

Scantronic 200WE Control Unit

Installation Instructions

Introduction

The Scantronic 200WE (PAN-200WE) is an expandable control unit that is compliant with grade 2 or grade 3, and is capable of supporting up to 200 wired and/or radio zones. The control unit has 10 on-board wired zones; further zones can be made available by using optional expanders.

Note: Use of any radio devices limits approval to grade 2.

The PAN-200WE provides a reliable, easy-to-install, wired or wire-free solution for domestic and commercial applications.

Key features

- Provides 10 wired zones on-board, with a system maximum of 200 wired and/or radio zones.
- Compatible with a wide variety of wired and wire-free detectors including PIR sensors, smoke detectors, hold-up devices, perimeter sensors and door contacts.
- Grade 2 or grade 3 selectable.
- Supports up to 50 bus devices (keypads, expanders, etc.).
- Two buses – enhances installation flexibility.
- Configurable through a keypad or web interface.
- Ethernet port for optional use of the web interface, network cameras, and the use of SecureConnect™ (e.g. for app cloud connectivity, or to send alarm notifications by email).
- Micro-SD card slot to enable storage of camera images and firmware/language upgrades.
- On-board connections for wired siren/strobe unit.
- Compatible with Scantronic radio siren/strobe units.
- On-board outputs: two open-collector, and two voltage-free (relay). System maximum of 200 outputs.
- Plug-by communicator port with 16 outputs (requires MISC-COMPACT16).
- Optional plug-on communicators available.
- Engineer keypad port.

Safety Information

This product must be installed by qualified service personnel.

WARNING: BEFORE INSTALLING THIS EQUIPMENT, ENSURE THAT THE MAINS SUPPLY FOR THE CONTROL UNIT IS DISCONNECTED AND ISOLATED. All electrical connections must be carried out by a qualified electrician and comply with current local regulations.

WARNING: When connected to the mains with power applied, mains voltages are present on the shrouded heads of the terminal screws of the mains connector (Figure 6).

WARNING: The mains cable to the control unit must use a double-pole isolation device in accordance with EN 62368-1.

WARNING: Good practice requires that documentation is not stored within the enclosure.

Caution: If you need to handle the PCB in the control unit, take standard precautions to prevent damage by static electricity.

Installing the control unit

Step 1: Choose a location

The control unit must be located:

- Within the protected area (but not in an entry or exit zone).
- Ideally, more than 2 metres from the floor.
- Out of sight of potential intruders.
- Upright (battery at the bottom) on a wall or other flat surface (to discourage tamper attempts from the rear).

Step 2: Check standby battery capacity

Check that the battery is capable of powering the system for the minimum required period during a mains failure:

- EN50131-1 grade 2: Minimum of 12 hours.
- EN50131-1 grade 3: Minimum of 30 hours*.
- PD6662 grade 3 (UK only): Minimum of 12 hours*.

*The minimum periods for grade 3 require the control unit to send mains failures to an ARC.

The periods must include two durations of 15 minutes in alarm. Please refer to the *Scantronic Series Installation Manual* for a worked example.

Step 3: Install cabling

Note the following (refer to the *Scantronic Series Installation Manual* for guidance):

- Normally, standard 7/0.2 un-screened alarm cable is suitable for wiring to bus devices (e.g. keypads) and wired siren/strobe units.
- Screened cable may be needed if the cable runs near to sources of electromagnetic interference.
- Keep cables to bus devices separate from any other wiring.
- You can connect bus devices using a daisy-chain (serial) or star (parallel) configuration.
- Cables must enter the control unit using the dedicated cable-entry holes (Figure 3).
- The maximum length of the bus cable depends on a number of factors, including the number of devices powered by the bus and whether daisy-chain or star connections are used. Remote power supplies may be required.

Step 4: Remove the lid of the control unit

Release the screw on the front of the lid, then lift it off.

Step 5: Fit the feet and tamper sleeve

Fit the supplied plastic feet and tamper sleeve to the bottom of the case, as shown in Figure 1.

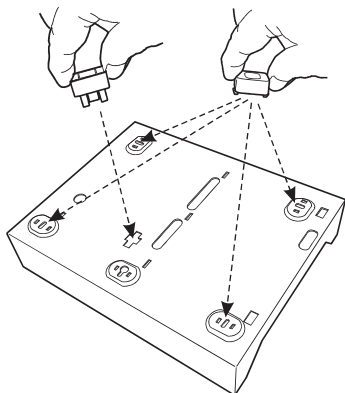


Figure 1. Fitting the feet and tamper sleeve

Step 6: Fit the tamper switch and shroud

Fit the tamper switch assembly through the slot in the case (Figure 2). Also, for added security, fit the tamper shroud to the wall so that when you mount the control unit, the shroud will surround the arm of the tamper switch.

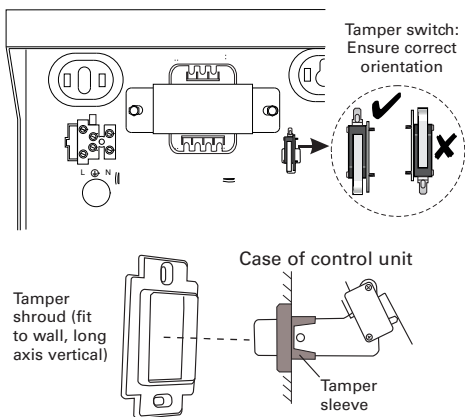


Figure 2. Fitting the tamper switch and shroud

Step 7: Mount the control unit

Mount the control unit in the orientation shown in Figure 3 using at least 4 fixing holes and minimum 50mm long No10(5mm) screws. Use only the designated cable-entry holes.

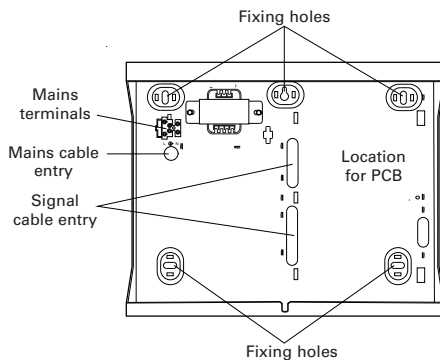


Figure 3. Mounting holes and cable entries

Step 8: Fit the PCB

Fit the PCB into the case as shown in Figure 4.

Step 9: Connect all wired devices

Connect all wired devices except the battery, as shown in Figure 5.

If you are using a plug-on module, fit and connect the device as described in the module's installation instructions.

Figure 4. Fitting the PCB

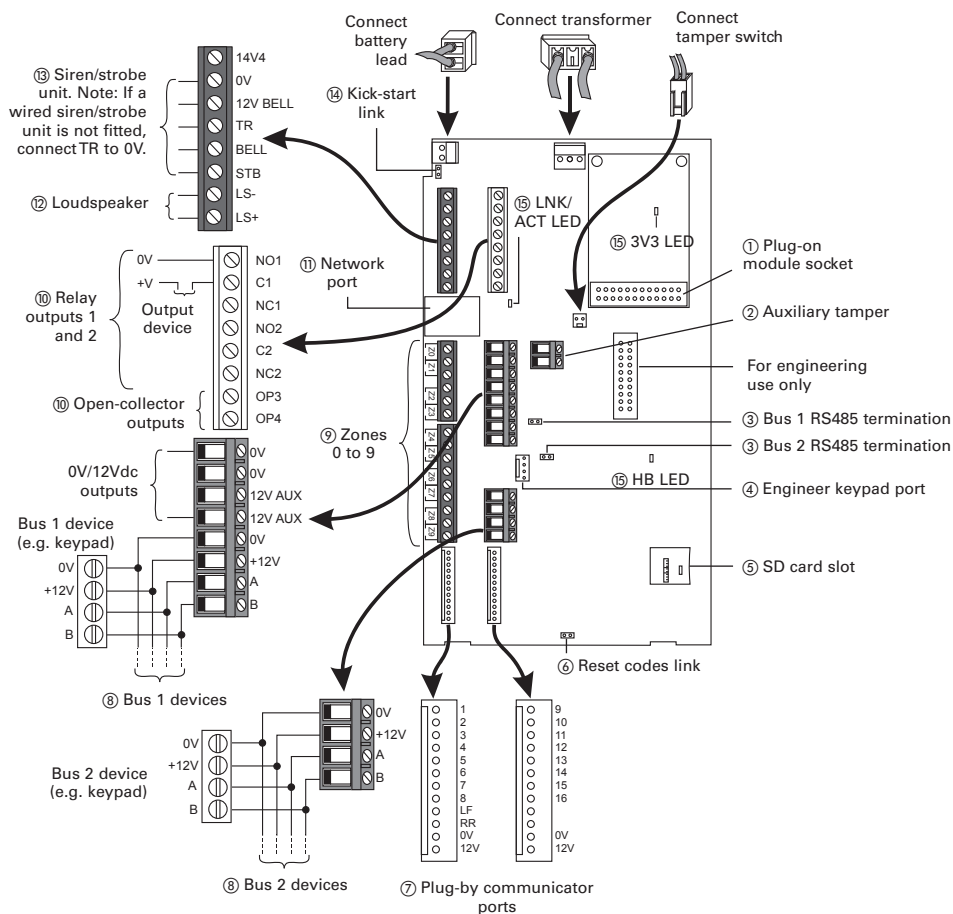
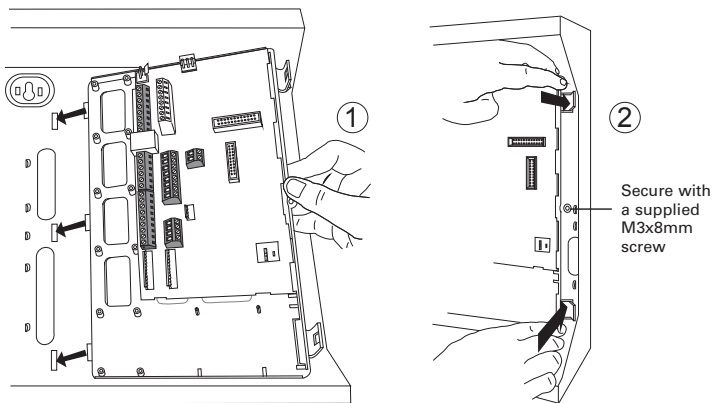


Figure 5. Control unit PCB

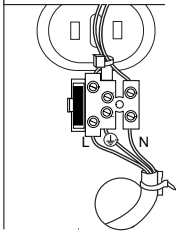
Step 10: Connect the battery

Note: Connecting the battery does not start the system.

Fit the lead-acid battery in the bottom-left corner of the control unit.

Connect the battery leads to the battery (red to positive and black to negative), and connect the other end to the PCB (Figure 5). Also connect the transformer lead to the PCB (Figure 5).

Step 11: Connect the mains cable



WARNING: ENSURE THAT THE MAINS SUPPLY IS DISCONNECTED AND ISOLATED.

Connect the mains cable to the terminal block (Figure 6) and fit a strain-relief tie.

Do not apply power until after the lid is re-fitted.

Figure 6. Mains connections

Step 12: Re-fit the lid, switch on and configure the system

WARNING: During initial power-up, keypad sounders and any internal loudspeaker may give an alarm tone. If you are working at the top of a ladder, make sure that the sudden noise does not startle you and cause a fall.

Re-fit the lid (Figure 7), then switch on the mains supply to the control unit.

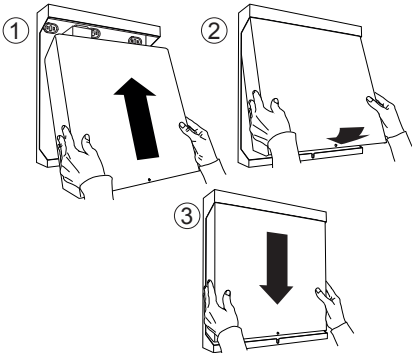


Figure 7. Re-fitting the lid

Go through the initial configuration prompts and set up the system as described in the *Scantronic Series Configuration Guide*. You are prompted to specify installer and user codes during initial system configuration.

It is recommended that you connect the control

unit to the internet and enable “Level 4 Update” in the installer and user menus. When you enter your installer code, the system can then check online whether later versions of the firmware or language file exist, and prompt you to install them. Please refer to the *Scantronic Series Configuration Guide* for further details.

PCB links, connectors and LEDs

The following sections provide information about the links, connectors and LEDs shown in Figure 5.

① Plug-on module connector

Various optional plug-on modules are available for communication over a landline, mobile or Wi-Fi network. A module can, for example, be used to route alarms to an ARC, send speech/text alarm messages to an administrator, or to allow users to control the system using the SecureConnect mobile application.

② Auxiliary tamper terminals

These terminals can be used to monitor the tamper status of other equipment. Use a 2k2 End-of-Line (EOL) resistor in series with the tamper contact (Figure 8).

Ensure that a 2k2 resistor is fitted across the auxiliary tamper terminals if they are not used.

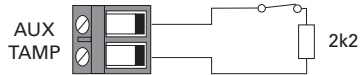


Figure 8. Auxiliary tamper wiring

③ RS485 bus termination links

Separate termination links are provided for each bus.

If the control unit uses a single daisy chain to connect bus devices and is at one end of the chain, fit a jumper across this link in the control unit and in the last device on the bus. RS485 termination can improve performance in electrically noisy environments.

The *Scantronic Series Installation Manual* gives further guidance.

④ Engineer keypad port

You can use an engineer keypad to configure the system, rather than a keypad on the bus. An engineer keypad does not need an address.

⑤ SD card slot

A micro-SD card can be used to store camera images from a compatible network camera, or to upgrade firmware or languages.

⑥ Reset codes link

You can use this link to reset the installer and all user codes (e.g. in the event that codes have been forgotten). All proximity tags, hold-up devices and remote controls are also deleted. Please refer to the *Scantronic Series Configuration Guide* for further details.

⑦ Plug-by communicator ports

You can connect a plug-by communicator to these ports using an optional MISC-COMPACT16 wiring harness (available separately).

By default, outputs 1-16 are 0V when active, and 12Vdc when inactive. Please refer to the *Scantronic Series Configuration Guide* for the default output type used for each output and programming details.

Connect LF (Line Fail) to an output from the communicator that is 12Vdc when communicator detects that there is a communications fault to the ARC, and 0V when no fault is present.

If a dual-path (landline and mobile) communicator is used, such as a RedCARE STU, re-program one of the plug-by outputs to type ATS Test, and wire that to the ATS Test input of the communicator. Also connect Line Fail to the Line Fail output of the communicator, as above. This is needed to comply with BSIA Form No. 175, April 2005. The control unit generates an "ATE LF Single" alert if one network is unavailable, or "ATE LF All" if both are unavailable.

Connect RR (Remote Reset) to an output from the communicator that indicates to the control unit that a user can reset the system after a system tamper. The input must be 12Vdc for at least 100ms to indicate the reset, and 0v normally. For further details, see "Remote Reset (Redcare Reset)" in the *Scantronic Series Configuration Guide*.

Note: During system commissioning, confirm with the ARC that the communicator is working correctly.

⑧ Bus devices

Up to 50 devices such as keypads and expanders can connect to either bus, or shared between the two buses. The control unit addresses each device in the order the address is requested by the device, regardless of which bus it is connected to.

The installation instructions supplied with each device provide details of how to install and configure the device.

Please refer to "Step 3: Install cabling" for guidance about bus cabling. See also "RS485 bus termination links" and "Engineer keypad port".

Wired zone connections

You can connect up to 10 wired detectors (0 to 9) to the control unit using the Fully-Supervised Loop (FSL), 4-wire Closed Circuit (CC) or 2-wire CC wiring method (Figure 9). You must use the same method for all detectors connected to the control unit. If 4-wire CC is used, the number of zones is halved and are numbered 1-5. To maintain ten 4-wire CC zones (0-9), fit an ADP-10CC board and configure the resistance setting of each zones as 2k2/4k7.

For any method, the total wiring and switch resistance must be less than 100 Ohms (EOL resistor shorted in the case of FSL).

By default, the system assumes normally-closed contacts. Detectors with normally-open contacts must be programmed with the "Inverted" attribute set.

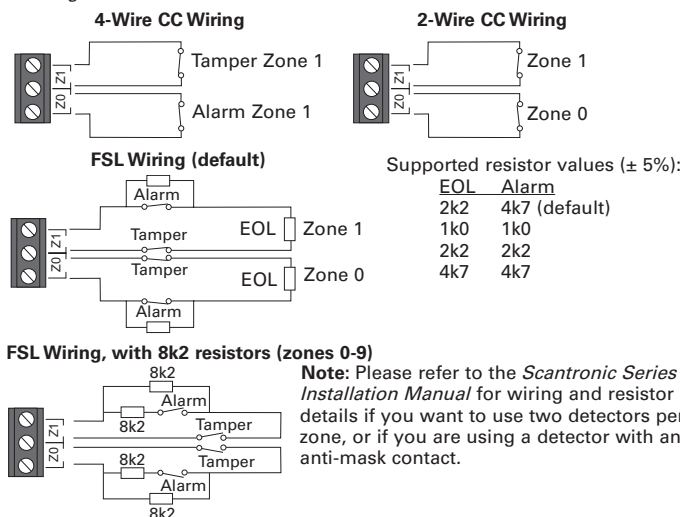


Figure 9. Zone wiring

⑨ Wired outputs

The wired outputs can be used to switch external equipment on or off.

Outputs 1 and 2 are relay (voltage-free) outputs. Connect to the common terminal and to either the NC (Normally Closed) or NO (Normally Open) terminal, as required.

OP3 and OP4 are open-collector transistor outputs, which by default, are 12Vdc when inactive and 0V when active (this can be reversed from the Installer menu).

Note: Radio outputs are available using radio expanders.

⑩ Network port

Connecting to a network allows you to, for example, configure the control unit using the web interface, use network cameras to capture images when an alarm occurs, and use the SecureConnect application.

Note: The control unit's network settings are configured from the Installer menu.

⑪ Loudspeaker connections

If fitted, a loudspeaker mimics alarm tones and repeats setting and entry tones. The loudspeaker must be min 16 Ohms.

Note:

- A loudspeaker is not a warning device as described by EN50131-4.
- You can set the loudspeaker volume and partitions from the Installer menu.

⑫ Siren/strobe connections

Please refer to the installation instructions provided with the siren/strobe unit for connection details.

Note: Scantronic radio siren/strobe units can be used instead of, or in addition to, a wired unit (a radio expander is required).

⑬ Kick-start link

Ordinarily, the control unit starts only after the mains supply is switched on, even if a battery is connected. If you want to operate the control unit temporarily using only the battery, start the control unit by briefly shorting this link.

⑭ LEDs

- **3V3:** Lit when the internal power supply is functioning.
- **HB (heartbeat):** Flashes approximately once every two seconds to indicate normal operation.

- **LNK/ACT:** Flashes when the control unit is connected to the network and there is network activity.

Maintenance

Inspect the control unit once or twice per year depending on grade as part of general inspection of the whole system. At the control panel, check for any damage, test the battery, check the action of the tamper switch and use the Test menu to confirm signal strengths.

Please refer to the *Scantronic Series Installation Manual* for general guidance about maintaining the whole system.

Specifications

Standards and Compliance

The installer must remove or adjust any compliance labelling if a non-compliant configuration is selected.

Intrusion compliance: EN 50131-1:2007+A2:2017; EN 50131-3:2009; EN 50131-6:2017+ A1:2021; EN 50131-10:2014; EN 50136-2:2013; BS8243:2010; PD6662:2017.

Security grade: Grade 2 or 3.

Environmental class: Class II.

Alarm transmission: ATS category SP2 and/or DP1.

Certification body:

Security

Radio detector combinations: 16,777,214.

Radio supervision: Programmable.

Access codes: 4-digit, giving 10,000 combinations.

Code blocking: Blocked for 90 secs after 4 incorrect codes in series.

Proximity tag differs: 4,294,967,296.

General

Relative Humidity: 0 to 93%, non-condensing.

Operating temp. range: -10°C to +55°C.

Dimensions: 320mm (h) x 400mm (w) x 102mm (d).

Weight: 4.5kg (without battery).

Case material: Steel.

Network port: Ethernet 10/100Mbps SSL/TLS.

Electrical

This product complies with the requirements of EN50131-6 Type A power supply at Grade 3 and environmental class II.

Mains power supply: 230Vac + 10%/-15%, 240mA max, 50Hz.

Control unit internal mains fuse: T500mA.

Control unit power supply: 13.7Vdc, 2.0A max of which 750mA is reserved for battery recharge and 1250mA to power the system.

Control unit PCB current consumption: 100mA quiescent; 150mA max (in alarm) excluding external devices, plug-on module and battery charging.

Standby battery: 12V, sealed lead acid, typically 17Ah for Grade 3. Min standby time: see "Step 2:

Check standby battery capacity." Max recharge time: 24hrs.

12V aux: 600mA max*

12V bell: 600mA max*

12V bus: 400mA max*

14V4 aux: 230mA max*

12V to plug-by communicator: 400mA max*

*Maximum current before triggering over-current protection.

Output voltage range: 12V outputs: 9.5Vdc to 13.8Vdc. 14V4 outputs: 9.5Vdc to 14.7Vdc.

Over-voltage protection for 12V and 14V4 outputs: 15.6Vdc $\pm$ 1Vdc.

Max p-to-p ripple voltage: 0.5V.

Low-battery fault at: 11.9Vdc $\pm$ 0.4V.

Low-battery restore at: 12.2Vdc $\pm$ 0.4V.

Aux power output fault at: <9V.

OP1/2: Voltage-free relays, 1A @ 24Vdc max.

OP3/4: Open collector transistor, 500mA max.

Plug-by outputs: Open collector transistor, 50mA max.

Loudspeaker: 12Vdc, 280mA max. Min impedance 16 Ohm.

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Eaton, Security House, Vantage Point Business Village,
Mitcheldean, GL17 0SZ.

www.myscantronic.com

Product Support (UK) Tel: +44 (0) 1594 541978 available 08:30
to 17:00 Monday to Friday.

email: securitytechsupport@eaton.com

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