



**SHORTFORM DATASHEET**  
*Subject to change, consult TNx prior to design-in*

*Part of the*



*family of touchscreens*

<b>Rev</b>	<b>Date</b>	<b>Author</b>	<b>Notes</b>
A1	20/11/2014	PG	First Issue
A2	01/12/2014	PG	Lens added Single I2C address 0x4A
A3	08/12/2014	PG	Assembly drawing added
A4	22/12/2014	PG	Lens detail in section 2.2 added Assembly drawing updated with lens thickness
A5	20/02/2015	PG	Various updates for release

## **1 Highlights**

Arcas is part of TouchNetix’ Brilliance family of capacitive touchscreen assemblies.

It has the following features:

- + Up to 12-bit XY multi-touch reporting**
- + Supports up to 10 simultaneous touches**
- + Reporting rate typically 80 to 100Hz depending on configuration**
- + 1.6mm chemically strengthened glass front lens**
- + Option for customizable cover lens up to 4mm glass subject to quantity**
- + Available as sensor only, without lens**
- + Robust sensor design allows operation with a wide range of 7” displays**
- + Industry leading EMC performance, especially for conducted immunity**
- + Active area is diagonal 16:10, tailored to fit most 7.0” TFT LCD panels**
- + I2C communication interface**
- + Optional USB adapter PCB to support multi-touch HID digitizer or “mouse mode” in legacy O.S.s and embedded versions of Windows™**
- + Active FPC tail connects to host via low cost 10 way 1mm pitch ZIF connector**
- + Two user configurable FPC tail length options**
- + Allows contemporary “bezel free” designs**
- + 3D CAD available on request<sup>1</sup>**
- + Supported by TouchNetix’ proprietary TNx TouchHub tuning software for Windows™**

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<sup>1</sup> STEP file

## **2 Ordering Part Numbers**

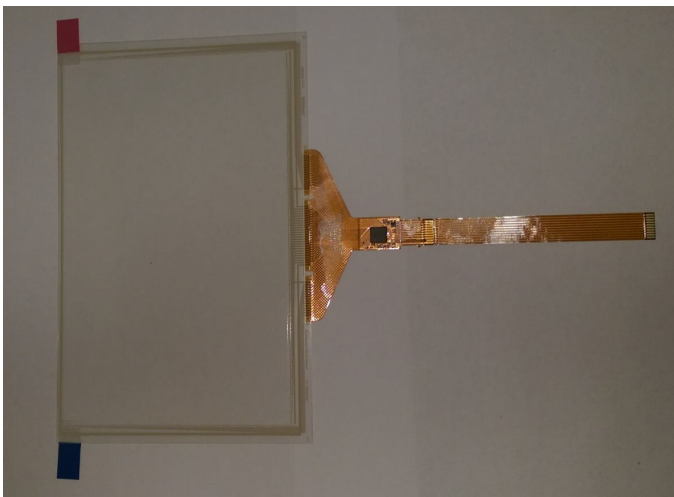
### **2.1 Touchscreen Assembly**

Touchscreen Assembly Part Number: **TNxBR-070E-A8-AC-002rr**



### **2.2 Sensor Assembly**

Sensor Assembly Part Number: **TNxBR-070E-A8-AC-001rr**



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## **2.3 Optional Accessories**

### **2.3.1 Mouse Mode USB Adapter (TNxAC-003)**

Connects to the 10-way FFC connector on the sensor control PCB and outputs to a USB Mini-B receptacle. This allows the host to treat the touch panel as a Mouse HID device in either relative (touchpad) mode or absolute (digitizer style) mode. The board measures 32x30mm<sup>2</sup>.



### **2.3.2 EVK**

An evaluation kit is available

**Part Number: TNxBR-EVK-070E-A8-AC-001rr**

Each kit contains the following items:

- 1x Arcas Touchscreen Assembly
- 1x TNxAC-003 Mouse Mode USB Adapter
- 1x USB stick containing TNx TouchHub evaluation and tuning software for XP/Win7/8

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<sup>2</sup> Note that J1 (rectangular 5-way B2W connector) in the picture is an optional fit and is \*not\* populated by default.

### 3 Specifications

#### 3.1 Sensor

Base material:	PET (Polyethylene terephthalate) interconnects in silver
Thickness:	0.4mm typ. from rear of lens
Overall dimension:	167mm x 111mm
Touch active area <sup>3</sup> :	159.9mm by 99.9mm
Transmittance	>85%
Max lens thickness:	4mm glass, 2.5mm polycarbonate, 2mm acrylic
Mass:	Consult TNx
Orientation:	Suitable for portrait or landscape use
Attachment to housing:	See “TNxAN00010 Recommended Attachment Methods for Touchscreen Assemblies”

#### 3.2 Standard Cover Lens

Material:	1.6mm (nom) chemically strengthened soda-lime glass
Overall dimensions:	183.3mm by 122.3mm
Transparent window:	153.4mm by 92.4 mm
Border decoration:	Process black ink, rear-side printed
Surface treatment:	Anti-fingerprint (AF) coating
Surface hardness:	6-7H typ.
Anti-shatter:	Fragmentation resistance of bonded sensor <sup>4</sup>
Protective film:	Peel off type, to entire upper lens surface

#### 3.3 FPC

Position on sensor:	Exits sensor at middle of long edge
Material:	Polyimide substrate + localized epoxy-glass FR4 rigidiser
Rigidiser dimensions:	17.6mm by 13.8mm
Rigidiser thickness:	0.6mm
Components:	Top (touch) side only above rigidiser
Max component height:	1.0mm above rigidiser top surface
Length <sup>5</sup> :	100.0mm standard, 13.6mm by user cutting excess tail
Contact fingers:	Gold plated
Mounting:	See “TNxAN00009 FPC Considerations for Touchscreen Assemblies”. Rear side is component free and is suitable for adhesive tape mounting.
Host connector type:	1mm pitch 10way ZIF. Example: <b>FCI</b> SFW10R-2STxxLF or equivalent
Min bend radius:	2mm
Max bending cycles:	3

<sup>3</sup> Defined as transparent area inside silver print

<sup>4</sup> Application testing required: sensor does not cover entire lens

<sup>5</sup> Measured to the nearest edge of the component rigidiser

### **3.4 LCD Mounting**

An LCD can be mounted to the rear of the sensor using an adhesive gasket<sup>6</sup> using suitable pressure sensitive adhesive e.g. 3M VHB™ or equivalent<sup>7</sup>. The sensor is also suitable for full optical bond to the LCD using wet or dry adhesive. Contact TNx for guidance.

See “TNxAN00010-A1 Recommended Attachment Methods for Touchscreen Assemblies”.

It is strongly recommended that early testing with a target LCD is conducted to identify any incompatibilities with noisy LCD drive electronics<sup>8</sup>.

### **3.5 Environmental**

Operating temperature:	-20°C to +70°C
Operating humidity:	5 to 90% RH non-condensing
Storage temperature:	-30°C to +85°C
Storage humidity:	45 to 85% RH non-condensing
Impact rating:	IK rating dependent on final application. Consult TNx
RoHS:	Compliant

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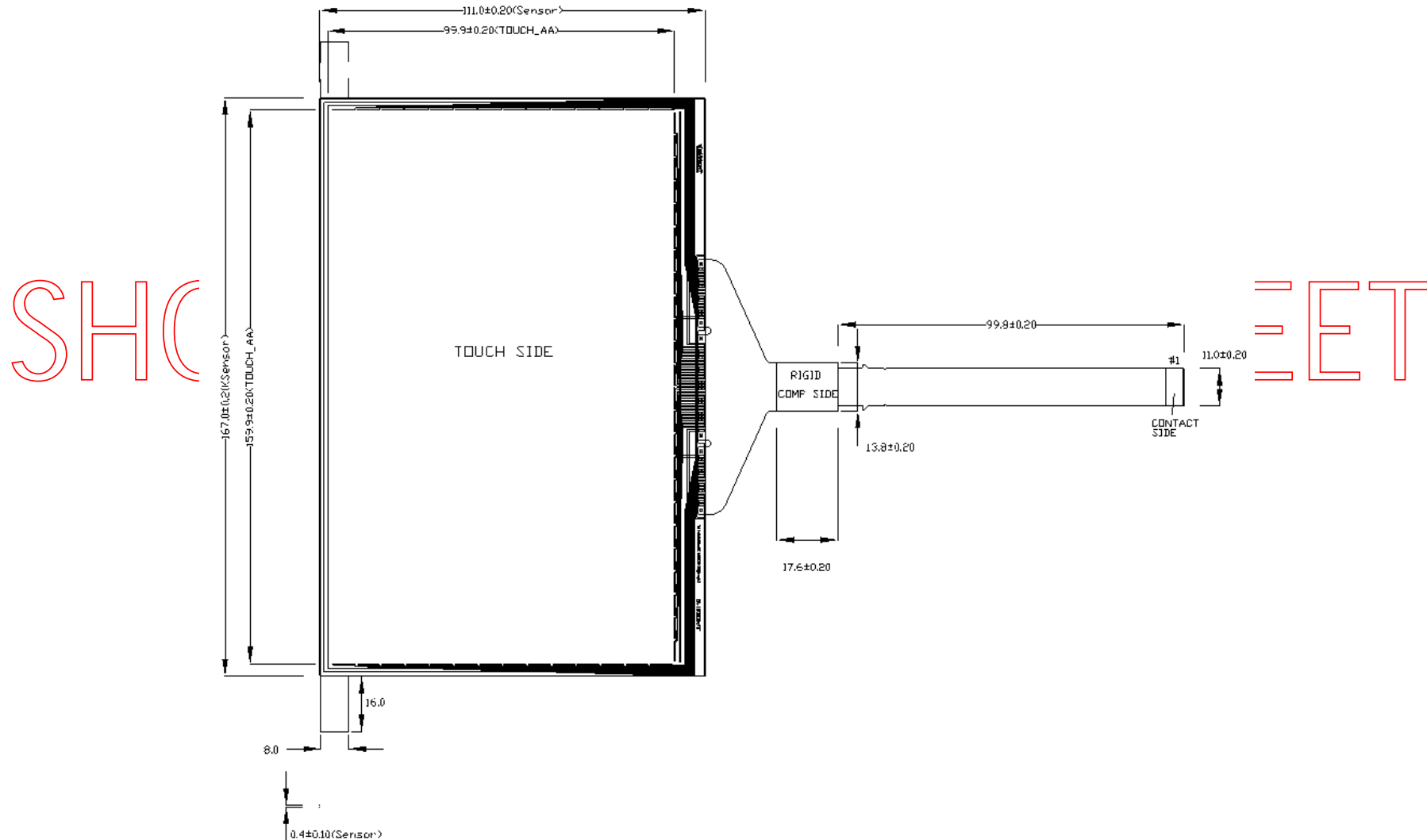
<sup>6</sup> To be fitted by customer or as part of 3<sup>rd</sup> party “moduler’s” responsibility

<sup>7</sup> It is very important to conduct material compatibility trials for any adhesives that are in direct contact with any part of the sensor, unless they are already proven to be non-aggressors

<sup>8</sup> The Brilliance series is designed to repel most LCD noise but there are so many LCD variants with radically different levels of noise emitted, that pre-testing is advised.

## 6 Mechanical Drawing

### 6.1 Sensor Assembly drawing



**6.2 Touchscreen Assembly drawing**

