

# ThiNcoder RT



**ELECTRONIC**  
MARKIT GRAPHICS

Increase design capabilities. Place rotors where you couldn't before with:

## Advantages

### LOWEST PROFILE ENCODER AVAILABLE

- ▶ Package thickness below overlay is less than 2.2 mm

### FLAT PANEL INTEGRATION

- ▶ Ultra-thin; non invasive
- ▶ flex circuit and/or PCB
- ▶ Easily integrated with other switch products including Pushgate, MagnaMouse, and thiNcoder slider in one thin package
- ▶ Potential for increase PCB Real Estate and design flexibility

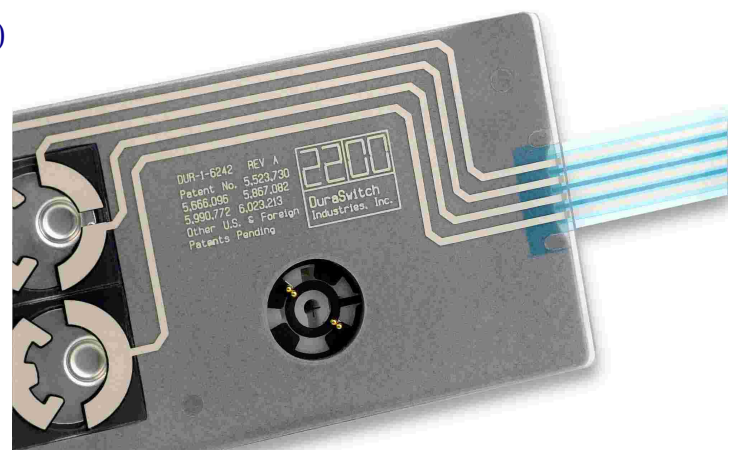


### SIMPLE DESIGN MEANS LOWER COSTS AND EASE OF MANUFACTURING

- ▶ Light weight integrated design
- ▶ No soldering required
- ▶ No parasitic power required as in optical encoders

### DESIGN CUSTOMISATION (multiple codes and indexing options)

- ▶ Encoder/Discrete/Potentiometer
- ▶ Dual function rotors (Push, On/Off and Turn)
- ▶ No parasitic power required as in optical encoders
- ▶ Low energy circuit capable - dry circuit compatible
- ▶ Shafts, Detents/stops, knobs can be customised
- ▶ Flex cable or pin mountable
- ▶ Thumbwheel configuration capability



### RELIABILITY/DURABILITY

- ▶ Mechanical shock tolerance exceeds 100g's
- ▶ Wide operating temperature range

### ENVIRONMENTALLY SEALED CIRCUIT

- ▶ Eliminates through-holes



Manufactured under licence. US Pat No's: 5,523,730/ 5,666,096/ 5,867,082/ 5,990,772/  
6,023,213/ 6,069,545/ 6,069,552/ 6,130,593/ 6,137,387/ 6,262,646/ China Pat.  
ZL96110385.x. Can Pat. 05046291. Taiwan Pat NI090979, Aust Pat. 727962

# Product Specifications



**ELECTRONIC**  
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MECHANICAL	
Std Outside diameter	18 mm
Shaft diameter	6.0 mm
Body Height	3.5 mm
Shaft Height	Round with flat (custom available)
Shaft flat angle to location lug	custom
Shaft length	7.6 mm (custom available)
Length of Flat	6.8 mm
Screw Slot	custom available
Dimension from shaft back to flat	4.5 mm (custom available)
Angle of throw	15 deg, 22.5 deg (custom available)
Stopper rate positions	(custom available)
Stop strength	>= 7.5 lb.in / 0.8 Nm
Rotational Life	>100 000 cycles

DETENT	
Number of Positions	16, 24, (custom available)
Ball & Spring detent	(custom available)
Ball detent rotational torque	3.5-6.5 oz, 25mNm 45mNm
Concentric Shaft Rotary Switch	(custom available)
Concentric Shaft Pushbutton switch	(custom available)
Custom shaft colours	(custom available)
Panel seals	Yes
Ball armature contacts	Standard
Ball retainer	(custom available)

ELECTRICAL SWITCH (TYPE AND CODES)	
Quadrature (2 bit grey code)	16, 24 position std (custom available)
Binary	(custom available)
Grey code	16, 24 position std (custom available)
On/Off Switch	(custom available)
Analog Potentiometer	(custom available)
Analog Potentiometer Resistance	1K - 1 Meg Ohm
Voltage	3-50 VDC
Current	50 mA max
Electrical life (360 deg)	>100 000 cycles
Maximum Contact resistance	100 ohms
Open Circuit & Insulation resistance	>20 meg Ohms (Between mutually Insulated Parts)
Voltage Breakdown	>600 VAC (Peak to Peak between Mutually insulated parts)

ENVIRONMENT	
Storage temperature	95 deg C
Operating Temperature	(-40 deg C to 85 deg C)
Thermal Shock	(-40 deg C to 85 deg C)
Humidity resistance	95% relative humidity
Salt fog, 5% solution	24 hours

MATERIALS	
Rotor / Shaft	Engineering thermoplastic
Cover	Corrosion resistant metal
Magnet material	Rare earth

MECHANICAL TESTING	
Shock	To 100 gs
Drop	3 ft



The Duraswitch thinNcoder RT™ is manufactured using licenced components in our production plants in both Australia & New Zealand.

## AUSTRALIA

Markit Graphics Pty Ltd, Unit 3/45  
Kingtel Place, GEEBUNG QLD 4034

Ph 1800 652 242, Fax 07 3865 8977,  
email [sales@markit.com.au](mailto:sales@markit.com.au)  
[www.markit.com.au](http://www.markit.com.au)

## NEW ZEALAND

Markit Graphics Ltd, 84 Gasson St,  
Christchurch, New Zealand

Ph 03 379 2288, Fax 03 3660 152, email  
[maildesk@markitgraphics.co.nz](mailto:maildesk@markitgraphics.co.nz)  
[www.markitgraphics.co.nz](http://www.markitgraphics.co.nz)