

Addressable fire alarm panel

HEPHAIS 128



Installation
Commissioning
Operation

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DOCUMENT UPDATES

Index	Date	Description	Page(s)
C	10/02/09	Correspondence between Alpha RE and Alpha RNA----- Delete of reference to old range----- Gas module GDxxA, DMA05, DMA05R, Sound 05 diagram connection Relative weight table----- Connection diagram for new range update----- Connection diagram module MB128 update----- Remove reference to TéléHéphaïs 128 software key----- List of correspondence TéléHéphaïs and detector's reference----- Evacuation modes description-----	6, 8, 16, 69,70 12, 13,50, 52, 58,67,66 11 56 20,54 45 12 35
D	25/02/10	Synoptic----- Battery sensor ----- Addressable sounder ----- Default Access codes level 2 and 3 ----- Specific connectors RS485 for Alpha RE direct connection----- Monitoring principle of Sounder lines ----- Specific function explanation (dirty levels, printouts)----- Diagram connections -----	7 9, 22 11,12 20,25 20, 21 21, 46 40, 41,48 55
E	18/02/11	All references to FMC1 converter module Note on TéléHéphaïs 128E compatibility with OS. ETC05 connection update Laser 4, FM2IO, FM4I, FM4IO, MAY1T, RS485 & RS232 links, Alpha Rna throught FMC1 connections removal	All document P.44 P64 P56 to 72



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PRODUCT TECHNICAL CHARACTERISTICS

A. INTRODUCTION

1. GENERAL

HEPHAIS 128 is a control and indicating equipment (CIE) with zone and point address localization using microprocessor-based techniques.

This Fire Detection System (FDS) mainly consists on:

- « MB128 » module which manages detection zones (DZ),
- Automatic fire detectors,
- Manual call points (MCP) and
- Possible technical alarm interfaces.

HEPHAIS 128 is designed to meet the requirements of standards **EN54-2** and **EN54-4**.

HEPHAIS 128 is an **intelligent-addressable** panel and it can manage:

- **128** devices connected on 2 loops or on 4 open lines.
- **99** logic zones
- **99** activation group



HEPHAIS 128

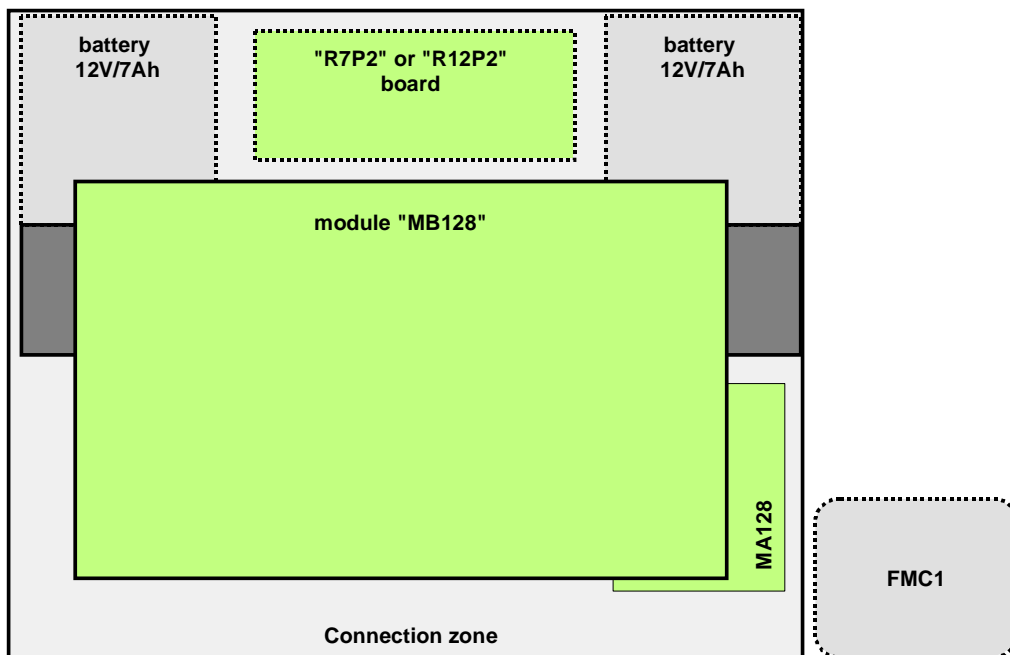
2. CONSTITUTION

2.1. GENERAL DESCRIPTION

This product consists on 2 main parts:

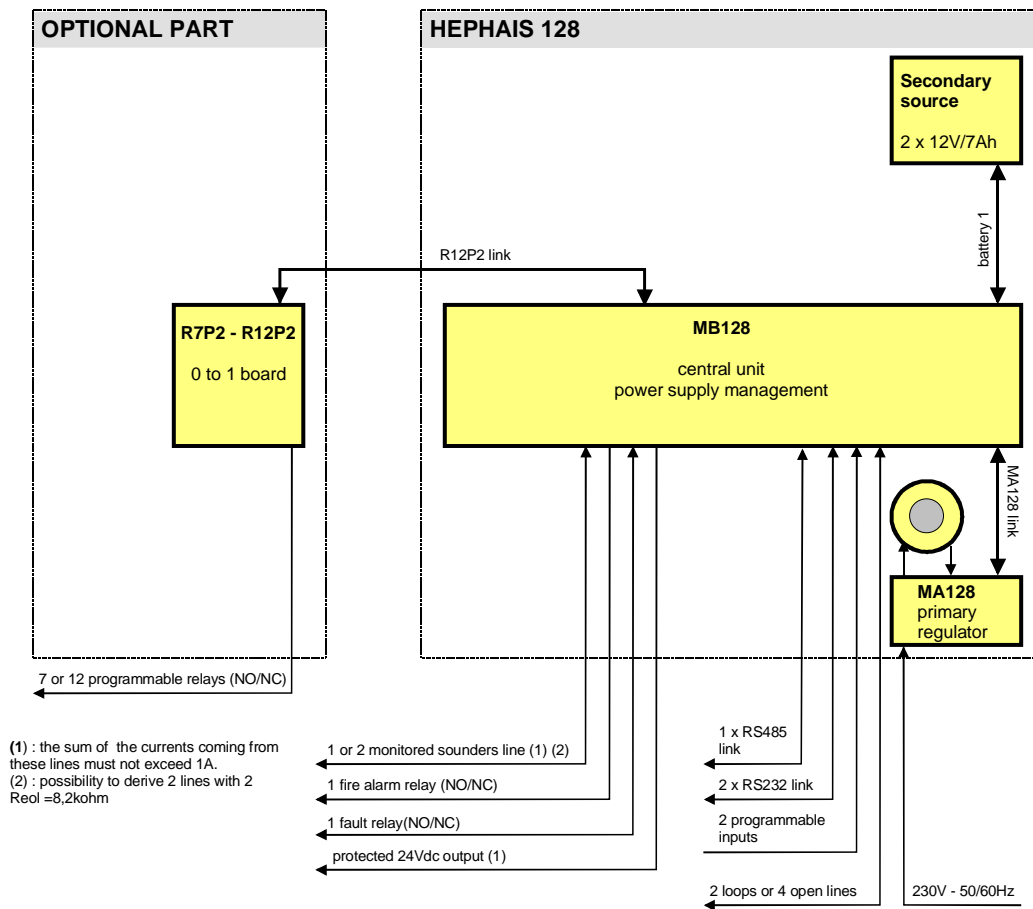
Sub-system	HEPHAIS 128	Comment
Plastic box	1	It contains the main power supply terminal blocks and the transformer
MA128 board	1	It is the power supply voltage regulator board
MB128 board	1	Front panel, general management and connection main board
12V/7Ah battery	2	Secondary source (not supplied)
R7P2 or R12P2 board	0 to 1	Optional boards (7 or 12 free programmable relays)
Kit ALPHA E2	0 to 1	For rack 19 inches version

2.2. INTERNAL ORGANISATION



Arrangement of the box (materials in dotted line are optional).

2.3. SYNOPTIC



2.4. EXTRA FUNCTIONS

2.4.1 Options relative to EN54-2

The options relative to EN54-2 are:

- **confirmation of fire alarm (pre alarm) according to §.7.12;**
- **fault of point according to §.8.3 ;**
- **total loss of power supply according to §.8.4 ;**
- **point disable according to §.9.5 ;**
- **test condition according to §.10 ;**
- **Sounders line management**

2.4.2. Others options

- On module **MB128** :
 - 1 x 24Vdc output,
 - 2 programmable inputs,
 - 2 x RS232 ports for printer, programming, FMC1 (ALPHA RNA or ALPHA RE management).
 - 1 x RS485 port for ALPHA RE direct connection and management.
- On the **R7P2** or **R12P2 boards**, respectively :
 - 7 or 12 programmable relays.

B. GENERAL SPECIFICATIONS

1. GENERAL

Operating characteristics	
Max capacity of management	<ul style="list-style-type: none"> • 99 zones, • 128 addresses of points distributed on 2 loops or (exclusive) 4 open lines (32 points max for each open line). It is not possible to mix loops with open lines, • 99 groups of activation (command of relays, remote indicators, etc), • 1 (or 2) sounders line.
Mechanical characteristics of the panel box	
Dimensions (mm)	Width: 370 - height: 300 - depth: 118.
Weight	3kg without batteries.
Material	Plastic ABS 5V
Colour	Grey – RAL 7035.
Index of protection	IP31.
Characteristics of electric source	
Main source	Mains 230V (-15%; +10%) / 50Hz or 60Hz. Max consumption : 1A 1A delay fuse (fuse protection on MA128 Board) Transformer: <ul style="list-style-type: none"> ▪ ratio: 230/30 Vac ▪ Power: 70VA ▪ Dimensions: D int. = 35mm, D ext. 0 85mm, h = 30mm
Secondary source	2 sealed lead batteries connected in series 12V / 7,2Ah. Autonomy: 24 hours in stand-by and 30 minutes in alarm. Final voltage of discharge: 22,5V ± 0,3V. Max consumption : 1,2A
Auxiliary source (panel disabled)	This function is carried out by the secondary source. Min autonomy of signalization (panel out of power): 1h
Real time clock autonomy	Back-up power supply: Super cap 5V, 1F Autonomy: > 7 days
Data site memorization	Data are stored in non volatile memory Eeprom.
Warning	There is a risk of damage in case of polarity inversion of batteries (2 x 12V/7Ah)
Characteristics of power supply	
Secondary source charger	End of charge voltage :28V ± 0,3V at +20°C with temperature compensation of 3mV cell/°C for a range of temperature of +50°C to -10°C. Output maximal current: 0,4A. Ripple voltage: < 0,25Vac. Charging characteristics are maintained on all the range of operating temperature of the batteries.
Main internal feeding	Output voltage: 28V ± 0,3V for a temperature of +50°C to -10°C. Max current available: 1.2A. Ripple voltage : < 0,25Vcac.
Environmental characteristics	
Operating	From -10°C to +50°C. Admissible Relative humidity: ≤ 93%rh without condensation.
Storage	From +10°C to +50°C. Admissible Relative humidity: ≤ 80%rh without condensation.
Other characteristics	
Components used	They comply with 3K5 class of CEI 721-3-3.
Charger and power supply	They comply with safety prescription of CEI950 normative.

2. DETERMINATION OF THE CAPACITY OF THE BATTERIES

2.1. SECONDARY SOURCE

This determination is carried out for the most unfavourable configuration in term of capacity of battery. The autonomy of this source is calculated for 24h in condition of standby and 30min in condition of fire alarm.

element	type	Max quantity	Consumption in A under 24V	
			1 unit	total
MB128 module (a)	base	1	0,110	0,110
24V output	base	1	0,100	0,100
1 Alpha RE	base	1	0,050	0,050
Sounder(s) line	base	1	0,000	0,000
R12P2	option	1	0,005	0,005
Max consumption in standby condition				0,265

(a): This consumption is limited to the module and to the material of detection in standby condition.

Element	Max quantity	Consumption in A under 24V	
		1 unit	total
MB128 module (a)	1	0,140	0,140
24V output	1	0,350	0,350
FMC1 module + 1 Alpha Rna/Alpha RE	1	0,050	0,050
Sounders line	1	0,600	0,600
programmable relays	2	0,010	0,020
relays of R12P2	12	0,010	0,120
Max consumption in alarm condition			1,280

(a): This consumption takes into account alarm condition, signalisations of alarm, points in alarm, alarm relay and auxiliary contact.

Element	time (h)	consumption (A)	capacity (Ah)
capacity used in standby (b)	24	0,255	6,36
Capacity used in alarm	0,5 (30min)	1,28	0,64
Min capacity presented by the source			7,00

Reserve: $(7-6,76)/7 = 0,034 \rightarrow 0\%$.

Important: About Battery charging:

The charging voltage of the batteries is compensated in temperature by a remote sensor placed on one of the batteries.

The temperature sensor connected to the power supply board (MA128) must be fixed on one of the battery with an adhesive ribbon.

3. PARTICULAR POINTS ABOUT FIRE DETECTION

3.1. MODES OF TREATMENT OF ALARM CONDITION

Of course alarm fire can be obtained in a traditional way: a point of detection in alarm state (Automatic detectors, MCP or input module) transmits its information to the Fire Detection Panel (FDS) and turns the installation into fire alarm state according to EN54-2.

To satisfy various particular applications (car park, industry...), HEPHAIS 128 is equipped with the following particular functionalities.

Warning: It is not allowed to apply the modes of treatment of alarm condition to the MCP zones.

3.1.1. Fire alarm confirmation (pre alarm)

The characteristics of this mode are as follows:

- Field of application: this principle of operation is applied to the automatic detection zones defined by downloading
- Principle of operation: a detector of an automatic detection zone transmits fire alarm information which is signalled as pre alarm; then, if a second detector of the same automatic detection zone transmits fire alarm information, the FDS indicates a condition of alarm fire.

Warning: It is not allowed to apply the mode of treatment of alarm condition described after (§.3.1.2) to the automatic detection zones declared in pre alarm (§.3.1.1).

3.1.2. Day/Night mode

The characteristics of this mode are as follows:

- Field of application: this principle of operation is activated by downloading and is applicable to all the automatic detection zones which were not configured in pre alarm (see above).
- Principle of operation: during a downloaded daily time period, a point from an automatic detection zone detects an alarm which starts a 30 seconds delay:
 - If during this delay this same point or a second point from the same zone detects an alarm, the FDS turns into alarm state at the end of 30s;
 - If no event comes to confirm the first detection during this delay, the treatment process is automatically re-initialized.

For each zone concerned by this treatment, it remains possible to force or block this automatic mode by pressing the Day/Night Key or by selection of the appropriate menu.



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3.2. ABOUT MIXING OF DETECTION POINTS

3.2.1. Main detection lines

General rules							
The maximum number of points managed by a main open line and its possible secondary lines should not exceed 32 . The maximum number of points managed by a main loop and its possible secondary lines should not exceed 128 ; moreover, a single anomaly on the detection loop should not provoke the loss of more than 32 points. This last parameter leads to the obligation of use short-circuit isolators (a).							
The mixing is possible as soon as the total weight represented by the whole of the points of a same line ($tW = (n \times W_{oa}) + \dots + (m \times W_{mcp}) + \dots$) is lower than the weight that can support the considered line and this in the respect of the system of equivalence allowing a respective weight (1 unit = 1u) to each type of point defined below.							
Admissible weight for each open line						180 u	
Admissible weight for the whole of the loops						720 u	
type	reference	designation	weight	type	reference	designation	weight
DI	OA05	Woa	5,6u	MCP	DMA05, DMA05R, BA95, BA95S	Wdm	5,6u
	MA05	Wma	5,6u			AT	ETC05 ET4C05
	TA05	Wta	5,6u	AC (b)	MAY1 MBA95		
	IR95	Wir	5,6u			AT	MAY1EX, MBA95ex
	DLFB-I	Wdlf	30u				
	LASER 4	Whart	22,5u (note 1)				
	DFA05	Wdfa	22,5u (note 1)				
	GDxxx (c) (d)	Wgd	11,2u				
	Sound05	Wsound05	See table below				
	AVSA05	Wavsa					
<p>(a): an isolator can be materialized by an ICC05 (option of the S05 base), DMA05, DMA05R or DM95. An isolator does not count for a point and does not take an address.</p> <p>(b): these kind of intermediate bodies take an address but do not count for a point, only the points which are connected on the secondary line count. The operation of these bodies requires a 24V external power supply.</p> <p>(c): Each GDxxx range gas detector has a consecutive double address.</p> <p>(d): When at least one GDxxx is used on the loop, the length of the loop is restricted to 1Km. Note: gas detectors need external power supply.</p>							
Example							
Considering a loop with 25 x OA05, 4 x TA05 and 14 x DLFB ; this represents a total of 43pts (1 isolator min) :							
<ul style="list-style-type: none"> • $Wt = 25W_{oa} + 4W_{ta} + 14W_{dlf} \Rightarrow Wt = 25(5,6u) + 4(5,6u) + 14(30u) \Rightarrow Wt = 140u + 22,4u + 420u \Rightarrow Wt = 580,4u$ • $Wt < 720u = \text{correct.}$ 							

SOUND05 Table:		
Condition :	Sound05 can be used only for loop (not for the line) and without AVSA05	
Max number of Sound05 high sound*	Max number of addresses**	Max. distance / Cable diameter or Rmax cable
6	128	1,5km / 1,5 ² or Rmax. cable = 34,5Ω Max. distance / Cable diameter
Max number of Sound05 medium sound*		
8		
Max number of Sound05 low sound*		
14		

*: It is possible to choose the sound level of the sounder base (Sound05) among 3 different levels (high, medium, low) by switch configuration.

**SOUND05 = 0 address;

The base sounder (Sound05) is installed on a 05 range detector base (interactive), this detector takes one address.

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AVSA05 Table:		
Condition :	AVSA05 can be used only for loop (not for the line) and without Sound05	
Max number of AVSA05	Max number of addresses	Max. distance / Cable diameter or Rmax cable
4	128	1,5km / 1,5 ² or Rmax. cable = 34,5Ω Max. distance / Cable diameter

3.2.2. Secondary lines built from intermediary bodies (equipped with external power supply)

Admissible weight on a secondary line of MAY1 and MBA95			30 u		
reference	designation	weight			
OC05	Wo	0,9u			
TSC05, TRC05	Wv	2u			
Admissible weight on a secondary line of MAY1EX and MBA95ex			30 u		
reference	designation	weight	reference	designation	weight
VOEX	Woex	5u	VIREX	Wirx	5u
VTEX	Wtex	3u			

3.2.2 SOFTWARE DEVICES CORRESPONDANCE.

Below is the list of the possible devices declared on the TéléHéphaïs 128 and their correspondence with the product catalogue references:

- Interactive optical
- Interactive heat
- Interactive multicriteria
- Manual Call Point
- Relay Manual Call Point
- Interactive beam
- Smoke Beam
- Conventional module
- Input module
- Input/Output module
- Flame
- Ionization
- Air Sampling
- Addressable sounder
- Interactive double optical multicriteria
- Air sampling Fire localization
- 4-20 input module
- Static heat
- Combined
- Addressable sounder

TéléHéphaïs reference list	Catalogue reference list
Interactive optical	OA05
Interactive heat	TA05
Interactive Multicriteria	MA05
Manual Call point	BA95, DM95, DMA05
Manual call point with relay	DMA05R
Interactive beam	DLFBe I
Smoke beam	DLF (beam detector range 95)
Conventional module	MAY1, MAY1ex, MBA95, MBA95ex
Input module	AT95, GDxxx
Input/Output module	ATC95,ETCO05, ET4CO05 (x4)
Flame	IR95
Ionization	ionic detector (for old range)
Air sampling	CMF (old aspiration range detector)
Interactive twin optical Multicriteria	-
Air sampling fire localization	TP2S
4-20 input module	-
Static heat	TA05 (static mode)
Combined	MA05 (logic OR combined technology)
Addressable Sounder	AVSA05

3.3 ASSOCIATIVITY, CABLE AND LENGTH

Associability sheet	panel	Associated materials
---------------------	-------	----------------------

reference ref. base	HEPHAIS 128	OA05	TA05	MA05	IR95	
				S05 with/without ICC05		S95
ref. board/module	MB128					
type of line	main					
End of line	-					
Max. quantity of elements (a) in condition of :						
Standby		32 or 128	32 or 128	32 or 128	32 or 128	
Alarm (b)		32 or 128	32 or 128	32 or 128	32 or 128	
Fault		32 or 128	-	32 or 128	-	
cable : nature		1 pair or 2 pairs 8/10 under screen				
Max. length (a)		800m (open line) or 1600m (loop) (c and d)				
equivalent impedance (a)		56Ω or 112Ω				
Additional devices						
type		IND05				

reference Ref. base	HEPHAIS 128	DLFB				
				-		
ref. board/module	MB128					
type of line	main					
End of line	-					
Max. quantity of elements (a) in condition of :						
Standby						6 or 24
Alarm (b)						6 or 24
Fault						6 or 24
cable : nature		1 pair or 2 pairs 8/10 under screen				
Max. length (a)		800m or 1600m (c)				
equivalent impedance (a)		56Ω or 112Ω				
Additional devices:						
type						

(a): The characteristic is given for an open line and for a loop.

(b): in alarm condition, at least 2 leds of points and 2 remote indicators are on.

(c): with min. 1 isolator each 32 points for a loop;

reference Ref. base	HEPHAIS 128	GDxxx				
				-		
ref. board/module	MB128					
type of line	main					
End of line	-					
Max. quantity of elements (a) in condition of :						
Standby						16 or 64
Alarm (b)						16 or 64
Fault						16 or 64
cable : nature		1 pair or 2 pairs 8/10 under screen				
Max. length (a)		800m or 1600m (c) and 400m (power supply)				
equivalent impedance (a)		56Ω or 112Ω and 28Ω (power supply)				
Additional devices:						
type						



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Associability sheet	panel	Associated materials
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reference	HEPHAIS 128	MAY1
ref. base		-
ref. board/module	MB128	
type of line	Main	
End of line	-	
Max. quantity of elements (a) in condition of :		
Standby		32 or 128 MAY1 max. with E.P.S (e) (24V-2A)
Alarm (b)		32 or 128 MAY1 max. with E.P.S (e) (24V-2A)
Fault		32 or 128 MAY1 max. with E.P.S (e) (24V-2A)
cable :		
nature		2 x 1 pair 8/10 under screen (line & power supply)
Max. length (a)		800m or 1600m (c) and 400m (power supply)
equivalent impedance (a)		56Ω or 112Ω (c) and 28Ω (power supply)
Additional devices		
type		IND05

reference	MAY1	OC05	TRC05	TSC05				
ref. base		S05						
ref. board/module	MAY1							
type of line	secondary							
End of line	3,9KΩ 1/4W ±5%							
Max. quantity of elements (d) in condition of :								
Standby		32	15	15				
Alarm (b)		2	2	2				
Fault		1	-	-				
cable :								
nature		1 pair or 2 pairs 8/10 under screen						
Max. length (a)		800m (secondary open line)						
equivalent impedance (a)		56Ω (secondary open line)						
Additional devices								
type		IND05						

(a): The characteristic is given for an open line and for a loop.

(b): in alarm condition, at least 2 leds of points and 2 remote indicators are on.

(c): with min.1 ISO95, 1 DMA05, 1 DMA05R, 1 DM95 or 1 ICC05 each 32 points for a loop; ISO95 is not considered a point.

(d): 32 points max distributed on each secondary line – MAY1 is a point.

(e) EPS: External power supply



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Associability sheet	panel	Associated materials
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reference	HEPHAIS 128	MAY1EX	
ref. base		-	
ref. board/module	MB128		
type of line	main		
End of line	-		
Max. quantity of elements in condition of :			
Standby		32 or 128 MAY1EX max. every E.P.S (24V-2A)	
Alarm (b)		32 or 128 MAY1EX max. every E.P.S (24V-2A)	
Fault		32 or 128 MAY1EX max. every E.P.S (24V-2A)	
cable :			
nature		2 x 1 pair 8/10 under screen (line and power supply)	
Max. length (a)		800m or 1600m (c) and 400m (power supply)	
equivalent impedance (a)		56Ω or 112Ω (c) and 28Ω (power supply)	
Additional devices			
type		barrier 9001/01-280-110-10	IND05

reference	MAY1EX	VOEX	VTEX	VIREX			
ref. base		S95EX					
ref. board/module	MAY1EX						
type of line	secondary						
End of line	3,9KΩ 1/4W ±5%						
Max. quantity (d) of elements in condition of :							
Standby		6	10	6			
Alarm		1	1	1			
Fault		1	1	1			
cable :							
nature		1 pair or 2 pairs 8/10 under screen					
Max. length		800m (secondary open line)					
equivalent impedance		56Ω (secondary open line)					
Additional devices							
type		-	-	-			

(a): The characteristic is given for an open line and for a loop.

(b): in alarm condition, at least 2 leds of points and 2 remote indicators are on.

(c): with min.1 ISO95, 1 DMA05, 1 DMA05R, 1 DM95 or 1 ICC05 each 32 points for a loop; ISO95 is not considered a point.

(d) : 32 points max distributed on each secondary line – MAY1EX is a point.

(e) EPS: External power supply



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Associability sheet	panel	Associated materials
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reference	HEPHAIS 128	TR-SDI	Alpha RE
ref. base			-
ref. board/module		MB128 or/and (R7P2 or R12P2)	RS485
type of line		relays	
End of line		-	-
Max. quantity of elements in condition of :			
Standby		1 for 2 relays	16
Alarm		1 for 2 relays	16
Fault		1 for 2 relays	16
cable :			
nature		3 pairs 8/10 under screen	1 pair 8/10 under screen for dialogue.
Max. length		800m	700m between FMC1 –Alpha RE and between 2 Alpha RE.
equivalent impedance		56Ω	49Ω
Additional devices			
type			

reference	HEPHAIS 128	AVS2000	TRI 10
ref. base			-
ref. board/module		MB128	
type of line		sounders	
End of line		3,9KΩ 1/4W ±5% if 1 line or 6,8KΩ 1/4W ±5% if 2 lines	
Max. quantity of elements in condition of :			
Standby		40	20
Alarm		40	20
Fault		-	-
cable :			
nature		2x1,5 ² or 2x2,5 ²	
Max. length		1000m	
equivalent impedance		23Ω	
Additional devices			
type			



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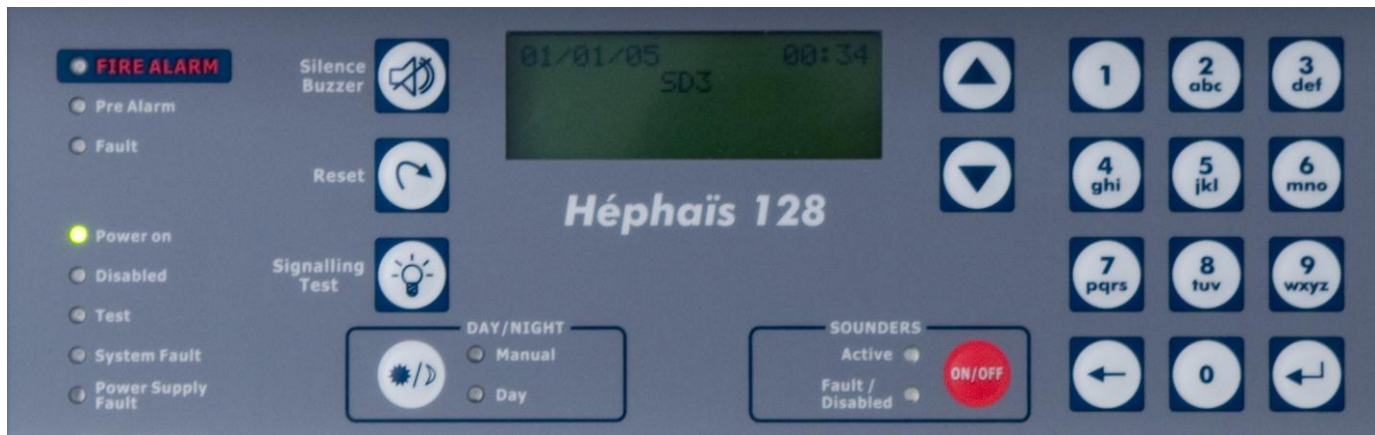
Associability sheet **panel** **Associated materials**

reference	HEPHAIS 128	SEV
ref. base		-
ref. board/module type of line End of line		MB128 Sound broadcasting 3,9K Ω 1/4W \pm 5% if 1line or 6,8K Ω 1/4W \pm 5% if 2 lines
Max. quantity of elements in condition of :		
Standby		1
Alarm		1
Fault		1
cable :		
nature		2x1,5 ² or 2x2,5 ²
Max. length		1000m
equivalent impedance		23 Ω
Additional devices type		

C. DETAILED CHARACTERISTICS OF SUB-SYSTEMS

1. MB128 MODULE

Operating Characteristics	
Function(s)	This module manages : <ul style="list-style-type: none"> Control and signalisation of FDS, Man-Machine interface and Site data storage.
Interconnection	Base interconnection concerns : <ul style="list-style-type: none"> Main feeding (MA128 link), Secondary source (Bat+ and Bat-) and In an optional way, it covers the link with : <ul style="list-style-type: none"> R7P2 or R12P2 board (J5).
Electric characteristics : - Power voltage - max consumption only on secondary source	22V to 28,5V. 0,54A under 24V in alarm condition (2 relays with this condition, 24V output with a max charge).



Module MB128

LED indications	
Power	Green led steady
Power supply fault (mains fault or/et battery fault)	Yellow led steady
Fire alarm	Red led steady
Pre alarm	Red led steady
Fault	Yellow led steady
Disabled	Yellow led steady
Test	Yellow led steady
System fault (system fault and panel disabled)	Yellow led steady or blinking
Day	Yellow led steady
Active	Red led steady or blinking
Disabled/fault	Red led steady or blinking
Events and status through menu	4 x 20 characters alphanumeric display

Acoustic indications	
Alarm or pre alarm	discontinuous sound (priority signal)
Fault	continuous sound
Panel disabled	continuous sound
Action on a key	brief monotone sound « beep »



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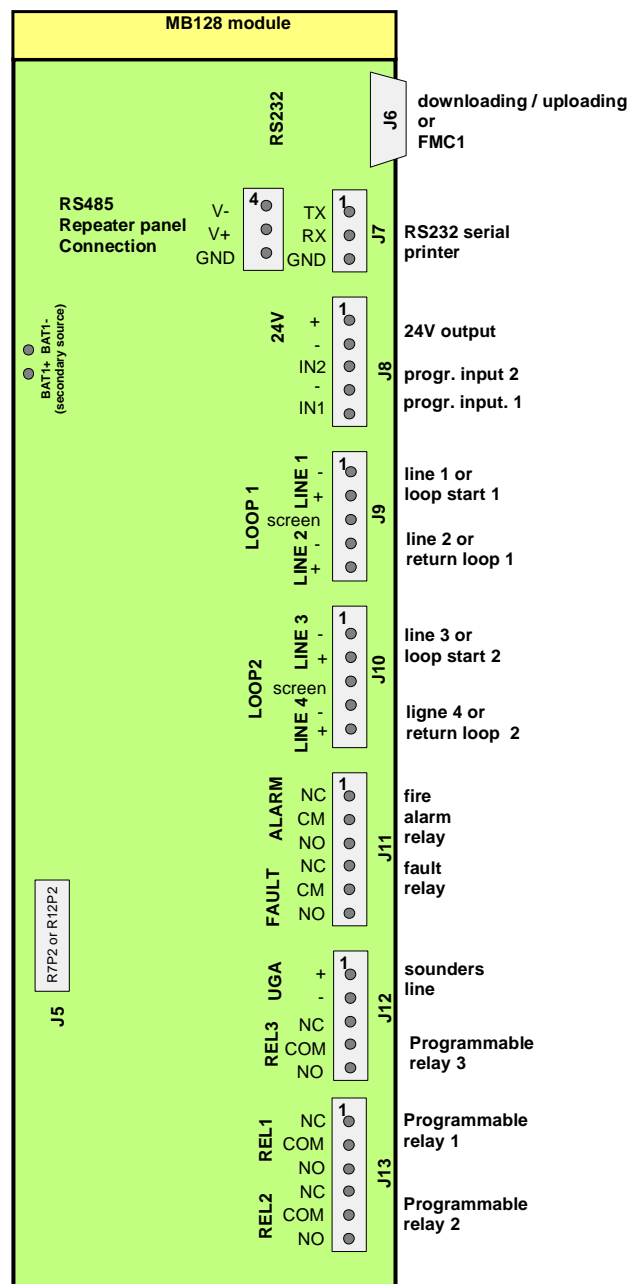
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Command bodies	
Level 1	Silence buzzer with dedicated key. Test leds with dedicated key. Menu navigation with 12 keys and 2 arrows keys alphanumeric keypad. This authorise also man-machine dialogue (question-answer).
Level 1 - Level 2	3 digits code dialled from keypad. (default code level 2: 123)
Level 2	Reset with dedicated key. Management functions linked with FDS (from menu) : reset, disable/enable zone/point, test on/off of zone/panel, etc.
Level - Level 3	3 digits code dialled from keypad. (default code level 3: 456)
Level 3	Start-up or maintenance functions linked to FDS (from menu) : disable/enable a range of point, etc.

External links	
Printer link or site data downloading link	Quantity : 2. Nature : serial link RS232 at 9600Bauds, without parity with 1 bit start, 8 bits, 1 bit stop. Function : allows the connection of serial printer to obtain on line the historic or (exclusively) or to permit the connection of a terminal for the downloading of site data. Terminal block : J7 or J6
RS485 Serial port	Quantity : 1. Nature : Serial link RS485 Function : Exclusively for the direct connection with Alpha RE repeater panel 9600 bit/s, no parity, 1 bit start, 8 bit datas, 1 bit stop. Terminal block : J7.4
« 24V » output	Quantity : 1. Nature : 24V monitored output (21V to 27V). Function : supplies power. Protection : fuse 400mA. Imax. available : 0,4A in alarm condition and 0,2A in others conditions. Terminal block : J8 Reminder about consumptions under 24V : <ul style="list-style-type: none">• 1 repetition panel Alpha Rna : 0,15A,• 1 MAY1 or MAY1EX module: 0,2A.
Programmable inputs « IN1 » and « IN2 »	Quantity : 2. Nature : Normally open or normally close line, not monitored. Function : indication of an event linked to fire safety (mains fault coming from external power supply, for example). Terminal block : J8 Particularity : <ul style="list-style-type: none">• Programming by downloading
Main detection lines « LOOP 1 – LINE 1 – LINE 2 » and « LOOP 2 – LINE 3 – LINE 4 »	Quantity : 2 main loops or (exclusively) 4 main open lines. Nature : fire detection circuit. Function : feeds the fire detection points and report their state (standby, fault or alarm). Imax. available : 0,2A for all the detection lines. Voltage delivered : 19,5V. Terminal block : J9 and J10
Fire alarm relay « ALARM »	Quantity : 1. Nature : NO/NC contact, potential free. Function : changes its state in alarm condition. Imax commutable : 1Adc. Umax. commutable : 30Vdc. Terminal block : J11
Fault relay « FAULT »	Quantity : 1. Nature : NO/NC contact, potential free. Function : changes its state in fault condition. Imax. commutable : 1Adc. Umax. commutable : 30Vdc. Terminal block : J11 Particularity : <ul style="list-style-type: none">• This relay has a positive security.

External links

Sounders line	<p>Quantity: 1</p> <p>Nature: monitored line, electronic protection, activation by inversion of polarity.</p> <p>Function: Sounders output line</p> <p>Imax current: =500mA (shared with 24V output)</p> <p>Available only in alarm condition</p> <p>Voltage:</p> <ul style="list-style-type: none"> Monitoring=-1 to -2Vdc Activation= 24Vdc nominal <p>End of line element: 56 Ω, 1/4W, 5% resistor and a diode 1N4007 (EFL-M)</p> <p>Possibility to have 2 lines in parallel with 1 end of line element (EFL-D) by line</p> <p>Terminal block: J12</p>
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MB128 connecting blocks



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2. MB128BOARD

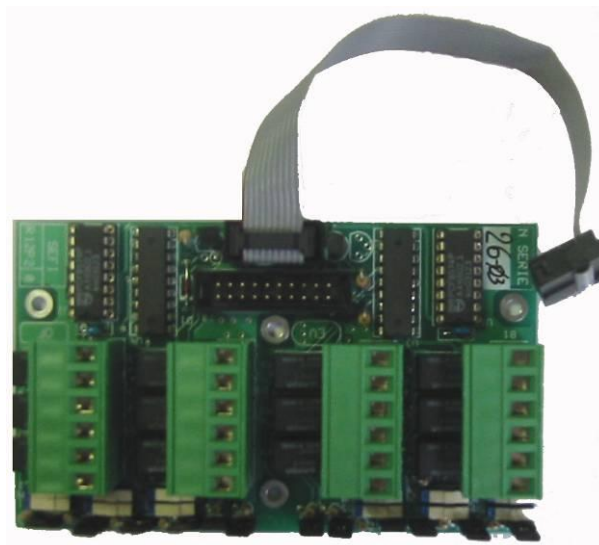
Operating Characteristics	
Function	Feeds the whole electric equipment and the battery charger.
Interconnection	The board is respectively connected to the main source, the transformer and the MB128 module.
External links	
Feeding part	Output voltage: 28V \pm 0,3V. Ripple voltage : < 0,25Vcac. Output max current: 1,2A.
Battery charger part	Output voltage: 28V \pm 0,3V to +20°C. Charge compensation : -3mV per cell above +20°C; +3mV per cell below +20°C Ripple voltage : < 0,25Vcac. Output max current: 0,4A.

4. R7P2 BOARD

Operating characteristics	
Function	7 relays (1 module maximum per panel).
Interconnection	R7P2 is to be connected through flat cable (24V, 5V and IC2 communication) to MB128 module (J5).
Electric Characteristics :	
- Operating voltage	22 to 28,5V and 5V±0,2V.
- max consumption on secondary source	5 mA in standby state and 10mA when commanded
External links	
« Relay <i>n</i> » outputs	<p>Quantity: 7 (1 per relay).</p> <p>Nature: NO or NC contact (with selector), potential free, resistive or not (with jumper).</p> <p>Function: allows, by downloading, repetition of points/zones/signalisation state.</p> <p>Imax commutable: 0,3A.</p> <p>Umax commutable: 50V.</p> <p>Terminal block: 2 terminals per relay.</p> <p>Particularity :</p> <ul style="list-style-type: none"> It is not possible to mix both R12P2 and R7P2.

5. R12P2 BOARD

Operating Characteristics	
Function	12 relays (1 module maximum per panel).
Interconnection	R12P2 is to be connected through flat cable (24V, 5V and IC2 communication) to MB128 module (J5).
Electric Characteristics :	
- operating voltage	22 to 28,5V and 5V±0,2V.
- max consumption on secondary source	5 mA in standby state and 10mA when commanded
External links	
« Relay <i>n</i> » outputs	<p>Quantity: 12 (1 per relay).</p> <p>Nature: NO or NC contact (with selector), potential free, resistive or not (with jumper).</p> <p>Function: allows, by downloading, repetition of points/zones/signalisation state.</p> <p>Imax commutable: 0,3A.</p> <p>Umax commutable: 50V.</p> <p>Terminal block: 2 terminals per relay.</p> <p>Particularity :</p> <p>It is not possible to mix both R12P2 and R7P2.</p>



R12P2 board



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OPERATING GUIDE



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A. GENERAL PRINCIPLES OF MANAGEMENT

1. ACCESS LEVELS

LEVEL 0

This level corresponds to **direct access**, in a general way only Manual Call Points located on the site are at this level.

LEVEL 1

This level corresponds to the **direct access of qualified or not safety staff**. In a general way, all acoustic and visual indications are accessible on this level.

function at this level

Stop buzzer

Signalling test

LEVEL 2 default code access: 123

This level corresponds to an **access to the control units by any initiated**, informed and authorized **operating person** who is aware of the consequences of his interventions.

The access to this level is obtained by the intermediary of a code set from the alphanumeric keypad of the front panel.

function at this level

Reset

Disable/enable detection point/zone

Test on/off of one or several detection zones

Day/Night mode management

Sounders deactivation/activation

LEVEL 3 default code access: 456

This level corresponds to an access to the bodies of the panel by any person in charge of start-up or maintenance.

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2. MANAGEMENT OF FIRE DETECTION SYSTEM

STAND BY CONDITION

It is the normal state of the installation, only the green led « POWER » is on.

ALARM CONDITION (see note)

This condition is characterized by red led indication and discontinuous acoustic signal.

Action	Means
Discharge the acoustic signal (taking into account) Apply the instructions	Key « Silence buzzer ». Refer to the directives relative to your site (call of the safety services, alert).
After the cause of alarm is eliminated, reset.	Press the key "Reset" then dial the level 2 access code (3 digits) followed by a pressure on the key « ↓ ». It is essential the detection elements (detectors or MCP) recover their standby state in order the panel to recover a standby state.

Note:

Certain detection zones can be exploited in a particular way to authorize an adequacy between the activity of the site and an optimized fire monitoring. The possible modes of management of a fire alarm are as follows:

- Pre alarm
- Day/night mode : inhibition/activation pre alarm

FAULT CONDITION

This condition is characterized by yellow led indications and continuous acoustic signal. Attention because this condition can correspond to a more or less consequent loss of your fire protection system.

Action	Means
Discharge the acoustic signal (taking into account) Go to the concerned zone	Key « Silence buzzer ». Identify without ambiguity the fault and note that it does not result from a voluntary action.
Warn the maintenance service	As soon as possible, either it will carry out the repairing, or it will contact the maintainer.
Apply the guarding instructions	Refer to the directives relative to your site (security agent ...).

DISABLE OR TEST CONDITION

Visual indications are yellow colour, no acoustic signal accompanies them.

These conditions result from a voluntary action generally rising from an intervention (present or to come) of the services of maintenance or checking on the installation.

3. RECOMMANDATIONS

The exploitation is largely facilitated by the use of an alphanumeric display and menus which require the various keys located on its front face.

However in order to ensure a "secured exploitation", the panel recovers its initial state as soon as time between two successive pressures of key is higher than 30 seconds.

According to this parameter and various functions offered by the panel, it is advised on the first hand to take note of the totality of this note and on the other hand to carry out regularly manipulations in order to acquire a good control of the exploitation of the panel in the event of real needs.

B. DETAILED MANAGEMENT

The following table indicates the possibilities of navigation by using the interface man - machine made up mainly of the keyboard and the alphanumeric display of front face. In order to facilitate the access to the various requests from anyone, it is advised to apprehend the menus proposed with 2 distinct views:

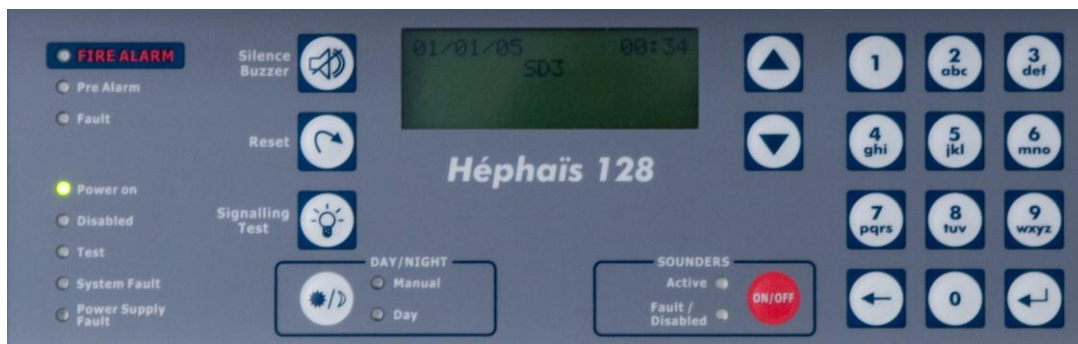
- Menus aiming the exploitation of the installation and
- Menus aiming its start up or/and its maintenance.

1. MENU

ROW 1	ROW 2	ROW 3
1) L1 Fire detection	1) L2 Reset	1) L2 enabling zone
	2) L1 Enabling	2) L2 enabling point
	3) L1 Disabling	1) L2 disabling zone
	4) L1 Start of test mode	2) L2 disabling point
	5) L1 End of test mode	1) L2 Test zone
	6) L1 Test signalisation	2) L2 Test panel
2) L1 Line of sounders	1) L2 Sounders ON	1) L2 End of test zone
	2) L3 Sounders OFF	2) L2 End of test panel
	3) L3 Enabling sounders	
	4) L2 Disabling sounders	
3) L1 Points status	1) L1 Points in alarm	
	2) L1 Points in pre alarm	
	3) L1 Points in fault	
	4) L1 Points disabled	
	5) L1 List of points	
4) L1 Zones status	1) L1 Zones in alarm	
	2) L1 Zones in pre alarm	
	3) L1 Zones in fault	
	4) L1 Zones disabled	
	6) L1 Zones in test	
	7) L1 List of zones	
	5) L1 Panel status	1) L1 General fault
2) L1 Configuration		
3) L1 Input status		
6) L1 Day/night function	1) L2 automatic	
	2) L2 Manual: day	
	3) L2 Manual: night	
7) L1 Site maintenance	1) L3 Clock setting	
	2) L3 Point addressing	
	3) L3 Erase historic	
	4) L3 Software versions	
8) L1 Data site	1) L1 Data modification	1) L3 General parameters
		2) L3 Points
		3) L3 Zones
		4) L3 sounders
		5) L3 Day/night function
	2) L1 Self learning	1) L3 Loop system
		2) L3 Open line system
9) L1 Print	1) L2 Points status	
	2) L2 Zones status	
	3) L2 Panel status	
	4) L2 Historic	

L1 : level 1 - L2 :under access level 2 - L3 : under access level 3

2. FUNCTIONS OF COMMANDS AND GENERAL SIGNALISATIONS



Front face of HEPHAIS 128

LEDs

- **Fire alarm:** at least one fire alarm is present on the site; the display specifies the origin
- **Pre alarm:** information of fire subjected to confirmation (go on zone).
- **Fault:** at least one fault is present; when the point originates in a detection point, the display specifies the origin
- **Power on:** The panel is fed by at least one of its 2 sources of power supply
- **Disabled:** at least one zone was voluntarily disabled, the display gives the detail
- **Test:** indicates a zone was put voluntarily out of service (maintenance, for example), the display gives the detail
- **System fault:** in fixed mode, indicates that the panel is not operational any more; in blinking mode, indicates a dialogue fault between sub-systems
- **Power supply fault:** at least one power supply source of the fire protection system is in fault
- **Manual (day/night) :** day/night function is in manual mode
- **Day (day/night):** the panel is working in day mode
- **Active (sounders):** sounders line is activated
- **Fault/disabled (sounders):** at least one fault is present on the sounders line or sounders line was voluntary disabled

Alphanumeric display 4 rows – 20 characters

Used to specify the source of information, we distinguish mainly:

- **Standby condition:** absence of event, the display indicates date, hour and details of the site;
- **Alarm condition:** are specified the condition, the row, the localization and the label. The 2 first lines are reserved for the first fire alarm; the 2 following lines are reserved for the last fire alarm.
- **Fault condition:** same format as alarm condition but alarm prevails on fault
- **Disable condition:** same format as alarm condition but alarm prevails on fault

Keys

- **Silence buzzer:** allows to stop at any moment the acoustic signal which is continuous for an alarm and discontinuous for a fault. When the led "System fault" is on, the acoustic signal is not dischargeable any more
- **Reset:** after the cause of fire alarm was eliminated, allows to initialize the process of return to standby state
- **Signalling test:** allows to check at any moment the good operation of the leds and the buzzer of the front panel



Sounder activation/deactivation:

If declared during commissioning and if enabled, it's possible to activate the sounders line pressing the "ON/OFF" pushbutton (access code level 2 is required).
LED "SOUNDERS ACTIVE" will be activated.

If this procedure is carried out during a delay linked to an automatic activation, then the delay will be expired and the sounders will be activated immediately.

Vice versa if the sounders are active, pressing the "ON/OFF" pushbutton is possible to silence the sounders (access code level 2 is required).
LED "SOUNDERS ACTIVE" will be turned on



Direct access to the Day / Night function:

During commissioning it is possible set the panel to change automatically its functionality during a user defined range of time (*day timing*).

When the panel is working in day mode, the LED "DAY" is light; vice versa the LED is off when it's working in night mode.

It's also possible avoid the panel to change automatically setting the day / night function in manual mode.
To do this, from main menu select "**6 Day/Night function**" and then "**2 Manual: Day**" to set the panel to work in day mode or "**3 Manual: Night**" to set the panel to work in night mode (access code level 2 is required).
When the day / night function is in manual mode, the LED "MANUAL" is light.
To return the day / night function in automatic mode, from main menu select "**6 Day/Night function**" and then "**1 Automatic**"

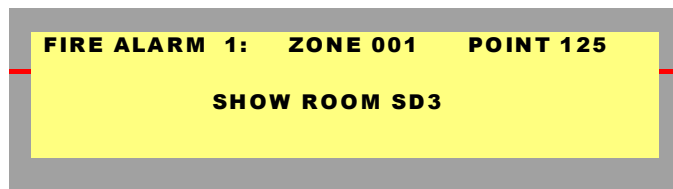
Keypad

- **Arrow keys:** allows navigation through exploitation menu.
- **12 alphanumeric keys:** numerical keys allow to set variables (access code, n° of zone, etc), the key « ↵ » authorizes the validation of this setting and the key « ← » cancels the last setting

EXAMPLE: RESET of an alarm

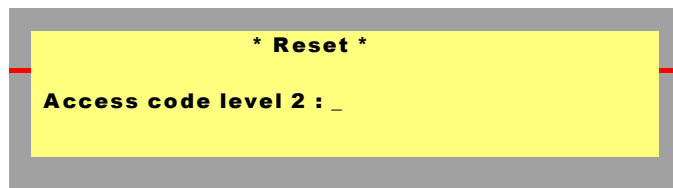
Initial state

Signalisation
- Green led « Power on » and red led « Fire alarm » on - Alarm screen on the display - Buzzer
Command
- « Silence buzzer » key



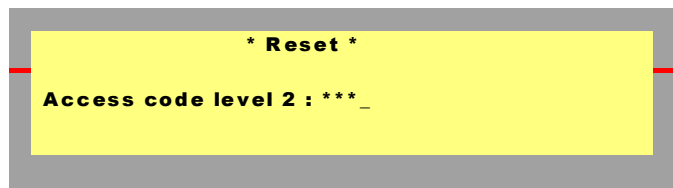
Initialisation of process of reset

Signalisation
- Green led « Power on » and red led « Fire alarm » on - Intermediate screen
Command
- « Reset »



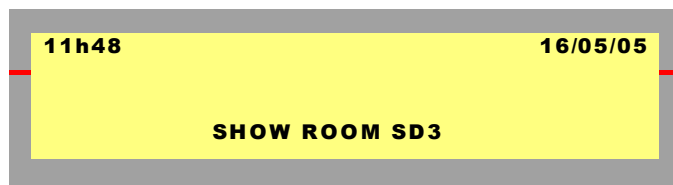
Setting of level 2 code

Signalisation
- Green led « Power on » and red led « Fire alarm » on - Intermediate screen
Command
- setting of code x x x followed by ↵



Reset

Signalisation
- Green led « Power on » on - Standby screen
Command



2.1 NORMAL STATUS

When the panel is in normal status, on the LCD display appear the data, the clock time and the site name, and it's ready to show any information coming from the devices connected.

2.2 ALARM CONDITION

If the fire detection system detects a fire alarm, the panel does the following automatically:

- Operates the internal buzzer (intermittent)
- Light the red "FIRE ALARM" LED
- Displays and prints information about the event
- Trigger the alarm relay
- Operates the sounders line and the point and relays outputs linked to the event according the activation groups declared during the panel commissioning
- If the sounders line will be activated, the red LED "SOUNDERS ACTIVE" will be lit.

Alarm information on LCD display:

When more than an alarm is present, on the LCD are displayed following information:

1st row: Indication about first zone alarm with the address of its 1st detector in alarm.

2nd row: Label of this detector.

3rd row: Indication about the last zone alarm with address of its last detector in alarm and the total number of zones in alarm

4th row: Label of this detector.

Pressing pushbutton "↓" or "↑" is possible scroll (on the first two row) all zones in alarm.

To have detailed information about the zones in alarm, from main menu, select "4 Zones status" and then "1 Zones in alarm". Press pushbuttons "↓" or "↑" to go to the next or to the previous zone in alarm.

To have detailed information about the points in alarm, from main menu, select "3 Points status" and then "1 Points in alarm". Press pushbuttons "↓" or "↑" to go to the next or to the previous point in alarm.

Recommended operator actions

1. Press "silence buzzer" pushbutton
2. Follow prescribed instructions for evacuation of premises, notification of Fire Brigade and investigation of source of Fire.
3. Once evacuation is achieved or at the request of an authorized person, the sounders may be silenced by pressing the "ON/OFF" sounders pushbutton (level 2 access code is necessary).
4. When the cause of alarm has been removed the system may be returned to normal status by pressing "RESET" pushbutton (level 2 access code is necessary).

2.3 PRE ALARM CONDITION

The panel goes in the Prealarm condition when it receives alarm information from a detector declared in a zone set in pre-alarm mode (the functional mode of each zone is set during commissioning).

If a second detector, in the same zone, sends to the panel alarm information, then the panel goes in alarm status.

When in Prealarm condition the panel does the following automatically

- Operates the internal buzzer (intermittent)
- Light the red "PRE ALARM" LED
- Displays and prints information about the event
- Operates the point and relays outputs linked to the event according the activation groups declared during the panel commissioning

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Prealarm information on LCD

When more than an alarm is present, on the LCD are displayed following information:

1st row: Indication about first zone pre alarm with the address of the detector in alarm.

2nd row: Label of this detector.

3rd row: Indication about the last zone prealarm with address of the detector in alarm and the total number of zones in prealarm

4th row: Label of this detector.

Pressing pushbutton “↓” o “↑” is possible scroll (on the first two row) all zones in prealarm.

To have detailed information about the zones in prealarm, from main menu, select “4 Zones status” and then “2 Zones in prealarm”. Press pushbuttons “↓” or “↑” to go to the next or previous zone in prealarm.

To have detailed information about the points in alarm, from main menu, select “3 Points status” and then “2 Points in prealarm”. Press pushbuttons “↓” or “↑” to go to the next or previous point in prealarm.

Recommended operator actions

1. Press “silence buzzer” pushbutton
2. Follow prescribed instructions for pre alarm condition
3. When the cause of pre alarm has been removed the system may be returned to normal status by pressing “RESET” pushbutton (level 2 access code is necessary).

2.4 FAULT CONDITION

If the system identifies a fault, the panel does the following automatically:

- Operates the internal buzzer
- Light the yellow “FAULT” LED and eventually a specific yellow fault LED
- Trigger the fault relay
- Displays and prints information about the event
- Operates the point and relays outputs linked to the event according the activation groups declared during the panel commissioning

GENERAL FAULT

Possible causes of a general fault are following:

- Addressable point (fault information, bad response, no response...)
- Fire detection line/loop fault
- Line of sounders (if used)
- Power supplies (main or batteries)
- Communication with optional relays board
- System fault
- 24Vdc output overload

Pressing pushbutton “↓” or “↑” is possible scroll (on the first two rows) all zones in fault.

To have detailed information about the zones in fault, from main menu, select “4 Zones status” and then “3 Zones in fault”. Press pushbuttons “↓” or “↑” to go to the next or previous zone in fault.

To have detailed information about the points in fault, from main menu, select “3 Points status” and then “3 Points in fault”. Press pushbuttons “↓” or “↑” to go to the next or previous point in fault.

From main menu, it’s possible to have information about other causes of fault selecting “5 Panel status” and then “1 General faults”.



SYSTEM FAULT

With this fault signalisation the panel informs that the functionality of the system is not guaranteed. There are two type of system fault indication:

1. The yellow "SYSTEM FAULT" LED is lighting.
Any other information on the panel is not to take in account.
2. The yellow "SYSTEM FAULT" LED is blinking.
It's possible to have more information about the cause of fault selecting "5 Panel status" and then "1 General faults".

2.5 DISABLEMENT AND ENABLEMENT

It is possible to disable an individual device or a complete zone.

If a device is disabled, then although its condition continues to be monitored a detection of an alarm or a fault condition doesn't lead action being taken.

If a point is disabled, it does not active its output even if this is specified in the activation groups declared during the panel commissioning

Disablement of a point in alarm causes the reset of the panel.

When a device is disabled, the panel does the following automatically:

- Light the yellow "DISABLED" LED
- Prints information about the event
- Display on LCD the total number of point and the total number of zones disabled (only in absence of any current alarm or fault information).

To have information about the zones disabled, from main menu, select "4 Zones status" and then "4 Zones disabled". Press pushbuttons "↓" or "↑" to go to the next or previous zone disabled. The same thing for the point disabled selecting "3 Points status" and then "4 Points disabled"

ZONE DISABLING

From main menu select "1 Fire detection", then "3 disabling" and then "1 disabling zone". Insert level 2 access code and then the number of the zone to disable.

POINT DISABLING

From main menu select "1 Fire detection", then "3 Disabling" and then "2 Disabling point". Insert level 2 access code and then the address of the point to disable.

ZONE ENABLING

From main menu select "1 Fire detection", then "2 Enabling" and then "1 Enabling zone". Insert level 2 access code and then the number of the zone to enable.

POINT ENABLING

From main menu select "1 Fire detection", then "2 Enabling" and then "2 Enabling point". Insert level 2 access code and then the address of the point to enable.

2.6 TEST MODE

Test mode can be applied to one zone, more zones or to all fire detection system. Test mode has influence only on the alarm condition; all other condition / information are not affected because not intended like event to test.

Outputs activation linked to alarm events of zones in test mode is not executed.



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All outputs can be activated by alarm of zone not in test mode.
Alarm event of a zone in test mode is not stored in the historic.
All information about the events are printed.

When at least a zone is set in test mode, the panel does the following automatically:

- Light the yellow "TEST" LED
- Prints information about the event
- Display on LCD the total number of zones in test mode (only in absence of any current alarm, fault or disabling information).

To have information about the zones in test mode, from main menu, select "4 Zones status" and then "5 Zones in test mode". Press pushbuttons "↓" or "↑" to go to the next or previous zone in test mode.

On the LCD, the alarms of zone in test mode are displayed in the same way of real alarm.
So use the same procedure to have detailed information about the alarm of zones/points in test mode.

SET A ZONE IN TEST MODE

From main menu select "1 Fire detection", then "4 Start of test mode" and then "1 Test zone". Insert level 2 access code and then the number of the zone to test.

SET THE PANEL IN TEST MODE

From main menu select "1 Fire detection", then "4 Start of test mode" and then "2 Test Panel". (Level 2 access code is required).

END OF TEST ZONE

From main menu select "1 Fire detection", then "5 End of test mode" and then "1 End of test zone". Insert level 2 access code and then the number of the zone to test.

END OF TEST PANEL

From main menu select "1 Fire detection", then "5 End of test mode" and then "2 End of test Panel". (Level 2 access code is required).

2.7 LINE OF SOUNDERS

A. MANUAL MANAGING

If declared during commissioning and if enabled, it's possible to active the sounders line pressing the "ON/OFF" pushbutton (access code level 2 is required).
LED "SOUNDERS ACTIVE" will be activated.

If this procedure is carried out during a delay linked to an automatic activation, then the delay will be override and the sounders will be activated immediately.

Vice versa if the sounders are active, pressing the "ON/OFF" pushbutton is possible to silence the sounders (access code level 2 is required).
LED "SOUNDERS ACTIVE" will be turned off

B. AUTOMATIC MANAGING

If declared during commissioning and if enabled, the line of sounders is automatically activated following the functional mode declared during the commissioning.

Option C evacuation mode

Evacuation according to EN54-2

During a fire alarm, an automatic cycle is activated and signalled by the quick blinking red led "sounders" (programmable delay from 0 to 10mn)

During the delay T the sounders can be immediately activated at level 1.

- By pressing the key ON/OFF of the sounder button of the front panel.

At the end of the delay time, the sounders are activated. The red led "sounders" is steady.

It is possible to stop or restart the sounders on access code level 2, by pressing on the associated "ON/OFF" key of the front panel.

It is not possible to activate through the evacuation menu or the front panel button "sounders" the sounder lines from the panel in standby status

The evacuation process can be stopped through the evacuation menu at access code level 2 or with a reset.

Direct evacuation mode

EN54-2 base with the possibility of activation from the standby status of the panel (not conform to EN54-2)

It is possible to triggers the sounders line from the front panel evacuation button "ON/OFF".

In this case, the front panel button "sounders line ON/OFF" can activate an option C evacuation with deviation.

Operating is similar to option C except that it is possible to activate the sounder lines from the panel in standby status; through the Sounder "ON/OFF" buttons or the evacuation menus with access code level 1 or 2 according to programmation.

Hotel alarm mode

Evacuation for hotels using pre alarm mode.

In this case the button "sounder line ON/OFF" can trigger evacuations of type Hotel.

On a pre alarm signalisation, the option C evacuation cycle starts. The led "sounders" ON/OFF" is active and blinking fast. After a silence buzzer at level 1 during the delay T1 the process is stopped. The pre-alarm led stays active and and the "sounders ON/OFF" led switches OFF.

In standby status or if the process has been stopped during the delay, it is possible to immediately activate the sounder lines by pressing the associated "ON/OFF" button at access code level 2.

If during the delay T1 a second pre alarm of the same zone a second delay T2 starts. At the end of which the sounders are activated.

In case of fire alarm (with or without pre alarm) the evacuation process is started with delay T2.

A pre alarm of a second zone has no effect on the evacuation cycle started.

If a started cycle is stopped manually then a new pre alarm or fire alarm of any zone restarts one of the cycles above described.

C. ENABLE/DISABLE

If declared during commissioning, it is possible to disable the sounders line.
In this situation the line is not monitored and is not possible active it.
When in this status, the panel does the following automatically:

- Light the yellow "DISABLED" LED
- Light the yellow "SOUNDERS DISABLED" LED
- Prints information about the event

It is not possible to disable the sounders line when it is active.

To disable the sounders line, from main menu select "2 Line of sounders" and then "4 Disabling sounders" (access code level 2 is required).

To enable the sounders line, from main menu select "2 Sounders line" and then "3 Enabling sounders" (access code level 2 is required).

2.8 DAY/NIGHT FUNCTION

During commissioning it is possible set the panel to change automatically its functionality during an user defined range of time (day timing).

When the panel is working in day mode, the LED "DAY" is light; vice versa the LED is off when it's working in night mode.

It's also possible avoid the panel to change automatically setting the day / night function in manual mode.

To do this, from main menu select "6 Day/Night function" and then "2 Manual: Day" to set the panel to work in day mode or "3 Manual: Night" to set the panel to work in night mode (access code level 2 is required).

When the day / night function is in manual mode, the LED "MANUAL" is light.

To return the day / night function in automatic mode, from main menu select "6 Day/Night function" and then "1 Automatic"

NIGHT MODE

When the panel is in night mode, the functionalities of the panel are those described in the previous paragraphs.

DAY MODE

When the panel is in day mode, the functionalities of the panel are those described in the previous paragraphs except for the following:

When the panel receives alarm information from a detector, start a prefixed delay and an alarm condition is performed only if at the end of this delay the detector is still in alarm or if during this delay another point goes in alarm

Otherwise the panel shows on the display "false alarm" information.

It is possible investigate about the detectors that give inadequate alarm information selecting, from main menu, "3 Points status" and then "5 List of points".

Now, pressing pushbuttons "↓" or "↑", is possible scroll all points' information.

All points marked with an exclamation mark were been causes of "false alarm".

To erase this information it is necessary perform a panel reset.

2.9 FREE PROGRAMMABLE INPUTS

If declared during commissioning, when a free programmable input is active, the panel does the following automatically:

- Operates the function linked to the input active declared during the panel commissioning
- Prints information about the event
- Display on LCD an input active information message

To have information about the status of the free programmable inputs, from main menu, select "5 Panel status" and then "3 Carry in(s) status".

Press pushbuttons "↓" or "↑" to show the other carry input.

3. DETECTOR'S SENSITIVITY

The Héphaïs 128 intelligent panel has the ability to change the sensitivity of each detector according to their type (smoke, heat, multicriteria...).

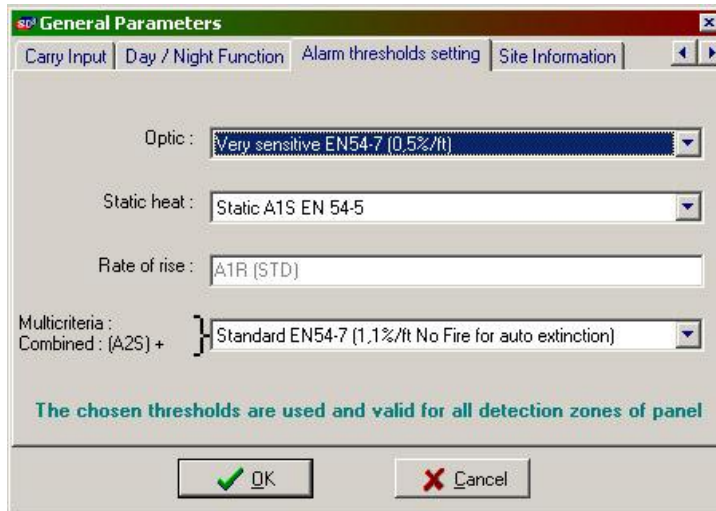
These settings of sensitivity can **be changed only during the database edition** of the panel under the TELEHEPHAIS128 software.

It is important to note that once a sensibility is set for one type of detector, it applies at all times to all detectors of the specified type connected on the panel.

CAUTION: If the setting of sensitivity is changed from the default value, it is necessary make sure that this sensitivity is in accordance to the fire detection.

From the Telehephais128 software,

Under the *General parameters* window, go to sub-menu *Alarm thresholds settings*. The following window will appear:



Each type of detector has particular specifications of use and can be set to a particular degree of sensitivity.

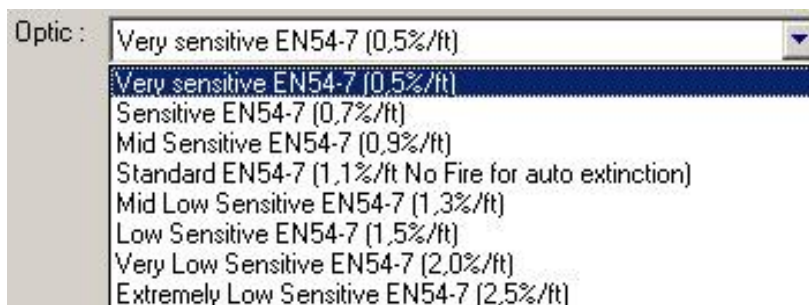
These possibilities are explained below according to each type of detector:

3.1 INTELLIGENT OPTICAL SMOKE DETECTOR OA05. (OPTIC)

Analyzes the atmosphere by reflection of a light on the particles of smoke according to TYNDALL effect. It detects especially the cold and visible smoke particles (0,3µm to 2µm) produced in the early stages of a fire. By default, The threshold of response of alarm is regulated to obtain the value $m=0,2\text{db/m}\pm 0,03$ (=1,1%/ft) according to standard EN54-7.

The detector has 8 levels of sensitivity available while programming the fire detection panel (from 0,1dB/m to 0,35 dB/m (from 0,5%/ft to 2,5%/ft).

The 8 sensitivity are listed below:



1: Table of sensitivity as it appear on *alarm threshold settings menu*

The degree of sensitivity is evaluated in % of smoke particles present in the air (inside the smoke detector detection chamber).

For each degree of sensitivity, the percentage of smoke is the minimum threshold value for the detector to generate an alarm.

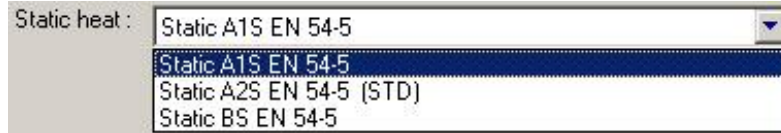
The percentage is the minimum threshold value to generate an alarm by the detector.

3.2 INTELLIGENT HEAT DETECTOR TA05. (STATIC HEAT + RATE OF RISE)

TA05 is able to detect elevation of temperature corresponding to A1S, A2S and BS class for static temperature detection according to EN54-5 standard.

The various levels of temperature can be set while programming according to the value given below:

- Static temperature detector:
 - TA05-A1S: static $T^{\circ}=62^{\circ}\text{C}+5/-3^{\circ}\text{C}$.
 - TA05-A2S: static $T^{\circ}=68^{\circ}\text{C}+5/-3^{\circ}\text{C}$.
 - TA05-BS: static $T^{\circ}=75^{\circ}\text{C}+5/-3^{\circ}\text{C}$.



2: Table of sensitivity as it appear on alarm threshold settings menu

- The Static + Rate of rise temperature sensitivity is fixed to the standard value:
A1R: static $T^{\circ}=62^{\circ}\text{C}+5/-3^{\circ}\text{C}$. and $\Delta T^{\circ}>3^{\circ}\text{C}/\text{min}$



3: Table of sensitivity as it appear on alarm threshold settings menu

Temperature heat detectors are designed to be installed under flat ceiling with heights ranging between 2, 5 m and 6 m (3,5m for A1S, A2S and BS class) and this, in healthy and more or less ventilated buildings.

3.3 TEMPERATURE HEAT/OPTICAL SMOKE DETECTOR MA05. (Multicriteria : Combined : (A2S))

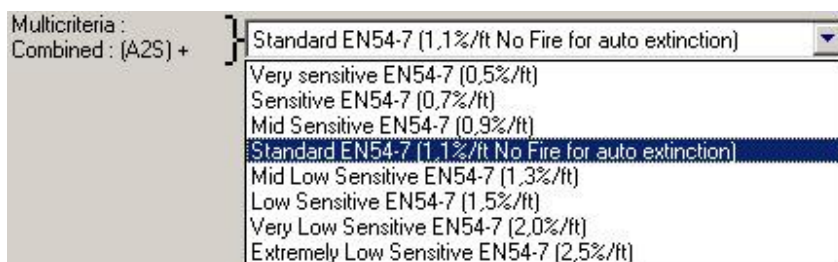
The MA05 detector combines both type of detection technology: optical and heat.

The type of detection, disregarding the degree of sensitivity can be of two different type:

- Multicriteria: Both the technologies are active at the same time and are independent. If any of the detection type detect an alarm condition, the detector will then produce a fire alarm information.
The threshold of alarm of the heat element is fixed 68°C (A2S EN54-5).
- Combined: In this mode of operation, the MA05 works as a smoke detector but has its degree of detection made sensitive the heat element. The nature of the particles scanned is different according to the temperature of the room.

The smoke analysis technology is the same than on the OA05 and works according to TYNDALL effect. It detects especially the cold and visible smoke particles (0, $3\mu\text{m}$ to $2\mu\text{m}$) produced in the early stages of a fire. The threshold of response of alarm is regulated to obtain the value $m=0$, $2\text{db}/\text{m}\pm 0$, 03 according to standard EN54-7.

8 levels of sensitivity for the optical detection technology are available while programming the fire detection panel (from 0,1dB/m to 0, 35 dB/m) as listed below.



4: Table of sensitivity as it appear on alarm threshold settings menu

It is important to note that independently of the mode the detector is used (combined or multicriteria), only the sensitivity of the optical detection technology can be changed on the system.

The static heat detection technology is fixed to A2S: static $T^{\circ}=68^{\circ}\text{C}+5/-3^{\circ}\text{C}$.standard and can not be changed.

3.4 DIRTY LEVEL STATUS

To know the dirty level status of the detectors, it is needed a serial printer or computer connected to the panel using the serial communication RS232 to the printer or downloading connector of the panel.

From the menu "9 – Print" then "1 – Point Status" and input the access code level 2.

If at least one detector is in dirty level status one of the following status will be displayed:

- Level 3 (Fault)
- Level 2 (High Dirty status)
- Level 1 (Low dirty status)

4. PRINTOUTS

4.1 PRINTOUTS MENUS

The menu « 9 – print » allows to print on a printer or to display on a HyperTerminal window the following information's:

- Point status
- Zone status
- Panel status
- Memory events

The printouts requires to input the access code level 2

4-2 POINT STATUS

Allow to display or print the list of points with the details for each point of its address and its status.

The list of point status is followed by the date and hour of the start and end of the printout.

The statuses are as follows:

- Alarm test
- Fault no response
- Fault bad response
- Fault integrity fault
- Fault dirty
- Fault
- Fault incorrect type
- Disabled
- Standby

And for the detectors of type optical, Multicriteria and optical beam the statuses are as follows:

- high dirty status
- low dirty status

4-3 ZONE STATUS

Allow to display or print the list of the zones, with, for each zone, its status.

The list status of zones is followed by the date and hour of the start and end of printing.

The list of zone status is as follows:

- Alarm
- Alarm test
- Pre alarm
- Pre alarm test
- Fault
- Disable
- Test mode
- Standby

4-4 PANEL STATUS

Allows to display or print the panel status
The list of panel status is followed by the date and hour of printing.
The status are as follows:

- Error e2p Data Base
- Err/CPU slave
- Clock Error
- Relay board error
- Short Circuit line 1
- Short Circuit line 2
- Short Circuit line 3
- Short Circuit line 4
- Short Circuit loop 1
- Short Circuit loop 2
- Open loop 1
- Open loop 2
- Power supply fault
- Low battery fault
- Battery fault (not present)
- Fuse 24V fault
- Rep. panel line fault
- Input 1 active
- Input 2 active
- UGA CPU fault

4-5 MEMORY EVENTS

Allows to display or print the memory event
The list of the memory events of the panel is followed by the date and hour of the start and the end of the printing.

The memory event is made of:

- Operation requiring access code level 2 or 3
- Start of faults and end of faults
- Alarm, Pre-alarm, faults

5 REPEATER PANEL ALPHA RNA & ALPHA RE.

There are two possibilities to connect the repeater panel (Alpha RNA or Alpha RE).

- through the printer port using the interface FMC1
- Thought dedicated connection for repeater panel (J7) of the main board.

The configuration of the line can be done through the menu:

8 – Data Site
 1 – Data Modification
 1 – General Parameters
 6 – Repeater panel

The choices are as follows:

- None: no panel is connected
- CO1: communication port 1, printer port (J7.1 or DB9)
- CO2: communication port 2, Repeater panel connection (J7.4)

Note: the 2 links can not be used at the same time. In case of use of the repeater panel connection, the printer port can be used for printouts or downloading data site and language files.

C. GENERAL INSTRUCTIONS OF MAINTENANCE

1. SERVICING

It only consists, if necessary, of an interior de-dusting and an external cleaning. Cleaning is carried out using a wet cloth.

2. CHECK OF THE INSTALLATION

The checks described hereafter must be carried out **at least once a year and by a qualified and trained staff** controlling the installations of fire protection.

These checks relate mainly to:

- General checks;
- Functionality of the installation.

2.1. NECESSARY SPECIFIC MEANS

Material means
One numeric multimeter ; One chronometer ; One generator adapted to each type of detector ; A pole of test or any other means suitable in comparison with the implantation of the detection device.
Documentation
This manual ; The start-up sheet to be filled up ; The installation drawings : position of the various devices (detectors, ...); A copy of the maintenance sheet that will be filled up while checks.

2.2. GENERAL CHECKS

From the standby state, proceed sequentially like follow:

Check	Action	Specific consequence
Test signalisations	Press briefly the key on the front face.	All the leds are on + discontinuous buzzer.
Secondary source	Cut mains 230V.	Leds « Power supply fault » and « Fault » on + continuous buzzer.
Main source	Put back on the mains and disconnect the battery.	Leds « Power supply fault » and « Fault » on + continuous buzzer.
Return to initial state	Reconnect the battery.	Only led « Power on » is on.

Measure the voltage:

- mains : between 195V and 253V with AC current ;
- Secondary source « Battery »: between 25,8V and 28,2V with DC current.

Carry out successively a control of the main source and a control of the secondary source on each external power supply with the table and to check the quality of indications.

2.3. WARNING

These tests consist of a real control of the System of Fire Detection. Neutralize the materials of fire protection; they will be then tested according to their own procedure.

2.4. TESTS OF FDS

2.4.1. Application field

These controls are to be carried out on each point of the system of detection (Detectors, MCP, and technical alarm). Take advantage of the various controls to check the functionality of the points of the detection system, but also the functionality of the programmable repetition and (or) control devices, as well with regard to the command as the delays of action.

It is understood that if the FDS were programmed to satisfy a day/night mode, it will be necessary to make sure that these functionalities are correctly assured or/and to extend in time the start up by a

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checking of the functionalities. As a reminder, the condition of alarm can be subjugated with the following modes of treatment:

- **Confirmation of fire alarm (pre alarm);**
- **Day/Night mode.**

Attention

1/ It is not allowed to apply the whole of the modes of treatment of the alarm condition to the zones of manual detection.

2/ It is not allowed to apply the mode "day/night mode" to the zones of automatic detection declared in pre alarm mode.

2.4.2. Fire alarm condition

For each point of the system of detection and using the adapted source to the point to control:

- Turn it into fire alarm condition, then control visual and acoustic indications;
- For the or the programmed repetitions, check the coherence of the repeated events and measure the delay;
- Finally, carry out a reset.

Reminder:

- When a zone is under test, the processes started by fire alarms of point of this zone are inhibited, only the fire detection elements are commanded when they are declared as disabled
- On the same main line, a maximum of two points in alarm status can have their indicator and their remote indicator on simultaneously. Beyond, the last point most recently in alarm causes the extinction of the indicator and the remote indicator of the oldest point in alarm; except for the first point in alarm whose elements remain always activated. This mode of lighting of the indicators of the points in alarm is independent of the possible activation of the commendable output of the detectors, useful for the common remote indicators in particular.

2.4.3. Fault condition

For the points causing a specific fault, such technical alarm or not punctual materials (linear detector, multi-punctual...), turn the considered point into alarm state and control the quality of indications.

3. SPARE PARTS

Designation	Reference
Front face module	MB128 module
Power supply module	MA128
RS485 board	FMC1
7 relays board	R7P2
12 relays board	R12P2
battery 12V/7Ah	According to supplier

BATTERIES

The current life time of the seal lead batteries is minimum 2 years. It is recommended to replace them every 4 years.

The meaning of the coding on the YUASA batteries is the following and permits to identify the date of manufacture:

Country	digit 1	digit 2	digit 3	digit 4	digit 5	digit 6	digit 7	letter	example
UK or US	year	month	month	day	day	internal code	internal code	-	1052142 21/05/2001
Taiwan	year	year	month	month	day	day	factory	line of manufacture	9708063A 06/08/1997
Japan	year	year	month	month	day	day	Internal code	-	9703211 21/03/1997

4. SERVICING

The longevity of an installation lies in its maintenance which must be imperatively carried out by a qualified company.

D. **MAINTENANCE SHEET**

See after.



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MAINTENANCE

FOLIO 1/1

Name of operator :
 Date : . . / . . / . .
 Site name :
 Reference of main product : HEPHAIS128
 Serial number :

General checks	
Test leds	correct, incorrect (a)
Secondary source fault	correct, incorrect (a)
Mains fault	correct, incorrect (a)
Mains voltage	. . . V (b)
Secondary source voltage	. . , . V (b)

Operative tests	
FDS tests	correct, incorrect (a)
Sounders line delay	. . s (b)

PARTICULAR REMARK

(a): stripe the useless mention
 (b): indicate the measured value.



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START UP GUIDE

A. NECESSARY SPECIFIC MEANS

Material means

- Coding bench MINIBT05 ;
- Numeric multimeter ;
- Chronometer ;
- PC with Windows XP or 7 32bits exclusively equipped with at least 1 serial port or USB port + USB/RS232 converter and the whole hardware and software equipment necessary for downloading ;
- Generator adapted to each type of detector ;
- A pole of test or any other means suitable in comparison with the implantation of the detection device;
- Eventually, a serial printer that will be used to save on line the tests carried out.

Documentation

- This manual and eventually the manuals of special detectors like DLFB,... ;
- The installation drawings : position and address of the various devices (detectors, ...)
- The site data file resulting from "TELEHEPHAIS128 E" software programming tool ;
- A copy of start up sheet that you can find at the end of this document.



HEPHAIS128

The start-up includes 4 principal phases:

- **Preliminary operations** gathering the coding of the points and the control of the connections between the various materials
- **Configuration of the materials** allowing their integration in the installation
- The **connection of the external lines**
- The **system checks and functional tests**, stage during which general operation of the panel and controls of the whole FDS are ensured

The start-up described hereafter requests that the detection equipment (detectors, MCP, etc) are inter-connected and that all the cables of line arrive at the level of the boards of the panel without being connected to them.

Moreover:

- For the not releasable terminal block addressable materials (ETC05, DLFB etc), it is essential that those are addressed before being connected on a line.
- It should be noted that a secondary line equipped with products of range EX is not controllable differently than by connecting it to the MAY1EX; indeed, detector VOEX ensures continuity only when it is power supplied.

B. PRELIMINARY OPERATIONS

At the first start-up, following message will appear:
Wrong data! Factory data will be stored in the panel.
To continue press ENTER button

1. POINTS ADDRESSING

For each point and according to its nature (punctual detector...), proceed using the bench:

- To its coding: the address must be comprised **between 1 and 128**; the factory address of each point is 0.
 - To its labelling by using the printing program of software TELEHEPHAIS128E.
 - To the labelling of the bases (directly on base) and of the base plates (MCP...).
- In same time, install the addressed points and the possible isolators ICC05 which fit, without tool, under the connector block of the S05 base.

Note1: it is strongly advised to carry out the first 2 phases in workshop.

Note2: For labelling, it is possible to stick on the head detectors the labels supplied with the panel. On these labels appear the address of the point.

But it is also possible to print out these labels using software programming tool (refer to TELEHEPHAIS128 manual); in this case it is possible to label both bases and heads.

2. CONTROL OF THE LINES

Before any connection of the lines, it is necessary to make sure of their quality. For each line, control must relate mainly to its characteristic resistance and/or its insulation.

These controls are carried out on points of detection, sounders.

2.1. CHARACTERISTIC RESISTANCE "CR"

This measurement is carried out on the secondary lines of detection, the sounders line.

Module	End of line	Reference of the line
MB128	1N4007 and 56Ω 1/4W ±5% (EFL-M)	Sounders line.
	1N4007 and 28Ω 1/4W ±5% (EFL-D)	If 2 sounders lines
MAY1	3,9KΩ 1/4W ±5%	Secondary detection line (collective address).
MAY1EX	3,9KΩ 1/4W ±5%	<u>Secondary line.</u>

2.2. INSULATION RESISTANCE « IR »

This measurement is to be carried out on all the lines coming from the boards equipping the panel. For each of these lines, measure resistance presents between each conductor of the cables, screen included/understood, and the electric ground of the installation. Whatever the line, measured resistance have to be **IR ≥ 1MΩ**.

2.3 PARTICULAR CHECKING OF THE MAIN LINES

Using bench MINIBT05, check that each open or looped line has the attended addresses (address and type) proceeding by comparison to the documents of installation.

In the event of anomaly check above all, the quality of the connection: false contact, insulation fault... and carry out repairing as soon as possible.

In loop configuration and for each 2 lines, carry out following measurement:

Module	Attended value of resistance	Measure
MB128	< 120Ω	Between start – and return – of each loop
	< 120Ω	Between start screen – and return screen – of each loop

2.4 VERIFICATION OF THE SOUNDERS LINES

After that all the sounders and evacuation signalisation equipment are connected to the panel, and before connecting the loop/line detections to the panel, check that the quantity and the type of devices connected on this line are in concordance with the capacity of the panel.

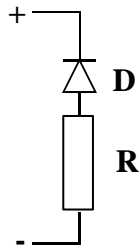
2.4.1 The Sounder line is terminated by the following circuit EFL-M:

- 1 diode 1N4007
- 1 End Of Line resistor 56 Ω

2.4.2 The Sounder line is terminated by the following circuit EFL-D (2 lines in parallel):

- 1 diode 1N4007
- 1 End Of Line resistor 28 Ω

According to the diagram below:



Measure the voltage in diode mode between the two conductors of the sounder line cable (+) and (-). Black wire on + and red wire on (-) and check that the measured value is comprised between 0,6V and 0,7V.

C. CONFIGURATION

1. GENERAL

In order to allow the start up, the panel must first of all be configured on 2 fields:

- **Hardware configuration:** panel out of power, it is carried before the installation of the board by the means of selectors and of jumpers;
- **Software configuration:** panel with power, it allows to define the site data, certain functionalities and inter – systems links.

2. HARDWARE CONFIGURATION

In order to carry out properly the software configuration, it is necessary that all the boards composing the panel are configured, installed and inter-connected.

2.1. POSITION OF SELECTORS

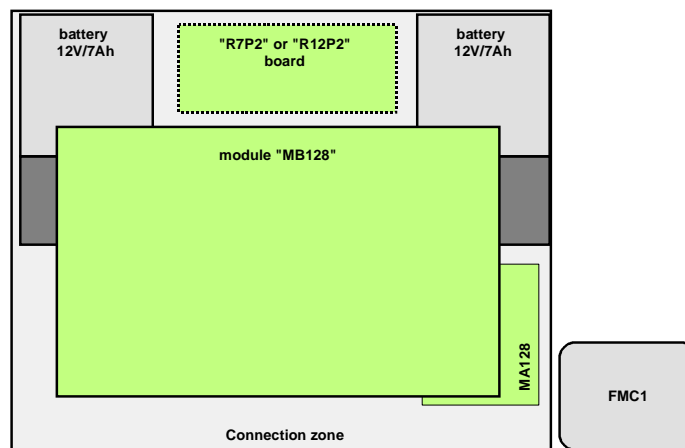
Module	selector	Possible option
MB128	SW1	« ON » - « OFF »: Site data downloading.
R7P2 board	switches and jumpers	For each relay used, select the nature (NO or NC) and the type (resistive or not) of the contact.
R12P2 board	switches and jumpers	For each relay used, select the nature (NO or NC) and the type (resistive or not) of the contact.
FMC1	JP1	RS485/RS422 choice: select RS485.
	JP2	Absent.

2.2. IMPLEMENTATION

Once this configuration carried out, install:

- The 2 batteries of secondary source ;
- R7P2 or R12P2 board.

FMC1 module will be connected after downloading.



Disposition of the different elements

3. SOFTWARE CONFIGURATION

3.1. POWERING

The sub-assemblies of the panel are inter-connected and configured:

- measure the voltage of the main source (mains comprised between 195V and 253V);
- Put the panel on, main source then secondary.

Check the following elements then:

- The green indicator "POWER ON" of front face of the MB128 module is on.

3.2. ACKNOWLEDGEMENT OF THE SITE DATA

3.2.1. General information

Two modes of acknowledgement of the data are proposed by HEPHAIS 128:

- Mode 1: downloading PC (the most traditional mode);
- Mode 2: the auto-configuration, which requires that the main lines are connected to the panel.

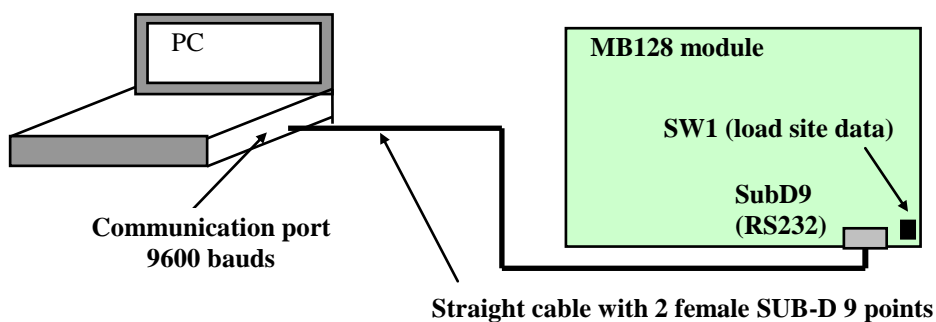
3.2.2. Mode 1: downloading

3.2.2.1. *Acquisition of site data*

Using the TELEHEPHAIS128 E software, enter the whole parameters characterizing the site (consult the help menu of the software, if necessary).

3.2.2.2. *Connection*

Carry out necessary connections for downloading:



3.2.2.3 *Data transfer*

After connection, switch **SW1** on position **ON**. The panel turns into system fault and the display proposes the following menu:

- 1 – Upload data
- 2 – Download data
- 3 – Download language

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Press the key "2" of the keypad, the display indicates a message of downloading for approximately 30 seconds.

Then, click on the icon of site data downloading; when the transfer is finished, the display shows the following message:

Downloading OK
 Flip SW1 on OFF

After few minutes, panel is operative:

- Led « System fault » goes on and
- Fault indications linked to various lines and external links appear because they are not connected.

Attention: if RS485 link (Alpha Rna/Alpha RE) is used, declare it using 8.1.1.6 menu.

3.2.3. Mode 2: auto configuration

3.2.3.1. General

This mode allows a fast and basic starting of the installation and does not require any particular data-processing equipment. 3 essential conditions are necessary:

- **checks mentioned in §.B.3.3 of this document are essential** to validate all the points
- all the addressable materials are power supplied (special detectors), coded and installed;
- all the detection lines are connected to panel.

3.2.3.2. Basic application

Attention, when this procedure is validated, all the former site data are erased.

We reach this mode by the means of menu "8 – site data" - "2 – self learning".

Once launched, at the beginning of procedure the panel questions about connection of the mains lines. Then, the panel gives the information of the quantity of addressed points found on each main or loop line. This operation takes approximately 4 minutes.

3.2.3.3. Complement of application

Various sub menus placed in the menu "8 – site data" - "1 – data modification" authorize to complete the acquisition made; this complement aims:

1. General parameters
2. Points
3. Zones
4. Line of sounders
5. Day/Night function

3.3. LANGUAGE SWITCHING

To proceed to this operation, carry out the same connection as for downloading then switch **SW1 on ON** position. The panel turns into fault system and the display proposes the following menu:

1 – Uploading data
 2 – Downloading data
 3 – Downloading language

Press the key "3" of the keypad, the display indicates a message of downloading during approximately 30 seconds.

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Then, click on the icon of language downloading to select the file to transmit; when the transfer is finished, the display shows the following message:

Downloading OK
 Flip SW1 on OFF

The next starting of panel will be carried out with new language.

D. CONNECTION OF THE EXTERNAL LINKS

The connection of the lines and external links to the various boards is carried out in a progressive way. In all the cases, never continue to connect new lines if there remains a fault, always repairing before progressing

This stage permits to put the system in standby state.

Links	Indication of associated fault
24V output (MB128)	General fault if presence of short circuit or overloading
Main detection lines (MB128)	Connect the detection lines in the ascending order of the numbers of line. Check at each stage of the connection that fault indications disappear (via the menus of display).
Secondary detection lines (MAY1, ...)	In this particular case, if a fault remains, it is affected with the collective address.
Relay 1 / general alarm (MB128)	No particular indication, the associated equipment assures generally the monitoring of these links.
Relay 2 / general fault (MB128)	No particular indication, the associated equipment assures generally the monitoring of these links.
Programmable input 1 (MB128)	According to programming.
Programmable input 2 (MB128)	According to programming.
RS232 - Printer (MB128)	No particular indication
RS485 (J7.4)	Control that the Leds "dialogue fault" and "disable system" are off. The fault can come from a dysfunction from Alpha Rna/Alpha RE which also monitors this connection.
RS485 (J7.1 through FMC1)	Control that the Leds "dialogue fault" and "disable system" are off. The fault can come from a dysfunction from Alpha Rna/Alpha RE which also monitors this connection.
Sounders line (MB128)	Check that the led fault/disable of sounders is off.
Relays (R7P2 or R12P2)	No particular indication, the associated equipment assures generally the monitoring of these links

E. CHECKS AND TESTS

Theses checks permit to carry out a full verification of the fire detection system (FDS).

2 main stages are necessary:

- Checks of source ;
- Operating tests.

1. CHECK OF SOURCES

From standby state, proceed sequentially as follow:

Control	Action	Specific Consequence
Secondary source	Cut mains 230V.	Leds « Power supply fault » and « Fault » on + continuous buzzer.
Main source	Put back on the mains and disconnect the battery.	Leds « Power supply fault » and « Fault » on + continuous buzzer.
Return to initial state	Reconnect the battery.	Only led « Power on » is on.

Carry out successively a control of the main source and a control of the secondary source on each external power supply with the table and to check the quality of indications

2. OPERATING TESTS

2.1. WARNING

These tests consist of a real control of the System of Fire Detection. Neutralize the materials of fire protection; they will be then tested according to their own procedure.

2.2. TESTS OF FDS

2.2.1. Application field

These controls are to be carried out on each point of the system of detection (Detectors, MCP, and technical alarm). Take advantage of the various controls to check the functionality of the points of the detection system, but also the functionality of the programmable repetition and (or) control devices, as well with regard to the command as the delays of action.

It is understood that if the FDS were programmed to satisfy a day/night mode, it will be necessary to make sure that these functionalities are correctly assured or/and to extend in time the start up by a checking of the functionalities. As a reminder, the condition of alarm can be subjugated with the following modes of treatment:

- **Confirmation of fire alarm (pre alarm);**
- **Day/Night mode.**

Attention

1/ It is not allowed to apply the whole of the modes of treatment of the alarm condition to the zones of manual detection.

2/ It is not allowed to apply the mode "day/night mode" to the zones of automatic detection declared in pre alarm mode.

2.2.2. Fire alarm condition

For each point of the system of detection and using the adapted source to the point to control:

- Turn it into fire alarm condition, then control visual and acoustic indications;
- For the commendable elements or the programmed repetitions, check the coherence of the repeated events and measure the delay;
- Finally, carry out a reset.

Reminder:

- When a zone is under test, the processes started by fire alarms of point of this zone are inhibited, only the fire detection elements are commanded when they are declared as disabled
- On the same main line, a maximum of two points in alarm status can have their indicator and their remote indicator on simultaneously. Beyond, the last point most recently in alarm causes the extinction of the indicator and the remote indicator of the oldest point in alarm; except for the first point in alarm whose elements remain always activated. This mode of lighting of the indicators of the points in alarm is independent of the possible activation of the commendable output of the detectors, useful for the common remote indicators in particular.

2.2.3. Fault condition

For the points causing a specific fault, such technical alarm or not punctual materials (linear detector, multi-punctual...), turn the considered point into alarm state and control the quality of indications.

3. END OF START UP

Once tests and controls are carried out, configure the panel according to particular requirements' of exploitation of the site.

Carry out brief checks in configuration of site. Except the specific printer of start up if it were used, configure the panel and its environment so that they fulfil the requirements of exploitation.

Print the site data; disconnect the specific printer if required and proceed, if necessary, with a new downloading to obtain the final configuration of exploitation.

Erase the complete historic (function maintenance of level 3) to initialize the historic of the panel.

As soon as the panel is in standby, connect or bring into service the various connections towards the cupboards or boxes of the fire protection systems.



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INSTALLATION AND CONNECTION GUIDE

A. DRAWINGS AND BILL OF MATERIALS

its	index	mod.	designation
its1	A	56	HEPHAIS 128 mounting & equipment
its2	B	57	connections & interconnections
its4	B	58	05 range detectors
its5	A	59	A95 range
Its6	A	60	DMA05, DMA05-R, AVSA05
Its7	A	61	Beam detectors DLFB-I, DLFB-C, DLFB-R
Its9	A	62	DFA05
Its 11	A	63	ETC05, ET4C05
its13	A	64	MAY1 / MAY1EX connection
Its14		65	MBA95, MBA95ex
its15	A	66	Conventional 05 range for MAY1
Its16	A	67	Sound05
Its17	A	68	GDxxx gas detector
its18	A	69	TR-SDI remote panel indicator
Its21	A	70	RS485 & 24V links : Alpha RE through J7.4 connector
Its22	A	71	Sounders management
its23	A	72	S.E.V. : voice evacuation panel

2. SPECIFIC DOCUMENTS REQUIRED

Except from present document are necessary:

- implantation drawings of materials on site with coding and addresses ;
- Specific mounting drawing of various associated materials (punctual, linear, multipunctual detectors,).

B. IMPLEMENTATION

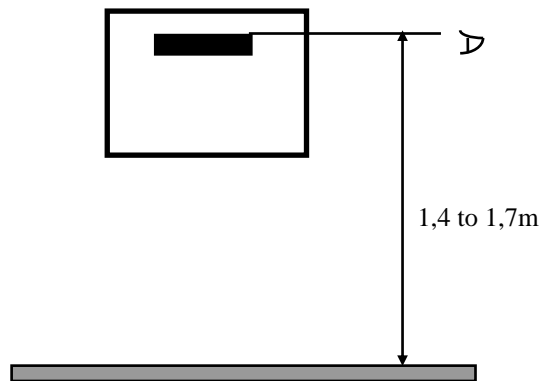
1. INSTALLATION

After consulting of the various drawings, firmly fix the box of the panel by the means of the 3 holes envisaged for this purpose (wall mounting). In the case of a standard 19" rack integration, use the kit AlphaE2.

If it is used, FMC1 module is fixed at less than 1,5m from main box.

The possible integration of the modules R7P2 or R12P2 will be carried out at the time of the start-up; it will be the same for the batteries.

In a general way and in order to allow an easy exploitation and maintenance of the panel, it is essential that the height of fixing of the front face is given between 1,4m and 1,7m so that the legibility of the alphanumeric display remains possible.



Then, proceed to the installation of the others materials. For this purpose, refer to the relative manuals.

Never install an address of point (detector, MCP, module) which is not coded

2. CONNECTIONS

2.1. RECOMMANDATIONS

In order to preserve the initial index of protection of panel (IP31), the cables will penetrate by the entries located at the low or/and bottom part of the panel.

Do not connect lines to panel; those will be connected at the time of the start-up of the installation.

2.2. POWER SUPPLY SOURCES

A dedicated line and its protections must be anticipated for fire protection.

The table must be joined together with the electric ground; this ground must be dedicated to the weak signals materials: "low currents ground" or "data-processing ground".

2.3. EXTERNAL POWER SUPPLYING OF FIRE DETECTION EQUIPMENTS.

The operation 24V power supply necessary to certain fire detection equipment can result either from the 24V output of module MB128, or of an external power supply equipment (AL124B, for example); in this last case, the mains and battery faults are to be managed by the programmable inputs of module MB128; the monitoring of these lines of control is not necessary.

2.4. COMMAND OUTPUTS OF INPUT/OUTPUT INTERFACES

The command output of ATC95 interface must be exclusively dedicated for fire detection.

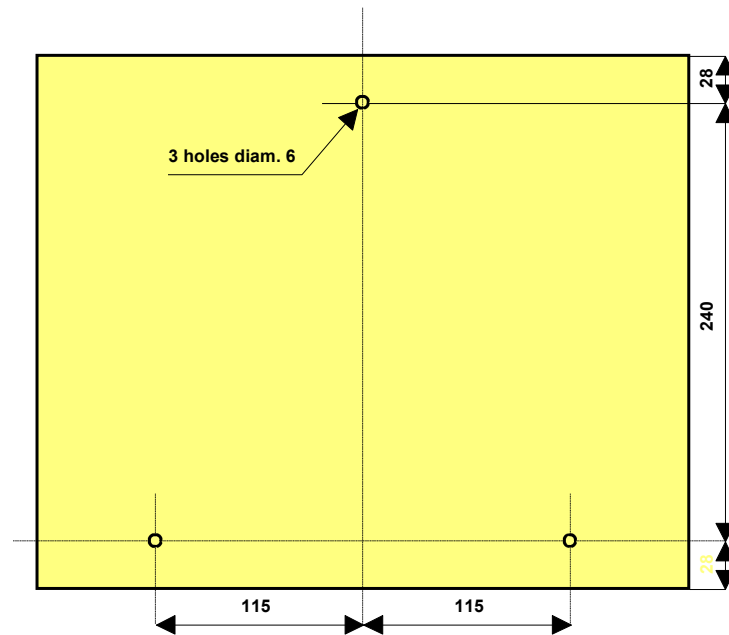
2.5. INTERCONNECTION OF ELEMENTS OF THE SYSTEM

module	type of line	type of cable	drawings	
	mains	3 x 1,5mm ² (2P+E) and ferrite	Mains 230V terminal block.	
MB128	Fire detection	1 pair 8/10 with shield	05 range detectors: <i>its4</i> . IR95 detector (infra red): <i>its5</i> . Isolator: <i>its3</i> Beam detector DLFB-I, DLFB-R, DLFB-C: <i>its7</i> .	
		1 pair 8/10 with shield and 2x1,5mm ² (power supply)	Laser 4: <i>its8</i> . MAY1/MAY1EX connection: <i>its12</i> . Conventional 05 range for MAY1: <i>its13</i>	
		1 pair 8/10 with shield	MCP: <i>its5</i> , DMA05 <i>its6</i> AT95, ATC95, ATG95 interface module: <i>its10</i> . FM2I, FM4I, FM4IO, MAY1T interface module: <i>its11</i> Sounders line: <i>its19</i>	
		2 x 1,5mm ² or 2 x 2,5mm ²		
		24V/0,5A	≥ 1 pair 8/10 with shield	<i>its2</i>
		Information collection	≥ 2 x 8/10	Programmable inputs: <i>its2</i> Input/output module: <i>its9</i>
	Information repetition	3 pairs 8/10 with shield	TR-SDI : <i>its16</i>	
		≥ 2 x 8/10	Programmable relays : <i>its2</i>	
		1 or 2 pairs 8/10 with shield	RS232 – serial printer : <i>its17</i>	
	MB128	Sound broadcasters (1 or 2 lines in //)	2 x 1,5mm ² or 2 x 2,5mm ²	Sounders line: <i>its119</i> SEV: <i>its120</i>
FMC1	Information repetition	1 pair 8/10 with shield	RS485 - ALPHA Rna/ALPHA RE: <i>its17</i>	
		1 pair 8/10 with shield and 2x1,5mm ² (power supply)	RS485 et 24V - ALPHA Rna/Alpha RE : <i>its18</i>	
R7P2 or R12P2	Alarm repetition			
R7P2 or R12P2	Information repetition	3 pairs 8/10 with shield	TR-SDI: <i>its16</i>	
		≥ 2 x 8/10	Terminal block of MB128 : <i>its2</i>	

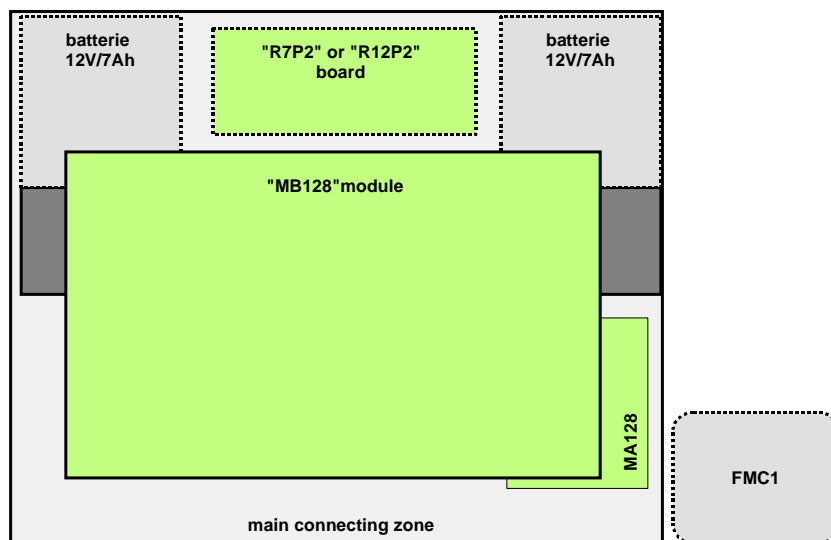
its: installation technical sheet.

C. INSTALLATION TECHNICAL SHEETS

Attention:
 leave a free zone of 100mm on each side of the box
 in order to facilitate the circulation of the cables and the
 opérations of maintenance and commissionning.



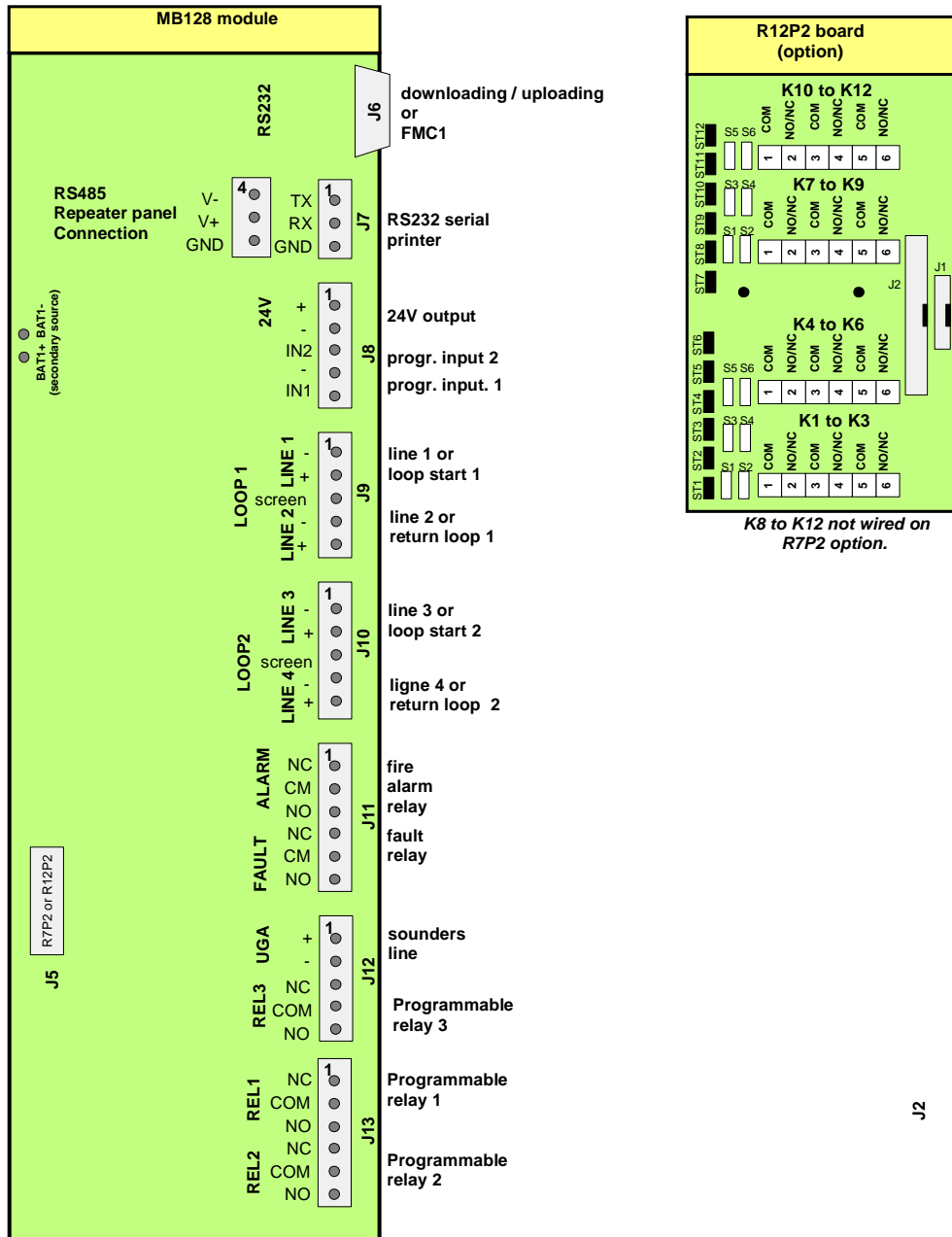
wall mounting



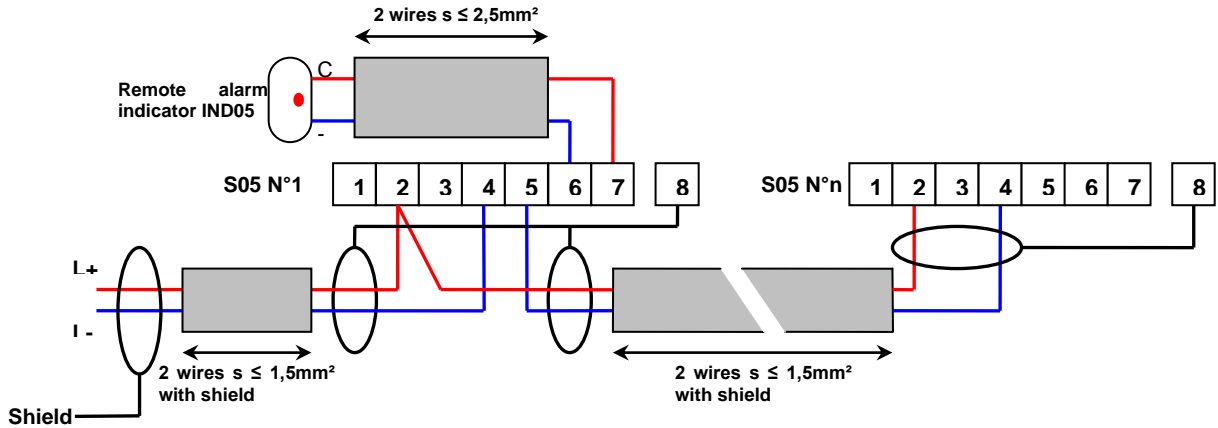
product equipment

— base material
 - - - - - optional material

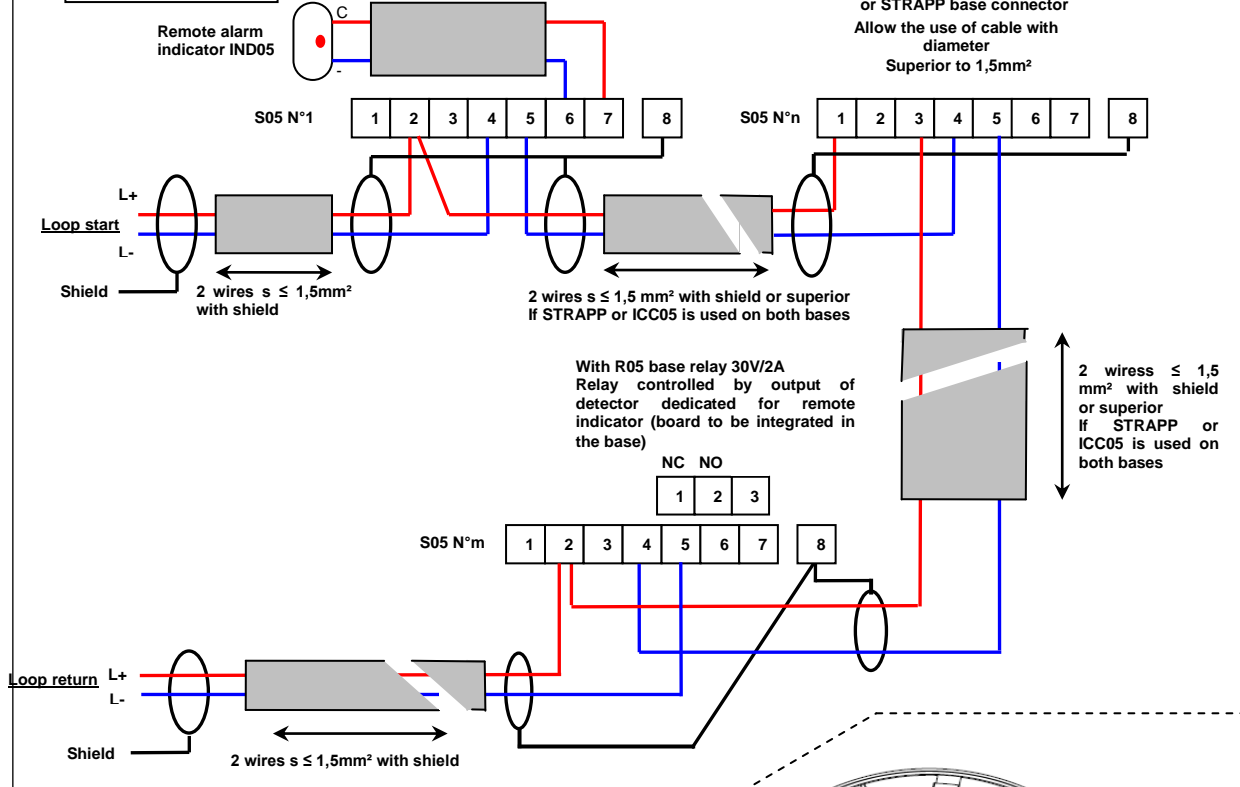
SEFI	INSTALLATION TECHNICAL SHEET	its n° : 1
	HEPHAIS 128 MOUNTING & EQUIPMENT	index : A



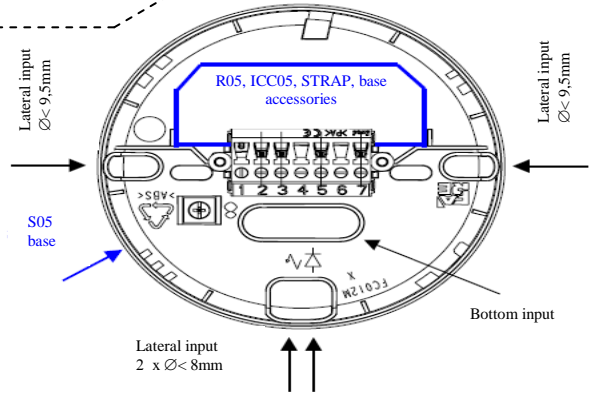
OPEN CIRCUIT WIRING

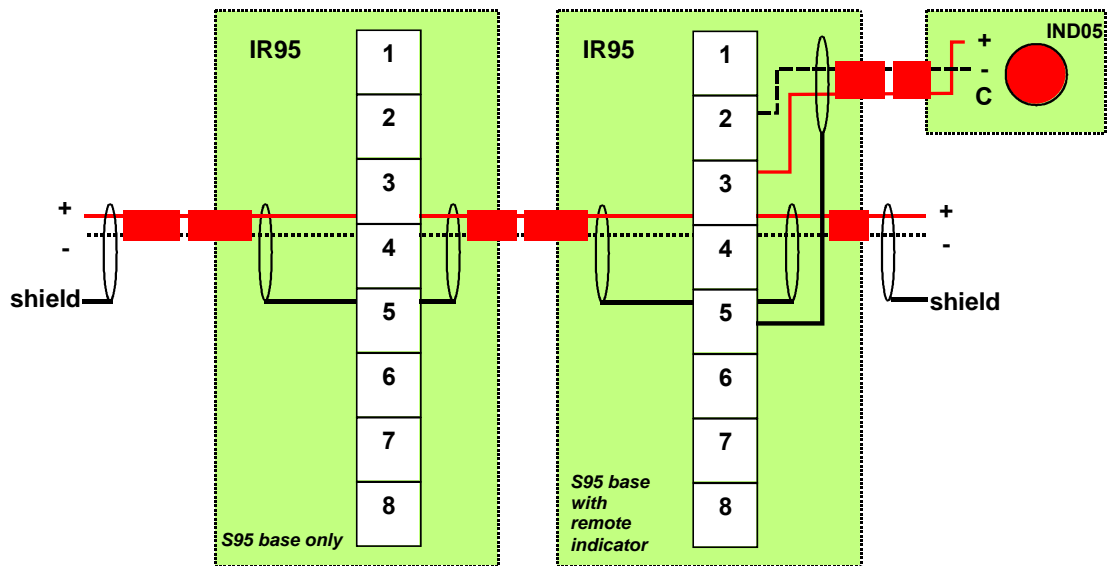


LOOP WIRING



INSTALLATION OVERVIEW

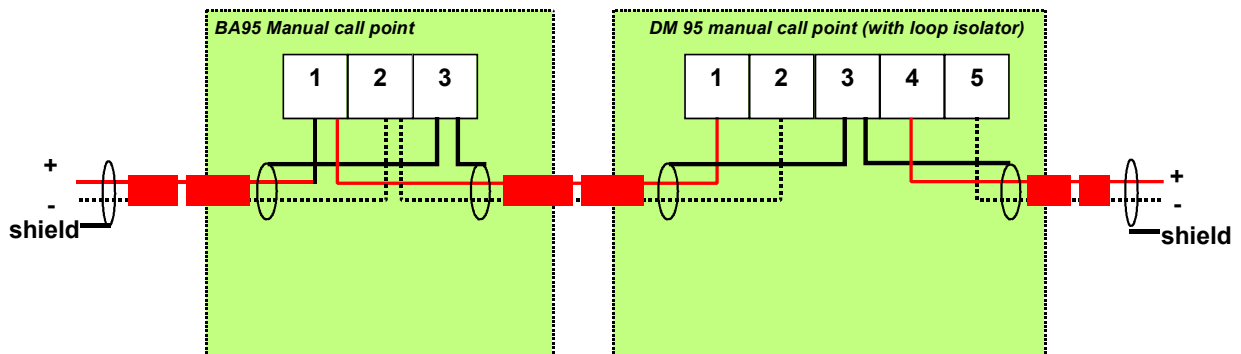




section of loop or open line

Notes :

- 1/ All shields must be protected by insulation tube.
- 2/ Detection heads must be addressed before mounting.
- 3/ In order to obtain a "programmed indicator", connect "-" of indicator to terminal 1 of base instead of terminal 2.



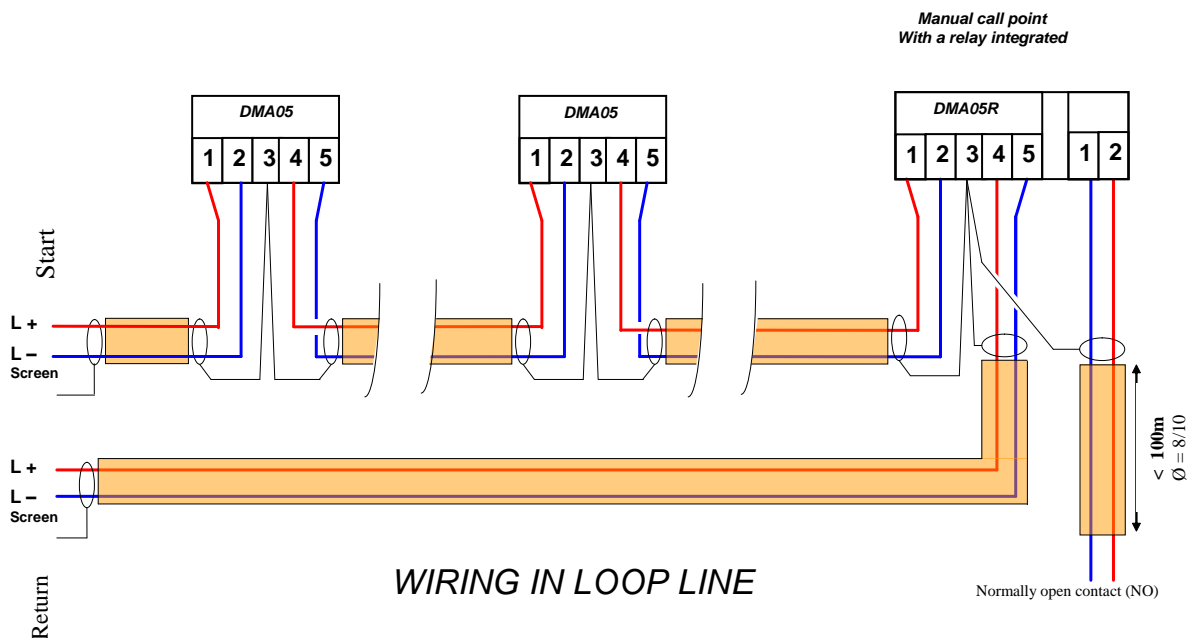
section of main loop or open line (MCP - A95 range)

Notes :

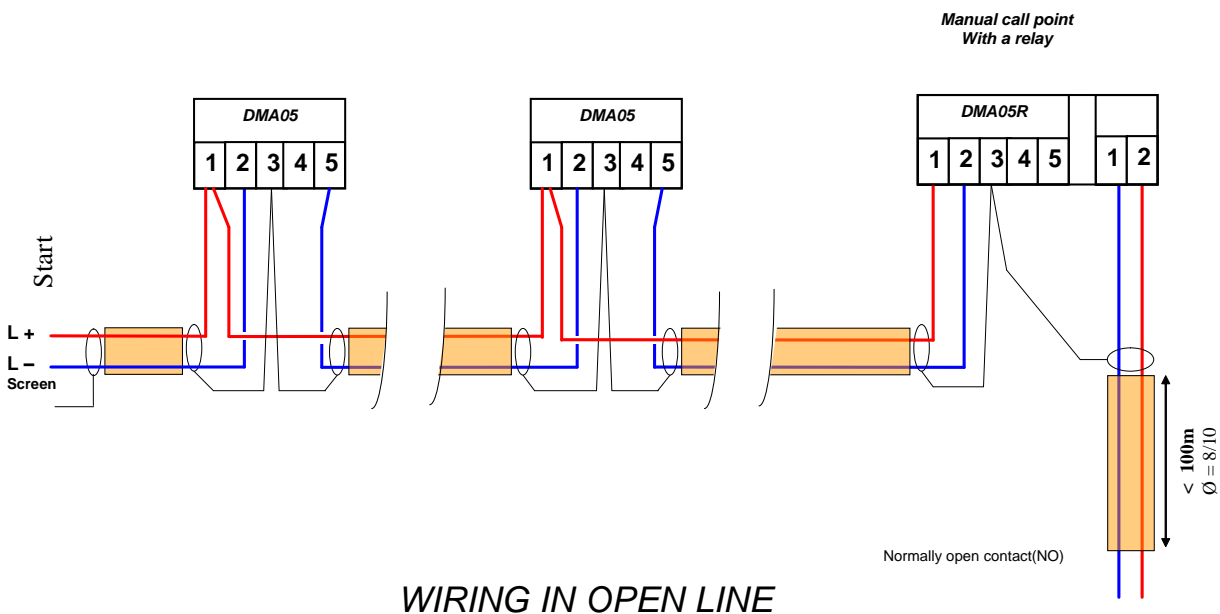
- 1/ All shields must be protected by insulation tube.
- 2/ MCP must be addressed before mounting.
- 3/ DM95 can be used only on loop.

CONNECTION DIAGRAM DMA05, DMA05R, AVSA05

Loop connection

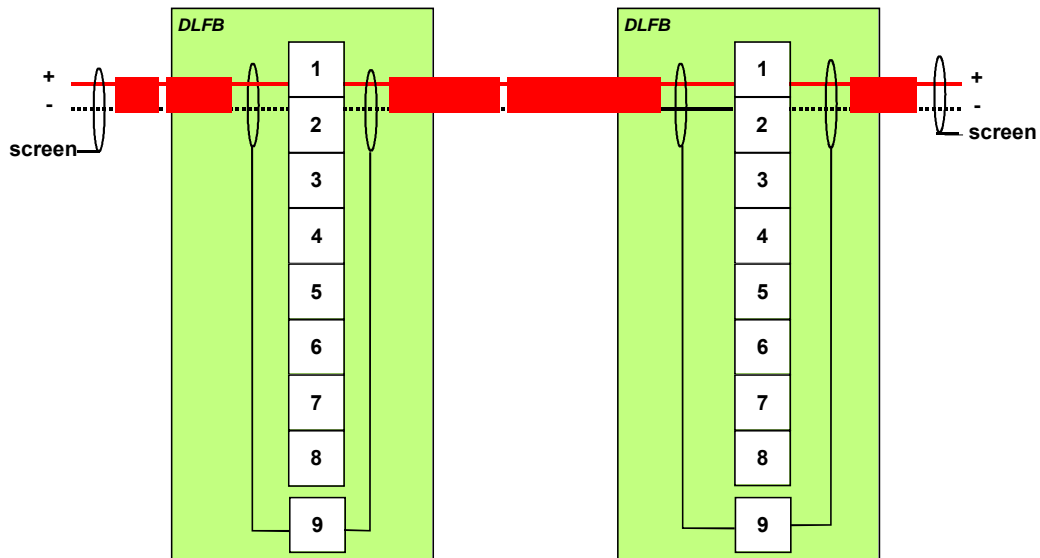


Line connection












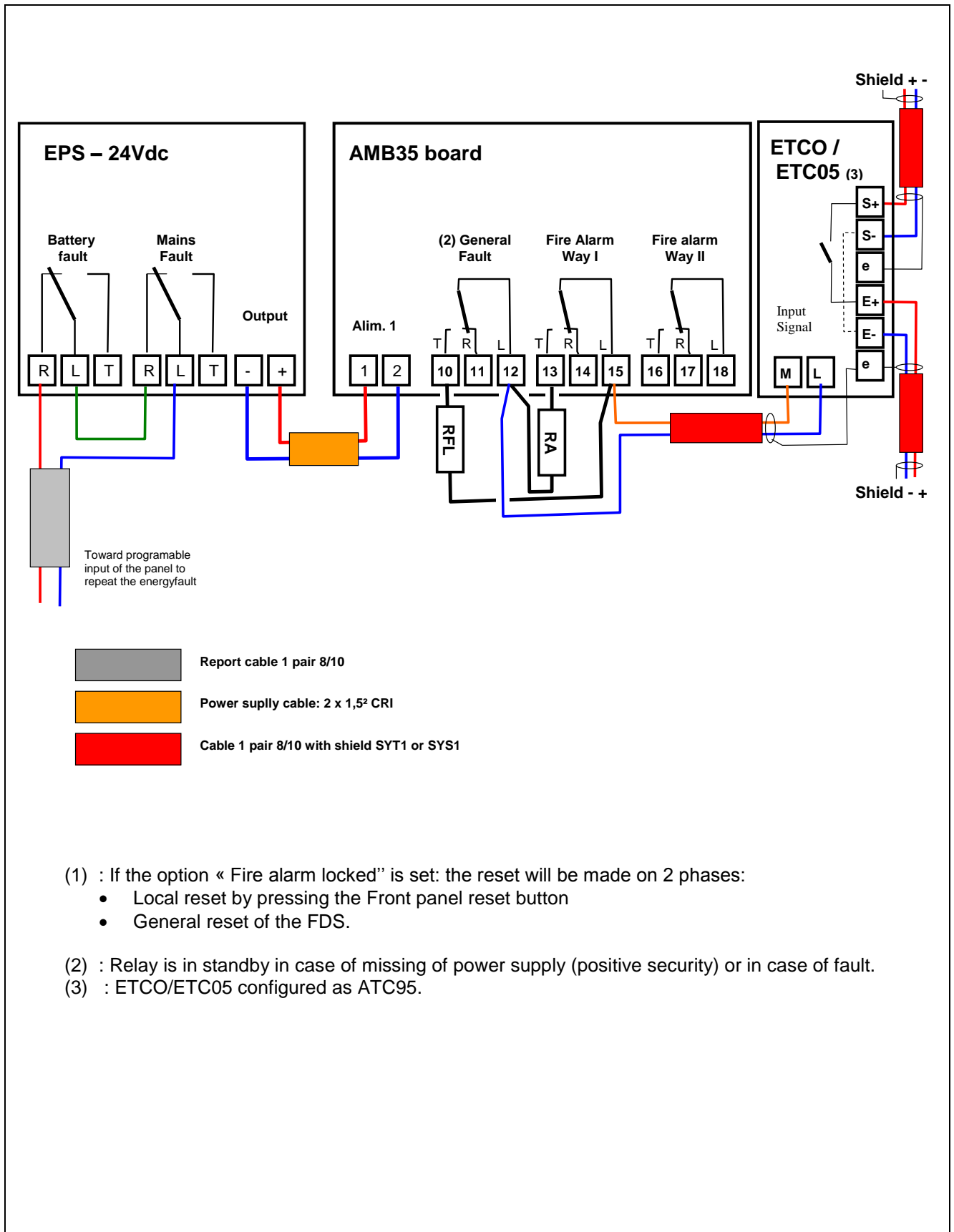
Note: Each DMA05, DMA05R, AVSA05 has a built in isolator

DLFB I
Addressable version



Notes : All the screen cables must be protected by insulator tubes or tapes.
 It is necessary to download the detectors addresses before installing them

- | | | |
|---|---|---|
| 1 |  | + Line or + loop input/output (when internal isolator is not used) or + loop input (when internal isolator is used) |
| 2 |  | - Line or - loop input/output (when internal isolator is not used) or - loop input (when internal isolator is used) |
| 3 |  | Reserved |
| 4 |  | + loop output (when internal isolator is used) |
| 5 |  | - loop output (when internal isolator is used) |
| 6 |  | + input power supply (opt. Module) |
| 7 |  | + RS485 (opt. module) |
| 8 |  | - RS485 (opt. module) |
| 9 |  | Shield |



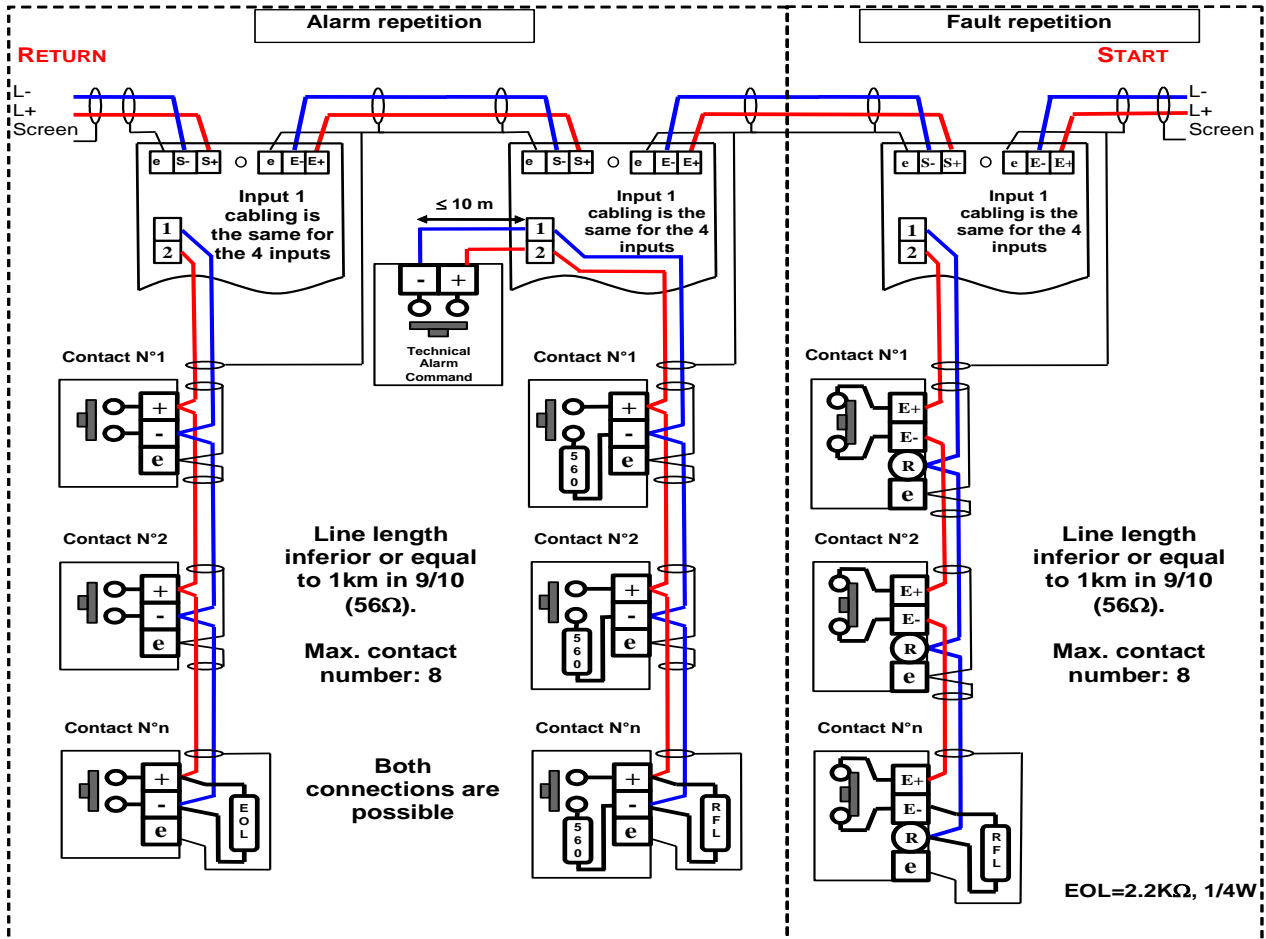
(1) : If the option « Fire alarm locked” is set: the reset will be made on 2 phases:

- Local reset by pressing the Front panel reset button
- General reset of the FDS.

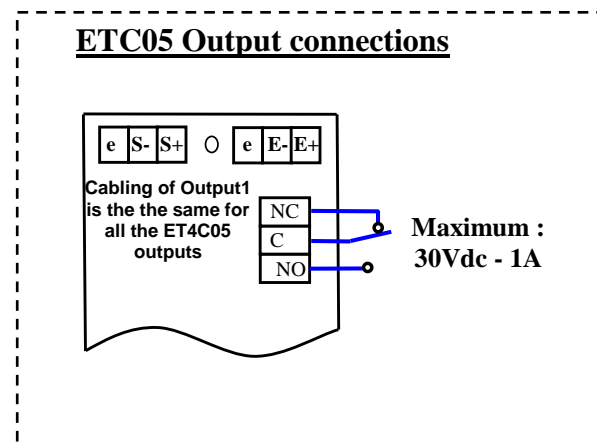
(2) : Relay is in standby in case of missing of power supply (positive security) or in case of fault.

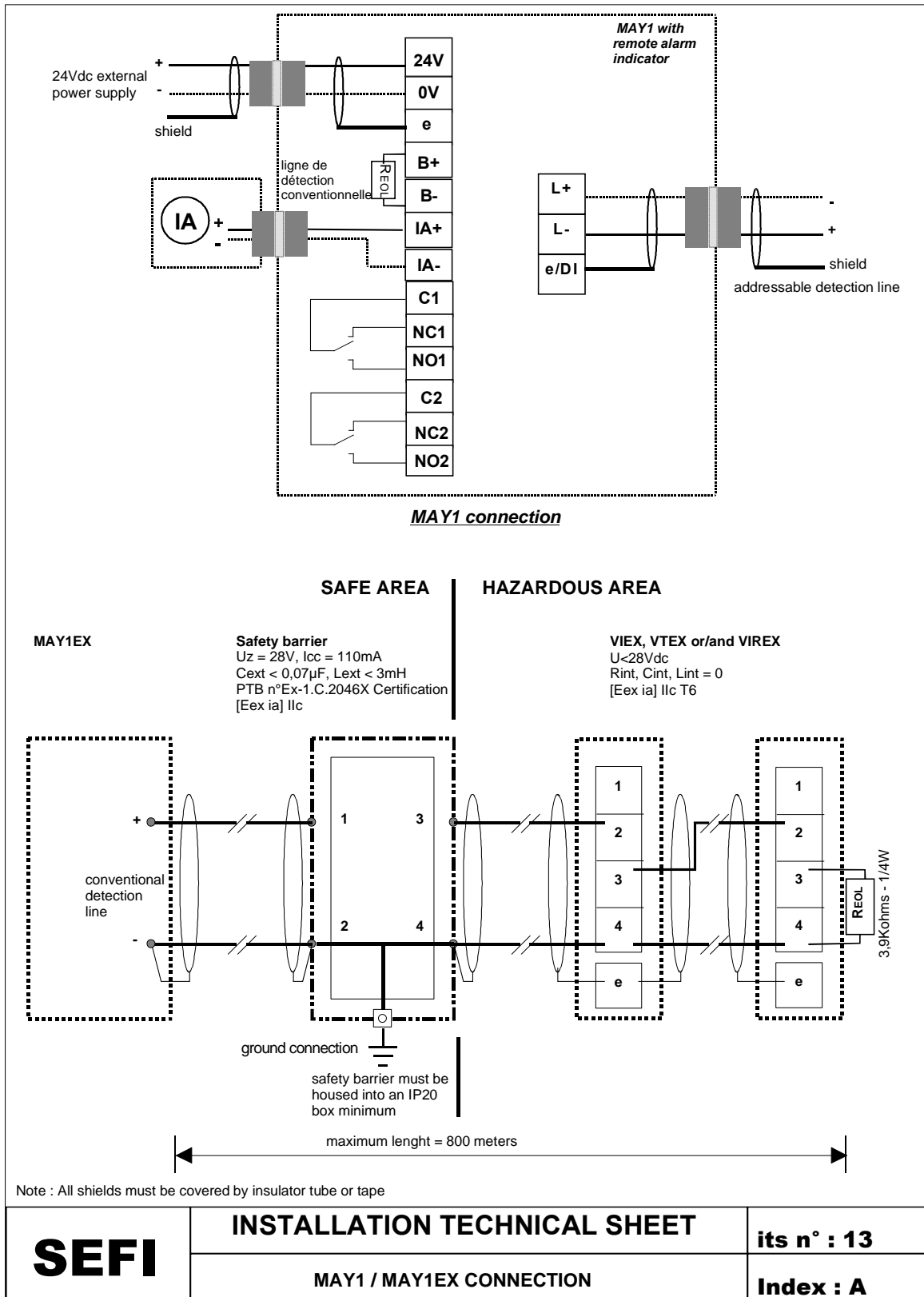
(3) : ETCO/ETC05 configured as ATC95.

ETC05 Input connections

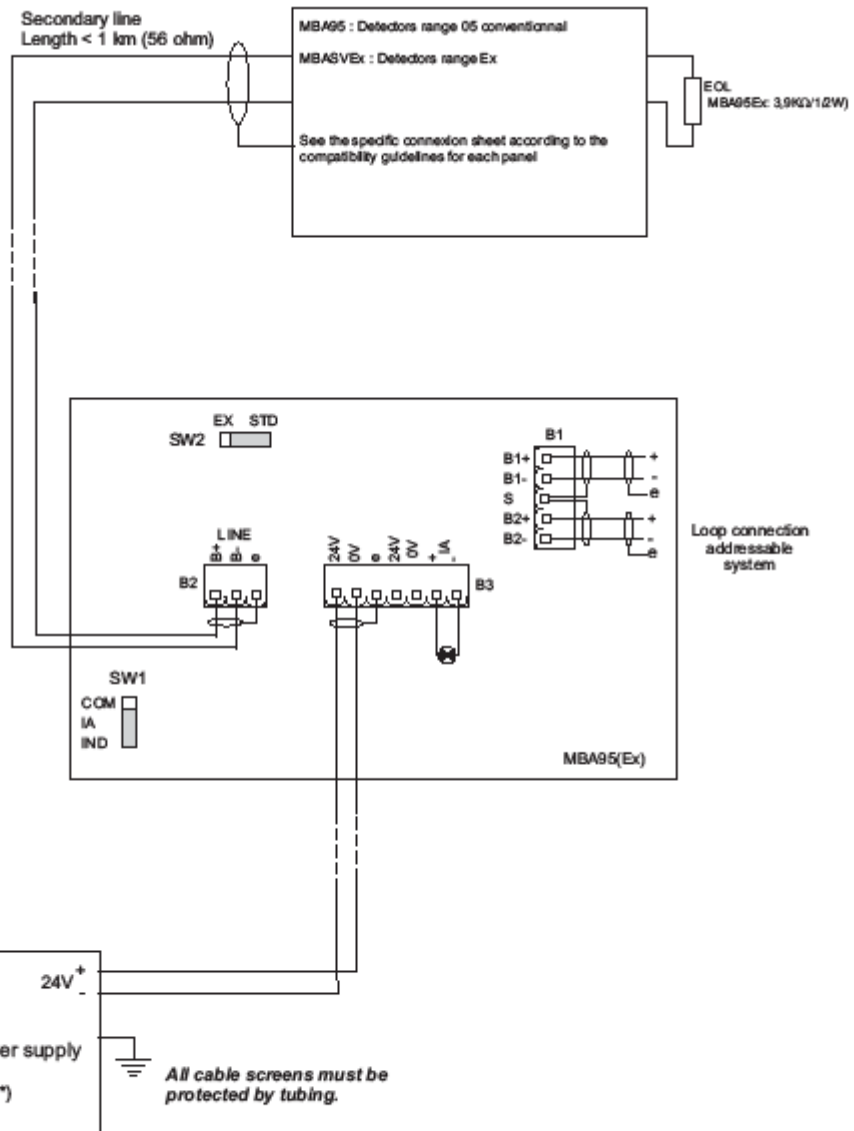


ETC05 Output connections





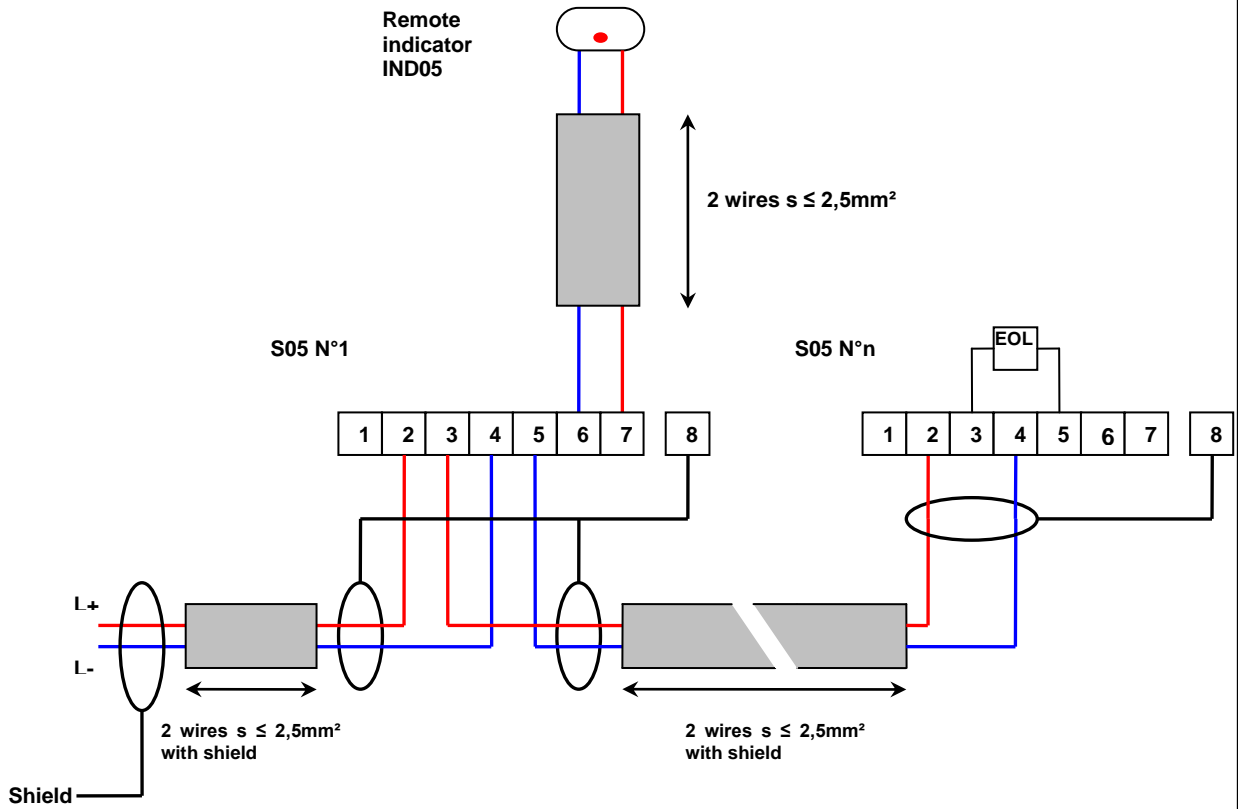
SEFI	INSTALLATION TECHNICAL SHEET	its n° : 13
	MAY1 / MAY1EX CONNECTION	Index : A



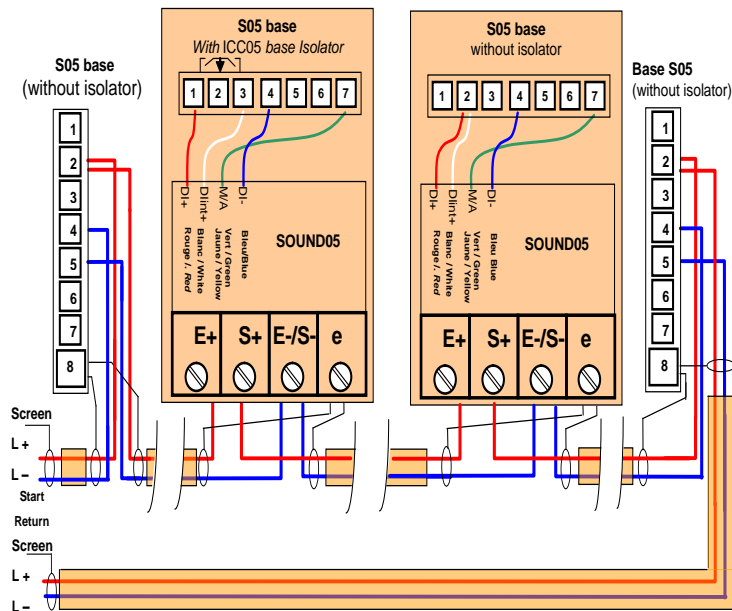
(*) According to the system

NOTA Some MBA95(Ex) connected on different main lines need to be connected to different power supplies.

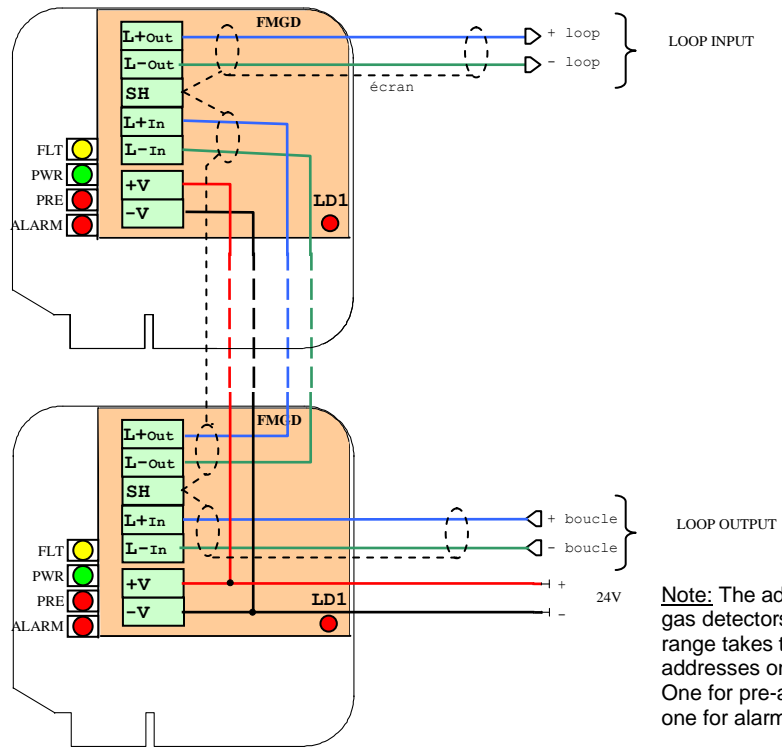
SEFI	INSTALLATION TECHNICAL SHEET	its n°:14
	MBA95, MBA95ex	Index : A



S05 base
 Analog line

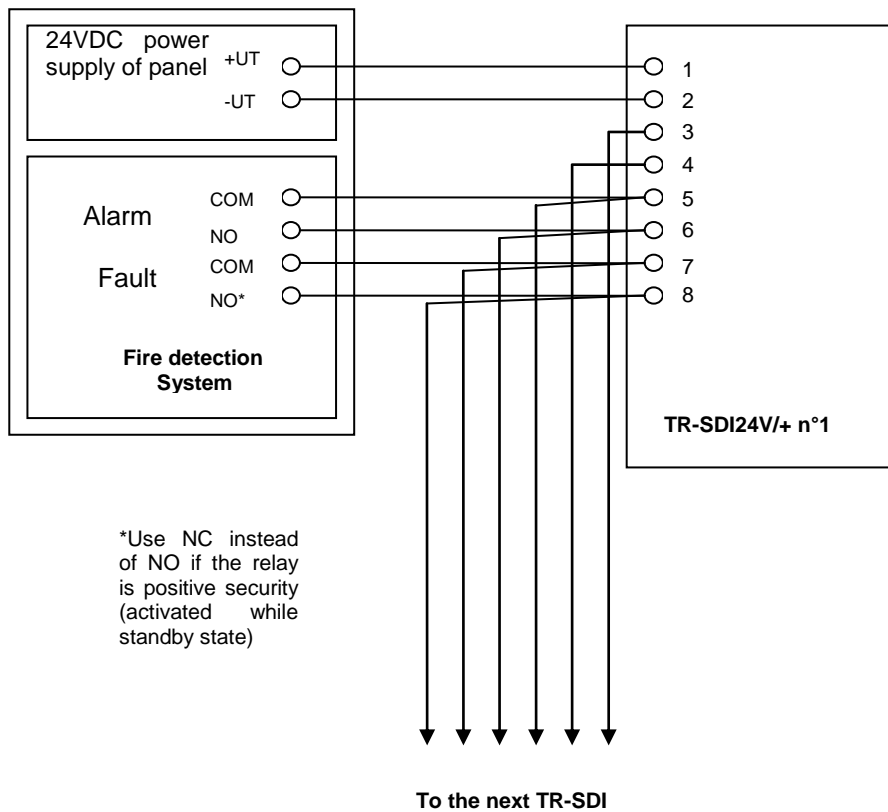


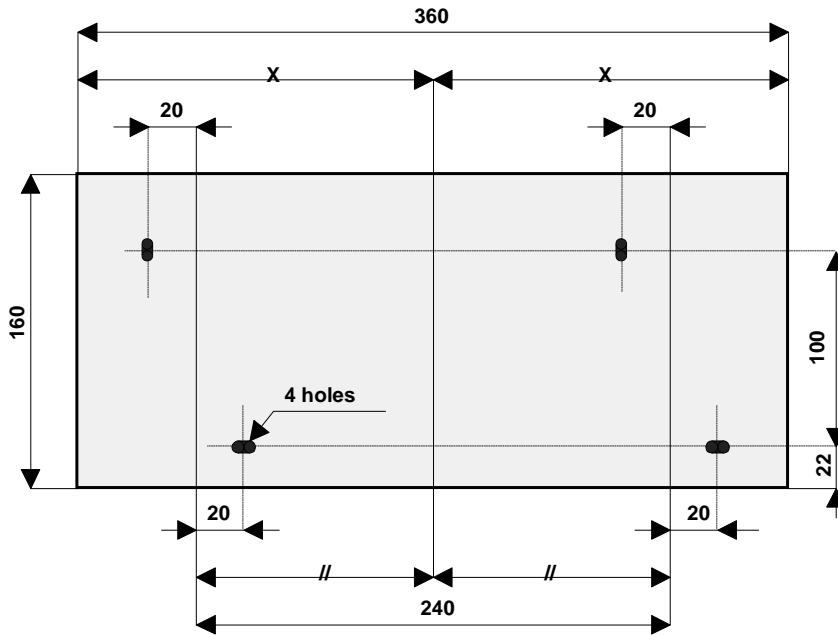
Addressable gas detector cabling diagram



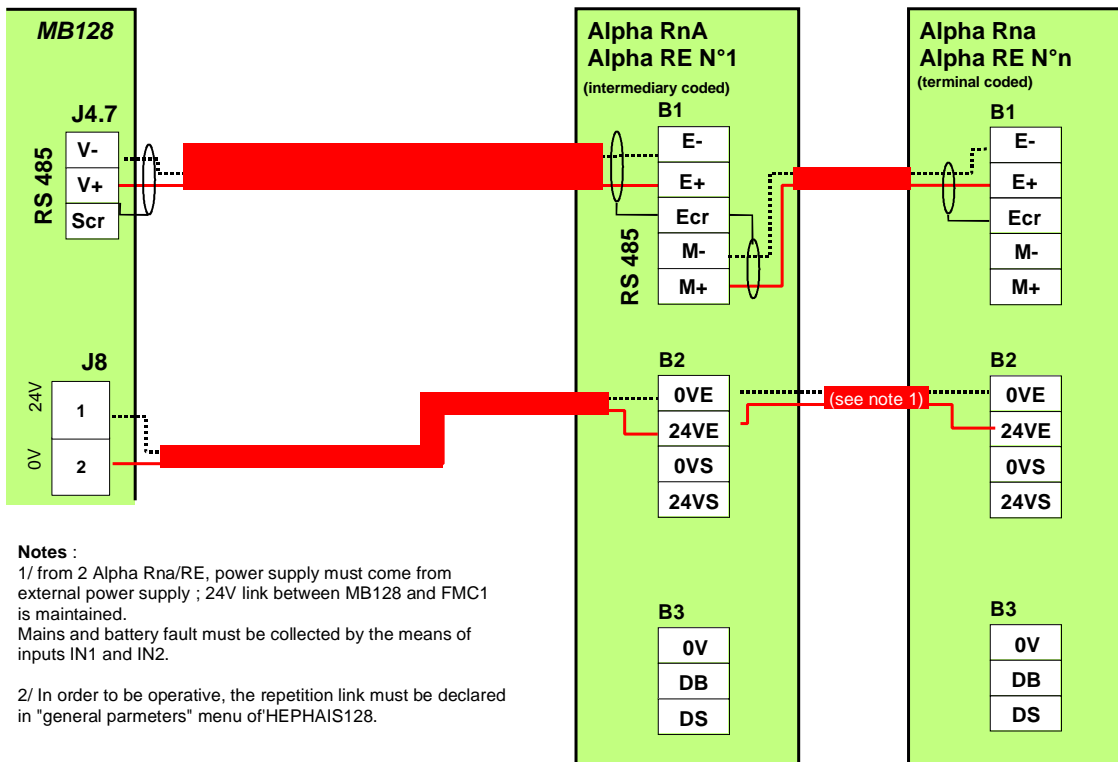
Note: The addressable gas detectors of GDxxA range takes two addresses on the loop. One for pre-alarm and one for alarm.

+V	+ supply detector 12Vcc...28Vcc
-V	- supply detector
L+Out	Output (+) detection line
L-Out	Output (-) detection line
L+In	Input (+) detection line
L-In	Input (-) detection line
SH	Screen detection line
ALARM	Led ON indicates alarm condition
PRE	Led ON indicates prealarm condition
PWR	LED ON indicates supply Ok, OFF indicates supply missing
FLT	Led ON indicates circuit fault
LDI	Signalisation Led ON switched ON by panel





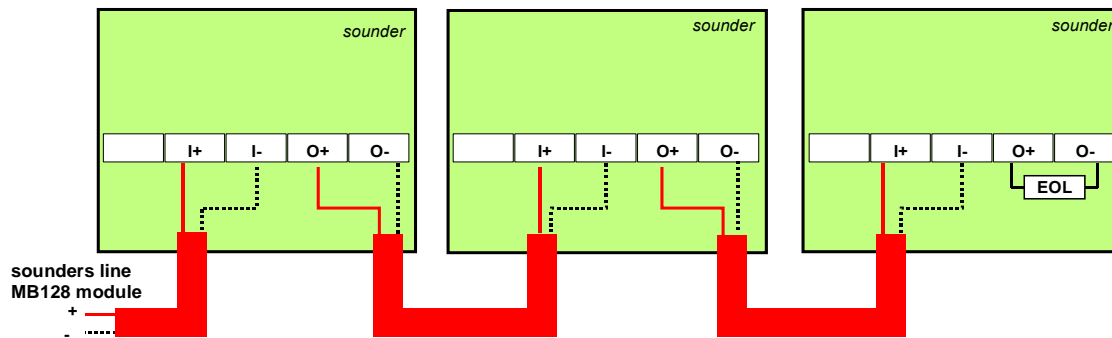
ALPHA RNA/ALPHA RE WALL MOUNTING



Notes :
 1/ from 2 Alpha Rna/RE, power supply must come from external power supply ; 24V link between MB128 and FMC1 is maintained.
 Mains and battery fault must be collected by the means of inputs IN1 and IN2.
 2/ In order to be operative, the repetition link must be declared in "general parameters" menu of HEPHAIS128.

SEFI	INSTALLATION TECHNICAL SHEET	its n° : 21
	RS485 AND 24V LINKS : ALPHA RE through connector J7.4	index : A

Sounders line



With input/output module

