

Incremental Encoder TRD-2E/2EH

Operation Manual

Thank you for purchasing series TRD-2E and TRD-2EH Incremental Encoder.Please read this Operation Manual carefully before applying this product.

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KEW-8161C-E

Safety Consideration

This indicates contents which can cause large accidents Warning leading to loss of life or severe injury when the indication is disregarded and wrong handling is executed.

This indicates contents which can cause injury or Caution material damage when the indication is disregarded and wrong handling is executed.

Explanation of the pictograms

This symbol indicates a general prohibition.

This symbol indicates a compulsory item or an instruction.

[Operating environment and conditions]

∕!**∖Warning**

- Do not use in a combustible or explosive atmosphere. Otherwise personal injury or fire may be caused.
- Do not use this product for applications related to human safety. Use is assumed in an application where an accident or incorrect use will not immediately cause danger to humans.

[Operating environment and conditions]

Caution

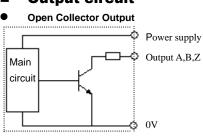
- Use and store the equipment within the scope of the environment(vibrations,impact,temperature,humidity,etc.) specified in the specifications.
- Otherwise fire or product damage may be caused.
- Understand the product first before use it.

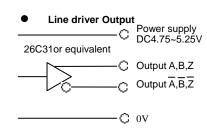
[Installation and wiring]

Warning

- Use only with the power supply voltage listed in the specifications. Otherwise fire, electric shock, or accidents may be caused.
- Use only with the wiring and layout specified in the specifications. Otherwise fire, electric shock, or accidents may be caused.
- Do not apply any kind of stress to the wires. Otherwise electric shock or fire may be caused.

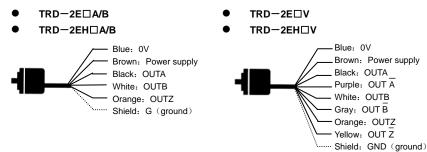
Output circuit





Connection

The shield wire (GND) is not connected to the encoder body.

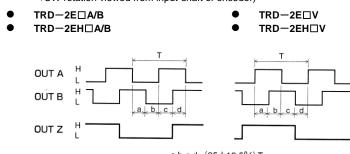


Electrial specifications

Type No.			TRD-2E□A/B/TRD-2EH□A/B	TRD-2E□V /TRD-2EH□V
	Operating voltage		A: DC4.75V∼13.2V	201771
Power supply			B: DC10.8V~26.4V	DC4.75V∼5.25V
	Allowable ripple		3%rms Max.	3%rms Max.
	Current consumption		50mA Max.	50mA Max.
	Signal format		Quadrature output	Quadrature output
	Max. response frequency		200kHz	200kHz
Output	Operating speed		(Maximum response frequency/Pulse)×60	(Maximum response frequency/Pulse)×60
waveform	Symmentry		50±25%	50±25%
	Quadrature phasing		25±12.5%	25±12.5%
	Index signal width		100±50%	100±50%
	Rising/falling time		≤1µs (with a cable of 1m)	=
	Output configuration		NPN open collector	Line driver(26C31 or equivalent)
	Output logic		Negative logic (active low)	Positive logic(active high)
	Output current	Inflow	30mA Max.	_
Output		Outflow		_
	0 !:	"H"	I	2.5V Min.
	Output voltage	"L"	0.4V Max.	0.5V Max.
	Load power supply voltage		DC30V Max.	_
	Short-circuit protection		Between output and power supply	_

Output signal timing chart

(CW rotation viewed from input-shaft of encoder)



 $a,b,c,d=(25\pm12.5\%)$ T

Mechanical specifications

Startin	Max. 0.01N • m (+20°C)	
Shaft mom	$0.3\times10^{-6}\mathrm{kg}\bullet\mathrm{m}^2$	
Marrialla collaboration de	Radial	30N
Max. allowable shaft load	Thrust	20N
Max.allow	5000rpm	
	Material	Oil-resistant PVC *1
Cable	Nominal core cross section	0.14mm ²
	External diameter	Φ5mm
We	Approx.200g (with 1m cable)	

*1 2E A/B、2EH A/B: 5-core shielded cable (AWG26) 2E□V、2EH□V : 8-core shidlded cable (AWG26)

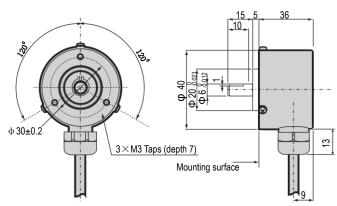
Environmental requirements

	Operation	-10∼+70°C
Ambient temperature	Store	-25∼+85°C
Ambient humid	dity	35~85%RH (non-condensing)
Withstand volta	age	AC500V (50/60Hz) for 1 min.
Insulation resista	ance	50MΩ min.
Vibration resista	ance	10 \sim 55Hz with 0.75mm amplitude $^{^{*2}}$
Shock resistar	nce	11ms with 490m/s ^{2 *3}
Protection constr	uction	IP54 (IEC529)

- *2: Durable for 1h along 3 axes
- *3: Applied 3 times 3 axes

External dimensions

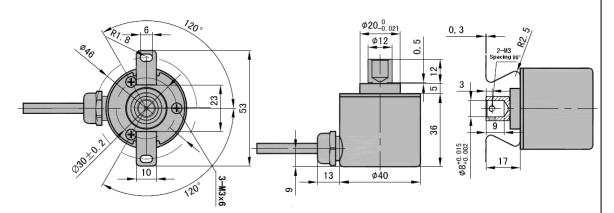
TRD-2E□A/B/V



Cautions for use

- Do not wire the cable in parallel with other power lines and do not share a duct with other cables.
- Use capacitors or surge absorption elements to remove the sparks caused by relays and switches in the control panel as far as possible
- Be sure to connect all wires properly, as wrong wiring can damage the internal circuitry.
- Erroneous pulses may be caused at the time of power ON and power OFF.After power ON, wait for at least 0.5 sec. before use.
- Do not disassemble the product.
- As the rotary encoder is composed of precision parts, its function will be impaired when it is subjected to shocks. Use sufficient care for handling and mounting.

TRD-2EH□A/B/V



✓ ■ Options Coupling RU-075 GJ-6

4-M5 set screw

