Moisture & Water Tolerant Touch display for Industrial Applications

What's on our July Newsletter...

- ***Moisture/ Water-resistant Touch Display***
  - Water and Touch Performance
  - Suggestions on System Design for Better Water-resistance

Moisture/ Water-resistant Touch Display

DigiWise is excited to share with you that our **13-121GDEBUAA3-C** is now approved by the Car Wash Machine maker. The specification would be **12.1", 1024*768, IPS, with PCAP 1000nits/Typical, 6mm Cover glass, OCR Bonding, -20 to +70℃ Operating temperature**.

As the easy-to-use touch screen applications being widely adopted in our daily lives, customers are now considering employing more related devices to increase convenience. Furthermore, customers may also need a touch panel that is smart enough to tell **whether there is water on the screen** or not for better adaptability to various environments and scenarios.

Since the water signal is similar to human fingers, the touch panel was designed to automatically alter between two touch modes by detecting whether there is water on the screen. When the surface is completely dry or with a tiny amount of moisture, the touch panel would work under a **multi-finger touch** mode. In contrast, if there is a sizable water presence on the screen, the touch panel would automatically switch to **single-finger touch** to minimize the interference of water.

※ The above is described as an ideal state, the actual usage would vary by the water condition, control IC drive capability, casing design, and the materials used. Under specific circumstances, Multi-finger touch must be changed to Two-finger or Single-finger touch.

1. Water and Touch Performance

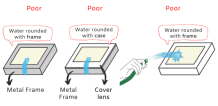
Liquids or conductive materials can affect mutual capacitance signals and make touch performance unstable. Below describes how the touch performance being affected by water for a projected capacitive (PCAP) touch system.

Condition	Touch Performance
 Wet finger	Drawing with wet finger may cause few jitters or inaccurate effects on sensitivity and linearity.
 Spray/ Moisture	Spraying water/ adding moisture to the surface may cause jitters or inaccurate effects on sensitivity and linearity.
 Water drips	Running water drips might cause a false touch. There may also be breaks or jitters when drawing across the drips.
 Pouring	Pouring may cause a false touch. There may also be some breaks or jitters when drawing across pouring water.
 Puddles	Puddles may cause obvious false touch. There might also be some breaks or jitters in the trace when drawing across puddles.

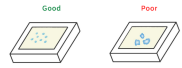
2. Suggestions on System Design for Better Water-resistance

a. The system should be a flat surface design and able to drain water off easily.

b. The border around the touch sensor should not be conductive. Water will be grounded to the system through the metal border. The water signal is similar to a real touch. If water connects users and touch panel, it is similar to a finger touch, too.



c. Water-repellent coating (AS coating) on the cover glass can make great help to decrease the water contact area, which reduces the water interference signal strength.



d. A proper UI design can help reduce the risk of abnormal operation, since the water is more easily to have false touches on the edge area. Please avoid designing UI functions around the edge area.

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