

Making products more reliable

NKK TOUCH SCREEN SOLUTIONS  
FT Series / TP01 Series

# Let's switch to a reliable touch screen.

NKK Switches leads the world as a manufacturer dedicated to making industrial switches.

Our touch screens inherit the full range of our technology, quality, and originality.

Our longstanding focus on quality is evident in our constant innovation of resistive film touch screens which we have continued to develop over the years.

NKK has won a reputation for the reliability of its resistive touch screens for medical and industrial applications where mission-critical reliability is essential.

NKK touch screens provide greater reliability to the products across a broad range of fields.

We don't provide just products. NKK also offers solutions, including arranging the most efficient procurement of liquid crystal displays (LCDs) and software development as part of a complete package that help our customers meet their objectives.

## NKK touch screens exceed expectations in three major sectors

### Technology

**We provide unique technologies  
as a dedicated switch manufacturer**

We have been awarded more than 1,200 industrial patents over our 60-year company history.

This speaks to NKK's innovation and technical expertise.

### Quality

**A reputation for quality established over 60 years**

Supported by sophisticated precision processing and other advanced techniques, our industry-leading quality improves performance and function and maintains initial control capabilities for extended periods.

### Performance

**Responsiveness and customer satisfaction**

Options include special orders, small-lot production, multiproduct production, rapid delivery, and a broad range of support services.

NKK provides responsiveness, versatility, quality, and customer satisfaction that exceeds expectations.

# ▶▶▶ Expanding the world of touch screens through resistive film

An enviable track record with a reliable supply source  
**FT Series Digital Touch Screens**

Meeting the need for a wide range of sizes  
**FT Series 4-Wire Analog Touch Screens**

**Integrated production at the NKK factory in Japan ensures high-quality, small-lot, multiproduct production and customization.**

### Materials and design

The materials and design used are the film/glass configuration most widely used.

### Two types: analog and digital

Two types of products are available: analog and digital (matrix).

### Anti-glare surface treatment

The anti-glare surface treatment suppresses glare from fluorescent light fixtures and other reflections from the film surface.

### Narrow frames

Narrow frame touch screens are available for use with narrow frame LCDs.

### Adhesive enhances integrity

Adhesive applied to glass/film joints improves resistance to environmental factors.

### Resin coating

The film surface is protected by a coating of resin that offers durable protection against scratching.

### FPC tails

An FPC tail improves contact reliability. Reducing the size of the terminal from a pitch of 8-pin and 1.25mm to 4-pin and 1mm results in smaller and thinner substrates. Various surface mount connector options are available. The tail material has changed from PET to polyimide to improve strength (bending durability) and heat resistance.

### ANR film layer

Incorporates an ANR (anti-Newton ring) film layer to reduce visible interference and improve visibility (analog touch screens).

### A variety of sizes

5.7", 6.5", 8.4", 10.4", 10.6" (wide), 12.1", 12.1" (wide), 15", 15.6", and 19" (analog touch screens).

## Product line

### Digital Touch Screens:

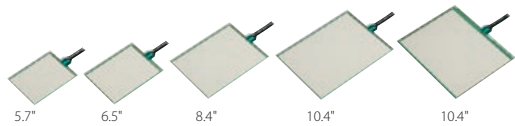
Dedicated IC  
Not Required



5.7"

### Printed Tails: Cost Effective and Wide Range of Sizes

4:3



5.7"

6.5"

8.4"

10.4"

10.4"

12.1"

15"

19"

Wide



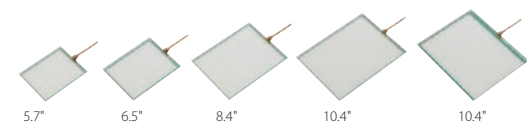
10.6"

12.1"

15.6"

### FPC Tails: High Contact Reliability

4:3



5.7"

6.5"

8.4"

10.4"

10.4"

12.1"

15"

19"

Wide



10.6"

12.1"

15.6"

Controller board/IC



NEW

\*A conversion tail allows a 4-wire analog touch screen of any size to be handled as an 8-wire analog touch screen. (The autocalibration function is not supported.)

Remarkable reliability

## FT Series 5-Wire Analog Touch Screens

The product line offers 10.4", 12.1", and 15" screens as standard sizes.

### FPC tail feature

Incorporates an FPC tail to ensure the reliability of its contact to the connector.

### Anti-glare surface treatment

The anti-glare surface treatment suppresses glare from fluorescent light fixtures and other reflections from the film surface.

### ANR film layer

Incorporates an ANR (anti-Newton ring) film layer to reduce visible interference and improve visibility.

### Adhesive enhances integrity

Adhesive applied to glass/film joints improves resistance to environmental factors.

### Resin coating

The film surface is protected by a coating of resin that offers durable protection against scratching.

### Materials and design

The materials and design used are the film/glass configuration most widely used.

### Superior durability

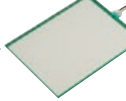
The 5-wire touch screens offer improved keystroke durability. Any scratches in or deterioration of the upper electrode film does not affect the voltage used to detect position.

### Product line

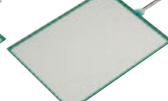
4:3



10.4"



12.1"



15"

Controller board/IC



Providing solutions equal to capacitive touch screens  
**TP01 Series 4-Wire Analog Touch Screens**



**Light touch operation on analog resistive touch screens.**

**Supports multi-touch operation.**

**Supports two-point gesture input**

The light touch panel ensures reliable input and sense of control. The dedicated controller board supports multi-touch operations.

**Various input methods**

Resistive touch screens can be operated using any input method: finger, stylus, or fingers covered by a glove.

**Anti-glare surface treatment**

The anti-glare surface treatment suppresses glare from fluorescent light fixtures and other reflections from the film surface.

**FPC tail feature**

Incorporates an FPC tail to ensure the reliability of its contact to the connector.

**Narrow frames**

Narrow frame touch screens are available for use with narrow frame LCDs.

**Resin coating**

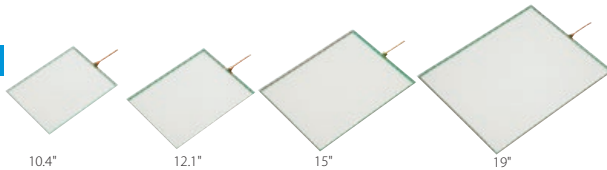
The film surface is protected by a coating of resin that offers durable protection against scratching.

**ANR film layer**

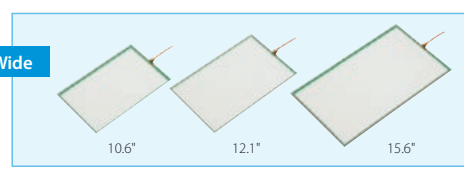
Incorporates an ANR (anti-Newton ring) film layer to reduce visible interference and improve visibility.

**Product line**

**4:3**



**Wide**



\*A TP01 series controller board and detection IC are bundled with the touch screen.

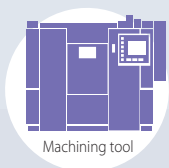
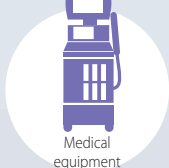
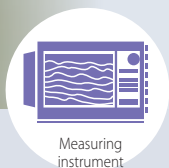
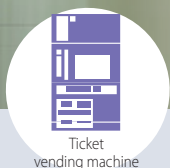
**Controller board/IC**



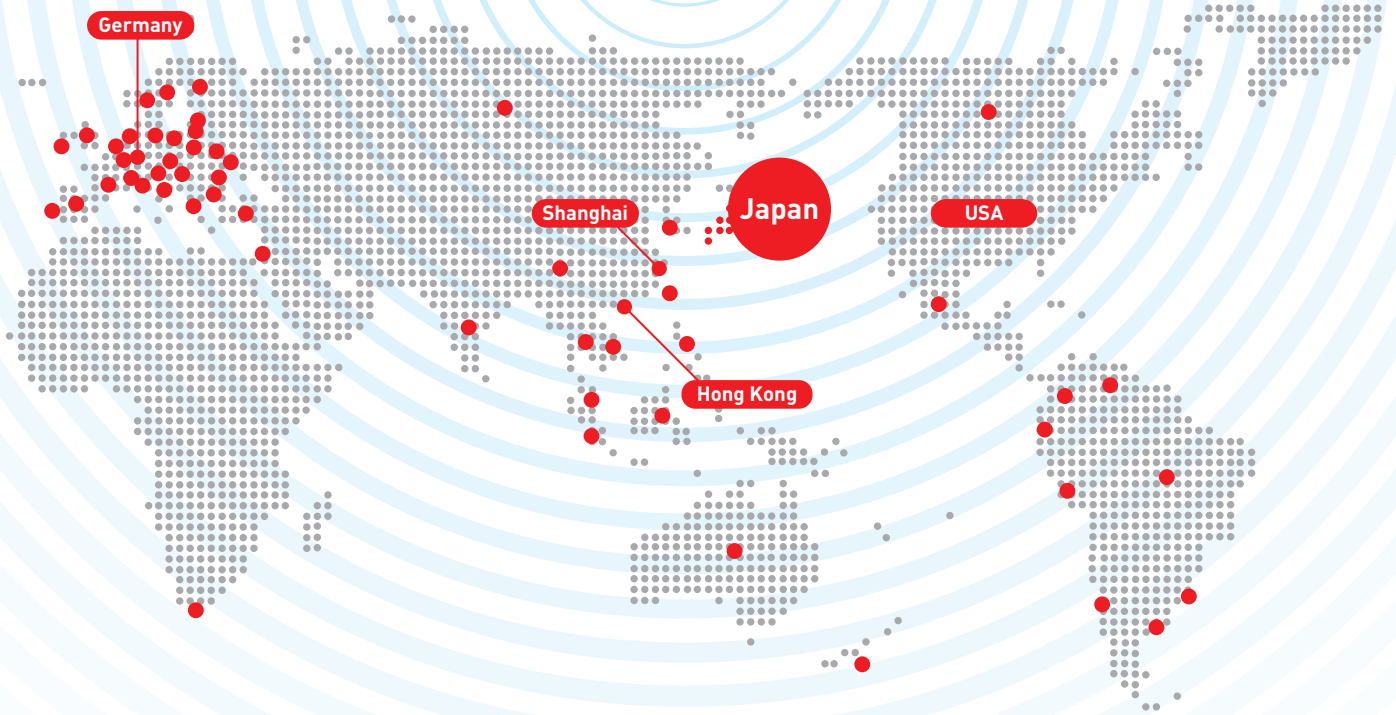
**Touch Screens + Switches**  
**Promoting Solutions that Support Ease of Use**



Combining NKK's touch screens and switches create added value. We're committed to responding to the challenge of diverse requirements through performance that exceeds expectations in various aspects. These include panel design, procurement of entire integrated screens, and cost reductions achieved through miniaturization and other solutions.



# A World-wide Distribution of Sales and Services



## Custom Requests



We welcome custom requests for products tailored to specific needs.

- **Specialty films (e.g., antifingerprint film)**
- **Nonstandard sizes (e.g., 3.5 inches, wider screens)**
- **Customized tail positions, pin-outs and dimensions**
- **Number of keys for digital touch screens (e.g., 80 keys, 1,200 keys)**

We can build products to meet specifications for special-order products.

Contact us for unique solutions.

\*Listed specifications are subject to change without notice. Please contact our sales department for the latest specifications.

### **NKK Corporate Headquarters**

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