



Consult TNx prior to design-in

Part of the



family of touchscreens

Rev	Date	Author	Notes
A1	24/09/15	PS	First Issue

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1 Highlights

The Luminance Press family of Touch products builds on the success and stability of TouchNetix’s standard Luminance sensors by adding the unique **pressSense** capability:

- + **Standard Luminance touch sensor and lens with integrated pressSense**
- + **pressSense detects the tiny (1’s to 100’s of microns¹) displacement between lens and chassis as user presses to make a selection**
- + **Simple press chassis mounting allows touch module to bond to customer chassis**
- + **Full multi-point capacitive touch *with* pressSense output channel reporting the combined pressure applied to cover lens**
- + **Good pressure/force sensitivity even on large panels**
- + **8-bit pressure output; 5 to 6 bits of easily usable resolution for most applications**
- + **TNxAC-005 pressSense control board uses TouchNetix’s own TNxPC-2101 chip**
- + **Highly configurable with excellent stability and noise robustness**
- + **I2C interface with optional USB bridge to convert to HID**
- + **Host software is free to interpret pressure as it chooses**
- + **Allows positive “press” confirmation of selections for critical applications, while allowing the best of light-touch capacitive behaviour for other UI interactions**
- + **Works with gasket mounted LCD or optically bonded LCD**
- + **Works with touch panel mounted vertically or horizontally**
- + **Uses TouchNetix’s own patent pending sensing method**
- + **Good uniformity even on large panels**
- + **3D CAD available on request²**
- + **Options for customizable cover lens subject to quantity**

¹ 1um = 1x10⁻⁶m. A human hair is typically 80um diameter

² STEP file

2 Ordering Part Numbers

2.1 PressScreen Assemblies³

Codename	Nominal Diagonal	PressScreen Assembly Part Number	Aspect Ratio	Press ⁴	EVK
Enki Press	7.0"	TNxLM-070E-A7-AB-003rr	15:9	Attached	TNxLM-EVK-070E-A7-AB-003rr
Enki Press	7.0"	TNxLM-070E-A7-AB-004rr	15:9	Separate	TNxLM-EVK-070E-A7-AB-004rr
Mata Press	8.4"	TNxLM-084A-A7-AB-003rr	4:3	Attached	TNxLM-EVK-084A-A7-AB-003rr
Mata Press	8.4"	TNxLM-084A-A7-AB-004rr	4:3	Separate	TNxLM-EVK-084A-A7-AB-004rr
Beli Press	10.1"	TNxLM-101C-A7-AB-003rr	16:10	Attached	TNxLM-EVK-101C-A7-AB-003rr
Beli Press	10.1"	TNxLM-101C-A7-AB-004rr	16:10	Separate	TNxLM-EVK-101C-A7-AB-004rr
Milu Press	10.4"	TNxLM-104A-A7-AB-003rr	4:3	Attached	TNxLM-EVK-104A-A7-AB-003rr
Milu Press	10.4"	TNxLM-104A-A7-AB-004rr	4:3	Separate	TNxLM-EVK-104A-A7-AB-004rr
Apis Press	12.1"	TNxLM-121C-A7-AB-003rr	16:10	Attached	TNxLM-EVK-121C-A7-AB-003rr
Apis Press	12.1"	TNxLM-121C-A7-AB-004rr	16:10	Separate	TNxLM-EVK-121C-A7-AB-004rr
Lado Press	12.1"	TNxLM-121A-A7-AB-003rr	4:3	Attached	TNxLM-EVK-121A-A7-AB-003rr
Lado Press	12.1"	TNxLM-121A-A7-AB-004rr	4:3	Separate	TNxLM-EVK-121A-A7-AB-004rr
Peko Press	12.3"	TNxLM-123A-A7-AB-003rr	8:3	Attached	TNxLM-EVK-123A-A7-AB-003rr
Peko Press	12.3"	TNxLM-123A-A7-AB-004rr	8:3	Separate	TNxLM-EVK-123A-A7-AB-004rr
Fudo Press	15.0"	TNxLM-150A-A7-AB-003rr	4:3	Attached	TNxLM-EVK-150A-A7-AB-003rr
Fudo Press	15.0"	TNxLM-150A-A7-AB-004rr	4:3	Separate	TNxLM-EVK-150A-A7-AB-004rr
Enyo Press	15.6"	TNxLM-156B-A7-AB-003rr	16:9	Attached	TNxLM-EVK-156B-A7-AB-003rr
Enyo Press	15.6"	TNxLM-156B-A7-AB-004rr	16:9	Separate	TNxLM-EVK-156B-A7-AB-004rr
Vali Press	18.5"	TNxLM-185B-A7-AB-003rr	16:9	Attached	TNxLM-EVK-185B-A7-AB-003rr
Vali Press	18.5"	TNxLM-185B-A7-AB-004rr	16:9	Separate	TNxLM-EVK-185B-A7-AB-004rr
Aray Press	19.0"	TNxLM-190D-A7-AB-003rr	5:4	Attached	TNxLM-EVK-190D-A7-AB-003rr
Aray Press	19.0"	TNxLM-190D-A7-AB-004rr	5:4	Separate	TNxLM-EVK-190D-A7-AB-004rr
Mars Press	21.5"	TNxLM-215B-A7-AB-003rr	16:9	Attached	TNxLM-EVK-215B-A7-AB-003rr
Mars Press	21.5"	TNxLM-215B-A7-AB-004rr	16:9	Separate	TNxLM-EVK-215B-A7-AB-004rr
Baku Press	24.0"	TNxLM-240B-A7-AB-003rr	16:9	Attached	TNxLM-EVK-240B-A7-AB-003rr
Baku Press	24.0"	TNxLM-240B-A7-AB-004rr	16:9	Separate	TNxLM-EVK-240B-A7-AB-004rr

Consult TNx non-listed sizes or for custom lens requirements.

³ Approximate dimensions and ratios

⁴ **Attached** means frame is pre-bonded to cover lens, **Separate** means frame with press sensor is supplied un-bonded to facilitate modularization with LCD when full optical bond is required

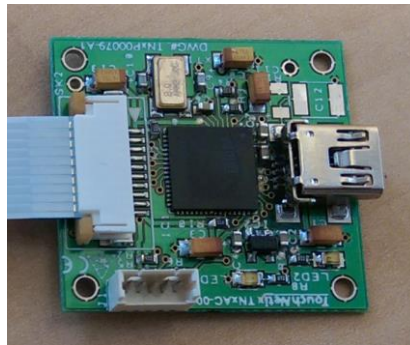
2.2 PressScreen Components

- **Luminance** touch module: Sensor, Lens and Touch Control Board (standard Luminance)
- **pressSense** press frame with press sensor, bonded to touch module
- **TNxAC-005** Press Sense Control Board

2.3 Optional Accessories

2.3.1 TNxAC-003 USB Adapter

Connects to the 10-way FFC connector on the touch sensor control PCB and also links to the **pressSense** control board via the 5 way B2W header. This allows the host to treat the touch panel as a Digitizer or Mouse HID device and also creates a separate HID device that streams press (and touch) data. The board measures 32x30mm.



2.3.2 EVK

An evaluation kit is available for each model. See 2.1 for details of part numbers.

Each kit contains the following items:

- 1x PressScreen as detailed above
- 1x TNxAC-003 USB Adapter with 10-way FFC and 5-way B2W cable
- 1x USB mini-B cable
- 1x USB stick containing TNxTouchHub evaluation and tuning software for XP/Win7/8

3 Touch Specifications

Refer to TNxD00135-xx Luminance Datasheet.

4 Press Specifications

4.1 Press Sensor

The press sensor is fitted between the press frame and the cover lens. The frame is permanently bonded to the cover lens using 3M 5962F VHB adhesive tape. **Do not** attempt to detach the frame; permanent damage will result.

The press sensor connects to the **pressSense** control board via 2 thin flex circuits that exit the frame near one corner. The two circuits are functionally identical and can connect to either 4 way FFC connector on the board. Both flex circuits must be connected. The contacts on the flex circuits are face up.

The press frame **MUST** be grounded to the **pressSense** control board, using a spade terminal onto one of the 2 tags on the frame. There is a solder point GND terminal on the control board.

Refer to the mechanical drawings for notes on various aspects of the module.

Several application notes are available that deal with various aspects of integrating the module and interfacing with it:

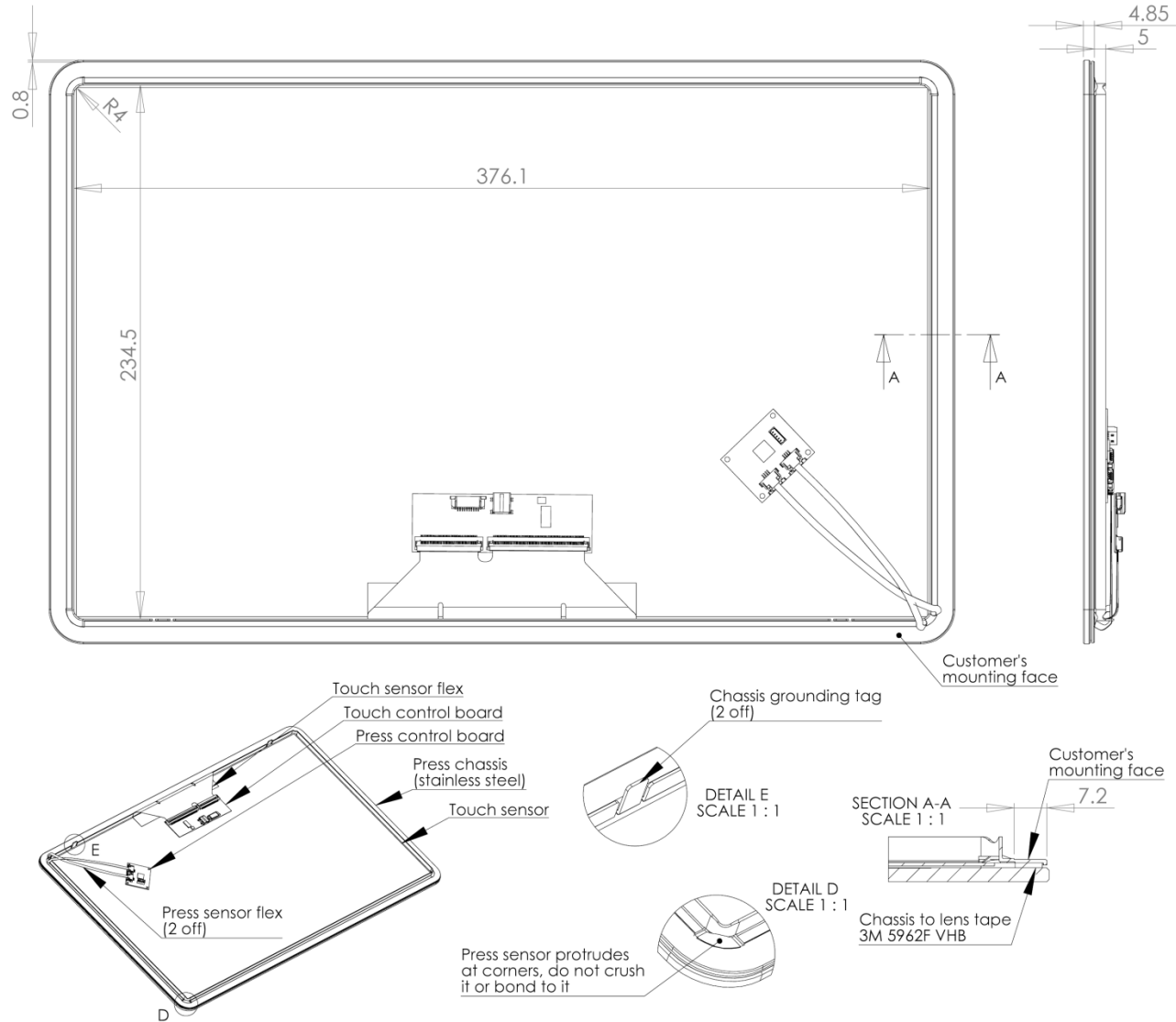
TNxAN00021	Mounting Instructions for Luminance Press Modules
TNxAN00022	pressSense Primer
TNxAN00023	TNxPC-2101 Software Interfacing

4.2 TNxAC-005 pressSense Control Board

Refer to TNxD00236 for details of the control board.

5 Mechanical Drawings

5.1 Enyo Press



Notes

- 1. All models: The frame is 0.8mm smaller than the lens and is positioned to +/-0.5mm accuracy relative to it.***
- 2. The dimensions at top right of above diagram(s) define the lens touch surface to the customer mounting face, and between the customer mounting face and the inner lip’s edge. Note that the 2 ground tags are taller by 3mm and require a spade terminal (or similar) to be attached (the tags may be bent over if required)***
- 3. The inner lip ***must*** be free to move relative to the customer’s chassis (do not bond or fix this edge). Only the customer mounting face may be used to fix the module into the customer’s housing. Similarly the LCD must NOT be obstructed from moving with the cover lens. Refer to TNxAN00021 for more details.***
- 4. The customer mounting face width is shown above; mounting tape used to secure this module to the customer chassis is recommended to be 5 to 6mm wide and of “firm” composition. Refer to TNxAN00021 for more details.***
- 5. The adhesive used to bond the press frame to the lens does not guarantee a 100% seal. Contact TNx if this is required.***
- 6. 3D Step data is available on request.***