Grayhill's Instinct technology tracks up to five finger touches at a time. The Multi-Touch Control Wheel combines a multi-touch touchpad with a circular groove to offer even more functionality. Touching the North, South, East or West points in the groove can be interpreted as joystick switch inputs. Running your finger around the groove can be interpreted as an encoder input. The number of relative state changes is user configurable from 4 to 256 per revolution. A proximity sensor automatically detects when a user approaches the device, allowing the OEM equipment to enter a power-saving mode when not in use. A few of the many multi-touch gestures are shown below.

**Multi-Touch Control Wheel**

**Features**
- Grayhill Instinct™ Gesture Recognition
- Three devices in one:
  - Multi-Touch touchpad
  - 4-256 position rotary encoder
  - 4 position (N, S, E, W) joystick
- Proximity sensor
- Impervious to cleaning solutions
- Easy to integrate into any device
- Rugged, scratch-resistant surface
- USB compatible HID device

Possible applications include:
- Medical devices
- Clean room controls
- Off-Highway vehicles

**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 Control Wheel can replace touchscreens, keypads, trackballs, switches and joysticks. This makes for clean design and cuts costs of manufacturing. The MTCW increases the engineer’s flexibility in building functionality into any product, while reducing front panel size and complexity.
DIMENSIONS

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>403.375</td>
<td>MAX ENCODER AREA</td>
</tr>
<tr>
<td>49.650</td>
<td>MAX HEIGHT</td>
</tr>
<tr>
<td>310.200</td>
<td>(4,86)</td>
</tr>
<tr>
<td>409.620</td>
<td>(114,6)</td>
</tr>
<tr>
<td>403.740</td>
<td>(16,0)</td>
</tr>
</tbody>
</table>

FOR PANEL THICKNESS UP TO 54mm

ENVIRONMENTAL & MATERIAL SPECIFICATIONS

**Operating temperature**
-10°C to +60°C

**Seal**
IP67

**Humidity**
95% Humidity at 60°C for 240 hours

**Chemical resistance**
(Resistance to accidental spills and disinfectants)
72-hour exposure to Coffee, Cola, Saline, Methyated spirits, Isopropyl, Ammonia, Chlorine bleach, Sodium Hypochlorite, Ethanol, Dupont® Virkon®, Dupont® RelyOn®, Betadine, Hydrogen Peroxide, Cidex®, Steris®, Civco®

**Material**
Xenoy

ELECTRICAL PERFORMANCE SPECIFICATIONS

**USB**
2.0, 3.0 Compatible, Full speed HID Compliant

**Operating Voltage**
2.5 to 5.5 Vdc

**Input Current**
50mA max @5V

**Icon Wear Resistance**
Minimum 1,000,000 cycle

**Touchpad Resolution**
1280 x 1280 pixels

ELECTROMAGNETIC COMPATIBILITY SPECIFICATIONS

**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**
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

SOFTWARE DEVELOPMENT KIT

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 Control Wheel, a standard USB cable and demo software. The kit is available directly from Grayhill, or from one of several distributors. For more detailed information, including a copy of the User's Guide, go to www.grayhill.com/instinct.

ORDERING INFORMATION

**T201-DEV1**

<table>
<thead>
<tr>
<th>PIN</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>USB + Vcc</td>
</tr>
<tr>
<td>2</td>
<td>USB Negative (D-)</td>
</tr>
<tr>
<td>3</td>
<td>USB Positive (D+)</td>
</tr>
<tr>
<td>4</td>
<td>Gnd</td>
</tr>
</tbody>
</table>

**Series Code**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>T201</td>
<td>Multi-Touch Control Wheel Device</td>
</tr>
</tbody>
</table>

**Color**
1 = White
2 = Black
3 = Black

**Type**
C = Capacitive

**Size**
7 = 70mm

**Contact**
Grayhill for Custom Options.