فروشگاه کانون ابزار
ali5.ir
021 66 39 39 00 - 0912 147 3023

Wheel type of Incremental Rotary Encoder

■ Features

- Suitable for measuring the length or speed of target moving successively by wheel type
- The output waveform according to measuring distance is proportional to the unit of International Measurement type (Meter or inch)
- Power supply : 5VDC, 12-24VDC ±5%

■ Applications

- Various packing machine, sheet manufacturing, textile machinery, and general industrial machinery etc.

Please read "Caution for your safety" in operation manual before using.

CE

■ Ordering information

ENC – 1 – 1 — N — 24 — □

Series	Output phase	Min. measuring unit	Output	Power supply	Cable
Wheel type	1 : A, B phase	1 : 1mm 2 : 1cm 3 : 1m 4 : 0.01yd 5 : 0.1yd 6 : 1yd	T : Totem pole output N : NPN open collector output V : Voltage output	5 : 5VDC ±5% 24 : 12-24VDC ±5%	No mark : Cable type C : Connector cable type(※)

※Cable length : 250mm

■ Specifications

Item			Wheel type of incremental rotary encoder	
Resolution(P/R)			Refer to resolution(Next page)	
Electrical specification	Output phase		A, B phase	
	Phase difference of output		Phase difference between A and B : $\frac{T}{4}\pm\frac{T}{8}$ (T=1cycle of A phase)	
	Control output	Totem pole output	• Low - Load current : Max. 30mA, Residual voltage : Max. 0.4VDC • High - Load current : Max. 10mA, Output voltage(Power voltage 5VDC) : Min. (Power voltage-2.0)VDC, Output voltage(Power voltage 12-24VDC) : Min. (Power voltage-3.0)VDC	
		NPN open collector output	Load current : Max. 30mA, Residual voltage : Max. 0.4VDC	
		Voltage output	Load current : Max. 10mA, Residual voltage : Max. 0.4VDC	
	Response time (Rise/Fall)	Totem pole output	Max. 1μs	• Measuring condition - Cable length : 2m, I sink = 20mA
		NPN open collector output		
		Voltage output		
	Max. Response frequency		180kHz	
	Power supply		5VDC ±5%(Ripple P-P : Max. 5%), 12-24VDC ±5%(Ripple P-P : Max. 5%)	
	Current consumption		Max. 80mA(disconnection of the load)	
	Insulation resistance		Min. 100MΩ(at 500VDC megger between all terminals and case)	
	Dielectric strength		750VAC 50/60Hz for 1 minute(Between all terminals and case)	
	Connection		Cable type, 250mm connector cable type	
Mechanical specification	Starting torque		Depend on coefficient of friction	
	Max. allowable revolution※1		5000rpm	
Vibration			1.5mm amplitude or 300m/s² at frequency of 10 to 55Hz(for 1 min.) in each of X, Y, Z directions for 2 hours	
Shock			Approx. Max. 75G	
Environment	Ambient temperature		-10 to 70℃(at non-freezing status), storage : -25 to 85℃	
	Ambient humidity		35 to 85%RH, storage : 35 to 90%RH	
Cable			ø5, 5-wire, Length : 2m, Shield cable(Line driver output : ø5, 8-wire) (AWG24, Core diameter : 0.08mm, Number of cores : 40, Insulator out diameter : ø1)	
Protection			IP50(IEC standard)	
Approval			CE	
Unit weight			Approx. 494g	

※1: Make sure that. Max response revolution should be lower than or equal to max. allowable revolution when selecting the resolution.

[Max. response revolution(rpm)= $\frac{\text{Max. response frequency}}{\text{Resolution}}$ × 60 sec]

※Environment resistance is rated at no freezing or condensation.

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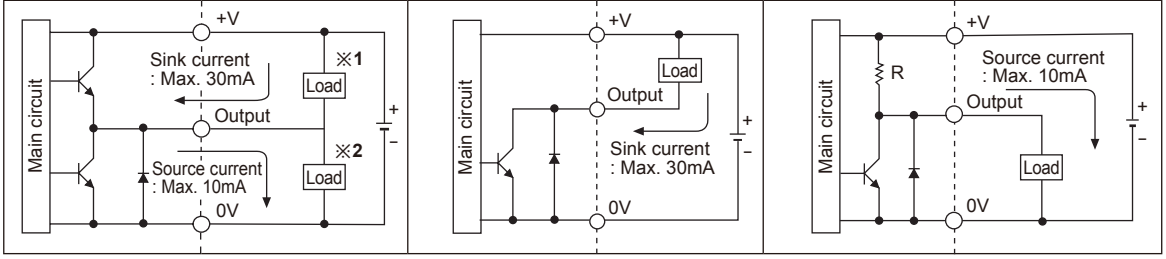
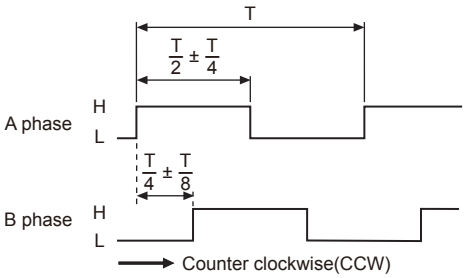
■ Control output diagram

Totem pole output		NPN open collector output		Voltage output	
Rotary encoder circuit	Load connection	Rotary encoder circuit	Load connection	Rotary encoder circuit	Load connection



- The output circuits of A, B phase are the same.
- Totem pole output type can be used for NPN open collector type(※1) or voltage output type(※2).

■ Output waveform



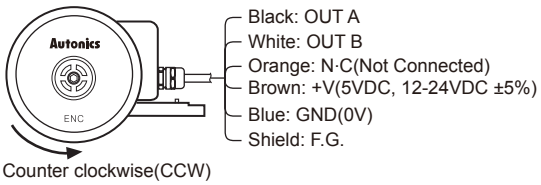
※CCW: Based on wheel rotation direction.

■ Resolution

No	The number of encoder pulse	Gear ratio	Wheel circumference	Moving distance per 1pulse
1	250Pulse	1:1	250mm	1mm/1Pulse
2	100Pulse	4:1	250mm	1cm/1Pulse
3	1Pulse	4:1	250mm	1m/1Pulse
4	100Pulse	4:1	228.6mm (0.25/yd)	0.01yd/1Pulse
5	10Pulse	4:1	228.6mm (0.25/yd)	0.1yd/1Pulse
6	1Pulse	4:1	228.6mm (0.25/yd)	1yd/1Pulse

■ Connections

◎ Cable type



※Unused wires must be insulated.
※The metal case and shield wire of encoder must be grounded(F.G.)

◎ Connector cable type

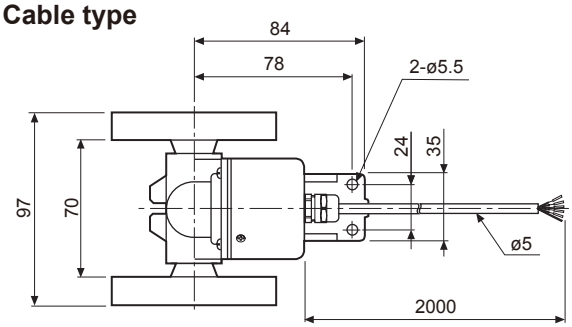
Pin No	Cable color	Function
①	Black	OUT A
②	White	OUT B
③	Orange	N·C
④	Brown	+V
⑤	Blue	GND
⑥	Shield	F.G.

※F.G.(Field Ground) : It must be grounded separately.

■ Dimensions

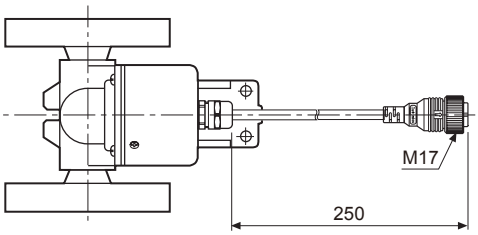
(unit: mm)

◎ Cable type



※The wheel circumference is changed according to model(ø), please refer to resolution chart.
※Connector cable is sold separately and see G-10 for specifications.

◎ Connector cable type



Cable for cable type	Cable for connector cable type
ø5, 5-wire, Length : 2000mm, Shield cable	ø5, 5-wire, Length : 250mm, Shield cable