Are you planning to use new IT systems in your cleanrooms and GMP environments? We would be pleased to provide you with a wide range of services to support your project. With our comprehensive package, you have everything you need to satisfy GMP standards when working with your new hardware.

**PRODUCT OVERVIEW**

**HMI SYSTEMS FOR CLEANROOMS AND HYGIENIC PRODUCTION - CUSTOMIZED COMBINATIONS AND CONFIGURATIONS**

**SERVICES**

All-round service for the commissioning, qualification, and maintenance of cleanroom IT systems. Are you planning to use new IT systems in your cleanrooms and GMP environments? We would be pleased to provide you with a wide range of services to support your project. With our comprehensive package, you have everything you need to satisfy GMP standards when working with your new hardware.

Customized products and solutions: Our products are scalable and can be configured to suit individual requirements. Customer-specific product modifications and special designs are no problem - even if only small quantities are involved.

To find out more: talk@systec-solutions.com systec-solutions.com

**SIMPLE AND SECURE AUTHENTICATION**

Electronic authentication solutions, employing an RFID card or Nymi Band for example, permit efficient and secure working. User authentication then takes just a matter of seconds, reduces the risk of incorrect entries, and saves a significant amount of time.

**PRODUCT OVERVIEW**

**HMI SYSTEMS FOR MOBILE AND MOUNTED SOLUTIONS**

- **WAVE**
- **PILOT**

**MOBILE WORKSTATIONS - WITH STRONG BATTERY PACK AND WLAN**

- **TROLLEY MAXI**
- **TROLLEY LIGHT**
- **TROLLEY COMPACT**

**LABORATORY WORKSTATIONS**

- **IP65 STAINLESS STEEL HOUSING**

**MOUNTING SYSTEMS**

**CLEANROOM KEYBOARDS**

- Glass keyboard (in stainless steel housing or integrated)
- foil keyboard (in stainless steel housing or integrated)

**TABLETS**

- Stainless steel tablet

**EX-PROTECTED SYSTEMS**

- Visunet

**CONNECT BOX**

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**PRODUCT OVERVIEW**

**HMI SYSTEMS FOR IN-WALL MOUNT**

- CONTROL
- MODI

**TABLETS**

- Stainless steel tablet

**EX-PROTECTED SYSTEMS**

- Visunet

**CONNECT BOX**

- Nymi Band

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Systec & Solutions follows the EHEDG guidelines.

**Pharmaceutical industry**

Modern touch-screens make the systems easy to operate. The operation of the multi-touch screens works impeccably with cleanroom gloves. Numerous interfaces, an enclosed stainless steel housing with no edges, and an IPS display offering outstanding clarity are just some of the advantages of the systems from Systec & Solutions.

**Cosmetics industry**

Systec & Solutions GMP-IT satisfies the IP65 requirements and is ideal for use in the production sector of the cosmetics industry. The HMI- and TRONLEY-systems as well as the keyboards are all of hygienic, edge-free design and resistant to aggressive cleaning agents and disinfectants. Displays with optical bonding and PCT multi-touch provide perfect clarity. We would be pleased to help you work out an individual solution to suit your production environment.

**Food industry**

Fanless Systec & Solutions PC systems with industrial components in an IP65 rated stainless steel housing satisfy the hygiene requirements of the food industry – and in particular the dairy processing industry. The systems can be used in damp surroundings and dusty production environments. Cleaning with acid-based cleaning agents is also no problem. The PILOT HMI system and glass keyboards can optionally be provided with a laminated polyester film. This shatter-proof glass front then helps to ensure compliance with the HACCP safety requirements.

Systec & Solutions GmbH, with headquarters in Karlsruhe (Germany), is a specialized manufacturer of hardware solutions for the pharmaceutical, cosmetics and food industry as well as for hospitals to name a few. Our products have been utilized by nearly all established pharmaceuticals companies for years.

**GMP-IT - Industry-compatible & durable**

Regulated industries comply to GMP standards and our GMP-IT hardware systems are fully equipped to meet the challenges. An uncompromising industrial design, employing only industry-grade components, guarantees highest quality and long-term availability.

**Cleanroom-compatible & highly efficient**

All of our systems are fully encapsulated and IP65 rated. They are easy to clean and satisfy the hygiene requirements of the pharmaceutical, cosmetics and food industry.

**Ruggedly constructed & compatible**

Our systems and platforms are specifically developed for long-term operation in demanding production environments. They prove themselves in practice daily, dealing with vibration, shock, humidity, water or dust. They are retrofitable and upgradable, compatible with established hard- and software systems and are easy to integrate into the existing IT landscape. Our GMP-IT products are ideally suited to applications such as workstations for MES software, Distributed Control Systems (DCS) and ERP software, room status displays and the presentation of KPI and OEE figures.

DRIVEN BY INNOVATION

YEARS OF EXPERIENCE, HIGHEST QUALITY, LATEST TECHNOLOGIES - OUR PRODUCTS ARE USED BY NEARLY ALL TOP-20-PHARMACEUTICAL COOPERATIONS

Systec & Solutions follows the EHEDG guidelines.
Straight forward cleaning, cutting-edge technologies, and a modern design – The WAVE HMI system was developed to make everyday working life in cleanrooms easier, safer and better.

Made with an IP65 stainless steel housing, the system permits rapid, thorough cleaning with almost all cleaning agents and disinfectants. It features operation by way of an optically bonded PCT multi-touch display or using suitable cleanroom keyboards. Equipped with a brilliant IPS display, the WAVE HMI system offers high color accuracy, distinct color presentation, and virtually unrestricted viewing angles. It provides an ideal display for MES software, ERP and Distributed Control Systems (DCS).

The WAVE can be configured on flexible support arm systems, on mobile GMP operating stations, or as a laboratory workstation to suit requirements. The system can also be equipped with a keyboard and various other accessories, such as a scanner holder and speakers.

THE IDEAL HMI SYSTEM FOR CLEANROOMS AND GMP ENVIRONMENTS IN THE PHARMACEUTICAL INDUSTRY

The HMI system WAVE is available in 19” - 55”.

The HMI system WAVE is available in 19” - 55”.

TECHNICAL DATA OF THE HMI SYSTEM WAVE CAN BE FOUND ON PAGE 10.
TECHNICAL DATA

MODEL

WAVE 219
WAVE 221
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DISPLAYS AND CONTROLS

Display

15" IPS LCD display (5:4 format, approx. 170° viewing angle, 1024 x 768)
15.6" IPS display (16:9 format, approx. 178° viewing angle, 1920 x 1080 Full HD)
24" IPS LCD display (16:9 format, approx. 178° viewing angle, 1920 x 1080 Full HD)
27" IPS LCD display (16:9 format, approx. 178° viewing angle, 1920 x 1080 Full HD)
32" IPS LCD display (16:9 format, approx. 178° viewing angle, 1920 x 1080 Full HD)
55" LCD display (16:9 format, approx. 178° viewing angle, 1920 x 1080 Full HD)

Resolution

1280 x 1024 SXGA
1920 x 1080 Full HD
1920 x 1080 Full HD
3840 x 2160 UHD
1920 x 1080 Full HD
1920 x 1080 Full HD
1920 x 1080 Full HD

Touchscreen

Analog resistive
Analog resistive or anti-glare PCT (projected capacitive multi-touch with optical bonding)
Anti-glare PCT (projected capacitive multi-touch with optical bonding)

Keyboard (optional)

Keyboard with glass or foil surface, mounted on torque hinge with concealed cabling, with touchpad

CONFIGURATIONS

Industrial PC

Intel® Celeron® N2930 1.83 GHz / Burst 2.16 GHz, quad-core*
Intel® Core™ i3-5010U 2.1GHz, Dual-Core*
Intel® Core™ i5-7300U (7th gen.) 2.6 GHz / Turbo 3.5 GHz, Dual-Core
Intel® Core™ i7-5650U 2.2GHz / Turbo 3.1 GHz, Dual-Core
Intel® Core™ i7-7600U (7th gen.) 2.8 GHz / Turbo 3.9 GHz, Dual-Core

Operating system

Windows® 10; (Android; Linux; Windows 10 Enterprise LTSB/LTSC and others upon request)

System memory

4 GB DDR3 up to 16 GB DDR3 (DDR4 at 7th Gen.)

Storage capacity

120 GB SATA 500; additional memory sizes and types upon request

I/O Interfaces

1-4x USB 3.0, 1-4x USB 2.0, 1-2x Gigabit Ethernet, 1-2x RS 232, additional interfaces upon request

Equipped PC (optional)

WLAN, Bluetooth®, RFID/NFC/Smartcard reader (compatible with Nymi Band), speaker, upon request: webcam, microphone

Thin Client

Thin Client (e.g. IGEL) for sessions of Microsoft (RDP), VMware, Citrix, VNC and others

DisplayPort (optional: VGA, HDMI)

PHYSICAL CHARACTERISTICS

Power supply

100 - 240 V AC, 50 - 60 Hz, or 9 - 36 V DC

Power consumption

40 W (industrial monitor)
31 - 105 W (IPC, depending on configuration)
45 W (industrial monitor)
45 W (IPPC, depending on configuration)
40 W (industrial monitor)
55 - 90 W (IPC, depending on configuration)
56 W (industrial monitor)
56 W (IPPC, depending on configuration)
50 W (industrial monitor)
60 W (IPPC, depending on configuration)
130 W (industrial monitor)
145 - 160 W (IPC, depending on configuration)

Dimensions (Approx. mm)

W 445 / H 390 / D 55
W 567 / H 380 / D 55
W 615 / H 414 / D 55
W 690 / H 450 / D 55
W 820 / H 520 / D 55
W 1300 / H 800 / D 60

Weight

Approx. 9 kg
Approx. 10 kg
Approx. 12 kg
Approx. 14 kg
Approx. 23 kg
Approx. 45 kg

Certification

CE, FCC, TÜV (optional)

IP rating

IP65
PILOT

THE PERFECT PC FOR HYGIENE REQUIREMENTS IN THE FOOD, BEVERAGE AND COSMETICS INDUSTRIES

The PILOT HMI system is the compact solution for 17.3 to 21.5 inch applications. The system is exceptionally well suited to use in the food and beverage industry, for example. With a laminated polyester film to reduce reflection and guard against splinters of glass, they are optimally designed for specialized fields such as the manufacture of dairy products.

The brilliant IPS display provides ideal presentation for MES software, ERP and Distributed Control Systems (DCS). Thanks to its robust IP65 stainless steel housing, the system is just right for mechanical engineering applications as well. Any necessary control elements and emergency stop switches can be added.

The PILOT can be configured on flexible support arm systems, on mobile GMP operating stations, or as a laboratory workstation to suit local application and installation requirements.

Ideally equipped to satisfy hygiene requirements in the food, beverage and cosmetics industries
- Laminated polyester film to guard against splinters of glass
- Less cleaning work required thanks to fully encapsulated design of stainless steel housing in accordance with protection class IP65
- Suitable for regular cleaning with disinfectants and cleaning agents
- 17.3”/19”/21.5” LCD display with LED backlight technology
- Intuitive multi-touch display with optical bonding. Operable with cleanroom gloves.
- Non-reflecting PCT display. IPS panel with up to 178° viewing angle from all sides.
- Available as industrial PC, industrial monitor, thin client (e.g. IGEL)
- Wide range of mounting systems available for installation on walls, ceilings and stands
- Control elements and emergency stop switches can be added on request
- Customized solutions available on request

TECHNICAL DATA OF THE HMI SYSTEM PILOT CAN BE FOUND ON PAGE 14.
## TECHNICAL DATA

### PILOT

#### MODEL

<table>
<thead>
<tr>
<th>PILOT 217</th>
<th>PILOT 219</th>
<th>PILOT 221</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industrial PC, Thin Client, Monitor</td>
<td>Industrial PC, Thin Client, Monitor</td>
<td>Industrial PC, Thin Client, Monitor</td>
</tr>
</tbody>
</table>

#### DISPLAYS AND CONTROLS

**PILOT 217**

- 17.3" TN-LCD display (16:9), LED backlight
- 1920 x 1080 Full HD

**PILOT 219**

- 19" IPS-LCD display (5:4) with approx. 178° viewing angle, LED backlight
- 1920 x 1080 Full HD

**PILOT 221**

- 21.5" IPS-LCD display (16:9) with approx. 178° viewing angle, LED backlight
- 1920 x 1080 Full HD

#### Design

- Compact, enclosed stainless steel housing

#### DISPLAYS AND CONTROLS

**PILOT 217**

- Keyboard with glass or foil surface, mounted in torque hinge with concealed cabling, with touchpad

**PILOT 219**

- Keyboard with glass or foil surface, mounted in torque hinge with concealed cabling, with touchpad

**PILOT 221**

- Keyboard with glass or foil surface, mounted in torque hinge with concealed cabling, with touchpad

#### CONFIGURATIONS

**PILOT 217**

- **Industrial PC**
  - Intel® Celeron® N2930 1.83 GHz / Burst 2.16 GHz, quad-core

**PILOT 219**

- **Industrial PC**
  - Intel® Core™ i3-5010U 2.1GHz, Dual-Core

**PILOT 221**

- **Industrial PC**
  - Intel® Core™ i5-7300U (7th Gen.) 2.6 GHz / Turbo 3.5 GHz, Dual-Core

#### Operating systems

- Windows® 10; (Android; Linux; Windows 10 Enterprise LTSB/LTSC and others upon request)

#### System memory

- 4 GB DDR3 bis 16 GB DDR3 (DDR4 at 7th Gen.)

#### Storage capacity

- 128 GB mSATA SSD; additional memory sizes and types upon request

#### I/O Interfaces

- 1-4x USB 3.0, 1-6x USB 2.0, 1-2x Gigabit Ethernet, 1-3x RS 232, additional interfaces upon request

#### PHYSICAL CHARACTERISTICS

**PILOT 217**

- Power supply: 100-240 V AC à 50-60 Hz, or 9-36 V DC
- Power consumption: 20 W (industrial monitor)
- Dimensions (approx. mm): W 461 / H 324 / D 55
- Weight: Approx. 8 kg
- Housing: Stainless steel, type 1.4301 (AISI 304), type 1.4404 (AISI 316L) optional
- IP rating: IP65

---

Example configuration: PILOT 219 + keyboard TNG + scanner holder
CONTROL

THE FITTED PANEL FOR OPTIMAL INTEGRATION INTO WALLS IN CLEANROOMS AND GMP ENVIRONMENTS

The CONTROL HMI system is a particularly space-saving and easy to clean option for integration into walls, machines and cabinets. It can be fitted from the front with a stainless steel frame or flush-mounted without a frame from the back. The front of both versions conforms to IP65.

The system comes with an optically bonded PCT multi-touch display for intuitive operation, offering high color accuracy, distinct color presentation, and virtually unrestricted viewing angles. It provides an ideal display for MES software, ERP and Distributed Control Systems (DCS).

An outstanding feature of the fitted panel is its shallow installation depth. An IP65 stainless steel protective enclosure for fitting between display and wall is also available on request. This retains the clean-room status if the panel has to be removed.

TECHNICAL DATA OF THE HMI SYSTEM CONTROL CAN BE FOUND ON PAGE 18.
## TECHNICAL DATA

### MODEL

<table>
<thead>
<tr>
<th>MODEL</th>
<th>CONTROL (FM) 217</th>
<th>CONTROL (FM) 219</th>
<th>CONTROL (FM) 221</th>
<th>CONTROL (FM) 224</th>
<th>CONTROL (FM) 232</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Variants</strong></td>
<td>Industrial PC, Thin Client, Monitor</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### DISPLAYS AND CONTROLS

<table>
<thead>
<tr>
<th>CONTROL (FM) 217</th>
<th>CONTROL (FM) 219</th>
<th>CONTROL (FM) 221</th>
<th>CONTROL (FM) 224</th>
<th>CONTROL (FM) 232</th>
</tr>
</thead>
<tbody>
<tr>
<td>Display</td>
<td>17.7” TN LCD display (16:9), LED backlight</td>
<td>19” IPS LCD display (16:9) with approx. 178° viewing angle (optical bonding)</td>
<td>21.5” IPS LCD display (16:9) with approx. 178° viewing angle (optical bonding)</td>
<td>24” IPS LCD display (16:9) with approx. 178° viewing angle (optical bonding)</td>
</tr>
<tr>
<td>Resolution</td>
<td>1920 x 1080 Full HD</td>
<td>1280 x 1024 SXGA</td>
<td>1280 x 1024 SXGA</td>
<td>1366 x 768 Full HD</td>
</tr>
<tr>
<td>Touchscreen</td>
<td>Analog resistive or anti-glare PCT (projected capacitance) multi-touch with optional bonding</td>
<td>Analog resistive or PCT (projected capacitive) multi-touch (optical bonding upon request)</td>
<td>Analog resistive or anti-glare PCT (projected capacitive) multi-touch with optical bonding</td>
<td>Anti-glare PCT (projected capacitive) multi-touch with optical bonding</td>
</tr>
</tbody>
</table>

### CONFIGURATIONS

<table>
<thead>
<tr>
<th>CONTROL (FM) 217</th>
<th>CONTROL (FM) 219</th>
<th>CONTROL (FM) 221</th>
<th>CONTROL (FM) 224</th>
<th>CONTROL (FM) 232</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Industrial PC</strong></td>
<td>Intel® Celeron® N2930 1.83 GHz / Burst 2.16 GHz, quad-core</td>
<td>Intel® Core™ i3-5010U 2.1GHz, Dual-Core</td>
<td>Intel® Core™ i5-7300U (7th Gen.) 2.6 GHz / Turbo 3.5 GHz, Dual-Core</td>
<td>Intel® Core™ i7-5650U 2.2GHz / Turbo 3.1 GHz, Dual-Core</td>
</tr>
<tr>
<td><strong>Operating systems</strong></td>
<td>Windows® 10; (Android; Linux; Windows 10 Enterprise LTSB/LTSC and others upon request)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>System memory</strong></td>
<td>4 GB DDR3 bis 16 GB DDR3 (DDR4 at 7th Gen.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Storage capacity</strong></td>
<td>128 GB mSATA SSD; additional memory sizes and types upon request</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>I/O Interfaces</strong></td>
<td>1-4x USB 3.0, 1-6x USB 2.0, 1-2x Gigabit Ethernet, 1-3x RS 232, additional interfaces upon request</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Equipment PC (optional)</strong></td>
<td>WLAN, Bluetooth® 4.0/5.0, NFC/RFID reader (compatible with Nymi Band), speaker, upon request: webcam, microphone</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Thin Client</strong></td>
<td>Thin Client e.g. IGEL for versions of Microsoft BOB, VMware, Citrix, VNC and others</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Industrial monitor</strong></td>
<td>DisplayPort and DVI</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Equipment monitor (optional)</strong></td>
<td>RFID/NFC/Smartcard reader (compatible with Nymi Band), speaker, upon request: webcam, microphone</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### PHYSICAL CHARACTERISTICS

<table>
<thead>
<tr>
<th>CONTROL (FM) 217</th>
<th>CONTROL (FM) 219</th>
<th>CONTROL (FM) 221</th>
<th>CONTROL (FM) 224</th>
<th>CONTROL (FM) 232</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Power supply</strong></td>
<td>100 - 240 V AC, 50 - 60 Hz, or 9 - 36 VDC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Power consumption</strong></td>
<td>20 W (Industrial monitor)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Dimensions (approx., mm)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Frontframe CONTROLS</strong></td>
<td>W 504 / H 337</td>
<td>W 494 / H 430</td>
<td>W 616 / H 416</td>
<td>W 673 / H 470</td>
</tr>
<tr>
<td><strong>Mounting depth</strong></td>
<td>D 55 / D 40 (optional for DC devices)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>Approx. 9 kg</td>
<td>Approx. 10 kg</td>
<td>Approx. 11 kg</td>
<td>Approx. 12 kg</td>
</tr>
<tr>
<td><strong>Frontplate CONTROLS</strong></td>
<td>Stainless steel, type 1.4301 (AISI 304); type 1.4404 (AISI 316L) optional, brushed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Front side surface CONTROLS (FM)</strong></td>
<td>Toughened glass</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Certification</strong></td>
<td>CE, FCC / EFB (optional)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>IP rating</strong></td>
<td>IP55 Front side</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
MODI

IOT HMI SYSTEM FOR ROOM INFORMATION AND FOR BUILDING AUTOMATION IN A GMP ENVIRONMENT

All information on room and production status at a glance – this is what the intelligent, energy-efficient, network-capable MODI IoT HMI system has to offer. Conforming to GMP standards, the panel is also the perfect choice for building automation.

Intuitive operation is provided by an optically bonded PCT multi-touch display. It can be incorporated into a network via Ethernet or WLAN. The required data can thus be displayed on the MODI straight from the network, via a browser or by your own applications.

The special Easy Click Magnetic Mount (see Page 22) makes it particularly easy to install and remove the MODI. Flush-mounted installation in the wall ensures simple cleaning of the IP65 front panel. Alternatively, it can be installed on the wall using a stainless steel IP65 surface-mounted housing.

TECHNICAL DATA OF THE HMI SYSTEM MODI CAN BE FOUND ON PAGE 23.
MODI

INNOVATIVE MOUNTING CONCEPT FOR SIMPLE INSTALLATION & REMOVAL - EASY CLICK MAGNETIC MOUNT

The MODI HMI system is flush-mounted in the cleanroom wall and provided with a silicone seal. Simple, quick & reliable - Easy Click Magnetic Mount

To install, simply connect up the cable and insert the MODI in the opening. The Easy Click Magnetic Mount automatically fastens the MODI in the correct position. Once it has been sealed with silicone, the device is flush-mounted and easy to clean. The system can be replaced from the front after removing the silicone seal. This involves picking up the device with a suction cup and detaching it from the magnetic holders on the back. The connected cables can be detached after lifting the MODI out of the wall.

TECHNICAL DATA

MODI

MODEL MODI 107 MODI 110

**DISPLAYS AND CONTROLS**

**MODEL** MODI 107 MODI 110

**Display**

7" IPS LCD display (16:9), LED backlight

10.1" IPS LCD display (16:10), LED backlight

**Resolution**

1024 x 600 WSVGA

1280 x 800 WSVGA

**PC/i/o interface**

PCT capacitive multi-touch with optical bonding

**CONFIGURATIONS**

**Processor**

ARM Cortex-A53 1.4 GHz quad-core

Intel® Atom™ x5-Z8350 1.44 GHz / Turbo 1.92 GHz, quad-core

**Operating system**

Linux (Raspbian), optional: Windows 10 (Pro or IoT Core™), Android emteria.OS

**System memory**

1 GB with ARM CPU, 2 GB with Intel® CPU (other configurations upon request)

**Storage capacity**

16 GB with ARM CPU, 32 GB with Intel® CPU (additional flash memory upon request)

**I/O interfaces**

2x USB 2.0, 1x Gigabit Ethernet, additional interfaces upon request

**Equipment PC (optional)**

RFID/NFC/Smartcard reader, WLAN, Bluetooth®, CAN-Bus, additional equipment upon request

**PHYSICAL CHARACTERISTICS**

**Power supply**

5 V DC, optional: 12-24 V DC, PoE

**Power consumption**

6-25 W (depending on type)

10-30 W (depending on type)

**Dimensions (approx. mm)**

Mounting cutout

W 175 / H 110

W 245 / H 163

Weight

Approx. 0.5 kg

Approx. 0.8 kg

**Surface**

Toughened glass

CE, FCC / ISED (optional)

IP65 Dust tight
ACCESSORIES

EXTENSIVE RANGE OF CLEANROOM-COMPATIBLE ACCESSORIES TO SUIT EVERY REQUIREMENT

We can offer additional accessories for our systems to ensure simple and ergonomic everyday operation for users. These make it possible to tailor the HMI systems exactly to specific work processes and production environments.

All components were developed and optimized specially for use in cleanrooms. They are made entirely of stainless steel and cleanroom-compatible materials. The accessories can be seamlessly combined with the WAVE and PILOT HMI systems.

Please contact us for advice if you do not find exactly what you need. We would be pleased to offer you our customized modifications or designs.

- Scanner holder
- Secure authentication via CONNECT BOX and Nymi Band
- Speaker
- Scanner cradle holder - Power supply without external cables
- Cable manager on HMI system for TROLLEYS
- Nymi/RFID/NFC/Smartcard interface
- Adjustable stainless steel keyboard tray with torque hinge

IM5 stainless steel touchpen

Touchpen holder with stainless steel cable

Replaceable tip
AUTHENTICATION

SIMPLE AND SECURE AUTHENTICATION IN A MATTER OF SECONDS

Regular login, confirmation, and electronic signatures in accordance with 21 CFR Part 11 take up a lot of time and may become a security risk if workers fail to comply with the regulations for the secure use of passwords. Electronic or biometric authentication solutions, employing an RFID card or Nymi Band for example, permit more efficient and secure working. User authentication then takes just a matter of seconds, reduces incorrect entries, and saves a significant amount of time.

There are various options for incorporating the authentication interface - including integration into the glass keyboard or the use of a special CONNECT BOX attached to the HMI system. All the solutions conform to IP65 and were developed specially for cleanroom applications.

COMPATIBLE WITH NYMI

Nymi is a leading edge biometric security company. Our enterprise authentication delivers data integrity and security, allowing highly-regulated industries to achieve compliance and productivity.
CLEANROOM KEYBOARDS

GMP-STANDARD GLASS OR FOIL KEYBOARDS - IDEAL FOR CLEANROOMS

The glass and foil keyboards were developed specially for cleanroom applications - both are provided with particularly smooth and easy to clean surfaces. They are designed to withstand regular cleaning with the standard cleaning agents and disinfectants used in cleanrooms.

The keyboards are flush-mounted in a high-grade stainless steel housing and conform to protection class IP65. Glass keyboards operate on the capacitive principle with audio feedback. The short-stroke keys of foil keyboards feature tactile feedback.

Desktop, rack and built-in versions of the cleanroom keyboards are available and can be combined with WAVE, PILOT, CONTROL and TROLLEY systems. A freely adjustable torque hinge connects the keyboard to the HMI system. Wall mounting or cabinet installation is also possible using a double torque hinge. This permits internal cable routing and ergonomic setting of the angle of inclination to suit the user.

TECHNICAL DATA OF THE GLASS AND FOIL KEYBOARDS CAN BE FOUND ON PAGE 30.
### TECHNICAL DATA
#### CLEANROOM KEYBOARDS

<table>
<thead>
<tr>
<th>MODEL</th>
<th>TNG / TNGR</th>
<th>TNFA</th>
<th>ING / INGR</th>
<th>INFA</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Variants</strong></td>
<td>Desktop unit / torque hinge</td>
<td>Stainless steel, glass surface</td>
<td>Capacitive technology, tested with cleanroom gloves of varying thickness</td>
<td>Glass surface</td>
</tr>
<tr>
<td><strong>Design</strong></td>
<td>Stainless steel, glass surface</td>
<td></td>
<td>Capacitive technology, tested with cleanroom gloves of varying thickness</td>
<td></td>
</tr>
<tr>
<td><strong>FITTINGS</strong></td>
<td>Capacitive technology, tested with cleanroom gloves of varying thickness</td>
<td></td>
<td>Capacitive technology, tested with cleanroom gloves of varying thickness</td>
<td></td>
</tr>
<tr>
<td>Touch pad (integrated)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Fitting</strong></td>
<td>Optional TNG with integrated RFID/NFC/Smart card reader (compatible with Nymi Band)</td>
<td>RFCID/NFC/Smartcard reader</td>
<td>Optional INGR with integrated RFID/NFC/Smart card reader (compatible with Nymi Band)</td>
<td></td>
</tr>
<tr>
<td>Keyboard layout</td>
<td>Many country layouts available as standard, additional layouts upon request</td>
<td></td>
<td></td>
<td>Short stroke with tactile feedback</td>
</tr>
<tr>
<td><strong>Key specifications</strong></td>
<td>Capacitive keys with audible feedback, cleaning function, Auto-Lock (optional)</td>
<td>Capacitive keys with audible feedback, cleaning function, Auto-Lock (optional)</td>
<td>Capacitive keys with audible feedback, cleaning function, Auto-Lock (optional)</td>
<td>Short stroke with tactile feedback</td>
</tr>
<tr>
<td><strong>Keyboard surface</strong></td>
<td>Glass back-printed, optional with laminated protection film</td>
<td>foil, print with ergonomics finger guidance</td>
<td>Glass back-printed, optional with laminated protection film</td>
<td>foil, print with ergonomics finger guidance</td>
</tr>
<tr>
<td><strong>PHYSICAL CHARACTERISTICS</strong></td>
<td>TNG / TNGR</td>
<td>TNFA</td>
<td>ING / INGR</td>
<td>INFA</td>
</tr>
<tr>
<td>Connection</td>
<td>USB</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dimensions (approx. mm)</td>
<td>W 517 / H 30 / D 230</td>
<td>W 482 / H 30 / D 177</td>
<td>W 482 / H 20 / D 177</td>
<td></td>
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<tr>
<td>Weight</td>
<td>Approx. 4.5 kg</td>
<td>Approx. 2 kg</td>
<td>Approx. 2 kg</td>
<td></td>
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<tr>
<td>Housing</td>
<td>Stainless steel, type 1.4301 (AISI 304)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surface</td>
<td>Brushed, glass bead blasted (optional)</td>
<td></td>
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</tr>
<tr>
<td>Certification</td>
<td>CE, FCC/ISED (optional)</td>
<td>CE</td>
<td>CE</td>
<td></td>
</tr>
<tr>
<td>IP rating</td>
<td>ING</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
FLEXIBLE SUPPORT ARM SYSTEMS ARE THE RIGHT SOLUTION FOR ALL CLEANROOM ENVIRONMENTS

You are sure to find the best solution for your particular situation among our wide choice of available options, ranging from fixed installation to rotating and swivel-mounted systems. Dual-display solutions in vertical or horizontal arrangement are just as feasible as direct mounting on a wall, ceiling, floor or desktop.

The mounting systems can be implemented with our WAVE and PILOT HMI systems. It is also possible to add a keyboard, mounted on the HMI system by way of a torque hinge. This enables the keyboard to be ergonomically adjusted to suit each user.

The mounting arrangement is designed to ensure smooth transitions between the individual components. This considerably simplifies cleaning. Made entirely of stainless steel, all mounting solutions are IP65 rated.

We would also be pleased to produce a customized solution for you on request. And we can offer you assistance with installation, qualification and documentation as well.

CONFIGURATIONS

For optimum integration of IT systems in GMP environments and cleanrooms
Less cleaning work required thanks to smooth transitions between stainless steel components in accordance with protection class IP65
Suitable for regular cleaning with disinfectants and cleaning agents
Wide range of reliable mounting versions available, customized modifications and designs on request
HMI systems can be fitted in horizontal or upright position
Particularly ergonomic with rotating and swivel mounting
Comprehensive extra services such as hardware IQ and individual maintenance contracts, for example
The TROLLEY systems are mobile, flexible cleanroom workstations suitable for customized configuration. They offer the right solution for every situation, ranging from the space-saving version right through to a complete system.

The TROLLEY systems can be combined with the WAVE and PILOT HMI systems. The TROLLEY MAXI and the TROLLEY COMPACT are designed to also accommodate a label printer or other hardware. Provided with cleanroom-compatible castors, battery and WLAN, the workstations can be moved around as required in the production environment. On request, certain TROLLEYs can also be equipped with inductive charging technology for a wireless cleanroom.

There is no need for complex and expensive HMI system installation and wiring work on walls, ceilings or the floor. The TROLLEY systems are always ready for use wherever they are required.

To permit simple adaptation of the monitor height, we can supply ergonomic height adjustable pipes for the TROLLEY system. The height adjustable system is made entirely of stainless steel.

**THE TROLLEY CONCEPT**

**MOBILE OPERATING STATIONS FOR CLEANROOMS - WITH CUSTOMIZABLE CONFIGURATION**

The TROLLEY systems are mobile, flexible cleanroom workstations suitable for customized configuration. They offer the right solution for every situation, ranging from the space-saving version right through to a complete system.

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To permit simple adaptation of the monitor height, we can supply ergonomic height adjustable pipes for the TROLLEY system. The height adjustable system is made entirely of stainless steel.
MOBILE, SPACE-SAVING WORKSTATION WITH POWERFUL BATTERY FOR CLEANROOM APPLICATIONS

Space-saving and stable - The TROLLEY LIGHT with trapezoid stand. With a platform diameter of just around 550 mm, this base is perfect for use where space is at a premium. The TROLLEY LIGHT can be pushed right up against a wall. Thanks to its lightweight design, the TROLLEY LIGHT is particularly easy to move. The integrated battery guarantees continuous operation for up to two shifts.

Optionally the height of the operating unit can be adjusted by up to 250 mm.
Maximum mobility and wireless power transmission to avoid cross-contamination by cables and plugs - the trapezoid stand for the TROLLEY LIGHT with inductive battery charging technology. The trapezoid stand is magnetically centered with the charging station, and charging starts automatically.

Optionally, the charging rate can be doubled using a second coupler, and charging is then faster than with conventional charging via a cable. If required, inductive charging stations can be distributed around the room to permit both charging and working at different locations. And so the system is always ready for use.

TECHNICAL DATA OF THE TROLLEY LIGHT CAN BE FOUND ON PAGE 48.
The most powerful battery with an operating time of up to three shifts can be accommodated in the 5-arm base of the TROLLEY LIGHT. Whilst offering full mobility, this base mounted on 5 castors provides a stable stand ideally suited to a mobile dual-display solution with keyboard, for example. The dual-display version with an additional display is the perfect choice for working with two applications in parallel, such as MES and Distributed Control Systems (DCS). Even with just one display, this TROLLEY LIGHT version is an excellent option for cleanroom operation.

The TROLLEY LIGHT can also be configured as a tall version with the display at a 10° angle and provided with a keyboard. A half-height version is possible as well, with a display at a 60° angle. Both options can be supplied with or without a keyboard.

New: Also available as version with inductive charging technology.

Ideal for GDP conditions and cleanrooms
Less cleaning work required thanks to sophisticated, fully encapsulated stainless steel design in accordance with protection class IP65
Suitable for regular cleaning with disinfectants and cleaning agents
Cleanroom suitable castors, integrated WLAN and high-power batteries for full mobility
Plug & Work: Quick, inexpensive and simple installation without the need for architectural modifications
Made in Germany. With utility model and industrial design protection
Customized solutions available on request
Comprehensive extra services such as hardware IQ and individual maintenance contracts, for example

TECHNICAL DATA OF THE TROLLEY LIGHT CAN BE FOUND ON PAGE 48.
The TROLLEY LIGHT with 3-arm base is the most compact, lightest and most mobile version of the TROLLEY LIGHT. The optional use of an integrated battery makes it possible to work in places with no direct power supply. The system can be moved around as required without having to shut down the HMI.

The operating unit can be controlled either using a keyboard or alternatively via the touch display, like a large tablet. The 3-arm base is ideal for configuration as a half-height version with or without a keyboard.

TECHNICAL DATA OF THE TROLLEY LIGHT CAN BE FOUND ON PAGE 48.
TROLLEY COMPACT

READY-TO-CONNECT OPERATING STATION FOR CLEANROOMS - HMI SYSTEM, KEYBOARD AND PRINTER

The TROLLEY COMPACT workstation is the ideal complete system for confined spaces in cleanrooms. It is equipped with an HMI system, an integrated keyboard and a stable mobile stand. There is also a front drawer for documents and space to accommodate a label printer. The labels can be simply removed by way of the printer flap on the side.

The design of the TROLLEY COMPACT is based on ergonomic principles and allows full mobile working all day thanks to the integrated WLAN and battery.

The workstation is supplied ready for connection and ready to use – without the need for costly structural installation work.

TECHNICAL DATA OF THE TROLLEY COMPACT CAN BE FOUND ON PAGE 49.
The TROLLEY MAXI is a complete cleanroom system based on hygienic design principles. Special double seals, fasteners and inside hinges ensure compliance with maximum hygiene standards and protection class IP65. It can be used as a stationary complete system or fitted with an (optional) battery for mobile applications.

The TROLLEY MAXI is equipped with an HMI system, an integrated keyboard, drawer and offers space for a label printer. The labels can be simply removed by way of the door with viewing window. The workstation is designed in accordance with ergonomic principles.

The workstation is supplied ready for connection and ready to use. The connector plate on the back facilitates the installation of peripherals (e.g. scales) on site, thus saving both time and installation expense.

The TROLLEY MAXI is a complete cleanroom system based on hygienic design principles. Special double seals, fasteners and inside hinges ensure compliance with maximum hygiene standards and protection class IP65. It can be used as a stationary complete system or fitted with an (optional) battery for mobile applications.

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The workstation is supplied ready for connection and ready to use. The connector plate on the back facilitates the installation of peripherals (e.g. scales) on site, thus saving both time and installation expense.

**TECHNICAL DATA OF THE TROLLEY MAXI CAN BE FOUND ON PAGE 49.**
## TECHNICAL DATA

### MOBILE SYSTEMS

#### TROLLEY LIGHT

**Variant**
- Mobile GMP-IT workstation developed in hygienic design
- With device fixtures for HMI systems of the WAVE or PILOT series

**Design**
- With integrated drawer and device fixtures for HMI systems of the WAVE or PILOT series

**Fittings**
- **TRAPEZOID**
  - 3-STAR
  - 5-arm base
  - 3-arm base

**Base**
- Compact trapezoid stand
- Ergonomic ±250 mm height adjustment with gas spring (optional)

**PHYSICAL CHARACTERISTICS**
- **TRAPEZOID**
  - 220–240 V AC or 100–120 V AC, 50 – 60 Hz, cable-free via INDUCTIVE CHARGER (optional)
- **3-STAR**
  - 220–240 V AC or 100–120 V AC, 50 – 60 Hz
- **5-STAR**
  - 220–240 V AC or 100–120 V AC, 50 – 60 Hz

**Battery option AGM**
- AGM / sealed lead-acid battery, 12 V, 56 Ah or 12 V, 107 Ah

**Battery option Li-ion**
- Li-ion battery (LiFePO4), 12 V, 50 Ah or 12 V, 100 Ah
- Li-ion battery (UPS)

**Dimensions (approx. mm)**
- **TRAPEZOID**
  - Height of center of monitor: H 1115, Base: Ø 785
  - Height of center of monitor: H 1130, Base: Ø 785
  - Height of center of monitor: H 1115, Base: Ø 785

**Weight**
- Approx. 25 kg (without battery)
- Approx. 26 kg (without battery)
- Approx. 18 kg (without battery)

**Certification**
- CE, FCC / ISED

**IP rating**
- IP65

#### TROLLEY COMPACT

**Variant**
- Mobile GMP-IT workstation developed in hygienic design
- With device fixtures for HMI systems of the WAVE or PILOT series

**Design**
- With device fixtures for HMI systems of the WAVE or PILOT series

**Fittings**
- **TRAPEZOID**
  - 3-STAR
  - 5-arm base
  - 3-arm base

**Base**
- Compact trapezoid stand
- Ergonomic ±250 mm height adjustment with gas spring (optional)

**PHYSICAL CHARACTERISTICS**
- **TRAPEZOID**
  - 220–240 V AC or 100–120 V AC, 50 – 60 Hz
  - 220–240 V AC or 100–120 V AC, 50 – 60 Hz
  - 220–240 V AC or 100–120 V AC, 50 – 60 Hz

**Battery option AGM**
- AGM / sealed lead-acid battery, 12 V, 56 Ah or 12 V, 107 Ah

**Battery option Li-ion**
- Li-ion battery (LiFePO4), 12 V, 50 Ah or 12 V, 100 Ah
- Li-ion battery (UPS)

**Dimensions (approx. mm)**
- **TRAPEZOID**
  - Height of center of monitor: H 1500
  - Height of center of monitor: H 1450
  - Height of center of monitor: H 1450

**Weight**
- Approx. 65 kg (without batteries)
- Approx. 75 kg (without batteries)

**Certification**
- CE, FCC / ISED

**IP rating**
- IP65

---

**TECHNOLOGY**

**Inductive charging station (transmitter)**
- Inductive coupler with 240 W output. For wall-mounting or for flush-mounted integration into the wall, with optional 100–240 V AC, power supply unit. Pilot module supplied separately.

**Inductive coupler (receiver)**
- Integrated into TROLLEY for wireless charging of the integrated battery

**Certification**
- CE, FCC / ISED (optional)
LABORATORY WORKSTATION

ERGONOMIC WORKSTATIONS TO GMP STANDARDS FOR LABORATORIES AND CLEANROOMS

We offer different laboratory workstation versions for the ergonomic design of laboratory and cleanroom benches. These are based on the WAVE and PILOT HMI systems, with the option of monitor, PC, or thin client configuration. All versions conform to IP65 and are particularly easy to clean. They can be operated via the touch screen and using cleanroom keyboards. Both alternatives have been successfully tested wearing cleanroom gloves of different thicknesses.

The HMI systems can be combined with a space-saving stainless steel stand and a desktop keyboard. The angle of the display is infinitely variable. Installation on a stainless steel tube is also possible. The tube-mounted HMI system is then fitted either on a stainless steel stand or directly on the bench, so that cables can be routed through the bench and tube to satisfy cleanroom standards. A further advantage is that the keyboards can be attached directly to the HMI, with the result that no external cables are required and there is no keyboard on the bench. If an external keyboard is required, we can supply a magnetic keyboard shelf for fitting directly to the HMI as an alternative.

Ideal for laboratories and cleanrooms with GMP conditions
Less cleaning work required thanks to fully encapsulated design in accordance with protection class IP65
Suitable for regular cleaning with disinfectants and cleaning agents
Different versions available: Stainless steel stand including torque hinge / tube-mounted with stainless steel stand / tube-mounted, fitted on bench
Can be combined with WAVE (19”/21.5”/24”/27”) or PILOT (17.3”/19”/21.5”) and glass or foil cleanroom keyboards
Non-reflecting PCT display, IPS panel with up to 178° viewing angle from all sides. LCD display with LED backlight technology
Intuitive multi-touch display with optical bonding. Operable with cleanroom gloves.
Available as industrial PC, industrial monitor, thin client (e.g. IGEL)

TECHNICAL DATA OF WAVE CAN BE FOUND ON PAGE 10.
TECHNICAL DATA OF PILOT CAN BE FOUND ON PAGE 14.

CONFIGURATIONS

Can be combined with HMI systems WAVE (Page 8) and PILOT (Page 12)
APPLICATION OF SYSTEMS
TABLETS

GMP CLEANROOM TABLET - MOBILE COMPUTING WITH STAINLESS STEEL HOUSING

The ideal solution for mobile applications in environments with high hygienic requirements provides the Tablet PC. The fully enclosed housing meets IP65 and can be rapidly and thoroughly cleaned with almost all standard cleaning agents and disinfectants.

The stainless steel tablet is provided with an IP65 on/off switch. Charging is performed by way of a modern, easy to clean IP65 magnetic charging contact (depending on integrated device). So it is ideally equipped for use in cleanrooms. On request, the tablet can be fitted with a handle, a USB interface and volume control buttons.

The stainless steel housing is prepared for/supplied with integrated Microsoft Surface Pro or Apple iPad Pro. We would also be pleased to offer you customized stainless steel housings for other makes on request.

**Ideal for mobile use under GMP conditions and in cleanrooms**

- Less cleaning work required thanks to fully encapsulated design in accordance with protection class IP65
- Suitable for regular cleaning with disinfectants and cleaning agents
- 11”, 12.3” LCD display - other sizes on request
- Models available: Microsoft Surface Pro, Apple iPad Pro. Other models on request
- Intuitive multi-touch display, suitable for operation wearing cleanroom gloves
- Equipped with IP65 On/Off switch, IP65 magnetic charging contact (depending on integrated device)
- Handle and holder for wall mounting or placement on a table can be added optionally

TECHNICAL DATA OF THE TABLETS CAN BE FOUND ON PAGE 58.
These pages only show a small selection of our extensive product range. We are pleased to assist you in the selection and configuration of your specific Tablet PC system.
SCANNER BOX

CLEANROOM-COMPATIBLE CHARGING OF SCANNERS IN STAINLESS STEEL HOUSING WITH PROTECTION CLASS IP65

Makes bar code scanner charging stations fit for cleanroom use - the SCANNER BOX. Up to four scanner charging stations or two battery charging stations can be safely and conveniently accommodated in the stainless steel housing. It is particularly easy to clean and conforms to IP65.

The SCANNER BOX can be set up on a desktop in a cleanroom or integrated into the wall. The current status of charge can be checked through the viewing window in the door of the SCANNER BOX. Once charging has been completed, the door can be opened and closed by means of a door with compression latch.

Inside there is a partition forming a compartment for the power supply units, the cables of which are safely routed through an IP65 opening. The back wall is screwed on and can be detached for service purposes. The SCANNER BOX is supplied fitted with charging stations and power supply units.

Physical features:
- Dimensions (approx. mm): W 470 / H 260 / D 265
- Weight: approx. 22 kg (without equipment)

Scanner systems: You can find a selection of 1D and 2D scanners for the reliable, high-performance recording of data under special operating conditions on pages 64-65.

Ideal for GMP conditions and cleanrooms:
- Less cleaning work required thanks to sophisticated design of stainless steel housing in accordance with protection class IP65
- Suitable for regular cleaning with disinfectants and cleaning agents
- Cleanroom-compatible integration of multiple scanner charging stations
- Viewing window for checking charge
- Can be placed on a desktop or screwed to a wall
- Completely pre-assembled
The PRINTER BOX ensures the best possible integration of printers in cleanrooms. Printers of almost any size can be installed in a sterile environment whilst satisfying GMP requirements. The box is based on hygienic design principles and satisfies the highest hygiene standards thanks to the use of special double seals, fasteners and inside hinges.

A door with compression latch on the front secures the PRINTER BOX during operation, thus ensuring compliance with IP65. The printed labels can be removed by way of a small door with viewing window. Safe and convenient operation is thus guaranteed. The printer is placed on a pull-out platform and is connected up inside the PRINTER BOX. Connections for power, USB or Ethernet on the rear allow versatile use of the PRINTER BOX. All our stainless steel printer housings can be placed or screwed onto a shelf or be integrated into a wall.

Physical features:
- Option S: 
  - Dimensions (approx. mm): W 360 / H 320 / D 445
  - Weight (without equipment): approx. 18 kg
- Option M: 
  - Dimensions (approx. mm): W 400 / H 400 / D 650
  - Weight (without equipment): approx. 28 kg
- Option L: 
  - Dimensions (approx. mm): W 450 / H 540 / D 630
  - Weight (without equipment): approx. 41.5 kg

Printer systems: You can find a selection of high-performance label printers for thermal transfer and/or direct thermal printing on pages 66-67.

Ideal for GMP conditions and cleanrooms
- Less cleaning work required thanks to sophisticated design of stainless steel housing in accordance with protection class IP65
- Suitable for regular cleaning with disinfectants and cleaning agents
- Door for convenient removal of labels
- Can be placed on/screwed to a desktop or integrated into a wall
- Completely pre-assembled
These pages only show a small selection of our extensive product range. All scanner systems are also available as DPM (Direct Part Marking) version.

We are pleased to assist you in the selection and configuration of your specific scanner system. Please contact us so we can inform you about the latest innovations and offers.

### TECHNICAL DATA SCANNER

<table>
<thead>
<tr>
<th>ADDITIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TECHNICAL DATA</strong></td>
</tr>
</tbody>
</table>

#### SCANNER

**Manufacturer**
- POWERSCAN PM9501 / PBT9501: Datalogic
- POWERSCAN PD9531: Datalogic
- ZEBRA DS3678: Zebra
- ZEBRA DS3608: Zebra

**Product Description**
- POWERSCAN PM9501 / PBT9501: Wireless 1D- / 2D-Imager, wireless Bluetooth® Imager
- POWERSCAN PD9531: Wired 1D- / 2D-Imager, Wireless Bluetooth® Imager
- ZEBRA DS3678: Wired 1D- / 2D-Imager, Wireless Bluetooth® Imager
- ZEBRA DS3608: Wired 1D- / 2D-Imager

**Operating range**
- POWERSCAN PM9501 / PBT9501: 2 up to 130 cm, Green Light LED System to read confirmation (3GL)
- POWERSCAN PD9531: 6 up to 130 cm (depending on barcode type and density), Green Light LED System to read confirmation (3GL)
- ZEBRA DS3678: 3,3 up to 152 cm (depending on barcode type and density), LED and vibration as a user display
- ZEBRA DS3608: 3,3 up to 152 cm (depending on barcode type and density), LED and vibration as a user display

**Communications**
- POWERSCAN PM9501 / PBT9501: 433,92 MHz, Bluetooth® 3.0
- POWERSCAN PD9531: Bluetooth® 4.0 (2)
- ZEBRA DS3678: Bluetooth® 4.0
- ZEBRA DS3608: Bluetooth® 4.0

**PHYSICAL CHARACTERISTICS**

<table>
<thead>
<tr>
<th></th>
<th>POWERSCAN PM9501 / PBT9501</th>
<th>POWERSCAN PD9531</th>
<th>ZEBRA DS3678</th>
<th>ZEBRA DS3608</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power supply</td>
<td>Scanner: 10 V, 2150 mAh, Li-ion battery</td>
<td>Station: 10 bis 30 V DC</td>
<td>Scanner: USB</td>
<td>Scanner: 3100 mAh</td>
</tr>
<tr>
<td>Dimensions (approx. mm)</td>
<td>Scanner: W 74 / H 212 / D 110</td>
<td>Station: W 240 / H 108 / D 95</td>
<td>Scanner: W 76 / H 185 / D 132</td>
<td>Station: 4,5 up to 12,6V DC</td>
</tr>
<tr>
<td>Weight</td>
<td>Scanner: 380 g</td>
<td>Station: 380 g</td>
<td>330 g</td>
<td>Scanner: 407 g</td>
</tr>
<tr>
<td>IP rating</td>
<td>IP65 (without display)</td>
<td>IP65 (without display)</td>
<td>IP67</td>
<td>IP67</td>
</tr>
</tbody>
</table>

---

PowerScan PM9501 / PBT9501
PowerScan PD9531
Zebra DS3678
Zebra DS3608
These pages only show a small selection of our extensive product range. We are pleased to assist you in the selection and configuration of your specific printer system. Please contact us so we can inform you about the latest innovations and offers.

### TECHNICAL DATA PRINTER

<table>
<thead>
<tr>
<th>MODEL</th>
<th>ZEBRA ZD620</th>
<th>ZEBRA ZT220</th>
<th>ZEBRA ZT410</th>
<th>CAB XCS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturer</td>
<td>Zebra</td>
<td>Zebra</td>
<td>Zebra</td>
<td>CAB</td>
</tr>
<tr>
<td>Product description</td>
<td>Label printer</td>
<td>Color label printer</td>
<td>Thermal transfer</td>
<td>Color label printer</td>
</tr>
<tr>
<td>PRINT TECHNOLOGY</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MODEL</td>
<td>ZEBRA ZD620</td>
<td>ZEBRA ZT220</td>
<td>ZEBRA ZT410</td>
<td>CAB XCS</td>
</tr>
<tr>
<td>Print method</td>
<td>Thermal direct / thermal transfer</td>
<td>Thermal direct / thermal transfer</td>
<td>Thermal direct / thermal transfer</td>
<td>Color thermal transfer</td>
</tr>
<tr>
<td>Print resolution</td>
<td>203 / 300 dpi</td>
<td>203 / 600 dpi</td>
<td>305 mm per second (203 dpi)</td>
<td>300 dpi</td>
</tr>
<tr>
<td>Print speed</td>
<td>152 mm per second (300 dpi)</td>
<td>356 mm per second (203 dpi)</td>
<td>Max. 184 mm</td>
<td>Up to 125 mm per second</td>
</tr>
<tr>
<td>Print width</td>
<td>Max. 104 mm</td>
<td>Max. 104 mm</td>
<td>Max. 104 mm</td>
<td>Max. 142.6 mm</td>
</tr>
<tr>
<td>MEDIA SPECIFICATIONS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MODEL</td>
<td>ZEBRA ZD620</td>
<td>ZEBRA ZT220</td>
<td>ZEBRA ZT410</td>
<td>CAB XCS</td>
</tr>
<tr>
<td>Media width</td>
<td>15 to 110 mm</td>
<td>Max. 110 mm</td>
<td>Max. 104 mm</td>
<td>55 to 165 mm</td>
</tr>
<tr>
<td>Media length</td>
<td>Not endless; 991 mm</td>
<td>Not endless; 991 mm</td>
<td>Up to 3988 mm</td>
<td>1500 mm</td>
</tr>
<tr>
<td>Media thickness</td>
<td>0.08 to 0.019 mm</td>
<td>0.035 to 0.005 mm</td>
<td>0.058 to 0.25 mm</td>
<td>0.05 to 0.8 mm</td>
</tr>
<tr>
<td>Roll diameter</td>
<td>Max. 127 mm</td>
<td>Max. 203 mm</td>
<td>Max. 203 mm</td>
<td>Max. 300 mm</td>
</tr>
<tr>
<td>Core diameter</td>
<td>12.7 mm and 25.4 mm</td>
<td>76 mm</td>
<td>76 mm</td>
<td>76 mm</td>
</tr>
<tr>
<td>CONFIGURATIONS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MODEL</td>
<td>ZEBRA ZD620</td>
<td>ZEBRA ZT220</td>
<td>ZEBRA ZT410</td>
<td>CAB XCS</td>
</tr>
<tr>
<td>System memory</td>
<td>256 MB SDRAM</td>
<td>512 MB Flash</td>
<td>128 MB RAM</td>
<td>64 MB RAM</td>
</tr>
<tr>
<td>I/O interfaces</td>
<td>RS-232, USB 2.0, 10/100 Print Server (optional)</td>
<td>RS-232, USB 2.0, 10/100 Print Server (optional)</td>
<td>USB 2.0 Slave and Master, Ethernet, WLAN (optional)</td>
<td>USB 2.0 Slave and Master, Ethernet, WLAN (optional)</td>
</tr>
<tr>
<td>PHYSICAL CHARACTERISTICS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MODEL</td>
<td>ZEBRA ZD620</td>
<td>ZEBRA ZT220</td>
<td>ZEBRA ZT410</td>
<td>CAB XCS</td>
</tr>
<tr>
<td>Power supply</td>
<td>100 - 240 V AC</td>
<td>100 - 240 V AC</td>
<td>100 - 240 V AC</td>
<td>100 - 240 V AC</td>
</tr>
<tr>
<td>Dimensions (approx. mm)</td>
<td>203x147x135 / 233x192x267</td>
<td>203x147x135 / 233x192x267</td>
<td>203x147x135 / 233x192x267</td>
<td>203x147x135 / 233x192x267</td>
</tr>
<tr>
<td>Weight</td>
<td>4.8 kg / 5.7 kg</td>
<td>7.8 kg</td>
<td>16 kg</td>
<td>24 kg</td>
</tr>
<tr>
<td>Housing</td>
<td>Double wall plastic</td>
<td>Robust metal construction</td>
<td>Diecast aluminum casing, metal cover with large inspection glass</td>
<td></td>
</tr>
</tbody>
</table>
THIN CLIENT SYSTEMS

IGEL ENDPOINT / THIN CLIENT – SIMPLE AND CENTRAL REMOTE ADMINISTRATION LOW COSTS AND LITTLE MAINTENANCE

In combination with the IGEL Workspace Edition, the IGEL Endpoint / Thin Client represents a fully equivalent alternative to standard thin client hardware. The software is installed as operating system on the WAVE, PILOT or CONTROL HMI system and turns the hardware used into a powerful, universally applicable thin client for secure access to a variety of IT infrastructures. It provides extremely powerful graphics capabilities for access to server systems such as Microsoft TSE (RDP, ICA protocol and VDI) or UNIX/LINUX (VNC protocol).

Only a few clicks are needed to connect the IGEL Endpoint / Thin Client to the server, and it is then immediately ready for operation. The IGEL Endpoint / Thin Client supports USB devices such as keyboard, mouse, scanner, printer, touchscreens, WLAN, Bluetooth, NFC, smartcard reader, audio etc. The versatile IGEL Universal Management Suite (UMS) permits IT remote maintenance for remote clients, for example.

We also support other thin client software including ThinManager®.

We would be pleased to advise you accordingly on customer-specific solutions.

---

**THIN CLIENT SYSTEMS**

**Secure plug-and-play connection via Ethernet / RJ45 to server / PC**

**Connection of USB devices possible**

**No local software, no installation and maintenance**

**Central administration with remote management software**

**Less expensive than conventional KVM solutions, thin clients, or PCs**

**Simple integration of IGEL Endpoints / Thin Clients into existing IGEL infrastructure**

**IGEL Endpoint / Thin Client with WLAN and Bluetooth**

**ThinManager® is compatible with Systec & Solutions HMI systems**

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**IGEL ENDPOINT / THIN CLIENT SOLUTION**

**MODEL**

- Product description: Thin Client for complete integration into WAVE, PILOT and CONTROL
- Operating system: IGEL OS / IGEL Workspace Edition
- Administration: IGEL Universal Management Suite (UMS)

**SESSIONS**

- Features: Support of all common IGEL remote protocols, e.g. RDP, Citrix, VMware or VNC
- Sessions: Dependent on client system

**INTERFACES**

- USB / RS-232
- Network: Ethernet 10 / 100 / 1.000 Mbit/s or WLAN

---

**USER**

- Scanner
- WAVE

**SERVER**

- Data Base
- Software
- OS Sessions

Central client management via Remote Management Software possible
VISUNET

THE EX-PROTECTED VISUNET IS SETTING NEW STANDARDS

For use in hazardous areas we recommend the VisuNet EX1 (e.g. VisuNet EX1 CXP RM or VisuNet EX1 CXP PC) and VisuNet EX2 (e.g. VisuNet EX2 CXP RM or VisuNet EX2 CXP PC) systems from Pepperl + Fuchs, which are able to meet the most demanding requirements.

The ex-protected VisuNet PC offers the optimal solution for decentralized displaying and working with information right where the process is happening. Other selected Atex products upon request.

EX-PROTECTED SYSTEMS

19" / 21.5" EX1 / EX2
EX1 with capacitive multi-touch display
Minimal heat generation
Windows®-based
Industrial monitor, VGA and DVI actuation, fiber optic (optional)
Remote monitors up to 2 km from the nearest network element
Robust, wireless architecture
Easy-to-clean stainless steel housing
Protection class IP66

Example configuration: VisuNet GXP RM + keyboard

TECHNICAL DATA VISUNET

<table>
<thead>
<tr>
<th>MODEL</th>
<th>VISUNET EX1 CXP RM</th>
<th>VISUNET EX1 CXP PC</th>
<th>VISUNET EX2 CXP RM</th>
<th>VISUNET EX2 CXP PC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variants</td>
<td>Remote monitor designed for operation in explo- sion- hazardous areas, Class 1 Zone 1 / Class 1 Div. 2, as well as under CWP conditions</td>
<td>Panel PC designed for use in hazardous areas, Class 1 Zone 1, as well as under CWP conditions</td>
<td>Remote monitor designed for use in hazardous areas classified as zones 2+22 and under CWP conditions</td>
<td>Panel PC designed for use in hazardous areas classified as zones 2+22 and under CWP conditions</td>
</tr>
<tr>
<td>DISPLAY AND CONTROLS</td>
<td>VISUNET EX1 CXP RM</td>
<td>VISUNET EX1 CXP PC</td>
<td>VISUNET EX2 CXP RM</td>
<td>VISUNET EX2 CXP PC</td>
</tr>
<tr>
<td>Display</td>
<td>19&quot; / 21.5&quot; TFT display</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resolution</td>
<td>1280 x 1024 / 1920 x 1080 Full HD</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Touchscreen</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stainless steel keyboard (optional)</td>
<td>Set keyboard, imprints with ergonomic finger guidance, with touchpad and trackball</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CONFIGURATIONS</td>
<td>VISUNET EX1 CXP RM</td>
<td>VISUNET EX1 CXP PC</td>
<td>VISUNET EX2 CXP RM</td>
<td>VISUNET EX2 CXP PC</td>
</tr>
<tr>
<td>Industrial PC</td>
<td>Intel® Atom Bay Trail E3827 (1.75 GHz) Dual-Core</td>
<td>Intel® Atom Bay Trail E3845 (1.91 GHz) Dual-Core</td>
<td>Intel® Atom Bay Trail E3827 (1.75 GHz) Dual-Core</td>
<td>Intel® Atom Bay Trail E3845 (1.91 GHz) Dual-Core</td>
</tr>
<tr>
<td>System memory</td>
<td>2 GB</td>
<td>4 GB</td>
<td>2 GB</td>
<td>4 GB</td>
</tr>
<tr>
<td>Storage capacity</td>
<td>32 GB SSD</td>
<td>128 GB SSD</td>
<td>32 GB SSD</td>
<td>128 GB SSD</td>
</tr>
<tr>
<td>USB interfaces</td>
<td>Eas. 1 x Fast Ethernet, 1 x USB, 1 x RS232/422, 1 x RS485, Eas. 1 x USB Keyboard, mouse, 1 x 101 Barcode reader - optional, 1 x USB Ethernet - optional</td>
<td>Eas. 1 x Fast Ethernet, 1 x USB, 1 x RS232/422, 1 x RS485, Eas. 1 x USB Keyboard, mouse, 1 x 101 Barcode reader - optional</td>
<td>Eas. 1 x Fast Ethernet, 1 x USB, 1 x RS232/422, 1 x RS485, Eas. 1 x USB Keyboard, mouse, 1 x 101 Barcode reader - optional, 1 x dual</td>
<td></td>
</tr>
<tr>
<td>PHYSICAL CHARACTERISTICS</td>
<td>VISUNET EX1 CXP RM</td>
<td>VISUNET EX1 CXP PC</td>
<td>VISUNET EX2 CXP RM</td>
<td>VISUNET EX2 CXP PC</td>
</tr>
<tr>
<td>Power supply</td>
<td>24 VDC / 36 VAC or 90 - 264 VAC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dimensions (approx. mm)</td>
<td>W 618 / H 452 / D 120</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>Approx. 23 kg (packed)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Housing and surface</td>
<td>Stainless steel, type 1.4301 (AISI 304), brushed</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Certification</td>
<td>CE (other certifications on request)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IP rating</td>
<td>IP66</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Example configuration: VisuNet GXP RM + keyboard
SERVICES

ALL-ROUND SERVICE FOR THE COMMISSIONING, QUALIFICATION, AND MAINTENANCE OF CLEANROOM IT SYSTEMS

Do you plan to use new IT systems in your cleanrooms and GMP environments? We would be pleased to provide you with a wide range of services to support your project. With our comprehensive package, you have everything you need to satisfy GMP standards when working with your new hardware.

Comprehensive consultation: We provide you with exactly the right IT solution to satisfy GMP standards. We would be pleased to assist you with the planning and management of your project. We can advise you with regard to IT systems when planning installations and cleanrooms, as well as on the topic of ergonomic mounting options. With our experience we can help you produce a detailed specification (URS) for your IT project and also provide assistance with subsequent Design Qualification (DQ).

Full installation package: Our experienced service team will make sure that the systems you order are put into operation as quickly as possible and in conformity with GMP standards. We will gladly perform installation work and IT system commissioning, as well as connecting up peripherals and accessories. Our team will conduct the system function tests on your premises and document the entire procedure accordingly. We will of course also be pleased to assist you if you wish to convert or upgrade your hardware.

Hardware Installation Qualification (HW-IQ): We can handle the entire hardware qualification procedure, including the signature rules, in accordance with GMP requirements. Our templates enable us to produce the full IQ documentation for your IT hardware in the shortest possible time. Our experienced team will visit your premises to conduct all the activities involved in the qualification procedure. That saves you time, expense and organizational work, and guarantees professional qualification for your IT systems.

Professional maintenance: We will continue to support you after commissioning with maintenance contracts tailored to your requirements. A network of professional specialists throughout Europe and around the world can offer both remote and on site service. This includes the servicing of wearing parts at the necessary maintenance intervals, for example.

Individual solutions: Alongside our successful standard systems we can supply customized solutions, even if only small quantities are involved. Just tell us what you are looking for, and we will document the requirements and draw up the specification. Our experienced team of engineers will support you in this process with their specialist knowledge.

Contact us: Hardware support inquiries: support@systec-solutions.com