

# Tough Panel with White LED Backlight, Designed Specifically for Heat & Humidity of Indian Sub-Continent



60°C  
95% Humidity  
4 yr Warranty

1 lakh  
hrs

Typical Ambient : 45°C  
Rise Inside Panel : 10-15°C  
**HMI Temperature : 55-60°C**  
**Maximum Temperature of HMI  
with CCFL : 50-55°C**

***No wonder LCD HMI does not last  
too long in the heat & humidity of  
Indian Sub-Continent***

**Current CCFL Technology:** Until now all LCD displays in HMIs have utilized Cold Cathode Fluorescent Light bulb. CCFL works fairly well in US, Europe and Japan where ambient temperatures typically do not exceed 30°C, however, CCFL is a problem in the Indian sub-continent where the ambient itself is 45°C. **STN** displays with CCFL have a maximum operating temperature of 45°C and the bulb is rated for 20,000 - 30,000 hours at 25°C. STN displays also have a limited viewing angle, i.e. operator has to be right on top the display to be able to view it. **TFT** displays with CCFL have a maximum operating temperature of 50°C and the bulb is rated for 40,000 - 50,000 hours at 25°C. TFT displays have a wider viewing angle i.e. operator can view it from the side as well. However even the TFT display cannot last longer than 20,000 - 25,000 hrs in the heat & humidity of Indian Sub-Continent.

**Uticor's White LED Technology:** Uticor ever since its invention of PLC in 1968 has always being 2-5 years ahead of other competitors in automation. CCFL is no different. Uticor is the first Automation company to introduce white LED technology. White LEDs are brighter, can operate at 60°C, have a longer life of minimum of 100,000 hours at 60°C and there is no wet bulb temperature phenomenon!

**Conformal Coating:** All products have conformal coat on its Printed Circuit Boards which increases the life of the product by protecting inner circuits and components from moisture, salt spray, aggressive chemicals and vapors, ideal protection from Indian humidity and dust.

**4 Year Warranty:** All Uticor products carry a limited 4 year warranty. All Toughpanel components are covered except for Touch screens.



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