Grayhill

INTUITIVE HUMAN INTERFACE SOLUTIONS

Multi-Touch Ring Encoder

Features

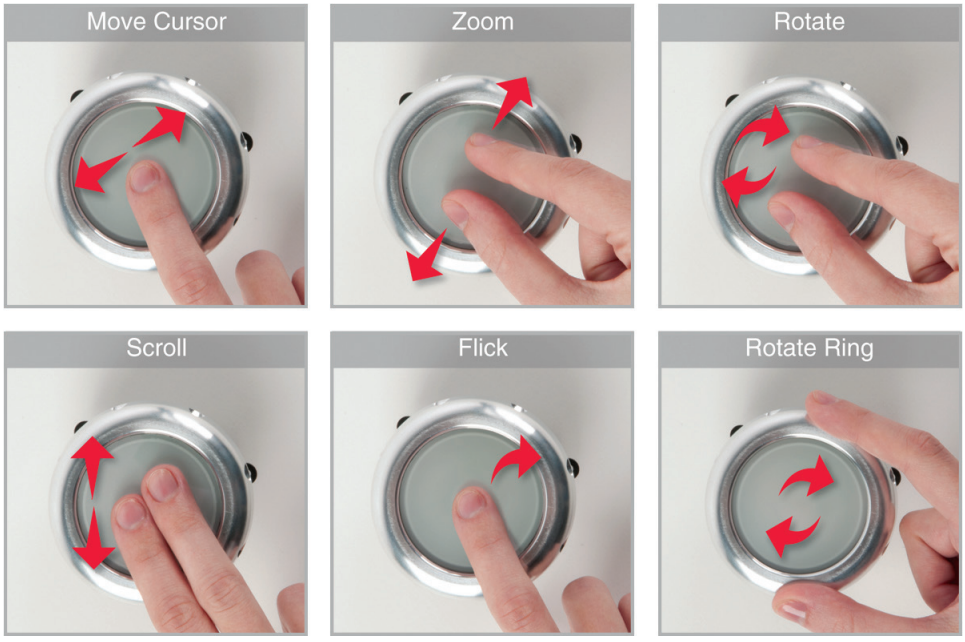
- Grayhill Instinct™ Gesture Recognition
- Three devices in one:
  - Multi-Touch Touchpad
  - Optical Encoder
  - Pushbutton
- Impervious to cleaning solutions
- Easy to integrate into any device
- Rugged, scratch-resistant surfaces
- Backlit illumination
- Colored highlight ring
- Redundant quadrature encoder output
- Redundant push button output
- USB compatible HID device

Possible applications include:

- Medical devices
- Industrial/Robotic controls
- Gaming machines

Let Your Fingers Do The Directing

The Multi-Touch Ring Encoder features a 50mm diameter surface that tracks multiple touch positions. Tracked touch-point data is sent from the device via USB to the system using Instinct software for interpretation. For mechanical control, a ring encoder encircles the touchpad and the entire knob can be pressed. The rotary function allows the user to scroll through options and the pushbutton selects the desired setting. Implementing the MTRE eliminates the need for additional devices such as joysticks, touchpads and trackballs. This results in a compact and intuitive user interface.



Instinct™ Technology. Intuitively Functional.

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

A Shorter Distance from Mind to Machine

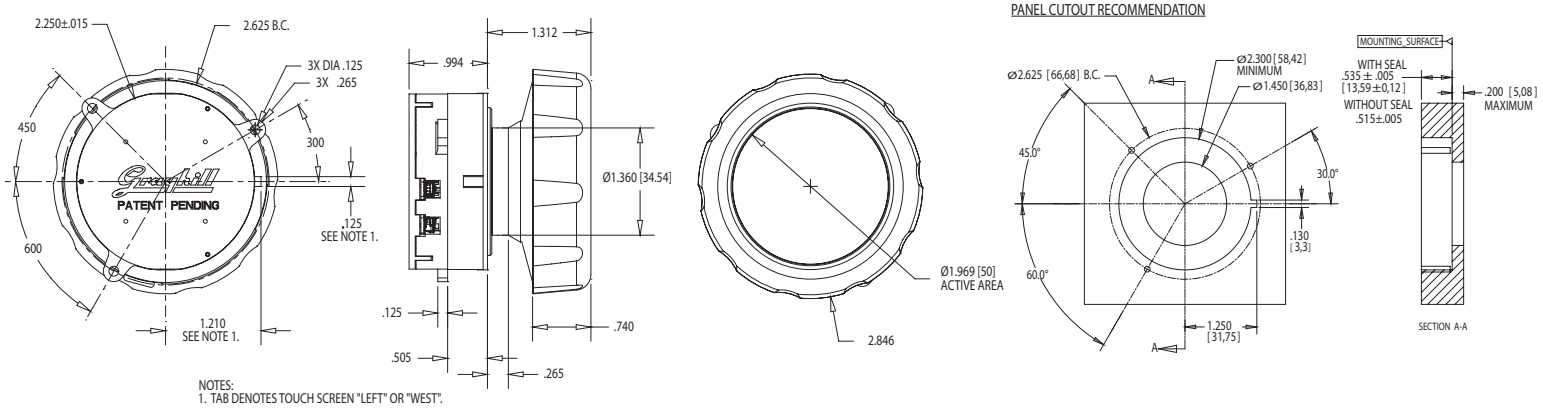
An intuitive, easy-to-use interface improves productivity. Instinctive movements provide a variety of commands, all without the fingers leaving the touchpad. This allows faster interaction without needing to take eyes off of the screen. Plus, ergonomics are improved by consolidating all controls within easy reach.

Simplicity in use & Device Design

The Multi-Touch Ring Encoder can replace touchscreens, keypads, trackballs, switches and joysticks. This makes for clean design and cuts costs of manufacturing. The MTRE increases the engineer's flexibility in building functionality into any product, while reducing front panel size and complexity.

INTUITIVE HUMAN INTERFACE SOLUTIONS

DIMENSIONS



NOTES:
1. TAB DENOTES TOUCH SCREEN "LEFT" OR "WEST".

ENVIRONMENTAL SPECIFICATIONS

Operating temperature	-10°C to +60°C
Seal	IP64
Humidity	95% Humidity at 60°C for 240 hours
Chemical resistance (Resistance to accidental spills and disinfectants)	72 Hr exposure to Coffee, Cola, Saline, Methylated spirits, Isopropyl, Ammonia, Chlorine bleach, Sodium Hypochlorite, Ethanol,Virkon®, Dupont® RelyOn®, Betadine, Hydrogen Peroxide, Cidex®, Steris®, Civco®

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		
Pushbutton Life		1,000,000 cycles minimum		
Rotational Life		500,000 cycles minimum		
Encoder Output		2-Bit Quadrature, Channel A leads Channel B by 90°electrically during CW rotation		
PIN OUT (P1)	1	2	3	
Encoder/Push Output	Encoder Output A	Encoder Output B	Pushbutton	
PIN OUT (P2)	1	2	3	4
USB	+ Vcc	Negative (D-)	Positive (D+)	Gnd

Mating Connector: Molex 501939-0400 and 501939-0300

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 61000-4-4 ±1kV Coupling Clamp
Power Frequency (50/60 Hz) Magnetic Field	IEC 61000-4-8 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

* see Grayhill application notes

Specifications subject to change

SOFTWARE DEVELOPMENT KIT part: 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. The kit is available directly from Grayhill, or from one of several distributers. For more detailed information, including a copy of the User's Guide, go to www.grayhill.com/instinct.

ORDERING INFORMATION

T101-XXX-XXX-XX

- Series Code: T101
- Multi-Touch Ring Encoder Device
- Size: 5 = 50mm, 7 = 70mm
- Type: R = Resistive, C = Capacitive
- Highlight Ring Color: 0 = None, 1 = White, 2 = Blue, 3 = Red, 4 = Green
- Angle of Throw: 07 = 7.5° for Code Change and 48 detent position; 11 = 11.5° for Code Change and 32 detent position
- Pushbutton Option: 0 = No pushbutton, 1 = Pushbutton
- Torque: N = Non-detent, L = Low Torque, M = Medium Torque, H = High Torque
- Knob Style

Grayhill, Inc.

561 Hillgrove Avenue
LaGrange, Illinois 60525
phone: (708) 354-1040
fax: (708) 354-2820
instinct@grayhill.com

Contact Grayhill for Custom Options.