

**Motortronics®**

**ROTARY ENCODERS**

# FA-CODER®



OIH35

**SmartAbs®**



# ABSOLUTE

## APPLICATION

Measuring Equipment  
Machine Tools  
Robots

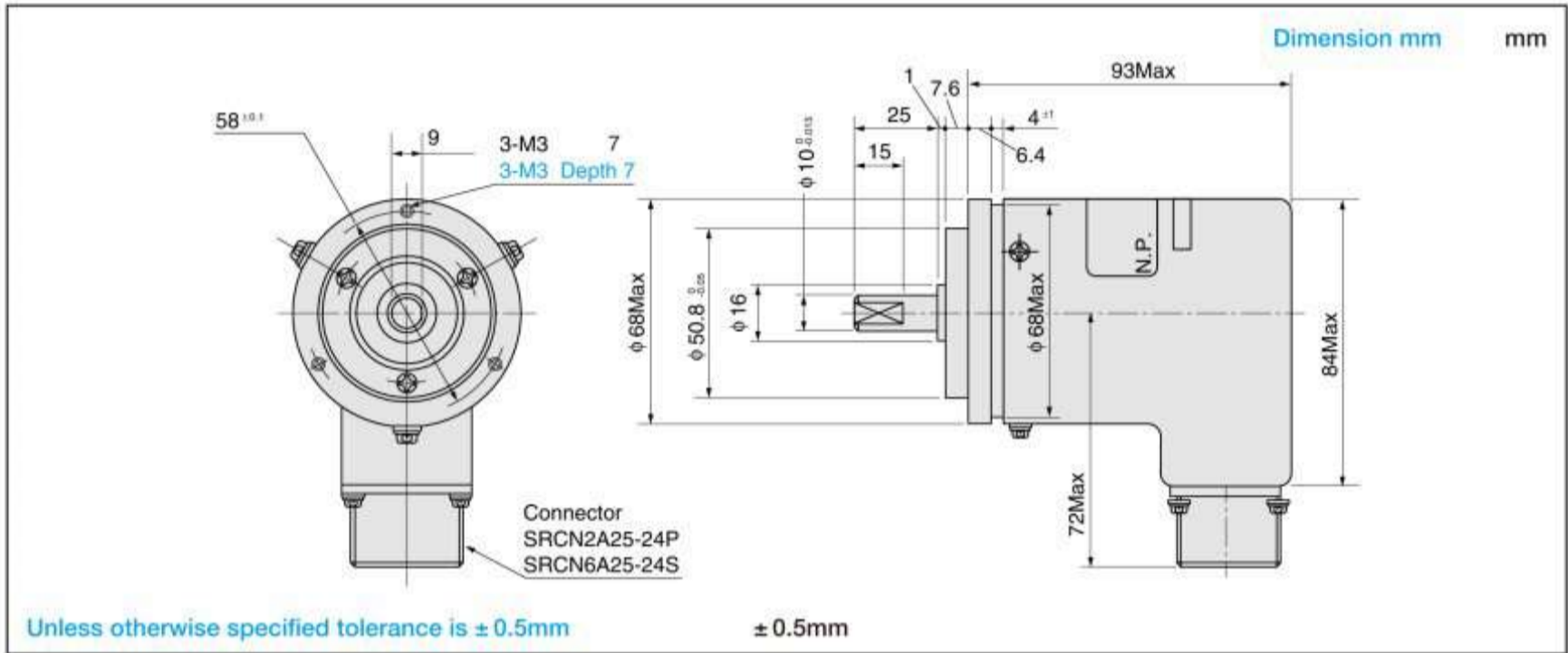
## FEATURES

Rigid type  
Low Cost



TS5620

# OAS68Series



## DESIGNATE THE NAME OF FUNCTION WHEN ORDERING

**OAS 68** —  bit — **C**  —  V

Optical Absolute Shaft Encoder	Size 68mm	Resolution bit	Model No.	Voltage
		10	TS5620	5 5V
		11	TS5621	12 12V
		12	TS5622	
		0 359C/T 1	TS5626	

0 359 resolution shall be for OAS68-360C/T-CG-5V only.  
0 359 OAS68-360C/T-CG-5V

Output phase  
P Pure Binary  
G Gray

Output form  
C Open Collector

### STANDARD ITEM

Description	Size	Resolution	Output form	Output Phase	Voltage	N-number N
OAS	68	<input type="text"/> bit	C	G	5	N131
					12	N231
				P	5	N132
					12	N232

For special cases, please consult us.

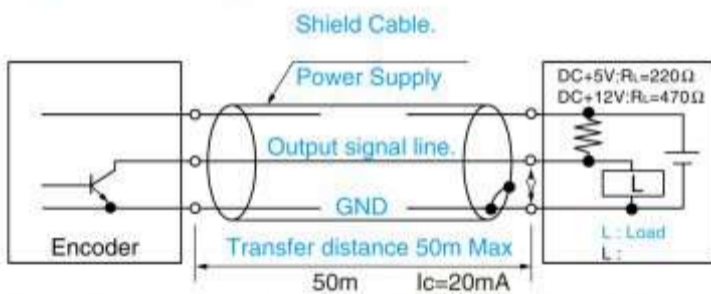


# SPECIFICATIONS

Electrical Spec.		Mechanical Spec.	
Resolution	10bit, 11bit, 12bit, 360C/T		
Output Phase	Pure Binary Code, Gray Code		
Supply Voltage	DC +5V ±5%	DC +12V ±5%	
Consumption Current	250mA Max		
Output Form	Open Collector	TD62503F	
		Maximum Allowable Output Voltage 24V	Maximum Allowable Sink Current 80mA
Maximum Response Frequency	10kHz		
Rise time, Fall time			
Starting Torque	9.8x10 <sup>-2</sup> · N · m 1kgf · cm Max		
Moment of Inertia	3.0x10 <sup>-6</sup> kg · m <sup>2</sup> 30g · cm <sup>2</sup> Max		
Maximum Rotating Speed	5,000min <sup>-1</sup> 5,000rpm		
Allowable Shaft Load	Radial	98N 10kgf Max	
	Axial	49N 5kgf Max	
Operating Temp. Range	-10 +70°C		
Storage Temp. Range	-20 +85°C		
Protective Construction	IP = 52		
Vibration	98m/s <sup>2</sup> 10G		
Shock	980m/s <sup>2</sup> 100G		
Mass	1.5kg Max		

## CIRCUIT AT OUTPUT STAGE (EXAMPLE)

### Open Collector Output



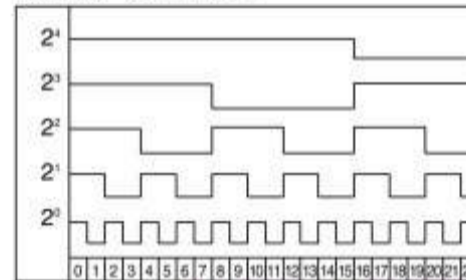
Note that transfer distance depends much on ambient condition.

Use transmission cable after verifying effects of impedance characteristics, etc.

## OUTPUT PHASE SHIFT (EXAMPLE)

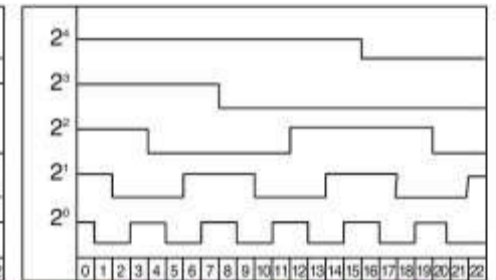
### Pure Binary Code

→ CW Viewed from Shaft End  
(Reverse "Open", "5V")



### Gray Code

→ CCW Viewed from Shaft End



The logic shall be negative and above figures shall show voltage wave-forms

## CONNECTION TABLE (EXAMPLE)

Confirm the function for output signals listed on the output signal table.

Pin	Function	Pin	Function	Pin	Function
1	ST Digit MSB	9	TH Digit LSB	17	
2	ND Digit	10	10TH Digit LSB	18	DC+ V
3	RD Digit	11	11TH Digit LSB	19	
4	TH Digit	12	12TH Digit LSB	20	
5	TH Digit	13		21	
6	TH Digit	14		22	Case GND
7	TH Digit	15	GND	23	
8	TH Digit	16	GND	24 Note	Reverse Count

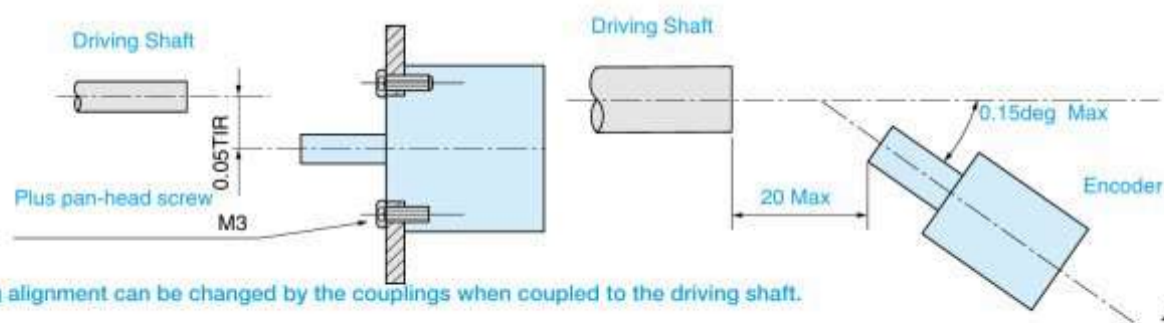
Note: In case of pure binary code, Count increasing direction Can be changed by applying 5V or 0V.

## OUTPUT SIGNAL TABLE (EXAMPLE)

Resolution	Digit												
	1ST	2ND	3RD	4TH	5TH	6TH	7TH	8TH	9TH	10TH	11TH	12TH	13TH
10 bit	2 <sup>9</sup>	2 <sup>8</sup>	2 <sup>7</sup>	2 <sup>6</sup>	2 <sup>5</sup>	2 <sup>4</sup>	2 <sup>3</sup>	2 <sup>2</sup>	2 <sup>1</sup>	2 <sup>0</sup>			
11 bit	2 <sup>10</sup>	2 <sup>9</sup>	2 <sup>8</sup>	2 <sup>7</sup>	2 <sup>6</sup>	2 <sup>5</sup>	2 <sup>4</sup>	2 <sup>3</sup>	2 <sup>2</sup>	2 <sup>1</sup>	2 <sup>0</sup>		
12 bit	2 <sup>11</sup>	2 <sup>10</sup>	2 <sup>9</sup>	2 <sup>8</sup>	2 <sup>7</sup>	2 <sup>6</sup>	2 <sup>5</sup>	2 <sup>4</sup>	2 <sup>3</sup>	2 <sup>2</sup>	2 <sup>1</sup>	2 <sup>0</sup>	

## ATTACHING WAY (EXAMPLE)

Dimension mm  
mm



Note that attaching alignment can be changed by the couplings when coupled to the driving shaft.



ROTARY ENCODERS

# FA-CODER®

FA-CODER®

Digital techniques in business industry have been greatly advanced. Among these, necessity for converting analog like rotating value, shaft angle position, etc. to digital has been increased as measurement for physical value and automation for control system are advanced. Encoders, at present, have been widely used for factory automations, measurements, office automation devices, medical equipment, aviations and universal fields.

Various kinds of encoders (FA-CODER® as trade mark) from small to high resolution are available to meet all of the requirements. High performance encoders supported by these high disk producing techniques are available.

