



İMAJ TEKNİK
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Rotary Encoders



Corresponding application If it clicks, details will looking-get.

Defence

Factory

Science

Amusement

Car

Spec List>>

[For instrumentation](#) [For industrial](#) [For milling](#) [For ultra precision machine tools](#)

[For motor controls](#) [Machine Tools](#) [For Machine Tools](#) [For Press Machines](#)

[For small wattage motor,Serial Data transfer](#) [For Medium wattage Serial Data transfer](#)

Digital techniques in business industry have been greatly advanced. Among these, necessity for converting analog rotating value, shaft angle position, etc to digital has been increased as measurement for physical value and automation for control systems are advanced. Encoders, at present, have been widely used for factory automations, measurements, office automation devices, medical equipment, aviation and universal fields. Various kinds of encoders (FA-CODER® as trade mark) from small to high absolute are available to meet all of the requirements. As a result of this, a maximum of resolution for encoder is one arc sec. High performance encoders supported by these high disk producing techniques are available.

INCREMENTAL: SPECIFICATION LIST

Applications		For instrumentation		For industrial	For milling	
Features		Ultra small size	Small size and low cost	Wide range of resolution, a lot of options	Ultra rugged Model	
Series		OIS28	OIS38	OIS66	OIS68	OIS128
Model No.		TS5150	TS5300	TS5100	TS5000	TS5080
Resolution (Counts/Turn)		100 to 2,000C/T	100 to 2,500C/T	100 to 5,000C/T	25 to 5,000C/T	
Output Phase		A, B Phase		A, B, Z Phase	A, B Phase	
Max Response Frequency		80kHz	200kHz	125kHz	25kHz	
Voltage Supply		DC+5V	DC+5V to DC+12V	DC+5V, DC+12V	DC+24V	
Consumption Current (NOTE1)		100mA Max		200mA Max	300mA Max	
Output form		Open Collector	Open Collector Line Driver	Voltage, Open Collector, Line Driver	Voltage Complementary	
Shaft Loading (NOTE2)	Radial		21.6N (2.2kgf)	98N (10kgf)	392N (40kgf)	
	Axial	12.7N (1.3kgf)	10.8N (1.1kgf)	12.7N (1.3kgf)	49N (5kgf)	
Starting Torque		$2.9 \times 10^{-3} \text{N}\cdot\text{m}$ (30gf-cm Max)	$4.4 \times 10^{-3} \text{N}\cdot\text{m}$ (45gf-cm Max)	$2.9 \times 10^{-3} \text{N}\cdot\text{m}$ (30gf-cm Max)	$9.8 \times 10^{-2} \text{N}\cdot\text{m}$ (1kgf-cm Max)	$0.2 \times 10^{-2} \text{N}\cdot\text{m}$ (2kgf-cm Max)
Protection			IP=50	IP=52	IP=57	
Operating Temp,Range		0 to +60°C	-10 to +70°C	-10 to +70°C	0 to +50°C	
Vibration(NOTE3)			49m/s ² (5G)		98m/s ² (10G)	
Shock(NOTE4)			490m/s ² (50G)		980m/s ² (100G)	
Mass		0.2kg Max	0.15kg Max	0.5kg Max	1kg Max	7kg Max

INCREMENTAL: SPECIFICATION LIST

<u>Applications</u>	<u>For ultra precision machine tools</u>		<u>For motor controls</u>			<u>Machine tools</u>
Features	High resolution, high reliability and low cost		Hollow Shaft Small Size	Hollow Shaft Small Size	High speed responsi- bility and Big Size	Magnetic Encoder
Series	<u>OIS85</u>	<u>OIS90</u>	<u>OIH35</u>	<u>OIH48</u>	<u>OIS80</u>	<u>MIB0.4</u>
Model No.	<u>TS5170</u>	<u>TS5410</u>	<u>TS5200N300</u>	<u>TS5200N500</u>	<u>TS5146</u>	<u>TS5270</u>
Resolution (Counts/Turn)	<u>9,600 to 50,000C/T</u>	<u>90k to 480k C/T</u>	<u>500 to 3,000C/T</u>	<u>1,000 to 6,000C/T</u>	<u>5,000C/T</u>	<u>1024C/T (No.of teeth=256)</u>
Output Phase	<u>A, B, Z, U, V, W Phase</u>	<u>A, B, Z Phase</u>	<u>A, B, Z, U, V, W Phase</u>			<u>A, B, Z Phase</u>
Max Response Frequency	<u>1.5MHz</u>	<u>500kHz</u>	<u>200kHz</u>		<u>250kHz</u>	<u>200kHz</u>
Voltage Supply	<u>DC+5V</u>					
Consumption Current (NOTE1)	<u>250mA Max</u>	<u>200mA Max</u>			<u>300mA Max</u>	
Output form	<u>Line Driver</u>		<u>Line Driver</u>	<u>Line Driver</u>	<u>Line Driver</u>	
Shaft Loading (NOTE2)	Radial	<u>19.6N (2kgf)</u>	<u>98N (10kgf)</u>		<u>19.6N (2kgf)</u>	<u>Air gap from Spur Wheel 0.15±0.01mm Allowable Tolerance Radial ±0.3 mm Axial ±0.5 mm</u>
	Axial	<u>9.8N (1kgf)</u>	<u>49N (5kgf)</u>	<u>Mounting Tolerance Radial 0.05mm TIR Max Axial 0.2mm Max Shaft Runout 0.1 °Max</u>		<u>9.8N (1kgf)</u>
Starting Torque	<u>2.0x10⁻² N·m (200gf·cm Max)</u>	<u>9.8x10⁻² N·m (1kgf·cm Max)</u>	<u>5.9x10⁻³ N·m (60gf·cm Max)</u>	<u>9.8x10⁻³ N·m (100gf·cm Max)</u>	<u>2.0x10⁻² N·m (200gf·cm Max)</u>	<u>-</u>
Protection	<u>IP=52</u>		<u>IP=40 Electronic Circuits Disclosed</u>	<u>IP=40</u>	<u>IP=52</u>	<u>IP=50</u>
Operating Temp. Range	<u>-10 to +80 °C</u>	<u>-10 to +75 °C</u>	<u>-20 to +85 °C</u>	<u>-20 to +85 °C</u>	<u>-10 to +75 °C</u>	<u>-10 to +80 °C</u>
Vibration (NOTE3)	<u>49m/s² (5G)</u>	<u>98m/s² (10G)</u>	<u>49m/s² (5G)</u>		<u>98m/s² (10G)</u>	<u>Full Amplitude 1.5mm 0.5Hr (5 to 500Hz)</u>
Shock (NOTE4)	<u>1.960m/s² (200G)</u>	<u>980m/s² (100G)</u>	<u>490m/s² (50G)</u>	<u>980m/s² (100G)</u>		<u>294m/s² (30G)</u>

Mass	1kg Max	3kg Max	0.2kg	0.3kg	0.8kg Max	0.5kg Max
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NOTE 1) Current consumption: This is a specification for no loading at output circuit.
NOTE 2) The specification for shaft allowable load shall be a mechanical value.
Actual specification allows us to recommend within 20 percents of the specification.
NOTE 3) Vibration: This is a value under the condition of meeting the total of 6 (six)hours consisting of 2 hours for each of X, Y and Z axis.
NOTE 4) Shock: This is a value under the condition of meeting the total of 18(eighteen)times consisting of 3 times for each of X, Y and Z axis.

ABSOLUTE: SPECIFICATION LIST

SPECIFICATION LIS		Single-Turn Encoder			
Applications	For Machine tools		For Press machines		
Features	<u>Small & Rugged Model</u>	<u>Rugged Model</u>	<u>Rugged Model and Special divisions</u>	<u>Vitra rugged model with strobe signal</u>	
Series	<u>OAS50</u>	<u>OAS68</u>	<u>OAS66</u>	<u>OAS66</u>	
Model No.	<u>TS5610</u>	<u>TS5620</u>	<u>TS1857</u>	<u>TS5607</u>	
Resolution	<u>8 bit</u>	<u>10 to 13bit 0 to 359C/T</u>	<u>8 to 90DIV.</u>	<u>0 to 359C/T</u>	
Output Phase	<u>Gray</u>	<u>Pure Binary Gray</u>	<u>Pure Binary</u>	<u>BCD</u>	
Max Response Frequency	<u>10kHz</u>		<u>20kHz</u>	<u>2.5kHz</u>	
Voltage Supply	<u>DC+5V</u>	<u>DC+5V DC+12V</u>	<u>DC+24V</u>	<u>DC+12V</u>	
Supply Current (NOTE1)	<u>120mA</u>	<u>250mA</u>	<u>150mA</u>	<u>300mA Max</u>	
Output form	<u>Open Collector</u>		<u>Emitter follower</u>	<u>Open collector</u>	
Shaft Loading (NOTE2)	Radial	<u>98N (10kgf)</u>			
	Axial	<u>49N (5kgf)</u>			
Starting Torque	<u>9.8x10⁻³ N·m (100gf·cm Max)</u>	<u>9.8x10⁻² N·m (1kgf·cm Max)</u>	<u>2.0x10⁻² N·m (200gf·cm Max)</u>	<u>9.8x10⁻² N·m (1kgf·cm Max)</u>	
Protection	<u>IP=50</u>	<u>IP=52</u>	<u>IP=53</u>	<u>IP=54</u>	
Operating Temp.Range	<u>-10 to +70°C</u>		<u>-10 to +60°C</u>	<u>-10 to +70°C</u>	
Vibration (NOTE3)	<u>49m/s² (5G)</u>	<u>98m/s² (10G)</u>	<u>176m/s² (18G)</u>	<u>continuous 98m/s²(10G)</u>	
Shock (NOTE4)	<u>490m/s² (50G)</u>	<u>980m/s² (100G)</u>		<u>490m/s² (50G)</u>	
Mass	<u>0.5kg Max</u>	<u>1.5kg Max</u>	<u>0.6kg Max</u>		

ABSOLUTE: SPECIFICATION LIST

SPECIFICATION LIST	Single-Turn & Multi-Turn Encoder
Applications	For Motor control, For Robots

Features	For small wattage motor, Serial Data transfer		For Medium wattage Serial Data transfer		
Series	SI35	SA35	SA48	SA56	
Model No.	TS5668N20	TS5667N120	TS5667N420	TS5645	TS5647 TS5648
Resolution	17bit/turn	17bit/turn and 16bit/turns		11bit/turn and 13bit/turns	20bit/turn and 16bit turns
Output Phase	Pure Binary				
Max Response Frequency	Absolute Signal 13MHz	Absolute Signal 170kHz Incremental Signal 170kHz		52MHz(TS5648) 3.2MHz(TS5647)	
Voltage Supply	DC+5V				
Consumption Current (NOTE1)	110mA	150mA Max Battery operation 100µA Max		250mA Max Battery operation 50µA Max	
Output form	Line Driver				
Shaft Loading (NOTE2)	Radial	—	0.05 mm TIR Max 0.2 mm Max		
	Axial	—	0.1°		
Starting Torque	—	5.9x10 ⁻³ N·m (60gf·cm Max)	9.8x10 ⁻³ N·m (100gf·cm Max)	5.9x10 ⁻³ N·m (60gf·cm Max)	4.9x10 ⁻³ N·m (50gf·cm Max)
Protection	Open				
Operating Temp.Range	-10 to +85 °C	-10 to +70 °C			
Vibration (NOTE3)	98m/s ² (10G)	49m/s ² (5G)			
Shock (NOTE4)	1,960m/s ² (200G)	980m/s ² (100G)			
Mass	0.03kg (Without Cable)	0.06kg (Without Cable)	0.08kg (Without Cable)	0.5kg Max (Without Cable)	0.6kg Max

NOTE 1)Current consumption: This is a specification for no loading at output circuit

NOTE 2)The specification for shaft allowable load shall be a mechanical value. Actual specification allows us to recommend within 20 percents of the specification.

NOTE 3)Vibration: This is a value under the condition of meeting the total of 6 (six) hours consisting of 2 hours for each of X, Y and Z axis.

NOTE 4) Shock: This is a value under the condition of meeting the total of 18 (eighteen)times consisting of 3 times for each of X, Y and Z axis.



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