Catalogue No.T12-1228N50

Motortronics®

ROTARY ENCODERS

FA-CODER®

OIH35

SmartAbs®

Tamagawa TAMAGAWA SEIKI CO.,LTD.

SmartAbs®

Semi-absolute encoder to output data of 11bit/Single Turn, and 13bit/Multi Turn by turning the input shaft by about 1.9° after power-on.

APPLICATION

For Small Wattage Motors

Robots

FEATURES

Small Size Serial Data Transmission

11bit/1Turn,Multi-Turn,13 bit.

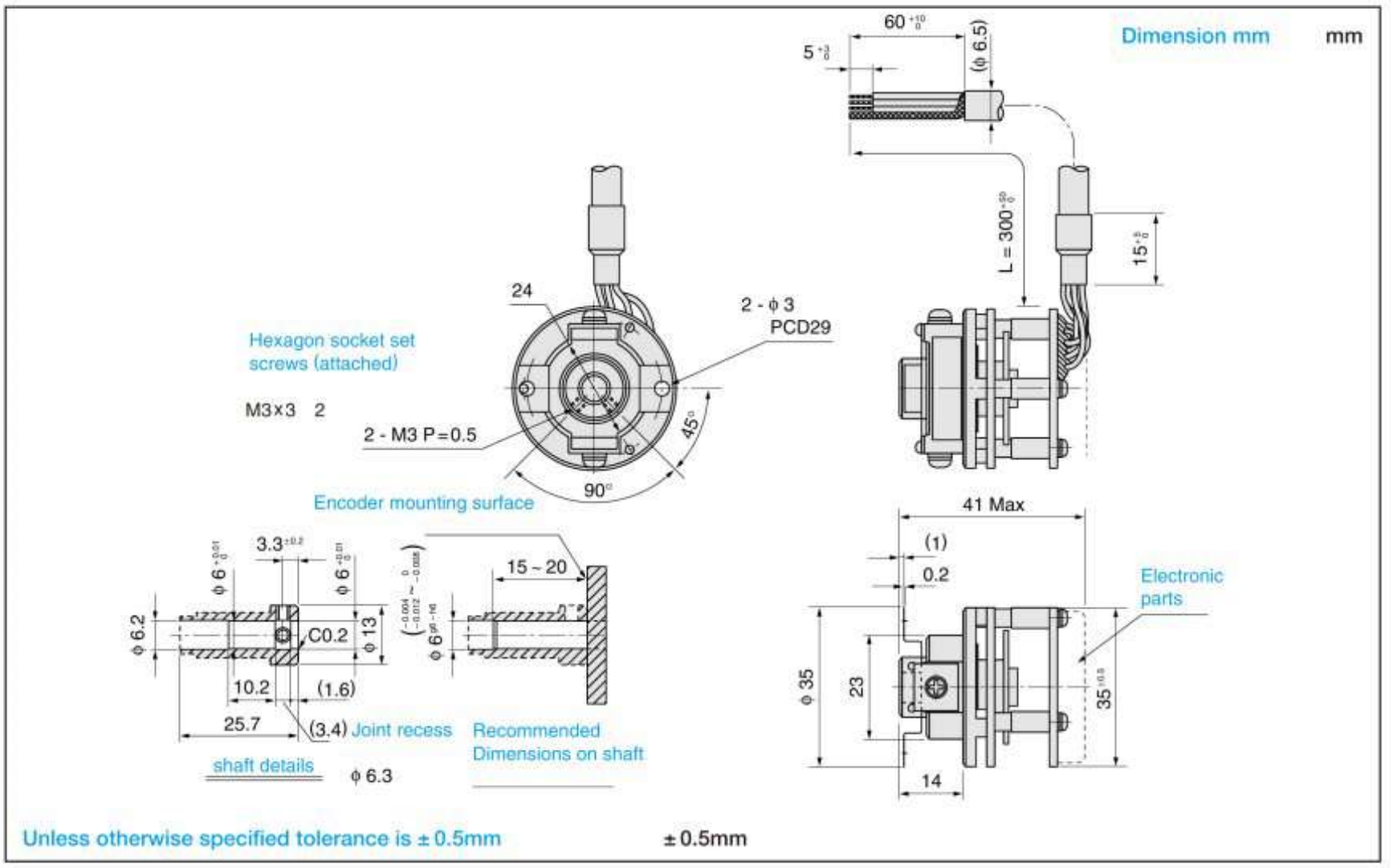
Fail-Check Operation

Built-in capacitor makes it possible to work during power failure

Dedicated serial signal receiver IC : AU5866N1 (Sold separately) is available.

TS5643 N110

SA35 Series



DESIGNATE THE NAME OF FUNCTION WHEN ORDERING

SA 35 — 11/24 bit — L P S - 5 V

SA	35	11/24 bit		L	P	S	5 V
Smart Abs Encoder	Size 35mm	Resolution	Model No.	L Line Driver	Output phase P Pure Binary	S Serial	Voltage 5 5V
		Single turn 11bit Multi turn 13bit Total Count 24bit	TS5643N110				

For special cases, please consult us.

SPECIFICATIONS

Electrical Spec.		
Resolution	Absolute Signal	11bit/turn and 13bit/8,192 turns total 24bit 11bit 1 13bit 8,192 24bit
	Incremental Signal	2,048C/T, 2-Phase output 1C/T, Zch. 2,048C/T, 2 , 1C/T, Z
Output Phase		Pure Binary Code
Supply Voltage		DC + 5V ± 5%
Consumption Current		150mA Battery Operation 100μA Max
Output Form	Line Driver	Source Current 20mA Max 26C31 Sink Current 20mA Max
Max Response Frequency		Absolute Signal 170kHz Incremental Signal 170kHz
Serial Data Transfer Cycle		84μs
Data Code		Manchester code

Mechanical Spec.		
Starting Torque	5.9x10⁻³ N · m 60gf · cm Max	
Moment of Inertia	1.0x10⁻⁶ kg · m² 10g · cm² Typ	
Maximum Rotating Speed	5,000min⁻¹ Mechanical Spec. Max 5,000rpm	
Mounting Tolerances	Radial Play	0.05mm TIR Max
	Axial End Play	0.2mm Max
	Shaft Inclination	0.1° Max
Operating Temp. Range	−10 +85°C	
Storage Temp. Range	−20 +90°C	
Protective Construction	Not Enclosed	
Vibration	98m/s² 10G 5 – 2,000Hz for 2hours 98m/s² 10G 5 – 2,000Hz 2	
Shock	1,960m/s² 200G 11msec, 3times 1,960m/s² 200G 11msec, 3	
Mass	0.3kg Max Without Cable	

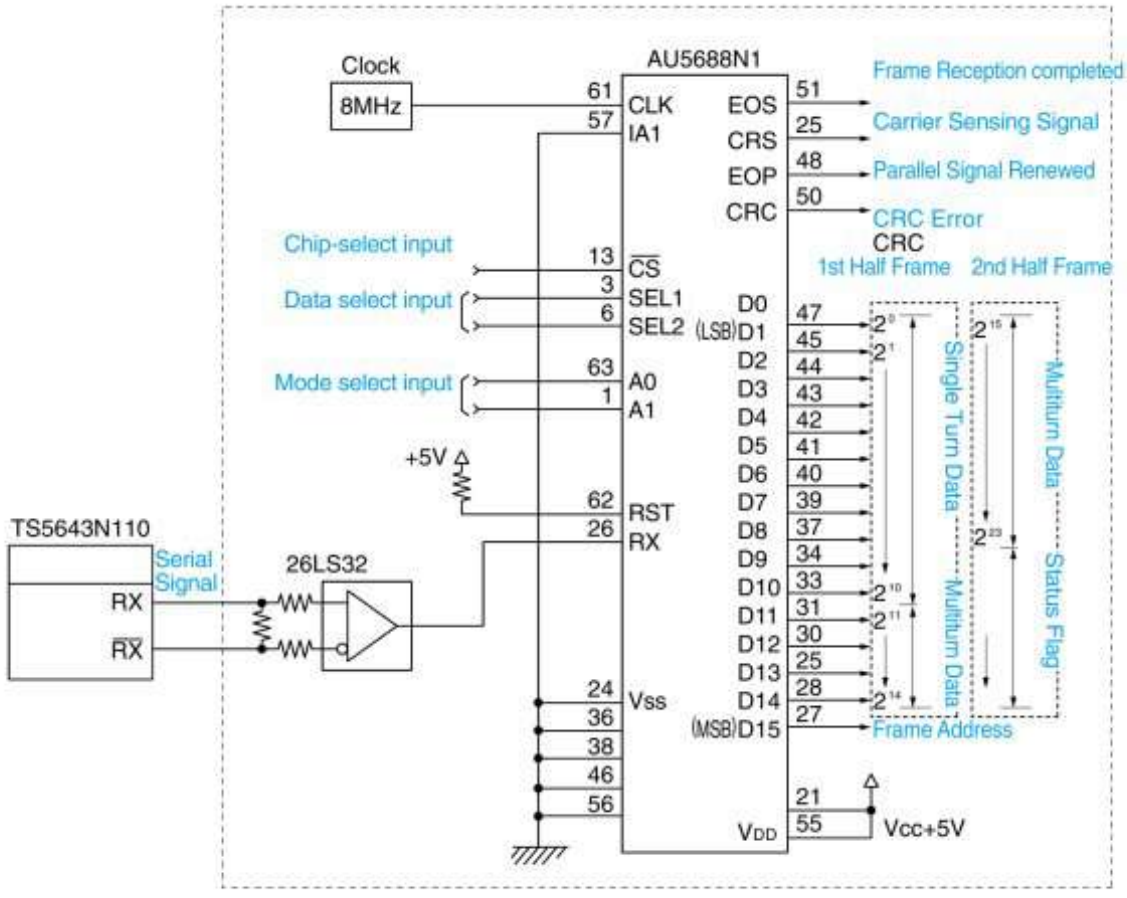
External Battery VB recommended:TOSHIBA Lithium Battery ER6V
Fully absolute data of 11bit shall be output by turning the input shaft by about 1.9° after the power supplied.

VB ER6V
1.9°
11bit

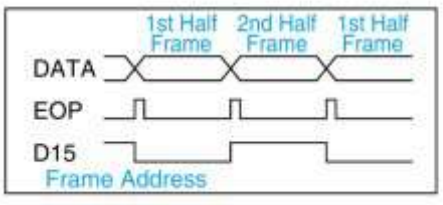
CONNECTION TABLE

SIGNAL	FUNCTION	COLOR
Rx	Serial Data	BRN
Rx		BRN/BLK /
A	Incremental Ach	BLU
A	A	BLU/BLK /
B	Incremental Bch	GRN
B	B	GRN/BLK /
Z	Incremental Zch	YEL
Z	Z	YEL/BLK /
Vcc	DC V	RED
GND	0V	WHT/BLK /
VB	Battery	WHT
GND	0V	BLK
RST	Reset	GRY
CASE GND	Case Ground	GRY/BLK /
Shield	Shield	Shield

SYSTEM CONNECTION

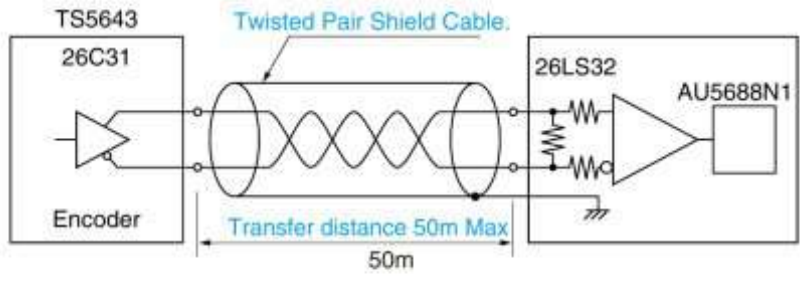


DATA OUTPUT SEQUENCE



CIRCUIT AT OUTPUT STAGE (EXAMPLE)

Line Driver Output



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

ROTARY ENCODERS

FA-CODER®

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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.