SIMATIC Panels and Panel PC with stainless steel front
Designed for Food and Beverage Industries
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Application area
Quality and hygiene are crucial competitive features in the production of food and beverages. Increased output in shorter cycles is also demanded in the face of rising quality demands. Objects and equipment that come into contact with food:

- must be kept in such a manner as to be clean and well maintained at all times, able to be disinfected if required, and free from any substance which could have a detrimental effect on food
- must be installed in such a way that the immediate vicinity can be reasonably and appropriately cleaned

„Objects and equipment must be clean and well maintained.” Excerpt from the Food and Hygiene Act (Germany). This requires not just the innovative know-how of engineering offices, mechanical equipment manufacturers and plant builders, but also modern, powerful human machine interface systems whose hardware and software are adapted to the special requirements.

Panels and panel PCs with touch screen and stainless steel front are designed for use in the food and beverage industry for machine-level operation and monitoring. The devices with stainless steel front have therefore been developed on the basis of EN 1672-2 "Food Processing Machines - Safety and Hygiene Requirements".

Easier cleaning and disinfecting
The high quality demanded by food and beverages requires a high standard in food processing machines. A complicated set of rules, guidelines, regulations, standards and legislation apply here. A central point is that all equipment and components must be easy to clean and disinfect to avoid any contamination of the food produced.

The panels with a stainless steel front have a grinded surface. The membrane covering the display cutout has been tested for its resistance to chemicals, and it minimizes grooves and joints in which micro-organisms can settle. It also protects the environment against display shiver.

Highlights
- Rugged, stainless steel fronts with grinded surface for easy cleaning
- Optimized frame design for liquid run-off
- Field-proven functionality of the SIMATIC HMI standard products
- Minimized grooves and joints and enhanced resistance against common cleaning agents and disinfectant
- Non-migrating sealing material food safe, and a chip guarded display to avoid food contamination

High degree of protection for humid environments
With a shallow mounting depth and a rugged front, the SIMATIC HMI standard panels are eminently suitable for industrial use at the machine level. The panels with stainless steel front are also better equipped for the high requirements that apply in the vicinity of food and beverage production.

Degree of protection IP66 also protects against water with a jet strength of 100 l/min at 1 bar from a distance of 2.5m to 3m. This ensures good run-off of liquids thanks to the optimized frame design and minimal projection of the device from the control cabinet.

Installation of operator panels into the stainless-steel switching unit as a ready-to-install, ready-to-connect operator station is an option which is available as a customized version.
SIMATIC Panels and Panel PCs with stainless steel front

Technical Overview

<table>
<thead>
<tr>
<th>Touch Panel</th>
<th>Multi Panel MP 277</th>
<th>Multi Panel MP 370</th>
<th>Panel PC 677</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Display</strong></td>
<td>5.7” color STN Touch</td>
<td>10.4” color TFT Touch</td>
<td>15.1” TFT Touch</td>
</tr>
<tr>
<td><strong>Resolution (pixels)</strong></td>
<td>320 x 240</td>
<td>640 x 480</td>
<td>1024 x 768</td>
</tr>
<tr>
<td><strong>MTBF of backgr. lighting (at 25 °C)</strong></td>
<td>50,000 h</td>
<td>60,000 h</td>
<td>50,000 h</td>
</tr>
</tbody>
</table>

**General features**

- **Processor**
  - TP 177B: RISC 32 bit
  - MP 277: RISC CPU
  - MP 370: MIPS CPU
  - Panel PC 677: Intel Pentium M technology, Intel Celeron M370 1.5 GHz, Intel Pentium M730 1.6 GHz, Intel Pentium M760 2.0 GHz

- **Memory**
  - TP 177B: 2 MB
  - MP 277: 6 MB
  - MP 370: 12 MB
  - Panel PC 677: 256 MB RAM to 2 GB

- **Power supply**
  - TP 177B: 24 V DC
  - MP 277: 24 V DC
  - MP 370: 24 V DC
  - Panel PC 677: 110V / 230V AC (autorange) 50/60 Hz; or 24V DC

- **Operating system**
  - TP 177B: Windows CE
  - MP 277: Windows CE
  - MP 370: Windows CE
  - Panel PC 677: Windows 2000 Prof. (MUI), Windows XP Prof. (MUI), opt. w/o operating system

- **Interfaces**
  - TP 177B: 1 x RS 422, 1 x RS 485, 1 x USB, 1 x Multi Media Card Slot
  - MP 277: 1 x RS 422, 1 x RS 485, 2 x USB, 1 x RJ45 Ethernet, 1 x Multi Media Card Slot
  - MP 370: 1 x TTY / RS 232, 1 x RS 232, 1 x RJ45, 1 x RS 232, 7 RS 485, 1 x PC Card Slot, 1 x CF Card Slot, 1 x USB
  - Panel PC 677: 1 x COM 1, V.24, 2 x RJ45 Fast Ethernet, 1 x PROFIBUS/MPI, 4 x USB rear, 2 free PCI slots

- **Special features**
  - TP 177B: –
  - MP 277: –
  - MP 370: –
  - Panel PC 677: Without front USB port

**Front**

- **Material**: Stainless steel 1.4301, polyester film
- **Surface**: Ground to a particle size of 240
- **Seal**: EPDM
- **Special features**: Optimized frame design, sloped surfaces

**Environmental conditions**

- **Degree of protection**
  - front: IP66K, NEMA 4, 4x and 12; rear: IP20
  - MP 277: IP66K, NEMA 4, 4x and 12; rear: IP20
  - MP 370: IP66, NEMA 4, 4x and 12; rear: IP20
  - Panel PC 677: IP66, rear: IP20

- **Ambient temperature/operation**
  - Vertical installation: 0 °C to 50 °C, max. angle of inclination +/- 35°: 0 °C to 40 °C
  - +5 °C bis 45 °C in full config.

- **Relative atmospheric humidity**
  - max. 85% (no condensation)
  - 5% to 80% at 25 °C (no condensation)

- **Transport/storage temperature**
  - -20 °C to 60 °C

- **Approvals**
  - FM Class 1 Div 2, cULus, CE, C-Tick, Ex-Zone 2/22
  - MP 277: FM Class 1 Div 2, cULus, CE, C-Tick, Ex-Zone 22
  - MP 370: FM Class 1 Div 2, cULus, CE, C-Tick, Ex-Zone 2/22
  - Panel PC 677: cULus, CE

- **Dimensions**
  - Front panel W x H (in mm)
    - TP 177B: 212 x 156
    - MP 277: 335 x 275
    - MP 370: 400 x 310
    - Panel PC 677: 483 x 310
  - Mounting cutout W x H (in mm)
    - TP 177B: 198 x 142
    - MP 277: 310 x 248
    - MP 370: 368 x 290
    - Panel PC 677: 450 x 296
  - External dimensions of clamping frame W x H (in mm)
    - TP 177B: 230 x 174
    - MP 277: 343 x 283
    - MP 370: 412 x 322
    - Panel PC 677: 495 x 322
  - Weight
    - TP 177B: approx. 1.5 kg
    - MP 277: approx. 4.4 kg
    - MP 370: approx. 7 kg
    - Panel PC 677: approx. 15 kg

- **Special features**
  - Clamping frame on the rear

- **HMI engineering software**
  - ab WinCC flexible 2005 SP1 Compact
  - WinCC flexible 2005 SP1 Standard or higher
  - ProTool, ab WinCC flex. Standard or higher
  - ProTool/ Pro, ab WinCC flexible Advanced or higher
  - ProTool/ Pro RT, WinCC flexible RT or higher

- **HMI runtime software**
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1) Multilanguage (MUI) corresponds to: GER/EN/FR/IT/SP/CHIN traditional/CHIN simplified/Korean/Japanese
Resistant, rugged and impervious to food splatter

An overview of the advantages

■ Easier cleaning thanks to resistant and rugged stainless steel front with grinded surface - grooves and joints are minimized
■ High degree of protection IP66 (TP 1778 and MP 277 addit. IP66K) on the front for enhanced seal and ruggedness
■ Seal impervious to food splatter and a chip guarded display to avoid contamination of the food
■ Optimized frame design with low projection from the control cabinet and good run-off of liquids
■ Device front based on EN 1672-2
■ Decorative membrane tested against chemicals in accordance with DIN 42115, Part 2. Note: special resistance requirements must be tested separately!
■ Flat seal approved for food industry in accordance with FDA 21 CFR 177.2006
■ A clamping frame on the rear included in the scope of supply guarantees even seal pressure
■ Outer dimensions and installation cutout as on the basic standard product

Additional customized modifications

■ Customized design
  - Insertion of company name instead of Siemens logo, and change in type identification
  - Modification of background color
■ Customized hardware modifications such as design and dimensions of the front, selection of the display, memory configuration, drives, options
■ Customized panel PC configuration as a hard-disk-free embedded system with rugged hardware and robust, tailored software
■ Customized software installation with a choice of Windows operating system
■ Customized applications for Windows CE-based panels (open platform program)
■ Device installed in stainless steel switching cabinet as ready-to-install and ready-to-connect terminal; ergonomic, functional and with high degree of protection and tested heat balance (e.g. degree of protection IP66)

In order to provide customized modifications a product agreement with minimum unit quantities is required.

Please address the HMI contact of your Siemens office/regional company:

www.siemens.com/automation/partners

Explanations

■ DIN 10516, Edition: 2001-01, Food Hygiene – Cleaning and Disinfecting
■ GMP – Good Manufacturing Practises

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