



TS1001 Touch Screen Arming Station Installation Manual

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Manufacturer	Carrier Fire & Security Australia Pty Ltd A Carrier company 10 Ferntree Place, Notting Hill, Victoria 3168 Australia
Agency compliance	 N4131 This product conforms to the standards set by Standards Australia on behalf of the Australian Communications and Media Authority (ACMA). Notice! This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.
Contact information	For contact information, see www.firesecurityproducts.com.au .

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Important information

Disclaimer

The customer is responsible for testing and determining the suitability of this product for specific applications. In no event is Carrier Fire & Security Australia Pty Ltd ('Carrier') responsible or liable for any damages incurred by the buyer or any third party arising from its use, or their inability to use the product.

Limitation of liability

To the maximum extent permitted by applicable law, in no event will Carrier be liable for any lost profits or business opportunities, loss of use, business interruption, loss of data, or any other indirect, special, incidental, or consequential damages under any theory of liability, whether based in contract, tort, negligence, product liability, or otherwise. Because some jurisdictions do not allow the exclusion or limitation of liability for consequential or incidental damages the preceding limitation may not apply to you. In any event the total liability of Carrier shall not exceed the purchase price of the product. The foregoing limitation will apply to the maximum extent permitted by applicable law, regardless of whether Carrier has been advised of the possibility of such damages and regardless of whether any remedy fails of its essential purpose.

Installation in accordance with this manual, applicable codes, and the instructions of the authority having jurisdiction is mandatory.

While every precaution has been taken during the preparation of this manual to ensure the accuracy of its contents, Carrier assumes no responsibility for errors or omissions.

Agency compliance

This product conforms to the standards set by Standards Australia on behalf of the Australian Communications and Media Authority (ACMA).

Notice! This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Advisory messages

Advisory messages alert you to conditions or practices that can cause unwanted results. The advisory messages used in this document are shown and described below.

WARNING: Warning messages advise you of hazards that could result in injury or loss of life. They tell you which actions to take or to avoid in order to prevent the injury or loss of life.

Caution: Caution messages advise you of possible equipment damage. They tell you which actions to take or to avoid in order to prevent the damage.

Note: Note messages advise you of the possible loss of time or effort. They describe how to avoid the loss. Notes are also used to point out important information that you should read.

Related manuals

This manual describes how to install and configure the TS1001 Touch Screen Arming Station. Arming stations are also known as remote arming stations or RASs. Refer also to the *TS1001 Touch Screen Arming Station User Manual* for details about using the Touch Screen RAS.

The Touch Screen RAS may be used on the Challenger series control panels (ChallengerPlus, Challenger10 or a Challenger V8). Refer to the appropriate Challenger manual for details about operating the Challenger system.

Care and cleaning instructions

The touch screen display panel (Figure 1 on page 1, item 1) is an LCD module consisting of a glass display panel and a polarizing display surface. The polarizer covering the display surface of the LCD module is soft and easily scratched.

Do not use hard or sharp objects to operate the touch screen: it is designed to be operated by touching the display surface with your fingers (or gloved hands).

If the touch screen is dirty, breathe on it to fog the surface, and then gently wipe the surface with a soft dry cloth.

Caution: Do not use water, ketone, or aromatic solvents to clean the touch screen.

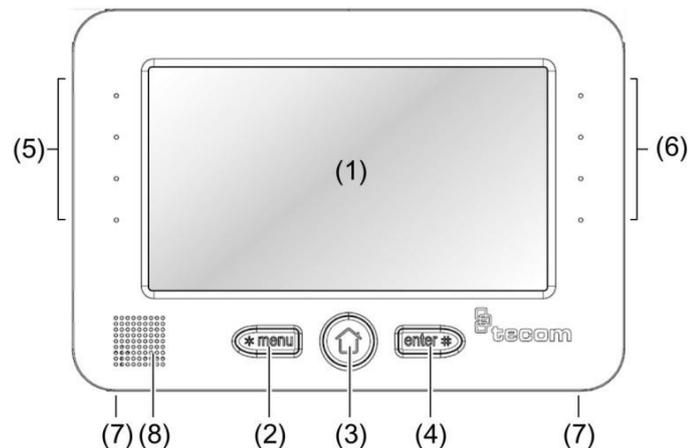
For dirt or marks that are not removed by a soft dry cloth, moisten the cloth with a small amount of either isopropyl alcohol or ethyl alcohol, and then gently wipe the surface.

WARNING: Do not use alcohol near an open flame or other source of ignition.

Product overview

Refer to Figure 1 below for details of external features of the TS1001 Touch Screen Arming Station.

Figure 1: TS1001 Touch Screen Arming Station overview



- | | |
|--------------------------------|---------------------------|
| (1) Touch screen display panel | (5) First four area LEDs |
| (2) * Menu key | (6) Next four area LEDs |
| (3) Home key | (7) Body retaining screws |
| (4) Enter # key | (8) Beeper |

The TS1001 Touch Screen Arming Station (Touch Screen RAS) is used for controlling Challenger security system alarm and access functions. Product features include:

- Touch screen keypad
- Beeper
- Integrated tamper switch
- Area and system status Light Emitting Diodes (LEDs)
- One open collector output is provided to drive a small relay or LED, for example.
- One input is provided for an egress function.

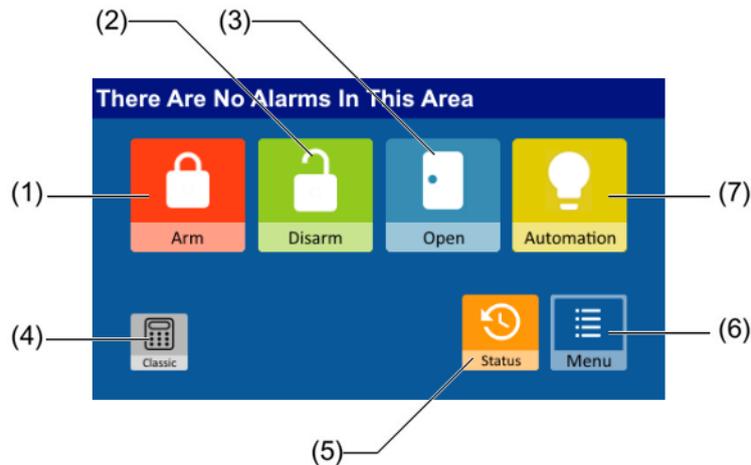
User interface details

A touch screen RAS provides a graphical mode of operating a Challenger system. In addition to the graphical mode's advanced user interface, the touch screen also has a classic mode that mimics a conventional LCD keypad.

Note: Different types of users may have levels of permissions to use the RAS. For example, access to "Install menu" options may be limited to installers, the ability to arm and disarm areas may be limited to users with "alarm" codes, and the ability to open a door may be limited to users with "door" codes.

When idle (not in programming mode and in the absence of alarms or faults) the touch screen resembles Figure 2 on page 2.

Figure 2: Home screen details



- | | |
|-------------------------------|--|
| (1) Arm button | (5) Status button |
| (2) Disarm button | (6) Menu button |
| (3) Open button (optional) | (7) Automation quick control button (optional) |
| (4) Classic button (optional) | |

In idle state, the touch screen displays the graphical mode Home screen (Figure 2 above) with graphical buttons and physical keys to perform the following functions:

- The Arm button (item 1) followed by an alarm code is used to arm assigned areas, or to select and arm areas (depending on alarm group programming).
- The Disarm button (item 2) followed by an alarm code is used to disarm assigned areas, or to select and disarm areas (depending on alarm group programming).
- The optional Open button (item 3) followed by a door code is used to open the RAS's door. If door codes are used, and you enter an alarm code, then the button works the same as the Arm button. Alternatively, an alarm code can be used to open the RAS's door if "Door event flag on alarm codes" is set to Yes in Install menu option 3. RAS Database.
- The optional Classic button (item 4) is used to access the login (code) prompt for mimicking a conventional LCD keypad. When using classic mode, enter a menu number to access a Challenger menu option.
- The Status button (item 5) displays the alarm Quick History when the system is normal (no alarms). When alarms are present, the display shows the inputs in alarm.
- The Menu button (item 6) is used to access the login (code) prompt for graphical access to Challenger menu options.
- The optional Automation quick control button (item 7) is a shortcut to User menu option 24-Automation Control. Automation quick control does not require user authentication via PIN.

The RAS's physical * Menu, Home, and Enter # keys perform the following operations:

- The * Menu key (Figure 1 on page 1, item 2) may be used to access the login (code) prompt for graphical access to Challenger menu options. During programming, the * Menu key delete the last character entered, navigates backwards through menus, or toggles Yes/No values, as applicable.
- The Home key (Figure 1 on page 1, item 3) may be used to quickly exit the current option and return to the idle screen.
- The Enter # key (Figure 1 on page 1, item 4) followed by an alarm code, is used to select and arm areas (same as the Arm button). During programming, the Enter # key works the same as the graphical # or ↵ buttons.

Front LED indications

The area LEDs (Figure 1 on page 1, items 5 and 6) display the status of eight areas. Use the menu option “12-Area LED Configuration” on page 16 to configure the area LEDs to be numbered 1 to 8 or 9 to 16.

When connected to a Challenger10 system, you can use the Install menu option RAS Database to assign any area numbers to the eight LEDs.

The LED indications are as follows:

- The LED illuminates when its corresponding area is armed.
- The LED flashes slowly when a fault is detected, or when an alarm occurs, in disarm.
- The LED flashes quickly when a fault is detected, or when an alarm occurs, in arm.

Specifications

Voltage	Nominal 13.8 VDC (8.5 to 14 VDC)
Power consumption	
Maximum (see note below)	155 mA @ 13.8 VDC
Normal (all areas armed)	100 mA @ 13.8 VDC
Operating environment	
Temperature	0 to 50°C
Humidity	0 to 95% noncondensing
Dimensions (W x H x D)	132 x 92 x 22 mm

Note: Maximum current consumption when touch screen and key illumination is on and set to maximum brightness, and all area LEDs are on. Current consumption when touch screen is on will increase if the supply voltage decreases (for example, during mains fail operation).

Installing the RAS

Notice! A qualified service person, complying with all applicable codes, should perform all required hardware installation.

Installation requirements

Technician qualifications: Only trained Challenger installation technicians should plan the programming of Challenger systems. Technicians must comply with and be trained in security and electrical industry installation regulations, as appropriate to this device.

Product contents

Table 1: TS1001 Touch Screen Arming Station shipping list

Quantity	Item
1	TS1001 Touch Screen Arming Station
2	3-way screw terminal blocks
1	Ring terminal and M3 screw
2	M2.5 x 6mm Phillips head screws
1	Plasterboard mounting bracket
2	6 gauge x 20mm self-tapping Phillips head screws
1	TS1001 Touch Screen Arming Station User Manual
1	TS1001 Touch Screen Arming Station Installation Manual

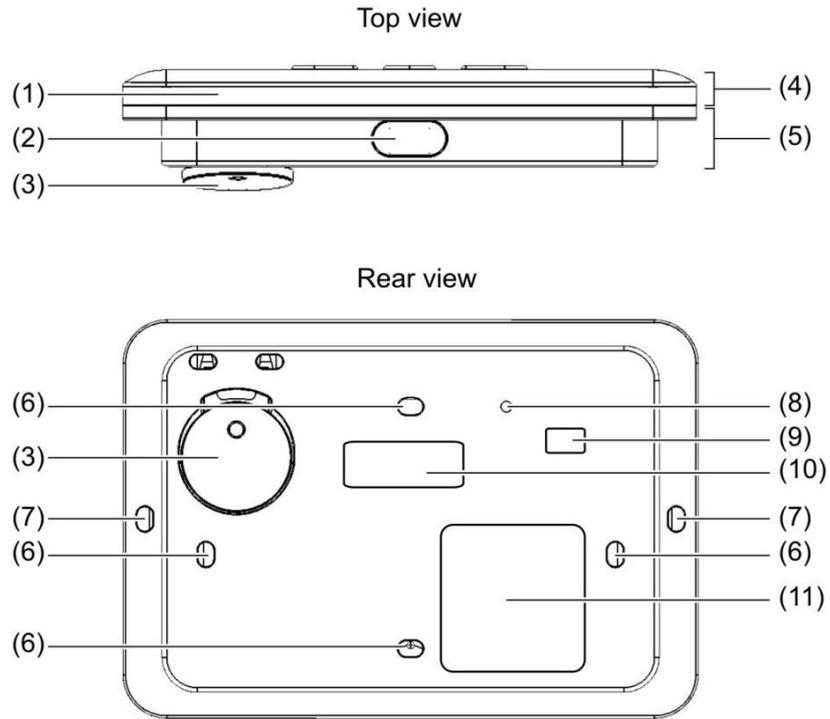
Inspect the package and contents for visible damage. If any components are damaged or missing, do not use the unit; contact the supplier immediately. If you need to return the unit, you must ship it in the original box.

Mounting the RAS

The RAS may be mounted to a wall in the following manners:

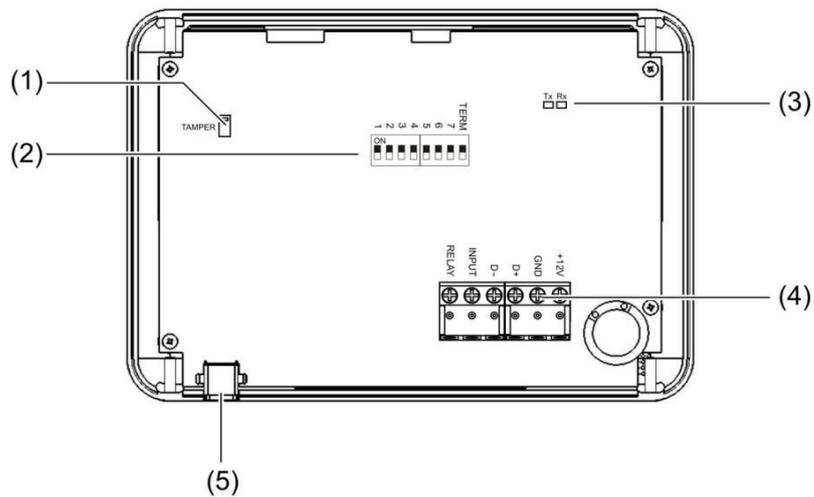
- Surface mounted using mounting holes in the back of the RAS. For surface mounting use either the rear cable entry (Figure 3 on page 5, item 11) or the top cable entry (Figure 3 on page 5, item 2). See “Mounting on a surface” on page 6.
- Flush mounted into a prepared cavity. For flush mounting use the rear cable entry (Figure 3 on page 5, item 11). See “Flush mounting in a cavity” on page 6.

Figure 3: TS1001 Touch Screen Arming Station mounting details



- | | |
|--------------------------------------|--|
| (1) Body retaining hooks (not shown) | (7) Flush mount screw locations |
| (2) Top cable entry | (8) Earthing point (for internal or external connection) |
| (3) Tamper switch | (9) Tx and Rx LED access |
| (4) Body assembly | (10) Configuration DIP switch access |
| (5) Base assembly | (11) Rear cable entry |
| (6) Surface mount screw locations | |

Figure 4: Locations of features in rear of body assembly



- | | |
|--------------------------------|--------------------|
| (1) Tamper switch | (4) Terminal block |
| (2) Configuration DIP switches | (5) USB 2.0 port |
| (3) Tx and Rx LEDs | |

Mounting on a surface

When surface mounting, you may use either the top cable entry knockout or the rear cable entry, depending on whether the cabling is external or internal to the wall. Figure 9 on page 21 is a template for surface mounting.

To install the RAS:

1. Remove the two body retaining screws (Figure 1 on page 1, item 7), and set aside for reuse.
2. Pull the bottom of the body away from the base to disengage the tabs at the top, and then remove the body assembly from the base assembly.
3. Use the mounting template to locate the surface mount screw holes, and to locate the rear cable entry (if used).

Take care that the tamper lever (Figure 3 on page 5, item 3) will be depressed when the RAS is mounted.

4. Prepare the mounting holes in the mounting surface, as appropriate to the type of surface.
5. If rear cable entry is required, cut a hole in the mounting surface for cable access.
6. Use suitable screws to mount the base assembly to the surface.
7. Set the RAS address using DIP switches 1 through 4 (see “DIP switches” on page 8).
8. Set the LAN termination using DIP switch 8, if required (see “DIP switches” on page 8).
9. Terminate the cabling. **Note:** All power should be turned off to the Challenger panel before wiring the RAS.
10. Hook the top of the body onto the mounting tabs on the base, and then swing the bottom of the body into position to align the retaining screw holes at the bottom.
11. Replace the two body retaining screws to secure the body to the base.

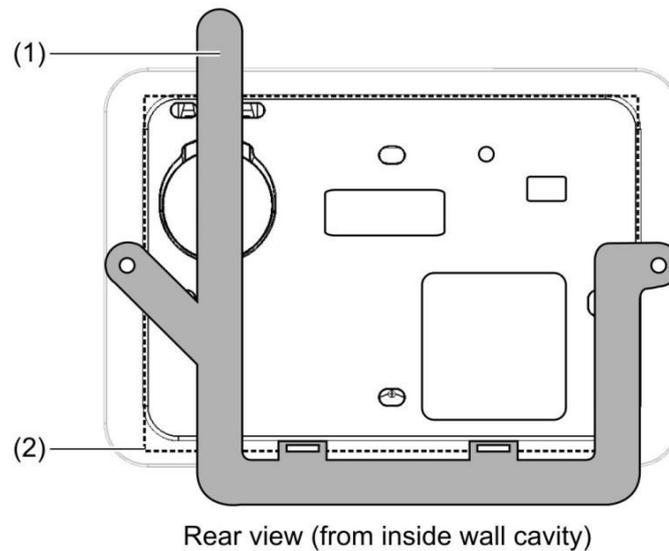
Flush mounting in a cavity

When flush mounting use the rear cable entry and the plasterboard mounting bracket (supplied). Figure 10 on page 22 is a template for flush mounting.

Figure 5 on page 7 shows the arrangement of the plasterboard mounting bracket inside a prepared wall cavity.

Tip: As an alternative to drilling holes in the plasterboard for the self-tapping mounting screws to pass through, you may prefer to notch the plasterboard. In either case, ensure the holes or notches will be completely covered when the RAS is mounted.

Figure 5: Use of plasterboard mounting bracket



- (1) Plasterboard mounting bracket (2) Wall cavity (115 x 82 mm)

To install the RAS:

1. Use the mounting template to locate the cavity to be cut in the plasterboard and the holes (or notches) for the self-tapping mounting screws to pass through the plasterboard to the mounting bracket.
2. Cut the cavity in the plasterboard, and drill holes (or cut notches) for the screws.
3. Pass the mounting bracket into the cavity, hooking the tabs at the bottom over the edge of the plasterboard (facing you).
4. Remove the two body retaining screws (Figure 1 on page 1, item 7), and set aside for reuse.
5. Pull the bottom of the body away from the base to disengage the tabs at the top, and then remove the body assembly from the base assembly.
6. Set the RAS address using DIP switches 1 through 4 (see “DIP switches” on page 8).
7. Set the LAN termination using DIP switch 8, if required (see “DIP switches” on page 8).
8. Terminate the cabling. **Note:** All power should be turned off to the Challenger panel before wiring the RAS.
9. Insert the base assembly into the cavity, and then secure it to the mounting bracket via the self-tapping screws (supplied).
10. Hook the top of the body onto the mounting tabs on the base, and then swing the bottom of the body into position to align the retaining screw holes at the bottom.
11. Replace the two body retaining screws to secure the body to the base.

Tamper switch

Ensure the tamper switch is sealed when mounting the RAS.

The tamper switch (Figure 3 on page 5, item 3) must be sealed (or the tamper function deactivated) to avoid “RAS Tamper” messages during operation.

Note: If sealing the tamper switch is not practicable you may need to deactivate the tamper function. See “2-Tamper Control” on page 14 for details.

DIP switches

An eight-segment DIP switch is located on the PCB (see Figure 4 on page 5, item 2) and is used for setting the RAS address and the LAN termination (TERM) condition.

The seventh segment of the DIP switch is for factory test mode and must always be set to OFF.

LAN address

RASs must be addressed in the range 1 to 16. Use the first four segments of the DIP switch to set the LAN address. Refer to Table 2 below.

Table 2: RAS address DIP switch settings

LAN	Address	Polled as	SW1	SW2	SW3	SW4
LAN 1	RAS 01	RAS 01	O	O	O	O
LAN 1	RAS 02	RAS 02	I	O	O	O
LAN 1	RAS 03	RAS 03	O	I	O	O
LAN 1	RAS 04	RAS 04	I	I	O	O
LAN 1	RAS 05	RAS 05	O	O	I	O
LAN 1	RAS 06	RAS 06	I	O	I	O
LAN 1	RAS 07	RAS 07	O	I	I	O
LAN 1	RAS 08	RAS 08	I	I	I	O
LAN 1	RAS 09	RAS 09	O	O	O	I
LAN 1	RAS 10	RAS 10	I	O	O	I
LAN 1	RAS 11	RAS 11	O	I	O	I
LAN 1	RAS 12	RAS 12	I	I	O	I
LAN 1	RAS 13	RAS 13	O	O	I	I
LAN 1	RAS 14	RAS 14	I	O	I	I
LAN 1	RAS 15	RAS 15	O	I	I	I
LAN 1	RAS 16	RAS 16	I	I	I	I
LAN 2	RAS 01	RAS 65	O	O	O	O
LAN 2	RAS 02	RAS 66	I	O	O	O
LAN 2	RAS 03	RAS 67	O	I	O	O
LAN 2	RAS 04	RAS 68	I	I	O	O
LAN 2	RAS 05	RAS 69	O	O	I	O

LAN	Address	Polled as	SW1	SW2	SW3	SW4
LAN 2	RAS 06	RAS 70	I	O	I	O
LAN 2	RAS 07	RAS 71	O	I	I	O
LAN 2	RAS 08	RAS 72	I	I	I	O
LAN 2	RAS 09	RAS 73	O	O	O	I
LAN 2	RAS 10	RAS 74	I	O	O	I
LAN 2	RAS 11	RAS 75	O	I	O	I
LAN 2	RAS 12	RAS 76	I	I	O	I
LAN 2	RAS 13	RAS 77	O	O	I	I
LAN 2	RAS 14	RAS 78	I	O	I	I
LAN 2	RAS 15	RAS 79	O	I	I	I
LAN 2	RAS 16	RAS 80	I	I	I	I

Legend: I = ON, O = OFF

Note: If used with a Challenger V8 panel or a ChallengerLE panel, the rows marked “LAN 2” in Table 2 on page 8 do not apply.

LAN termination

Use the eighth segment of the DIP switch to set TERM to ‘ON’, if needed.

If the RAS is the last device on the RS-485 LAN the LAN termination should be ON. In a star wiring configuration, the RS-485 LAN may consist of a number of cable runs (branches). LAN termination should be set to ON only for the devices at the far ends of the two longest branches.

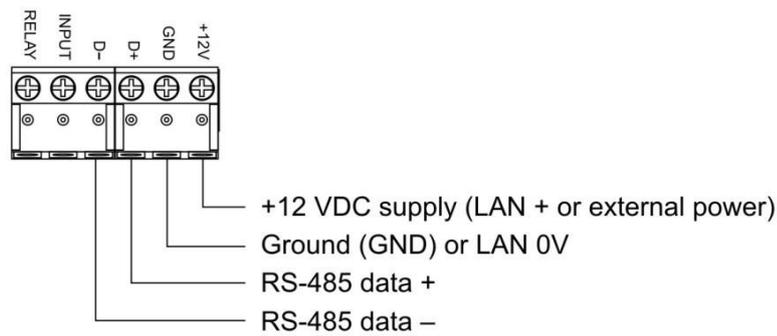
A star LAN that has multiple branches in excess of 100 m may need to use TS0893 Isolated RS-485 to RS-485 Interface modules to isolate the LAN segments that do not have LAN termination set to ON.

Connecting the RAS

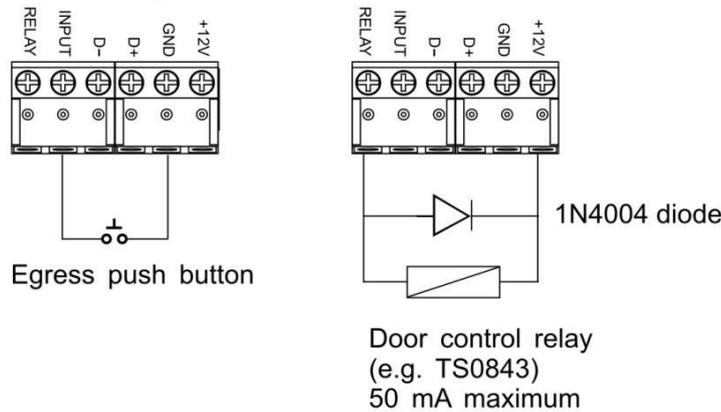
A terminal block on the rear of the body assembly (see Figure 4 on page 5) is used for connections to the Challenger panel’s RS-485 LAN, and optionally to an egress push button and relay. Refer to Figure 6 on page 10.

Figure 6: Terminal block connections

Standard connections



Additional optional connections



LAN connection (D+ and D-)

The RAS is connected to the Challenger panel via the RS-485 LAN, up to 1.5 km cabling distance from the Challenger panel unless LAN isolation devices are used to extend the distance).

We recommend that you use 2-pair twisted shielded data cable (such as Belden 8723) for the RS-485 LAN.

- **D+** is the data positive connection of the LAN data bus.
- **D-** is the data negative connection of the LAN data bus.

LAN cable shield

The LAN cable shield must be connected to system earth at one end only. If the LAN is ‘daisy-chained’ to the RAS, ensure that the shield of the cable is jointed to provide continuity of data cable shield.

Power connection (+12V and GND) to Challenger panel

The RAS can be powered using the RS-485 LAN + and – power from the Challenger panel, if the cabling distance does not exceed 100 m (if using Belden 8723) and when electrical isolation is not required.

Power connection (+12V and GND) to separate power supply

The RAS can be powered by an auxiliary power supply.

When using an auxiliary power supply:

- Connect the '+' of the local power supply to the +12 terminal of the RAS. **Do not** connect the + power of the LAN to the RAS.
- Connect the '-' of the local power supply to the GND terminal of the RAS **and** to the - power of the LAN.

Egress Control and Open Collector (INPUT and RELAY)

Terminals INPUT and RELAY are optionally used for egress control and door relay operation:

- **INPUT** — An Egress button (normally open, momentary push-button switch) can be connected across the INPUT and GND terminals (see Figure 6 on page 10). When pressed, the button controls the request to exit function to the panel.
- **RELAY** — Open collector output must be assigned with a number according to type of Challenger panel. For Challenger10 panels you can use any relay number to drive the relay or output on this RAS. For Challenger V8 panels use the first relay number of the relay control group assigned to the RAS (for example, assign relay control group 1 to use relay 1, assign relay control group 2 to use relay 9, and so on).

Egress functionality is enabled and disabled via the RAS programming option "1-RTE (Egress) Control" on page 14.

Earthing

The RAS must be earthed via the earthing point on the base assembly (Figure 3 on page 5, item 8) or via the RAS mounting screws if the RAS is attached to an earthed metal fixture (assuming there is a good electrical connection between the mounting screws and the fixture). Consider the following cases:

Case 1: The RAS is mounted to a non-conductive fixture (such as a plasterboard wall). Connect the RAS's earth point to the Challenger LAN data cable shield. The LAN cable shield must be connected to system earth at one end only (via the LAN earth connection on the Challenger panel or DGP).

When connected to earth via the LAN data cable shield, and the LAN complies with the cabling requirements in the *Challenger10 Installation and Quick Programming Manual* R04 (or later), the RAS will have a good connection to the building electrical earth (<10 Ω).

Note: If this segment of LAN data cable shield is connected to a Challenger10 panel's LAN earth terminal, the plug pack must be connected to the panel and to a GPO in order to measure the resistance because the panel is earthed via the plug pack earth wire.

Case 2: The RAS is mounted to a conductive metal fixture (such as a metal door frame). You need to determine whether the RAS has a good connection to the building electrical earth (<10 Ω) via the RAS mounting screws. If connecting to earth via the mounting screws, **do not** connect the RAS's earth point to the Challenger LAN data cable shield.

If the resistance is 10 Ω or greater, then you need to either connect the fixture to the building electrical earth, or connect the RAS's earth point to the Challenger LAN data cable shield in the same manner as in Case 1 (above).

Note: Regardless of whether you are connecting the Touch Screen RAS to a Challenger10 panel or a Challenger V8 panel, earth the RAS according to the *Challenger10 Installation and Quick Programming Manual R04* (or later).

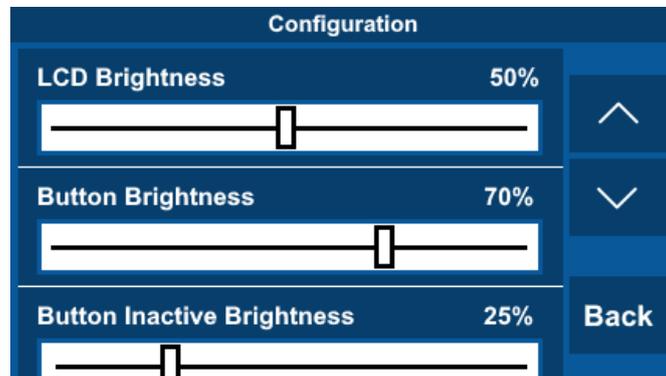
Adjusting LCD and button brightness

The LCD screen and the physical keys are backlit when active, and are either off or dimmed when inactive. After using the RAS, the state reverts to inactive after the inactivity time expires (see "Inactivity Period" on page 13). If the display is off, touch the screen or a key to activate the display.

Note: Adjust the active mode brightness of the RAS's LCD screen and the physical keys to suit the ambient lighting of the environment.

You can dynamically configure the touch screen RAS's LCD display and physical buttons via the Install menu option "This RAS Configuration" (not available in classic mode).

Figure 7: Configuration screen



Use the Enter # key and * Menu key or the Up and Down arrows to navigate the list. The configuration options are described in the following sections.

Note: LCD and button brightness can also be adjusted remotely via Install menu option 28–Remote Controllers. See "Programming RAS menu options" on page 13.

LCD Brightness

Tap the slider bar to adjust the LCD screen brightness during activity (when either the LCD screen or a button is pressed). The brightness changes dynamically as you change the settings.

Note: We recommend using smaller values in order to minimise power use in mains fail conditions.

Button Brightness

Tap the slider bar to adjust the button brightness during activity (when either the LCD screen or a button is pressed). The brightness changes dynamically as you change the settings.

Note: We recommend using smaller values in order to minimise power use in mains fail conditions.

Button Inactive Brightness

Tap the slider bar to adjust the button brightness during inactivity. The brightness changes dynamically as you change the settings. The brightness will reduce following the period of inactivity defined in “Inactivity Period” below.

Note: We recommend using smaller values in order to minimise power use in mains fail conditions. A value of 5% can help locate an inactive RAS in the dark.

Inactivity Period

Tap the slider bar to select from 5 to 300 seconds of inactivity before the inactive brightness levels apply.

Note: We recommend using smaller values in order to minimise power use in mains fail conditions.

Volume

Tap the slider bar to select from 0% to 100% levels of beeper volume. The volume changes dynamically as you change the settings.

Programming RAS menu options

Touch Screen RASs have a number of options that are programmable at the time of installation to help integrate the RAS into the local environment.

Note: If you are programming via this RAS, you can also use the Install menu option “This RAS Configuration” (graphic mode only) to program the screen’s brightness and timeout settings. See “Adjusting LCD and button brightness” on page 12.

Use the following steps to configure a Touch Screen RAS at address nn (where nn is a RAS address in the range 1 to 16 and 65 to 80).

To program RAS menu options:

1. Use the Install menu option 28–Remote Controllers, and then select option 2–RAS.
2. Press the buttons that correspond with RAS address nn , and then press the # button (or press the Enter # key). The main menu displays and lists the product name and firmware revision number.

The RAS menu options are described in the following sections.

1-RTE (Egress) Control

The RAS is fitted with an Egress (Exit) terminal labelled INPUT (Figure 6 on page 10). When connected to a simple push button, the open collector terminal labelled RELAY may be used to control a door relay.

This option is enabled by default, and should be disabled if not used.

2-Tamper Control

The RAS is fitted with a tamper switch (Figure 3 on page 5, item 3). The tamper must be sealed (or the tamper function deactivated) to avoid “RAS Tamper” messages during operation.

This option is enabled by default, and should be disabled if not used.

3-Scramble Keypad

The touch screen can become worn or dirty over the buttons where a particular digit or PIN is used frequently. The scramble keypad option moves the numbered buttons to different positions after every login to avoid providing visual clues to the numbers used.

This option is disabled by default.

4-Open Button

The Home screen’s optional Open button (Figure 2 on page 2, item 3) is used to open the RAS’s door. If disabled, the Open button does not display on the Home screen.

5-Classic Button

The Home screen’s optional Classic button (Figure 2 on page 2, item 4) is used to select Classic mode of operation. If disabled, the Classic button does not display on the Home screen.

6-Automation Button

The Home screen’s optional Automation button (Figure 2 on page 2, item 7) is a ‘quick control’ shortcut to User menu option 24-Automation Control.

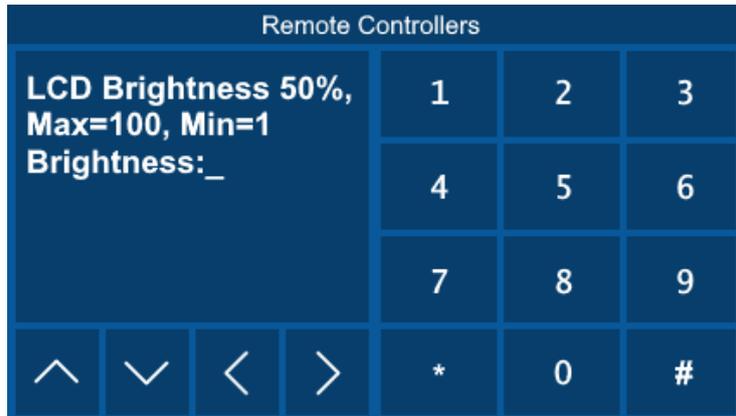
Note: Quick control does not require user authentication via PIN. We recommend that control be assigned to a specific RAS (in a secure area) via automation zone programming in order to help prevent unauthorised use.

If disabled, the Automation button does not display on the Home screen.

7-LCD Brightness

The LCD screen (Figure 8 below) displays the currently selected value, and the range of acceptable values, of LCD screen brightness during activity (when either the LCD screen or a button is pressed).

Figure 8: LCD Brightness screen



Press the buttons that correspond to the desired value from 1% to 100% levels, and then press the # button (or press Enter # key) to apply the new value.

Note: We recommend using smaller values in order to minimise power use in mains fail conditions.

8-Button Brightness

The LCD screen displays the currently selected value, and the range of acceptable values, levels of button brightness during activity (when either the LCD screen or a button is pressed).

Press the buttons that correspond to the desired value from 0% to 100%, and then press the # button (or press Enter # key) to apply the new value.

Note: We recommend using smaller values in order to minimise power use in mains fail conditions.

9-Button Inactive Brightness

The LCD screen displays the currently selected value, and the range of acceptable values of button brightness following the period of inactivity defined in "10-Inactivity Period" below.

Press the buttons that correspond to the desired value from 0% to 100%, and then press the # button (or press Enter # key) to apply the new value.

Note: We recommend using smaller values in order to minimise power use in mains fail conditions.

10-Inactivity Period

The LCD screen displays the currently selected value, and the range of acceptable values.

Press the buttons that correspond to the desired value from 5 to 300 seconds of inactivity before the inactive brightness levels apply, and then press the # button (or press Enter # key) to apply the new value.

Note: We recommend using smaller values in order to minimise power use in mains fail conditions.

11-Volume

The LCD screen displays the currently selected value, and the range of acceptable values, of beeper volume.

Press the buttons that correspond to the desired value from 0% to 100%, and then press the # button (or press Enter # key) to apply the new value.

12-Area LED Configuration

By default, the RAS's eight area LEDs are numbered 1 to 8 and indicate the state of areas 1 to 8 (or as otherwise assigned in the Challenger10 RAS database).

Alternatively, the eight area LEDs can be numbered 9 to 16.

Press * to toggle the numbering of the eight area LEDs between 1 to 8 and 9 to 16, and then press the # button (or press Enter # key) to apply the new value.

13-Factory Defaults

The factory defaults option resets this RAS's menu options 1 to 12 to their default states.

Troubleshooting

Known limitations

The RAS programming option “Disarm/arm using one key” is not compatible with the TS1001 Touch Screen Arming Station.

Offline mode

If the RAS has power available but loses communication with the panel, the RAS will go into offline mode. In this mode, all LEDs will flash at the slow rate and the touch screen will display “**System Fault**”.

This condition may be caused by the following:

- RAS is set to an address that is not polled by the panel.
- D+ and D– wires swapped.

Calibrating the touch screen

If the touch screen doesn't respond as expected, you may need to calibrate it.

To calibrate the touch screen:

1. Press and hold the Menu, Home, and Enter keys simultaneously until a message “Performing touch screen calibration” displays, and then release.
2. Press the touch screen to begin calibration. A filled red circle displays near the corner of the screen.
3. Touch the filled red circle to display a new filled red circle in another corner. Repeat for each corner.
4. When finished, a message “To repeat calibration...” displays. Touch the screen to exit calibration mode.

General faults

RAS displays unexpected results:

- Base assembly not earthed as described in “Earthing” on page 11.

No LED or LCD display:

- Verify the +13.8 and 0V wire connections on both the RAS and the power supply.
- Verify power output on the Challenger panel or external power supply that powers the keypad.

Area and status LEDs are flashing and the display reads, “**System Fault**”:

- Verify that the RAS is programmed in the RAS database as an LCD arming station.

- Verify the D+ and D– wire connections (may be reversed or open circuit).
- Verify the address DIP switches of the RAS are set to the proper address.
- Verify that the Challenger panel is polling the RAS address.

Tx and Rx LED Indications

Tx and Rx LEDs are provided on the circuit board to assist in fault diagnosis, and are visible through the Tx and Rx LED access port (Figure 3 on page 5, item 9) or when the body is removed from the base (Figure 4 on page 5, item 3).

- **Tx** — The red Tx LED flashes to indicate the RAS is replying to polling from the Challenger panel. If the Rx LED flashes but the Tx LED does not, the RAS is not programmed to be polled in the Challenger panel or is addressed incorrectly.
- **Rx** — The yellow Rx LED flashes to indicate polling data is being received on the LAN from the Challenger panel. If the LED does not flash, the Challenger panel is not operational or the LAN is faulty (usually cabling).

Firmware upgrade procedures

This section describes how to upgrade the Touch Screen RAS firmware and/or images via the RAS's USB port (Figure 4 on page 5, item 5) and the Tecom Firmware Loader application. This is typically the quickest way to upgrade the RAS.

Note: Titan management software can also be used to upgrade the Touch Screen RAS firmware and images. Refer to *Titan help* for details.

To upgrade the image files refer to “Upgrading RAS images” on page 19. To upgrade the firmware refer to “Upgrading RAS firmware” on page 19.

To upgrade the firmware or images you need the following:

- A powered and functioning Touch Screen RAS
- A Windows PC with a USB 2.0 port
- Tecom Firmware Loader application
- A USB cable (“Type A Male to Type B Mini Male” or “Type A Male to Type B Micro Male” depending on hardware version) to connect the Windows computer to the RAS's USB port (located bottom right-hand side of body assembly)
- Firmware upgrade file and/or images upgrade file

Note: If you are upgrading both images and firmware, you need to complete one part before starting the next part (the order is not important). The only difference in the two parts is the file selected in step 8.

Upgrading RAS images

To upgrade the RAS images:

1. Disconnect the RAS's power supply.
2. Press all three keys on the RAS simultaneously (Figure 1 on page 1, items 2, 3, and 4) whilst repowering the RAS. The three keys will blink rapidly.
3. Use the USB cable to connect the computer to RAS's USB port (Figure 4 on page 5, item 5).

The first time you connect a RAS to the computer's USB port, the Found New Hardware Wizard may display. If the Found New Hardware Wizard does not display, go directly to step 7.

4. If the wizard asks "Can Windows connect to Windows Update to search for software?", click to select the "No, not this time" radio button, and then click Next.
5. If the wizard asks "What do you want the wizard to do?", click to select the "Install from a list or specific location" radio button, and then click Next.
6. Click to select the "Search for the best driver in these locations" radio button, and then browse to include the location of the Tecom Firmware Loader application in the search (for example, C:\Program Files\Tecom Firmware Loader\inf_driver).
7. Run Tecom Firmware Loader (for example, double-click the file C:\Program Files\Tecom Firmware Loader\tecom-fw-loader_Vn.n.exe).

When you run it will tell you if the device is ready, otherwise you can't select a file.

8. Click Select File... and then browse to the location of the images upgrade file on your computer. Select the file and then click Open.
9. Click Program File... to update the RAS's images. The process will take several minutes. The percentage completion displays at the bottom of the window. When finished, a "Programming is complete" message displays.
10. Remove the USB cable from the RAS.
11. Disconnect the RAS's power supply.
12. Reconnect power to the RAS. The three keys will blink rapidly for a few moments, and then the RAS will restart.

Upgrading RAS firmware

To upgrade the RAS firmware:

1. Disconnect the RAS's power supply.
2. Press all three keys on the RAS simultaneously (Figure 1 on page 1, items 2, 3, and 4) whilst repowering the RAS. The three keys will blink rapidly.

3. Use the USB cable to connect the computer to RAS's USB port (Figure 4 on page 5, item 5).

The first time you connect a RAS to the computer's USB port, the Found New Hardware Wizard may display. If the Found New Hardware Wizard does not display, go directly to step 7.

4. If the wizard asks "Can Windows connect to Windows Update to search for software?", click to select the "No, not this time" radio button, and then click Next.
5. If the wizard asks "What do you want the wizard to do?", click to select the "Install from a list or specific location" radio button, and then click Next.
6. Click to select the "Search for the best driver in these locations" radio button, and then browse to include the location of the Tecom Firmware Loader application in the search (for example, C:\Program Files\Tecom Firmware Loader\inf_driver).
7. Run Tecom Firmware Loader (for example, double-click the file C:\Program Files\Tecom Firmware Loader\tecom-fw-loader_Vn.n.exe).

When you run it will tell you if the device is ready, otherwise you can't select a file.

8. Click Select File... and then browse to the location of the firmware upgrade file on your computer (named, for example, ts_ras.6437.img). Select the file and then click Open.
9. Click Program File... to update the RAS's firmware. The process will take several minutes. The percentage completion displays at the bottom of the window. When finished, a "Programming is complete" message displays.
10. Remove the USB cable from the RAS.
11. Disconnect the RAS's power supply.
12. Reconnect power to the RAS. The three keys will blink rapidly for a few moments, and then the RAS will restart.

Mounting templates

Copy these pages as needed.

Figure 9: Surface-mount template

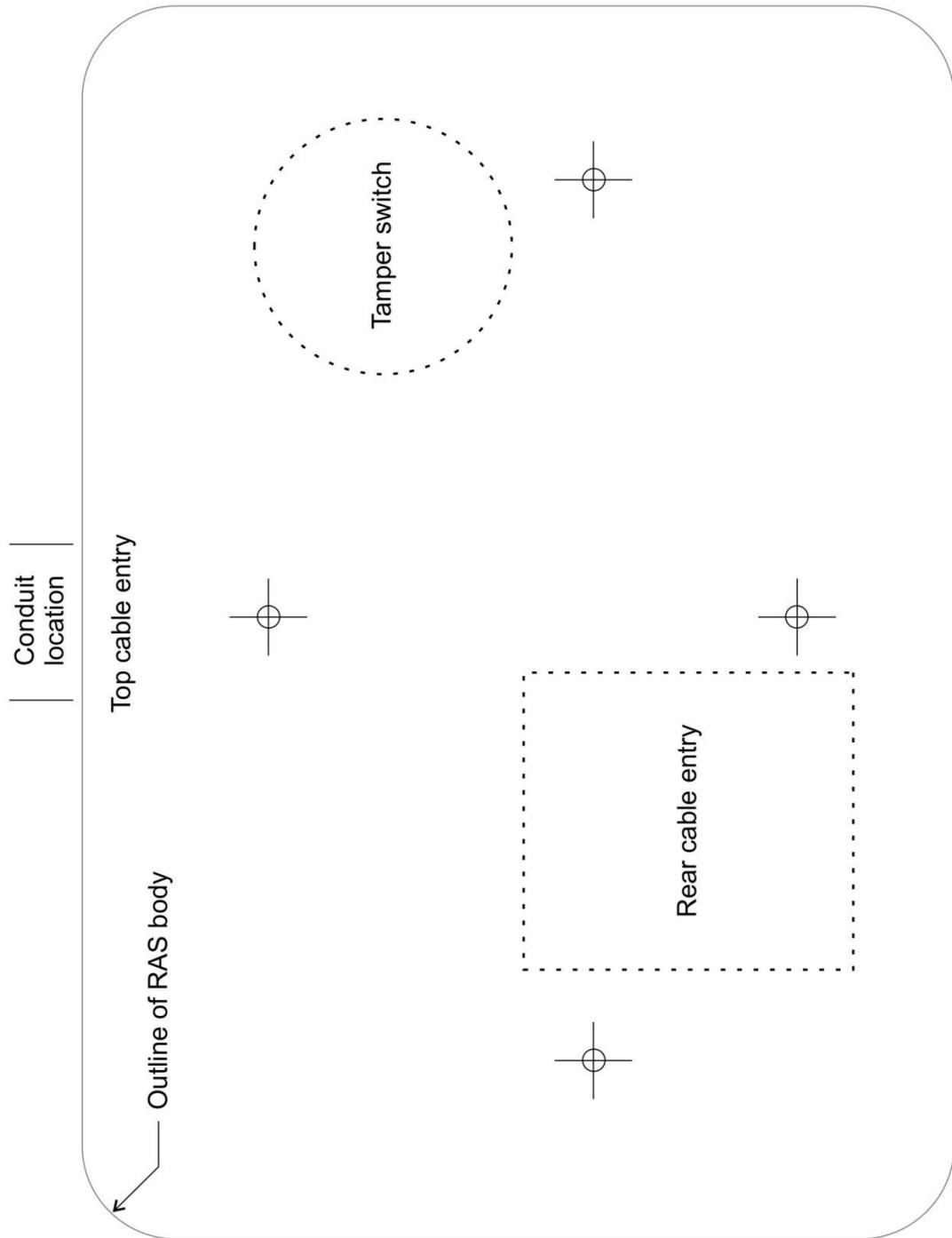


Figure 10: Flush-mount template

