

GT4 Clock User Guide



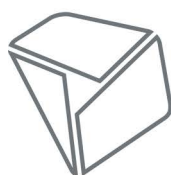
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GT CLOCKS

PEOPLE AND DATA MANAGEMENT

gtclocks.com

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Chapter 1:

Preface



Preface

Important Note:

Menus and options will vary depending on the hardware options supplied and software version installed. Please refer to additional instructions supplied with your clock for additional information.



This User Guide provides information about installing and configuring GT4 clocks.

About the GT4 clock

The GT4 clocks runs on the Linux operating system. It has been designed for various applications including Time and Attendance in both the commercial and retail sectors, where low cost, flexibility and ease of installation are essential factors.

The clock incorporates a flexible, modular hardware design which supports different reader technologies such as biometric, proximity, barcode and magnetic as well as enabling power supplies and ancillary input/output modules to be easily added.

The ability to manage the software after deployment is incorporated as a fundamental function of the system. Everything from a complete operating system flash image update to a change in application program parameters can be downloaded over the Internet or uploaded via USB memory stick.

Key benefits and features of using the GT4

The Linux-based GT4 makes the most of its 4.3" color display, delivering a user-friendly experience. Programmable soft keys allow for enhanced self-service capabilities and the extensive reader options mean it's suited to most workplace environments.

The GT4 took the foundations of Grosvenor Technology's best-selling IT31 and evolved into a sophisticated, up-to-date terminal with impressive capabilities.

The Linux OS allows for preferred software integration, making it ideal for both commercial and retail environments.

The ability to manage software after deployment is incorporated as a fundamental function of the system. Everything from a complete operating system update to a change in application program parameters can be downloaded over the Internet or uploaded via USB memory stick.

Other key features include:

- The interface can be designed to meet your workplace requirements, using nested menu structures.
- Customizable key mat means the clock can be configured to display a brand's logo for a unique product appearance.
- Fitted with 4 USB 2.0 ports, the GT4 can support printers, scanners, WiFi and other peripherals.
- Supports an abundance of reader technology options, including: Mag Stripe, Proximity, Barcode and Fingerprint biometrics.
- Made from PC/ABS flame retardant plastic, the GT4



Preface

About this Guide

This User Guide is intended for users who will be responsible for installing and configuring the GT4 clock.

It is aimed at users who need to:

- Configure the clock.
- Remotely connect to the clock.
- Install applications onto the clock.

Certifications

The GT4 has been certified for use in the following markets:

- | | |
|----------|------------------------|
| ■ Europe | CE Certification |
| ■ UKCA | UK Conformity Assessed |
| ■ USA | FCC, UL 62368-1 |

In addition, the clock has been certified to comply with the requirements of the CB certification authority which may meet compliance requirements in their member countries. For further information regarding CB certification please see www.iecee.org/dyn/www/f?p=106:40:0, or discuss with Grosvenor Technology's professional services team.

If the GT4 is intended to be used in countries other than those listed above, please contact Grosvenor Technology's professional services team to discuss how we can assist with certification.

Clock maintenance and recommendations

Battery Life (if applicable)

The GT4 is fitted with a button cell type battery on the main PCB to maintain the real-time clock (RTC) of the device when power is removed. This battery typically has a service life of around 10 years. The battery should only be replaced by suitably qualified engineers and care should be taken to avoid damage to the PCB caused by ESD (ElectroStatic Discharge). Replacement batteries must be of the same type as the original, and the old battery should be disposed of in accordance with local regulations.

Care should be taken when recycling the clock to ensure that the batteries are removed and recycled in accordance with local regulations/legislation.



Maintenance

The GT4 clock does not require any regular maintenance during its service life.



Cleaning

Cleaning of the outside of the clock can be undertaken at intervals appropriate to the environment that it is being used and the frequency of use. In all cases it is recommended that the surface of the clock is wiped with a lint free cloth that has been dampened with up to 70% isopropyl alcohol. We do not recommend spraying liquids directly onto the surface of the clock as this could potentially cause damage to the electronics. Particular care should be taken when cleaning the display and biometric devices to prevent damage.



Installation Safety

The GT4 clock should be installed in accordance with the instructions documented in this User Guide. The clock should be installed in compliance with any Health and Safety legislation and it is recommended that any electrical or network connections to the clock are undertaken by a suitably qualified engineer.

Care should be taken when installing the clock to ensure that it does not present any possible hazards to people or property within its vicinity. The clock should be installed at a height that ensures compliance with any local disability legislation.

Device operating temperatures

The GT4 clock is designed to be installed indoors only and comply with the following temperature range:

- Minimum operating temperature 0°C (32°F).
- Maximum operating temperature (with battery) 35°C (95°F).
- Maximum operating temperature (without battery) 45°C (113°F).



WEEE

In accordance with EN 50419, the clock must be disposed at the end of its life by returning to a designated recycling organization for waste electrical and electronic equipment as defined within the WEEE directive. The clock must not be disposed of in normal domestic waste.

Batteries should be carefully removed from the clock prior to disposal taking care to prevent short-circuits, crushing or damage to the battery housing.



Preface

Related Documents

You should also refer to the following documents, available from Grosvenor Technology:

- The GT4 Terminal Front Panel Connection Details – FP-GT4 Installation Guide.
- The GT4 Terminal Developer Guide – This Guide is intended for Developers: it describes how applications can be created for the clock.
- AssistIT User Guide – This Guide explains how to use the AssistIT service for remote support.

GT Services

GT Services provides priority end-to-end technical support, and access to our remote data and device management platform: seeing reduced costs, minimal downtime, and a more efficient HCM solution. The options available from Grosvenor Technology included:

- **GTConnect.** A cloud platform which connects your Human Capital Management (HCM) devices and your software, building an integrated network. This allows remote diagnostics and data management across all connected devices in real-time. GTConnect is a subscription service designed to streamline your HCM processes and reduce your technology and data challenges. With GTConnect, your workforce management is simple. For more information, see [GTConnect - Grosvenor \(grosvenortechnology.com\)](https://grosvenortechnology.com).
- **GTProtect.** Protect your investment. All our devices carry a one year warranty: however, this subscription based service provides you with an extended warranty for the duration of the subscription. Should the hardware fail within that time, an advance exchange replacement device is provided - no questions asked. For smaller issues, we offer immediate Technical Support, whether you need to access our real-time diagnostics tool or to speak with one of our dedicated support team. For more information, see [GT Protect - Grosvenor \(grosvenortechnology.com\)](https://grosvenortechnology.com).
- **Professional Services.** Our dedicated specialist in-house project team guarantees that you only have a single point of contact throughout your project, from start to finish. We work alongside you during the installation phase, we can ensure that you receive the outstanding service we are known for. From the moment you receive your device until it's running exactly as you need it to, we're on hand to deliver exceptional remote support. For more information, see [Professional Services - Grosvenor \(grosvenortechnology.com\)](https://grosvenortechnology.com).



Technical Support

Technical Support can be obtained from Grosvenor Technology from the following points of contact:

Europe, Middle East and Africa

Phone: +44 (0)1202 627611
E-mail: HCM-EMEAsupport@grosvenortechnology.com
Website: www.grosvenortechnology.com

North America

Phone: +1 800.989.5197
E-mail: HCM-USsupport@grosvenortechnology.com
Website: www.gtclocks.com



Chapter 2:

Installation & specification features



Installation & specification features

Installation

Before starting the installation, consider which power option is to be used, as this may influence cabling requirement, vicinity to power outlets and accessory modules required: for more information, see Chapter 4: "Power options".

If the GT4 is to be used in an environment where there is a need for enhanced protection or will be subject to water or dust ingress then the AE-ENC-EP-GT4 industrial protection enclosure should be used to protect the GT4.

Fitting the device

The clock should be fixed to a flat surface at a height that is comfortable for users to view and interact with the screen without glare from reflections and in a suitable level of ambient light. Take care to adhere to any local regulations such as disabled access when determining the height of the unit.

Top Cable Entry

- Blanking plate
- Conduit entry
- Option pod fitting

Bottom Cable Entry

- Blanking plate
- Conduit entry
- Mousehole plate

Rear Cable Entry

- For concealed wiring
- When mounted directly to a back box

External Connector Aperture

- Blanking plate
- External connector adapter

Fixing Holes


- Variety of back box fixing centres
- Keyhole for easy wall fitting
- Pips on back for uneven walls

External Connector Blanking Plate

The Back Panel is supplied with a clip-in blanking plate for the External Connector aperture.


1. Locate tongue in Back Panel slot.
2. Press home until it clicks

External Connector Adapter may be fitted here using screw provided.




Fitting Blanking Plates


Correctly orientate blanking plate - the embossed number faces inwards




Faces Inside



Faces Outside



Locate barbs in Back Panel grooves




Push home until it clicks


Mousehole Blanking Plate

The Mousehole Blanking Plate allows cables with large connectors to be inserted without the need for removal.

Pass the connector through the large lower aperture and then clip the Mousehole Plate into place.



The Mousehole can accommodate CAT5 cable plus flat power cable.




Fitting the front Panel

Once the Back Panel is secured, any option modules fitted and wiring installed then the Front Panel can be fitted.

Plug-in any cables to the Front Panel then hooking the tabs on the top of the Front Panel into the locating points in the Back Panel hinge down the Front Panel into its final position.

Secure with single screw at bottom of Front Panel



Front Panel fixing screw location

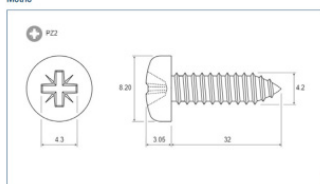
Installation & specification features



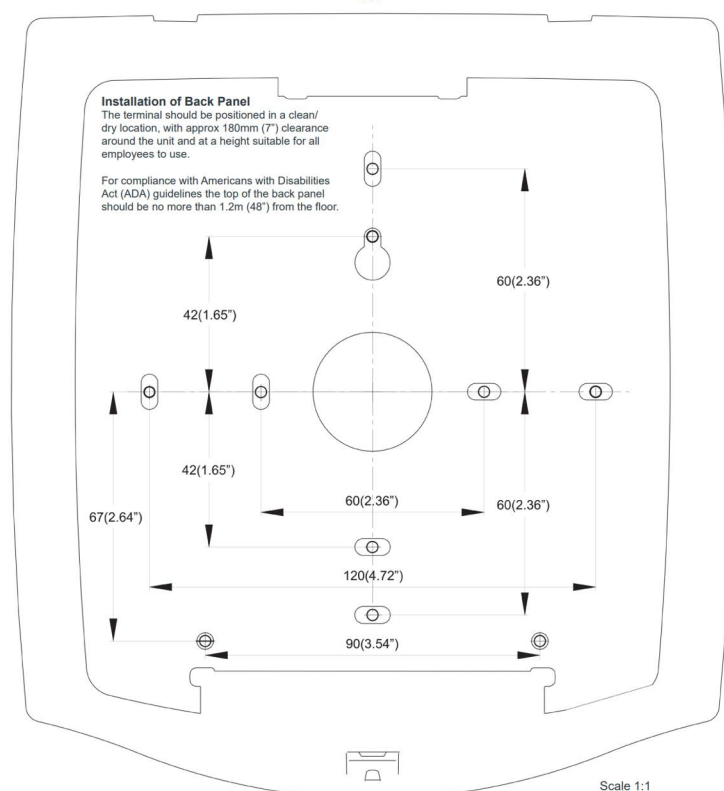
The clock be positioned in a clean/dry location, with approximately 180mm (7") clearance around the unit and at a height suitable for all employees to use. For compliance with Americans with Disabilities Act (ADA) guidelines the top of the back panel should be no more than 12mm (48") from the floor.

Cables should be routed through either the rear or bottom cable entry apertures. There are multiple fixing holes in the backplate to facilitate flexible fixing to the wall.

4.2mm x 32mm Pan Head Pozidriv® Self Tapping Screw Form C
Metric



Installation Template
TOP



The terminal should be secured in position using fixings suitable for the surface on which it is mounted. Screws should be pan head type.



Installation & specification features

Hardware

The following GT4 hardware is available:

- Fast, low power i.MX287 processor at 454
- 256MB RAM DDR3 800 MHz with 512 MB internal on-board flash memory
- 4.3" High resolution colour display (480 x 272)
- Durable keypad with numeric, function and navigation keys
- USB interfaces for Flash Memory Stick, WiFi Dongle, Bar Code Scanner, etc.
- Modular hardware
- Biometric reader interface
- Reader interface (Proximity (125Khz), Wiegand, Clock and Data, Barcode, i-Class, Mifare)
- Battery backed real time clock
- Internal sound system
- Internal microphone
- Ethernet 10/100 baseT with Power over Ethernet (using additional module)
- USB I/O expansion modules

Software

- Linux-based operating system
- Remotely upgradeable/configurable
- Separate partitions for system software, user applications and system configuration data, with additional recovery partitions
- Networking protocols supported: DHCP, Static IP, NTP
- GTConnect compatible for remote management and diagnostic support
- Multi-language and locale support
- Software development toolkit available
- Applications can be written in Python 2.7 using an API to access the hardware
- SQLite database support for application

Installation & specification features



GT4 Internal components

Real Time Clock Coin Cell

Maintains the RTC during power off situations. Under normal operating conditions the coin cell will have a service life of up to 10 years.

RECOVERY Switch

Press the Recovery button down when the device is powered on

RESET Switch

Press to initiate hardware reset, Terminal will reboot

Biometric Reader Connector

For Suprema Fingerprint Reader Module

Biometric Reader Position

For Suprema Fingerprint Reader Module

Reader Module Connector

Reader Modules Include

- HID Prox
- Feig Prox
- Generic Prox 5V
- Generic Prox 12V
- Mag Swipe
- Barcode Swipe

USB Connector

- USB 2 x 4
- Supports Flash memory stick
- USB Fingerprint Readers
- Other devices subject to drivers

Power over Ethernet (PoE) Module Position

Optional module enables terminal to be powered via the Ethernet cable using an IEEE802.3af or IEEE802.3at Ethernet switch or mid-span injector

Ethernet Connector

- 10/100baseT
- Full duplex
- Supports PoE (when module fitted)

Auxiliary Power Connector

For connection of Power Option Modules including

- Battery Backup Module

Power IN Connector (2.1mm)

- 12V DC External PSU (centre positive)
- Power loading - 150mA @12v Power IN



Mounting points for Reader Module

Front cover fixing screw

Slot for Swipe Reader

Unit is supplied with slot filler bar

- Remove for Swipe readers
- Fit for Proximity readers





Chapter 3:

System start-up



System start-up

When the GT4 system is powered on, a bootloader runs which loads the Linux operating system. This runs start-up scripts to set up and configure the terminal and to start enabled services.

When an application is installed and the unit is fully booted, the initial screen gives you the opportunity to enter the Terminal Setup by pressing the F8 key. If no key is pressed, the system times out and automatically runs the installed application. See below:



Press F8 for Set-Up Menu



Factory App Launch Screen

If no application is installed, the terminal continually displays the prompt to enter the **Terminal Setup**.

With the **Factory App** installed, the following keys are active from the launch screen:

- **F3 (USB Setup):** Installs application from a USB memory stick. This option is only available if a USB memory stick with an application installation package is fitted. See “Deploying/Configuring clock with a USB memory stick” on page 8-1.
- **F4 (Exit):** Exits the application momentarily and allows you to access the clock’s set-up menus for system configuration. See “Accessing the GT4 Terminal setup” on page 4-1.
- **F7 (Net Setup):** Allows network download of an application by specifying ID and PIN. See “Deploying a clock using a network connection” on page 8-2.
- **F8 (Info):** Accesses Info pages on the Application, Firmware, Health and Network status.

The set-up menus allow the terminal configuration to be changed at the terminal.

Note: when connectivity is achieved between the terminal and a remote computer, the clock can be configured remotely, either by downloading data using the server software (such as CustomExchange) or by using tools such as GTConnect, SSH and AssistIT: for more information, see “Using GTConnect” on page 5-1, “Using SSH” on page 5-1 and “Using AssistIT” on page 5-2.



Chapter 4:

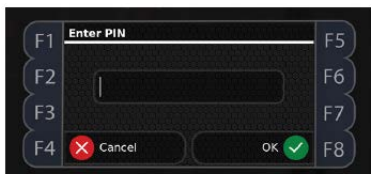
Terminal set-up



Terminal set-up

Accessing the GT4 Terminal setup

When accessing the clock's set-up, you are prompted to enter a PIN before the set-up menus can be accessed.

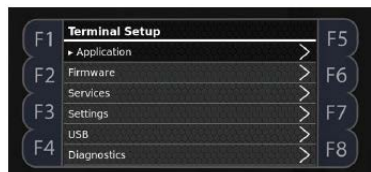


PIN Entry Screen

The default PIN is 1905.

We strongly recommend that you change the default PIN: for more information, see The Terminal PIN on page "The Clock PIN" on page 6-1.

The following **Terminal Setup** menus are available:



Terminal Setup Screen

- **Application.** Used for managing the installed application, see "Application menu" on page 4-2.
- **Firmware.** Used for managing the firmware properties, see "Firmware menu" on page 4-3.
- **Services.** Used to enable and disable services on the terminal, see "Services menu" on page 4-4.
- **Settings.** Used for configuring a variety of terminal properties, see "Settings menu" on page 4-5.
- **USB.** Used to browse files via a USB connection, see "USB menu" on page 4-12.
- **Diagnostics.** Used to run a variety of tests, see "Diagnostics menu" on page 4-12.

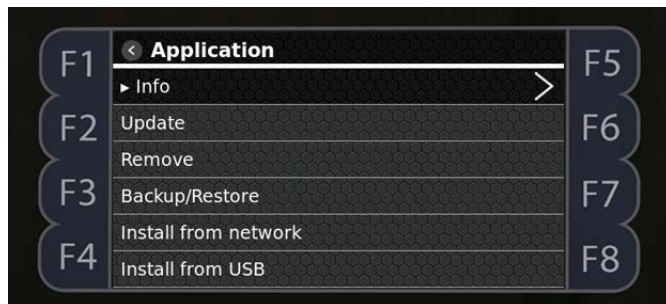
Note: use arrow keys to navigate **Setup** menu.



Terminal set-up



Application menu



Options on the **Application** menu are used to manage the installed application. The following options are available:

- “Info” on page 4-2.
- “Update” on page 4-2.
- “Remove” on page 4-2.
- “Backup/Restore” on page 4-2.
- “Install from network” on page 4-3.
- “Install from USB” on page 4-3.

Info

Select this option to display the currently configured application parameters:

- **Name.** The name of the installed application.
- **Version.** The version of the installed application.
- **URL.** The application’s update URL, used to check and download newer versions of the application.
- **Problem Report.** Indicates whether any crash reports exist following an application abnormal end.

Update

The firmware checks for an application update immediately. If one is found, you are given the choice to update or not.

Remove

This permanently removes the installed application and its associated database from the terminal.

Backup/Restore

Allows the application to be backed up and restored from a USB memory stick.

An **Auto Backup** feature allows a backup to be scheduled automatically. A specified number of these backups can be saved on the USB stick.



Terminal set-up

Install from network

Install application from pre-configured network location.

Install from USB

Install application from USB memory stick.

Firmware menu



Options on the Firmware menu are used to manage the terminal's firmware. The following **Firmware** menu options are available:

- "Info" on page 4-3.
- "Check for updates" on page 4-3.
- "Change PIN" on page 4-3.
- "Change password" on page 4-4.
- "Reset to defaults" on page 4-4.
- "Reboot terminal" on page 4-4.

Info

Select this option to display firmware and terminal information:

- **Firmware.** The current firmware version, e.g. IT3200.x.x.x1.0.0
- **Build Date.** The current build date of the firmware
- **URL.** The firmware's update URL, used to check for newer firmware versions.
- **Bootloader.** Bootloader version.
- **MAC.** Terminal MAC address, e.g. 00:01:CE:01:08:BC.
- **Part No.** Part/Serial No. detail of front panel assembly.
- **PCB Revision.** PCB revision.
- **HW Tested.** Date that terminal passed hardware test.

Check for updates

This forces the firmware to check immediately for a firmware update. If one is found you are given the option to update or not.

Change PIN

This allows you to set a new PIN. This PIN is entered before entering the set-up menus and also before running applications from the USB memory stick. You must re-enter the old one.

Terminal set-up



Change password

The default password is the numeric part of the clock serial number.

Reset to defaults

- **Firmware version 7.1.0 and below.** Removes application database **only** and resets all system settings back to default configuration.
- **Firmware version 7.2.0 and above.** Removes application **and** database, resets all system settings back to default configuration.

Reboot terminal

This reboots the terminal.

Services menu



Options on this menu can be used to manage various services, and are used when setting up remote connections.

Note: before activating any service, consider any associated security risks, which depend on the network the clock is installed in.

The following **Service** menu options are available:

- “GtConnect” on page 4-4
- “AssistIT” on page 4-5.
- “Telnet” on page 4-5.
- “NTP” on page 4-5.
- “SSH” on page 4-5.
- “VNC” on page 4-5.

GtConnect

By default, GTConnect is activated so that the GT4 can be provisioned and managed by the GTConnect service. For more information, see “GT Services” on page 1-5.



Terminal set-up

AssistIT

Activate this for Grosvenor's comprehensive remote support feature. The AssistIT service uses port **5222/TCP** to connect to the server and port **7777/TCP** for VNC, Shell and LogView data. For AssistIT to work fully, these ports must not be blocked.

Telnet

Activate this to run a Shell on the clock from a remote computer. This needs to be activated if the development environment is being used. The Telnet service listens on port **23/TCP**.

Note: Telnet is not secure and should only be used for debug/development purposes and should not be left on.

NTP

Activate this if the clock is to acquire its time and date using the Network Time Protocol. If activated, the clock will try to connect to the default **pool.ntp.org** server on the Internet. The NTP service uses port **123/UDP** to connect to the server. For NTP to work, this port must **not** be blocked.

SSH

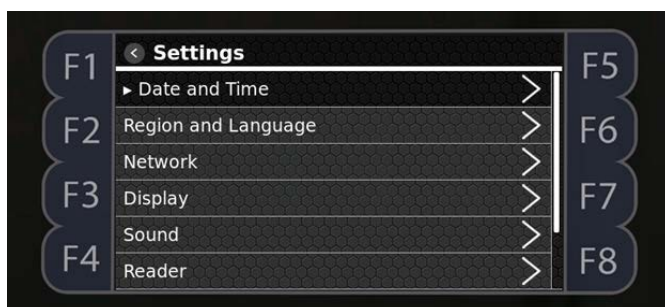
Activate this to run a Secure Shell on the clock, which allows remote users to log in to the clock's Shell securely. SSH provides a secure alternative to Telnet and does not transmit passwords in plain text. A SSH client program is required on the remote computer. The SSH service listens on port **22/TCP**.

VNC

Activate this if you want to control the clock from a remote computer. The remote computer needs to run a VNC client program, such as UltraVNC Viewer. When connected, the display on the clock can be viewed on the remote PC and the keypad on the clock can be operated remotely. The VNC service listens on port **5900/TCP**.

Note: VNC is not secure and should only be used for debug/development purposes and should not be left on.

Settings menu



Options on this menu can be used to configure a variety of clock .

Terminal set-up



The following menu options are available:

- “Date and Time” on page 4-6.
- “Region and Language” on page 4-6.
- “Sound” on page 4-7.

Date and Time

These values set the clock’s time, date and time zone.

- **Set Time.** Enter the current time. It is recommended that NTP is used.
- **Set Date.** Enter the current date (dd/mm/yyyy).
- **Timezone.** Select the time zone the clock is in. The following zones are supported:
 - Africa.
 - America.
 - Asia.
 - Australia.
 - Europe.
- **Customized.** Use this option if a customized time zone needs to be created. Specify the time zone using the uClibc TZ environment variable specified in the format:

```
stdoffset[dst[offset]][,start[/time],end[/time]]
```

For example, UK time is represented by:

```
WET+0WEST,M3.5.0/1,M10.5.0
```

- **NTP Server.** This lets you change the NTP server if required.

Note: for more information on the time zone format, see http://www.opengroup.org/onlinepubs/007904975/basedefs/xbd_chap08.html

Region and Language

These values control the clock’s language and location. This information is used by the application to display translated text and show dates, times, numbers, etc. according to the configured region:

- **Language.** Languages that are supported include:
Bulgarian, Chinese, Croatian, Czech, Danish, Dutch, English, Finnish, French, German, Greek, Hungarian, Italian, Japanese, Korean, Norwegian (Bokmål), Norwegian (Nynorsk), Polish, Portuguese, Russian, Slovak, Slovene, Spanish, Swedish, Turkish.



Terminal set-up

- **Region.** The following regions/locales are supported:
Austria, Belgium (Dutch), Belgium (French), Belgium (German), Bulgaria, Canada (English), Canada (French), China, Croatia, Czech Republic, Denmark, Finland (Finnish), Finland (Swedish), France, Germany, Greece, Hong Kong (Chinese), Hong Kong (English), Hungary, Ireland, Italy, Japan, Luxembourg (French), Luxembourg (German), Netherlands, Norway (Bokmål), Norway (Nynorsk), Poland, Portugal, Russia, Singapore (Chinese), Singapore (English), Slovakia, Slovenia, Spain, South Korea, Sweden, Switzerland (French), Switzerland (German), Switzerland (Italian), Taiwan, Turkey, United Kingdom, United States.

Sound

These settings modify the default volume, test playback and microphone operation.

- **Volume.** Adjust by using the left and right arrow keys.
- **Microphone.** Adjust by using the left and right arrow keys.
- **Test playback.** Select **Play** in this option to hear the tone at the current volume level.
- **Test microphone.** Check the microphone operation by recording a test message. Press **F2** to record, stop and play message.

Network

The **Network Setup** screen allows you to configure the clock's network settings:

The options include:

- "Info" on page 4-7.
- "DHCP" on page 4-8.

Info

Selecting this option displays the current network settings. An example of the information provided is shown below:

Interface. On-Board LAN
Status: Connected
Mode: DHCP
MAC: 00:01:ce:01:d6:2a
IP Address: 172.016.003.049

Netmask. 255.255.252.000
Gateway: 172.016.044.255
DNS1: 172.016.047.001
DNS2: 172.016.047.002

Terminal set-up



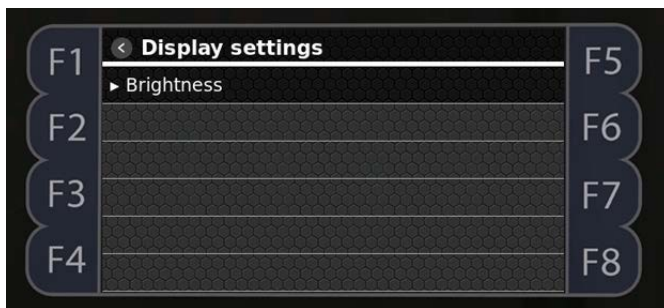
DHCP

Select this if the clock is to be dynamically supplied with an IP address from a DHCP server, as opposed to having to enter a static IP address.

For static IP, the following settings need to be configured:

- IP address.
- Subnet mask.
- Gateway address.
- Primary and secondary DNS servers.

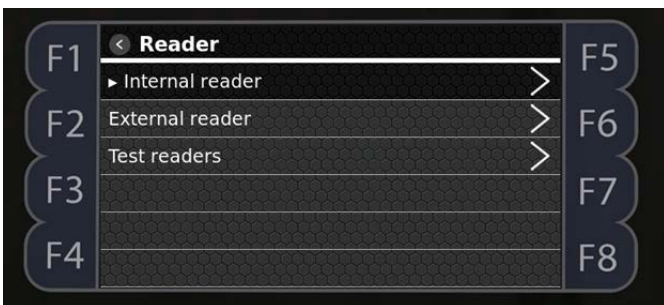
Display menu



This allows the brightness of the display to be changed.

- Brightness. Adjust the brightness of the display using the left and right arrow keys.

Reader menu



These settings configure the type of reader fitted and defines how data from the reader is decoded.

The options include:

- “Internal Reader” on page 4-9.
- “External Reader” on page 4-10.
- “Test Reader” on page 4-10.



Terminal set-up

Internal Reader

- **Info.** Details of the internal reader detected/configured.
- **Type.** Select the type of reader from one of the following:
No Reader, Autodetect, Wiegand, Clkndata, Barcode, iClass, Mifare.
- **Proximity decoders.** Currently supported data formats:
 - Type 100 - CMP 26 bit
 - Type 101 - CMP 37 bit
 - Type 102 - 10304
 - Type 103 - 8 - 32 Bit
 - Type 104 - Corporate 1000
- **Mifare decoders.** Currently supported data formats:
 - Type 105 - Mifare 32 Bit CSN
 - Type 106 - Mifare 56 Bit CSN
 - Type 107 - Mifare UID
 - Type 108 - Mifare CSN
 - Type 109 - Mifare Application
- **Magnetic decoders.** Currently supported data formats:
 - Type 200 - Auto detect
 - Type 201 - 5 Bit only
 - Type 202 - 7 Bit only
- **Decoder.** This determines how the clock treats the data generated by the reader.
- **Barcode decoders.** Currently supported symbologies:
 - Type 300 - Auto detect.
 - Type 301 - 3 of 9.
 - Type 302 - 2 of 5 interleaved.
 - Type 303 - Codabar.
 - Type 304 - Barcode 93.
 - Type 305 - Barcode 128.
 - Type 306 - UPC.
 - Type 307 - EAN.

Internal reader

Special Decoders

- **Type 1 - Passthrough.** This causes the data stream generated by the reader to be passed directly to the application as an ASCII bit stream. This allows the application to decode the data in situations where the reader encoding is not yet supported by the firmware. This option is also a useful tool for data format analysis.
- **Type 2 - Bitmask decoder.** Enables a pre-defined bitmask to be applied to a reader data string that is of an unsupported format, in order to obtain the desired transponder number.

Terminal set-up



External Reader

Displays information on connected external readers.

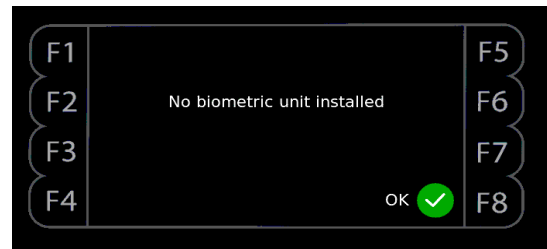
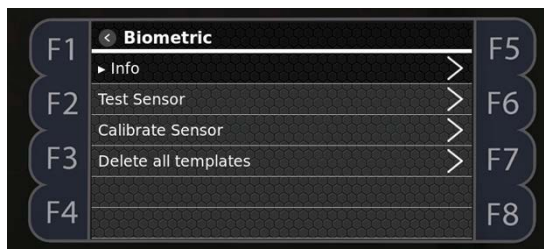
Test Reader

This allows the configured reader to be tested. The user should swipe/present badge and the decoded data is displayed on the clock's display, for example:

- #2 0004405100693
(2nd swipe same badge)
- #1 0004405100693
(1st swipe same badge) is shown (bit length, decoder used, and so on)

Biometric menu

The clock detects whether a biometric reader is fitted. If detected, then the following selections can be made, otherwise the message **No biometric unit installed** is displayed.



The following options are available:

- “Info” on page 4-10.
- “Test Sensor” on page 4-11.
- “Calibrate Sensor” on page 4-11.
- “Delete all Templates” on page 4-11.

Info

Module: displays the model/firmware details of the biometric reader.



Terminal set-up

Test Sensor

This prompts the user to place their finger on the reader. When read, the user's template is displayed on the display, for example:



Note that this process does not enrol the user, but by displaying a representation of the fingerprint, it can be used to confirm that the reader is working correctly and is not damaged.

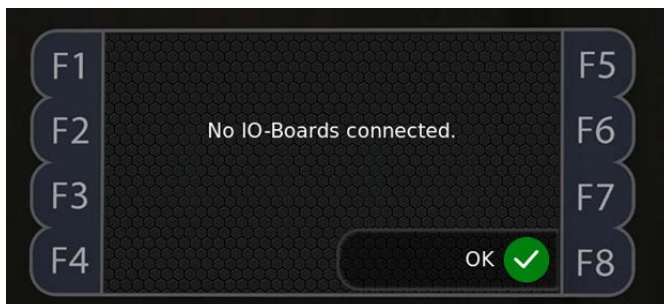
Calibrate Sensor

This option allows recalibration of the biometric sensor and is normally only used following sensor replacement.

Delete all Templates

This option allows the user to permanently delete all templates in the biometric reader. Use this option with care!

IO-Boards



Options vary dependant on the IO board(s) fitted.

Please refer to relevant hardware guide for options.

Terminal set-up



USB menu

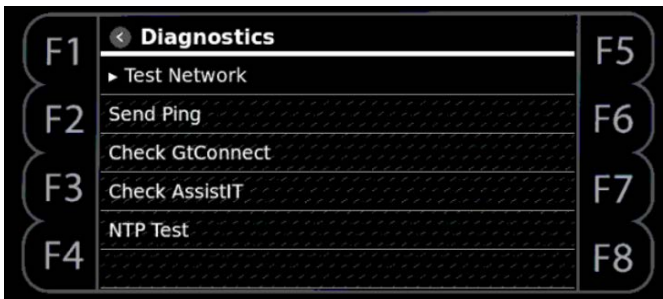


When you select this option and plug in a memory stick you will be presented with the following options:

- Install firmware image (IT3200-fw-*.bin)
- Install application (*.app)
- Restore backup (*.itbackup)

Please note that if an application installation package is detected, you will be given the option of installing.

Diagnostics menu



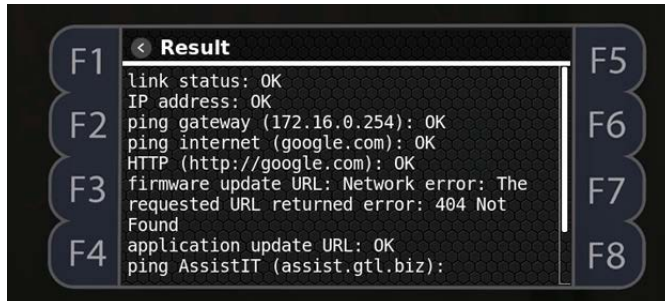
Options on this menu can be used to perform the following diagnostic functions. The following options are available:

- “Test Network” on page 4-13.
- “Send Ping” on page 4-13.
- “CheckGtConnect” on page 4-13.
- “Check AssistIT” on page 4-14.
- “NTP Test” on page 4-14.



Terminal set-up

Test Network



This option runs a number of network tests to check and displays the results:

- Link status of Ethernet cable
- Gateway reachable (via ping)
- Gateway and Nameserver

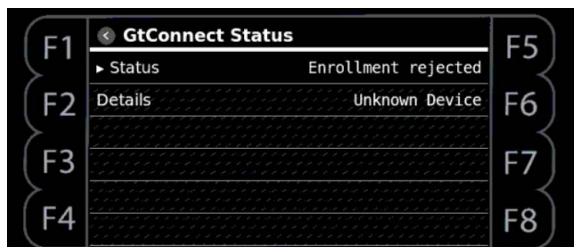
Send Ping

This option prompts you to enter a host name to ping and displays the results:



CheckGtConnect

This option allows you to view the status and device details.



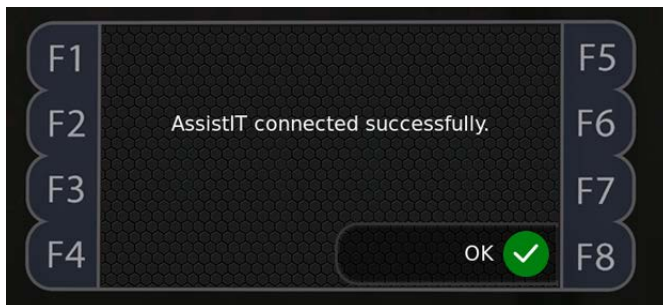
Select to see the enrolment status of GTConnect. If the clock's serial number is not recognised by GTConnect, then the device is rejected and **Unknown Device** is displayed. If you subscribe to the GTConnect service the clock's serial number needs to be manually entered in GTConnect.

Terminal set-up



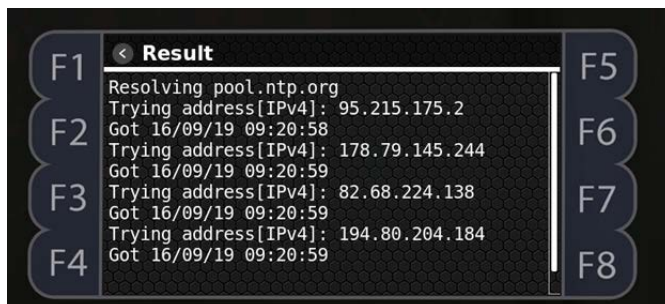
Check AssistIT

This option allows you to confirm whether AssistIT can connect successfully.



NTP Test

Tests the connection to the configured NTP server - the default timeserver cluster is pool.ntp.org





Chapter 5:

Remote connections



Remote connections

It is possible to use the following programs:

- GTConnect.
- SSH.
- AssistIT
- Telnet
- VNC

Using GTConnect

GTConnect is a cloud based platform that connects your clocks to each other and your software, to create an integrated network. This allows remote diagnostics and data management across the connected devices in real-time.

When the clock is setup in GTConnect, it is then possible for the clock to be remotely managed.

For more information, see:

- “GT Services” on page 1-5.
- “GtConnect” on page 4-4.
- “CheckGtConnect” on page 4-13.

Using SSH

The recommended method for remotely connecting to a command line shell in the clock is to use SSH.

On Windows platforms the free program PuTTY can be used.

To connect, specify the IP address of the terminal e.g. 172.16.3.49 (**Note:** Omit any leading zeros). Once a connection has been initiated, you are prompted to log into the terminal and are prompted for a login name and a password.

Login: root

Password: 00000088 (for example)

Remote connections



The user name is root and the password is the numeric part of the terminal serial number located inside the clock at the top of the motherboard.



Note: we strongly recommend that you change the default password: for more information, see “The Login Password” on page 6-1.

When you’re logged in, shell commands can be run.

Note: the SSH service must be activated as part of the clock configuration. For more information, see “Services menu” on page 4-4.

Using AssistIT

Activating the AssistIT service allows the support representative to interrogate the clock’s configuration, as well as access to other remote control services. Full instructions on how to use this feature can be found in the AssistIT User Guide.

Note: the AssistIT service must be activated as part of the clock configuration. For more information, see “Services menu” on page 4-4.

Using Telnet

The log-in messages are the same as the SSH session.

Note: the AssistIT service must be activated as part of the clock configuration. For more information, see “Services menu” on page 4-4.

IMPORTANT: using Telnet is not secure and not recommended.

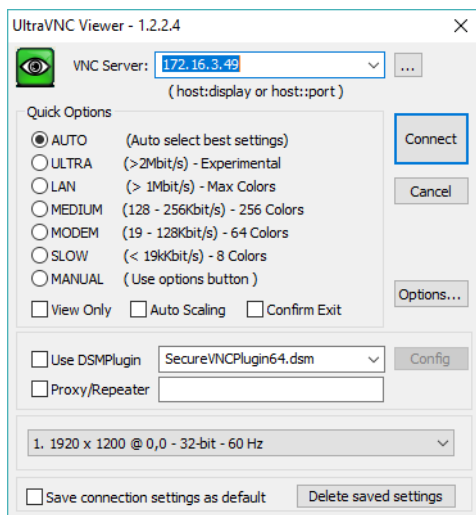


Remote connections

Using VNC

If the VNC service is activated on the clock it is possible to control the keyboard remotely, using a VNC Client viewer program on the remote computer.

The example below uses UltraVNC viewer to remotely control the clock. The connection screen is as follows:



When connected, the remote clock's live display is shown in a window on the computer's desktop. The keyboard on the remote computer causes the same key to be pressed at the clock.

In the example below, press **F8** at the computer will cause the clock to enter the **Info** menu.



Chapter 6:

Security and Passwords



Security and Passwords

The GT4 clock uses three passwords, the PIN (Personal Identification Number), the remote Login password and the VNC password. This chapter explains their purpose and how you can modify them.

The Clock PIN

You need to enter the PIN at the clock to access the set-up menus: for more information, see “Accessing the GT4 Terminal setup” on page 4-1.

The factory default PIN is **1905**.

We strongly recommend that you change the default PIN as soon as possible to ensure the security of the clock.

Modifying the clock PIN

There are two ways to modify the PIN:

- From the **Change PIN** option on the clock’s **Firmware set-up** menu. For more information, see “Firmware menu” on page 4-3. **Note:** you must first enter the old one.
- You can also change the PIN on the command line.
For example, to change the PIN to 12345, enter the following command:
`$ cfgset it_cfgit_pin 12345`
Reboot the clock to activate the password.

The Login Password

The clock Login password is used by Telnet and SSH to log in into the system. It can be modified from the clock’s shell: for example using SSH or via the clock settings.

By default the password is the numeric part of the clock serial number.

We strongly recommend that you change the default PIN as soon as possible to ensure the security of the clock.

- To modify the password, on the command line, enter a command of the following format:
`$ cfgset it_login new_password`
- Reboot the clock to activate the password.

Note: when using the `cfgset` command to save a new password or PIN, the clock saves the password in an hashed form. If the password is lost it may result in the clock being reset and all user data on the clock will be lost.



Chapter 7:

Special key shortcuts



Special key shortcuts

Terminating the current application

To terminate the current application:

Simultaneously hold down the **F1**, **F5** and **Enter** keys.

The current application will terminate and the default application launcher is displayed:





Chapter 8:

Application deployment



Application deployment

One of the strengths of the GT4 clock is its ability to deploy an application using either a USB memory stick or a network connection.

The GT4 clock comes with the FactoryApp application pre-installed, which makes it very easy to install and configure a clock via USB or network.



Deploying/Configuring clock with a USB memory stick

Installing and configuring a clock via USB can be initiated from several menu options:

- FactoryApp>USB Setup
- Terminal Setup>Application>Install from USB
- Terminal Setup>USB>Install Application

To prepare a USB memory stick, you need to do the following:

- Create an \IT-Install folder on the USB memory stick
- Copy your application file into the \IT-Install folder
- Copy the firmware image file required into the folder (optional)

Note: you must ensure that there is only one application file and one firmware file per terminal type within the \IT-Install folder.

Some applications support loading a pre-configuration file as part of their wizard. Such files must be named **itcfg.xml** and saved to the **IT-Install** folder.



Deploying a clock using a network connection

If the clock is connected to the Internet, installing and configuring it via the network is the easiest method. This can be initiated from:

- FactoryApp > Net Setup
- Terminal Setup > Application > Install from network



You're asked for an ID and a PIN. The clock then connects to the Grosvenor Server and downloads the application, firmware and pre-configuration file for that ID.



Chapter 9:

Hardware options



Hardware options

The tables below list some of the common modules that can be fitted to the GT4 clock. For installation details, refer to the hardware Installation Guide.

Main system unit

Part number	Description
FP-GT4	GT4 front panel (processor board + display)
BP-001-DG	GT4 back panel

Designed for simple installation, Grosvenor clocks use a back panel with various mounting and cable entry possibilities to meet a wide range of installation situations.

The back panel includes clip-in cable entry plates to allow secure installations without the need to remove or re-wire connectors.



Hardware options

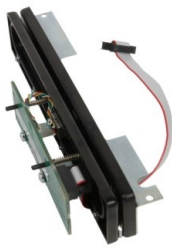


Reader Modules (only popular assemblies listed)

Part number	Description
RM-AWID-IT	AWID Reader Module
RM-BAR-IT	Infra-red Barcode Reader
RM-DEI-IT/RS	Deister Reader Module
RM-ELATEC-A	Elatec Reader Module - IT/GT
RM-FEIG-FC-IT/RS	Feig Reader (EM4100 - Fix Code)
RM-FEIG-HI-IT/RS	Feig Reader (Hitag)
RM-GIG-SEC-IT/RS	Giga Mifare Sector Reader Module
RM-HID-IT/RS	HID 125KHz Prox Reader
RM-HID-CD-IT/RS	HID 125KHz Prox Reader, clock and data output
RM-HON-IT	Honeywell Reader Module
RM-ICLSE-IT/RS	HID iClass SE Reader Module
RM-IND-IT/RS	Indala 125KHz Prox Reader
RM-IND-CD-IT/RS	Indala 125KHz Prox Reader, clock and data output
RM-KAN-IT/RS	Kantech Reader Module
RM-KERI-IT/RS	Keri/Pyramid Prox Reader
RM-LUM-M320-IT	Lumidigm Biometric Finger Reader Module
RM-MAG-IT/RS	Mag Stripe Reader (Track 1 or Track 2)
RM-MIF-IT	Mifare Reader Module IT
RM-PAX-IT/RS	Paxton Prox Reader Module
RM-PAX-UNI-IT/RS	Paxton Prox Universal Reader Module
RM-SP-4750-GT4	Suprema Capacitive Biometric Finger Reader
RMK-5VPRX-IT/RS	Generic 5V Reader Mounting Plate
RMK-12VPRX-IT/RS	Generic 12V Reader Mounting Plate



Hardware options



Biometric Reader Modules

The RM-SP-4750-GT4 biometric finger reader operates in both **Verify** and **Identify** modes with 4750 finger template capacity and may be fitted in conjunction with card readers. The module fits directly into the front panel:



Communications Modules

Part number	Description
CM-POE-HC-IT	Power over Ethernet Module
CM-WIFI-I-USB-IT	USB WI-FI Dongle (Internal)

Hardware options



The CM-POE-HC-IT is an optional plug-in module to the GT4 Front Panel which allows the clock to be powered via the Ethernet connection from a IEEE802.3af or IEEE802.at standard PoE switch.

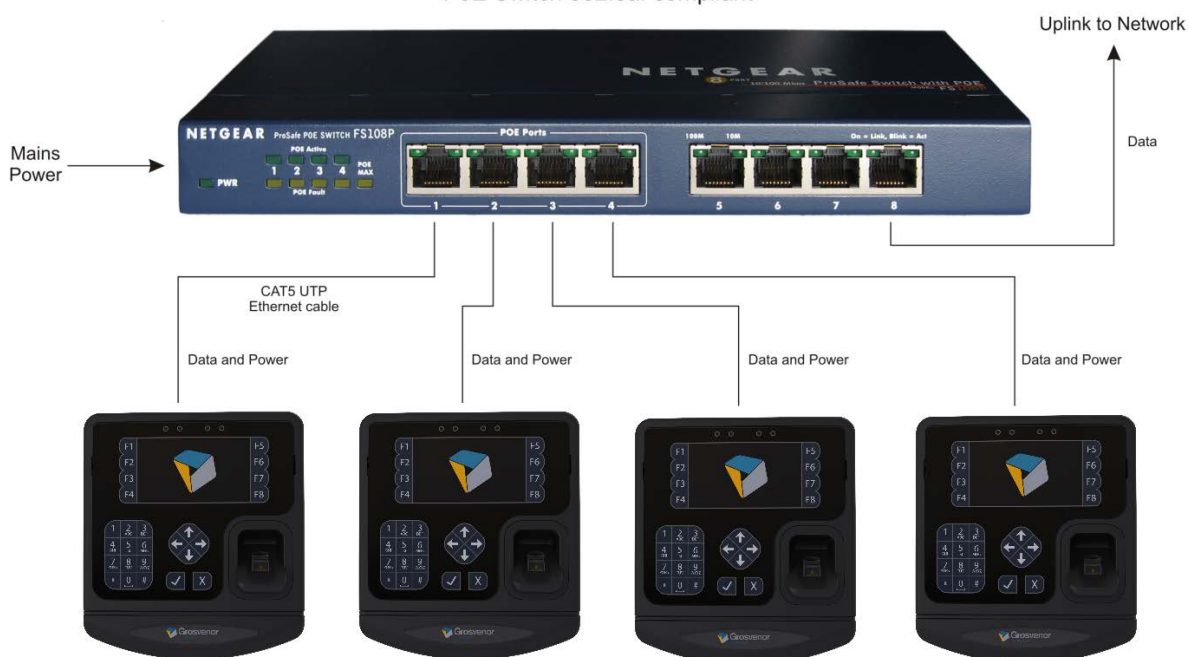
CM-WIFI-I-USB-IT



CM-POE-HC-IT



PoE Switch 802.3af compliant



Part number	Description
EM-BB-HC-IT/RS	High capacity battery operation module
EM-IO-USB-IT	USB I/O expansion module
EM-USB-IT	External USB expansion port
EM-IO-ER-IT	I/O Board external reader IT/GT



Hardware options

The EM-BB-HC-IT/RS is a power supply back-up battery module capable of running the clock if the power supply fails for approximately two hours: the battery is compatible with all power options, including PoE.

The Lithium-Ion battery typically has a service life of between two-three years. In order to ensure the continued reliable operation of the back-up battery function, we recommend running Advanced diagnostics to monitor its charge state, voltage current and temperature. The battery should be replaced when it has reached the end of its service life.

In order to ensure the continued reliable operation of the back-up battery function we recommend checking the condition of the battery, once every six months, to see if there are signs that it's reaching the end of its life. Occasionally, the battery may start to swell towards the end of its life. If this is noticed, the battery should be (Part Number: EM-BB-HC-IT).

EM-BB-HC-IT/RS



The EM-IO-USB-IT module is designed to be mounted on the clock back panel and the module features two optically isolated input channels, together with two relays that have volt-free change-over contacts designed to switch DC loads with a continuous rating of 3A.

EM-IO-USB-IT



Ancillary equipment

Part number	Description
AE-BP-ISRT-KIT01	Back panel insert kit (spare parts).
AE-PSU-PT-12VDC	12VDC plug top PSU
AE-PSU-WM-12VDC	12VDC wall mount PSU