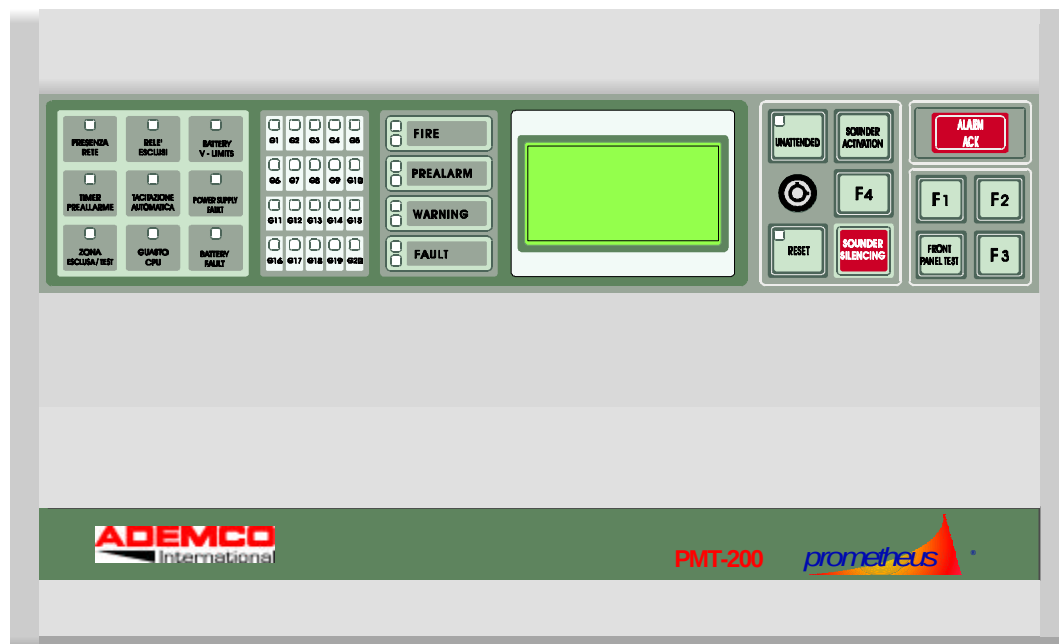




PMT - 200 FIRE CONTROL PANEL

INSTALLATION

MANUAL



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INTRODUCTION

PMT - 200 System description

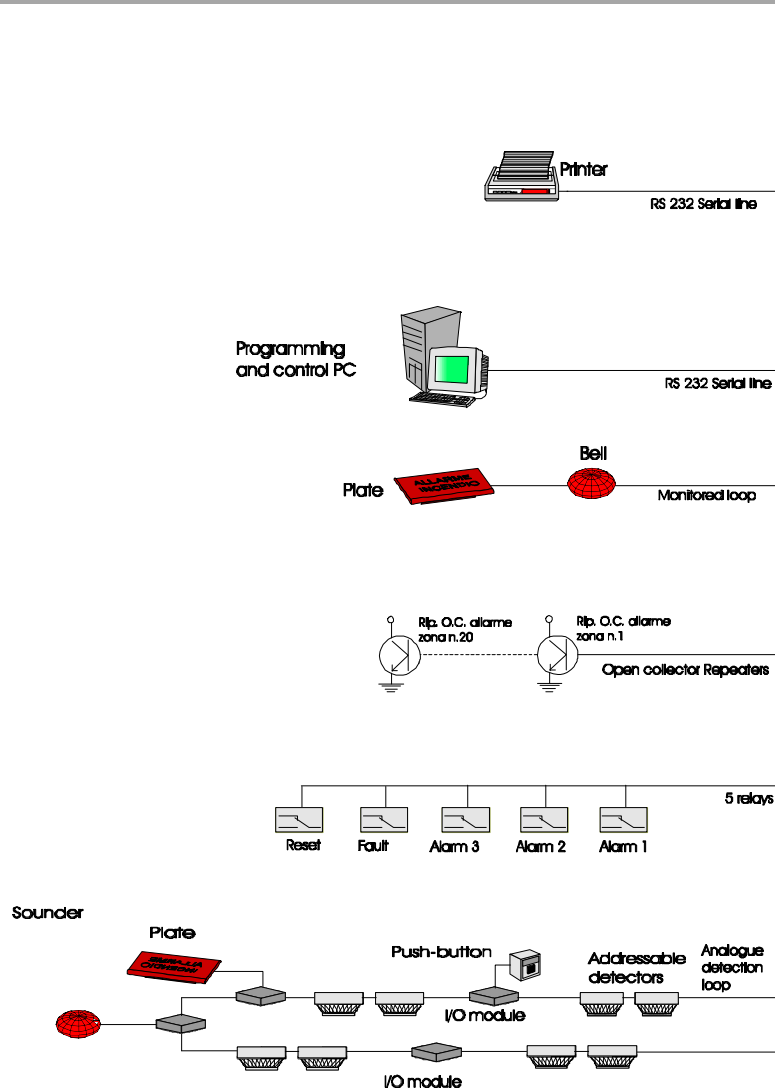
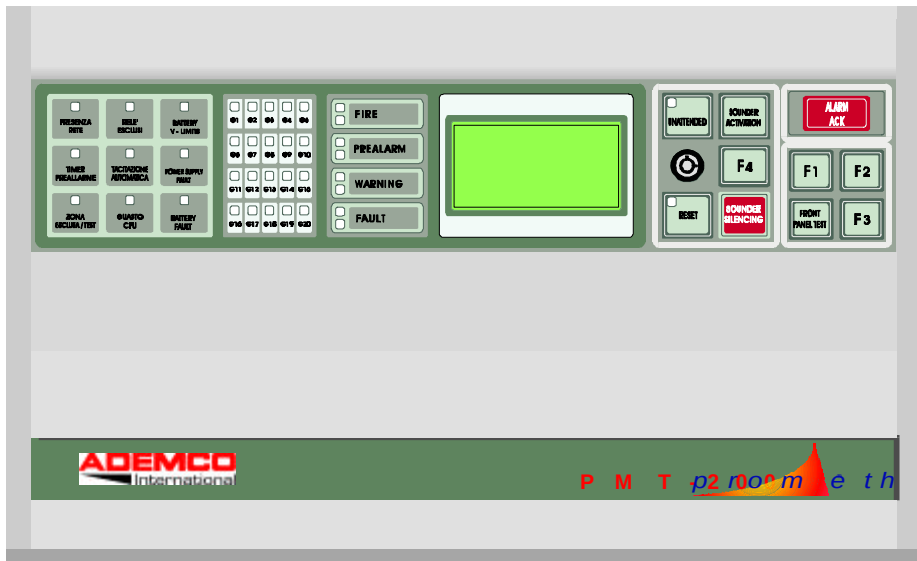
The control panel is constructed to meet the following standards CEI-EN60950, CEI 14-6, CEI 64-8, UNI 9795, EN 54-1 and the draft standards EN 54-2, EN 54-4, as well as the harmonised European standard on electromagnetic compatibility CE.

The PMT-200 is a programmable stand-alone fire alarm control panel, a list of the principal operating features appears below:

- ☐ The detection is accomplished through an addressable analogue detection loop loops to which can be connected up to 99 intelligent detectors and 99 I/O modules.
- ☐ All system components employ a 16 bit Microprocessor, RAM memory, EPROM resident program memory end EEPROM non-volatile memory for storing configuration data.
- ☐ The high level feedback via the alphanumeric display and the use of programming menus makes it extremely simple to install, program and manage systems.
- ☐ Dedicated software permits the programming of the control panel under Windows operation system (ver. 3.11 and '95).

The PMT-200 system architecture

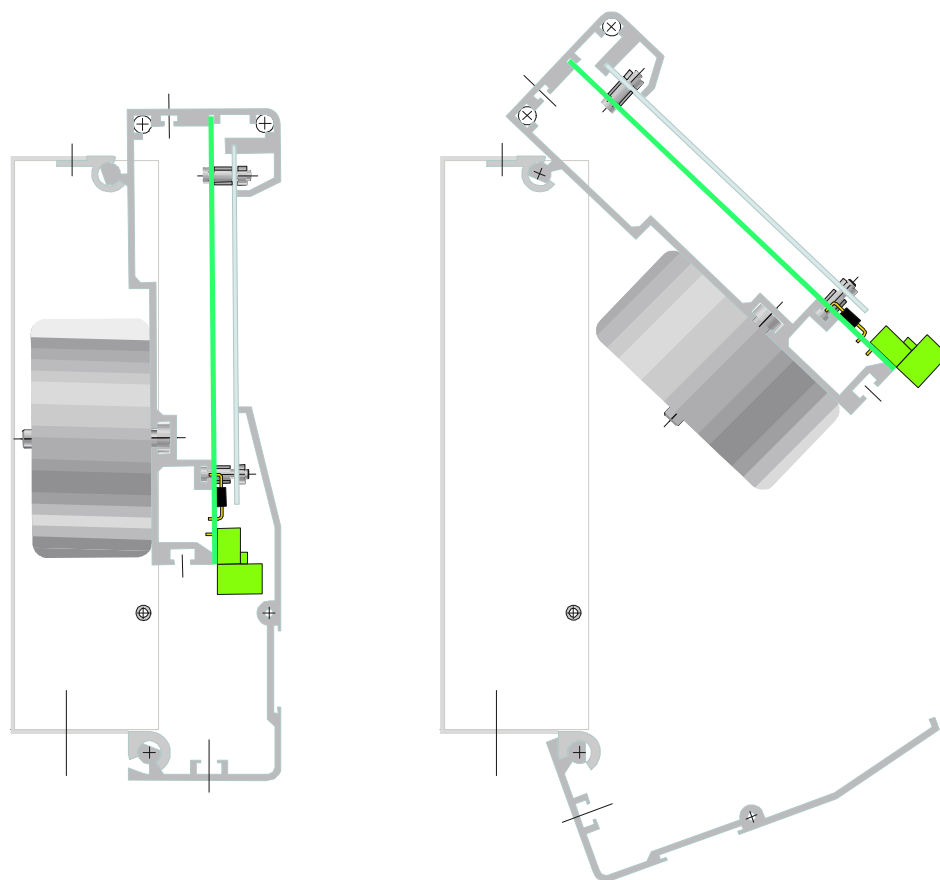
The following diagram shows the architecture of the PMT200 analogue control panel:



METAL CASE

Characteristics of the metal case

The layout of the metal case is illustrated in the following figure:



The physical specifications of the metal case are listed below:

Dimensions (W x L x D)224.5 x 370 x 120 mm

Protection rating.....I.P. 44

Weight (batteries excluded)7 Kg.

MaterialSteel and extruded aluminium.

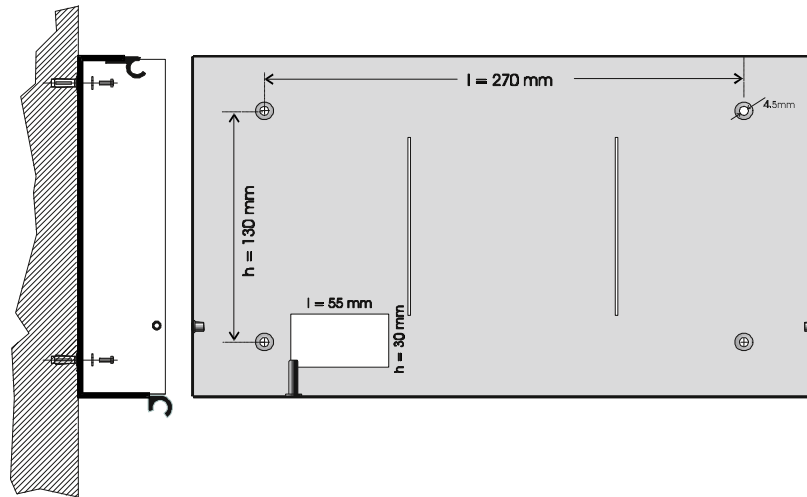
Painting.....Epoxy resin

ColourRAL 7035

Wall mounting of the metal case

4 elongated holes are available on the rear side of the case. They are used for the wall mounting of the fire panel.

The following drawing refers to the PMT-200 control panel:



To install the panel drill four 10mm holes in the wall with centres as shown in the diagram.

THE OPERATOR PANEL

Overview

The operator panel (keyboard) allows to control the system status, through a series of LEDs, a retro illuminated LCD display and the ten push buttons on the keypad.

The keyboard consists of the following components:

- Graphic LCD with 8 lines x 21 alphanumeric characters (64 x 128 pixel), backlit.
- 4 pairs of LEDs to signal the alarms and general faults.
- 9 LEDs for various indications (faults, mains ON, etc.).
- A dual-tone buzzer for alarms and faults.
- 10 control keys (keyboard).
- Electronic pass key to access the different operator levels

The layout of the keyboard is shown below:

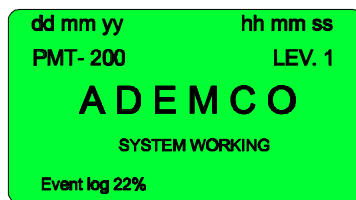


KEYBOARD LAYOUT

The detailed description of each visual indication on the front panel is explained in this section with the exception of the LCD display which is dealt with in the User Manual.

ALPHANUMERIC DISPLAY

The status of the system is clearly shown on the 21 character 8 line alphanumeric display, this aids the operator in both normal operation and in the set-up of the control panel. The normal operating display shown in figure:



On the second line is displayed the control panel name and the access level for the operational procedures: The higher the number the greater the number of steps permitted.

Whenever a fault occurs text describing what was happened is automatically displayed. Refer to the User Manual for a list of the available messages.

Visual indications

37 LEDs are to be found on the front panel, when describing the operational state of the LED *on* means permanently lit, *flashing* means alternatively on for 500ms and off for 500ms.

During normal operation all the LEDs are off with the exception of the "MAINS POWER ON" LED which is on indicating connection to the 230 VAC supply.

Below is a list of all the indications to be found on the operator panel.

1. FIRE (Double Red LED): fire alarm status
 off = no alarm present
 flashing = alarm present (to be acknowledged)
 on = alarm acknowledged
2. PRE ALARM (double Red LED): pre-alarm status
 off = no pre-alarm present
 flashing = pre-alarm
 On = pre-alarm acknowledged
3. WARNING (Double RED LED): Technical alarm
 off = no Technical alarm present
 flashing = Technical alarm
 On = Technical alarm acknowledged
4. FAULT (Double Yellow LED): fault status
 Off = no fault
 Flashing = fault present

- On = fault acknowledged
5. MAINS PRESENT (Green LED): Mains power present
- Off = Mains power not present
- On = Mains power present
6. TIMER PRE-ALARM (Yellow LED): pre-alarm timer on status
- Off = no pre-alarm timer in operation
- Flashing = pre-alarm timer in operation
7. ZONE BYPASSED / TEST (Yellow LED): Test status of the loops
- Off = normal operation
- Flashing = undergoing test
- On = zone bypassed
8. RELAYS BYPASSED (Yellow LED): Warning indication that the relays have been isolated (alarm, Temp. alarm., pre-alarm, Technological Alarms, Fault).
- Off = relays enabled
- On = relays disabled
9. AUTO MUTING (Yellow LED): Auto muting status
- off = no automatic muting
- flashing = alarm has been automatically muted
- On = automatic muting acknowledged
10. CPU FAULT (Yellow LED): CPU fault monitoring
- off = no CPU fault present
11. BATTERY V - LIMITS (Yellow LED): Battery status monitor
- off = battery correctly charged
- on = battery low ($15 < V_{batt} < 20.5$) volt
- on = battery overcharged ($V_{batt} > 28$ volt)
12. POWER SUPPLY FAULT (Yellow LED): Power supply status monitor
- Off = Power supply working correctly
- On = Power supply fault ($V_{lim} < 13V - V_{lim} > 30V$)
13. BATTERY FAULT (Yellow LED): Battery fault status monitor

-
- | | | |
|-----|----------------------------|---|
| | | Off = Battery operational |
| | | On = Battery fault ($V_{batt} < 15$ volts) |
| 14. | RESET (Yellow LED): | Control panel reset monitor |
| | linked to the push-button | Off = control panel operational |
| | | On = control panel in a reset status |
| 15. | UNATTENDED (Yellow LED) | : Attended/unattended mode of operation monitor |
| | linked to the push-button | Off = Control panel attended |
| | | On = Control panel unattended |
| 16. | Groups G1.. G20 (Red LEDs) | : Fire alarm indication from detectors programmed in the first 20 software zones (G1 = Zone 1.... G20 = Zone 20): |
| | | Off = No Alarm |
| | | Flashing = New Alarm (to be acknowledged) |
| | | Permanently Lit = Acknowledged alarm |

The keyboard and the hardware key

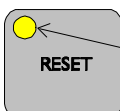
The keyboard is made up of 7 buttons, whose functions are as follows:



Pressing this button silences (disactivates) the sounders (at operation level. 2 and higher) and the audible warning signals following alarm or fault conditions, and acknowledges the alarm or fault condition. All visual indications remain active on all the panels but permanently on. A subsequent alarm re-activates the audible. It is possible to remote the command.

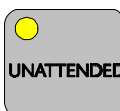


Pressing this button activates the audible and visual warning signals of the control panel and those of the outstations for a short period (approximately 5 seconds), so as to verify their correct operation.

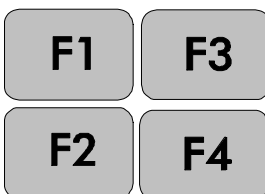


Reset indication LED

Pressing this button resets the whole system to its quiescent state, after an alarm or fault condition. Any alarm or fault condition still remaining will produce again the relative warning signals. It is possible to remote the command.



Pressing this button permits the selection of one of two states of operation of the system.



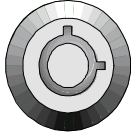
Function Buttons useful in programming the system.



It is possible to activate the siren loop by pressing this push-button TWICE; This function is dependent on the key-switch being operated.



This pushbutton allows the sirens connected on the monitored loop in question to be silenced; this function is dependent on the key-switch being operated.



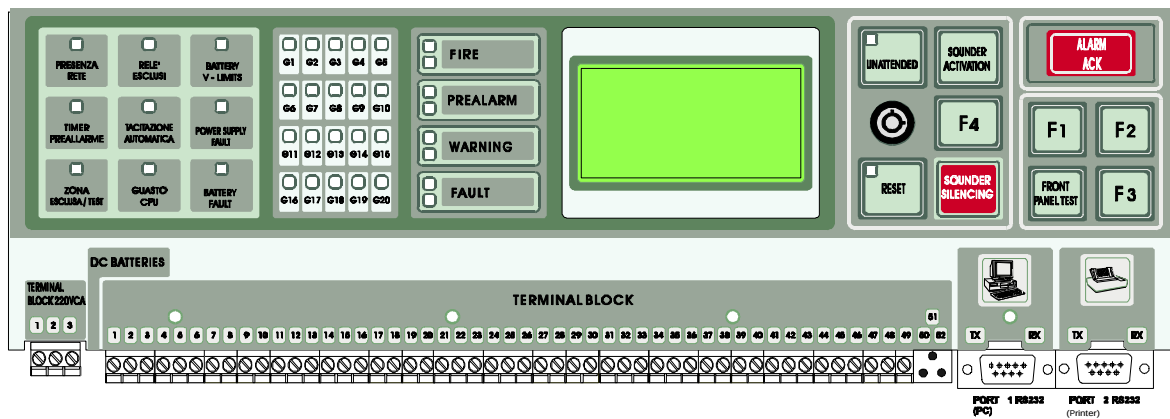
Password to the operational levels; changing the status of the key-switch whilst in the key-block (this is independent of the actual key-switch position) the password remains active for approximately 2 minutes.

THE PMT-200 TERMINAL BLOCK

Terminal block is made up of 52, 2.5 mm. terminals; there are also 2, male 9 pin sockets available on the control panel for connection to the two serial ports.

- Serial Port 1: RS 232 used for connecting to the system programming PC;
- Serial Port 2: RS232 used for connecting to a 80 column serial printer which gives a hard copy of the events both in real-time or by request of the operator;

The following diagram shows the terminal numbering and the positions of the 9 way sockets:



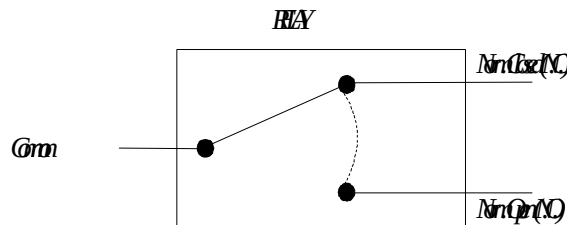
Control panel terminal block

The following table shows the Number, description and electrical specifications for each terminal:

n°	Description	Electrical Specifications
1	ALARM repeater relay (COMMON)	1 A / 100 VAC s.p.d.t.
2	ALARM repeater relay (NC)	
3	ALARM repeater relay (NO)	
4	PRE-ALARM repeater relay (COMMON)	
5	PRE-ALARM repeater relay (NC)	
6	PRE-ALARM repeater relay (NO)	
7	TECHNICAL ALARM repeater relay (COMMON)	
8	TECHNICAL ALARM repeater relay (NC)	
9	TECHNICAL ALARM repeater relay (NO)	
10	FAULT repeater relay (COMMON)	
11	FAULT repeater relay (NC)	
12	FAULT repeater relay (NA)	
13	Timed GEN. ALARM relay (COMMON)	
14	Timed GEN. ALARM relay (NC)	
15	Timed GEN. ALARM relay (NO)	
16	Relay reset (NA = 0VDC in norm. cond. - 24 VDC in Reset)	1 A / 100 VAC s.p.d.t.
17	Relay reset (NC = + 24 VDC in norm. cond - 0 VDC in Reset)	
18	GND	
19	+ 24 VDC Output (fuse protected)	+24 VDC 350mA max.
20	+ Line monitored for one siren	0,5 A max. 24 VDC Polarity of monitoring voltage
21	- Line monitored for one siren	
22	Open Collector repeater alarm software zone n° 1	These O.C. outputs are Optional 200 mA 30VDC Open C.
23	Open Collector repeater alarm software zone n° 2	
24	Open Collector repeater alarm software zone n° 3	
25	Open Collector repeater alarm software zone n° 4	
26	Open Collector repeater alarm software zone n° 5	
27	Open Collector repeater alarm software zone n° 6	
28	Open Collector repeater alarm software zone n° 7	
29	Open Collector repeater alarm software zone n° 8	
30	Open Collector repeater alarm software zone n° 9	
31	Open Collector repeater alarm software zone n° 10	
32	Open Collector repeater alarm software zone n° 11	
33	Open Collector repeater alarm software zone n° 12	
34	Open Collector repeater alarm software zone n° 13	
35	Open Collector repeater alarm software zone n° 14	
36	Open Collector repeater alarm software zone n° 15	
37	Open Collector repeater alarm software zone n° 16	
38	Open Collector repeater alarm software zone n° 17	
39	Open Collector repeater alarm software zone n° 18	
40	Open Collector repeater alarm software zone n° 19	
41	Open Collector repeater alarm software zone n° 20	
42	+ Open circuit detector loop	
43	- Open circuit detector loop	
44	+ Closed circuit detector loop	
45	- Closed circuit detector loop	
46	N.C.	
47	N.C.	
48	N.C.	
49	N.C.	
50	MAINS FAIL Open C. repeater	200mA 30 VDC
51	SW ZONES ISOLATED Open C. repeater	
52	BATTERY LOW Open C. repeater	

Relay output connections

6 Relay outputs are available at the terminal block (100VAC @ 1A s.p.d.t.) each of which is activated by a specific event; the description of each terminal of the s.p.d.t relay is illustrated in the following diagram:



Note: activation of the relay connects the COMMON terminal to the NORMALLY OPEN terminal.

- *FAULT* Relay: activated whenever a fault condition is signalled from any of the monitored equipment.
- *FIRE ALARM* Relay: activated whenever a FIRE ALARM condition is signalled from any detector.
- *DELAYED FIRE ALARM* Relay: the conditions to activate this relay are the same as for the previous relay (Fire Alarm); the activation delay is however programmable via the appropriate menu. (Refer to the 'Programming manual').
- *PRE-ALARM* Relay: activated when a pre-alarm condition is signalled by one of the connected detectors; This condition is specific to detectors programmed as CONFIRMED or when the control panel is operating in a manned condition. (Refer to the appendix of the 'Programming manual')
- *TECHNOLOGICAL ALARM* Relay: activated whenever an alarm condition is signalled from a technological alarm detector (configured in a technological zone).
- *RESET* Relay: This relay is activated during a system reset so as to provide a suitable output to reset external apparatus connected to the control panel. In quiescent conditions the NORMALLY CLOSED terminal is at +24Vdc (fuse protected) with respect to DC power supply, (e.g. terminal 13) whilst the terminal NO is voltage free.

Connection to the sounder loop

One sounder loop is available at the terminal block to control one siren when a FIRE ALARM condition is signalled. It is possible to set the activation delay independently for each loop using the appropriate programming menu. Please refer to the 'Programming Manual' for the delay settings as well as the silencing menu.

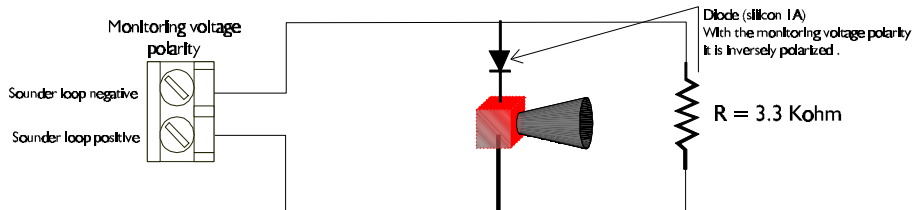
The loop is monitored for open circuit and closed circuit conditions (3.3Kohm end of line resistor); these fault conditions are signalled both by the LED on the front panel and a specific message displayed on LCD.

In quiescent conditions there is a monitoring current through the end of line resistance (3.3Kohm); in this case the monitoring voltage is approximately 2.7 VDC the polarity of which is shown in the table showing the electrical characteristics of the terminal block; so as to avoid that the sounder is "seen" as a load in parallel to

the end of line resistance IT IS NECESSARY to connect a diode in series with the siren. (see the following diagram)

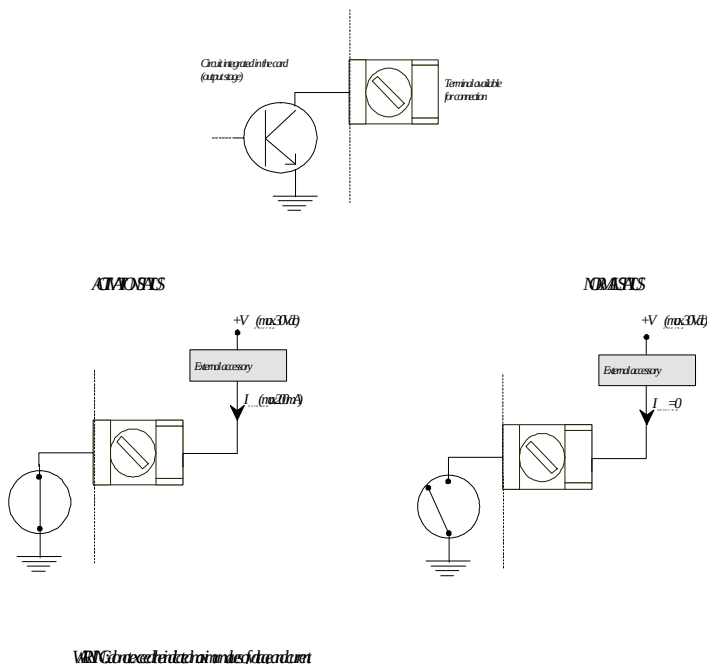
When an alarm condition is generated the monitoring voltage polarity is inverted and rises to 24Vdc (nominal), the diode now conducts and therefore the sounder receives its activation signal.

The following diagram shows the connections to the sounder loop:



The Open Collector repeater output connections

The following figure shows the connection diagram for an Open Collector output:



Following are the descriptions of each output:

- *SOFTWARE ZONE ALARM Repeaters (Option):* each of the 20 open collector repeater outputs is activated when one or more detectors belonging to the corresponding software zone goes into an alarm state.
- *BATTERY VOLTAGE FAULT repeater:* Active when the standby battery voltage satisfies the following criteria:

$$(15 < V_{\text{batt.}} < 20.5) \text{ V}$$

V_{batt.} > 28.5 V

- *ZONE ISOLATED Repeater*: Active when one or more software zones/detectors or I/O modules have been isolated.

- *MAINS FAIL repeater*: Active when the mains voltage has not been present for 15 minutes (230 VAC).

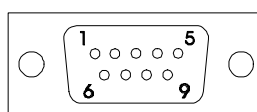
The serial ports

As previously indicated, the control panel is equipped with two serial ports which permits communication with external devices, e.g. PCs, Printers.

The transmission specifications of the serial ports are as follows: 8 data bits, no parity, one stop bit and the baud rate is programmable from the control panel.

Connection to the serial port is via a male 9 pin connector, the pin connections of which are shown in the tables below.

The pin numbering is the same for all the serial ports and shown in the following diagram:



FRONT VIEW (the same as the solder side of the female connector)

PORT 1: SERIAL RS 232 for connection to a PC or MODEM

Signal Direction	Signal	Pin Number
--	Data Carrier Detect	1
<<<	Transmitted Data	2
>>>	Received Data	3
<<<	Data Terminal Ready	4
--	Ground	5
>>>	Data Set Ready	6
<<<	Request To Send	7
>>>	Clear To Send	8
>>>	Ring Indicator	9

PORT 2 : SERIAL RS 232 for connection to a PRINTER

Signal Direction	Signal	Pin Number
--	Data Carrier Detect	1
<<<	Transmitted Data	2
>>>	Received Data	3
<<<	Data Terminal Ready	4
--	Ground	5
>>>	Data Set Ready	6
<<<	Request To Send	7
>>>	Clear To Send	8
>>>	Ring Indicator	9

Serial port connection cables

In the following paragraph the connections between the 9 pin connector at the control panel end and the corresponding serial port connectors on the peripheral equipment, Port No. 1 (PC) & Port No. 2 (Printer), useful for construction suitable connection cables.

The type of cable recommended is:

- Minimum cross sectional area of the conductors: 0.22 mm².
- Type of cable: Screened, Twisted pairs.

RS232 SERIAL CABLE FOR CONNECTION TO A PC

The table shows how the cable should be constructed:

9 pin connector control panel end	25 Pin connector PC end
3	2
2	3
5	7
The cable screen must be connected to the metal housing of the connector	

Use the following connection if the PC connector is a 9 pin connector:

9 pin connector control panel end	9 Pin connector PC end
2	2
3	3
5	5
The cable screen must be connected to the metal housing of the connector	

RS232 SERIAL CABLE FOR CONNECTION TO PRINTER

The transmission specifications of the serial printer port are: 8 data bits, Even parity, 1 Stop bits, Baud rate programmable at the control panel. The serial printer must accommodate 80 column printing.

The table shows how the cable should be constructed:

9 pin connector control panel end	25 Pin connector Printer end
3	2
2	3
8	4
7	5
5	7
The cable screen must be connected to the metal housing of the connector	

Standby battery

The control panel is equipped with two standby batteries so as to ensure its correct operation whenever the mains supply might fail. As previously described the primary supply maintains the standby batteries and checks that they are functioning correctly.

The following tables show the battery characteristics as well as the maximum space available for them in the cabinet:

PMT200 CONTROL PANEL STANDBY BATTERIES	
Electrical Specifications	N° 2, 12Vdc @ 24 Ah batteries
Maximum Dimensions	(L x H x D) = (105x175x65)mm

THE ADDRESSABLE ANALOGUE DETECTOR LOOP

General Description

The main operating specifications of this loop are described below:

- ☐ Monitor 1 zone of addressable detectors and/or in/out modules.
- ☐ Zone configuration: closed or open loop connection.
- ☐ 99 detectors and 99 I/O modules can be connected.
- ☐ Each zone can be configured as Single or Double Knock.
- ☐ 20 Open Collector outputs for the alarm status repetition of the first 20 software zones.
- ☐ LED indication on the front panel of the following states:
 - Fire alarm on the zone
 - Fire Alarm from each of the 20 groups that the zone has been divided into.
 - Pre-alarm.
 - General fault
 - Warning of zone Isolate/Restore of software zones together with detectors and I/O modules.
 - CPU fault.
- ☐ Using the correct programming procedures it is possible, via the control panel, to carry out the following:
 - Configuration of a maximum of 99 software zones, single or double knock.
 - Detector configuration: Types of detectors used and description
 - Input and output module configuration: type of module, description, release delay and release formula (only if configured as an output module).
 - Isolate/reset the configured software zones.
 - Isolate/reset of the detectors/modules configured.

Description of the states

The flash frequency of the front panels LEDs are listed in the following table:

TYPE	TIMES	
A	ON = 500 m sec	OFF = 500 msec
B	ON = 900 msec	OFF = 1.1 sec

Fire pre-alarm

The Fire Pre-Alarm status of a particular loop and a particular zone is activated by at least one of the detectors belonging to that loop and zone going into alarm, only when the detector in question belongs to a software zone which has been configured as "Double Knock" during the programming of the unit.

The pre-alarm status is indicated by:

- The DOUBLE RED LED flashing (pre-alarm) on the front panel.
- The detected status is shown on the alphanumeric display.

Pressing the ACKNOWLEDGE button situated on the operator panel of the control panel toggles the DOUBLE RED LED from flashing to permanently on.

Fire alarm

The alarm status on any loop and zone is activated by at least one detector on that loop and zone going into alarm only when that software zone is configured as a single knock during programming of the control panel.

If the detector belongs to a zone configured as Double Knock the alarm status is activated when at least two detectors go into alarm on that zone.

The ALARM status activates:

- The DOUBLE RED LED flashing (fire alarm) on the front panel.
- The detected status is shown on the alphanumeric display.
- Activation of the corresponding repeater open collector output (if installed).

Pressing the ACKNOWLEDGE button situated on the operator panel of the control panel toggles the DOUBLE RED LED from flashing to permanently on.

Technical alarm

The TECHNICAL ALARM status activates:

- The DOUBLE RED LED flashing (warning) on the front panel.
- The detected status is shown on the alphanumeric display.

Pressing the ACKNOWLEDGE button situated on the operator panel of the control panel toggles the DOUBLE RED LED (warning) from type A flashing to permanently on.

Fault

The FAULT status is activated by:

- Open circuit of the detector / I/O module loop.
- Short circuit of the detector / I/O module loop.
- Removal of a detector / module from the loop.
- During the interrogation phase of the unit a signal from at least one detector / I/O module.

The FAULT status activates:

- The DOUBLE YELLOW LED flashing (fault) on the front panel.
- The detected status is shown on the alphanumeric display.

Pressing the ACKNOWLEDGE button situated on the operator panel of the control panel toggles the DOUBLE YELLOW LED from flashing to permanently on..

Maintenance of a detector I/O module

The MAINTENANCE status is activated by:

- At least one detector / I/O module signalling a service request during the interrogation phase.

The MAINTENANCE OF A DETECTOR status activates:

- The detected status is shown on the alphanumeric display.

Pressing the ACKNOWLEDGE button on the operator panel the detected status is acknowledged and the display is reset in normal condition.

Isolating / restoring a software zone / detector / I/O module

The isolation or the restoration of one of the software zones / detectors / modules configured during programming, can be carried out only by a specific message sent from the control panel.

Isolation of one or more programmed units will result in the YELLOW LED ("zone isolated / test") of the corresponding zone to flash, Flash type B.

Installation of the detection zones

4 types of device can be connected:

- ADDRESSABLE DETECTORS OF ADEMCO SERIES.
 - ADDRESSABLE BASES AB401PMT.
 - INPUT / OUTPUT MODULES.
1. ZONE SEPARATOR MODULES.

The devices are explained in detail in the following paragraphs.

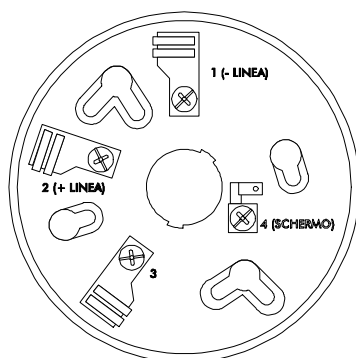
Detector specifications

A maximum of 99 detectors can be connected.

TYPES OF DETECTOR WHICH CAN BE CONNECTED (for more details on these detectors see the Programming Manual)

DESCRIPTION	CODE
LOW PROFILE IONIZATION SMOKE DETECTORS	1700 ECB/A
LOW PROFILE OPTICAL ADDRESSABLE SMOKE DETECTORS	2700 ECB/A
LOW PROFILE RATE OF RISE DETECTOR	3700ECB/A

The typical layout of the base of an analogue addressable detector ADEMCO B501 is shown in the figure:



TERMINAL CONNECTIONS

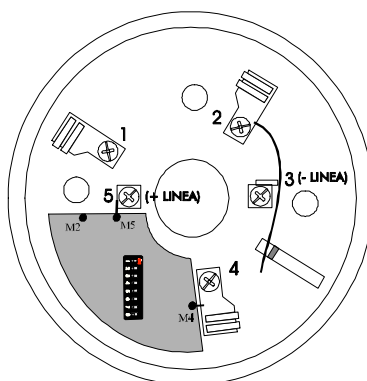
Terminal n°	Description
1	(-) detection loop (-) Alarm repeater LED
2	(+) detection loop
3	(+) alarm repeat
SCH.	Loop shield

Specifications of the AB401PMT addressable bases

The AB401/PMT addressable bases contain an electronic circuit which permits a conventional, resistance change, detector to have an address.

The maximum number of addressable bases for each loop is 50.

The following diagram shows the structure of the base:



TERMINAL CONNECTIONS

Terminal n°	Description
5	(+) protocol loop
3	(-) protocol loop

PMT-100 Input/Output module specifications

The functional specifications are as follows:

- 99 modules can be connected on each zone.
- Each module is individually identifiable by its address, which is programmed by the installer on the DIP-Switch mounted on the unit.
- Programmability: It is possible to select the mode of operation of the unit as; an input module, An output module or an input/output module and assign a name to the module during the system programming.
- Input module: it interfaces the loop with either analogue signals (4-20 mA) or ON/OFF types.
- Output module: an opto-isolated normally open contact is available.
- Input/output module: This allows the dual operation from only one device.

PMT100 MODULES TECHNICAL SPECIFICATIONS

Supply voltage..... 0 ÷ 30 V pulsed (communication)

Current consumption in standby 0,5 mA

Local indication..... Red LED

Output stage current consumption when activated 10 mA 36VDC

Maximum current of the output stage (opto-isolated)..... 50 mA (36 VDC)

The maximum number of output module that

can be activated at the same time..... 25

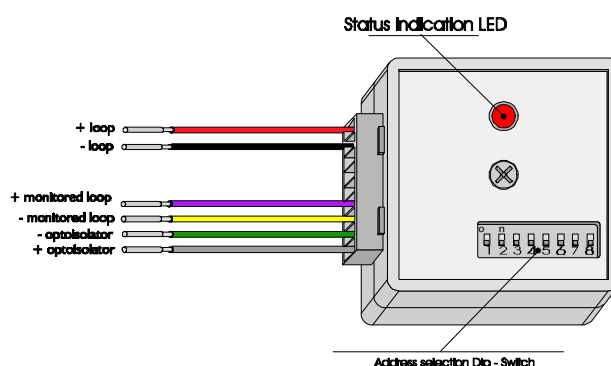
Programmability..... Dip - Switch

Operating temperature..... (-10 ÷ +50) °C

Humidity 10 - 93% U.R.

Dimensions (H x D x L) 40 x 14 x 40 mm

The I/O module is shown in figure:

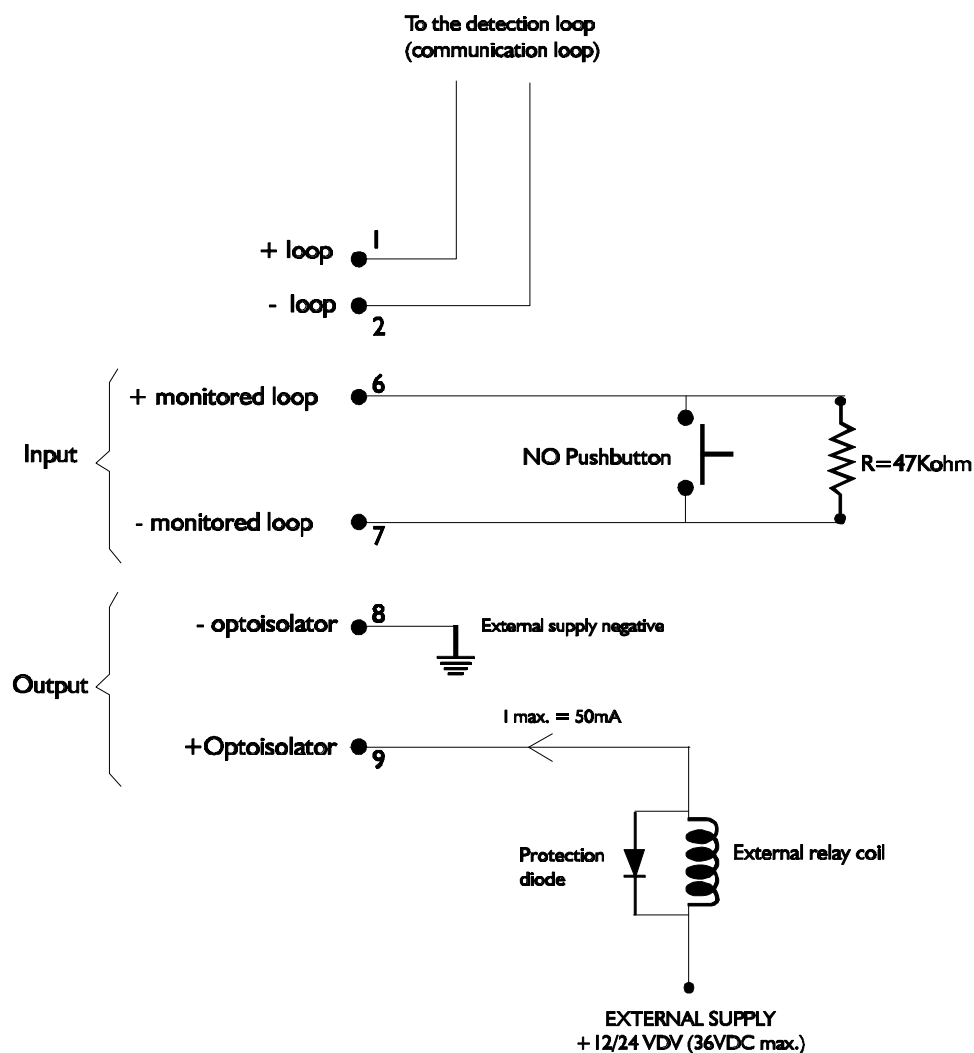
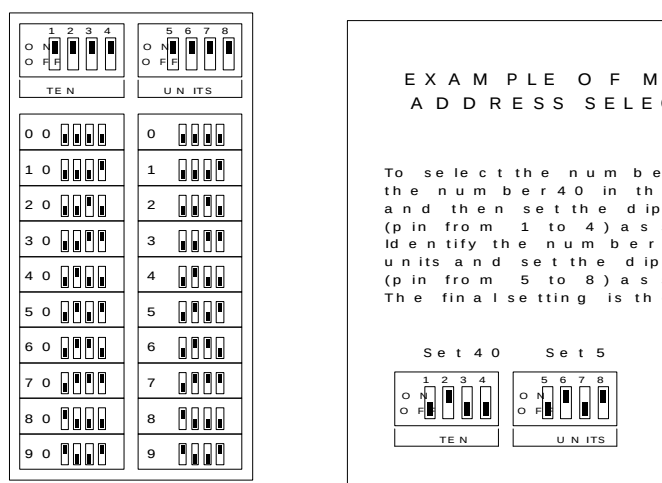


TERMINAL BLOCK CONNECTIONS

Terminals	Description
1 (Red)	(+) communication loop
2 (Black)	(-)communication loop
3 ÷ 5	Not used
6 (Blue)	(+) monitored input ($R_{\text{fine linea}} = 47 \text{ Kohm}$)
7 (Yellow)	(-) monitored input
8 (Green)	(-) optoisolated output
9 (Grey)	(+) optoisolated output

EXAMPLE OF THE CONNECTIONS TO A PMT-100 I/O MODULE:

The following diagram shows an example of the connections to a module:

MODULE ADDRESS SELECTION:

PMT-102 zone separator module specification

The zone separator modules permit the isolation of a part of the loop when a short circuit condition is detected in that part of the loop; connected in series with the loop itself, **in the case of a closed loop configuration**, to isolate the part of the loop affected by the short circuit, whilst maintaining the correct operation of the rest of the loop.

A relay is mounted in each one, which opens when the current is greater than **250mA**.

The maximum number of zone separator modules is 5 on each loop.

TECHNICAL SPECIFICATIONS OF THE ZONE SEPARATOR MODULE:

Supply voltage 24 V (communication protocol)

Local indication Red LED (on = short circuit)

Step-in current..... 250mA

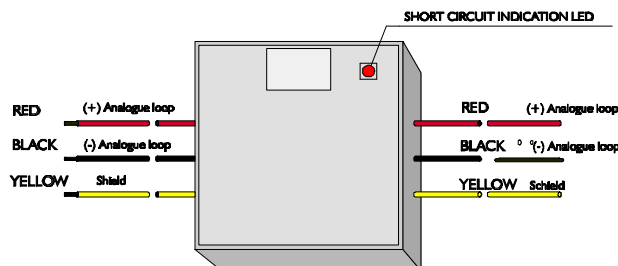
The maximum N° of zone separator modules on each loop 7

Operating temperature (-10 ÷ +50) °C

Humidity 10 - 93% U.R.

Dimensions (H x D x L)..... 40 x 15 x 40 mm

The zone separator module is shown in the figure:



TERMINAL BLOCK CONNECTIONS

Terminals	Description
Red	(+) loop
Black	(-) loop
Yellow	shield

Detection loop connection types

The detection loops can be configured in two ways:

- Connection in closed loop.
- Connection in open loop.

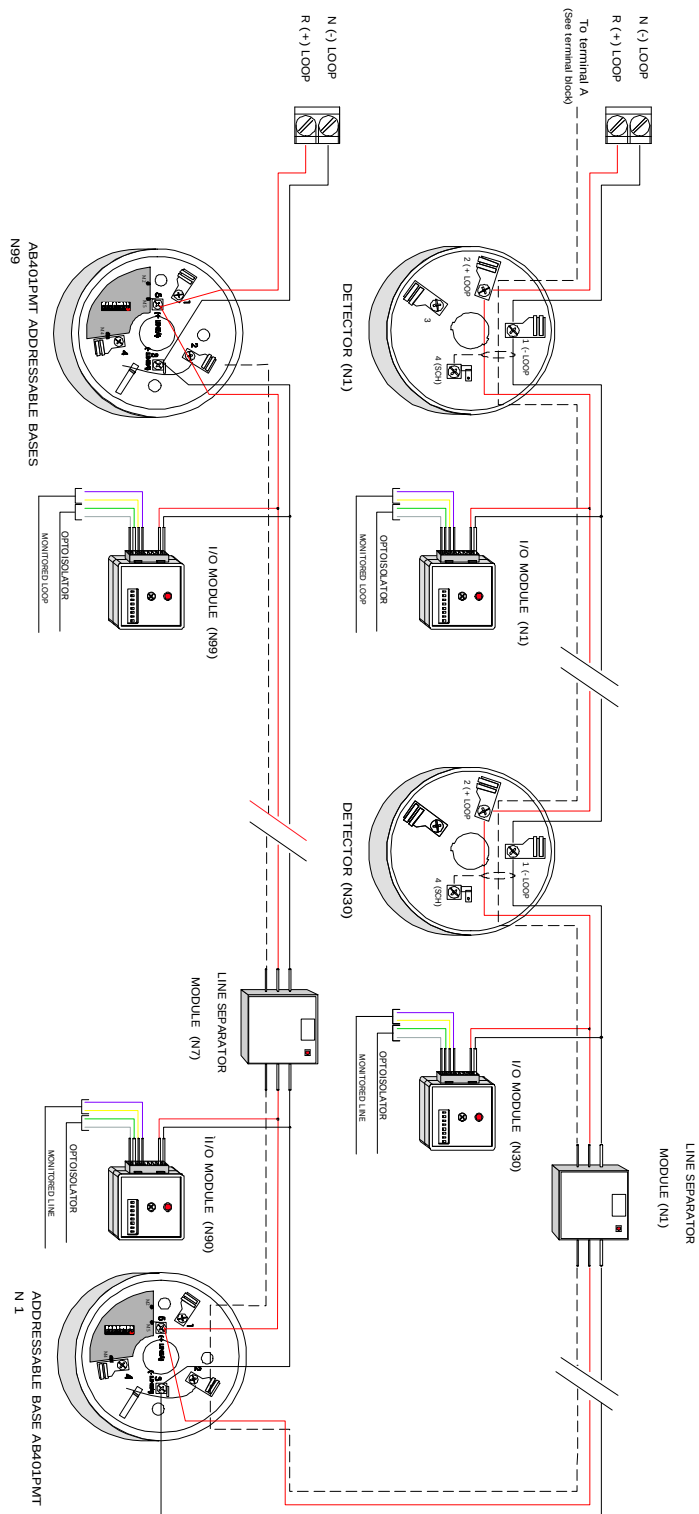
TECHNICAL SPECIFICATIONS OF THE DETECTION LOOP

Recommended cable (twisted, shielded).....	2 x 0.5mm ² (up to 250 mt)
	2 x 0.75mm ² (up to 750 mt)
	2 x 1mm ² (up to 1000 mt)
	2 x 1.5mm ² (up to 1500 mt)
	2 x 2mm ² (up to 2000 mt)
	2 x 2.5mm ² (up to 2500 mt)
Maximum loop length	2500 mt
Maximum number of detectors per loop.....	99
Maximum number of I/O modules for each PMT100 loop	99
Maximum number of B401PMT addressable bases	99
Maximum number of PMT102 zone separator modules per loop.....	7

The two methods of connecting the detection loops are dealt with in greater depth in the following paragraphs.

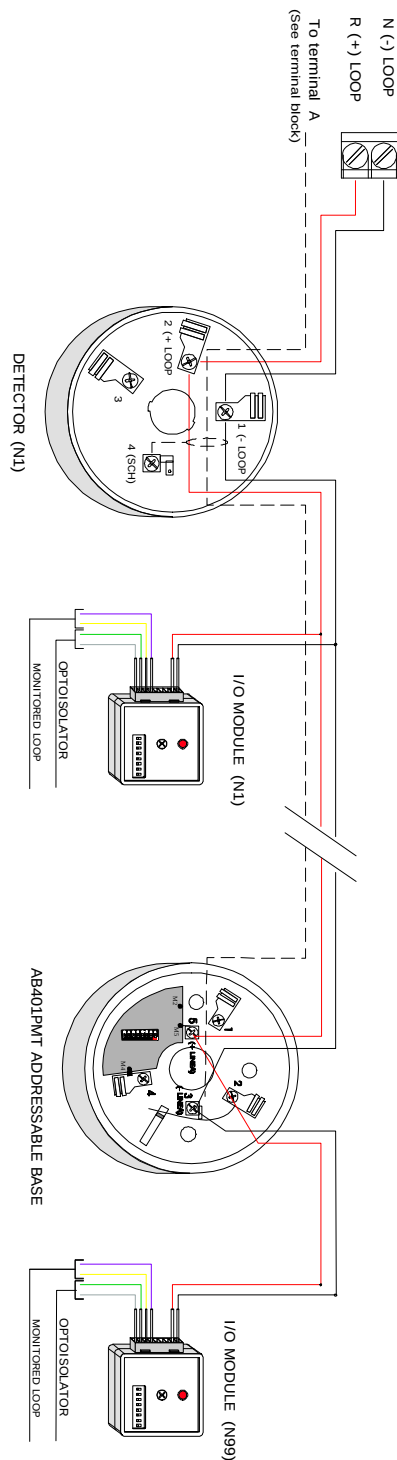
Closed loop configuration

On the next page is illustrated a closed loop configuration of a zone of detectors / I/O modules and AB401PMT addressable bases.



Open loop configuration

The following diagram shows an open loop configuration of a zone of detectors / I/O modules and addressable bases:



Alarm repeater connection (option)

The detection loop is divided into 99 software zones; an open collector repeater output is linked to each of the first 20 zones. This output is active each time a detector, which address is assigned to the related zone, detects an alarm status.

20 **Open Collector** outputs which can switch currents and voltage equal to **200 mA** and **30VDC** are available on the terminal block.

The following is the installation method of these outputs:

