

TOUCH ENCODER™ FLUSHMOUNT

Reimagining the User Experience



OVERVIEW

The Touch Encoder Flushmount replaces many traditional user input devices (such as switches, keypads, pushbuttons, displays, etc.) with a simple, easy-to-use device.



KEY FEATURES

- Optimal front panel footprint
- Supported gestures: Tap + Swipe + Turn
- High-resolution display: 245 PPI
- Quick user interface development
- Intuitive development platform
- Library of configurable standard widgets
- Stores hundreds of screens (32MB memory)
- Incorporates pictures: PNG, JPEG, etc.
- Field upgradable application and firmware over CAN J1939 and USB
- Robust: panel sealed to IP67, high impact strength, chemical resistant
- USB 2.0 or CAN J1939 communications
- Easy panel installation: adhesive install for minimal behind-panel thickness

TOUCHSCREEN/DISPLAY

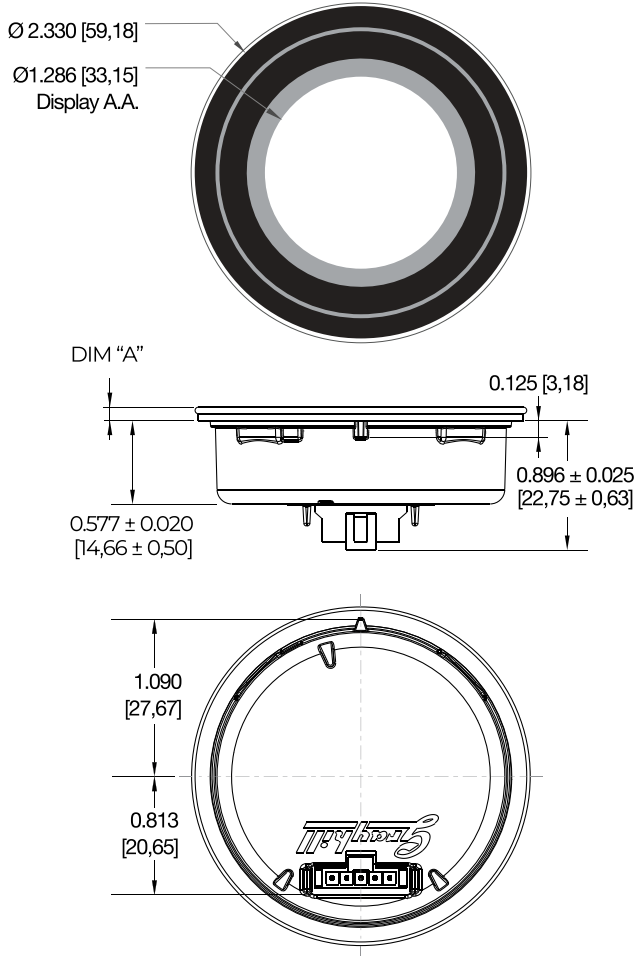
- Optically-bonded display and touchscreen for excellent sunlight readability
- Touchscreen construction: high-resolution PCAP ITO

MATERIALS

- Cover lens: chemically-strengthened glass
- Rear housing: PBT+PC blend
- RoHS 2018/863 compliant

DIMENSIONS in inches (and millimeters)

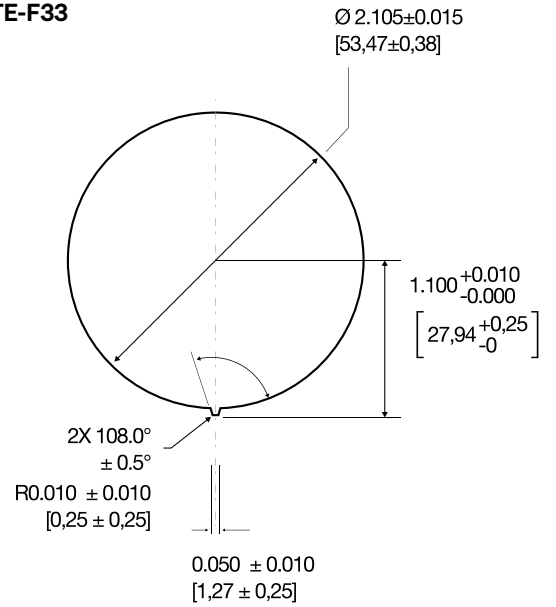
TE-F33X-11X



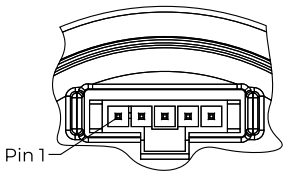
Part Number Dimensions

P/N	Dim "A"	Description
TE-F33A-X-XXX	.088 [2,24]	1.1 mm Glass Lens
TE-F33B-X-XXX	0.124 [3,14]	2.0 mm Glass Lens
TE-F53A-X-XXX	.088 [2,24]	1.1 mm Glass Lens
TE-F53B-X-XXX	.0124 [3,14]	2.0 Glass Lens

Cutout: TE-F33

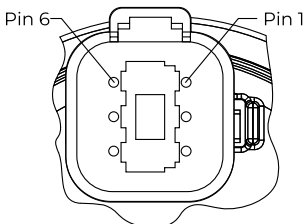


Pin Numbering



Connector Output

Pin #	USB	CAN
1	USB_D-	CAN_L
2	USB_D+	CAN_H
3	MODE	MODE
4	GND	GND
5	Vin	Vin



Connector Output

Pin #	USB	CAN	Wire Color
1	Vin	Vin	Red
2	GND	GND	Black
3	USB+	CAN+	Yellow
4	USB-	CAN-	Green
5	MODE	MODE	Blue
6	NC	NC	—

Utility Mode

USB: Utility mode runs on the Backup OS, and can be used to troubleshoot, program, and check version number.

CAN: Utility mode runs on the Backup OS, and can be used to troubleshoot and check version number.

Mode Pin Truth at Power Up

Utility Mode	GND
Run Mode	Open

SPECIFICATIONS

General

Device Diameter (O.D.)	2.330 in (59.18 mm) nominal
Display Diameter (V.A.)	1.320 in (33.50 mm) nominal
Touchscreen	Projected capacitive
Display: Type	Round color TFT LCD, 320×320
Display: Brightness	200 Cd/m ²
Connector Style	Molex 1053111305 or Amphenol AT04-6P

Mechanical Specifications

Side Load Force	45 lbs (200 N)
Lens Hardness	>6H
Lens Impact:	IK6
Connector Pullout	15 lbs (66.7 N)
Mounting Alignment (Maximum)	< 1.5 Deg for .005" tol
Weight (Production Unit)	1.23 oz (35.0 g)

Environmental Specifications

Operating Temp. Range	-20 to 65 °C
Storage Temperature	-30 to 70 °C
Humidity	95% @ 65 °C
Mechanical Shock	ANSI EP455 5.14.1
Panel Seal	IP67* contact sales for full IP67 seal
Vibration (Random)	50-2000 Hz, 2 hr each axis ANSI EP455 5.15.2
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

Electrical Function

	Standard Power	Rugged Power
Operating Voltage	4.75 to 18 Vdc	4.75 to 24 Vdc
Max Operating Power	1.5 W @ Max	TBD
Memory	32 MB	32 MB
Sleep Mode Wakeup Time	500 mS	500 mS
Boot Time	5 seconds	5 seconds
USB Interface	2.0 full speed composite device	
CAN Bus Interfaces	J1939 compliant	

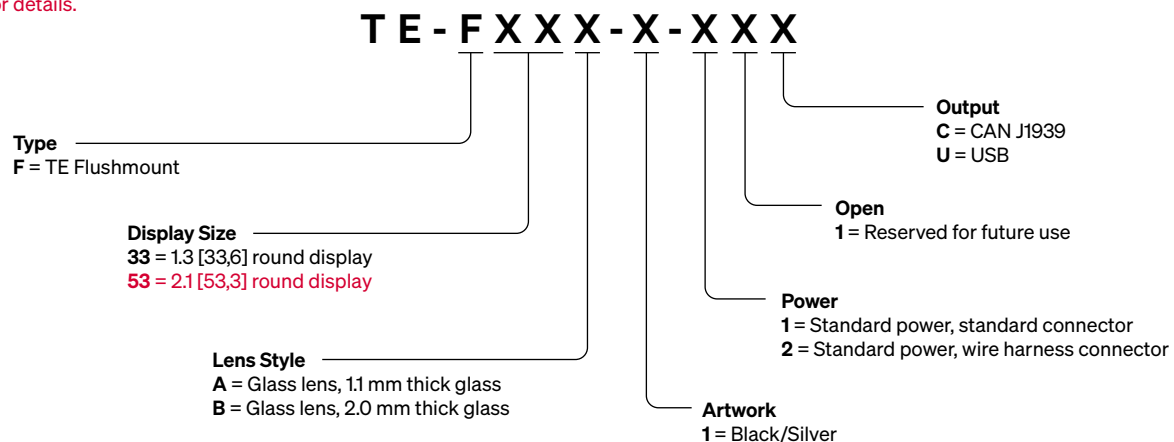
Electrical Specifications

	Standard Power
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
Power Frequency Magnetic Field	Meets IEC 61000-4-8 100 A/m
Electrical Fast Transient/Burst: IEC 61000-4-4±1	IEC 61000-4-4 ± 1 KV Coupling Clam
Conducted Emissions EN	EN 55011, EN 55032 Class B
Radiated Emissions	EN 55011, EN 55032 FCC Part 15 Class B

ORDERING INFORMATION

Availability

Red items available upon request.
Contact sales for details.



TOUCH ENCODER™ FLUSHMOUNT SDK

Continuing in the success of the Touch Encoder Product Line, Grayhill is thrilled to announce the launch of its latest Touch Encoder Software Development Kit (SDK).

With the Touch Encoder's unique display, touchscreen, and rotary knob design, this multifunctional control is both sleek and rugged and fast becoming the user-interface choice for many industries such as Avionics, Marine, Ag/Con, Recreational Vehicles, Industrial, and Luxury Automotive.

Our new SDK, designed to work seamlessly with the graphics creation tool GUIDE, represents a significant leap forward, offering a more plug-and-play experience that simplifies your development process.

Plug-and-Play Simplicity

Our SDK is engineered for effortless integration, requiring only power and USB-C cables to kickstart your development journey. Experience a smooth and hassle-free setup that streamlines your entire process.

Streamlined Communication for CAN J1939 Customers

Say goodbye to third-party hardware dependencies when it comes to CAN J1939 communication. Our SDK eliminates the need for a separate piece of hardware, offering a unified solution that enhances both efficiency and cost-effectiveness.

Enhanced Development Speed

Accelerate your development timeline with our user-friendly SDK. Minimize setup complexities, allowing you to focus more on refining your application and bringing your ideas to market faster.



Package Contents

- SDK
- Power Cable (Grayhill PN: T11927)
- Power Adapter (Grayhill PN: T11928)

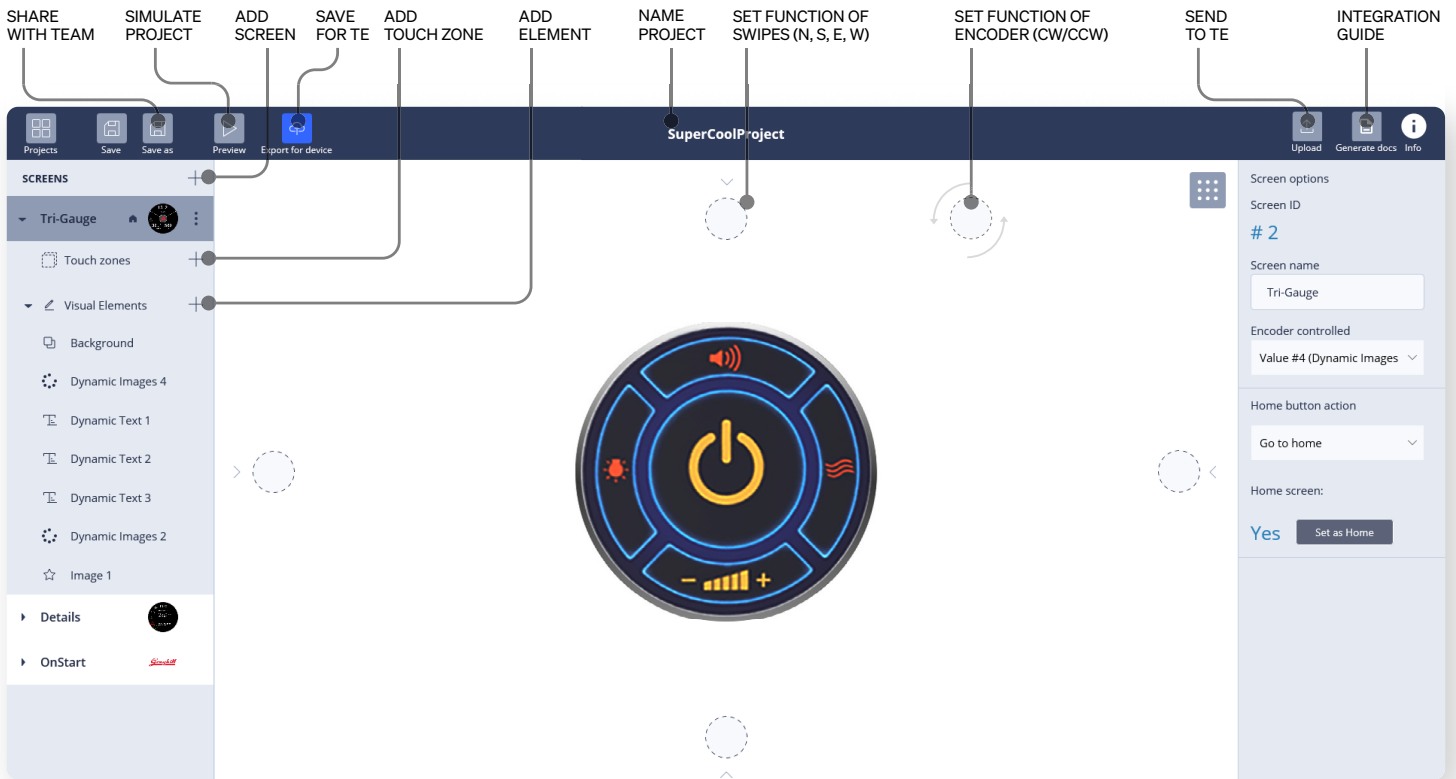
TE-F33B-XX-SDK

Style
 0 = Unit not included
 1 = Unit included

Output
 C = CAN (J1939)
 U = USB

GUIDE SOFTWARE

Simple, Intuitive Project Development Using Grayhill GUIDE for PC



Premium Tool Kit

Unlock the full power of GUIDE with the Premium Tool Kit. With this Tool Kit developers will have access to all of the Grayhill tools shown in the table and have the freedom to design any Project they can sketch up. The Premium Tool Kit is perfect for customers who:

- Will design multiple Projects which require functionality not found in the Standard Widget Set
- Can benefit from rapid design iterations
- Want the power to quickly react to customer feedback and deploy an improved user experience

GUIDE App Features

FEATURES	
●	UPDATED OVER CAN
●	UPDATED OVER USB
●	LABEL
●	IMAGE
●	STANDARD WIDGET
●	LINEAR GAUGE
●	RING GAUGE
●	STANDARD MENU
●	NUMERIC VALUE
●	RADIO GROUP
●	ADVANCED MENU
●	DYNAMIC IMAGES
●	TEXT BOX
●	BUTTON

BASE VERSION (Yellow bar on the left) covers features up to STANDARD WIDGET. **PREMIUM VERSION** (Blue bar on the right) covers features from STANDARD MENU onwards.