



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



## Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



THE MULTI-TOUCH RING ENCODER WITH GRAYHILL INSTINCT TECHNOLOGY



A naturally human evolution  
of the interface.

*Grayhill*



## Instinct™ technology. Intuitively functional.

Grayhill Instinct is a set of multi-touch gesture recognition software tools that, when integrated with Grayhill physical components, creates more intuitive human interface solutions.



The Multi-Touch Ring Encoder combines a touchpad with multi-touch tracking, an optical encoder and pushbutton into one easy-to-use device. By combining gesture recognition technology with a ring encoder, we provide the ultimate in input flexibility. Menu search, selection, navigation and much more are all in one user interface that can be easily integrated into future devices.

## A shorter distance from mind to machine.

An intuitive, easy to use interface improves operator productivity. Our Instinct technology enables an operator's thoughts to be seamlessly communicated to the device. This allows faster interaction without needing to take eyes off of the screen. For the operator it makes controlling a machine easier to manage. And unlike touch screens, the display is left clean and unblocked. Plus, ergonomics are improved by consolidating all controls within easy reach.



Design uncluttered, easy-to-clean instruments using Grayhill's Multi-Touch Ring Encoder.

## Let your fingers do the directing.

Finger gestures are a popular means of controlling contemporary electronic devices. Instinctive, memorable movements provide a variety of commands...all without the fingers leaving the touchpad. Grayhill's Instinct technology tracks up to five finger touches at a time. The Multi-Touch Ring Encoder combines the multi-touch touchpad with an optical encoder and a push button to offer even more functionality. Several gestures are shown below.



## An elegant engineering solution for controlling electronic equipment.

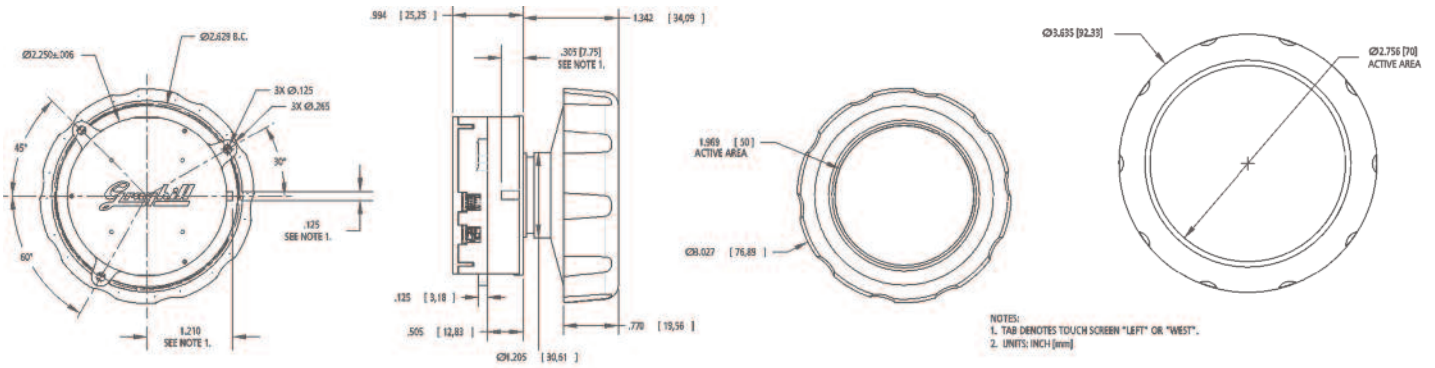
Simplicity in use and device design. The Multi-Touch Encoder can replace keypads, knobs, trackballs and switches. This makes for clean design and cuts costs of manufacturing. Combined with the Instinct gesture recognition library, the multi-touch encoder increases the engineer's flexibility in building functionality into any product.

Possible applications include:

- Medical devices
- Off-highway vehicles
- Commercial aviation
- Gaming



DIMENSIONS in inches (and millimeters)



NOTES:  
1. TAB DENOTES TOUCH SCREEN "LEFT" OR "WEST".  
2. UNITS: INCH (mm)

FEATURES

- Grayhill Instinct™ Gesture Recognition Technology
- Three devices in one:  
+ Multi-Touch Touchpad  
+ Optical Encoder  
+ Pushbutton
- Impervious to cleaning solutions and disinfectants
- Easy to integrate into any device
- Rugged, scratch-resistant surfaces
- Backlit illumination and colored highlighting ring
- Redundant quadrature and push button output
- Patent pending

ENVIRONMENTAL SPECIFICATIONS

Operating temperature	-10°C to +60°C
Seal	IP65 knob with labyrinth seal through panel
Humidity	95% Humidity at 60°C for 240 hours
Chemical resistance (Resistance to accidental spills and disinfectants)	24 Hr exposure to betadine, Coffee, Water, Cola, NaCl, Isopropyl Alcohol Betadine, Hydrogen Peroxide, "Quats," and Cidex

SOFTWARE DEVELOPMENT KIT Part Number T101-DEV1

Grayhill offers an Instinct Software Development Kit that provides the user with a common development platform for prototyping and evaluating different solutions. The Software Development Kit is comprised of a mounted Multi-Touch Ring Encoder, a standard USB cable and demo software.

ELECTRICAL PERFORMANCE SPECIFICATIONS

USB	2.0, 3.0 Compatible, Full speed HID Compliant
Operating Voltage	2.5 to 5.5 Vdc
Input Current	250mA max (at full backlight) @5V
Rotational Life	500,000 cycles minimum
Pushbutton Life	3,000,000 actuations minimum
Encoder Output	2-Bit Quadrature, Channel A leads Channel B by 90° electrically during CW rotation

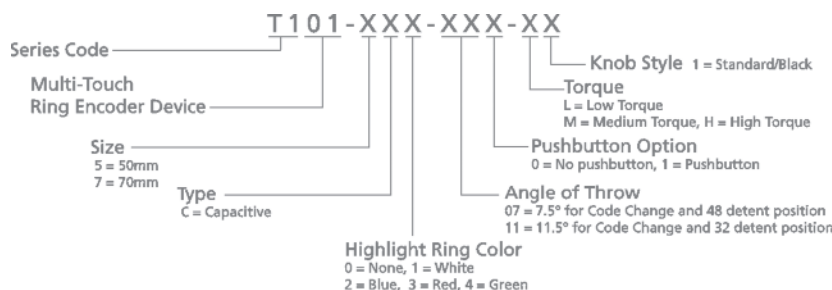
ELECTROMAGNETIC COMPATIBILITY SPECIFICATIONS

Designed and tested for use in systems requiring IEC 60601-1	
RF Emissions	CISPR 11 Group 1 Class B
Electrostatic Discharge	IEC 61000-4-2 ±6kV Contact ±8kV Air
Electrical Fast Transient/Burst	IEC 6100-4-4 ±1kV Coupling Clamp
Power Frequency (50/60 Hz) Magnetic Field	IEC 6100-4-8 3 A/m
Conducted RF	IEC 61000-4-6 Level 1 - 120dBuV, 150 kHz to 80 MHz
Radiated RF	IEC 61000-4-3 3 V/M 80 MHz to 2.5 GHz

PIN OUT	ENCODER
1	Output A
2	Output B
3	Pushbutton

PIN OUT	USB
1	+Vcc
2	USB Negative (D-)
3	USB Positive (D+)
4	Gnd

ORDERING INFORMATION



MATING CONNECTOR

Molex 501939-0400 and 501939-0300



561 Hillgrove Avenue  
LaGrange, Illinois 60525  
Phone: 708-354-1040  
Fax: 708-354-2820  
[grayhill.com](http://grayhill.com)