Control Panels

TELEFIRE
FIRE & GAS DETECTORS

RM-7000

Addressable
Remote Panel and Annunciator

Technical Manual

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Note

The terms “**Trouble**” as used in NFPA 72 guideline and UL standards and “**Fault**” as used in EN 54 standards are used interchangeably throughout this manual.

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Note

Do not install, operate, and maintain this product before fully reading this manual.

1 Introduction

The RM-7000 Remote Panel and Annunciator enables control and supervision of the ADR-7000fire alarm control panel from remote locations and key positions such as security officer, premises manager, or maintenance office.

The RM-7000 remote panel consists of an LCD display, keyboard, internal buzzer, and features such as alarm output, trouble output, and an interface relay that reduces the need for additional input/output interface modules.

The remote panels are connected to the main control panel via a twisted wire pair (RS-485). As many as 16 remote panels can be connected to each ADR-7000 using the same cable. Each remote panel should be configured with a unique address. The connection with the control panel is fully supervised.

In large systems incorporating multiple ADR-7000 control panels connected in a peer-to-peer network as many as 16 remote panels can be connected to each of the ADR-7000 control panels.

The RM-7000 operates with a 24Vdc power source that can be supplied from one of the following options:

- 24Vdc supplied from the main control panel ADR-7000
- 24Vdc supplied from a UL 864 listed auxiliary power supply

2 Compatibility

The RM-7000 is compatible with the ADR-7000

3 Display and Keyboard

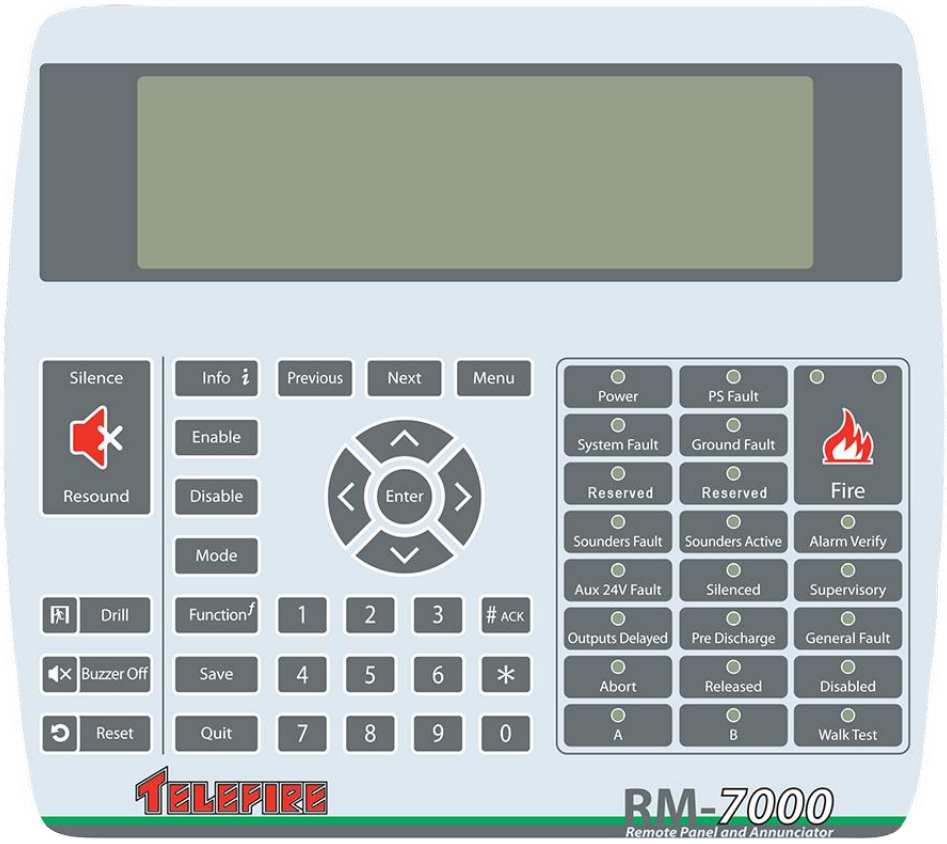

Figure 1 Display and Keyboard

3.1 LCD Display

A 260 by 64 pixel graphical LCD is used to indicate clearly system status and events. It is lit when in use and will stay on for about two minutes after the last keypress. When on secondary power (batteries) the LCD will be lit for ten seconds after the last keypress.

3.2 LEDs

LED	Meaning
Power	Green LED. Indicates the presence of input power (AC or battery). • Always on in normal operation • Flashes when there is no main power until **Acknowledge** key is depressed. Additionally there will be additional warning in the LCD display. Pressing the **Acknowledge** key will turn the LED off.
System Fault	Yellow LED. Indicates a hung processor. • Off during normal operation • Solid on when the processor hangs.
General Fault	Yellow LED. Indicates a fault event or one of the connected devices – see additional yellow LEDs and the LCD display for addition display. • Off during normal operation • Flashes to indicate a fault event or one of the connected devices – see additional yellow LEDs and the LCD display for addition display. Pressing **Acknowledge** will turn the LED solid on until resolution of the problem
PS Fault	Yellow LED. Indicates a power fault (loss of AC power; Disconnected battery; Weak battery) • Off during normal operation • Flashes to indicate a ground fault. Pressing **Acknowledge** will turn the LED solid on until resolution of the problem
Ground Fault	Yellow LED. Indicates a ground leak. • Off during normal operation • Flashes to indicate a ground fault. Pressing **Acknowledge** will turn the LED solid on until resolution of the problem
Walk Test	Yellow LED. Indicates test mode. • Off during normal operation, • On during Field Test.
Reserved	Yellow LED. Reserved for future use
Sounders Fault	Yellow LED. Flashes if present fault in general sounders, turns to solid yellow upon pressing # button.

LED	Meaning
Aux 24V Fault	Yellow LED. Indicates a fault in the auxiliary 24Vdc outputs. Additional detail is shown on the LCD display. • Off during normal operation • Flashes on upon a fault event in any output device (other than Horn and outputs configured as "General, Silenced"). Pressing **Acknowledge** will turn the LED solid on until resolution of the problem
Outputs Delayed	Yellow LED. Indicates that an output is delayed and will be activated once the countdown period is over. • Off during normal operation • On during the countdown process
Abort	Yellow LED. Indicates an aborted extinguishing operation. Off during normal operation • Off during normal operation • On following an abort
A	Reserved for future use
Fire	Red LED. Indicates fire alarm. The device in alarm is displayed on the LCD display. • Off in normal state • Flashes during alarm. Pressing the **Acknowledge** key will turn the LED on until the control panel is reset
Supervisory	Yellow LED. Indicates a supervisory event. • Off during normal operation • The LED flashes as long as the supervisory event is in force.
Alarm Verify	Yellow LED. Indicates alarm verification. Also displayed on the LCD display. • Off in normal operation • Flashes during alarm verification
Disabled	Yellow LED. Indicates a disabled input, or output. Additional detail is shown on the LCD display. • Off during normal operation • On when one of the inputs or outputs is disabled. Additional detail is shown on the LCD display. The LED will stay on until all inputs, and outputs are enabled.
Reserved	Yellow LED. Reserved for future use

LED	Meaning
Sounders Active	Red/Yellow LED. Indicates a situation where the horns are disabled due to a fault in the horn line or disablement of the horn output. • Off during normal operation • Slid on red during horn activation • Flashes in Yellow when there is a fault in the horn line. Pressing **Acknowledge** will turn the LED solid on until resolution of the problem Solid yellow when horn output is disabled
Silenced	Red LED. Yellow LED. Indicates silenced condition. • Off during normal operation and during alarm • Flashes during alarm after silencing.
Pre Discharge	Red LED. Indicates that an extinguishing output is delayed and will be activated once the countdown period is over. • Off during normal operation • Flashes during the countdown process
Released	Red LED. Indicates that an extinguishing output was activated. • Off during normal operation • Flashes during the countdown process
B	Reserved for future use

Table 1 Operator Panel – Indicating LEDs

3.3 Operator Keys

Key	Function
Drill	Allows the Operator to initiate an evacuation procedure (Drill). Requires password. If a sounders was silenced, pressing Resound renewal all general sounders. Requires password.
Buzzer Off	Pressing this key silences only internal buzzer.
Reset	Pressing this key resets and restores the system to normal operation mode. All NACs are turned off, input and output modules return to normal operation mode, addressable detectors receive a reset signal, the LCD displays "System OK" and history report is updated. The system will resound if any Alarm or Trouble occurs.

Key	Function
Silence / Resound	Pressing this key silences the devices connected to the NACs (if defined as Silenced) and all addressable outputs that are defined as "silenced". Pressing this key again before the control panel is reset will cause all the silenced outputs to re-activate.

Table 2 Operator Panel – Operator Keys – upper left

Key	Function
Info	Provides information on the addressable device or main board
Previous	Shows the previous alarm or fault. In programming mode it will move to the previous address.
Next	Shows the next alarm or fault. In programming mode it will move to the next address.
Menu	Shows the menu
Enable	Enables an addressable device
Disable	Disables an addressable device
Mode	Reserved for future use
Function	Form main menu: allows disablement of device From a device menu: allows to turn the device's indicating LED on or off
Save	Saves SSD (Site-Specific Data) after programming
Quit	Goes to the previous menu option

Table 3 Operator Panel – central area

3.4 Numerical and Arrow Keys

3.4.1 Numerical Keys

The numeric keys are used for entering values for system initialization, programming, daily operation, password entering, and selecting menu field values on the LCD.

3.4.2 Arrow Keys

The arrow keys are used for navigating from field to field on the screen during system programming and for browsing through the memory.

3.5 Normal (Quiescence) State

Normal state is a state where no alarm or fault event and all of the inputs and outputs are enabled. In this state, the green power LED is turned on and the LCD displays System OK.

Screen 1 Quiescence state

4 Installation

4.1 Pre-Installation Planning

4.1.1 Capacity Planning

Up to 16 RM-7000 remote anunciators can be connected to each ADR-7000 control panel.

The RM-7000 remote anunciators are connected to a control panel using four tendons between 20 and 12 AWG (cross section of 0.5 to 3.3 mm^2) – a two-wire solid copper cable for communication with the RS-485 control panel and a pair of 24Vdc supply from the control panel or A UL 864 listed auxiliary power supply.

The wiring will be carried out according to RS-485 and NFPA guidelines – the strictest of them. Long cable runs or between buildings or roofs must be shielded.

The wiring from the control panel to the RM-7000 can be in either Class B or Class A topology.

The maximum overall length of the cable is 1,220 meters.

The RM-7000 is fed from a 24Vdc voltage from the control panel or a UL 864 listed auxiliary power supply.

Use a UL 864 listed auxiliary power supply when the RM-7000 is installed far from the control panel or when the consumer flow summary in normal working condition or alarm exceeds the maximum current allowed in the main power supply (control panel).

4.1.2 Cabling Planning – 24Vdc Supply

The module requires 24Vdc from the control panel or a UL 864 listed auxiliary power supply.

Use a UL 864 listed auxiliary power supply whenever the module is installed a long distance from the control panel or whenever the total current consumption of all NACs exceeds the capability of the control panel's 24Vdc Output.

Use a fire-resistant solid copper cable that is 12 – 20 AWG (cross section of 0.5mm^2 to 3.3mm^2).

Ensure that the maximum voltage drop to the end of the line at full load does not exceed 2V and will leave the last device the minimal operating voltage as per the manufacturer's specification.

4.1.3 Cabling Planning – Shielding

It is recommended to avoid wiring outside buildings because of the likelihood of lightning strikes. If necessary, use shielded cables. The shield should be connected to the ground using the grounding points on the control panel.

4.2 RM-7000 Installation

The RM-7000 must be installed in a closed place. Exposure to outdoor conditions should be avoided to prevent high humidity or dust and air pollution from external sources.

The RM-7000 should be placed on a stable wall so that there is easy access to the installation of the line cables of the outputs and the maintenance personnel for continuous operation and where the display and indicator lights can be conveniently monitored and viewed.

On the back of the chassis at the top are two sliding slots for mounting the wall enclosure. On the lower part are two nozzles to fix the case.

4.2.1 Mounting the Control Panel

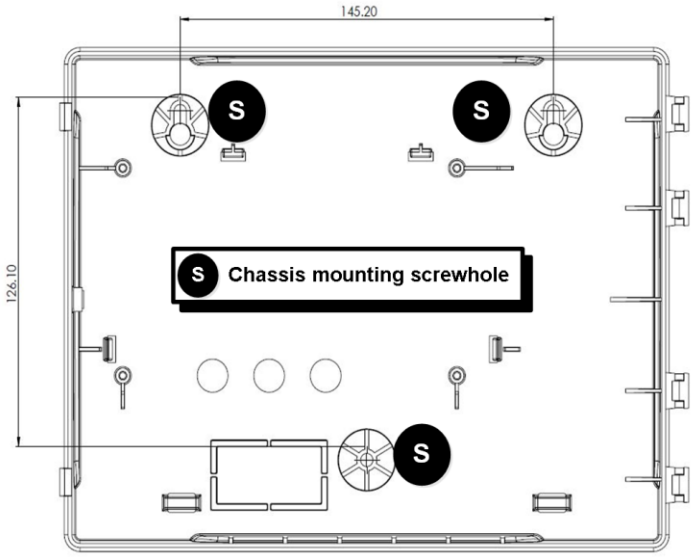

Figure 2 RM-7000 Mounting Holes

4.2.2 Connecting RS-485 Communication Lines and 24Vdc Supply

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Note

Measure the wiring to ensure there are no shorts before connecting the wiring to the control panel.

Connecting or adding inputs, outputs, and extinguishing devices shall be done when all power to the control power is disconnected (AC and batteries disconnected).

Notify the system administrator that the control panel will be temporarily disconnected before adding devices to the control panel.

Connect to the board that changes the communication line (RS-485) from the control panel or from the previous RM-7000 to the Com 3 connector (RS-485 Out). Connect the communication line to the next device or back to the control panel in case of a Class A connection to the Com 4 connector (RS-485 In).

Connect the 24V line from the control panel or a UL 864 listed auxiliary power supply to the RM-7000 (24Vdc In connector). Connect the 24V line (24Vdc Out connector) to the next RM-7000 as needed.

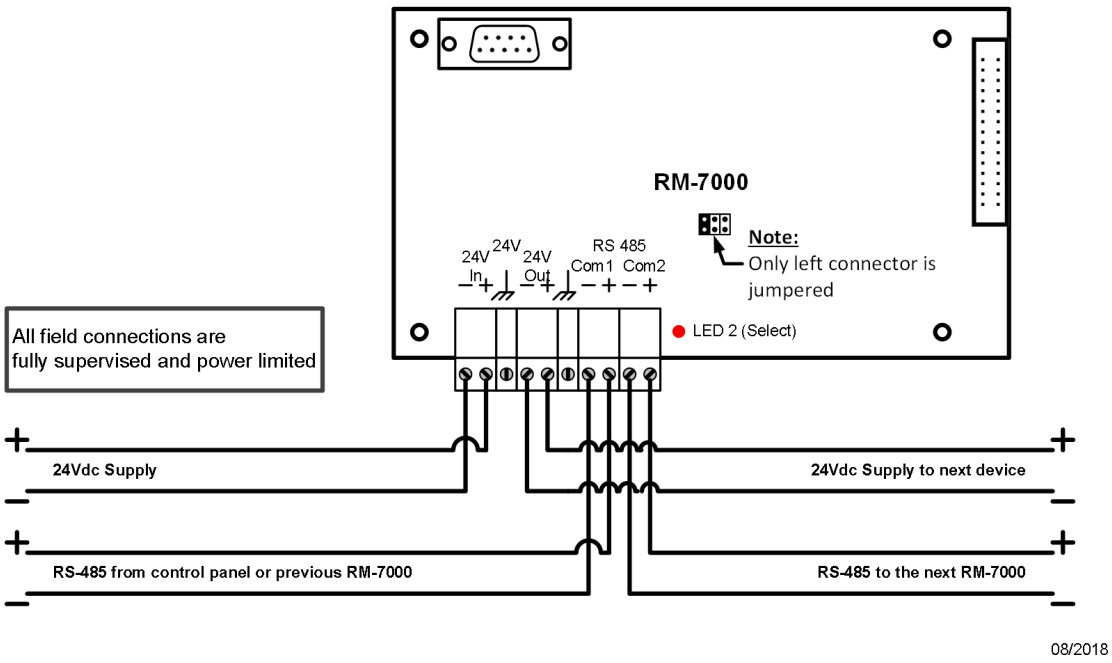

Figure 3 RM-7000 Field Connection – Class B connection

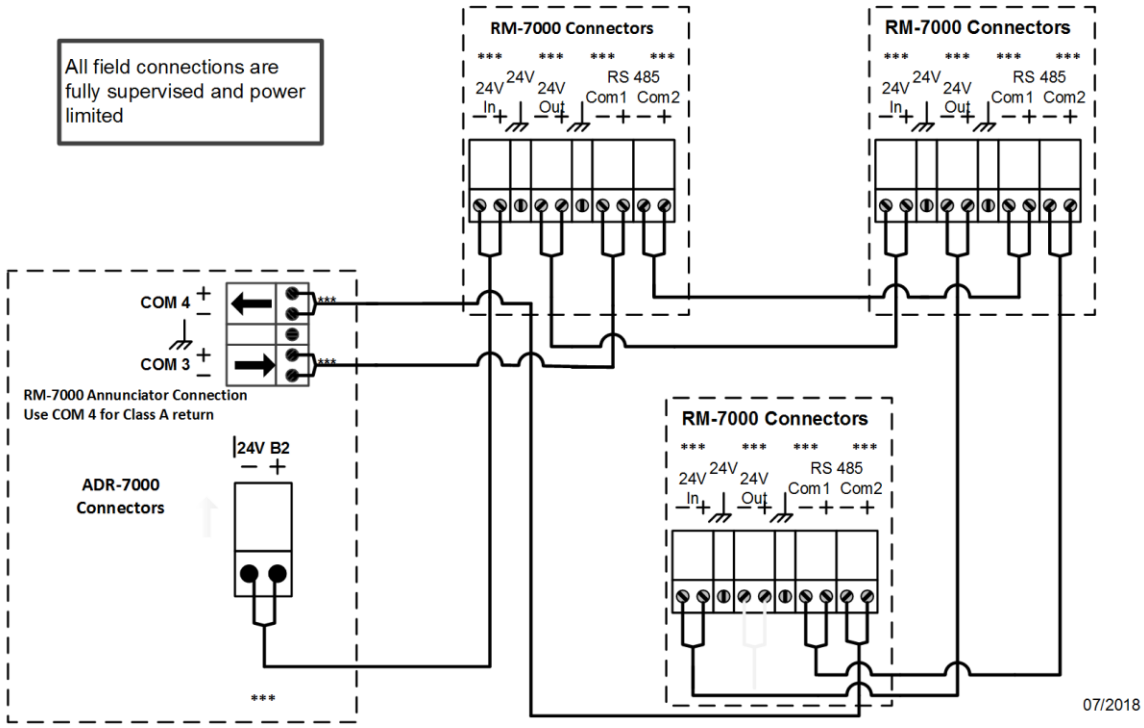

Figure 4 RM-7000 Field Connection – Class A connection

4.2.3 Menu Structure

The transition between the fields is done with the arrow keys ı and ►. Changing the field value is done using the ▲ or ▼ arrow keys, or using the number keys, as needed.

You can select menus by pressing the menu number or by scrolling using the ▲ and ▼ arrow keys.

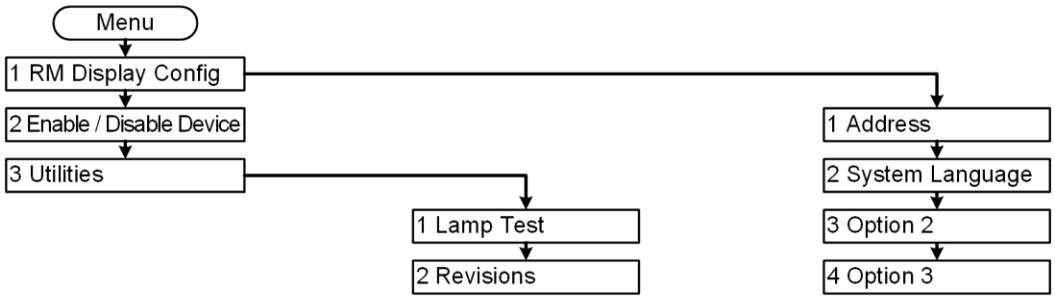

Figure 5 RM-7000 Menu Structure

4.2.4 RM-7000 Configuration – Address Programming

1. Press the Menu key for the main menu.
2. Type 1 (RM-7000 configuration), press a password (default: **555555**), and then click OK.
3. Click the left arrow, type the RM-7000 address, and click OK.

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Note

This address is the RM-7000 address and is not related to the device addresses in the loops.

This address is in range 1-16 in the ADR-7000 control panel and in range 1-3 in the SAVER-7000 and GUARD-7 control panel.

4.2.5 RM-7000 Configuration – Language Setting

1. Press the Menu key for the main menu.
2. Type 1 (RM-7000 configuration), press a password (default: **555555**), and then click OK.
3. Type 2 (system language) and replace the display language with the RM-7000.

4.2.6 Configuring the Control Panel

Set the RM-7000 address on the control panel as active. See technical instructions for declaring more details.

5 Specification

Both the RS 485 and 24Vdc supply are supervised and power limited by the control panel.

Ground fault supervision is performed by the control panel.

Please refer to the ADR-7000 manual, P/N ADR-7000Enxxx (xxx is a number that corresponds to the document revision), for detailed information.

Dimensions (W / H / D) ..... 325 / 239 / 58 mm

Operating Temperature range..... -0°C – +49°C

Relative Humidity Range ..... 10% – 93% non-condensing

Operating Voltage (supplied by control panel or UL 864 listed auxiliary power supply) ..... 24Vdc nominal

Maximum current consumption (24Vdc)

LCD screen off..... 117mA
LCD screen on..... 125mA

RS 485 interface

Uses standard RS 485 specification and protocol
Maximum cable length ..... 1,150m / 3,800ft

All field connection are power limited

The RM-7000 communication interface can be configured as Class B or Class A at the ADR-7000. Refer to the ADR-7000 manual for detailed information

All field connections are supervised and power limited.

All values are nominal. Specifications are subject to change without prior notice

6 Certification

Telefire's RM-7000 Addressable Remote Panel and Annunciator has the following approvals:

- UL 864 Listed
- SI 1220 Approved

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RM-7000 Instructions for Immediate Use

Quiescence State	Green **Power** LED is ON with short OFF pulses
Alarm State	**FIRE** indications flash red, internal buzzer and the alarm sounder are ON. Silence the internal buzzer by pressing **Buzzer Off**. Follow the instruction on the screen. Go to the location indicated on the screen and follow the instructions provided by the safety supervisor. If there are multiple events in the system, the screen shall display the total number of alarms, supervisory alarms, faults, and disablements. Use **Next**, **Previous** or the **arrow keys** to navigate between events.
To Exit from Alarm State	After following instructions provided by the safety supervisor, you can return the system to normal operation by pressing **Reset**. **This action shall be performed only by persons authorized to do so by the site's safety supervisor**.
Automatic Extinguishing	Performed automatically, without human intervention. After extinguishing was activated the screen shall display **Extinguishing Activated**. Call the service organization to return the control panel to normal operation.
Fault State	**General Fault** and other indications flash yellow. Silence the internal buzzer by pressing **Buzzer Off**. Follow the instruction on the screen. Go to the area indicated on the screen and follow the instructions provided by the safety supervisor. Problem resolution returns the control panel to normal operation. Call the service company if required.

Enter password when indicated on the LCD screen.

Read the technical manual supplied with control panel for in-depth details

Support phone No _____

Service Company _____