ADLINK
LEADING EDGE COMPUTING



# How to Create a HMI for Injection Molding Machines

Application Story

## Overview

A large number of machine makers leverage commercial off-the-shelf products to find time-efficient, low-effort solutions for the development of a human machine interface (HMI). For instance, in injection molding machines, a HMI is used to regulate temperature, pressure, and speed parameters of injection molding processes, as to enable such equipment to mass produce high-quality components.

## Challenges

1. However, an injection molding machine integrates mechatronics subsystems that generate noises. It is important for the HMI to be equipped with electromagnetic resistance to faithfully receive and deliver touch commands to a machine controller.

2. Additionally, the HMI mostly has to operate in hot environments due in part to the high temperatures involved in injection molding, ranging from 120°C to 320°C depending on the plastic materials used. Even though mold temperatures are relatively lower, they can reach up to 100°C, causing a considerable heat load on the HMI.

3. Finding an effective solution on the market might resemble looking for a needle in a haystack, yet custom indicator lights are required for application-specific scenarios. To this end, deploying a commercial off-the-shelf industrial touch screen monitor can potentially save machine makers a great deal of time and resources.

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## ADLINK OM Series

| Model | OM-101 | OM-156 | OM-215 |
|---|---|---|---|
| Size | 10.1” | 15.6” | 21.5” |
| Resolution | 1280 x 800 | 1920 x 1080 | |
| Aspect Ratio | 16:9 | | |
| Brightness | 400 nits (w/ touch) | | |
| Backlight Life (Hrs) | 50,000 | | 30,000 |
| Touchscreen | 10-point, PCAP | | |
| Op. Temp | -20°C~70°C | | -20°C~60°C |
| IP Rating | Front IP65 | | |
| Mounting | VESA/Panel | | |

*For more screen sizes and resolutions, please visit our website

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# ADLINK Solution

The ADLINK OM series open-frame industrial touch screen monitors are an ideal fit thanks to their industrial-grade reliability and flexible architecture that enables fast customization.

## Guaranteed signal integrity

In terms of injection molding applications, the OM series products can guarantee the signal integrity of touch commands by interfacing with the machine controller using a standard interface through universal serial bus (USB). Based on the machinery, the OM series products can be further fine-tuned to enhance touch responsiveness and electromagnetic compatibility.

## Seamless integration

The open-frame architecture of the OM series is another major feature. Machine makers can brand OM series products by adding a custom-built chassis for seamless integration into injection molding machines.

## Wide temperature range support

As for the heat load, ADLINK's OM series products are industrial-grade touch screen monitors designed to operate under a wide temperature range from -20°C to 70°C in order to deliver reliable thermal resistance during injection molding processes.

## Bespoke functionality

The scaler board inside ADLINK's indus-trial touch screen monitors is another valuable advantage, allowing OM series products to be programmed for custom indicator lights based on a variety of operation scenarios.

# Benefits

Open-frame industrial touch screen monitors allow manufacturers of injection molding machines to accelerate development. As the touch screen monitors provide industrial-grade reliability, it is not necessary for manufacturers to create a HMI from scratch, and they can instead move ahead directly to touch functional testing, mechanical design, and programming to adjust the HMI to meet use requirements.

The flexible architecture and open-frame design can cut down the time and effort spent on developing a control board for indicator lights; and facilitate the integration between the injection molding machine and HMI, accelerating machine makers' time to market.



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