



DL0G MPC 6

Manual 2.00

This manual contains a detailed description of the product and we have made every effort to make it as accurate as possible. However, this is not a guarantee of the features or the functionality of the product.

We reserve the right to modify the contents of this document at any time and without prior notice.

Because we at DLoG are constantly striving to improve this product, we cannot guarantee that previous or subsequent releases of the product will correspond in every respect with the product description given in this manual.

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www.dlog.com

Konformitätserklärung/ Declaration of Conformity

... gemäß den Bestimmungen der EG-Richtlinie über elektromagnetische Verträglichkeit 89/336/EWG, geändert mit 91/263/EWG, 92/31/EWG, 93/68/EWG und der EG-Richtlinie über Niederspannung 73/23/EWG, geändert mit 93/68/EWG, sowie der RTTE EG-Richtlinie 1999/5/EG, falls
Datenübertragungsgeräte, die im 2,4GHz Band arbeiten, von DLoG installiert wurden.

... in accordance with the EU-Directive of Electromagnetic-Compatibility 89/336/EEC changed by directive 91/263/EEC, 92/31/EEC, 93/68/EEC of the council and the EU-Directive for Low Voltage 73/23/EEC changed by directive 93/68/EEC of the council as well as the EU-Directive for radio equipment 1999/5/EC in case of data transmission equipment operating in the 2,4GHz band is assembled by DLoG.

Die Firma / The Manufacturer

DLoG Gesellschaft für elektronische Datentechnik mbH, Industriestr. 15, D-82110 Germering, Germany

erklärt hiermit, dass das Produkt / declares, that the product described in the following ...

Geräteart/Designation of device:	Gerätetyp/Type of device:
Industrie-PC/Industrial PC	MPC 6

... mit den oben genannten / folgenden Normen oder normativen Dokumenten übereinstimmt /
is conform to the aforementioned / following standards or normative documents.

EMC-Störaussendung (EMC-Emission) / EMC-Störfestigkeit (EMC-Immunity):

EN 55022:2006 Class A	Information technology equipment – radio disturbance characteristics – limits and methods of measurement
EN 55024:1998 + A1:2001 + A2:2003	Information technology equipment – immunity characteristics – limits and methods of measurement
EN 61000-3-2:2006	Electromagnetic compatibility (EMC) – limits for harmonic current emissions (equipment input current ≤ 16 A per phase) – For AC only
EN 61000-3-3:1995 + A1:2001 + A2:2005	Electromagnetic compatibility (EMC) - Part 3-3: Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current ≤ 16 A per phase and not subject to conditional connection For AC only
EN 61000-6-2:2005	Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity for industrial environments
EN 300 328 V1.7.1	Data transmission equipment operating in the 2,4GHz ISM band and using wide band modulation techniques
EN 301 489-17 V1.3.2	Specific conditions for 2,4GHz wideband transmission systems and 5GHz high performance RLAN equipment
EN 301 489-1 V1.8.1	Electromagnetic compatibility and Radio spectrum Matters (ERM); Electro Magnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements

Sicherheit (Safety):

EN 60950-1:2006	Information technology equipment - Safety - Part 1: General requirements
-----------------	--


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1. About this manual

This manual has been designed to make using the DLoG MPC 6 as simple as possible and provide expert assistance if problems should occur. It contains important information on using the device safely, properly and efficiently.

Adhering to the manual helps by avoiding dangers, reducing repair costs and breakdown times and increasing the reliability and lifespan of the DLoG MPC 6.

DLoG GmbH will not assume responsibility for any damage caused by the improper use of the DLoG MPC 6 and/or in disregard of the instructions in this manual.



WARNING

Before transporting, assembling, and starting the DLoG MPC 6, please read this manual carefully and follow all the safety guidelines listed.

Follow all *Basic safety guidelines* and the safety guidelines in the individual chapters.

Within this manual, DLoG GmbH strives to provide all the information required for using your DLoG MPC 6. However, because this is a versatile product that can be used in many different scenarios, we cannot guarantee that the information contained in this manual will cover every single aspect.

Should you require further information or if you have questions or issues needing clarification, please contact your nearest DLoG agent or representative.

1.1. Device version described

This manual describes the DLoG MPC 6 with the motherboard version MPC6.20 06.2006.

1.2. For qualified personnel

This manual was written for qualified personnel. The information is intended exclusively to complement the expertise of qualified personnel, not to replace it.

1.3. Keep this manual

Please keep this manual in a safe place. It should always be at hand near the described device.

1.4. Design method

1.4.1. Risk of injury or death

This symbol indicates hazards that pose a risk to life and limb (such as contacting the power supply):



The following levels apply, denoted by the keywords DANGER, WARNING, and CAUTION:



DANGER

There is an immediate risk of death / serious injury.



WARNING

There is a possible risk of death / serious injury.



CAUTION


Mild injury is possible.

1.4.2. Danger of property damage

These tips warn you of possible property damage:

Caution: Property damage	This symbol warns you of any dangers or hazards that could potentially cause damage to the terminal or system (such as malfunctions, data loss, equipment damage, etc.).
--------------------------------	--

1.4.3. Hints

	This symbol indicates hints that help you to understand how to use the product or the manual.
---	---

1.4.4. Additional design elements

Lists are indicated with bullet points, for example:

- DC power packs
- AC power packs

Instructions are numbered, for example:

1. Activate the DLoG Config icon.
2. Press <A>.

Parameter descriptions (e.g., of a dialog)

Ignition off	This parameter is used to set,...
Delay time	This indicates the delay time.
Switch-off time	The switch-off time should be at least...

Key display

Key names are shown in angle brackets: <F1>, <Ctrl>, <Insert>, <Home>, etc.

Menu options, commands, dialog fields

Examples: In the Edit menu you will find the command Paste | Values.

Click OK to finish.

Entries

Any text that needs to be entered is shown in `Courier` font, for example:

1. Enter the text `abcdefg`.

Other methods for emphasis

Any other emphasized text elements are highlighted in **bold** or underlined.

References to other chapters in the manual are printed in *italics*.

2. Basic safety guidelines

The DLoG MPC 6 was designed and built according to modern technology and accepted safety regulations. However, the operation of the DLoG MPC 6 can endanger personnel or third parties and cause damage to the device and other material assets when for example the device is

- mounted incorrectly
- operated by untrained or uninformed personnel.
- operated and maintained incorrectly.
- not operated according to the intended usage

The operator commitments in regards to safety (accident prevention regulations, work protection) are to be followed.

2.1. Safety

In order to prevent injury and damage, please read and observe the following safety guidelines prior to assembly and commissioning.

The manufacturer assumes no liability for any and all damages that can be attributed to non-compliance with these guidelines.

2.2. Intended usage

The DLoG MPC 6 is a multifunction terminal for stationary and mobile use in commercial applications (for example logistics, storage, manufacturing).

A different or extraordinary usage is not permitted.

For resulting damage the user/operator of the DLoG MPC 6 is solely responsible. This also applies to any changes you make to the device.

Compliance with the contents of the safety guidelines is particularly important for the proper use of this device.

2.3. Initial operation of the device

Area of application: not for use in life-support systems or critical safety systems

The device is not designed for use in life-support systems or critical safety systems where system malfunction can lead to the direct or indirect endangerment of human life. The operator shall take full responsibility for using the device in these situations.

The device cannot be used in combination with safety functions for machines and equipment which have to conform to the requirements of EN 954-1.

Risk of injury during transit or installation

The unit could fall during transit or installation and cause injury. Always ensure that there are two persons available when installing or removing the device.

Choice of location - observe the protection class

The ambient conditions at the point of installation must comply with the device's protection class.

Supply of fresh air – avoid overheating the unit

The DLoG MPC 6 is based on a passive cooling concept. As a result, the waste heat which is produced inside the device is emitted over the surface of the housing. For this system to function properly, sufficient fresh air circulation is required. Never install the system in a closed environment where the cooling air is unable to dissipate accumulated heat to the outside.

If the DLoG MPC 6 is not able to draw in fresh cooling air, this may cause overheating and severe damage to the unit.

The maximum allowed ambient temperature for the system needs to be taken into account for the concrete application area.

Install an easily accessible disconnecting device

The device is not supplied with a disconnecter (switch) that can be accessed externally. The power supply connector is therefore used as a disconnecter. Therefore it needs to be easily accessible.

If it is necessary to establish a fixed connection, an easily accessible disconnecting device (e.g. a switch such as a circuit breaker) should be installed close to the device. Ensure that the power cable is laid so that it is mechanically protected.

Laying power supply cables - observe the local installation regulations

The power supply cables must be laid in accordance with the applicable local installation regulations.

Ensure that no persons are injured in case the mounting bracket breaks

The DLoG MTC 6/10 may in no case be installed in such a way that persons can be injured during a breaking of the mounting bracket (e.g. fatigue break).

If the device is mounted in a place where people can be injured if the bracket should break, appropriate safety measures must be put in place (e.g. install a security cable in addition to the device bracket).

Radio performance: Do not exceed the maximum permissible transmitting power

Do not exceed the maximum permissible transmitting power which is specified by each separate country. DLoG MPC 6 users must verify this themselves.

2.4. Power supply

Operation in an emergency: immediately disconnected the device from the power supply

In case of emergency (such as damage to the power cable, or housing, or ingress of liquid or other foreign bodies), the device must be disconnected immediately from the power supply. Contact technical support staff at once.

Protection of the power supplies

If, after replacement, the fuse fed by the internal power supply blows again, the device must be sent in for servicing immediately (see section 3.6.11).

Danger of electrocution when cleaning/servicing the device

In order to avoid electrocution always disconnect the DLoG MPC 6 from the power supply before cleaning or servicing the device.

When charging the car battery please note

While charging the car battery the DLoG MPC 6 has to be either disconnected from the battery or it has to be determined that the maximum allowed input voltage of the DLoG MPC 6 is not exceeded.

Do not switch on devices with damaged cables or plugs

Do not use the DLoG MPC 6 when a cable or plug is damaged. Have the damaged parts replaced immediately!

Do not connect or disconnect any cables during storms

Data cables must never be connected or disconnected during an electrical storm.

2.5. External devices

The use of additional wiring and other peripheral devices, which are not recommended or sold by the manufacturer can result in fire, electrocution or personal injury.

If a power supply is used, only use the power supply recommended by the manufacturer.

Before connecting or disconnecting peripheral devices (exception: USB devices), the DLoG MPC 6 must be disconnected from the power supply! Otherwise, this could seriously damage both the DLoG MPC 6 and the connected devices!

Make sure that external peripheral devices with their own power supply are switched on at the same time or after you start the DLoG MPC 6.

If this is not possible, please ensure that the DLoG MPC 6 is adequately protected from power leakage caused by an external device.

2.6. Repairs only through DLoG

As a rule, never carry out repairs on the device yourself.

Always contact DLoG's technical support and send in your unit for repair if necessary.

On the back of the DLoG MPC 6 you will find the device's type plate which has important information about the device which you must quote for technical service. It provides important information about the configuration and manufacture of the device in abbreviated form.

Always provide technicians with the full model name and serial number.

2.7. CE Marking

Remark for CE class A products: Class A products may be used in residential environment but with the condition that the end user is informed about the possible consequence with a warning information in the user manual:

Warning! This is a class A device. This equipment may cause interference in a residential installation. In this case the user is encouraged to perform appropriate measures to correct the interference.

2.8. RTTE Directive 1999/5/EC

With regard to the RTTE Directive 1999/5/EC the statements in the declaration of conformity for the DLoG MPC 6 (see page 2 of this handbook) apply.

Česky [Czech]:	Toto zařízení je v souladu se základními požadavky a ostatními odpovídajícími ustanoveními Směrnice 1999/5/EC.
Dansk [Danish]:	Dette udstyr er i overensstemmelse med de væsentlige krav og andre relevante bestemmelser i Direktiv 1999/5/EF.
Deutsch [German]:	Dieses Gerät entspricht den grundlegenden Anforderungen und den weiteren entsprechenden Vorgaben der Richtlinie 1999/5/EU.
Eesti [Estonian]:	See seade vastab direktiivi 1999/5/EÜ olulistele nõuetele ja teistele asjakohastele sätetele.
English:	This equipment is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.
Español [Spanish]:	Este equipo cumple con los requisitos esenciales así como con otras disposiciones de la Directiva 1999/5/CE.
Ελληνική [Greek]:	Αυτός ο εξοπλισμός είναι σε συμμόρφωση με τις ουσιώδεις απαιτήσεις και άλλες σχετικές διατάξεις της Οδηγίας 1999/5/EC.
Français [French]:	Cet appareil est conforme aux exigences essentielles et aux autres dispositions pertinentes de la Directive 1999/5/EC.
Íslenska [Icelandic]:	Þetta tæki er samkvæmt grunnkröfum og öðrum viðeigandi ákvæðum Tilskipunar 1999/5/EC.
Italiano [Italian]:	Questo apparato é conforme ai requisiti essenziali ed agli altri principi sanciti dalla Direttiva 1999/5/CE.

Latviski [Latvian]:	Šī iekārta atbilst Direktīvas 1999/5/EK būtiskajām prasībām un citiem ar to saistītajiem noteikumiem.
Lietuvių [Lithuanian]:	Šis įrenginys tenkina 1999/5/EB Direktyvos esminius reikalavimus ir kitas šios direktyvos nuostatas.
Nederlands [Dutch]:	Dit apparaat voldoet aan de essentiële eisen en andere van toepassing zijnde bepalingen van de Richtlijn 1999/5/EC.
Malti [Maltese]:	Dan l-apparat huwa konformi mal-ħtiġiet essenzjali u l-provedimenti l-oħra rilevanti tad-Direttiva 1999/5/EC.
Magyar [Hungarian]:	Ez a készülék teljesíti az alapvető követelményeket és más 1999/5/EK irányelvben meghatározott vonatkozó rendelkezéseket.
Norsk Norwegian]:	Dette utstyret er i samsvar med de grunnleggende krav og andre relevante bestemmelser i EU-direktiv 1999/5/EF.
Polski [Polish]:	Urządzenie jest zgodne z ogólnymi wymaganiami oraz szczególnymi warunkami określonymi Dyrektywą UE: 1999/5/EC.
Português [Portuguese]:	Este equipamento está em conformidade com os requisitos essenciais e outras provisões relevantes da Directiva 1999/5/EC.
Slovensko [Slovenian]:	Ta naprava je skladna z bistvenimi zahtevami in ostalimi relevantnimi pogoji Direktive 1999/5/EC.
Slovensky [Slovak]:	Toto zariadenie je v zhode so základnými požiadavkami a inými príslušnými nariadeniami direktív: 1999/5/EC.
Suomi [Finnish]:	Tämä laite täyttää direktiivin 1999/5/EY olennaiset vaatimukset ja on siinä asetettujen muiden laitetta koskevien määräysten mukainen.
Svenska [Swedish]:	Denna utrustning är i överensstämmelse med de väsentliga kraven och andra relevanta bestämmelser i Direktiv 1999/5/EC.

2.7.1 Special rule/restriction

For the DLoG MPC 6 with WLAN 802.11abg, the following restrictions apply:

- WLAN 5 GHz band: 5.15 GHz – 5.35 GHz may only be used indoors.
- WLAN operation outdoors in France is only permitted in the 2454 – 2483.5 MHz range at max. 10 mW EIRP.

2.9. FCC user information

2.9.1. Interference declaration of the Federal Communications Commission

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules and meets all requirements of the Canadian Interference-Causing Equipment Standard ICES-003 for digital apparatus. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/T.V. technician for help.

DLoG GmbH is not responsible for any radio television interference caused by unauthorized modifications of this equipment or the substitution or attachment of connecting cables and equipment other than those specified by DLoG GmbH. The correction of interference caused by such unauthorized modification, substitution or attachment will be the responsibility of the user. The use of shielded I/O cables is required when connecting this equipment to any and all optional peripheral or host devices. Failure to do so may violate FCC and ICES rules.



WARNING

FCC warning: Any change or modification which is not expressly approved in the corresponding pages can lead to the withdrawal of the operating license for this device.

In order to comply with the FCC requirements regarding radio frequency exposure from vehicle-mounted transmission devices the antenna has to be kept at least 20 cm away from people.

2.9.2. Transmission of radio frequencies

Use care in airplanes or in clinical/medical areas

Some devices in hospitals and airplanes are not protected from radio frequency energy. Consequently, do not use the DLoG MPC 6 in airplanes or hospitals without prior authorization. Here use of the DLoG MPC 6 is only permitted if authorization is obtained.

Caution with pacemakers

Do not use the DLoG MPC 6 near pacemakers.

The DLoG MPC 6 can affect the function of medically implanted devices such as pacemakers and create interference. Do not place the DLoG MPC 6 near such devices.

Keep a minimum distance of 20cm between such a device and the DLoG MPC 6 in order to reduce the risk of interference.

If you have reason to assume that interference has occurred, then turn the DLoG MPC 6 off and consult a heart expert.

3. Device description

3.1. General

Thank you for choosing the DLoG MPC 6.

The DLoG MPC 6 is a multi-function industry computer designed for stationary and mobile use. Thanks to its rugged design (aluminum housing) the device provides effective protection against mechanical, electrical and chemical influences and extreme ambient temperatures. It is designed without an external fan to reduce maintenance requirements.

The particular advantage offered by the DLoG MPC 6 is the extreme diversity of functions combined with its compact design. By applying ultramodern technologies for display and touch screen, the DLoG MPC 6 combines excellent image quality with the simplest operability.



Figure 3.1: DLoG MPC 6 with optional mount

3.2. The models: DLoG MPC 6/110 and DLoG MPC 6/112

This manual applies to the following models of the DLoG MPC 6:

- for the DLoG MPC 6/110 with 10.4" display
- and for the DLoG MPC 6/112 with 12.1" display

Any differences between the devices will be clearly noted in this manual.

3.3. Abbreviations used for devices and accessories

Please note that to save space on the DLoG MPC 6 and supplied accessories, the following abbreviations have been used:

Abbreviation	Explanation
+	DC+
-	DC-
Ign	Ignition

3.4. Device description and type identification

3.4.1. Device type plate

The device type plate on the DLoG MPC 6 contains the following information:

DLoG MPC 6/110 or DLoG MPC 6/112	Describes the device DLoG MPC 6 with one (1) connection level and a 10" or 12" display
XGA, SVGA or VGA	Display resolution
AC or DC	Type of power supply, the following numbers (1-9) indicate the exact type of power supply with input voltage

H	H stands for heating, further letters denote other device options
e.g. 24/48V with 6.2 A	Input voltage of the DC power supply with nominal current or AC power supply with additional frequency display
e.g., 1 GHz	Clock rate of the CPU
S/N	12 digit serial number composed of: DLoG specific device code (29 stands for the DLoG MPC 6 model range) Indication of the week of manufacture Indication of the year of manufacture Six digits for internal DLoG identification

Example of a device type plate:



Figure 3.2: Example of a device type plate

3.5. Technical specifications

3.5.1. Mechanical

Housing	<p>Rugged aluminum-cast housing with integrated heat sink</p> <p>Protection class IP54 (upgradeable to IP65)</p> <p>ESD safe</p> <p>Weight of the DLoG MPC 6 with a 10.4" front panel: approx. 4.0 kg (depending on configuration)</p>
Display	<p>10.4" SVGA, 230 cd/m² or 420 cd/m², optional 4-wire resistive touch screen , with brightness adjustment</p> <p>10.4" VGA, 400 cd/m², optional 4-wire resistive touch screen, with brightness adjustment</p> <p>12.1" SVGA, 350 or 450cd/m², optional 8-wire resistive touch screen , with brightness adjustment</p> <p>12.1" XGA, 400 or 450cd/m², optional 8-wire resistive touch screen, with brightness adjustment</p>
Bottom	<p>Cable cover (splash guard)</p>
Top	<p>Optional antenna fitting for wireless LAN</p>

3.5.2. Motherboard

CPU and Chipset

CPU and Chipset combinations:

CPU:

Intel® Celeron® M ULV, 800 MHz, 0 kB L2 cache

or

Intel® Celeron® M ULV, 1 GHz, 512 kB L2 cache

or

with Chipset:

Intel® 82915GM Northbridge and Graphic chip

and

Intel® 82801 FBM (ICH6-M) Southbridge

CPU:

Intel® Celeron® M ULV, 1 GHz, 0 kB L2 cache

with Chipset:

Intel® 82910GM Northbridge and Graphic chip

Intel® 82801 FBM (ICH6-M) Southbridge

CPU:

Intel® Core™ Duo L2400, 1,66 GHz, 2 MByte L2 cache,

with Chipset

Intel® 82945GME Northbridge and Graphic chip

Intel® 82801GBM (ICH7M) Southbridge

Bus Interface

PCI bus (PCI 2.1)

Cache

64 kB level 1 cache: CPU-internal

0 kB level 2 cache on the 800 MHz CPU: CPU-internal

512 kB level 2 cache on the 1 GHz CPU: CPU-internal

RAM	256 to 1024 MBytes in one SO-DIMM slot Fully cacheable DDR2 technology
BIOS	AMIBIOS8® -1 MByte Flash BIOS with ACPI, PnP Programmable in the system BIOS POST self test
Slots for standard plug-in cards	A riser card is available for expansions: 1 PCI slot 32 bit 5 V
Real-time clock	Real-time clock with a power reserve of up to 10 years
IDE interface	Supports up to two IDE devices from PIO Mode 3/4 to UDMA/33. Connection via a 44-pin connector (2 mm grid). Connectable devices: 2.5" hard drives (enquire which capacities are currently available) 2.5" Flash disks (IDE) (enquire which capacities are currently available) CompactFlash type I/II Important notes for CompactFlash Cards: Only use CompactFlash Cards approved and released by DLoG to ensure the device functionality. Otherwise data loss could increase. The CompactFlash Cards used in the DLoG MPC 6 must be industrial and non removable models.
Floppy disk drive	Supports an external 3.5" USB floppy disk drive Protected to ESD level 4 (according to EN 61000-4-2)
Fan	Optional

Serial ports	1st serial port: 115 200 Baud max (16550A compatible, 16 bytes FIFO), supports RS-232 on an external 9-pin D-Sub connection ESD level 4 protected (acc. to EN 61000-4-2)
	2nd serial port: 115 200 Baud max (16550A compatible, 16 bytes FIFO), supports RS-232 on an external 9-pin D-Sub connection ESD level 4 protected (acc. to EN 61000-4-2)
	3rd serial port: 115 200 Baud max (16550A compatible, 16 bytes FIFO), internal for the integrated environment controller
	4th serial port: 115 200 Baud max (16550A compatible, 16 bytes FIFO), internal for integrated touch controller
Keyboard/mouse connection	Keyboard/mouse: 6-pin mini DIN connector, combination connector, Y cable for PS/2 keyboard and mouse required Internally-protected power supply for keyboard and mouse ESD level 4 protected (acc. to EN 61000-4-2)
USB-connection	2 stacked USB connections (USB 2.0 High Speed) with 0.5 A per port protected by fuse ESD level 4 protected (acc. to EN 61000-4-2)
Software compatibility	MS-DOS 6.x
	Windows XP Professional
	Windows XP Embedded
	Linux

3.5.3. LCD/CRT interface

VGA controller	Integrated Intel® Graphics Media Accelerator 900 with maximum 224 MByte Dynamic Video Memory Technology (DVMT 3.0) Shared memory architecture Resolution up to 1600 x 1200 (UXGA)Up to 24 bit color depth, depending on which LCD is used Simultaneous use of LCD/CRT Multiple LCDs are supported Drivers available for Windows XP Professional, XP Embedded and Linux
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3.5.4. Touch screen (optional)

Analog touch controller	12bit touch controller for 4/5/8-wire resistive touch screens with RS232 and PS/2 interface. Drivers available for MS-DOS 6.2x, Windows XP Professional, XP Embedded and Linux
Analog touch screens	Available for 10.4" and 12.1" LCD displays, others on request
Analog touch connection	Internal plug-in connector Interface is ESD level 4 protected (acc. to EN 61000-4-2)

3.5.5. Network interface

Network controller	Intel® ICH6M with PHY Intel® 82562 controller: 10/100 MB/s Drivers available for MS-DOS 6.2x, Windows XP Professional, XP Embedded and Linux
Network connection	RJ45 plug-in connector Integrated transmitter Two integrated status LEDs

3.5.6. ADC/MDC interface (optional)

Properties	4 electrically-isolated outputs, 16 electrically-isolated inputs PCI bus Drivers available for Windows XP Professional and XP Embedded
ADC/MDC connection	A 37-pin D-Sub connector

3.5.7. Cardbus interface (optional)

Cardbus controller	Ricoh R5C485 PCI Ver. 2.2 Driver support through Windows XP Professional, XP Embedded and Linux (only operating system support, plug-in card drivers from the manufacturer)
Cardbus slot	1 x type 1 or 1 x type 2 Accessible at the back of the unit

3.5.8. PCI Express® MiniCard interface for WLAN (optional)

PCI Express MiniCard slot	1 USB 2.0 High Speed 1x x1 PCI Express® Lane No SIM card mounts available, therefore, for example, no GSM, UMTS etc. cards can be used Driver support through Windows XP Professional, XP Embedded and Linux (only operating system support, plug-in card drivers from the manufacturer)
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3.5.9. Power supply

The device model is displayed on the device type plate!

AC internal power supply	115 V / 230 V, 50 to 60 Hz Maximum output 100 W Electrically-isolated Optional automatic switch-off software, supports Windows XP Professional, XP Embedded and Linux Withstands 4 kV burst Type: AC-1 Nominal current 1 A
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DC power pack 24/48 VDC 60 W internal Type DC-2	24/48 VDC nominal (down to 11 V for 20 s max.) Voltage range: 18 to 60 VDC Covers power outages up to 5 ms Electrically-isolated Maximum output 60 W Optional automatic switch-off software, supports MS Windows XP and Linux Optional display heater Withstands bursts up to 2 kV Nominal current of 3.7 A / 1.9 A Connection to SELV circuit ¹⁾ only
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DC power pack 24/48 VDC 40 W / 60 W internal Type DC-10	24/48 VDC nominal (down to 10 V for 20 s max.) Voltage range: 18 - 60 VDC Covers power outages up to 5 ms Electrically-isolated Maximum output: 40 W (+10 °C to +70 °C device interior temperature) or 60 W (-30 °C to +10 °C device interior temperature) Optional automatic switch-off software, supports MS Windows XP and Linux Withstands bursts up to 2 kV Nominal current 2.8 A / 1.4 A Connection to SELV circuit ²⁾ only
---	--

DC power pack 24/48 VDC 100 W internal Type DC-3, DC-4	<p>24/48 VDC nominal (down to 11 V for 20 s max.)</p> <p>Voltage range: 18 - 60 VDC</p> <p>Covers power outages up to 5 ms</p> <p>Electrically-isolated</p> <p>Maximum output 100 W</p> <p>Optional automatic switch-off software, supports MS Windows XP and Linux</p> <p>Optional display heater</p> <p>Withstands bursts up to 2 kV</p> <p>Nominal current 6.2 A / 3.1 A</p> <p>Connection to SELV circuit³⁾ only</p>
DC power pack 12 VDC 100 W internal Type DC-1, DC-5	<p>12 VDC nominal (down to 6 V for 20 s max.)</p> <p>Voltage range from 9 to 16 VDC</p> <p>Covers power outages up to 5 ms</p> <p>Electrically-isolated</p> <p>Maximum output 100 W (at 9 to 16 VDC) 80 W (at 6 to 9 VDC)</p> <p>Optional automatic switch-off software, supports MS Windows XP and Linux</p> <p>Optional display heater</p> <p>Withstands bursts up to 2 kV</p> <p>Nominal current of 15 A</p> <p>Connection to SELV circuit⁴⁾ only</p>
Power consumption	<p>Typically 30 W (DLoG MPC 6/110 SVGA with CompactFlash)</p> <p>Max. 100 W (DLoG MPC 6/110 VGA with CF in heating mode)</p> <p>Standby 1W (DLoG MPC 6/110 SVGA with DC power pack in standby mode)</p>

^{1,2,3,4)} The SELV circuit is a secondary circuit that is designed and protected so that its voltages will not exceed a safe value both when operating correctly or if a single error occurs.

3.5.10. Maximum power available for peripheral devices

Power supply	Motherboard	with no internal fan	with internal fan
DC-1	800 MHz motherboard	24 W	28 W
DC-1	1 GHz motherboard	16 W	20 W
DC-3	800 MHz motherboard	13.2 W	26.2 W
DC-3	1 GHz motherboard	5 W	18 W
AC-1	800 MHz motherboard	13.2 W	26.2 W
AC-1	1 GHz motherboard	5 W	18 W

3.5.11. Power supply fuses

The symbol for the fuse is FA. You will find the exact position on the sticker located on the connection plate (*Section 5.3 External connectors*).

Power supply	Fuse type	Examples
DC-1, DC-5	5x20 mm T 16 A L/250 V	Wickmann 195-2160 16 A / 250 V Siba 179120 (SIBA #. 7000135) 16 A / 250 V or similar devices produced by other manufacturers
DC-2 DC-10	5x20 mm T 6.3 A H/250 V	Bussman S505-6.3A Wickmann 181-6.3A Littelfuse 215 06.3 Schurter 0001.2512 Siba 70 007 65 6.3A Elu 179200 6.3A or similar devices produced by other manufacturers
DC-3, DC-4	5x20 mm T 12.5 A L/250 V	Wickmann 195-2125 12.5 A / 250 V Siba 179120 (SIBA Nr. 7000135) 12.5 A / 250 V or similar devices produced by other manufacturers
AC-1	5x20 mm T 1.25 A H/250 V	Wickmann 181-1.25 A or similar devices produced by other manufacturers

3.5.12. Ambient conditions

You can obtain even more information on the currently used displays and their temperature ranges on the Internet at www.dlog.com.

Operating temperature

All specifications in accordance with EN 60068-2-1/2
The permissible ambient temperature depends on the display used:

Display	Operating temperature [°C]	Operating temperature with heating [°C]
10.4" VGA	0 to +50	-30 to +50
10.4" SVGA 230cd	0 to +35	no heating possible
10.4" SVGA 400cd	0 to +50	-30 to +50
12.1" SVGA	0 to +50	-30 to +50
12.1" XGA	0 to +50	-30 to +50

Storage temperature

All specifications in accordance with EN 60068-2-1/2
The permissible ambient temperature depends on the display used.

Display	Storage temperature [°C]
10.4" VGA	-35 to +65
10.4" SVGA 230cd	-20 to +60
10.4" SVGA 400cd	-20 to +80
12.1" SVGA	-20 to +80
12.1" XGA	-20 to +80

Note: The storage temperature's lower limit may exceed the permissible operating temperature range. In such cases, the unit may be powered up to the minimum storage temperature and used in the full range of operating temperatures after the heating phase.

Relative humidity 10% to 90% at 40° C, non-condensating
In accordance with EN 60068-2-3

Mechanical vibration and shock-resistance Class 5M3 according to EN 60721-3-5: 1998 (land vehicles), 5 hrs with 3.6 g effective noise and 36 vibrations with 30 g peaks or US highway truck according to MIL-STD 810F: 2000 (Department of Defense), 3 hrs with 1 g effective noise and 600 vibrations with 20 g peaks in operation, with Flash disk

3.5.13. Test marks

CE EN 55022 Class A
EN 55024, EN 61000-3-2, EN61000-3-3, EN 61000-6-2
IEC 60950-1, EN 60950-1, UL 60950-1

EN 300328-1 and EN 301489-17, in case DLoG data transmission devices operating in the 2.4 GHz spectrum have been installed

3.5.14. Dimensions DLoG MPC 6/110 SVGA

Front view

Dimensions without add-ons (in mm):

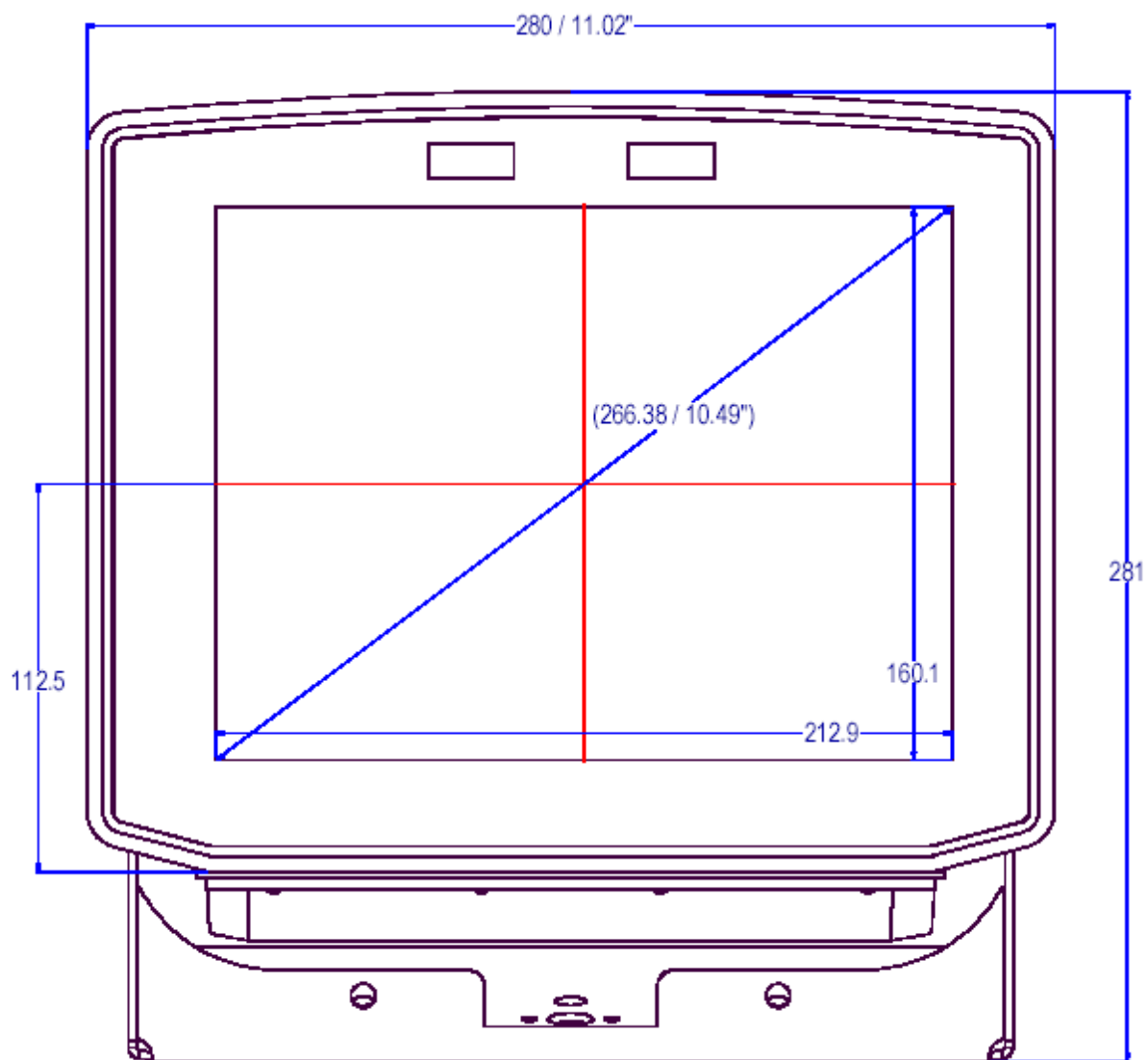


Figure 3.3: DLoG MPC 6/110 SVGA front view

Side view

Dimensions without add-ons (in mm):

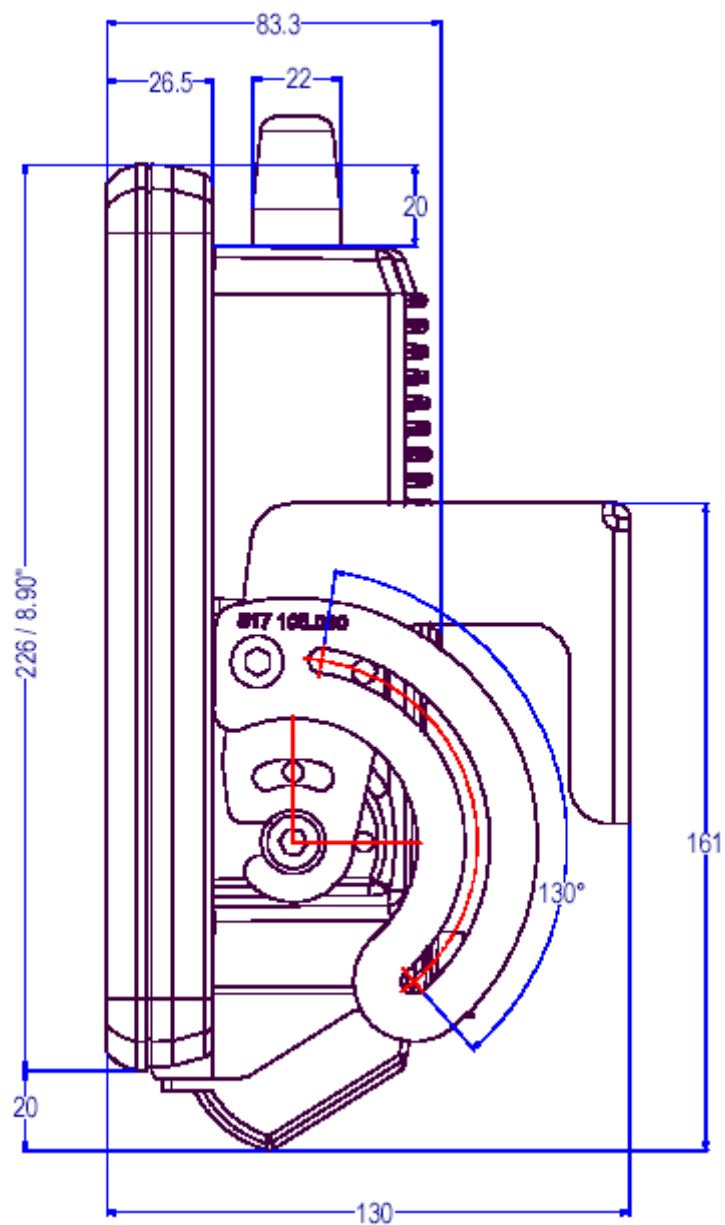


Figure 3.4: DLoG MPC 6/110 SVGA side view

Top view

Dimensions without add-ons (in mm):

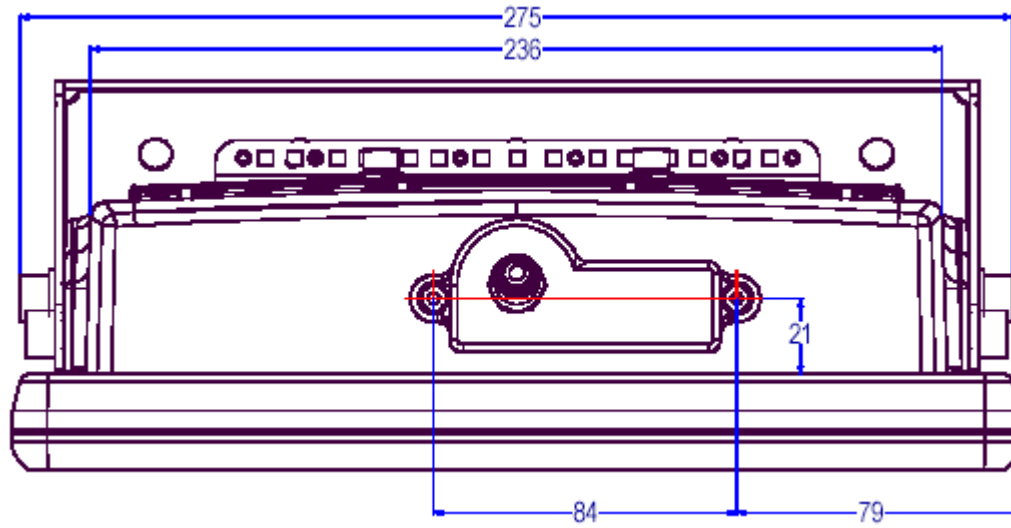


Figure 3.5: DLoG MPC 6/110 SVGA top view

3.5.15. Dimensions DLoG MPC 6/112

Front view

Dimensions without add-ons (in mm):

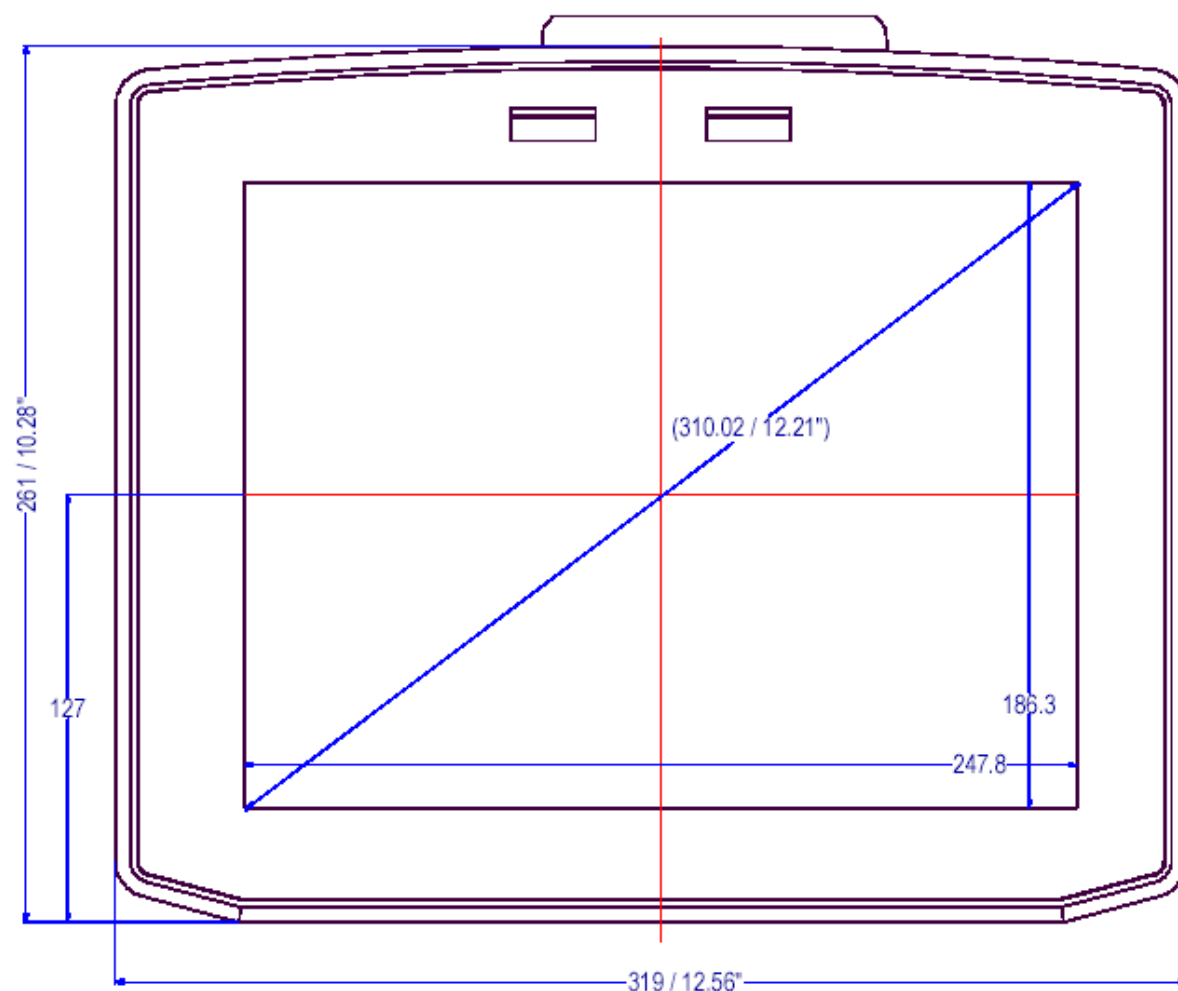


Figure 3.6: DLoG MPC 6/112 front view

Side view

Dimensions without add-ons (in mm):

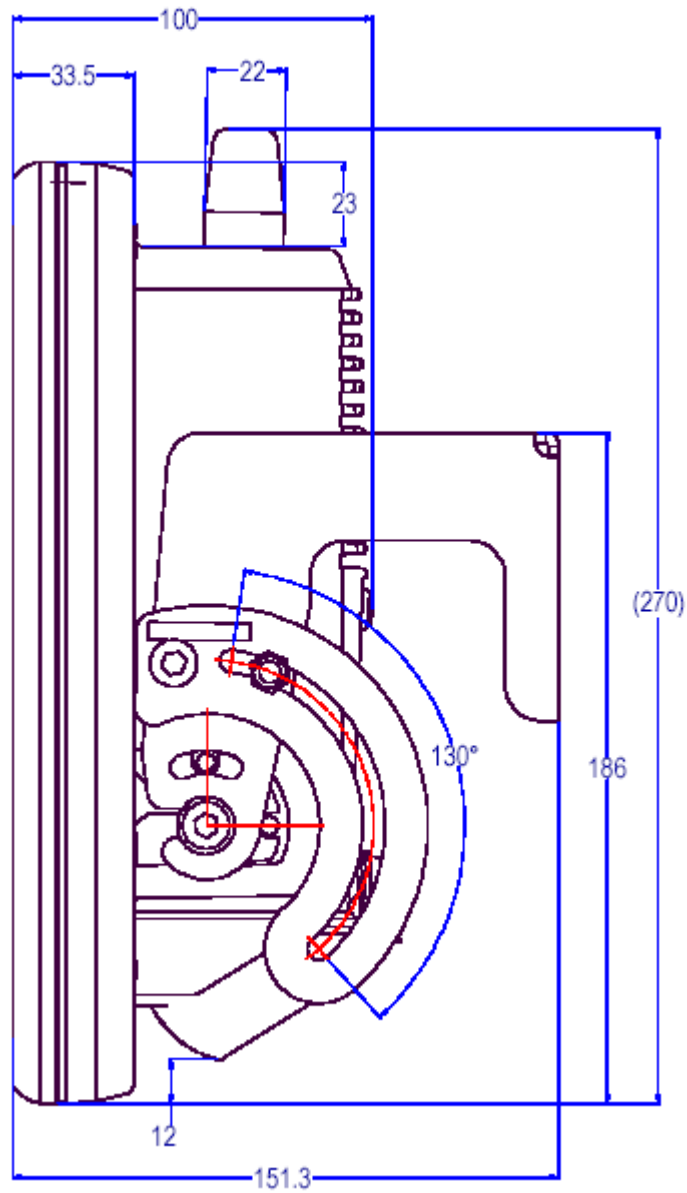


Figure 3.7: DLoG MPC 6/112 side view

Top view

Dimensions without add-ons (in mm):

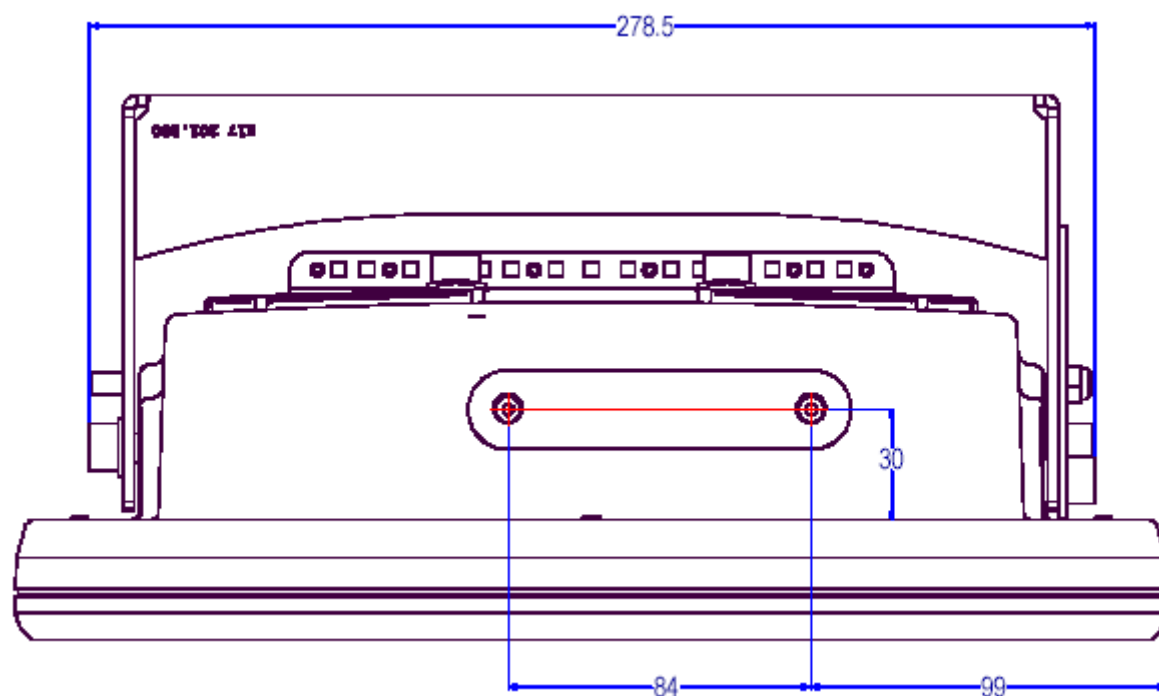


Figure 3.8: DLoG MPC 6/112 top view

3.6. VESA drill holes

The VESA drill holes on the DLoG MPC 6 are visible on this diagram.

Dimensions without add-ons (in mm):

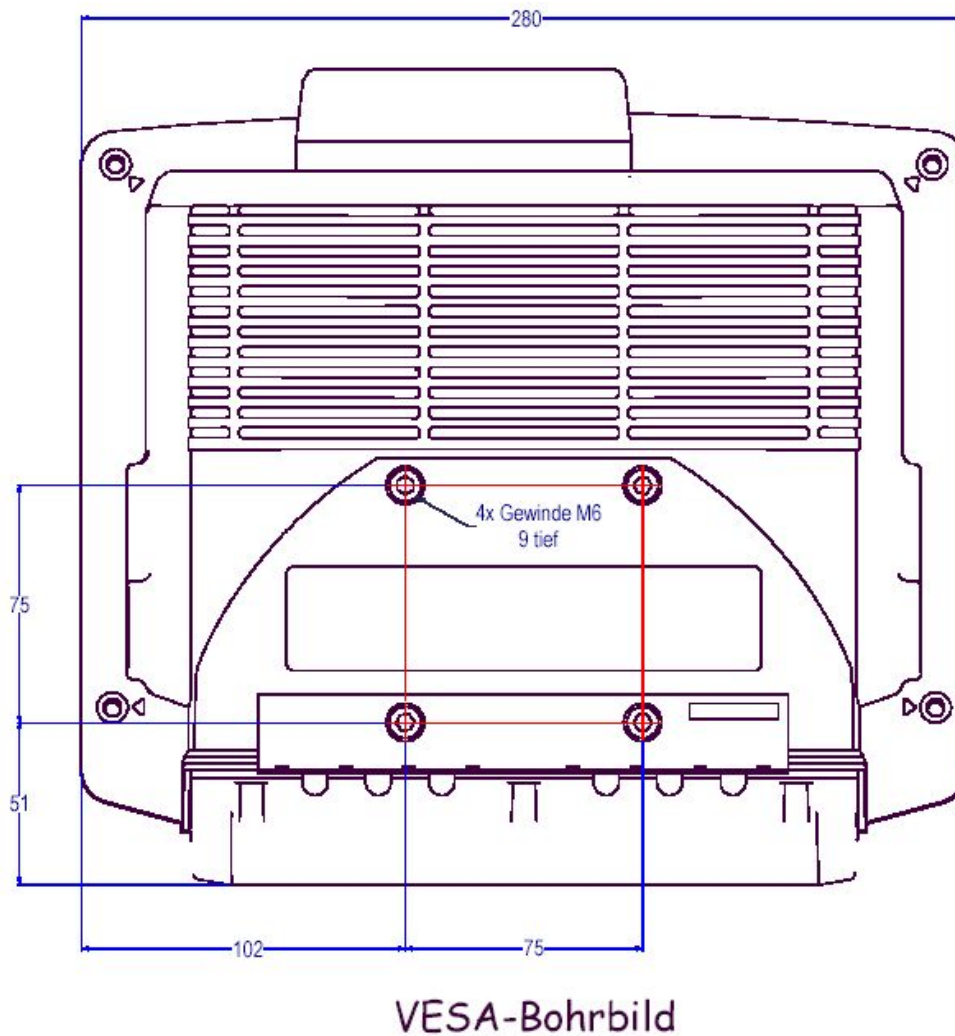


Figure 3.9: DLoG MPC 6/110 with VESA drill holes

4. Unpacking the device

4.1. Scope of delivery

The delivery includes at least the following:

- DLoG MPC 6 with strain relief rail
- Ordered assembly set
- Cable cover (standard = IP54; optional = IP65 with strain relief rail)
- One DC or AC connecting cable
- One IPC/MPC driver CD per delivery
- One printed manual per delivery

Please verify the delivery contents immediately on receipt!

4.2. Packaging

The packaging material has been selected to optimally protect your device while simultaneously offering the best possible ecological compatibility. We therefore kindly request that you store the original packaging material or ensure it is used for another suitable purpose such as transporting the unit or returning shipment.

Caution: Property damage	If you repack the device, please ensure that the cling wrap in the cardboard frame is positioned towards the front of the device so that it can provide the proper protection.
---	--

4.3. Returning your device

Due care was exercised when putting together the contents of your delivery and dispatching your device. Nevertheless, if you still have cause for complaint, please complete the form included in the appendix.

Should you need to return the device, please use the original packaging.

5. Initial operation



WARNING

Before operating the unit for the first time, carefully read the *Basic safety guidelines* at the start of this manual.

5.1. Cooling through the supply of fresh air

The DLoG MPC 6 employs a passive cooling concept whereby the waste heat generated inside the device is emitted from the surface of the housing. For this system to function properly, sufficient fresh air circulation is required.

Never install the system in a closed environment where the cooling air is unable to dissipate accumulated heat to the outside.

Caution: Property damage

If the DLoG MPC 6 does not have access to fresh cooling air, it may result in overheating and severe damage to the unit. The maximum permissible ambient temperature for the entire system needs to be taken into account for the concrete application area.

5.2. Pin configuration

This section describes the pin configuration for all DLoG MPC 6 plug-in connectors.

The pin configuration is based on the MPC6.20 06.2006 motherboard.

5.3. External connectors

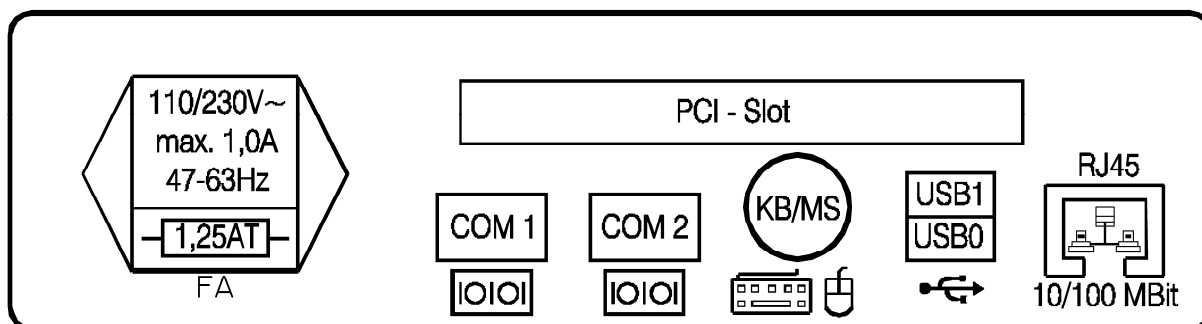


Figure 5.1: External connectors, AC version

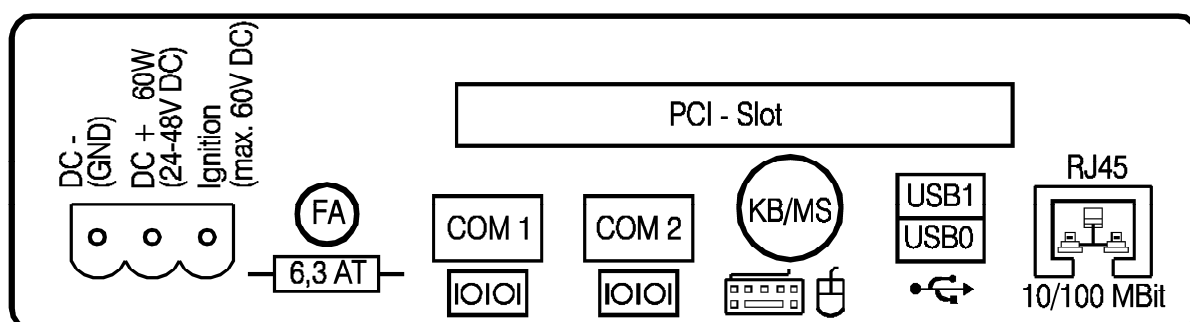


Figure 5.2: External connectors, 24/48 VDC 60 W version

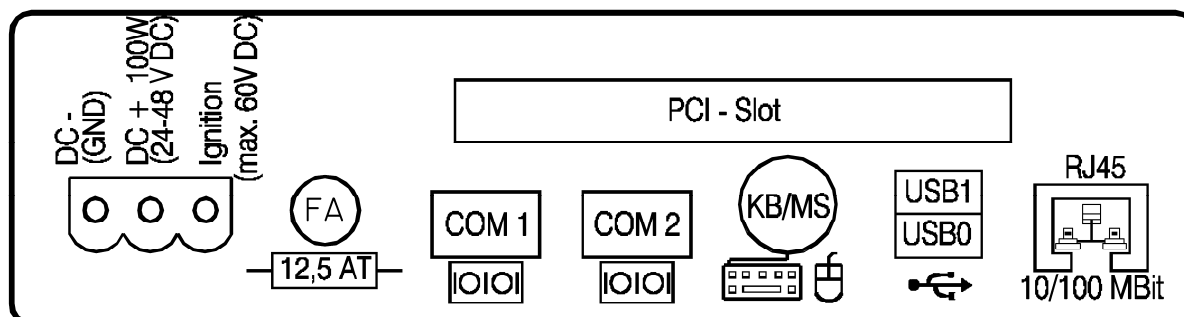


Figure 5.3: External connectors, 24/48 VDC 100 W version

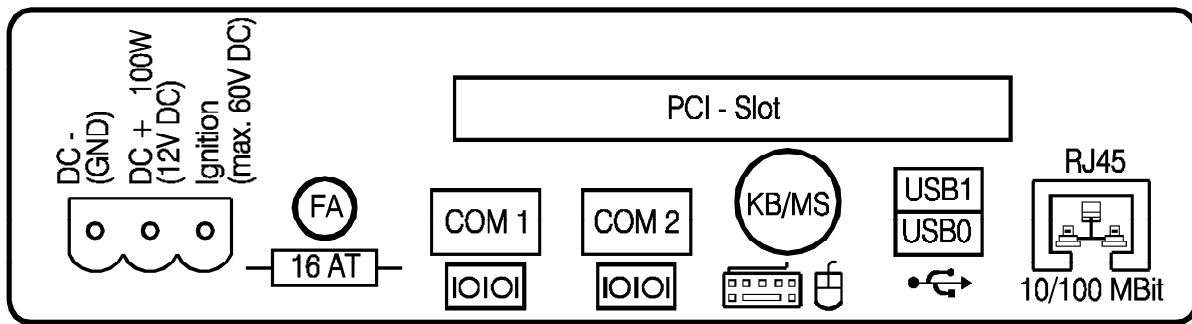


Figure 5.4: External connectors, 12 VDC 100 W version

5.3.1. AC voltage supply connector

Version: Standard power plug (IEC 320 compliant), 3-pin.

Outside view of the connector:

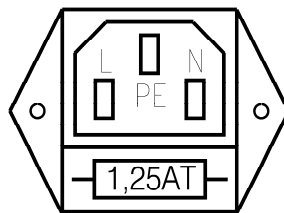


Figure 5.5: Exterior view of the AC power supply connector

5.3.2. DC voltage supply connector

Version: Phoenix Combicon, 3-pin.

External view:

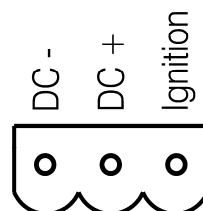


Figure 5.6: Exterior view of the DC power supply connector

Explanation:

Ignition on means that a control signal has to be routed to this connection (e.g., ignition of a vehicle), that matches the supply voltage level and is able to supply at least 2 W to the DLoG MPC 6.

The signal reference is DC-.

5.3.3. DLoG MPC 6 supply cable

The following diagrams show the DC device's supply cable.

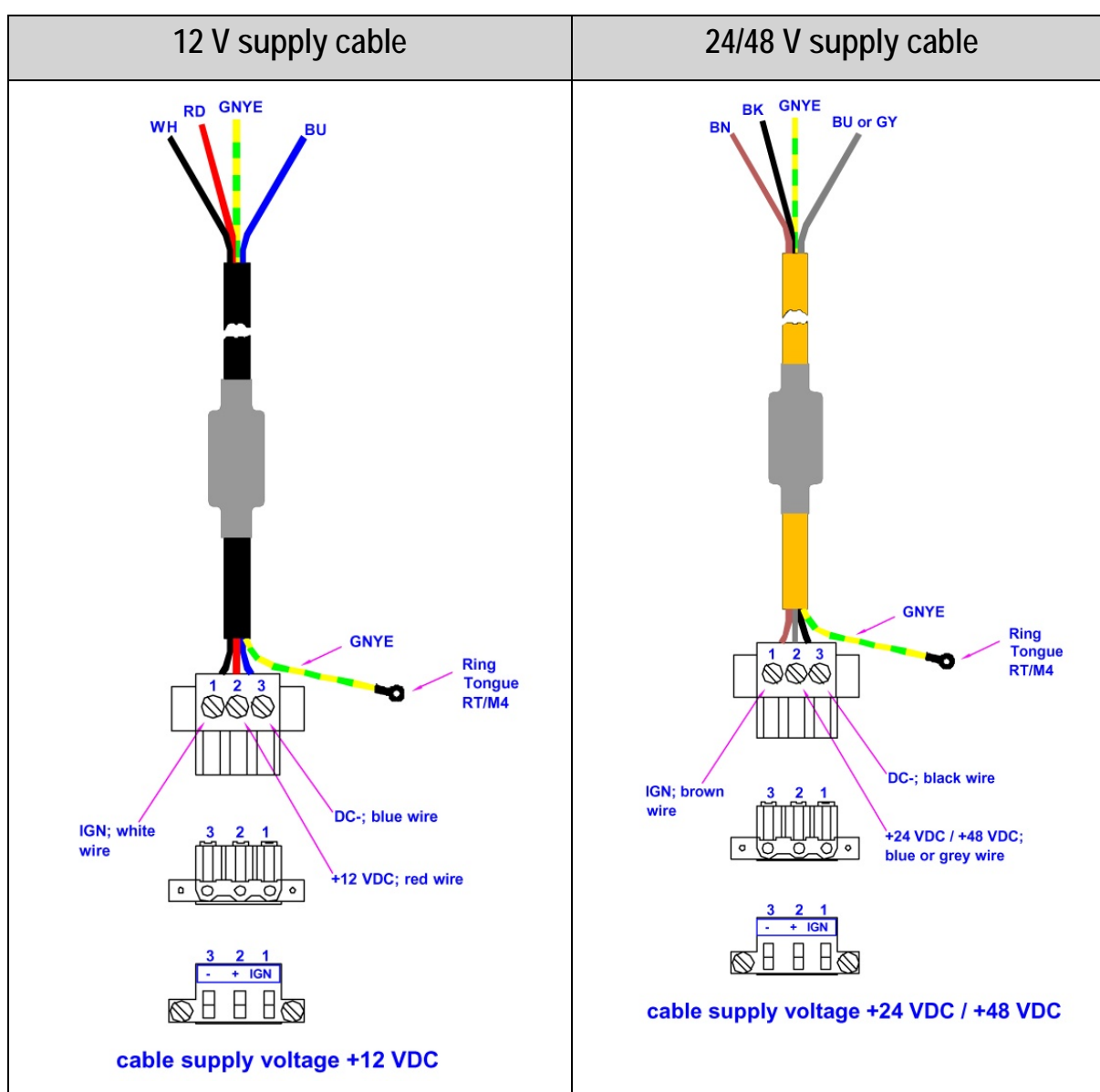


Figure 5.7: Cable diagrams of the DC device's supply connection

5.4. Connecting external devices

The DLoG MPC 6 must be disconnected from the power supply:

- before external devices (e.g., scanner, keyboard) can be connected or disconnected
- and before the DLoG MPC 6 can be connected to a network.

All connections and interfaces on the DLoG MPC 6 are located on the underside of the unit.

Caution:
Property
damage

Before connecting or disconnecting peripheral devices (exception: USB devices), the DLoG MPC 6 must be disconnected from the power supply! If the DLoG MPC 6 is equipped with an optional UPS battery, only open the device after the power LED has gone out. Otherwise, this could seriously damage both the DLoG MPC 6 and the connected devices!

Make sure that external peripheral devices with their own power supply are switched on at the same time as the DLoG MPC 6 or after you start the DLoG MPC 6. If this is not possible, please ensure that the DLoG MPC 6 is adequately protected from power leakage caused by an external device.

5.4.1. Powering down the DLoG MPC 6

Always shut down the DLoG MPC 6 as follows:

1. If your DLoG MPC 6 has a DC power pack and automatic switch-off software, power down the device using the ignition input.
2. If your device has an AC power pack and automatic switch-off software, power it down using the power button.
3. Remove the cable cover .
4. Disconnect the device from the DC or AC supply voltage (pull the plug).

The DLoG MPC 6 is only shutdown once the Power LED has gone out.

5.4.2. Powering up the DLoG MPC 6

Only power up the DLoG MPC 6 when all devices have been connected and the DLoG MPC 6 has been closed correctly (remember the cable cover!). Otherwise, you may damage the DLoG MPC 6!

5.5. Software settings with DLoG Config

The program DLoG Config can be found on your DLoG MPC 6. Use it for settings like the following:

- Configuring the front keys of the DLoG MPC 6
- Setting up the WLAN status display
- Turning the DLoG MPC 6 on and off together with the vehicle ignition

You can find detailed information in the user manual for the DLoG Config program.

5.6. WLAN settings

The settings and access data form must be defined for radio networks like WLAN depending on the optional equipment and intended use of the DLoG MPC 6.



WARNING

Please pay attention to all *Basic safety guidelines*, for WLAN especially chapters 2.8 *RTTE Directive 1999/5/EC* and 2.9 *FCC user information*.

5.6.1. Radio performance



WARNING

Do not exceed the maximum permissible transmitting power which is specified by each separate country. DLoG MPC 6 users must verify this themselves.

Please keep in mind the configuration for the transmitting power:

- Wireless card (programmed driver capacity)
- Connecting cables
- Antenna

Help table for the correct setting:

Translation between mW and dBm																							
dBm	-1	2	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
mW	1	2	3	4	5	6	8	10	12	15	20	25	30	40	50	60	80	100	125	150	200	250	

5.6.2. DLoG antenna solutions for use in Germany

The integrated DLoG antenna solutions are based on the prevailing IEEE.802.11 standard, which allows wireless data transfer at rates from 54 Mbps to 1 Mbps using the 2.4 GHz band.



WARNING

In Germany according to regulations published in the gazette 89/2003 of the RegTP (regulating body for telecommunications and mail), now: "Bundesnetzagentur" - Federal network agency for electricity, gas, telecommunications, post and railway - the maximum permissible transmitting power, EIRP (equivalent isotropically radiated power), in the 2.4 GHz frequency band is set at 20 dBm.

The transmitting power of the two integrated DLoG antennas (DLoG 4 dBi or DLoG 5 dBi) must be set to 30 mW (15 dBm) so that the EIRP limit value is adhered to when using the antenna.

To set the transmitting power of the wireless card, please read the documentation on the wireless card.

5.7. Removing the protective film from the display

The display of the DLoG MPC 6 is protected during transport by a transparent film. This film should remain on the display during assembly to avoid damage to the display surface.

Only remove the film once all of the assembly work has been completed.

5.8. Powering up the DLoG MPC 6

Only power up the DLoG MPC 6 after connecting all of the devices.

The DLoG MPC 6 is powered up by connecting it to an appropriate power supply and then, depending on the version of the device, either using the <Power> key or the ignition signal .

You have to hold the <POWER> key down for at least 3 seconds.

Caution: Property damage	Make sure there is a suitable disconnecting device such as a power switch or circuit breaker in the power supply circuit.
---	---

5.9. Protecting the TFT display from the memory effect

The TFT display of the DLoG MPC 6 has to be protected from the burning in of a motionless image. An image that has remained motionless for too long can cause irreversible damage to the display. With TFT displays there no cathode rays burning in an afterimage as in old TV sets or monitors, but TFT displays still have a “memory effect”. This is because with a still image the liquid crystal molecules align themselves in a certain way and become inert if they are not moved. Like burning in the effect is irreversible, but can be avoided by regularly turning off the display or by using a screensaver with changing content.

Define in the power management center of the utilized operating system that the displays of the DLoG MPC 6 should be turned off when no user input occurs.

A motionless image can stay on the display for a maximum of 12 hours. After more than 12 hours there is the risk of the memory effect.

Important for the lifespan of the backlighting:

Choose a turn off time that is definitely not too short (not less than 30 min) since frequent turning on of the backlighting will noticeably reduce its lifespan. This particularly applies at low temperatures. Here the backlighting of the display should never be switched off but instead a screensaver should be used which displays a changing or completely black screen in order to achieve the maximum lifespan of the backlighting.

6. Accessories

6.1. Keyboard

On the DLoG MPC 6 any keyboard with a 6-pin Mini-DIN plug can be connected (PS/2).

Resources for the keyboard controller are pre-defined in the system architecture and automatically managed by the BIOS.

All keyboards can be used with all operating systems. No additional drivers are required.

6.1.1. SMALL keyboard

A mountable SMALL keyboard (German/English) is available for the DLoG MPC 6, protection class IP 65.



Figure 6.1: SMALL keyboard on the DLoG MPC 6

SMALL keyboards available from DLoG:

- Desktop SMALL keyboard, English and German
- Add-on version SMALL keyboard, English and German, this add-on version can be attached to a stationary or mobile mounting bracket with a mounting kit.

6.1.2. 24-key keypad

A 24-key keypad which can be mounted onto the device, with a protection class IP 65 is available for the DLoG MPC 6.



Figure 6.2: 24-key keypad on the DLoG MPC 6

6.2. Mouse

Any PS/2-compatible mouse with a standard Mini-DIN plug, USB connector or RS-232 port can be connected to the DLoG MPC 6.

If the mouse has a PS/2 connection, a Y cable is also required.



It is not possible to use a PS/2 mouse during Touch operations, if you use the touch controller in PS/2 mode. By default, however, the touch controller is operated via COM4.

Of course a USB mouse or a RS-232-mouse can always be used in combination with touch mode.

Resources for the PS/2 mouse controller are pre-defined in the system architecture and automatically managed by the BIOS. This is also the case for RS-232 and USB mouse devices.

Drivers for MS-DOS operation need to be supplied by the control device manufacturer (order if necessary).

Support for the USB mouse under MS-DOS can be provided with a PS/2 driver, since here it is managed by the BIOS.

Special functions, such as those provided by wheel mouse devices, frequently require additional drivers, which are to be supplied by the manufacturer.

6.3. External CD-ROM drive

An external CD-ROM drive is available for the DLoG MPC 6. This is connected via the USB port.

Caution:
Property
damage

When connecting an external USB CD-ROM drive which has its own external power supply the DLoG MPC 6 must be disconnected from the power supply. The CD-ROM must be powered up **simultaneously** or **after** the DLoG MPC 6 as otherwise this can cause start-up problems, malfunctions, or even the destruction of the device.

Please note: Not every device classified as a USB CD-ROM is a proper USB CD-ROM drive. Only use devices approved by DLoG to ensure the device is fully compatible.

Operation

The CD-ROM drive port is provided via USB. The drive, which is supplied in a separate housing, is connected to one of the sockets on the back of the DLoG MPC 6.

Depending on the model, the external drive is powered either via the DLoG MPC 6 connecting cable or via a separate external power supply.

If USB has been activated in the BIOS, the CD-ROM drive is automatically recognized and made available by the BIOS.

The CD-ROM drive is bootable once it has been properly installed. To boot from a CD-ROM, insert a bootable CD and start the system.



In the BIOS USB CDROM must be entered as a boot device.

Resources and drivers

Resources for the USB port are pre-defined in the system architecture and automatically managed by the BIOS.

Drivers for the various operating systems need to be supplied by the drive manufacturer (order if necessary).

6.4. External floppy disk drive

An external floppy disk drive is available for the DLoG MPC 6.

Operation

The floppy disk drive port is provided via USB. The drive, which is supplied in a separate housing, is connected to one of the sockets on the underside of the DLoG MPC 6.

Power is supplied to the external drive by the DLoG MPC 6 via the USB connecting cable. If USB has been activated in the BIOS, the floppy disk drive is automatically recognized and made available by the BIOS.

The floppy disk drive is bootable once it has been installed correctly.

To boot from drive A: Insert a bootable floppy disk and start the system.



In the BIOS USB Floppy must be entered as the first boot device.

Resources and drivers

Resources for the floppy disk drive controller are pre-defined in the system architecture and automatically managed by the BIOS.

The floppy disk drive is automatically supported by all modern operating systems.

6.5. USB stick

You can connect a USB stick to the DLoG MPC 6 with a USB-A connector.

6.6. Scanners

You can connect scanners to either the USB, PS/2 or serial port. If connected to COM1, the scanner can be powered through the port (optional).

Be sure to only use scanners that have been approved by DLoG.

6.7. WLAN cards (PC card, cardbus, PCIe minicard)

WLAN cards are plugged in to the PC card/cardbus slot or at the PCIe minicard slot (according to the specified option which cannot be changed!).

If you received the WLAN card from DLoG the correct driver will already be installed.

If you want to use other WLAN cards the correct driver must be installed.

Generally, only drivers for WLAN cards that have been approved by DLoG can be integrated into the Images operating system.

7. Mounting

7.1. Options for mounting the device

The DLoG MPC 6 can be mounted in a variety of ways:

- It can be positioned horizontally on a desk or mounted on a steering wheel and vehicle console.
- Wall mounts are also available for mounting the unit on machines and operating panels.
- Roof mounting is also possible, for example under the vehicle roof.

Depending on the vibration resistance and pivoting demands, mounting brackets, clamp feet or RAM mount elements can also be used to attach the device. Please contact your DLoG sales office to find out more about the whole range of installation options on offer.



WARNING

The unit could fall during transit or installation/mounting and cause injury. Always ensure that there are two persons available when installing or removing the device.

7.2. Permitted mounting positions

The permitted mounting positions of the DLoG MPC 6 have been defined as follows:

From a maximum of -90°

Up to a maximum of $+90^{\circ}$



Figure 7.1: Permitted mounting positions of the DLoG MPC 6

Caution:
Property
damage

The DLoG MPC 6 can only be mounted in a range of 180° as illustrated.

7.3. Follow and retain the installation instructions

Please follow the installation/mounting instructions included with assembly kit when installing your DLoG MPC 6. Please make sure that you retain the instructions. Pay careful attention to the Basic safety guidelines included in the beginning of this manual.

7.4. Mechanical dynamic loading

Since the DLoG MPC 6 is a weighted structure, it is invariable that the unit will be subject to mechanical dynamic effects. Therefore optimizing the mounting can be very helpful.

7.5. Power supply

An integrated, electrically isolated AC/DC power supply is available for the DLoG MPC 6.

The power pack is designed to fulfill the requirements for the full range of operating temperatures of a DLoG MPC 6 with standard extension modules.

In a system with a 800 MHz CPU, 512 MB RAM, HDD, a 10.4" display and an external keyboard, this leaves approx. 20 W for plug-in cards and/or external devices.

7.5.1. AC power pack

An integrated, electrically isolated AC power pack is available for the DLoG MPC 6. This automatically adapts to the mains voltages 115 VAC or 230 VAC (50-60 Hz)

Its maximum output is 60 W.

Power is connected on the underside of the device via a standard plug for non-heating devices.

There is no power switch.

Caution: Property damage	Ensure that there is a suitable disconnecting device such as a power switch or circuit breaker in the power supply circuit. Ensure that the disconnecting device isolates all supply voltage lines.
---	--

7.5.2. DC power pack

Different DC power packs, each fully integrated and electrically isolated, are available for the DLoG MPC 6, read more in manual section *3.5.9 Power supply*.

100 W power packs are required for the heating option!

Power is connected to the underside of the unit using a Phoenix Contact plug. There is no power switch.

Caution:
Property
damage

In DC applications the DLoG MPC 6 must only be connected to a SELV (Safety Extra Low Voltage) circuit ⁵⁾

Ensure that there is a suitable disconnecting device such as a power switch or circuit breaker in the power supply circuit. Ensure that the disconnecting device isolates all supply voltage lines.

The DC+ - connecting cables must be protected by a fuse (30 AT max.).

The ignition connecting cables must be protected by a fuse of the following type: 5x20 mm T 125 mA L/250 V, for example, a Wickmann 195-125 mA/250 V.

⁵⁾ The SELV circuit is a secondary circuit that is designed and protected so that its voltages will not exceed a safe value both when operating correctly or if a single error occurs.

7.5.3. Installing connecting cables

If possible, use the connecting cables supplied to connect the DLoG MPC 6 to the power supply.

Make sure that the connecting cables are laid without kinks and are protected.

7.6. Vehicle applications (such as forklifts)

Pay special attention to the various electrical potentials when installing the unit on a vehicle (such as a forklift).

In the DLoG MPC 6, the logic ground and the shield ground are firmly linked.

The “logic ground” is the earth line (GND) for all of the internal electrical components, such as the hard drive and the CPU.

Cable shielding, the housing and the ground conductor (in AC-powered units) are connected to the shield ground.

Caution: Property damage	Carefully read the following warnings!
---	--

- Never connect a 12 VDC device to a 24/48 VDC vehicle! The device model is written on the device type plate, a warning sticker on the front of the unit and on the external connector strip.
- Some forklifts have a chassis that is connected to DC+. Therefore, the DLoG MPC 6 chassis is also connected to DC+. However, if you use peripheral devices that supply DC– to the DLoG MPC 6 via an interconnector (such as a DC– serial port), this will cause a short circuit. This will inevitably lead to malfunctions or even a total system failure.
- In DC-powered devices, always attach ring tongues on the supply voltage cable to the ground bolt situated on the connector bay .

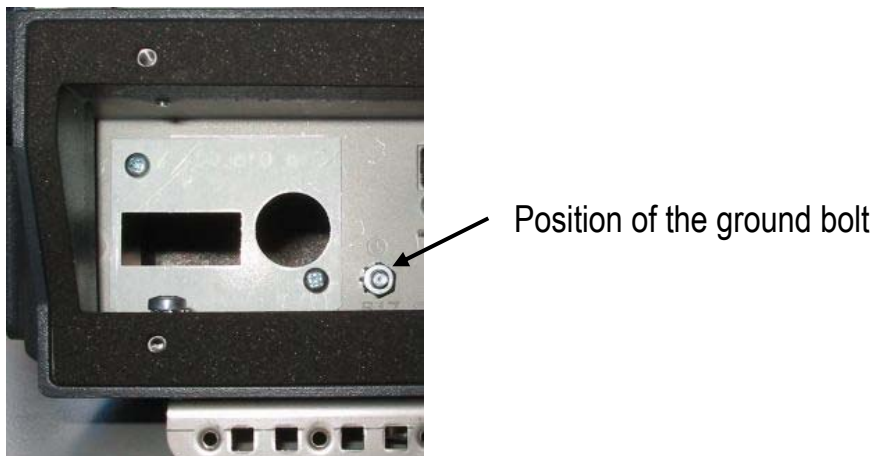


Figure 7.2: Position of the ground bolt

- The other end of the yellow-green supply voltage cable should be connected to the vehicle's chassis .
- Make sure that the DLoG MPC 6's connecting cable is attached as close to the battery as possible. Connecting the DLoG MPC 6 to large electrical loads, such as converters for the forklift motor may result in random restarts, malfunctions and/or irreparable damage to the device.
- If you want to connect devices fed by other power sources to the DLoG MPC 6, such as certain PS/2-Wedges, printers and so on, be sure to power up the peripheral devices at the same time or after the DLoG MPC 6. Otherwise, you may encounter start-up problems, malfunctions or even irreparable damage to the device.

7.7. Cable cover (splash guard)

Caution: Property damage	For safety reasons, the supplied cable cover for the external ports must be installed prior to using the DLoG MPC 6.
---	--

7.7.1. Protection class IP65

In order to comply with protection class IP65, please use the optionally available IP65 assembly kit from DLoG.

Please observe the installation instructions included with this assembly kit.

After finishing the mounting process the cables must be affixed using the included strain relief rail.

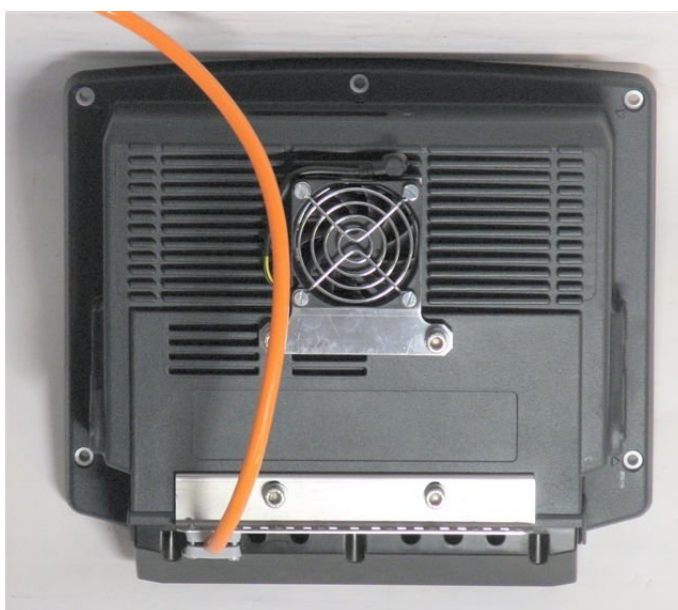


Figure 7.3: DLoG MPC 6 with strain relief

7.7.2. Protection class IP54

To ensure that the DLoG MPC 6 continues to conform to this protection category, proceed as follows:

1. Place the cables connected to and from the device next to each other. Avoid crossing the cables.
2. Attach the cables to the strain relief rail using the enclosed strain relievers. Ensure that the cables are attached exactly where the cable cover's cable opening is located.



Figure 7.4: DLoG MPC 6 without cable cover

3. Now attach the sealing ends onto the cables.

**Caution:
Property
damage**

Take care not to damage the opening seal of the cable cover! It should be possible to attach the cable cover to the cable duct without using force. The neck collar screws should be screwed firmly, preferably diagonally and always using 5 rotations. The screws need to be retightened after 2 days.

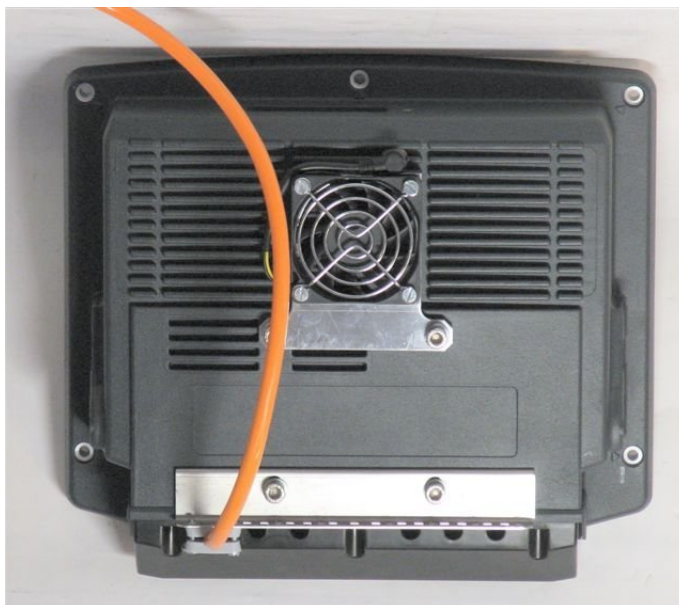


Figure 7.5: DLoG MPC 6 with cable cover mounted

7.8. Mounting the WLAN Antenna

In order to avoid exceeding the limits determined by the FCC for exposure to radio waves, you (and other people in your vicinity) should maintain a minimum distance of 20 cm from the antenna integrated into the computer.

Please note this while mounting DLoG industry computers with WLAN antennas.

7.9. Mount antenna cap/protective cap

Under the antenna cap or protective cap of the DLoG MPC 6 there is a slot for a CF card or a PC/PCMCIA card.

To access this slot, you need to remove the aerial /protective cap from the unit.

Caution: Property damage	Incorrect or improper removal and fastening of the antenna/protective cap can impair the function of the entire DLoG MPC 6 system and in particular the WLAN functionality! Incorrect or improper changes made to the DLoG MPC 6 will invalidate any warranty provided by DLoG GmbH.
---	--

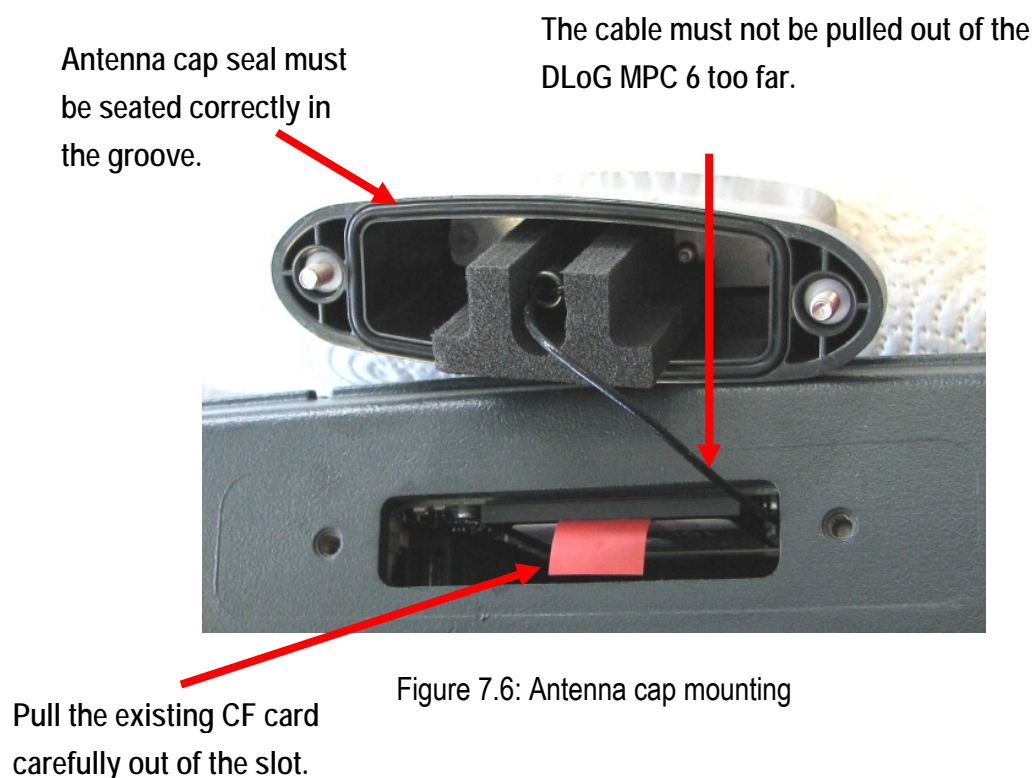
Unfasten antenna cap from unit and refasten it:

1. Unscrew the two screws from the antenna cap with an Allen key (size 3 mm).
2. Lift the antenna cap carefully to avoid pulling on the antenna connection cables (max. 2 to 3 cm).
3. Keep hold of the antenna cap, making sure that no pulling tension is exerted on the antenna connection cables.
4. Pull the existing CF card carefully out of the slot with the aid of the pull-out tape.

CAUTION: One end of the antenna connection cables is attached to the antenna cap, the other end to the internal WLAN unit of the DLoG MPC 6. The cables must not be pulled out of the DLoG MPC 6 too far and become detached from the WLAN unit! This might damage the WLAN unit or other components of the device.

5. Push the new CF card into the slot until it snaps into place.
Take care not to trap or sever the antenna connection cables.

6. Place the antenna cap back onto the DLoG MPC 6.
7. Take care not to trap the antenna connection cables when doing this.
The antenna cap seal must not be damaged; it must be seated correctly in the groove.
8. Reinsert and tighten the two screws of the antenna cap (1 Nm torque).



Unfasten protective cap from unit and refasten:

To unfasten and refasten the protective cap, use the same procedure as for the antenna cap.

8. Operation

8.1. Touch Screen

The DLoG MPC 6 is equipped with a resistive touch screen. The surface of the touch screen should be kept free of contamination, sand, etc. to prevent damage to the touch screen.

Caution:	Incorrect operation, e.g. using sharp objects such as screwdrivers, will irreparably damage the touch screen.
Property damage	

Operation of the resistive touch screen is recommended with:

- clean, dry fingers
- clean, dry, soft gloves
- suitable touch stylus (plastic or wood, rounded tip, hardness at most 3H (corresponds to pencil hardness 4H))

Resistive touch screens may not be operated with:

- Ball-point pens or writing utensils
- Unsuitable touch stylus with hardness greater than 3H (corresponding to pencil hardness 4H)
- Tools of any kind (e.g. screwdrivers)
- Sharp objects (knives, scalpels, etc) that can lead to damage to the touch surface.

8.1.1. Dirty touch surface

If the touch surface is dirty, the touch screen must be cleaned before operation.

Clean the touch screen as specified in Chapter *11 Touch screen* (never with sharp cleaning agents, never with cleaning agents containing sulfur).

8.2. Front panels

The DLoG MPC 6 is available with three different front panels:

- With a 4 key front panel
- With a 10 key front panel
- Or with a 25 key front panel

8.3. 4 key front panel

The DLoG MPC 6 with a 4 key front panel has the following controls:

- POWER ON/OFF for turning the unit on and off
- Manual brightness control with + or -
- As well as turning the backlighting on or off (lightbulb symbol)

You can find details on the functionality of these keys in section 8.5 25 key front panel.



Figure 8.1: DLoG MPC 6 front panel with 4 keys

8.4. 10 key front panel

The DLoG MPC 6 with a 10 key front panel has the following controls:

- POWER ON/OFF for turning the unit on and off
- Manual brightness control with + or -
- As well as turning the backlighting on or off (lightbulb symbol)
- Arrow keys
- <Esc> and <Enter>

You can find details on the functionality of these keys in section *8.5 25 key front panel*.



Figure 8.2: DLoG MPC 6 front panel with 10 keys

8.5. 25 key front panel



Figure 8.3: DLoG MPC 6 front panel with 25 keys


The layout of the keys is the same for 10.4" and 12.1" displays.

Units with brightness control

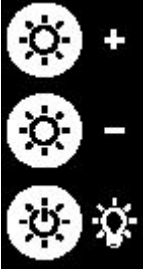
Note for all units featuring a brightness control: Even after manually turning off the backlighting, the DLoG MPC 6 will continue to respond to interaction via the keyboard, mouse or touch screen. This means that you can continue to enter commands and data even if the display lighting is off.

8.5.1. Power key


If you want to start the DLoG MPC 6 using the <POWER> key, please: You have to hold the <POWER> key down for at least 3 seconds.

<p>Turning the DLoG MPC 6 on and off:</p> <p>This button has been preconfigured by DLoG by default:</p>		
	DLoG MPC 6 with DC power supply and automatic switch-off software	Power key is not used for powering up the unit. If the button is pressed before the shutdown delay time has elapsed, the unit is powered down immediately.
	DLoG MPC 6 with DC power supply without automatic switch-off software	Power key is used to power up the unit. If the button is pressed while the unit is operating, this results in a HARD shutdown. This may lead to data loss!
	DLoG MPC 6 with AC power supply and automatic switch-off software	Power key is used to power up the unit. If the button is pressed while the unit is operational, all applications are quit and the DLoG MPC 6 is properly shut down.
	DLoG MPC 6 with AC power supply without automatic switch-off software	Power key is used to power up the unit. If the button is pressed while the unit is operating, this results in a HARD shutdown. This may lead to data loss!


8.5.2. Manual brightness control/backlighting

	<p>+ button for manual brightness control (optional)</p> <p>- button for manual brightness control (optional)</p> <p>Turning the backlighting ON/OFF</p>
---	--


8.5.3. LEDs

	<p>Temp (red) LED indicates an excessively high or low temperature inside the unit</p> <p>HD (green) LED indicates access of the hard drive/CF drive</p> <p>Power (green) LED indicates an available internal power supply</p>
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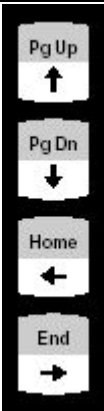
8.5.4. Function and number keys

	<p>yellow LED: indicates the status of the <Shift> key</p> <p>"0"/F1": digit "0", or function key <F1> if the <Shift> key is pressed</p> <p>to</p> <p>"9"/F10": digit "9", or function key <F10> if the <Shift> key is pressed</p> <p>". " / F11": decimal point, or function key <F11> if the <Shift> key is pressed</p> <p>"← " / F12" "BACKSPACE" or. <F12> if the <Shift> key is pressed</p>
--	--

8.5.5. Special keys

	<p><S1> Special key: Pressing this key has the same effect as simultaneously pressing the <Ctrl> and <+> key on the keypad.</p> <p><S2> Special key: Pressing this key has the same effect as simultaneously pressing the <Ctrl> and <-> key on the keypad.</p>
---	---

8.5.6. Escape key, enter key and scroll keys

	<p><Esc> key</p> <p><Enter> key, also called the <Return> key</p>
	<p>↑/PgUp “Cursor Up” or “Page Up” when pressing the <Shift> key</p> <p>↓/PgDn “Cursor Down” or “PageDown” when pressing the <Shift> key</p> <p>←/Home “Cursor Left” or all the way left on that line when pressing the <Shift> key</p> <p>→/End “Cursor Right” or all the way right on that line when pressing the <Shift> key</p>

8.6. Operating states

The following operating states are possible for the DLoG MPC 6:

Status of internal LEDs		DLoG MPC 6 status
Power (green)	Temp (red)	
OFF	OFF	Initial state, idle time - waiting for a new ignition signal after switch off; no power supply
OFF	FLASHING	Temperature sensor malfunctioning
OFF	ON	Heating is on at temperatures $< 0^{\circ}\text{C}$, or overheating warning at temperatures $> 62^{\circ}\text{C}$. The computer will not start until the temperature inside the unit is between 0 and 62°C again.
ON	OFF	Computer is starting up; normal operational state; shutdown delay time is running
ON	ON	Temp. $< -25^{\circ}\text{C}$ or Temp. $> 70^{\circ}\text{C}$
ON	FLASHING	Temperature sensor malfunctioning; automatic switch-off software configuration

9. Operating system

9.1. Pre-installed on the hard drive/CompactFlash

When a DLoG MPC 6 with a pre-installed operating system is started, this operating system is loaded following the BIOS boot messages.

System-specific device drivers – such as those for display, audio and network adapters, and touch screens – are also pre-installed.

Refer to the relevant operating system manual for specific operating instructions.

In DLoG MPC 6 units with a pre-installed operating system, the system is located on the **C partition**. The size of this partition will not always be the same as the size of the entire hard drive/CompactFlash. It is up to you to organize the usage of the remaining hard drive/CompactFlash capacity.

With Windows XP Embedded a small EWF partition (Enhanced Write Filter), which is required for the EWF functions.

9.2. Installing on the hard drive/CompactFlash

When a DLoG MPC 6 is started up for the first time without a pre-installed operating system, the user needs to carry out a number of steps that will vary depending on the system to be installed. Refer to the relevant operating system manual for specific instructions.

Caution: Property damage	The installation and configuration of the operating system should only be carried out by professionals familiar with the system environment.
---	--

9.2.1. Operating systems supplied on CD-ROM

There are two ways to install operating systems which are supplied on CD-ROM:

- Using an external CD-ROM drive connected to a USB port. This drive can be used to install, for example, Windows XP/SP1 and SUSE Linux 10.1.
- Initialize the hard drive/CompactFlash using a bootable floppy disk and then copying the operating system CD and driver CD contents onto the hard drive/CompactFlash using the right network/CD drivers. The operating system can then be installed directly from the hard drive/CompactFlash.



The installation CD must include Service Pack 1 or higher if Windows XP is to be installed via a USB-connected CD-ROM. Service Pack 1 is included with all current installation CDs from DLoG.

9.2.2. Operating system images

If you have created an image of a master installer, there are many ways to copy it to another computer:

From CD-ROM	For installation via USB CD-ROM a bootable image CD must be available. The operating system image can then simply be installed from the USB-connected CD-ROM drive.
Via Memory stick	For installation via a USB memory stick a bootable memory stick with an image must be available. The operating system can then be installed from the memory stick.
Via the network	When installing via a network, you need to have an external USB floppy disk drive and a bootable disk with the right network driver. The operating system image can then be installed from the network server.

9.2.3. Operating systems on floppy disk

Operating systems supplied on floppy disk can be installed from an external USB floppy disk drive.

There are three ways to install additional system-specific device drivers such as those for display and network adapters or touch screen:

- If the DLoG MPC 6 only contains a floppy disk drive, the device drivers need to be copied from the IPC/HPC/MPC Drivers CD-ROM to the floppy disk.
- If a CD-ROM drive is available for the USB connection on the DLoG MPC 6 it is possible to install from the IPC/HPC/MPC Drivers CD-ROM.
- If a network connection is available, copy the IPC/HPC/MPC Drivers CD-ROM to the network server and install the device drivers from there.

9.3. Special features of the operating systems

Always observe the documentation provided by the operating system's manufacturer when using a custom operating system. Additional aspects to be observed for specific hardware/software combinations are described below.

9.3.1. MS-DOS

MS-DOS is not a Plug and Play operating system. The system resources need to be managed by the user.

9.3.2. Windows XP Embedded

If the DLoG MPC 6 is running Windows XP Embedded, not all USB devices will be supported.

9.3.3. Linux

Linux is an operating system that is gaining more and more ground in the industrial environment due to its stability and open access to the source code.

The DLoG MPC 6 was successfully tested with the SUSE distribution version 10.1 and Fedora Core 5. Most likely, other distributions will also be compatible.

Most of the peripheral equipment for the DLoG MPC 6 is supported in Linux by default. For the DLoG MPC 6 analog touch controller, the drivers are included on the IPC/HPC/MPC Drivers CD, or they can also be obtained from your DLoG sales agent.

10. Software applications

10.1. Displaying the DLoG MPC 6 configuration

The program DSYSINFO, which is started from DOS shows the configuration of the DLoG MPC 6.

It was designed for use under DOS and does not work under Windows XP.

Launching DSYSINFO.EXE generates the following messages:

```
DSYSINFO V3.60 DLoG PC System Info
Copyright (C) 1992-2003 by DLoG GmbH

Date                : 13-SEP-06 13:40:07.20
Operating System, Vers : MS-DOS, DOS 7.10
CPU, Math Coprocessor : 486 or higher, 80387
Installed Memory      : 64MB
Size of fixed disk 0,1 : 122MB, 1MB
DLoG PC model         : MPC 6
DLoG Serial Number    : 290002200000H
DLoG BIOS Version     : M6I00C00
Chipset               : Intel 915
```

10.2. Fine tuning the operating system parameters

The free program TweakUI from Microsoft® is used to fine-tune the Windows user interface. Operating parameters that are otherwise inaccessible can be changed with this program.

For example, an automatic log-on can be set up with a username and password. Please refer to the help file for further details.

TweakUI has been designed exclusively to be used with Microsoft Windows operating systems. Specific functional limitations of the program are listed in the TweakUI help file.

10.3. Environment controller settings

The program MPCCOM has been developed for use in DOS. It does not work under Windows XP or any other Windows operating system.

The MPCCOM program is started from DOS.

Using different parameters you can adjust the following settings:

- Display the current version of your environment controller software as well as statistical, configuration and control functions (temperature, ignition and so on).
- Change the shutdown and delay time.
- Change the reaction time of the power button on the unit's front panel.
- Set how the front panel power button is to be interpreted.
- Set whether the DLoG MPC 6 is to constantly monitor the ignition signal during operation.

Operation

Launching MPCCOM.EXE -h generates the following messages:

```
MPCCOM -d time0      set power-key time
                     (time0=time to wait before keypress is
                     recognized in 100ms
                     valid values [1..255])
MPCCOM -h            show this help
MPCCOM -info, -i     readout a lot of info stored in EEPROM
MPCCOM -p value      set power-key mode
                     (0=power-key completely disabled
                     1=wait for the power-key to startup &
                     use the power-key to switch off the
                     device
                     2=ignore the power-key at startup & use
                     the power-key to switch off the device
                     3=wait for the power-key to startup &
                     ignore the power-key on the working
                     device
MPCCOM -t time1 time2 ...set timer values in sec
                     (valid values [1..65535])
                     (time1 = delay time,
                     time2 = switchoff time)
```

```

MPCCOM -x value      .. .set ignition monitoring
                        when device is working
                        (0=use ignition for automatic
                        switch-off
                        1=ignore ignition if device
                        is working)
MPCCOM -kb value     ...disable backlight key
                        (0=no, 1=yes)
MPCCOM -kl value     ...disable "+" & "-" keys
                        (0=no, 1=yes)
MPCCOM -kp value     ...disable power key
                        (0=no, 1=yes)
MPCCOM -ks value     ...disable shift key
                        (0=no, 1=yes)

```

Statistical information, for example, is generated by calling: `MPCCOM.EXE -i`

```

PIC-Version:  3.00                MPCCOM-Version:      :      1.7
Last Update:  01.01.2003          Actual Temperature   :      26øC
Working hour backlight : 103h 30min or 4d,  7h and 30min
Working hour device   : 103h 30min or 4d,  7h and 40min
Delay time            :      900s    Switchoff time      :      180s
Brightness value      :      0       Switchoff automatic :      yes
Brightness control    :      yes     Heating automatic   :      no
BKL off while on Accu :      no      Accu option         :      no
Use delay while on Accu:      no      Shift key state saved :      no
Backlight key off     :      no      "+" & "-" keys off   :      no
Power key off         :      no      Shift key off      :      no
Act. brightness saved :      no      Use switchoff auto  :      yes
Wait for powerkey     :      no      Wait for ignition   :      yes
Switch-on device count :      70     Powerkey-time       :      2.0s
Switch backlight-volt :      78      Switch-on/off bkl-sw :      1
Powerkey sw-on count  :      1       Powerkey sw-off count :      0
Ignition sw-on count  :      26      Switch-off auto count :      0
PS-ON switch-off count :      0      Temp-sensor error count:      0
Overtemp sw-off count :      0       Lowtemp sw-off count  :      0
Heating active startup :      0      Heating active working :      1
Startup temp -> min    :      23øC    Startup temp -> max    :      49øC
Working temp -> min    :      23øC    Working temp -> max    :      49øC
Actual shutdown reason :      unknown Last shutdown reason  :      unknown

```

11. Touch screen

An integrated touch screen controller evaluates the changes in resistance that result from contact with the touch screen. The touch screen controller sends the calculated data to the touch screen software driver of the operating system.

11.1. Construction type

- 4- and 8-wire touch sensor using analog resistive two-tail technology
- Hardness of surface JIS-K-5400: 3H (corresponds to pencil hardness 4H)
- Construction: Film-film-glass (FFG) with buffer layer, chemically hardened glass

11.2. Resistance

The touch sensor surface does not change under the influence of the following substances (based on DIN 42 115 part 2, time of effect two hours at room temperature):

Food material:

Tea, coffee, ketchup, mustard, vinegar, soy sauce, beer, red wine, white wine, cola, cooking oil

Household and industrial chemicals

Detergent, all-purpose cleaner, dishwashing detergent, glass cleaner, hydrogen peroxide (3%), Lysol, ethanol, isopropanol, acetone, methylethylketone, toluene, concentrated hydrochloric acid, petroleum, benzene, gasoline, motor oil, diesel, gear oil, brake fluid, antifreeze, hydraulic oil.

11.3. Operation

The finger or a suitable stylus can be used for operation.

Sharp or hard objects may not be used.

Unsuitable objects such as ball-point pens, screwdrivers, etc. damage the sensor and lead to the total failure of the touch sensor.

For more details, please see Chapter 8 *Operation*.

11.4. Cleaning

Clean the resistive touch screen with clean, damp, not dropping cloth and a dishwashing detergent. It is better to apply the detergent to the cloth than directly to the surface of the touch screen.

Do not use cleaning agents containing ammonia or sulfur!

Do not use abrasive agents; they can scratch the touch screen

11.5. Storage and handling

The resistive touch screen is a glass product and must therefore be handled with care. To avoid scratching the touch screen, the surface should be kept clean and free of dust and dirt. To avoid accidental damage to the touch screen, follow these instructions:

- Store corresponding to the temperature and humidity listed (*Technical Data*).
- Do not place heavy objects on the touch screen.
- Use a soft, lint-free, cloth dampened with isopropanol for cleaning.
- The finger or a suitable stylus can be used for operation. Sharp or hard objects may not be used. Unsuitable objects such as ball-point pens, screwdrivers, etc. damage the sensor and lead to the total failure of the touch screen.

11.6. MS-DOS installation and calibration

Installation

The directory C:\hammouse must be used in order for the driver to be able to locate the calibration data.



Install the Hampshire touch screen driver after installing MS-DOS and verifying that the installed system is fully functional.

Follow the instructions below to install the Hampshire touch screen driver under MS-DOS:

1. Create the directory C:\HAMMOUSE. This directory name must not be modified.
2. Copy the DOS files for the touch screen into this directory. These DOS files can be found in the directory C:\Util on the hard drive/CompactFlash of the DLoG MPC 6 or on the driver CD-ROM.
3. Enter the following command line in the batch file **Autoexec.bat** (for example, using <EDIT>):
Serial touch: C : \HAMMOUSE\HMOUSE /B9600 /C4 /I11 /hY
- PS/2 touch: C : \HAMMOUSE\HMOUSE /p /T12 /hY
4. Restart the computer.

Calling parameters:

You can also enter the following calling parameters:

/r : Uninstall the driver

/? : Help page

MS-DOS calibration

The calibration of the touch screen is carried out with the program HDOSCALB.EXE.

Example:

1. Open the directory C:\HAMMOUSE.
2. Enter HDOSCAL.

You can also enter the following calling parameters:

/Tx : Touch Mode

/TS – Stream

/TU – Pen-UP

/TD – Pen-Down

/Sx : Touch Sound

/SN – Sound ON

/SF – Sound OFF

/Cxx: Cal Mode

/C3 – 3 point

/C4 – 4 point

/C20 – 20 point

/V: Video Mode

/VTEXT – Calibrate Text mode

/V640x200 – Calibrate 640x200 mode

/V640x350 – Calibrate 640x350 mode

/V640x480 – Calibrate 640x480 mode

/V800x600 – Calibrate 800x600 mode

/V1024x768 – Calibrate 1024x768

/Vcustom – Calibrate custom mode

11.7. Touch (Serial) for Windows XP Prof. and XP Embedded

11.7.1. Installation

The touch drivers to be used can, by default, be found on the CompactFlash or hard drive under **Util/atouch/<verNR>**.

In addition you will find the DLoG drivers on the included driver CD or on the Internet under www.dlog.com.

1. Open the corresponding folder and run **Setup.exe**.
2. On the Welcome dialog click **Next**.
3. In the Software License Agreement window select **I accept all of the terms of the above License Agreement** and then click **Next**.
4. On the Select Controller dialog choose **serial (RS/232)** and click **Next**.
5. On the Serial Configuration dialog choose **COM4** and **9600 Baud** and click **Next**.
6. Deselect the option on the Configuration Complete dialog and close by clicking **Finish**.
7. Two Files Needed windows will appear querying the path to the **tsufiltr.sys** file.

8. Select **Browse** to navigate to the installation folder indicated above, then choose the **Serial** folder and click **OK**.

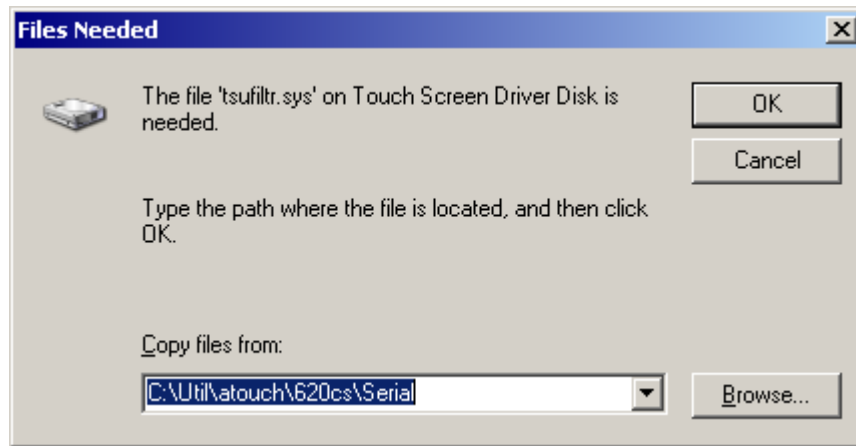


Figure 11.1: “Files Needed” touch installation dialog

9. Confirm the final message **Setup is now complete** by clicking **OK**.
The computer does not need to be restarted.

11.7.2. Calibration

The touch screen must be calibrated so that it functions correctly.

1. Start the touch configuration tool under **Start/Programs/Hampshire TSHARC Control Panel**.
2. Select the **Calibration** tab and click the **Touch** field.
3. Once calibration is complete, finish by clicking **Accept**.
4. Select the **Click Settings** tab and select **Enable right click emulation** and enter the following values:
Right-Click Area + Double-Click Area each to 13;
Right-Click Delay + Double-Click Delay each to the third line.
5. Exit the tool with **OK**.

11.8. Touch (PS2) for Windows XP Prof. and XP Embedded

11.8.1. Installation

The touch drivers to be used can, by default, be found on the CompactFlash or hard drive under **Util/atouch/<verNR>**.

In addition you will find our drivers on the included driver CD or on the Internet under www.dlog.com.

1. Open the corresponding folder and run **Setup.exe**.
2. On the **Welcome** dialog click **Next**.
3. In the **Software License Agreement** window select **I accept all of the terms of the above License Agreement** and then click **Next**.
4. On the **Select Controller** dialog select **PS/2** and click **Next**.
5. Deselect the option in the **Configuration Complete** dialog and end by clicking **Finish**.
6. In the following window confirm the dialog by clicking **OK**.

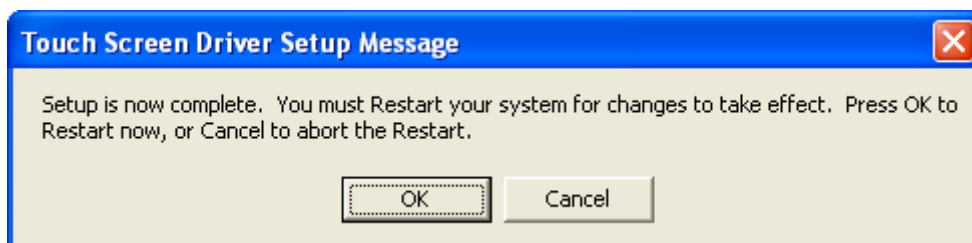


Figure 11.2: "Setup Message" touch installation dialog

7. Next, the computer needs to be restarted.

11.8.2. Calibration

The touch must be calibrated so that it functions correctly.

1. Start the touch configuration tool under **Start/Programs/Hampshire TSHARC Control Panel**.
2. Select the **Calibration** tab and click the **Touch** field.
3. Once calibration is complete, finish by clicking **Accept**.
4. Select the **Click Settings** tab and select **Enable right click emulation** and enter the following values:
 Right-Click Area + Double-Click Area each to 13;
 Right-Click Delay + Double-Click Delay each to the third line.
5. Exit the tool with **OK**.

12. Serial ports

By default the DLoG MPC 6 is equipped with 4 serial ports. COM1 and COM2 are accessible from the outside, COM3 and COM4 are used internally for communication with the environment controller and the touch controller.

12.1. Resources

Resources for the serial ports are pre-defined in the system architecture and automatically managed by the BIOS. The resources for COM1, COM2, COM3 and COM4 can be defined via the BIOS.

The standard resources for serial ports are:

COM1	Address 0x3F8 - 0x3FF (hexadecimal), Interrupt IRQ4
COM2	Address 0x2F8 - 0x2FF (hexadecimal), Interrupt IRQ3
COM3	Address 0x3E8 - 0x3EF (hexadecimal), Interrupt IRQ10
COM4	Address 0x2E8 - 0x2EF (hexadecimal), Interrupt IRQ11

12.2. COM1 options

The following section describes what needs to be observed when using the COM1 port to supply power to external equipment.

The resources required for the COM1 controller module are automatically reserved by the BIOS.

12.3. COM1 as a power supply

The COM1 port can optionally supply externally connected equipment with +12 V or +5 V of power. The voltages are protected by internal fuses which limit the total consumed current to 1.1 A at 5 V (including keyboard and mouse). The current consumption at 12 V is also limited to 1.1 A by a reversible fuse. Depending on the specific system configuration, the maximum current consumption at +12 V may be significantly lower.

12.4. COM2 options

This section describes what needs to be observed when the COM2 options RS-422 and RS-485 are used.

The resources required for the COM2 controller module are automatically reserved by the BIOS.

12.5. COM2 as electrically-isolated RS-422/485

An electrically-isolated RS-422/485 port is optionally available for the COM2 of the DLoG MPC 6. This option provides increased data transfer reliability in environments with a lot of interference and extreme differences in ground potential.



This function requires special adapter cables. This can be ordered from your DLoG sales agent.

12.6. Drivers

12.6.1. RS-232 operation

MS-DOS only supports 4 serial ports. The application is responsible for the use of more COM ports. Other operating systems support more serial ports.

12.6.2. RS-4xx operation

This operating mode is not supported by any of the available operating systems. Applications need to provide their own routines for this mode.

12.7. Serial port printers

Printers with a serial port can be connected to the DLoG MPC 6.

12.8. Serial port barcode scanners

To activate the integrated scanner software wedge under Windows XP Embedded:

1. Open the Start menu and navigate to **Settings | Control Panel | Accessibility**.
2. Select the **General** tab.
3. Select **Support accessibility options**.
4. Click **Settings**.
5. Configure the desired COM port and BAUD rate.
6. Confirm the change with **OK**.
7. Click **OK** again for the changes to take effect.

Caution:
Property
damage

Please note that you have to configure the scanner correctly to RS-232 and the above set BAUD rate following the scanner manufacturer's guidelines. Otherwise the software wedge will not function properly.

12.8.1. Tips & tricks

Note that according to the EIA-232-E specification, the maximum cable length is 15 m at 19,200 bps.

By using a correctly terminated twisted-pair cable, however, up to 1,200 m at 100 kbps can be achieved according to the EIA-422-A specification. With a data rate of 1 Mbps and a high-quality cable, it is possible to reach cable lengths of up to approximately 400 m.

Malfunctions in the RS-232 connections are frequently caused by ground loops. If both end devices establish a ground connection via RS-232 but do not share the same ground potential in their power supply circuits, then compensation currents may result. This is particularly noticeable with long cables.

These compensation currents, which are also present at the ground point of the RS-232 connection, may significantly degrade signal quality and effectively stop the data flow. In challenging environments, electrically-isolated connections (via external converters) or differential systems (RS-422/485 port) are strongly recommended.

13. Internal devices

13.1. Chipset

The DLoG MPC 6 computer is equipped with a chipset which controls the communication between all function modules.

The chipset converts the signals it receives from the CPU into memory access, hard drive access and other similar actions. Likewise, it transmits requests from peripheral devices to the CPU. Input devices such as the mouse or keyboard also communicate with the system via this chipset.

Resources

The chipset does not require any resources for its core functions – unlike the internal peripheral units, which are also described in this manual.

13.1.1. Installing chipset drivers under MS-DOS

No drivers are required for MS-DOS operation.

13.1.2. Installing chipset drivers under Windows XP

Install the chipset drivers before all other drivers, otherwise the system will not function properly!

The chipset drivers to be used can by default be found on the CompactFlash or hard drive under **Util/chipset/<verNR>**.

In addition you will find the DLoG drivers on the included driver CD or on the Internet under www.dlog.com.

Proceed as follows to install the chipset driver:

1. Open the corresponding folder and run Setup.exe.

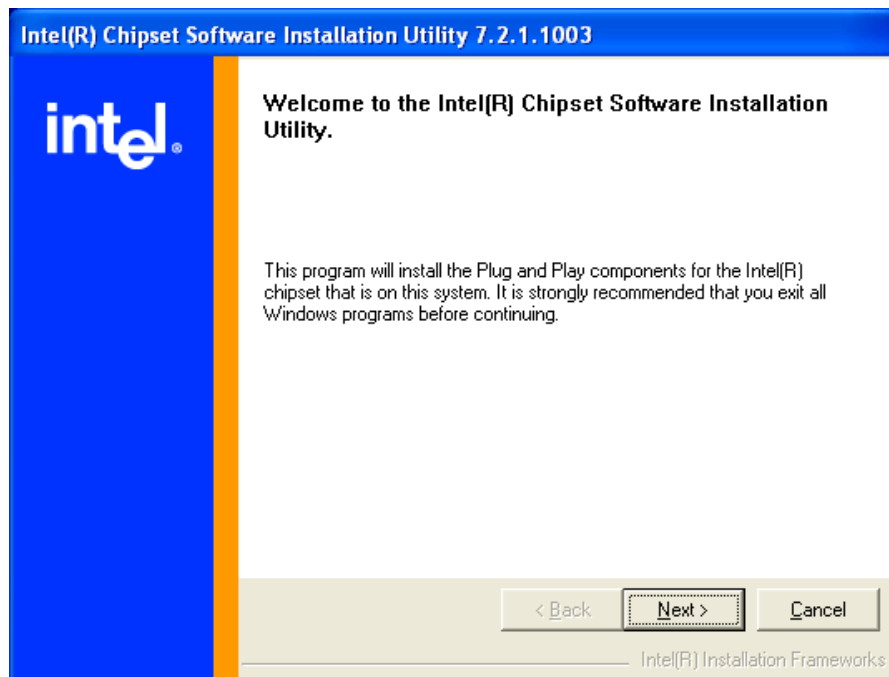


Figure 13.1: Welcome screen for chipset driver installation

3. Click Next.
4. In the following window click Yes.
5. Click Next again.
6. Then restart your computer.

13.2. VGA adapter

The DLoG MPC 6 is equipped with a VGA-compatible adapter. This adapter controls the integrated display. The VGA adapter generates all the control signals required for the integrated displays.

Resources

The VGA adapter is a Plug and Play component for the PCI bus. All resource allocation and management is therefore performed by the BIOS.

13.2.1. VGA driver installation under MS-DOS

No drivers are required for MS-DOS operation.

13.2.2. VGA driver installation under Windows XP

The graphic card driver to be used can be found by default on the CompactFlash or hard drive under **Util/vga/<verNR>**.

In addition you will find the DLoG drivers on the included driver CD or on the Internet under www.dlog.com.

Proceed as follows to install the VGA driver:

1. Open the corresponding folder and run Setup.exe.

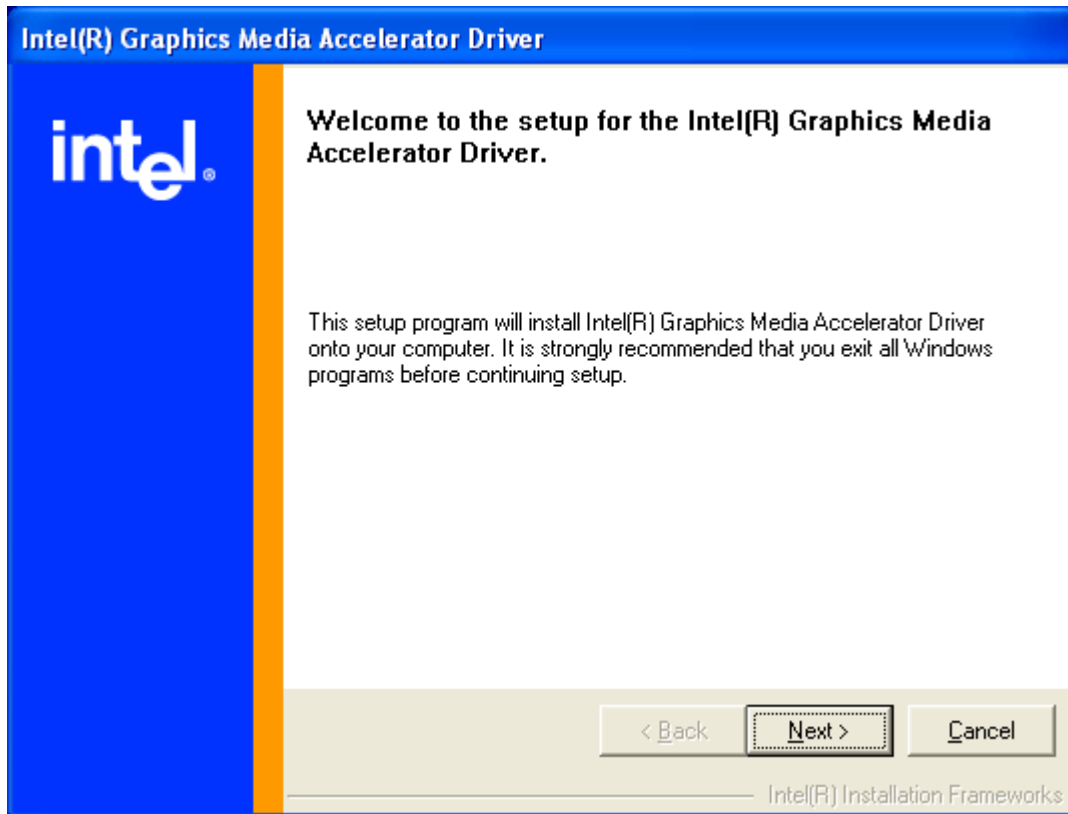


Figure 13.2: Welcome screen for the VGA driver installation

2. Click Next.
3. In the following window click Yes.
4. Now restart your computer.

13.3. Network adapter (10/100)

The DLoG MPC 6 is equipped with a 10/100 Mbit network adapter. This adapter is available on the back of the device and features an RJ45 port.

The network controller undertakes the entire task of connecting the hardware to the network.

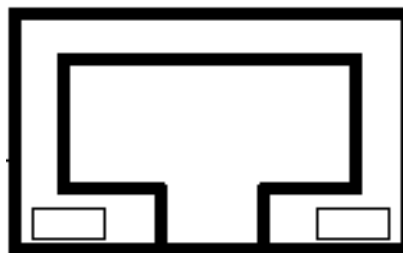
The RJ45 connection port features two integrated status LEDs. They display the following messages:

Left LED (green)

LED off: not connected, no activity

LED on: connected, no activity

LED flashes: connected, activity



RJ45 network port

Right LED (orange):

LED off: 10 Mbit network

LED on: 100 Mbit network

Figure 13.3: RJ45 network port

Resources

The network adapter is a true Plug and Play component. All resource allocation and management is therefore performed by the BIOS.

13.3.1. Problems with data transmission via LAN/Ethernet

If problems occur during data transmission over LAN/Ethernet (e.g. data is lost or not detected), the cause of these problems may be a cable which is too long.

Depending on the cable layout and interference from the environment, it may be impossible to use the cable length of 100 m given in the specification (IEEE802.3 standard).

The solution here is the use of a shorter cable.

13.3.2. Network driver installation under MS-DOS

Follow the instructions provided in the ReadMe file on the master installation CD.

13.3.3. Network driver installation under Windows XP

The network drivers to be used can be found by default on the CompactFlash or hard drive under Util/Lan/<verNR>.

In addition you will find the DLoG drivers on the included driver CD or on the Internet under www.dlog.com.

Proceed as follows to install the network drivers:

1. Open the corresponding folder and run Setup.exe.

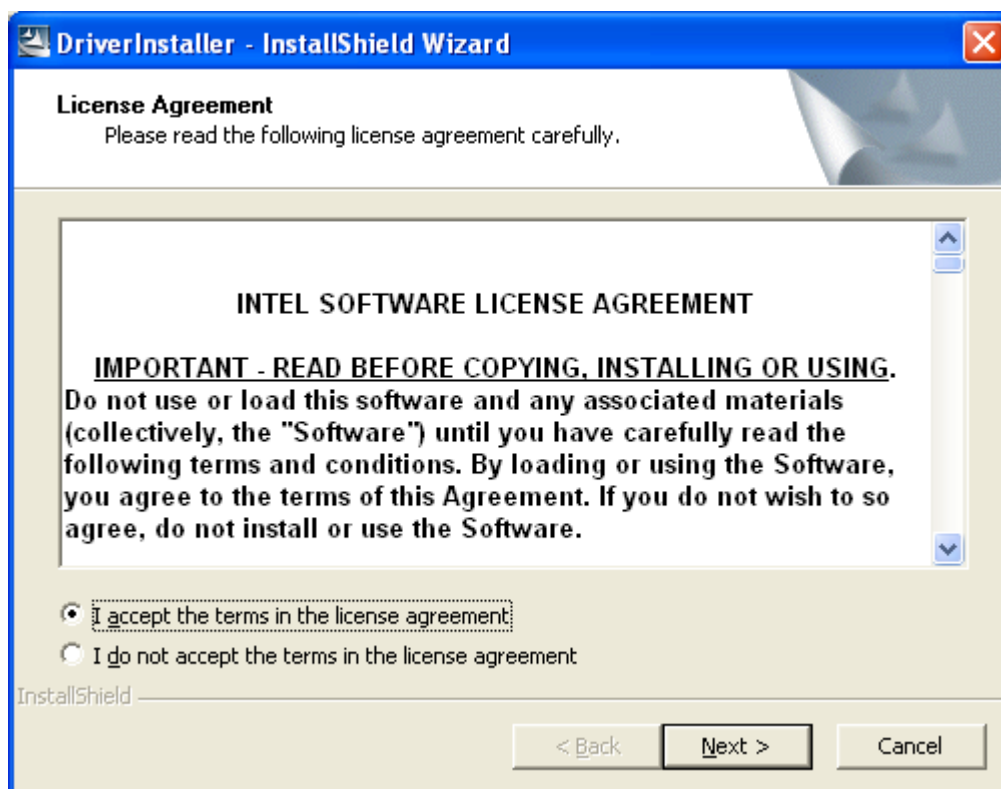


Figure 13.4: Network driver installation license agreement

2. Select the menu option I accept the terms in the license agreement and click Next.

In the following window click Next.



Figure 13.5: Start screen for network driver installation

3. Now click Install Drivers.
4. After the installation click Exit.
5. Next, the computer needs to be restarted:

13.4. Onboard sound adapter

The DLoG MPC 6 is equipped with an onboard sound adapter. Normally this adapter is not directed to the outside.

Resources

The onboard sound adapter is a true Plug and Play component. All resource allocation and management is therefore performed by the BIOS.

13.4.1. Installation of the onboard sound adapter drivers (Win XP)

The sound card drivers to be used can be found by default on the CompactFlash or hard drive under Util/Sound/<verNR>. In addition you will find the DLoG drivers on the included driver CD or on the Internet under www.dlog.com.

Proceed as follows to install the onboard sound adapter drivers:

1. Open the corresponding folder and run Setup.exe.

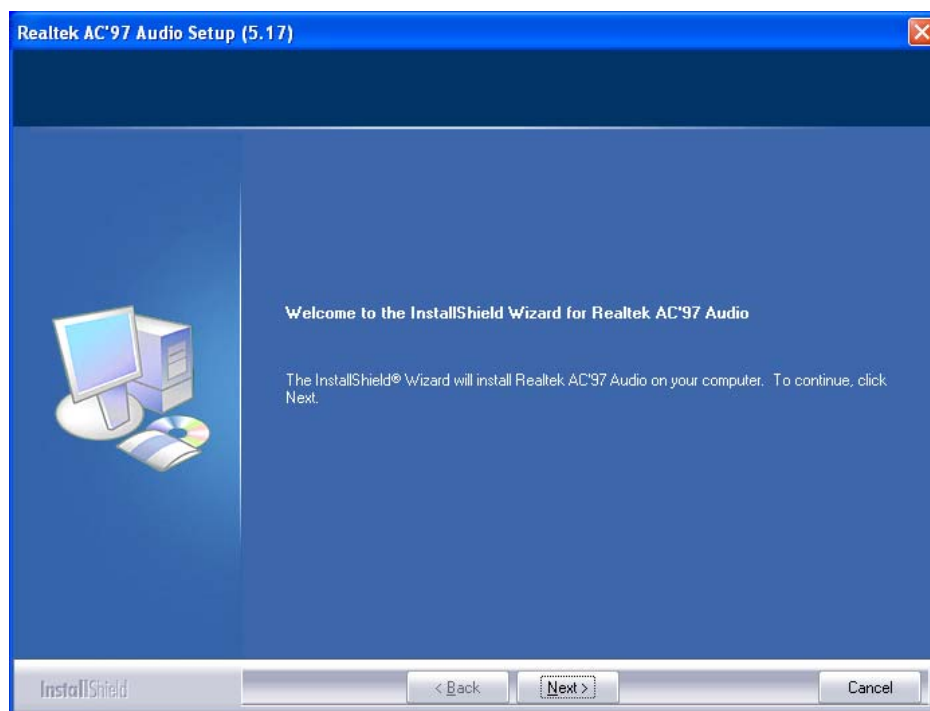


Figure 13.6: Welcome screen for the onboard sound adapter drivers

2. Click Next.



Figure 13.7: Warning message for the onboard sound adapter drivers

3. In the following window click Continue Anyway.
4. Now restart your computer.

13.5. Plug-in cards

A so-called riser card with a single bus master-capable PCI slot is available for the DLoG MPC 6. This card allows you to upgrade your system with conventional ultra-short expansion cards (max. length: 141 mm).



WARNING

Before extending the module, make sure that you read the *Basic safety guidelines* at the start of this manual.

The slot bracket on the connector bay needs to be removed and replaced by the expansion card's slot bracket.

The riser card routes the onboard PCI bus signals from the P22 of the motherboard to a standard plug-in slot.

Resources

The riser card itself does not require any system resources. You need to be familiar with the plug-in card's resource requirements to avoid conflicts with standard system resources.

Even in worst-case operating scenarios, the power consumption of all added plug-in cards must not exceed 20 W.

Caution: Property damage

Remember to also take into account the power requirements of external peripheral equipment (keyboard, mouse, scanner etc.)!

Installation

The plug-in card is fastened to the slot bay at the back of the unit by its slot bracket.

13.5.1. Riser card with 1x PCI

This riser card provides a master-capable PCI slot for PCI Ver. 2.1.

Component heights are permitted up to 12 mm. Otherwise, refer to the PCI specifications for maximum component heights.

The maximum length of the plug-in card must not exceed 141 mm.

Drivers

The riser card is fully transparent for all operating systems, i.e. no drivers are required.

Some plug-in cards which are inserted into riser cards may require additional drivers. These drivers need to be supplied by the respective card manufacturers.

13.5.2. TerraTec 128i PCI sound card

Follow the manual supplied with the sound card.

13.5.3. CAN card

Follow the manual supplied with the CAN card.

13.6. Automatic switch-off and heating

DLoG MPC 6 models with DC voltage can optionally be equipped with either an automatic switch-off module or an automatic switch-off and heating module.

If the heating option is implemented, the DLoG MPC 6 can be operated at temperatures ranging from maximum -30 C to +50 C.

Modes of operation

If wired up accordingly, the DLoG MPC 6 conveniently switches off together with the vehicle's ignition. As disconnecting the power supply during operation can lead to data loss, the operating system needs to be shut down normally using the appropriate hardware and software installed on the system when the ignition is switched off.

The DLoG MPC 6 is connected to the vehicle with three supply cables. DC+ und DC- are directly connected to the power supply of the vehicle, the connection is of course run through fuses (see section *7.5.2 DC power pack*) Therefore make sure that the cables are connected directly to the battery and not to high-interference supply lines (for example, motor supply) or to supply lines already used by other consumers.

The supply voltage connected is then linked to the DLoG MPC 6's ignition input via a switch, for example, the key switch of the ignition (also with a fuse, see section *7.5.2 DC power pack*).

Heating is required if you want to operate the DLoG MPC 6 at ambient temperatures below 0°C.

In the following two sections, the main functions of the automatic heating and switch-off modules are described. For detailed information on the automatic switch-off and heating modules – complete with pre-defined thresholds – refer to the program flowchart diagrams (part 1 and 2) below.

Resources

The automatic switch-off/heating module requires the COM3 port for configuration. In normal use the LPT1 port is used for communication.

13.6.1. Automatic switch-off process

When the ignition is switched on, the DLoG MPC 6 is supplied with power and begins checking its internal temperature and automatic switch-off function.

Once the ambient conditions have been verified as acceptable, the DLoG MPC 6 starts the operating system just like normal.

During the first three minutes of the start-up phase, none of the ambient conditions, such as the internal temperature or the *Ignition* input status, are checked. This allows the operating system and the operating software for the automatic switch-off module to fully load without interruption. Following this three-minute period, the internal temperature of the unit and the status of the *Ignition* input are checked continuously. If the inner temperature of the DLoG MPC 6 reaches a critical range, the operating system is shut down normally and the computer remains switched off until the temperature is back in the permitted range.

If the *Ignition* input is switched to earth potential or a potential-free source during normal operation, the unit switches to shutdown delay time. In this state, the device continues to operate normally until the delay time (for example, 15 minutes) has elapsed.

- If the ignition is triggered again during this time, the DLoG MPC 6 resumes normal operation.
- If, however, the delay time elapses, the operating system is shut down normally by the DLoG operating software and the unit is automatically switched off (for example, after three minutes, or after a signal from the operating software).

13.6.2. Program flowchart

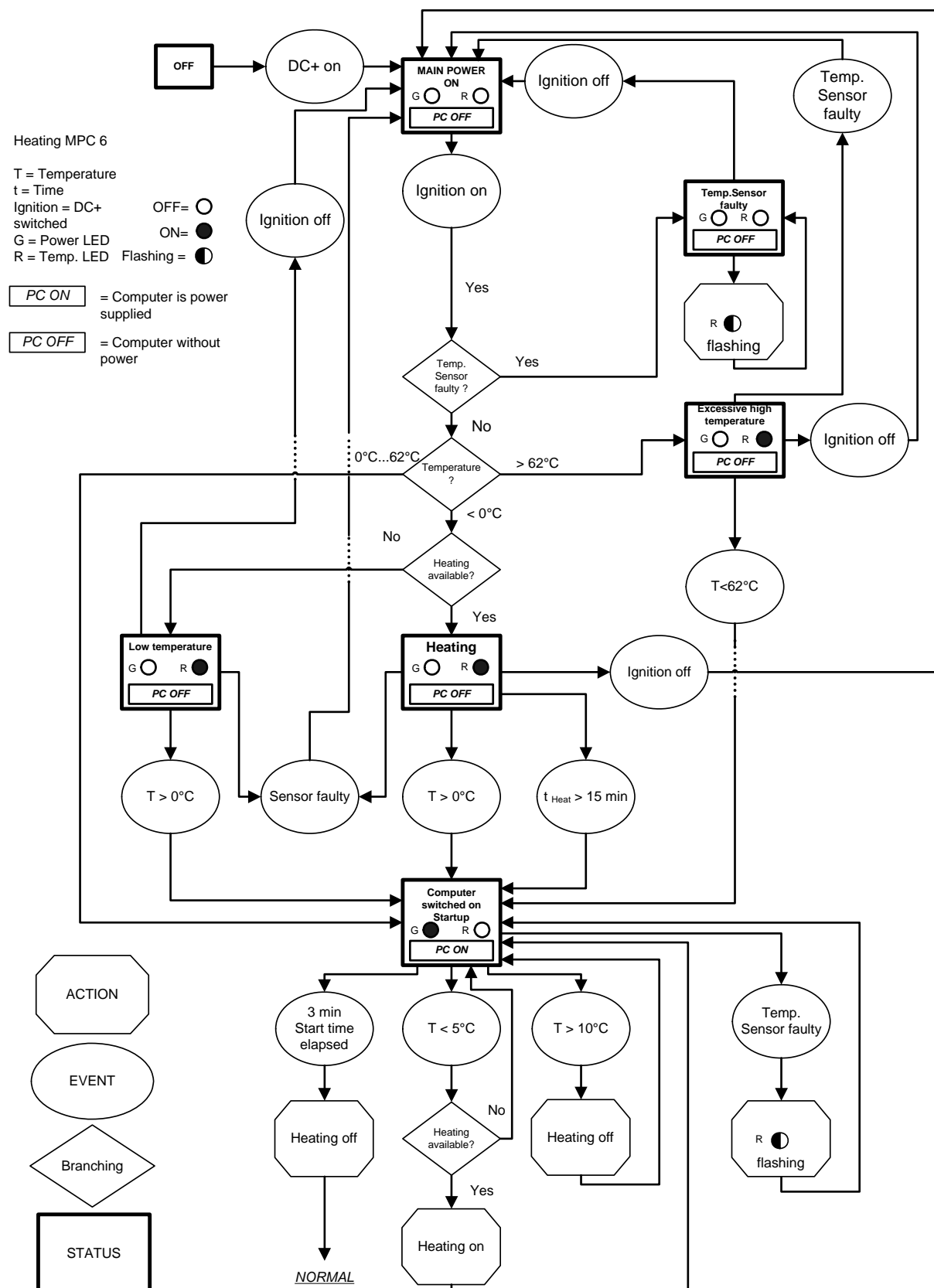


Figure 13.8: Automatic switch-off program flowchart part 1

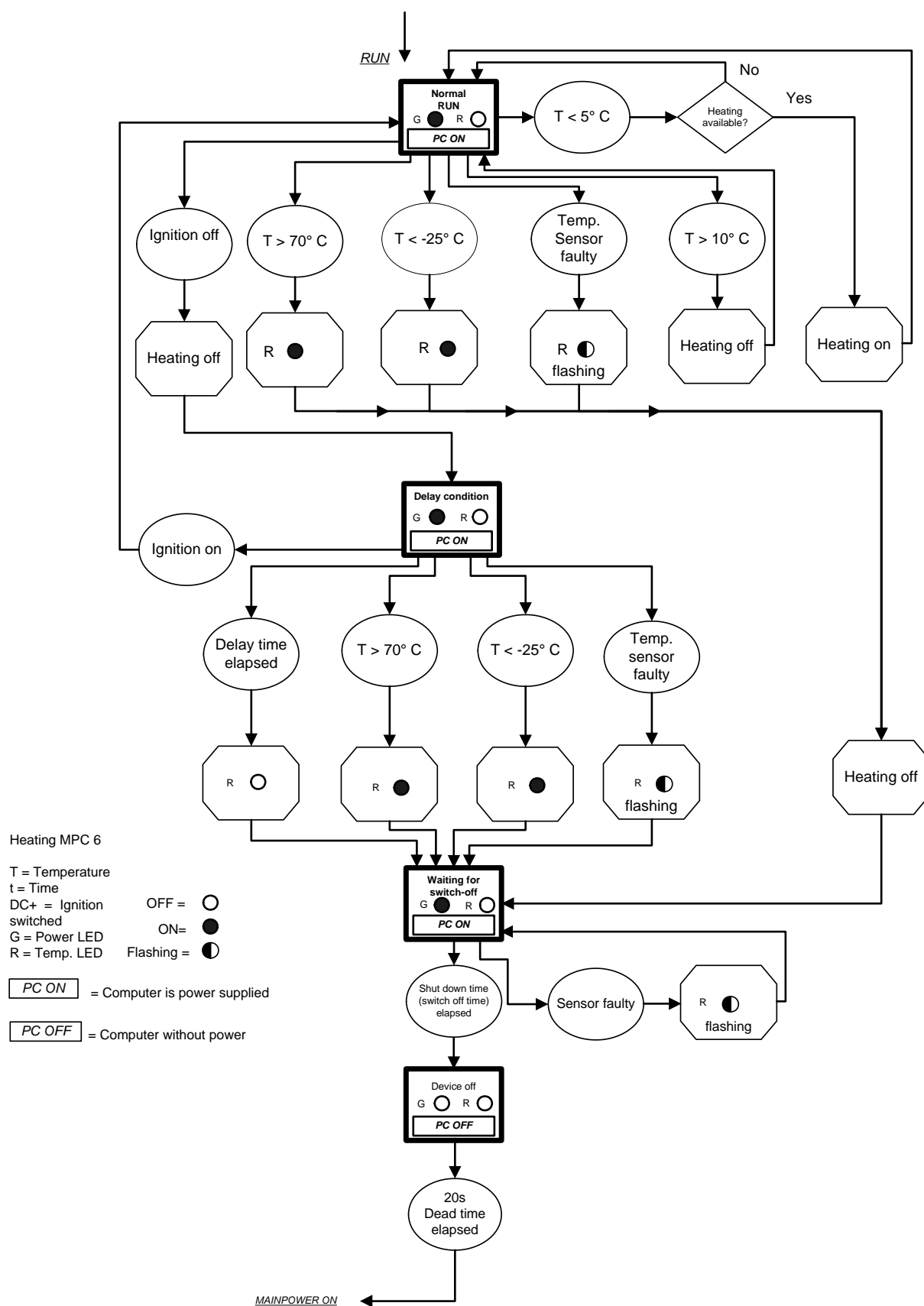


Figure 13.9: Automatic switch-off program flowchart part 2

13.6.3. Drivers

DLoGPwrw.sys driver V1.0 for Windows XP

Standard setting: I/O port 0x379, length 2 Bytes

The DLoG MPC 6 and the automatic switch-off module communicate via the DLoG motherboard control port, which consists of the two I/O ports described above.

Parameter settings in the registry

Using the Registry Editor REGEDIT.EXE, supplied with Windows, the parameters of the DLoG port driver can be configured via the following path:

```
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\dlogpwr\parameters\0
```

Key name	Key type	Value of key
lpcType	REG_DWORD	0: The computer type is automatically detected 8: The PC is a DLoG IPC 6 9: The PC is a DLoG MPC 6 Default: 9

13.6.4. Automatic switch-off software and DLoG Config program

The DLoG Config program must be installed for the automatic switch-off module to function correctly.

If the DLoG Config has not been started, the DLoG MPC 6 will carry out a hard shutdown once the delay time and shutdown time set by the hardware (e.g. via MPCCOM.EXE) has elapsed. In this case, the operating system is not shut down normally before the power is switched off. The current application is unable to save its data, and the file system becomes increasingly unstable and inconsistent.

If the DLoG Config has been started, the program can recognize when the operating system needs to be shut down. Firstly, the Windows message "WM_QUERYENDSESSION" is sent to all running applications to inform them of the impending shutdown.

Now every application has to respond within the time that is set in the registry (see the DLoG Config manual). If a response is not sent in the specified time, the application is forced to quit.

If there are any open programs with unsaved changes, it may not be possible to automatically quit them (for example, an unsaved document in WORDPAD.EXE, a program supplied with Windows). In this case WORDPAD.EXE responds to the Windows message "WM_QUERYENDSESSION" with a user query to confirm if the current file is to be saved. Applications that can be quit with the key combination "ALT" and "F4" (that is, without a final user query) generally send the required response to the "WM_QUERYENDSESSION" message and are not shutdown "hard".

To ensure that vital data is always saved correctly, applications need to be able to properly respond to the "WM_QUERYENDSESSION" message, that is, without user queries and within the set time period.

Further information to the DLoG Config program can be found in the corresponding manual.

14. Troubleshooting

14.1. COM1 / COM2 data transmission



To avoid transmission problems in serial transmission, DLoG GmbH always recommends transmission with hardware handshake.

If problems arise when transmitting data via a serial interface COM1 or COM2 (e.g. data is lost or is not detected), please follow the steps described here.

Please note the different procedures for MSWindows and MS-DOS operating systems!

Step 1: Change power saver BIOS settings

1. In BIOS setup, open the menu **Advanced | CPU Configuration**.
2. Go to the setting **C2 State Support**.
Here, **Enabled** is set by default.
3. Change this setting to **Disabled**.
The setup line **C3 State Support** is automatically also set to **Disabled**.
4. Save that BIOS setting and leave the BIOS setup.



This BIOS setting applies to all COM ports.

Technical background: The changed setting affects the computer's power saving mechanism. If the power saving mechanism **C2 State Support** is set to **Disabled**, no SMIs will be generated when switching processor states between C1=>C2=>C2 and back to C1, which may lead to "lost" bytes on the RS232 interface. The setting **C2 State Support** is also called **Stop-Clock State**; the **C3 State Support** is the so-called **Sleep State**.

Step 2 for computers with MS-Windows: Activate FIFO

If step 1 does not achieve a satisfactory solution to the transmission problem, please change the following setting in the Windows system.

1. Open the menu Start | Control Panel | System | Hardware | Device Manager | Connections (COM1, COM2, etc.).
2. Use the right mouse button to open the popup menu and activate Properties.
3. Go to Connection settings | Advanced.
4. Set the Receive buffer and the Transmit buffer to Low (1).

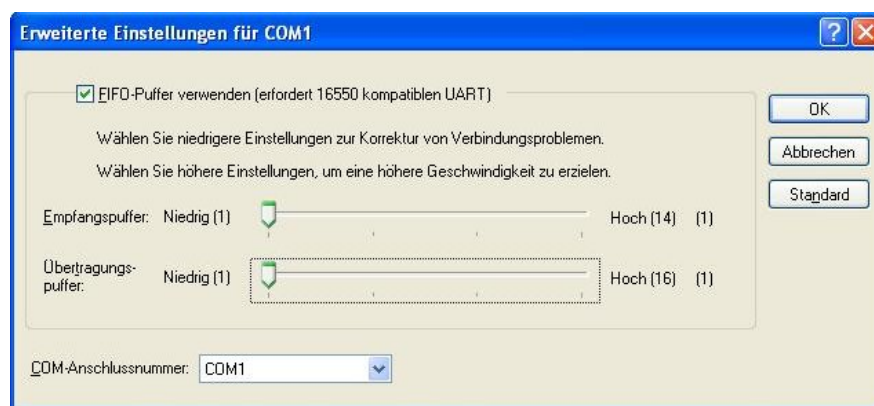


Figure 14.1: Advanced settings for COM1 (FIFO)

5. Confirm this setting with OK.



This Windows setting must be carried out separately for each COM port (unlike the BIOS setup setting).

Technical background: Depending on the application and settings (XON/XOFF, baud rate, etc.) it is helpful in case of transmission problems to activate FIFO and to set the receive buffer or the transmit buffer to Low (1). This causes the buffer to be emptied as early as possible, so that more time remains if other IRQs require time.

Step 2 for computers with MS-DOS: BIOS setup setting USB Legacy Support

If step 1 does not achieve a satisfactory solution to the transmission problem, please change the following additional setting in the BIOS setup.

1. In BIOS setup, open the menu **Advanced | USB Configuration**.
2. Go to the setting **USB Legacy Support**.
Here, **Enabled** is set by default.
3. Change this setting to **Disabled**.
4. Save this setting and leave the BIOS setup.

Warning: When the setting **USB Legacy Support: Disabled** is selected, a USB keyboard and/or a USB mouse can no longer be used in the following situations:

- in the "Safe mode" of the computer
- when using a Windows start menu (e.g. selecting which operating system should be started)
- when starting the computer in MS-DOS mode (does not apply to the MS-DOS command window in Microsoft Windows)
- when a Windows "blue screen" error message appears with the request to hit a key
- when ScanDisk requires input or other messages occur while the PC is booting

Fix: Use PS/2 devices instead!

14.2. Data transmission via LAN / Ethernet

If problems occur during data transmission over LAN/Ethernet (e.g. data is lost or not detected), the cause of these problems may be a cable which is too long.

Depending on the cable layout and interference from the environment, it may be impossible to use the cable length of 100 m given in the specification (IEEE802.3 standard).

The solution here is the use of a shorter cable.

15. Maintenance



WARNING: Danger due to electric shock when cleaning and maintaining the device.

To avoid electric shock, turn the DLoG MPC 6 off and disconnect it from the power supply before cleaning or maintaining it.

15.1. Cleaning the housing

The housing of the DLoG MPC 6 is best cleaned with a damp cloth.

Do not use compressed air, a high-pressure cleaner or vacuum cleaner, as this can damage the surface.

Using a high-pressure cleaner poses the additional risk of water entering the device and damaging the electronics or display.

15.2. Touch screen cleaning

The touch screen's surface should always be kept clean of dirt, dust, fingerprints etc. to ensure full display visibility. Abrasive cleaning agents may scratch the surface and lead to a deterioration in image quality.

The best results are obtained using a damp, non-abrasive cloth with any commercially-available window cleaner that does not contain ammonia. Apply the window cleaner to the cloth instead of spraying it directly onto the touch screen surface.

Do not use sulfurous agents.

16. Common mistakes in usage

16.1. Power supply

An integrated, electrically isolated AC/DC power supply is available for the DLoG MPC 6.

- Do not connect DLoG MPC 6 devices that have a DC power pack to an AC/DC power supply!
- Do not connect DLoG MPC 6 devices that have an AC/DC power pack to a DC power supply!

16.2. Powering up/down

- Please note that the function of the DLoG MPC 6's power switch varies depending on how the device is configured (depending on the power supply and integrated automatic switch-off).
- Only disconnect the computer from the power supply after the computer has been properly shut down and switched off. Otherwise file errors may occur on the storage device (in operating systems that have no activated write protection filter).

16.3. Cable cover

- The supplied cable cover for the external ports must be installed prior to using the DLoG MPC 6. In order to comply with protection class IP65, please use the optionally available IP65 assembly kit from DLoG.

16.4. Installation

- Only use suitable mounting brackets and screws permitted by DLoG.
- Ensure that ball-and-socket bases and fastening arms are securely attached.
- Follow the instructions carefully when attaching all outgoing cables to the strain relief rail.
- The top cover hood of the wireless card is there to protect the card and should not be used as a handle when turning the terminal.
- All fastening brackets and mounting parts supplied by DLoG are only intended for use in the mounting of terminals and peripheral devices and may not be used for other purposes.
- However, changing conditions during installation may result in operating states where it may be necessary to optimize the mounting process.
- When mounting peripheral devices, follow the manufacturer's instructions. This is particularly important when welding or drilling supporting parts.
- To avoid any accidents, make sure your field of vision is not restricted in any way when mounting peripheral devices. Observe all accident prevention regulations.

16.5. Mobile application on vehicles

- Never connect a 12 VDC device to a 24/48 VDC vehicle!
- Never connect a 24/48 VDC device to a 12 VDC vehicle!
- Never connect a 12/24/48 VDC device to vehicles with more than a 60 VDC voltage.
- Ensure that supply lines are fused correctly.
- Lay the supply cable so that it will not get crushed or frayed.
- Read the labeling on the cable and connect the supply cable with the correct polarity.
- Cut the supply cable as short as possible. This avoids tangled cables and improves the quality of the power supply.
- Observe the vehicle manufacturer's instructions for connecting additional loads, for instance, in conjunction with an emergency shut-off switch.
- Connect the supply cable to a suitable place. Ensure that the connecting cable has an adequate cross section and ampacity at the connection point.

16.6. Using the touch screen

- Please do not use sharp or abrasive objects on the DLoG MPC 6's touch screen.
- Do not use abrasive cleaning agents to clean the front of the device. The best results are obtained using a damp, non-abrasive cloth with any commercially-available window cleaner that does not contain ammonia. Apply the window cleaner to the cloth instead of spraying it directly onto the touch screen surface. Do not use sulfurous agents.

16.7. Use/storage in extreme temperatures

Please observe the DLoG MPC 6's maximum operating and storage temperatures. Make sure you know which type of device is being used:

- With or without heating module
- Which type of display is used

The temperature ranges mainly depend on these two components.

17. Disposal

The DLoG GmbH general terms and conditions set out the obligations for disposal in accordance with official electronics regulations.

18. Return packing slip

Return packing slip (please fill in once per return shipment):

Company	
Street	
Zip code, town	
Contact	
Phone number	

Type(s) of unit(s) returned:

Serial number(s) of the unit(s) returned:

☐ The units have not been returned, as they are currently being used. However, the following parts are missing:

☐ Unit was already damaged on delivery (please enclose a copy of the delivery note)

☐ Delivery was incomplete

Missing parts:

☐ The following error occurs when operating the unit:

☐ Separate error report is enclosed

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