# OT 3M, OT 4M, OT 6M

**Operator terminals with FSTN display**

**AUTOMATION**

Data sheet
7312_en_04                     © PHOENIX CONTACT - 08/2008

## 1    Product description

The operator terminals OT 3M, OT 4M and OT 6M are part of a modern, scalable and seamless HMI family. Through the use of a comprehensive range of functions, the operator terminals provide an innovative operating concept for complex machine visualizations. The operator terminals have full-graphics 3", 4" or 6" displays. Each operator terminal is equipped with one Ethernet interface and two USB interfaces.

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ℹ️ Make sure you always use the latest documentation.
It can be downloaded at www.download.phoenixcontact.com.
A conversion table is available on the Internet at www.download.phoenixcontact.com/general/7000_en_00.pdf.

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ℹ️ This data sheet is valid for the products listed on the following page:

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**PHŒNIX CONTACT**

*INSPIRING INNOVATIONS*

## Table of contents

## 2 Ordering data

**Products**

| Description | Type | Order No. | Pcs./Pkt. |
|---|---|---|---|
| Operator terminal with integrated runtime of VISU+ visualization software | | | |
| – With 3" FSTN display | OT 3M | 2985123 | 1 |
| – With 4" FSTN display | OT 4M | 2985136 | 1 |
| – With 6" FSTN display | OT 6M | 2985149 | 1 |

**Documentation**

| Description | Type | Order No. | Pcs./Pkt. |
|---|---|---|---|
| Quick Start Guide | UM QS EN OT TP | 2888903 | 1 |

## 3 Technical data

| Electrical data | OT 3M | OT 4M | OT 6M |
|---|---|---|---|
| Supply voltage | 24 V DC (SELV according to DIN EN 61131) | | |
| Residual ripple | 10%, maximum | | |
| Minimum voltage | 18 V | | |
| Maximum voltage | 30 V | | |
| Current consumption (at 24 V, typical) | 0.25 A | | |
| Current consumption (maximum) | 0.35 A | | |
| Connected load | 6 W | | |
| Fuse | Semiconductor fuse, self-resetting | | |
| Protection against polarity reversal | Integrated | | |

| Ethernet | |
|---|---|
| X5 Ethernet | 10/100Base-T |

| USB | |
|---|---|
| In accordance with the "Universal Serial Bus Specification Rev. 2.0" | |
| X9, X10 host<br>    Minimum:<br>    Maximum:<br>    Maximum output current: | 1.5 Mbps<br>12 Mbps<br>100 mA per output |

| Central processing unit | |
|---|---|
| Central processing unit | RISC ARM9 |
| Clock frequency | 200 MHz |
| Other features | Watchdog timer, realtime clock, battery monitoring |

| Memory | |
|---|---|
| Application memory | 8 Mbytes |
| Flash | 32 Mbytes |
| SDRAM | 64 Mbytes |

| Connection method | |
|---|---|
| Network | Ethernet (10/100 Mbps), RJ45 |
| USB interface | 2 x USB 2.0 |

| Climatic data | |
|---|---|
| Temperature (operation) | 0°C ... 50°C |
| Ambient temperature (storage/transport) | -25°C ... +70°C |
| Relative humidity (operation and storage) | 10% ... 95%, no condensation |

| Standards and directives | |
|---|---|
| Noise immunity | DIN EN 61000-4-2<br>DIN EN 61000-4-3<br>DIN EN 61000-4-4<br>DIN EN 61000-4-5<br>DIN EN 61000-4-6<br>DIN EN 61000-6-2 |
| Noise emission | DIN EN 55011 limit value class A<br>DIN EN 55022 limit value class A<br>DIN EN 6100-6-4 |
| Equipment requirement | DIN EN 61131-2 |
| Storage and transport | DIN EN 61131-2 |
| Power supply units | DIN EN 61131-2 |
| Electromagnetic compatibility | 2004/108/EC (including all applicable modifications) |
| Degrees of protection | DIN EN 60529 |
| Impact load, shocks | DIN EN 60068-2-27 |
| Sinusoidal vibrations | DIN EN 60068-2-6 |

**i** This device is classified as Class A equipment. It may cause radio interference in residential areas. In such cases, the operator may be held liable for taking appropriate measures and for the incurrence of costs.

| Housing and front plate | OT 3M | OT 4M | OT 6M |
|---|---|---|---|
| Housing | | Sheet steel, galvanized | |
| Front plate, natural anodized aluminum (H x W x D) | 96 x 144 x 5 mm | 205 x 155 x 5 mm | 160 x 300 x 5 mm |
| Front foil | | Polyester foil | |
| Grommet | | Circumferential rubber grommet on the rear | |
| Mounting cutout (H x W) | 82 x 136 mm | 199 x 139 mm | 152 x 292 mm |
| Installation depth | 46 mm, approximately | 43 mm, approximately | 43 mm, approximately |
| Degrees of protection | | Front: IP65; rear: IP20 | |
| Total weight | 500 g, approximately | 800 g, approximately | 1300 g, approximately |

# 4 Mounting

⚠ When mounting the operator terminal, leave a circumferential gap of at least 30 mm in order to provide sufficient air circulation.

⚠ If the operator terminal is mounted horizontally, please note that additional heat sources may cause a build-up of heat below the operator terminal.
Provide sufficient heat dissipation!
Please observe the permissible temperature range specified in the technical data when operating the device.

⚠ In order to ensure the specified degree of protection, make sure that the grommet lies flat against the mounting surface and the threaded pins of the mounting brackets are tightened uniformly.

The device enables quick and easy mounting from the rear. Ideally, mounting should be in control panels with a plate thickness of approximately 1 mm to 6 mm.

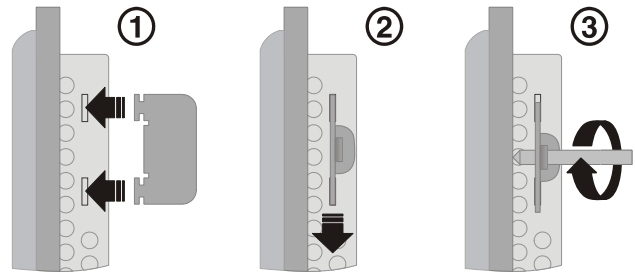1. Push the device through the mounting cutout from the front.



Figure 1      Mounting with mounting bracket

2. Place the mounting brackets in the appropriate slots (1) and pull the brackets downwards until they snap into place (2).
3. Secure the device using the threaded pins (3).
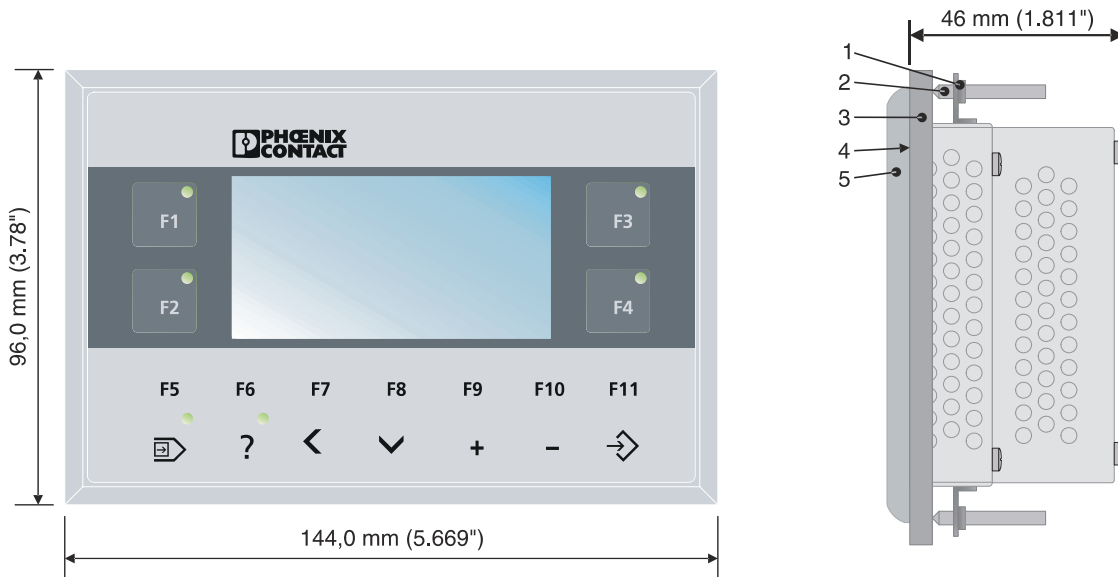
# 5 Housing dimensions

## 5.1 OT 3M operator terminal



Figure 2        Front and side view of the OT 3M with dimensions

**1** Mounting bracket
**2** Threaded pin
**3** Mounting surface, 1 mm to 6 mm thick
**4** Circumferential grommet
**5** Front plate

## 5.2 OT 4M operator terminal



Figure 3     Front and side view of the OT 4M with dimensions

**1** Mounting bracket
**2** Threaded pin
**3** Mounting surface, 1 mm to 6 mm thick
**4** Circumferential grommet
**5** Front plate

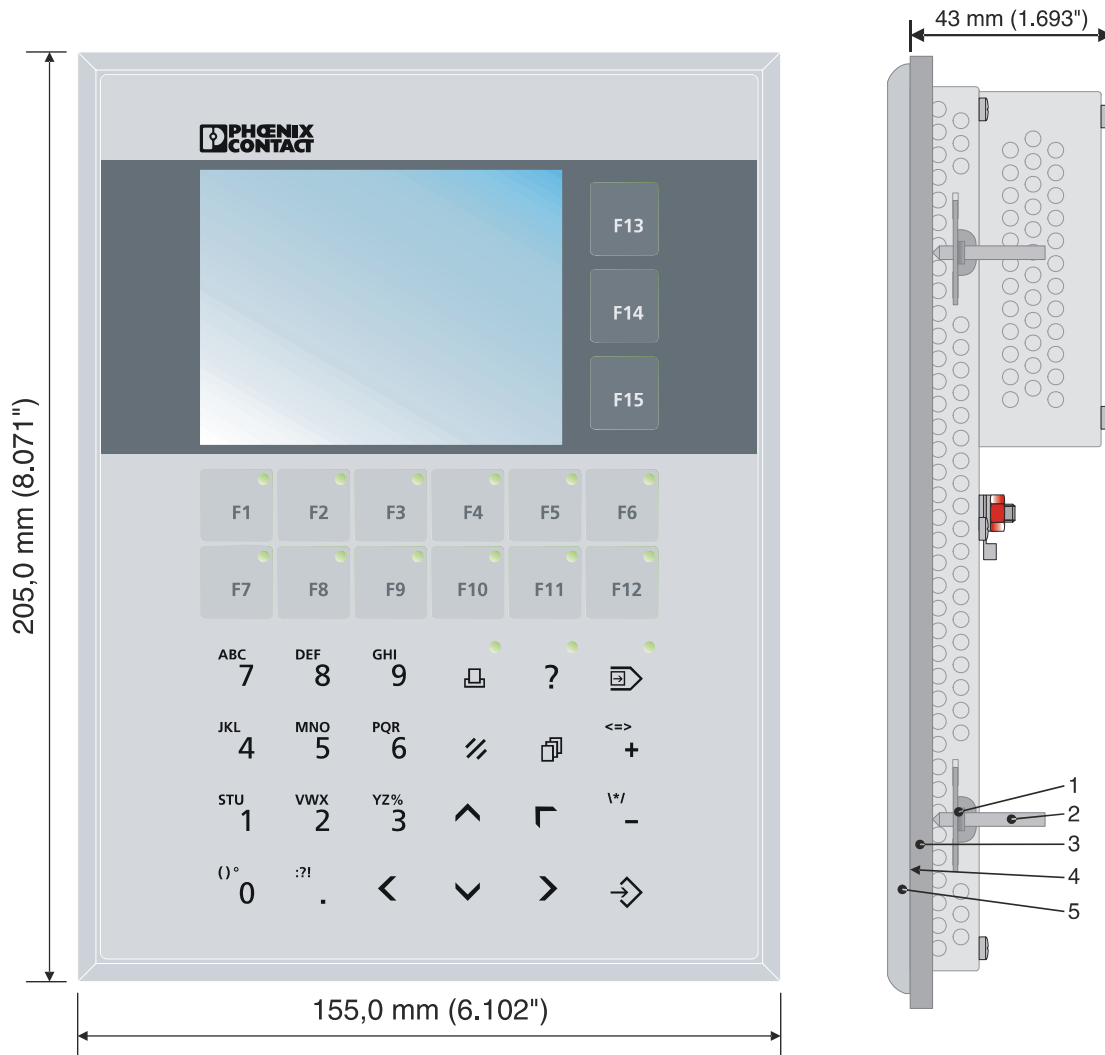## 5.3 OT 6M operator terminal



Figure 4    Front and side view of the OT 6M with dimensions

**1** Mounting bracket
**2** Threaded pin
**3** Mounting surface, 1 mm to 6 mm thick
**4** Circumferential grommet
**5** Front plate

# 6 Switching on

The operator terminal is equipped with the Windows CE operating system suitable for VISU+ visualization runtime.

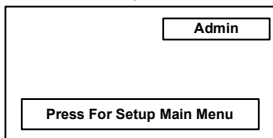## 6.1 Loading process within the Windows CE operating system

The operator terminal allows you to modify the configuration during the startup phase using buttons.

The operator terminal has two operating modes:
– Normal (no button pressed)
– Setup Main (**Press For Setup Main Menu** button pressed)

## 6.2 Normal operating mode

The AppStarter.exe program is started from the internal flash memory.

```
                        ┌──────────────┐
                        │    Admin     │
                        └──────────────┘


  ┌──────────────────────────────┐
  │  Press For Setup Main Menu    │
  └──────────────────────────────┘
```

Display after startup

| i | Please note that the device can only be reached via Ethernet after an Ethernet address has been assigned. |
|---|---|

## 6.3 Setup Main operating mode

Press the **Press For Setup Main Menu** button during the startup phase to start the Setup Main operating mode.
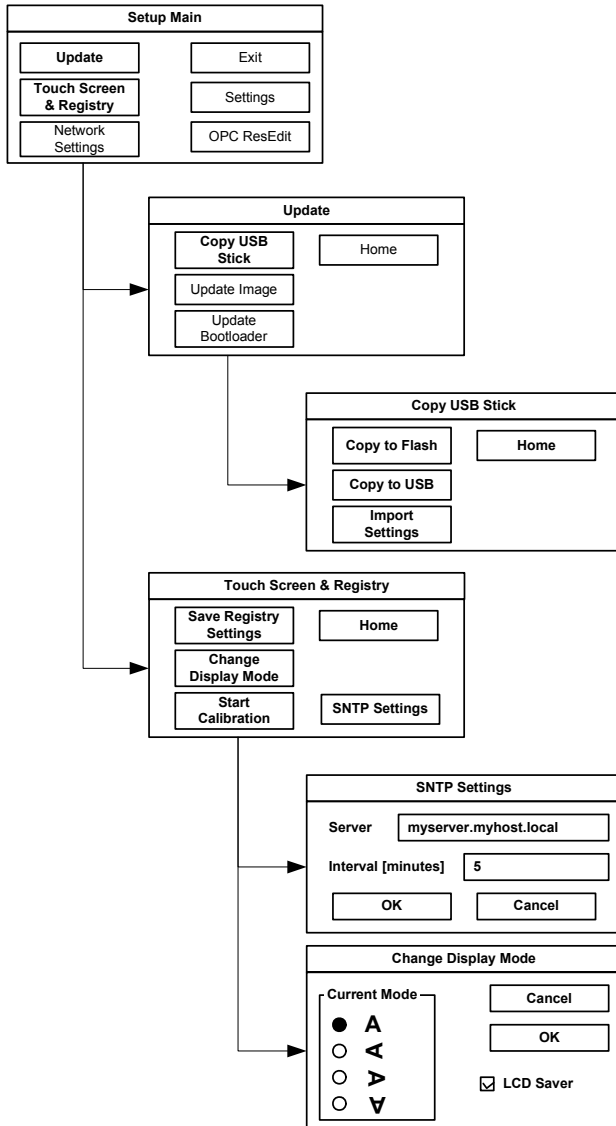.



Figure 5    Update, Registry

To transfer data and settings to another device, proceed as follows:

1.  "Copy to USB" on current device.
2.  "Copy to Flash" on destination device.
3.  Select "Backup" directory.

The device is restarted.

4.  "Import Settings" on destination device.

**Update, Copy USB Stick, Copy to Flash:**

Copies the data from the USB stick to the internal flash file system. The root, backup or any other directory can be selected.

| Selection | Function |
|-----------|----------|
| Root | All files (no directories) of the root directory are copied to the root directory of the flash memory. |
| Backup | The contents of the directory are copied to the root directory of the flash memory. |
| XYZ (any) | The selected directory (including subdirectories) is copied 1:1 to the flash memory. |

**Update, Copy USB Stick, Copy to USB:**

Copies the contents of the flash file system to the backup directory of the USB stick. Protected system files are excluded. A log file is also copied, which can be used to restore system settings via the "Import Settings" menu item.

**Update, Copy USB Stick, Import Settings:**

An automatically generated log file can be used to restore system settings. If the backup directory of the USB stick contains a corresponding log file, the settings can be restored.
This is only possible when using identical types of device.

**Update, Update Image:**

If the image subdirectory of the memory stick contains an "xxxx.nb0" file, then this file is used to perform the image update. There must only be one "xxxx.nb0" file in this directory.
During this procedure flash registry is deactivated. This means that "image" is operated with a new default registry.

**Update, Update Bootloader:**

If the bootloader subdirectory of the memory stick contains an "xxxx.nb0" file, then this file is used to perform the bootloader update. There must only be one "xxxx.nb0" file in this directory.
The user is informed after every successful update.

**Registry, Save Registry Settings:**

The complete registry is stored.
This entry is password-protected.

**Registry, Change Display Mode:**

Settings of display orientation.
This entry is password-protected.

**Registry, Start Calibration:**

Touch calibration is initiated. After calibration the values must be saved via "Save Registry Settings".
This entry is password-protected.

**Registry, SNTP Settings:**

You can enter the address of an Intranet or Internet time server. Enter the synchronization interval in minutes.
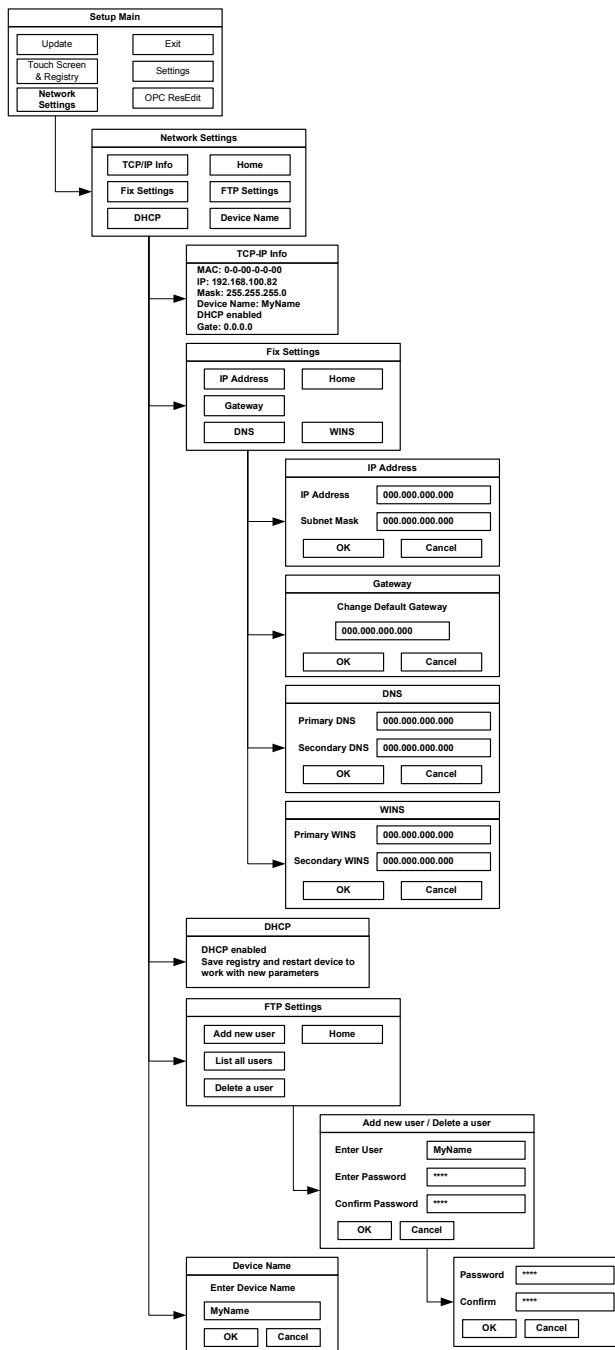This entry is password-protected.

**Setup Main**

| Update | Exit |
| Touch Screen & Registry | Settings |
| **Network Settings** | OPC ResEdit |

**Network Settings**

| TCP/IP Info | Home |
| Fix Settings | FTP Settings |
| DHCP | Device Name |

**TCP-IP Info**
MAC: 0-0-00-0-0-00
IP: 192.168.100.82
Mask: 255.255.255.0
Device Name: MyName
DHCP enabled
Gate: 0.0.0.0

**Fix Settings**

| IP Address | Home |
| Gateway | |
| DNS | WINS |

**IP Address**

| IP Address | 000.000.000.000 |
| Subnet Mask | 000.000.000.000 |
| OK | Cancel |

**Gateway**
Change Default Gateway
000.000.000.000

| OK | Cancel |

**DNS**

| Primary DNS | 000.000.000.000 |
| Secondary DNS | 000.000.000.000 |
| OK | Cancel |

**WINS**

| Primary WINS | 000.000.000.000 |
| Secondary WINS | 000.000.000.000 |
| OK | Cancel |

**DHCP**
DHCP enabled
Save registry and restart device to work with new parameters

**FTP Settings**

| Add new user | Home |
| List all users | |
| Delete a user | |

**Add new user / Delete a user**

| Enter User | MyName |
| Enter Password | **** |
| Confirm Password | **** |
| OK | Cancel |

**Device Name**
Enter Device Name
MyName

| OK | Cancel |

**Password**

| Password | **** |
| Confirm | **** |
| OK | Cancel |

Figure 6    Network Settings

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> **i** All addresses must be entered in the format "xxx.xxx.xxx.xxx".
> Numbers less than 100 must be filled with leading zeros.
> (Example: 192.168.42.1 -> 192.168.042.001)

**Network Settings, Fix Settings, IP Address:**

Enter an IP address and the subnet mask.
After confirming the information, DHCP is automatically deactivated.

This entry is password-protected.

**Network Settings, Fix Settings, Gateway:**

Define the default gateway.
After confirming the information, DHCP is automatically deactivated.

This entry is password-protected.

**Network Settings, Fix Settings, DNS:**

Here you can enter a primary and a secondary DNS server address.
After confirming the information, DHCP is automatically deactivated.

This entry is password-protected.

**Network Settings, Fix Settings, WINS:**

Here you can enter primary and secondary WINS addresses.
After confirming the information, DHCP is automatically deactivated.

This entry is password-protected.

**Network Settings, Current IP:**

Displays the current IP address, subnet mask, device name, DHCP status, and gateway.

**Network Settings, DHCP:**

This menu item is used to activate the DHCP service. The settings must be saved when exiting the menu or via "Save Registry Settings".

This entry is password-protected.

**Network Settings, Device Name:**

Specify a device name with a maximum of 15 characters. The device can be accessed by the device name instead of the IP address by using an FTP connection.
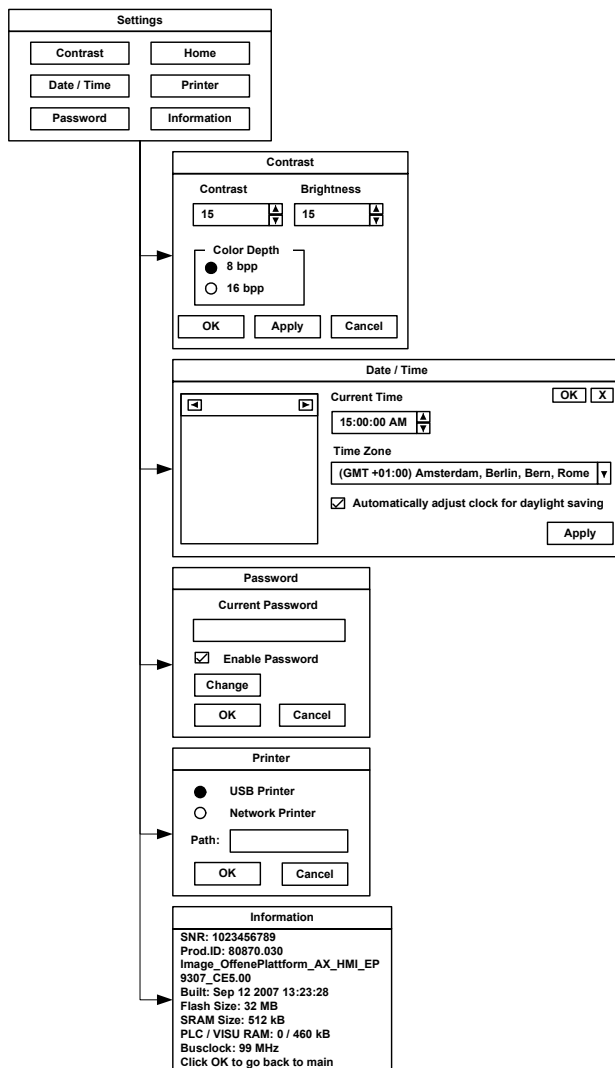
This entry is password-protected.
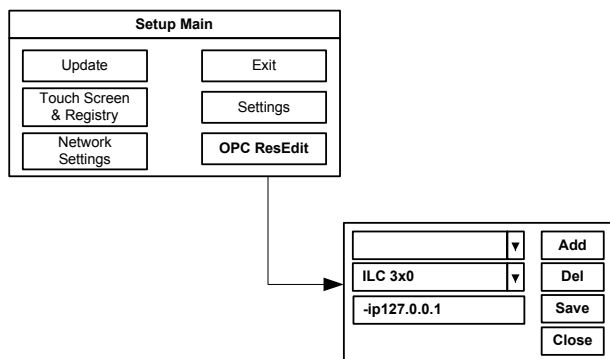
**Settings, Contrast:**

In the Setup Main operating mode display, default values are used for contrast and brightness. This ensures display even in the event of faulty values. Changing a value requires confirmation in an additional dialog box. The values are not accepted if **Cancel** is pressed or confirmation does not take place within 5 seconds.

This entry is password-protected. Depending on the display type, different values can be modified:

| Display type | Contrast | Brightness |
|---|---|---|
| STN (mono) | X | - |
| STN (color) | X | X |
| TFT | - | X |

**Settings, Date / Time:**

Set the date and time. Press Refresh to update the values.

**Settings, Password:**

The password can be activated, deactivated or redefined. When the password is activated, all password-protected dialog boxes can only be accessed by prior entry of password.

This entry is password-protected.

**Settings, Information:**

The following information is output: serial number, part number, image version, image date, flash size, SRAM size, and PLC/Visu RAM size.

**OPC ResEdit:**

The OPC Resource Editor is started. Resource, type and parameter settings can be made.

This entry is password-protected.

> The addition "-ip" must always be retained.
> (Example: -ip192.168.42.1)



Figure 7    Setup Main operating mode



Figure 8    OPC ResEdit

# 7    Display

⚠ **DANGER: Poisoning**
If the display is damaged, avoid direct contact with skin, and do not ingest any liquids or inhale any gases.

⚠ **DANGER: Chemical burns**
If the display is damaged, avoid direct contact with skin, and do not ingest any liquids or inhale any gases.

Depending on its design, the operator terminal is equipped with different displays.

**Touch screen**

The operator terminal has a resistive 4-wire touch screen, which is used for its operation.

ⓘ **NOTE:** Damage
Pointed or sharp objects, such as pins or fingernails, may cause irreparable damage to the touch screen.
Therefore, only use your fingertips or the tools specified in the technical data for operating the touch screen.

# 8    Interfaces

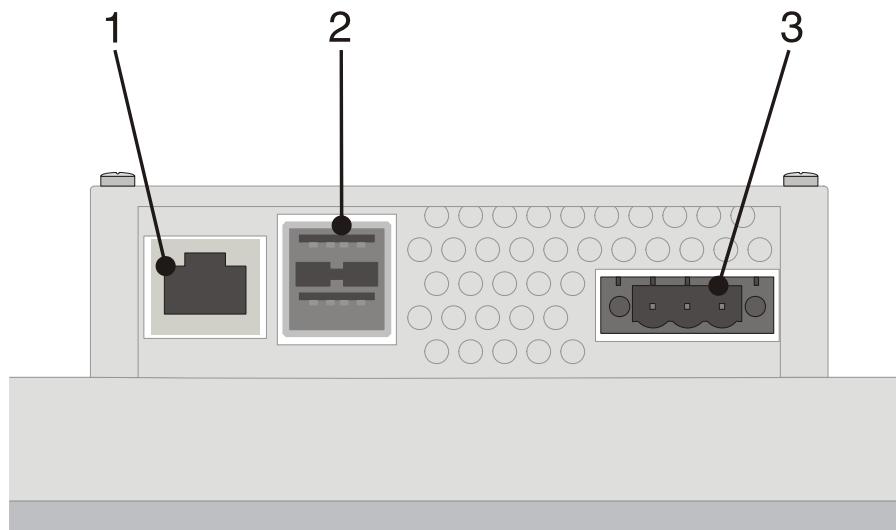Several interfaces are located on the bottom of the operator terminal.

Figure 9      Interfaces of the OT 3M, OT 4M, and OT 6M operator interfaces

**1**    Female connector X5 (Ethernet)
**2**    Female connector X9, X10 (USB host - type A)
**3**    Male connector X1 (supply voltage)

# 9 Interface assignment

⚠️ **DANGER: Hazardous contact voltage**

In electrical systems, hazardous voltages may occur posing a danger to humans. There is a risk of electric shock when touching live parts. Work must only be carried out by qualified personnel familiar with the required safety measures.

🛈 **NOTE:**

Provide a separate cable for protective grounding at the threaded bolt. The cable must have a minimum cross section of 1.5 mm² and must be as short as possible.
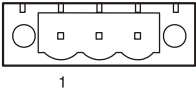
## 9.1 Supply voltage



Figure 10    Supply voltage

| Pin | Designation | Function |
|-----|-------------|----------|
| 1 | ⏚ | Low-noise ground |
| 2 | 0 V | 0 V supply voltage |
| 3 | +24 V DC | 24 V DC supply voltage |

ℹ️ Use a fine strand cable with a minimum cross section of 0.75 mm² and a maximum cross section of 2.5 mm² for the supply voltage.
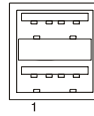
## 9.2 USB



Figure 11    Two USB host interfaces

| Pin | Designation |
|-----|-------------|
| 1 | VCC (+5 V DC) |
| 2 | Data– |
| 3 | Data+ |
| 4 | GND |

ℹ️ Use a fine strand cable with a minimum cross section of 0.75 mm² and a maximum cross section of 2.5 mm² for the supply voltage.

ℹ️ For the specification of a suitable cable, please refer to the "Universal Serial Bus Specification Rev. 2.0".

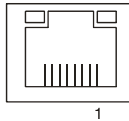ℹ️ The maximum cable length for the cable used is 2.5 m.

## 9.3 Ethernet



Figure 12    Ethernet interface

| Pin | Designation | Function |
|-----|-------------|----------|
| 1 | Tx+ | Transmit data, positive polarity |
| 2 | Tx- | Transmit data, negative polarity |
| 3 | Rx+ | Receive data, positive polarity |
| 4 | n.c. | Not connected |
| 5 | n.c. | Not connected |
| 6 | Rx- | Receive data, negative polarity |
| 7 | n.c. | Not connected |
| 8 | n.c. | Not connected |

ℹ️ Use a category 5 (CAT 5) twisted pair cable. The maximum cable length is 100 m.

ℹ️ For additional information, please refer to the IEEE 802.3 standard.

# 10   Diagnostic LEDs

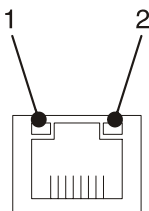Ethernet diagnostic LEDs are located at the Ethernet interface of the operator terminal.



Figure 13     Arrangement of the Ethernet diagnostic LEDs

| No. | Designa-tion | Color | State | Function |
|-----|--------------|-------|-------|----------|
| 1 | XMT | Green | On | Link active |
| | | | Off | Link inactive |
| | | | Flashing | Transmitting/ receiving |
| 2 | RCV | Yellow | On | Full duplex mode |
| | | | Off | Half duplex mode |
| | | | Flashing | Collision detected |

## 11    VISU+

VISU+ is an industrial visualization software which can be used on all hardware platforms under Windows CE and XP operating systems.

The TPxx series uses Windows CE as its operating system. The visualization functionality is limited under Windows CE. In addition, performance is reduced by the choice of hardware.

Please observe the following restrictions:

- Lower speed
- Less memory space
- Limited trending
- Limited data logging
- Limited alarming
- Processing of data amount (hardware-dependent)
- Graphical elements of the VISU+ library (e.g., tank views with traverses) cannot be completely displayed.

| VISU+ functions | |
|---|---|
| I/O variables in bytes (tags) | 4096 |
| Graphical interface and objects | Limited |
| Alarms | Limited |
| Short-cut and menu editor | Yes |
| Virtual pad (for touch screen) | Yes |
| Historical log for events | Limited |
| Dynamic language management | Yes |
| General logic | Yes |
| VBA multithreading | Yes |
| Trending | Limited |
| Recipe data logger | Limited |
| Reporting | Not available |
| Networking | Yes |
| Statistic alarms | Not available |
| SMS/voice/fax/e-mails | Not available |
| Modem services Driver tapi | Not available |
| Charts | Yes |
| OPC client | Yes |
| Runtime user management | Not available (ARM9) Yes (XScale) |

**Recommendations to improve performance**

1.    Reducing the page switchover time (page clearing)

To ensure a rapid switchover time between the pages to be visualized, the "Not destroyable" option should be set in the project file. Using this setting the page remains in RAM. The RAM assignment directly depends on both the displayed page size and the total number of pages. A RAM area of approximately 12 ... 13 MB is available for the saving of pages. A total of approximately 40 ... 50 pages can be saved in this area, depending on the page memory requirements.

For the operator terminal templates, the "Not destroyable" option is set by default.

When starting the runtime environment, only pages with the "Not destroyable" option activated will be preloaded into RAM provided that the option "Preload process images" has been selected for the project.

In this case, the starting time will be prolonged once by the page load times.

2.    Using IL (instruction list)

Assigning an IL script to a page requires a RAM area of approximately 800 kB. Due to the limited memory capacity, it is only possible to preload a maximum of 10 pages. In addition, the script runs in the background if the "Not destroyable" option is selected.

The scripts of all pages loaded into RAM are processed in parallel. Even the scripts stored in background are processed. This may lead to undesired interactions.

For the global use of IL scripts within a project, the engine should be stored on the overview page.

> **i**    To avoid confusion in the IL scripts, unused pages should always be "cleared" if they contain IL scripts possibly affecting other pages.

3.    Using VBA (Visual Basic for Applications)

Assigning VBA to a page requires a RAM area of approximately 800 kB. Due to the limited memory capacity, it is only possible to preload a maximum of 10 pages. In addition, VBA runs in the background if the "Not destroyable" option is selected.

For the global use of data within a project, the engine should be stored on the overview page.

4. Heap management

Heap management is used for memory management using the VISU+ runtime environment. The request and release of memory areas is both dynamic and unpredictable.

If there is no automatic garbage collection, the fragmentation of the total available memory may lead to new memory requirements not being able to be met even though the sum of available free memory would, theoretically, still be high enough.

Heap management can be activated to ensure a more efficient memory management and thus reduced access times.

For activating the heap management, proceed as follows:

1. Start the project file on the PC.
2. Open all project pages and options of the project file.
3. Stop the project on the PC.
4. Activate heap management by selecting the **Set value of last start** option.

The values automatically determined by the heap management are set.

**VISU+ system variables**

When creating a new VISU+ project, you should always apply the templates of the chosen HMI operator terminal, which are provided by the program.

Using device-specific templates ensures that the device-dependent system variables are created properly and the HMI operator terminal is supported in its entire performance range (see also Section "Keyboard" on page 20).

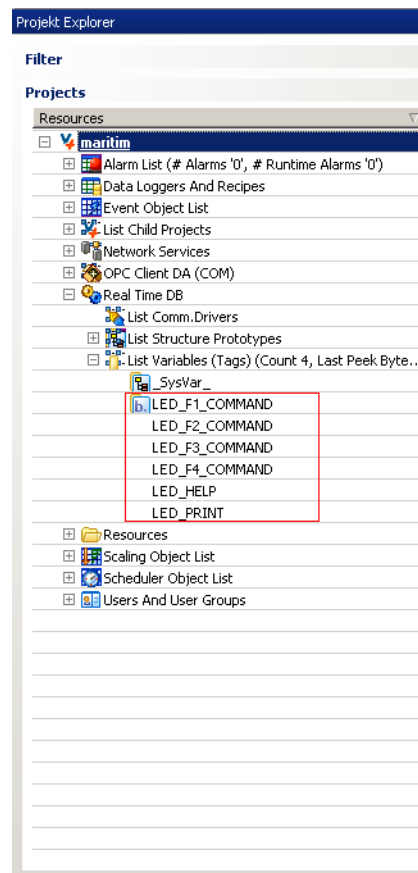In the program, the system variables are managed as a byte (8-bit) sequence.



Figure 14    Detail view, VISU+ system variables
            OT 3M

## 12 General user notes

**Error message**

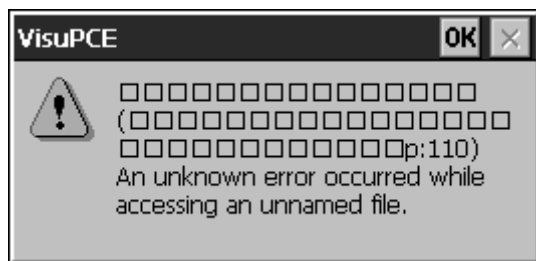| Error message | Remedy |
|---|---|
| Flash full | Delete any data in the flash memory that is no longer needed. (e.g., via FTP access) |
| | To swap out memory data, use a USB memory extension, if necessary. |

Figure 15    Example, error message

## 13 Restrictions for operator terminals

VISU+ uses buttons which support the following operator functions:

**Pushbutton functionality**

By pressing the button once, a log 1 signal is generated. The signal remains active as long as the button is pressed. The signal state returns to log 0 when the button is released.

**Switch functionality**

By pressing the button once, a log 1 signal is generated. By pressing the button once again, the signal state returns to log 0.

**Command functionality**

In conjunction with the onboard keys, only the "Release key" command trigger is processed.

## 14 Keyboard

The keys are protected by an embossed polyester foil resistant to environmental influences.

()°
**0**  The 0 and ()° key is used for data input. Pressing the key once provides the character 0. Pressing and holding the key for approximately 2 seconds allows you to select between the characters ()°.

STU
**1**  The 1 and STU key is used for data input. Pressing the key once provides the character 1. Pressing and holding the key for approximately 2 seconds allows you to select between the characters S, T, U, s, t, and u.

VWX
**2**  The 2 and VWX key is used for data input. Pressing the key once provides the character 2. Pressing and holding the key for approximately 2 seconds allows you to select between the characters V, W, X, v, w, and x.

YZ%
**3**  The 3 and YZ% key is used for data input. Pressing the key once provides the character 3. Pressing and holding the key for approximately 2 seconds allows you to select between the characters Y, Z, %, y, z, and %.

JKL
**4**  The 4 and JKL key is used for data input. Pressing the key once provides the character 4. Pressing and holding the key for approximately 2 seconds allows you to select between the characters J, K, L, j, k, and l.

MNO
**5**  The 5 and MNO key is used for data input. Pressing the key once provides the character 5. Pressing and holding the key for approximately 2 seconds allows you to select between the characters M, N, O, m, n, and o.

PQR
**6**  The 6 and PQR key is used for data input. Pressing the key once provides the character 6. Pressing and holding the key for approximately 2 seconds allows you to select between the characters P, Q, R, p, q, and r.

ABC
**7**  The 7 and ABC key is used for data input. Pressing the key once provides the character 7. Pressing and holding the key for approximately 2 seconds allows you to select between the characters A, B, C, a, b, and c.

DEF
**8**  The 8 and DEF key is used for data input. Pressing the key once provides the character 8. Pressing and holding the key for approximately 2 seconds allows you to select between the characters D, E, F, d, e, and f.

GHI
**9**  The 9 and GHI key is used for data input. Pressing the key once provides the character 9. Pressing and holding the key for approximately 2 seconds allows you to select between the characters G, H, I, g, h, and i.

:?!
**.**  The decimal point and :?! key is used for data input. Pressing the key once provides the decimal point. Pressing and holding the key for approximately 2 seconds allows you to select between the characters :, ?, !, :, ?, !.

**+**  The **Plus** key is used to increment numeric values.

<=>
**+**  The **Plus** and **<=>** key is used for data input. Pressing the key once provides the character +. Pressing and holding the key for approximately 2 seconds allows you to select between the characters <=>.

**–**  The **Minus** key is used to decrement numeric values.

\*/
**–**  The Minus and \*/ key is used for data input. Pressing the key once provides the character -. Pressing and holding the key for approximately 2 seconds allows you to select between the characters \*/.

**Control keys**

The **Cursor left** key is used for navigation.

The **Cursor right** key is used for navigation.

The **Cursor down** key is used for navigation.

The **Tab** key is used to navigate between text fields and buttons.
The LEDs are controlled via the "LED_TAB" VISU+ system variable.

The **Enter** key is used to confirm buttons and dialog boxes.

The **Del** key is used to delete characters in the text fields.

The **Cursor home / Pos 1** key is used for navigation.

**Special keys**

The function of the **Scroll** key can be freely assigned using Visu+ and is configured as F17.

The function of the **Print** key can be freely assigned using Visu+ and is configured as F18.
The LED is controlled via the "LED_PRINT" VISU+ system variable.

The function of the **Help** key can be freely assigned using Visu+ and is configured as F19.
The LED is controlled via the "LED_HELP" VISU+ system variable.

**Function keys**

The function of the function keys can be freely assigned using Visu+.
The F1 - F12 function keys are supported depending on the HMI operator terminal used.
The relevant LED is controlled via the associated "LED_Fxx_COMMAND" VISU+ system variable.

> ℹ️ We recommend the use of an external USB keyboard to make settings on the OT 3M. This can be used, for example, to define the device name. The **+** and **–** keys can be used to enter numeric values in the operator terminals.

**Insert strips for the function keys**

The insert strips can be replaced when the operator terminal is installed or removed. By inserting the strips from the rear of the front plate, the functionality of the specified sealing will not be affected. A set of insert strips is supplied as standard.

For labeling, use the following:

Single pieces, prototypes:    Labeling with a permanent marker pen

Small series:    Copying foil (thickness $\leq 70 \ \mu m$) with laser print

Large series    Customer-specific labeled insert strips

# 15 Insert strips
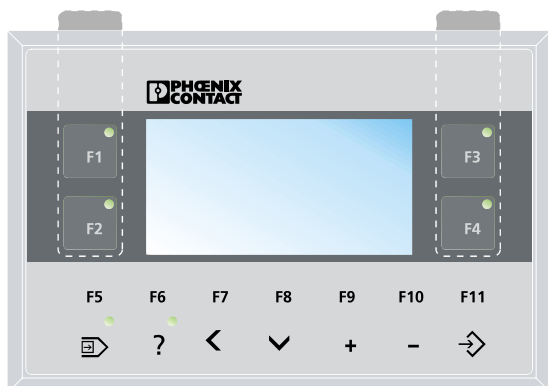


Figure 16     Position of the insert strips in the OT 3M
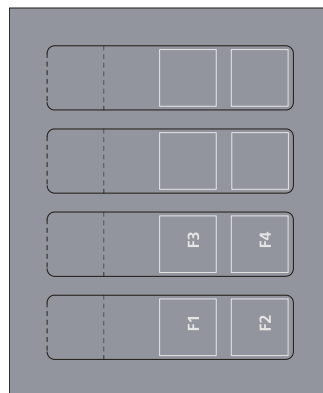


Figure 18     Set of insert strips for the OT 3M



Figure 17     Position of the insert strips in the OT 4M
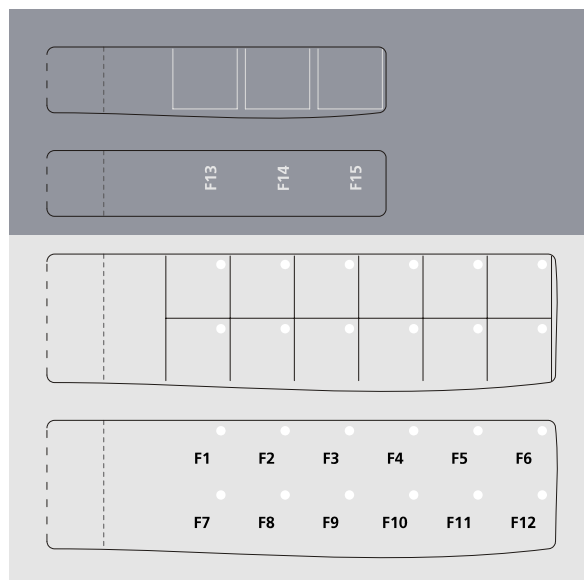


Figure 19     Set of insert strips for the OT 4M

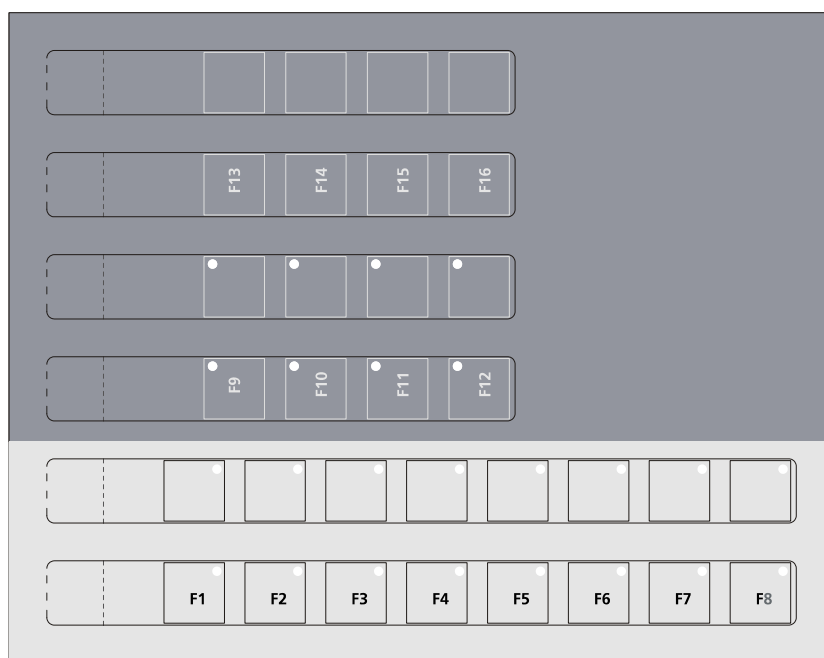Figure 20    Position of the insert strips in the OT 6M



Figure 21    Set of insert strips for the OT 6M

Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
-  Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits,General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



**Как с нами связаться**

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