function
1	Joystick"X"
2	Joystick"Y"
3	Power"+5V"
4	Output"A"
5	Output"B"
6	Switch
7	Switch
8	GND

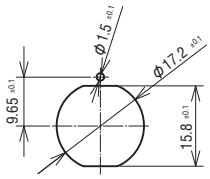


〈Accessories〉



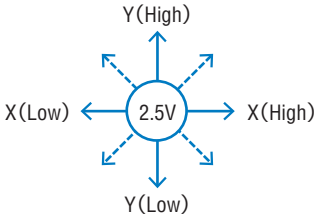


〈Panel cut-out dimensions〉



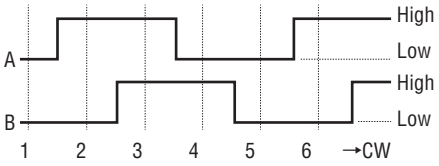
OUTPUT

● JOYSTICK



"Y (High)" defined by locating pin.

● ENCODER Output Waveform



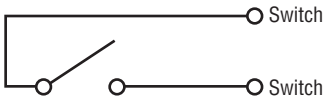
Position number: 1～6… (Clockwise rotation)

Position \ Output	A	B
1		
2	●	
3	●	●
4		●

● =High
blank=Low

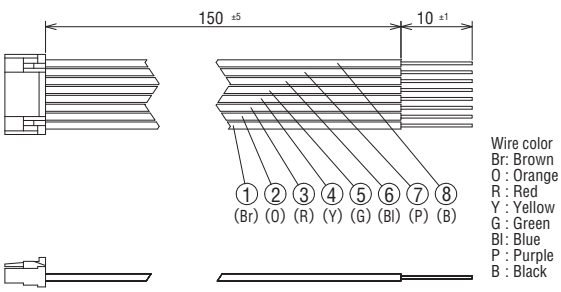
※Code repeats every 4 positions.

● SWITCH



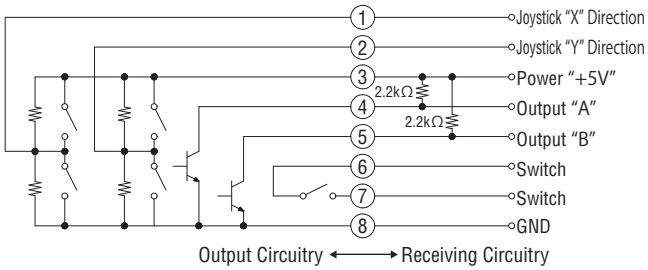
OPTION

(Wire harnesses)



Optional wire harnesses are available upon request.

OUTPUT CIRCUITRY AND RECEIVING CIRCUITRY



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