

Case Study

How faytech's Human Machine Interface (HMI) solutions overcame the challanges faced by **MARO Manfred Rottenhofer GmbH**

Introduction

MARO Manfred Rottenhofer GmbH (further reffered to as MARO), a medium-sized, family-operated company has moved forward to become a leading supplier of standard and special-purpose machine systems as well as machines and components for automation, winding and coiling technologies. They have been looking for a suitable hardware partner to support them with suitable hardware in the area of HMIs for their customers.

The special requirements for the HMI and the possibility to use it with the existing PLCs became a task for potential suppliers. In 2022 they became aware of faytech and started discussions to set up a solution with a possible cooperation.

faytech was able to meet the requirements, successfully performed the first test on the system and started production for this application.

Challenges and Requirements

Since MARO's systems had already been running process-stable for many years and no further changes were to be made to the machines' hardware for the use of new HMIs, there were a few challenges that faytech had to meet:

- The HMI must be integrated into the existing control system
- There must not be more effort in programming
- Complete IP65 solution for the potentially harsh environment
- A stable touch solution with high quality brightness control for day- and night-time operation
- Possibility to integrate the HMI to existing / standard equipment
- Easy Installation and commissioning
- Different sizes for different installations, interchangeable

MARO used the faytech's displays for the demonstration system for the following reasons:

- different display sizes for demonstration of the processes on the equipment
- High quality response of the touch function
- Possibility of visualization with the existing PLC
- Solid IP65 solution for the harsh production environments

faytech's 7" and 12.1" HMI Solutions

After discussions with the team and the customer, it was decided to recreate a specific solution for the requirements and challenges.

In addition to the above requirements, it was also decided to include additional shielding so that the HMIs in the cabinet would not be exposed to unnecessary interference. The possibility of installing additional BUS interfaces was also considered, so that existing machines can also be retrofitted with the HMIs. The installation dimensions were chosen so that designers could integrate the HMIs into existing and new machines with as little effort as possible.

The finished solution was built with all points in mind so that all requirements are met.

faytech's 7" and 12.1" HMI (Open Frame) Capacitive Touch PCs

Housing: Aluminum with IP65 front (Open Frame)
Mounting: Clamp Supports & VESA 100 mounting

Displays: faytech's 7" / 12.1" Capacitive Touch Monitor (optically bonded)
Mainboards: Intel® Atom® x6211E / Intel® Celeron® J6412 QuadCore
Memory & Storage: 4GB Memory & 120GB SSD
OS: Windows 10/11 (+ Siemens WinCC)



Connectors: 24V DC-In (3-pin)
HDMI & DP
USB 3.0 & USB 2.0
RJ45 LAN
RS485 (3-pin) & RS422 (5-pin)
COM RS232 - RX/TX (DSUB9)
Mini-USB & Audio
PROFIBUS / PROFINET (optional)

Certificates: CE, FCC, CCC

Additional Features:
- 100k hours backlight
- Resolution of 1280×800
- Ratio of 16:10 - easy interchangeable
- Windows 10/11 or Linux compatible
- Also supports EtherCat





The Benefits & Results

With the first units implemented into the machinery of MARO in Q2 of 2022, the results have been extremely positive. With comments on easy integration, interchangeability and overall user experience. The benefits have been shown for the integrators and operators.

Integrators
Easy intallation - No need to hassle with new software, it can easily replace the existing HMI in use. Even switching displays is an ease due to the same ratio implemented across the two versions (no additional adjustments required).
Easy mounting/integration - With the mounting options available, the units can easily be integrated into any machine, simply by using the clamp supports holes at the back of the devices. Additionally, with the available connectors, any peripheral or port can be connected to.

Operators
Touch functionality - No issues with operating the touch display while using industrial gloves or while there is moist / water-droplets on the screen.
Crisp screen quality - Optical bonding allows for the best picture quality, while still being ruggedized. even with limited resolution, the display quality is decent.

MARO Results
Test Phase started in Q2 of 2022 (ongoing)

- **Increased efficiency in exchanging HMI displays**
  In the short time-span of testing the displays, the time to implmenent and replace the units has decreased significantly compared to previous units (due to no additional installation requirements).

- **Increase in overall engineer satisfaction**
  With the connectors and integration possibilities, as well as mounting options, the engineers had significant less issues integrating the units into the machinery.



German Engineering – Asian Manufacturing – Local Services

faytech specializes in the design, development, manufacturing and marketing of **Touchscreen Monitors** and **Touchscreen PCs**, while also providing Optical Bonding and **Antimicrobial Coating services**. With its roots in Germany, faytech today sells and supports Touch Monitors and Touch PCs on a worldwide basis. faytech offers German engineered products, manufactured in Asia with local service.