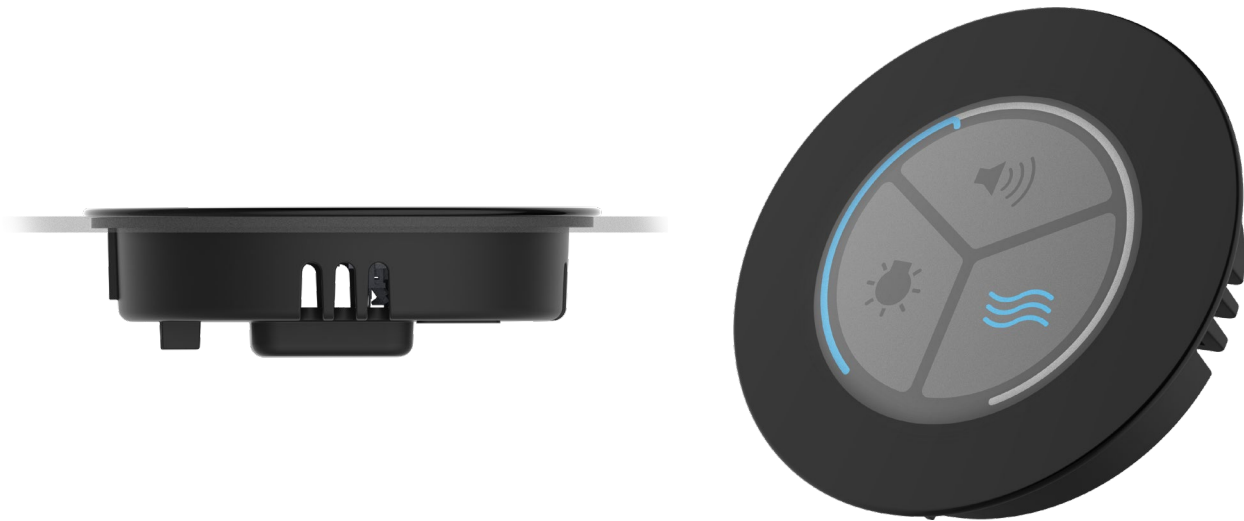


## Reimagining the User Experience

# Touch Encoder Flush Mount



### KEY FEATURES

- Replaces many traditional user input devices (such as switches, keypads, pushbuttons, displays, etc.) with a simple, easy to use device
- Optimal front panel footprint
- Supported gestures: Tap + Swipe + Turn
- High resolution display: 320 X 300
- Quick user interface development
  - Intuitive tablet based development platform
  - Library of configurable standard widgets
  - Incorporates pictures: PNG, JPEG, etc.
- Stores hundreds of screens (32MB memory)
- Field upgradable application and firmware
- Robust: sealed to IP67, high impact strength, chemical resistant
- USB 2.0 or CAN J1939 communications with host device
- Easy panel installation: Either mounting nut or adhesive install for minimal behind panel thickness

### MATERIALS

- Cover lens: polyester/glass
- Rear housing: nylon
- Mounting nut: nylon
- RoHS 2018/863 compliant

### TOUCHSCREEN/DISPLAY

- Optically bonded display and touchscreen for excellent sunlight readability
- Touchscreen construction: ITO

## General

Device Diameter (O.D.): 2.330in [59.18mm] Nominal - Glass Lens

Device Diameter (O.D.): 2.370in [60.20mm] Nominal - Plastic Lens

Display Diameter (V.A.): 1.30in [33.02 mm Nominal

Touchscreen: Projected Capacitive

Display - Type: Round Color TFT LCD, 320 X 300

Display - Brightness: 200 Cd/m2 Nominal

Connector Style: Molex - 53047-0710

Behind Panel Depth: 0.577in [14.65mm] Nominal - Glass Lens

Behind Panel Depth: 0.825in [20.96mm] Nominal - Plastic Lens

## Electrical Function

Operating Voltage: 4.75 to 18 Vdc;

Max Operating Power: 1.5 W @ Max Brightness

Memory: 32MB

Standby Power Mode: < 100 mW

Sleep Mode Wakeup Time: 500 mSec

Boot Time: 5 Seconds to O.S.

USB Interface: 2.0 Full Speed Composite Device

CANbus Interface: J1939 Compliant

For more information, contact us at [TE@grayhill.com](mailto:TE@grayhill.com)

## Mechanical

Pushout Force (Max): 45 lbs (200 N)

Lens Hardness: 6H - Glass Lens; 2H - Plastic lens

Lens Impact: IK6

Mounting Torque (Nominal): 4 -10 in-lbs

Mounting Torque (Max): 14 in-lbs

Mounting Alignment (Maximum): < 2 Deg

## Environmental

Operating Temp. Range: -20 to 65 °C

Storage Temperature: -30 to 70 °C

Humidity: 95% @ 65 °C

Mechanical Shock: ANSI EP455 5.14.1

Seal (Electronics): IP67 Above Panel

Radiated Immunity: IEC 61000-4-3 80 - 2700 MHz 10 V/M

Conducted Immunity: IEC 61000-4-6 LEVEL 2 - 130 dBµV, 150 KHz to 80 MHz

ESD: IEC 61000-4-2: 8 kV Contact; 15 kV Air

Vibration (Random): ANSI EP455 5.15.2; 2hr Each Axis

Chemical Resistance: Designed to survive repeated exposure to most chemicals found in Medical, Off-Highway, and Industrial applications

Solar Radiation: ISO 4892.2 Method B

Power Frequency Magnetic Field: Meets IEC 61000-4-8, 100 A/m

Electrical Fast Transient/Burst: IEC 61000-4-4 ±1kV Coupling Clamp

Conducted Emissions: EN 55011, EN55032 Class B

Radiated Emissions: EN 55011, EN55032 FCC Part 15 Class B

## Part Numbers

# TE-F33X-X-XXX

Product:  
F - TE Flush Mount

Display Size  
33 - 1.32" [3.06MM] Round Sharp Display

LENS STYLE:  
A - Glass Lens, 1.1 mm Corning Gorilla Glass  
B - Glass Lens, 2.0 mm Corning Gorilla Glass  
C - Plastic Lens

ARTWORK:  
1 - Black/Silver Ink  
2 - Black Ink (No Home Button)

PLATFORM:  
A - STM32, µClinux, 32MB

OPEN:  
I - Reserved for Future Use

OUTPUT:  
U = USB 2.0  
C = CAN J1939

# Simple, Intuitive Application Development using Grayhill App (GH TE-MX)

Create & store multiple projects

Simulate your program on the iPad before downloading it to the Touch Encoder

Create individual screens using any combination of widgets (from the widget library), pictures and graphics

Scroll up and down to see all of the screens on your workspace

Add in touch zones; Tap anywhere on the screen to define size and location

Drag and drop screens from your workspace into N,S,E,W swipe zones

Drag and drop screens from your workspace

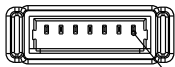
## Fully Customizable Standard Widgets

Select icon from Menu

Change colors

Determine values/increments for rotary movements

## Pin Numbering Detail



PIN 1

Connector: Molex-51021-0700

CONNECTOR OUTPUT	
PIN #	DESCRIPTION
1	USB_D+
2	USB_D-
3	MODE
4	CAN_L
5	CAN_H
6	GND
7	VIN

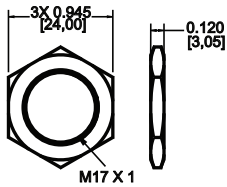
To put device in programming mode:  
Connect mode pin #3 to GND at power up.  
Leave mode pin #3 open for run mode  
(normal operation)

### Mode Pin Truth Table @ Power up

Program Mode	GND
Run Mode	Open

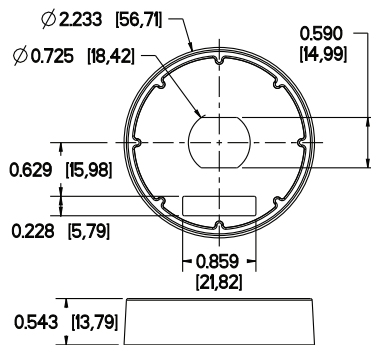
## Mounting Information

Standard Plastic Mounting Nut  
IN [MM]

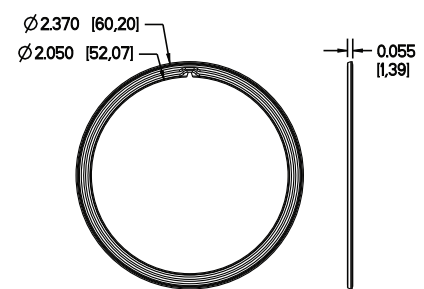


M17 X 1

Clamp Washer IN [MM]



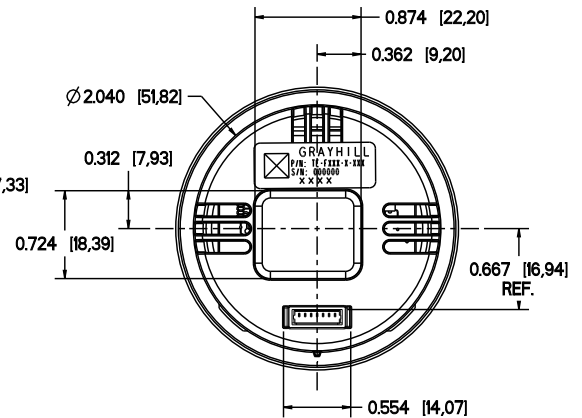
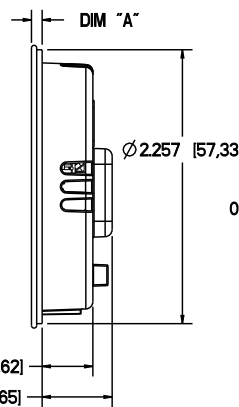
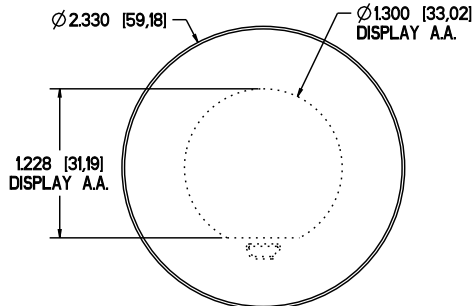
Panel Seal for Plastic Lens Version IN [MM]



## Dimensions

### TE-F33A-X-XXX and TE-F33B-X-XXX (Glass Lens)

IN [MM]



FINAL ASM P/N	DIM "A"	DESCRIPTION
TE-F33A-X-XXX	.088 [2,24]	1.1mm GLASS LENS
TE-F33B-X-XXX	0.124 [3,14]	2.0mm GLASS LENS

### TE-F33C-X-XXX (Plastic Lens)

IN [MM]

