

**Motortronics®**

**ROTARY ENCODERS**

# FA-CODER®



OIH35

**SmartAbs®**



ROTARY ENCODERS

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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.





Mount Type, Full-absolute encoder to output data of 17bit/Single Turn, and 16bit/Multi Turn.

## APPLICATION

For Small Middle Wattage Motors  
Robots

## FEATURES

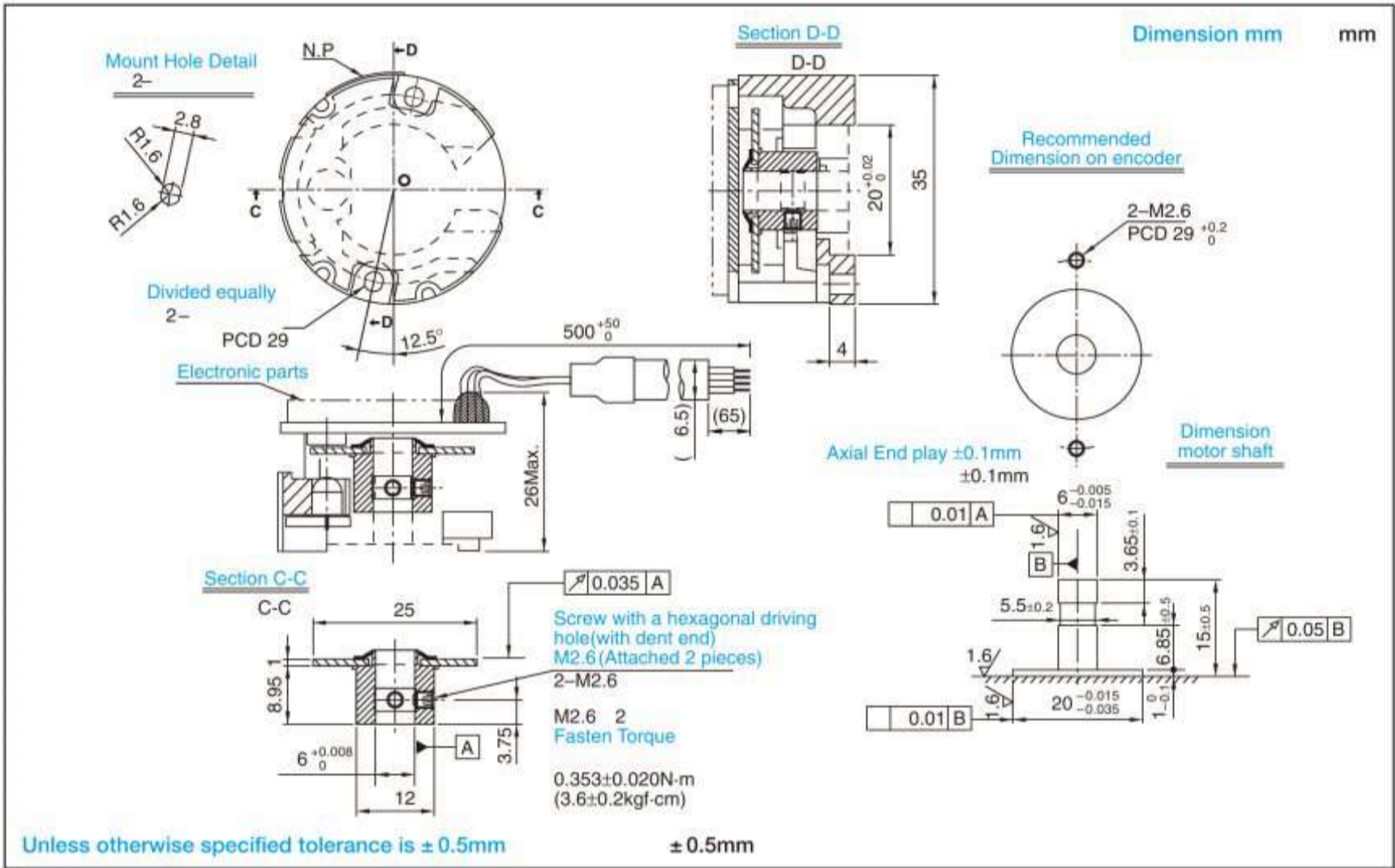
- Full Absolute Signal Output
- 17bit/Turn, 16bit Turns (At 6,000rpm Max)
- Bi-direction Serial Communication Type(NRZ)
- Fail-Check Operation
- Even during power outage, Multi-Turn data are backed up by external battery. (Encoder does not come with back-up capacitor.)



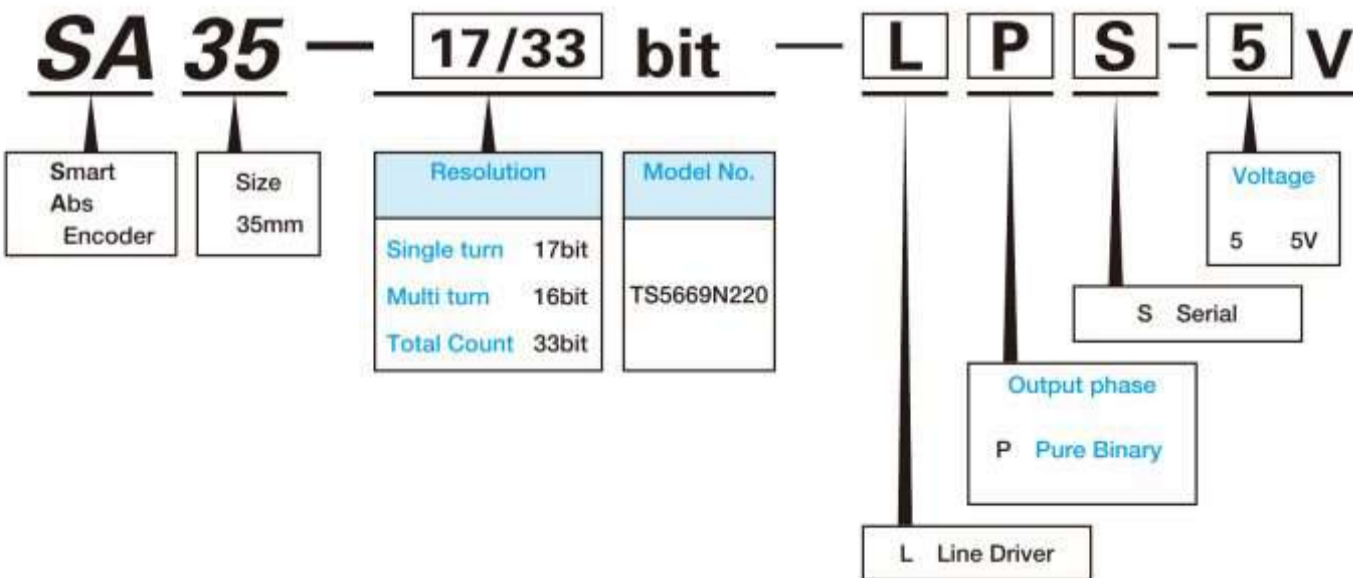
TS5669N220

# SA35 Series

Bus communication system enables connection up to 8 shafts. (Special specification)



## DESIGNATE THE NAME OF FUNCTION WHEN ORDERING



For special cases, please consult us.

# SPECIFICATIONS

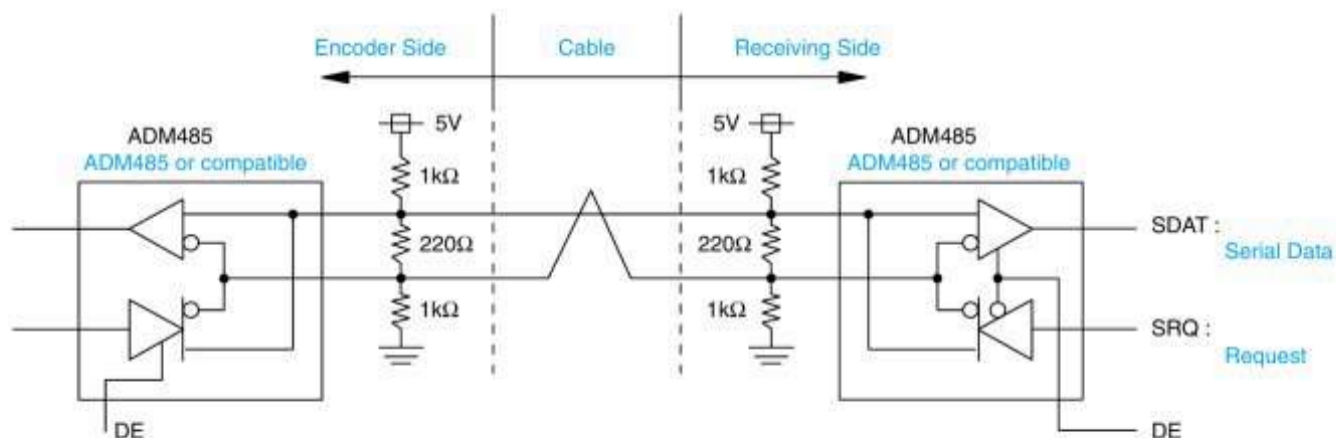
Electrical Spec.			Mechanical Spec.		
Resolution	Absolute Signal	17bit/turn and 16bit multiturns Total 33bit	0.24x 10 <sup>-6</sup> kg · cm <sup>2</sup> Typ		
		17bit 1    16bit    33bit			
Output Phase		Pure Binary Code	Maximum Rotating Speed 6,000min <sup>-1</sup> Mechanical Spec. Max 6,000rpm		
Supply Voltage		DC +5V $\pm 10\%$ $- 5\%$	Operating Temp. Range -10 +85°C		
Consumption Current		Typ Normal Operation 110mA Typ Battery Operation 110µA/3.6V	Storage Temp. Range -20 +90°C		
Output Form	Line Driver	ADM 485 20mA	Protective Construction Not Enclosed		
			Vibration 98m/s <sup>2</sup> 10G 5 2,000Hz for 2hours 98m/s <sup>2</sup> 10G 5 2,000Hz 2		
Max Response Frequency		Normal Operation 13MHz Battery Operation 13MHz	Shock 1,960m/s <sup>2</sup> 200G 11msec, 3times 1,960m/s <sup>2</sup> 200G 11msec, 3		
Serial Data Transfer Cycle		35µs 63µs Note Including time for a request.. Time depends on the ID Codes. 2.5Mbit/sec Start-Stop transmission. ID 2.5Mbit/sec.	Mass 0.03kg Max Without Cable		
Data Code		Base Band NRZ Bi-direction NRZ	External Battery VB recommended:TOSHIBA Lithium Battery ER6V VB ER6V		

# CONNECTION TABLE

Lead Wire	Function	Remark
Red	Vcc	Main Power DC +5V ± 5%
Black	GND	
Brown	VB	Battery Notice1
Brown/Black	GND	
Blue	SD	Serial Data
Blue/Black	SD	

Notice 1 : Battery Power is necessary during Power Outage.

# RECEIVING AND TRANSMITTING INTERFACE



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