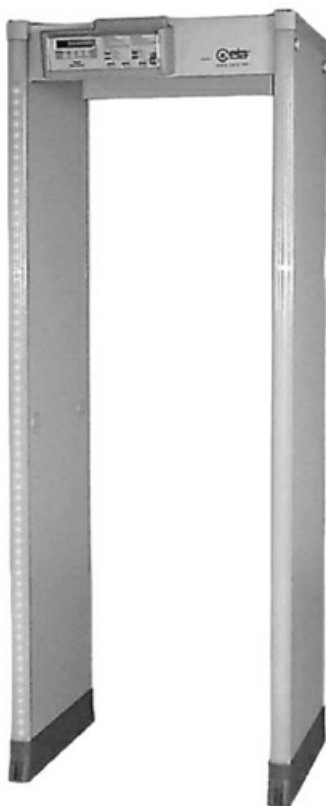


CEIA HI-PE MULTI-ZONE SERIES INSTALLATION, USE AND MAINTENANCE MANUAL



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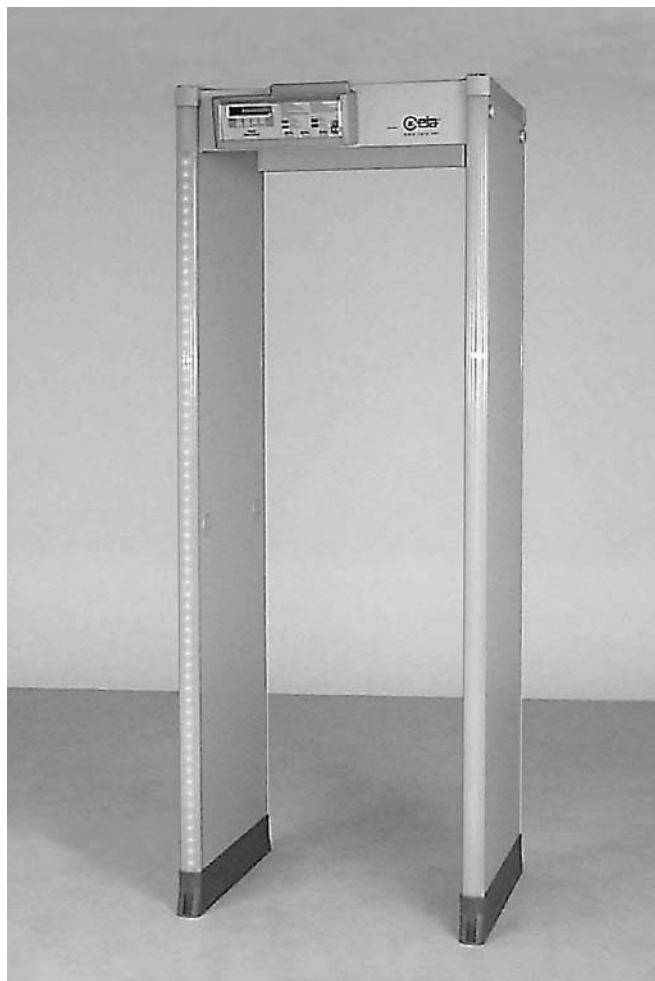
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**METAL DETECTOR*****HI-PE multi-zone***

Installation Use and Maintenance

ATTENTION!

This manual contains the necessary instructions for the CEIA equipment described in the test report attached to the end of the manual itself (Factory Acceptance Test Report). These instructions are not, generally, applicable to equipment different from that described in the test report.

Rev.: FI 050 GB 60K10 v2_1	Program Version: 8.11	Date: 2005-04-18
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Installation, use and safety information

READ THESE INSTRUCTIONS BEFORE WORKING WITH THE DEVICE

CEIA can not be held responsible for direct and/or indirect damage to persons and/or property arising from failure to observe these instructions.

- | | |
|---|--|
| <ul style="list-style-type: none"> • Read this manual carefully before installing, operating or carrying out maintenance on the device. Keep this booklet in a safe place for future reference. • Follow the instructions contained in this manual for all operations relating to installation, use and maintenance of the device. CEIA cannot be held responsible for any damage resulting from procedures which are not expressly indicated in this manual. • The final user is responsible for selecting the appropriate security level/sensitivity for their application. After this selection has been made, and programming has been adjusted accordingly, it is also the final user's responsibility to verify calibration using the test object(s) appropriate to the level of security selected. Additionally, this test should be carried out periodically to insure no changes have occurred in the equipment. • Whenever there is any suggestion that the level of protection has been reduced, the device should be taken out of service and secured against any possibility of unintentional use, and authorised service technicians should be called. The level of protection is considered to have been reduced when: <ul style="list-style-type: none"> - the device shows visible signs of deterioration; - the device does not operate correctly; - the device has been stored for a long period in sub-optimal conditions; - the device has suffered severe stress during transport; - the inside of the device has come into contact with liquids. • Choose the installation site carefully. Avoid placing the device in locations where it may be directly exposed to sunlight, in unventilated areas or in places that are close to sources of heat. In addition, avoid places that are subject to vibrations, dust, humidity, rain and excessively high or low temperatures. • Installation must be carried out by qualified personnel. Given the dimensions of the device, it is requested that the installation site be kept clear while work is carried out to facilitate setting it up and to avoid any harm to third parties. • Position the device as far away as possible from sources of electromagnetic interference such as transformers or motors. • When installation is completed, the detector must be anchored to the ground in a stable manner and not subject to vibrations (use expansion screws inserted through the anchoring holes in the base of the panels). All connecting cables between the gateway and the power supply or other external devices must be properly fixed and protected so as to achieve the best performance from the detector and avoid accidental injury to people who might trip over them. • Handle the device with care and without excessive force during installation, use and maintenance • Before powering up the device, check that the mains power supply voltage corresponds to the voltage shown on the device's electrical specifications plaque. The use of a different mains voltage may damage the equipment! The device should be connected to the mains voltage only after all the connections required for full installation have been carried out. • The device must be connected to a power supply circuit fitted with a switch or other device which allows the power to be cut off. | <ul style="list-style-type: none"> • If the device is to be powered via an external autotransformer to regulate the voltage, ensure that the common terminal of the autotransformer is connected to the neutral of the power-supply circuit. • The power-supply plug must only be inserted into a socket fitted with an earth/ground connection. Any break in the safety conductor, either inside or outside the device, or disconnection of the earth/ground safety terminal, will render the device dangerous. Intentional cutting or disconnection is strictly forbidden. • Always remove the plug by hand when disconnecting the power supply cable, never by pulling on the cable. • The standard power-supply adapter is not waterproof: place it in a ventilated position where it is protected from water (rain, condensation, liquid detergents)! There is a risk of electric shocks for people and damage to the equipment! • This device contains electrical and electronic components, and may therefore be susceptible to fire. Do not install in explosive atmosphere or in contact with inflammable material. Do not use water or foam in the case of fire when the device is powered up. • To prevent damage by lightning, disconnect the power supply cable during thunderstorms. • Do not use in an explosive atmosphere. Avoid contact with inflammable or explosive material. • Carry out the periodic maintenance regularly (see section on Maintenance). Do not wash the device with water, liquid detergents or chemical substances. Use a slightly moist, non-abrasive cloth for cleaning. • The device must be disconnected from all power sources before undergoing any maintenance or cleaning, and before being moved. • Read the chapter on "Maintenance" carefully before calling the service centre. Whatever the problem, only specialised service personnel authorised to work with CEIA equipment should be called. • Any damaged parts of the device should be replaced by original components only. • Any maintenance or repair involving the device being opened while powered should be avoided as far as possible: if this becomes inevitable, the operation must be carried out only by qualified personnel who are fully aware of the risks involved. • Important advice regarding any batteries incorporated in the device. When replacing: use CEIA spare parts or batteries with equivalent electrical/mechanical characteristics. Do not dispose of used batteries in general rubbish bins; use public battery collection facilities as per local regulations, or return them to a CEIA office. If the equipment is to be disposed of, remove the batteries and dispose of them separately. CEIA will not hold itself responsible for the improper use of the batteries incorporated into its equipment: consult the battery manufacturer for more detailed information. • Human exposure to electromagnetic fields. The equipment is pre-set in the factory according to the regulations applicable in the destination country. Any modification to this pre-setting is the responsibility of the installer. For further information contact the competent bodies. CEIA's technical/sales department can provide further clarification. |
|---|--|

Symbols

	The device is marked with this symbol whenever the operator or the maintenance personnel, in order to avoid possible damage, have to refer to the present manual. The same symbol appears in the booklet at points where warnings or particularly important instructions are given - instructions that are vital to a safe and correct use of the device.
	The device is marked with this symbol in those areas where a dangerous amount of voltage is present. Only specialised maintenance personnel should make adjustments in these areas.
	This sign in the manual indicates tips for optimising the device's performance.

Warranty conditions

The warranty on all CEIA products, extended to the period agreed with the Sales Department, is applicable to goods supplied from our factory, and for every constituent part thereof, with the exception of the batteries and the card reader.

Any form of tampering with the device, and in particular opening its container, is strictly forbidden and will invalidate the warranty.

Customer Satisfaction Report

Your suggestions and comments on the products and services offered by CEIA and its distribution network are extremely important for improving our procedures. We would ask you to send them to us by compiling and returning the form available:

<http://www.ceia.net/security/satisfaction.asp>.

Thank you for your kind interest and co-operation.

CEIA reserves the right to make changes, at any moment and without notice, to the models (including programming), their accessories and optionals, to the prices and conditions of sale.

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I - DESCRIPTION

Operating Principle

In general, a modern Metal Detector for checking people in transit comprises:

- An electronics unit, made up of:
 - a variable magnetic field **generator**
 - a **receiver**
 - a **processing and control unit**, which determines if the variation of the received signal is due to metal masses in transit of a certain shape, volume or composition
- a **transceiver antenna** in the form of an archway

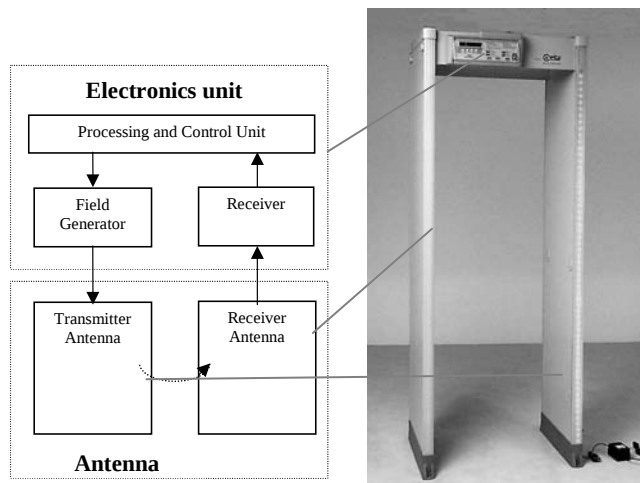


Fig. I-1: general block diagram of a metal detector

SOME HELPFUL GUIDELINES FOR METAL DETECTORS

The parameters which best characterise a Metal Detector are as follows

- **Discrimination:** This parameter reflects the variation in sensitivity between potentially dangerous metal objects (due to their particular shape compared with their volume) and personal effects (such as coins, keys, watches, buckles, etc...). When a detector with low discrimination is used, personal effects can cause a large number of false alarms, rendering the system ineffective in practical terms.
- **Uniformity in detection efficiency:** This parameter is closely connected with the linearity of the magnetic field generated inside the Metal Detector. Generally speaking, the greater the uniformity, the better the discrimination.
- **Sensitivity:** alarm activation threshold: the greater the sensitivity, the smaller the metal mass which will cause an alarm.
- **Interception speed:** the transit speed of a person through the metal detector archway usually depends on situational factors, and can vary considerably. The sensitivity of a good Metal Detector should be independent of the speed of transit.
- **Programming:** C.E.I.A. have designed their Metal Detectors to include the possibility of selecting the settings of the operational parameters: this predisposition facilitates both the installation of the device (rejection of external sources of interference) and adaptation to the user's requirements (orientation towards ferromagnetic and/or non-magnetic metals). This feature is particularly important in the detection of weapons made of light metal.
- **Immunity to interference:** environmental electromagnetic interference of mechanical or electrical origin is the principal cause of false alarms, because it augments the effective signal of the mass to be detected. Particular attention must therefore be paid to the Metal Detector's immunity to this type of interference.
- **Harmlessness to life support systems and storage media:** the field emitted by the Metal Detector should be below the values set by international standards which guarantee harmlessness to life support systems such as pace-makers, adrenaline pumps etc. Observance of these limits also means that there is no effect whatsoever on computer-type storage media.
- **Synchronisation:** multiple installations of Metal Detectors are very common (just think of an airport departure terminal). To allow several Metal Detectors to operate in a restricted area without influencing each other, it must be possible to synchronise them without the help of cable connections.
- **Power supply flexibility:** wide tolerance range for the input voltage and emergency batteries which cut in automatically ensure that the Metal Detector continues operating in the case of variations or cuts in the mains supply.
- **Set-up and calibration with respect to the reference sample:** a modern Metal Detector must allow its installation in whatever environment, without any interference caused by other external devices. The security level may usually be adjusted acting on sensitivity: CEIA's Metal Detectors are also provided with a special command (IS) allowing the direct selection of the functioning parameters which determine a security level conforming to the International Standards.
- **Maintenance:** a modern Metal Detector generally incorporates a self-diagnosis system which identifies any sabotage and which also signals accidental faults. Modular construction furthermore allows the faulty parts to be replaced quickly and easily, thereby minimising the time the device is out of operation.

Models

Series	Model	Description	Standard configuration/Options
HI-PE multi zone	HIPE/PTZ	Standard panel model <u>Intended use:</u> indoor applications (IP20)	<u>Standard configuration</u> - Electronics unit in IP20 plastic casing - IP20 archway with 720mm useful width, equipped with connection module without emergency battery <u>Options</u> - IP20 archway with 760mm useful width - IP20 archway with 820mm useful width - Connection module with emergency battery (30'). - Photocells for transit counting
	HIPE /PTZ-WP	Outdoor panel model <u>Intended use:</u> indoor/outdoor applications (IP65)	Standard configuration (full options) - Electronics unit in IP65 metal casing - IP65 archway with 760mm useful width, equipped with: - Connection module with emergency battery (30') - Photocells for transit counter

Construction of the Metal Detector

CEIA Metal Detectors are made up of an **electronics unit** and an **archway antenna**; the connection between the two is via two cables (one for the transmitter and one for the receiver).

Electronics Unit

The electronics unit, which is extremely compact, is available in an shock-resistant plastic casing, with protection grade IP20, or in a tight metal container, with protection grade P55 (for the outdoor model). Both casings are designed to be attached directly to the crossbar of the archway.

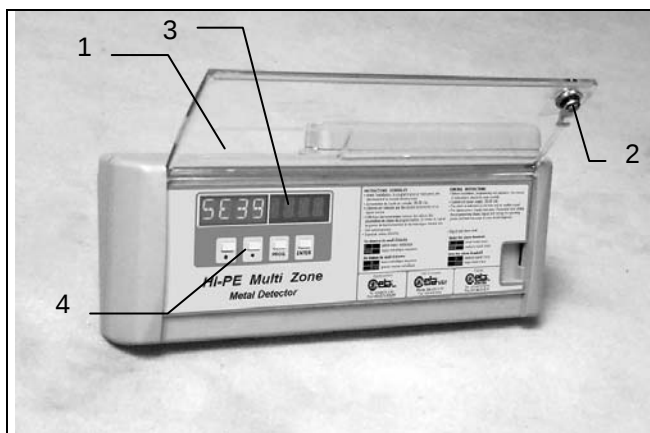


Fig. I-2a: electronics unit in IP 20 casing

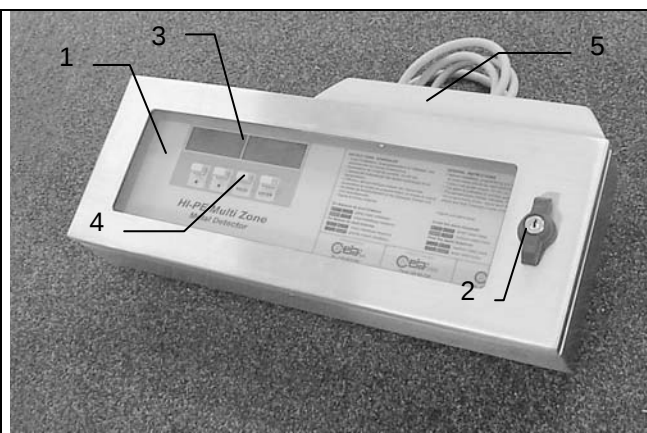
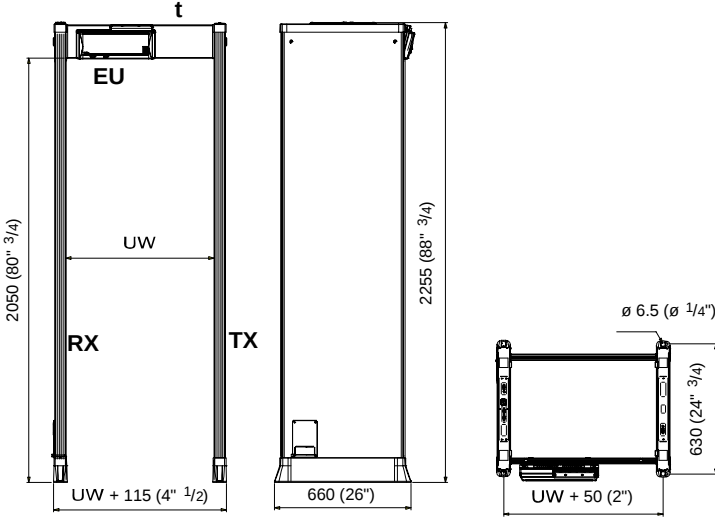
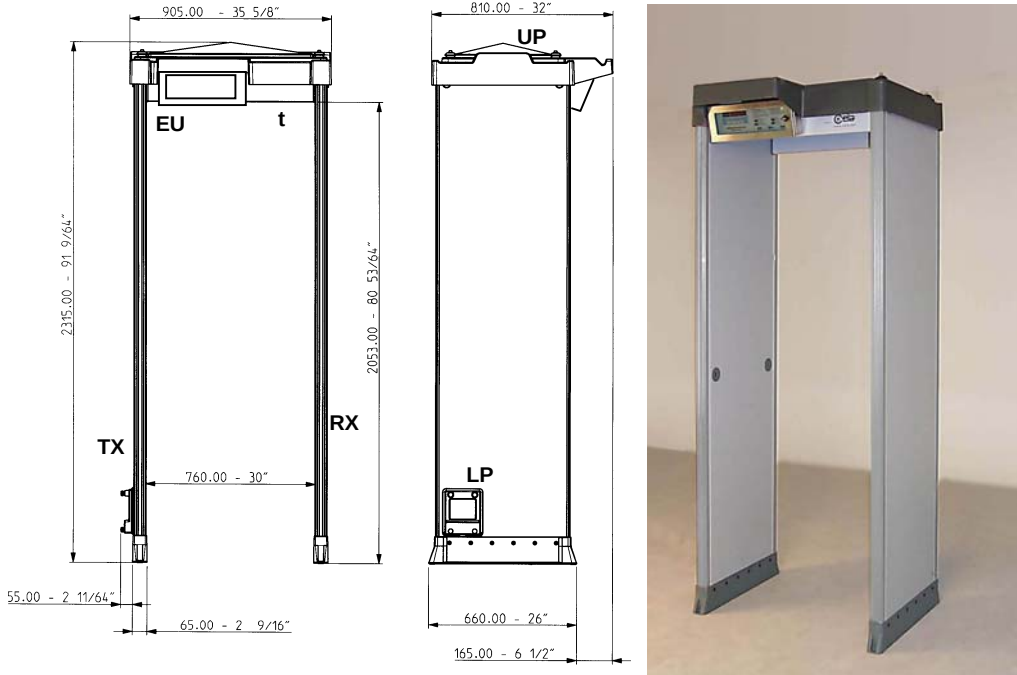


Fig. I-2b: electronics unit in IP65 casing

The alphanumeric display (3) and the programming keypad (4) are situated at the front, protected by a transparent panel (1) fitted with a security lock (2). A cover (5) on the top of the unit protects the terminal board and connectors to which the antenna, power supply, serial and slave connections are made.

Archway

This model is for the most part employed airports, ports, embassies, military installations, manufacturing premises and stadiums. The panels are manufactured in exceptionally robust synthetic material. The archway incorporates two bars which light up in the case of an alarm to show the height at which the metal mass has been detected.

 Technical drawing of the Standard Model archway. The front view shows a height of 2050 (80" 3/4) and a width of UW + 115 (4" 1/2). The side view shows a height of 2255 (88" 3/4) and a base width of 660 (26"). The top view shows a width of UW + 50 (2") and a height of 630 (24" 3/4). A cross-section detail shows a diameter of 6.5 (1/4").	Standard Model EU electronics unit RX receiver panel t cross-bar TX transmitter panel UW = 720mm (760mm or 820mm optional) Fig. I-3a Dimensions
 Technical drawing of the Outdoor Model archway. The front view shows a height of 2315.00 - 91 9/64" and a width of 905.00 - 35 5/8". The side view shows a height of 2053.00 - 80 53/64" and a base width of 660.00 - 26". The top view shows a width of 810.00 - 32". A photograph of the unit shows the electronics unit (EU) at the top, the receiver panel (RX) on the left, the transmitter panel (TX) on the right, and the upper protection (UP) at the top. The lower protection (LP) is at the base.	Outdoor Model (for outdoor applications) EU electronics unit LP protection of the lower connection module RX receiver panel t cross-bar TX transmitter panel UP upper protection UW = 760mm Fig. I-3b Dimensions

Mains adapter



Input voltage: 230Vac (CEE plug) or 115Vac /100Vac (UL plug)
Dimensions: 121 x 80 x 71 (LxWxH)
Cable length - plug side: 2m
Cable length - electronics unit side: 2m
Weight: 1,5 kg.
Protection degree: IP30

Fig. I-4

OPTIONS

Transit counter

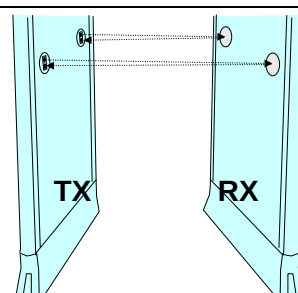
Two photocells fitted into the antennae allow counting of transits, alarms and percentage of alarms.



Fig. I-5a Photocells



Fig. I-5b Reflectors

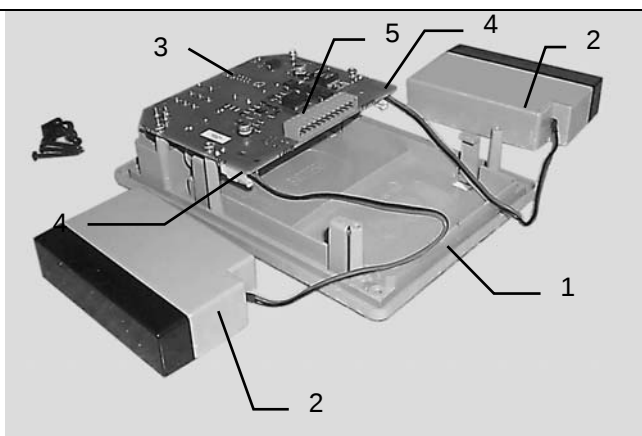


Emergency batteries

Two 12V-0,8Ah batteries built into the antenna switch in automatically and allow about 30 minutes of independent operation in the event of a mains failure. The batteries recharge automatically when the metal detector is connected to the AC power supply and switched on.

Use of the emergency batteries is signalled by a flashing letter "B" on the electronics unit display. Recharge time is about 8 hours.

The batteries (2) are housed in a compartment located in the upper part of the TX panel and are connected to the recharging card AB via the connectors (4).



- 1 cover
- 2 batteries (model NP 0.8-12 Yuasa)
- 3 card ALP (battery charger)
- 4 battery connectors
- 5 connector for internal connections

Fig. I-6

II - INSTALLATION



Before proceeding to install the device read the warnings and instructions in this section and in the paragraph “**Installation, use and safety information**” carefully. Please note that CEIA is not responsible for any damage that may result from installations that do not follow these guidelines.

Assembly

Unpacking the Metal Detector

Opening the packaging.

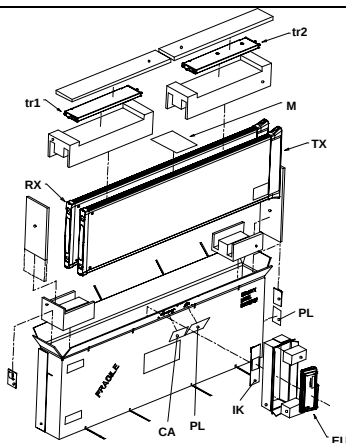


Cut the bands with scissors and open the top side of the box. Before taking out the components, remove the staples that join the strips of cardboard with pincers to avoid injury or damage to the equipment.



Handle the material with care during unpacking operations, to avoid injury to people or damage to the equipment.

All accessories needed for assembly of the Metal Detector are supplied with the device



CA customer address
EU electronics unit
IK installation kit
M manual
PL list of materials
RX receiver panel
tr1 cross-bar designed for fixing the electronics unit
tr2 second cross-bar
TX transmitter panel

Mechanical assembly

Assembly of the probe

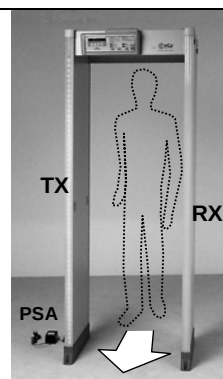
Refer to figures II-1a and II-1b. Connect the panels to the cross-bars **tr**, using the wrench provided to tighten the screws **vt** fully (about 15 Nm). The transmitter panel (TX) can be recognised by the connector at the bottom..



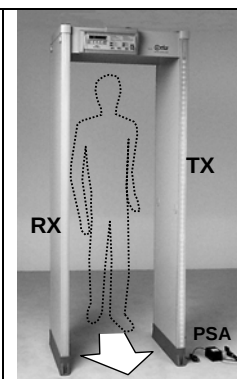
The probe can be assembled in two different configurations, both having the same level of performance:

- **configuration A** (with TX panel on the left when facing the exit side)
- **configuration B** (With TX panel on the right when facing the exit side)

The choice between the two configurations should be made based on installation requirements: see notes on the following pages (in particular, the paragraphs “Application in an airport environment” and “Installation of coupled metal detectors - synchronisation”).



Configuration A
TX on left



Configuration B
TX on right

Fixing the electronics unit

Refer to figures II-1a and II-1b. Fix the electronics unit **EU** to the cross-bar **tr1** using the wrench provided to tighten the screws **vc** fully (about 1.2 Nm).

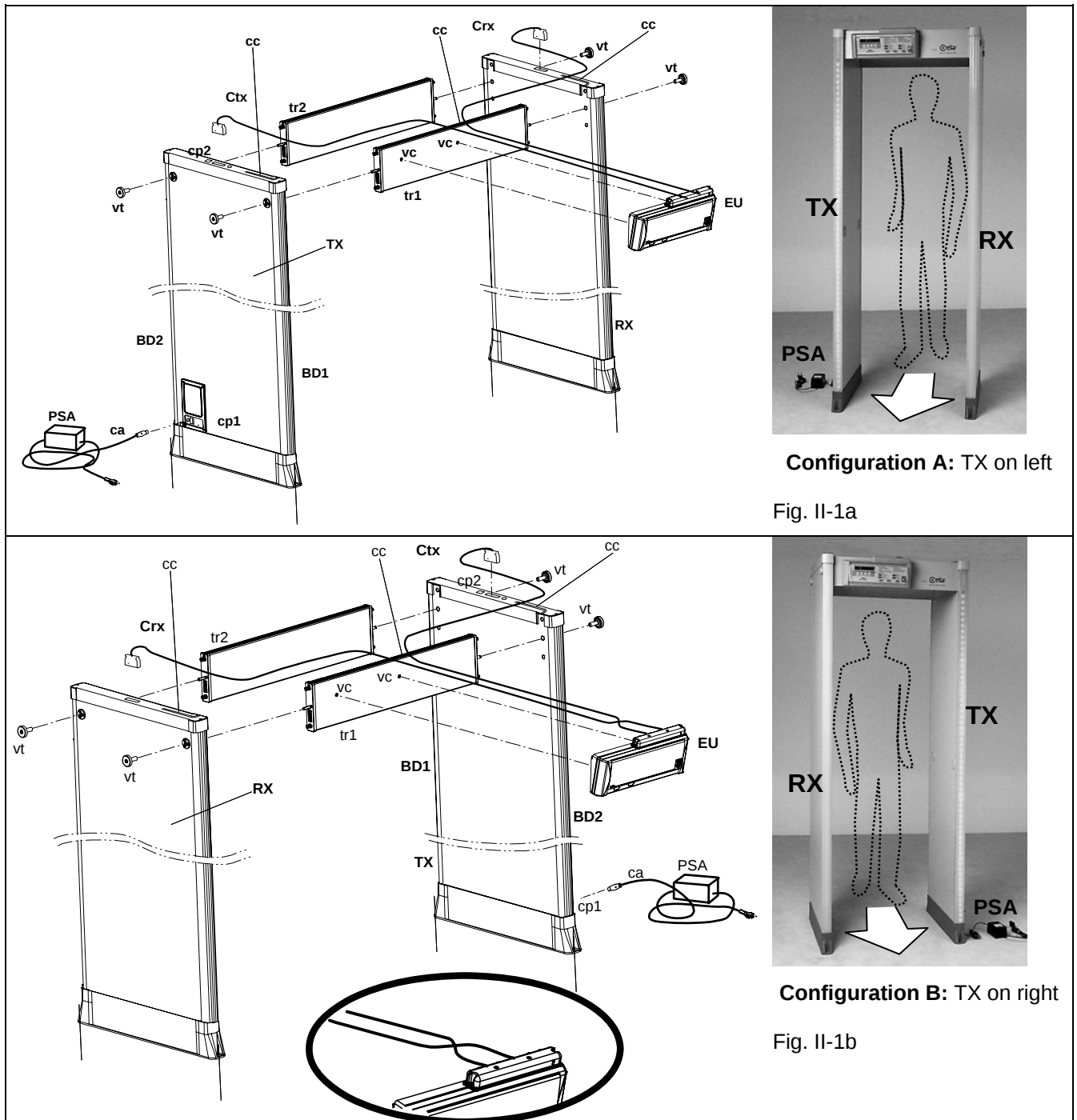
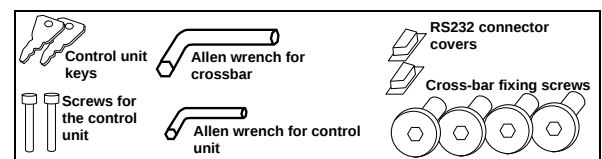


Fig. II-1a

Fig. II-1b

BD1, 2 LED bar
ca power-supply cable
cc central cable fixing groove
CH chip card
cp1 lower connection module
cp2 upper connection module
Crx RX panel – electronics unit cable
Ctx TX panel – electronics unit cable
EU electronics unit

PSA power supply adapter
RX receiver panel
tr1 cross-bar designed for fixing the electronics unit
tr2 second cross-bar
TX transmitter panel
vc electronics unit fixing screws
vt cross-bar fixing screws



Installation kit

Positioning

Transit requirements

The Metal Detector will be positioned, according to the requirements dictated by the transit, in such a way as to allow the maximum flow of people and observance of the rules for installation.



See notes on the following pages for correct positioning.



Minimum distances - Electrical and mechanical compatibility

General Rules:

- avoid movement of significant metal masses less than 70 cm from the Metal Detector antenna;
- avoid the presence of electric lines and electrical devices less than 30 cm from the metal detector probe, especially the receiver section (RX).
- move electrical/electronic devices (e.g. motors or switching power supplies) in general away from the metal detector probe, especially the receiver section (RX): the distance depends on the type and power of the device.

IMPORTANT!

The distances mentioned are indicative only:
The amount of interference should be assessed at the time of installation (see paragraph "Installation Check").



no signal or one green asterisk: interference acceptable!

Fixing the antenna to the ground

To fix the antenna to the ground screw the expansion screws (vf) into the floor through the holes provided in the base flanges.

Carefully check the perpendicularity and alignment of the transmitter and receiver sections, ensuring that they are anchored at the right distance

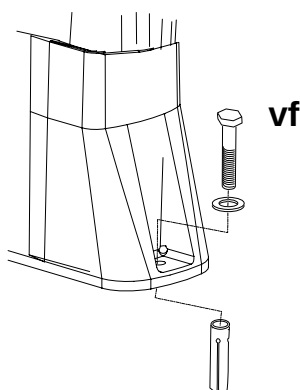
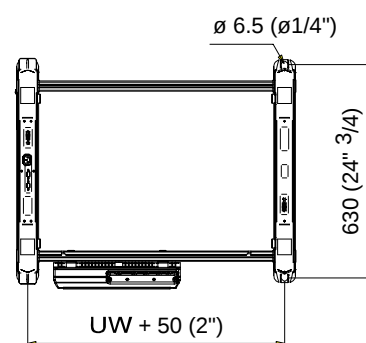


Fig. II-2a



UW= 720/760/820mm

Fig. II-2b - Diagram of holes for fixing to ground



Stability

To operate properly the antenna should not be subject to shocks or movements. Follow the installation instructions and ensure that the Metal Detector probe is stable and anchored firmly to the ground using screws or silicone. Check the rigidity of the floor; in particular, avoid installation on:

- Wood floors
- "technical"-type floors, as these generally do not rest on surfaces which guarantee stability over their whole area.



Holes

It is strictly forbidden to make holes in the Metal Detector antenna or to insert screws in positions, or of lengths, not expressly indicated by CEIA. Damage due to such actions is not covered by the product warranty.

Electrical assembly



All connecting cables between the gateway and the power supply or other external devices must be properly fixed and protected so as to achieve the best performance from the detector and avoid accidental injury to people who might trip over them.

Connecting the electronics unit to the archway (antenna).

- Refer to figures II-1a and II-1b.
The electronics unit is fitted with two cables for connection to the antennae (**Cr_x** for the receiver panel, **C_{t_x}** for the transmitter panel). The connectors of the receiver and transmitter panels are located on the top of the units.
- Attach the cables to the cross-bar using the grooves (**cc**) provided.

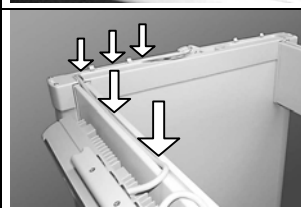
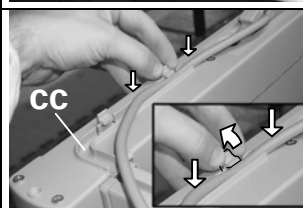
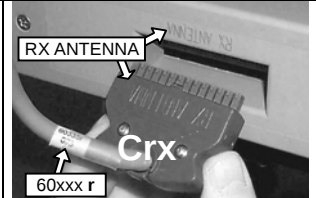
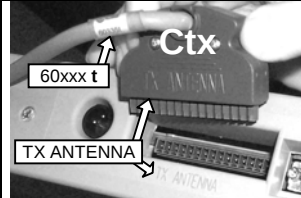
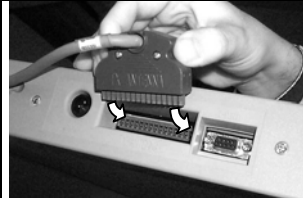
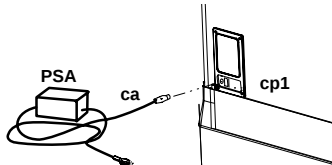


Fig. II-2c

Power supply connection

Refer to figures II-5a e II-5b.
The TX panel incorporates a low-voltage power-supply section: the connection panel (**cp1**) is located low down, and, in addition to the power-supply connection socket **DC**, includes the connector for serial communication (**B PORT**). The mains power adapter **PSA** should be connected to connector **DC**.



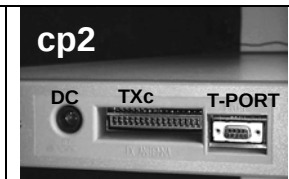
The connections panel is also designed for the insertion of two emergency batteries (see Options section).

The panel Metal Detector is provided with an additional connection module located in the upper part of the TX panel (**cp2**): this allows the connections to be made via cables coming down from the ceiling.



B-PORT serial communication port
cp1 lower connection module
DC power-supply cable connector
L1 power indicator
S1 On/Off switch

Fig. II-2d



ca power supply cable
cp2 upper connection module
DC power-supply cable connector
PSA power supply adapter
T- PORT serial communication port
TXc TX panel connector for cable connecting the control unit to the TX panel



Check that the voltage supplied by the mains corresponds to the detector's supply voltage: this latter is indicated on the device's power supply adapter and on the test report at the end of this booklet.

The use of a different mains voltage may damage the equipment!

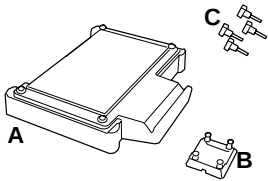
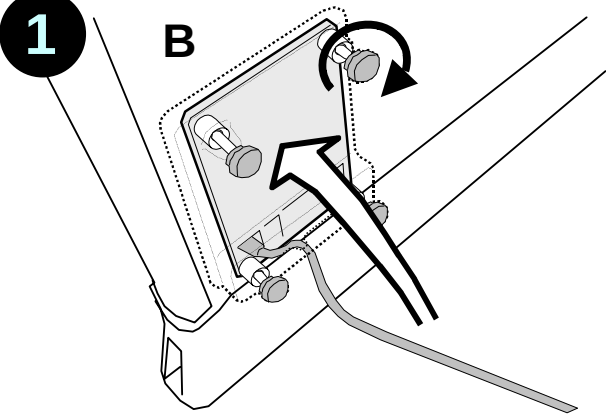
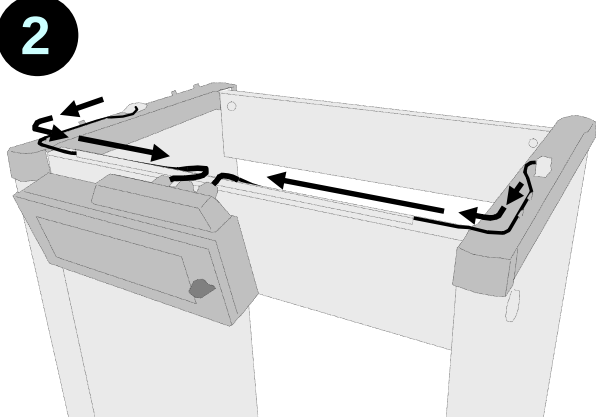
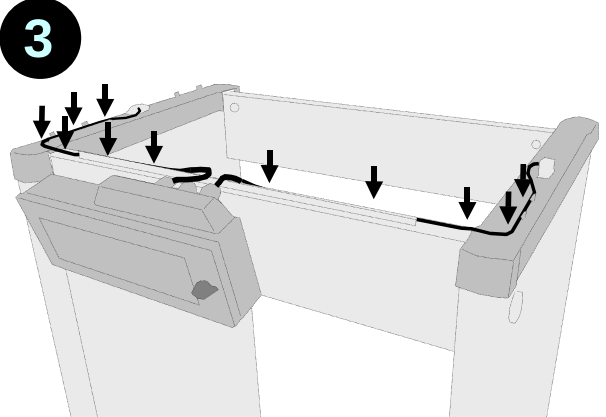
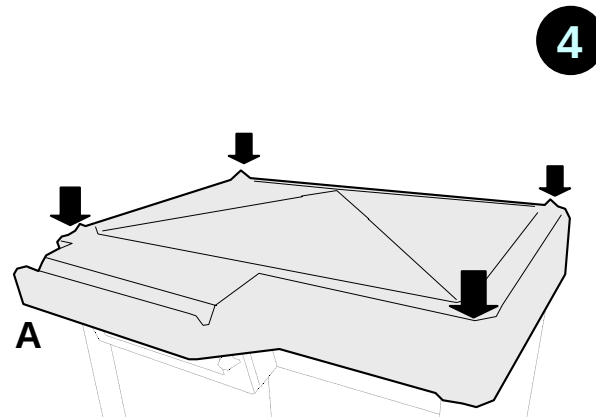
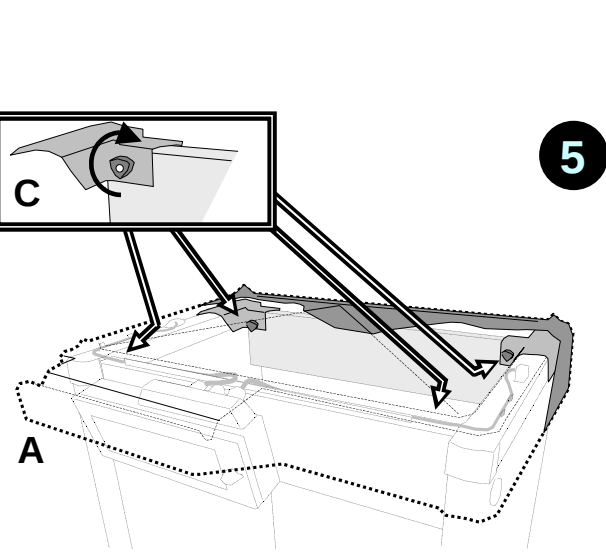


The standard power-supply adapter is not waterproof: place it in a well-ventilated position where it is protected from water (rain, condensation, liquid detergents).

A protection switch should be connected up between the mains supply and the detector. The external grounding line should conform to standards and should not in any case have a resistance greater than 3 Ohm.

Auxiliary connections: see appendix.

Outdoor model for outdoor applications: assembly

 A: upper protection B: lower connection module protection C: threaded knobs	Kit composition
1 	2 
3 	4 
5 	

Examples of Installations

Application in an airport environment

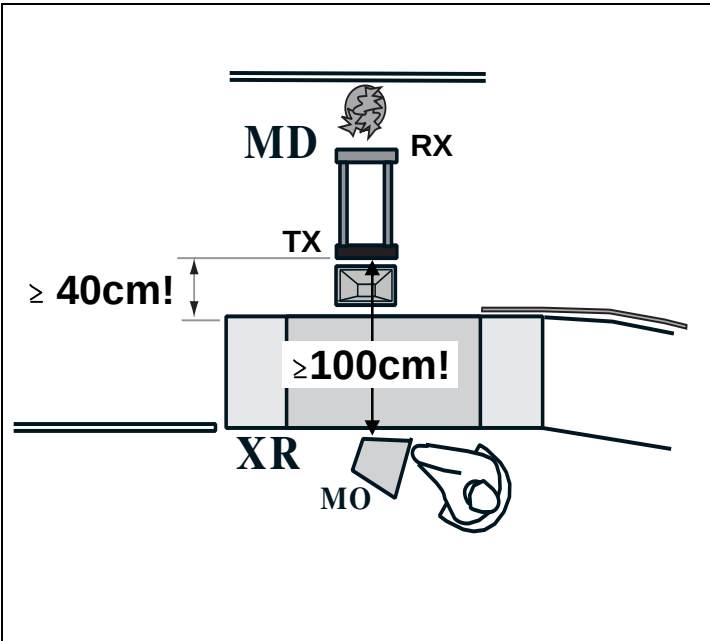
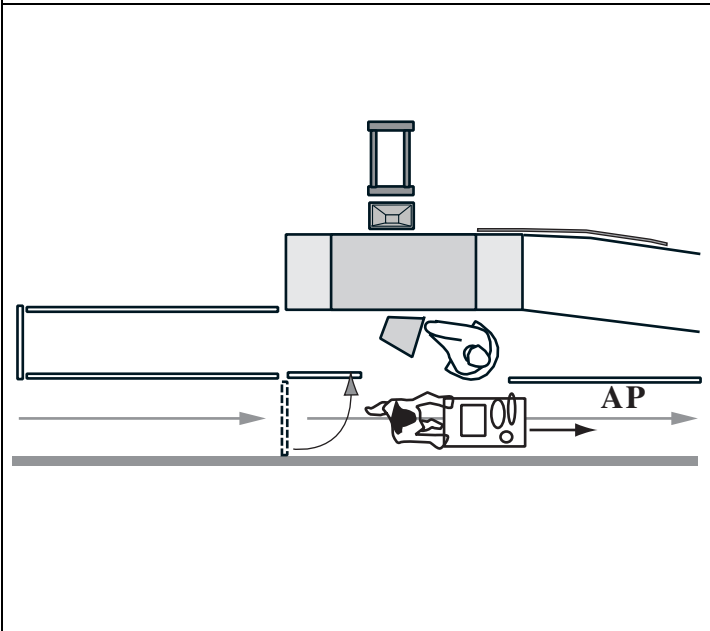
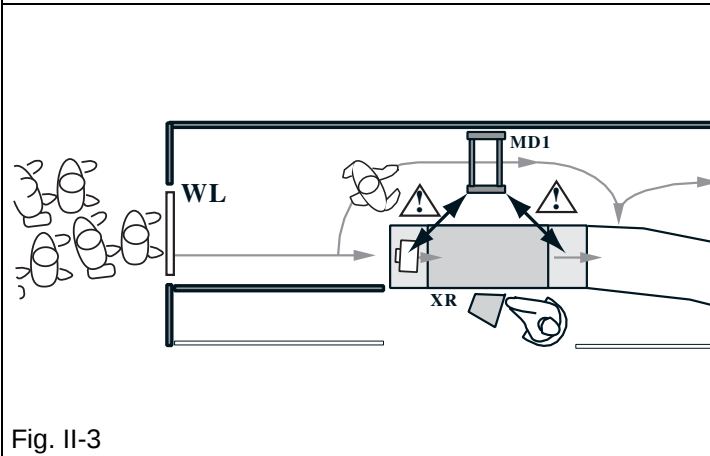
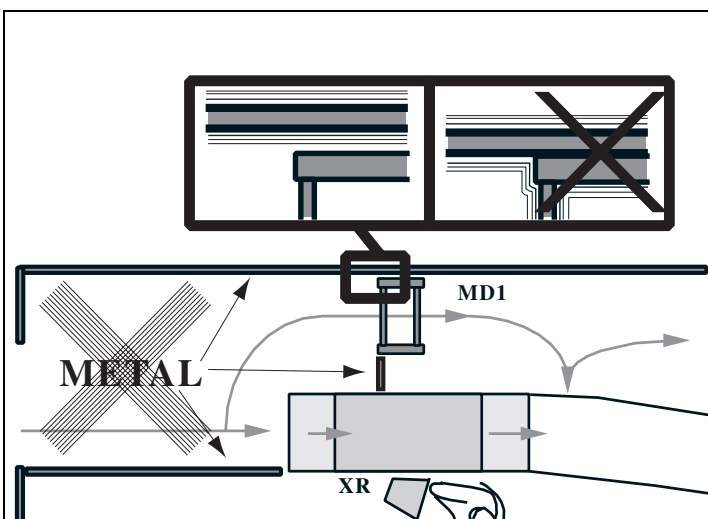
	The following notes refer to an airport departure terminal equipped with an X-ray unit for personal effects and a metal detector to intercept any weapons carried by passengers. Siting of the devices Care must be taken in the siting of the devices to avoid electromagnetic interference. The RX antenna of the MD metal detector should ideally be located as far as possible from the monitor (MO) and conveyor belt of the X-ray inspection device (XR). Site the transmitter antenna (TX), recognisable by its power-supply connector, next to this device.
	Auxiliary passage Wherever possible provide a passage dedicated to service personnel transit (AP), which will allow the passage of material and equipment for the cleaning and maintenance of the area. It will not therefore be necessary for the staff to pass through the Metal Detector, and the possibility of accidental blows and damage to the detector will be avoided
	Movement of luggage In order to avoid false alarms from the metal detector due to movement of luggage near the archway, it is advisable to locate it at equal distance from the beginning and end of the conveyor belt, where the luggage is taken back by passengers. It is also advisable to stop passengers crowding into the entrance by placing channelling barriers near the access control system (WL: waiting line).

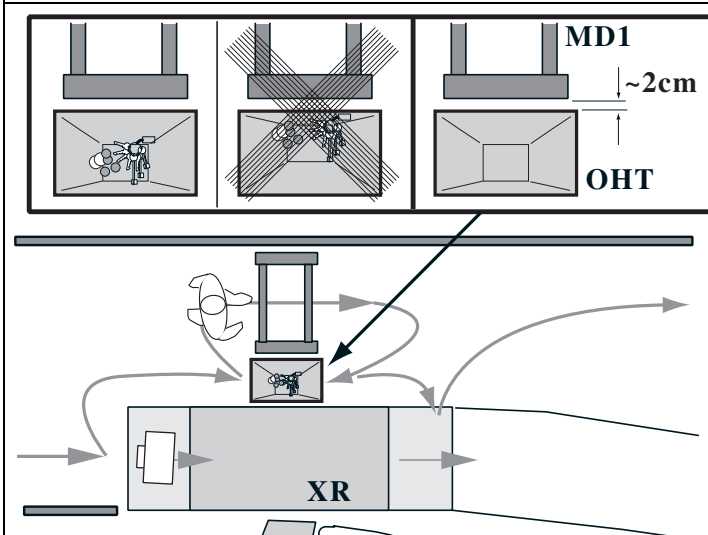
Fig. II-3



Barriers

It is recommended that the barriers be made of insulating material (wood, glass, lexan, plastic panelling, cordons, architectural embellishments in insulating materials), so that any movement due to knocks do not affect the antenna of the metal detector.

For the same reason, avoid direct contact between the barriers and the probe of the metal detector.



CEIA Personal Effects Depository

We recommend placing a CEIA Personal Effects Depository (**OHT**) between the metal detector probe and the X-ray unit

This article acts both as a spacer between the X-ray unit and the metal detector and as a temporary depository for metal personal effects which are not of dubious nature and therefore not required to undergo X-ray analysis (coins, keys and so on).

In this case, again, avoid direct contact between the depository and the metal detector probe.

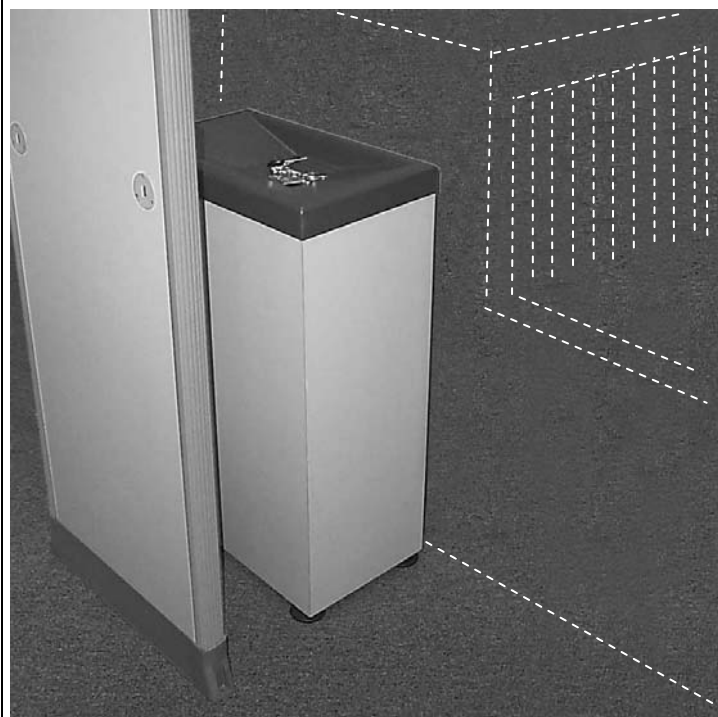


Fig. II-3b

Transit flow-rate and secondary metal detector for inspection in case of alarm

Medium-low flow-rate application: manual secondary metal detector

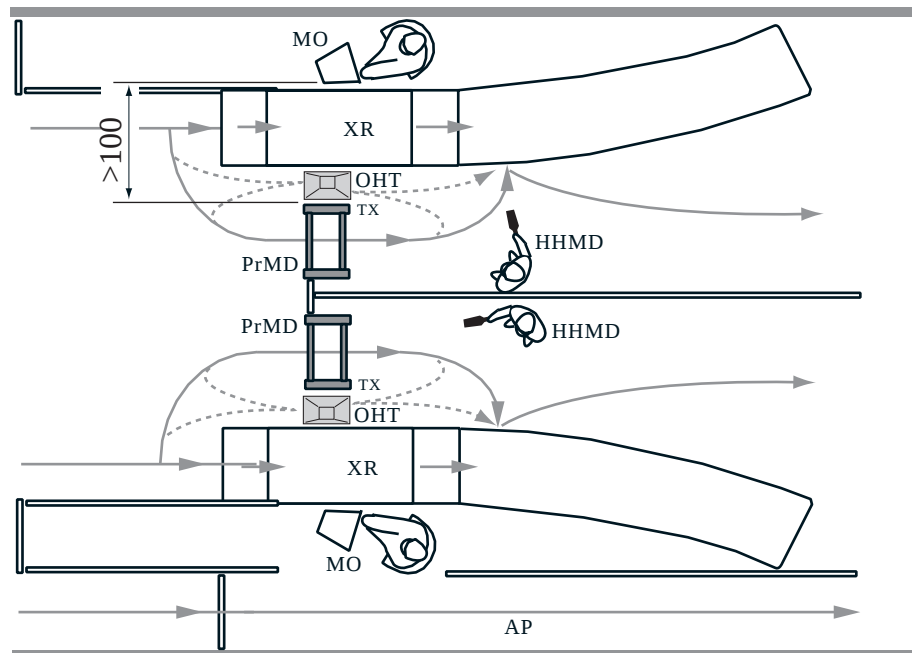


Fig. II-4a

Should the alarm sound, locate and identify the metal objects being carried by making the person pass through the gate several times or, if necessary, by using the hand-held metal detector.

- AP** Possible transit for service personnel
- HHMD** Hand-held metal detector CEIA PD140
- MO** Monitor of the X-ray unit
- OHT** CEIA Personal Effects Depository
- PrMD** Primary metal detector HI-PE or 02PN10
- RX** Receiver antenna
- TX** Transmitter antenna
- XR** X-ray unit

High flow-rate application: secondary metal detector with zonal detection

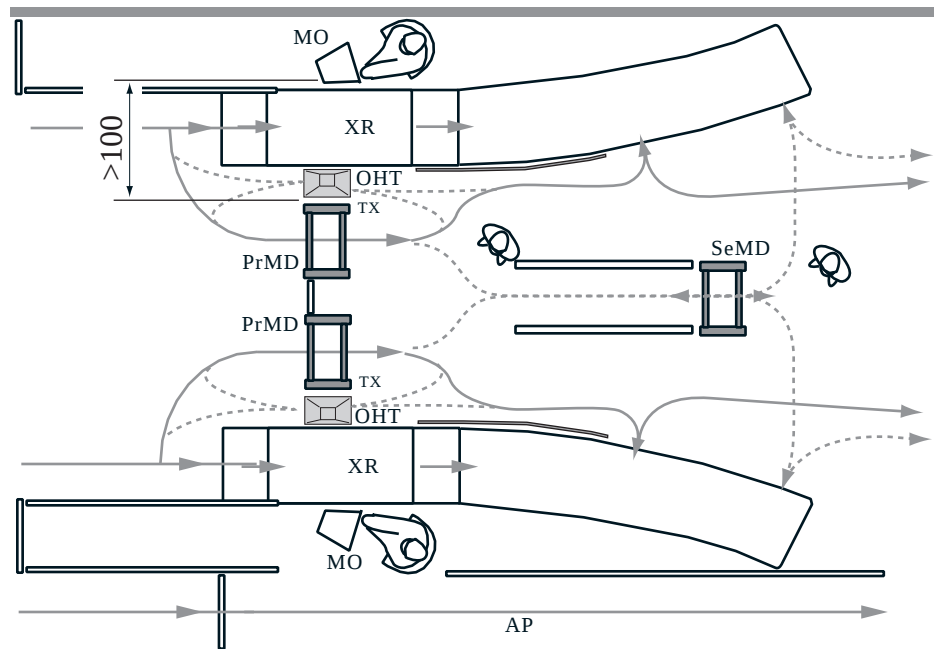


Fig. II-4b

Should the alarm of the primary metal detector sound, locate the metal objects being carried using the secondary metal detector.

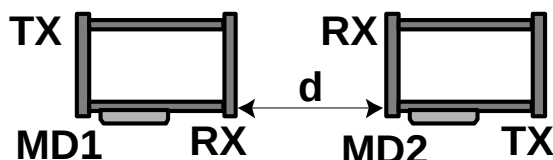
- AP** Possible transit for service personnel
- MO** Monitor of the X-ray unit
- OHT** CEIA Personal Effects Depository
- PrMD** Primary metal detector HI-PE or 02PN20
- RX** Receiver antenna
- SeMD** Secondary metal detector PMD2 with interception zone
- TX** Transmitter antenna
- XR** X-ray unit

Installation of coupled metal detectors - synchronisation

When two or more Metal Detectors are to operate near each other (generally within 10 meters), they must be synchronised by choosing an appropriate transmission channel for each one (CH function).



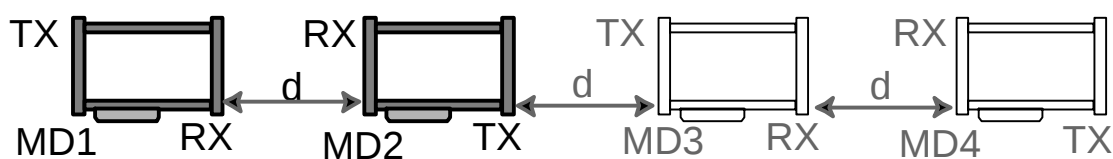
1. Follow precisely the arrangement of the TX and RX antennas and the minimum distances indicated. The TX antenna can be recognised by the power supply connector.
2. Select the 0 setting for the NL function.



NL = 0 !
d ≥ 5cm

50Hz power supply		60Hz power supply	
MD1	MD2	MD1	MD2
CH=1	CH=2	CH=51	CH=52

Fig. II-5a Installation of 2 Metal Detectors



NL = 0 !
d ≥ 15cm

50Hz power supply				60Hz power supply			
MD1	MD2	MD3	MD4	MD1	MD2	MD3	MD4
CH=1	CH=2	CH=3	CH=4	CH=51	CH=52	CH=53	CH=54

Fig. II-5b Installation of three or four Metal Detectors

III - SWITCHING ON AND DISPLAY MESSAGES



Before working with the device read the warnings and instructions in this section and in the paragraph **"Installation, use and safety information"** carefully. Please note that CEIA is not responsible for any damage that may result from installations that do not follow these guidelines.

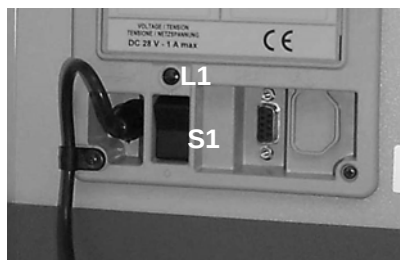
Switching on the Metal Detector

After turning ON the equipment, an audible signal will sound and the display of the electronics unit will show the following information:



Fig. III-1a

Manufacturer
Model
Alarm indication test
Normal operating



L1 power supply LED indicator
S1 On/Off switch

Fig. III-1b Detail of the lower connection module

Display messages

During operation the following messages may appear on the display (see also **AD** command, Programming section).

Alarm indications

Messages with **AD =0P-5P** (see Programming section).

Display	Buzzer	Meaning	
		NORMAL FUNCTIONING without metal masses in transit	
		small metal mass	metal mass under the alarm threshold
		medium metal mass	
		medium metal mass	metal mass over the alarm threshold: duration of alarm indication determined by the value of AD.
			
			
		large metal mass	

Fig. III-2

Messages with **AD =0C-5C** (see Programming section).

Display	Buzzer	Meaning
		Normal operation or metal mass under the alarm threshold (sensitivity indication)
		Metal mass over the alarm threshold: duration of alarm indication determined by the value of AD.

Fig. III-3

Other messages

Emergency battery power – mains voltage absent

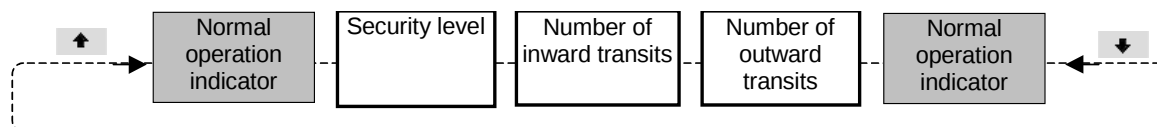
Display	Buzzer	Meaning
 Fig. III-4a	-	Emergency battery power supply is only indicated by a flashing letter “B” on the right of the display.

Warnings

Display	Buzzer	Meaning
 Fig. III-4b		Self-diagnosis (example shows message indicating antenna damaged or disconnected from the electronics unit)
 Fig. III-4b		Implementation phase of operating parameter modification. Metal Detector not operational (alarm relay activated).

Messages activated via the keypad

When keys or are pressed, the display shows, in sequence, the values of some operating parameters without having to enter programming mode (see also Programming section).



Action	Parameter	Possible messages
	AU (Autoset)	 Standard operation obtained via the AU (Autoset) function. N.B.: the AUTOSSET function is pre-set in the factory for all detectors.
	IS (International security standards)	 Operation in line with standard NILECJ 0601.00, level 1, obtained via the IS (International Security Standards) function. For the other possible settings, see Programming section.
		 : Operation differs from the standards selectable using the AU and IS functions. In addition to the sensitivity, it is possible to adjust another parameter which influences the response of the detector to metals (see sub-section “Received signal parameters” in the Programming section).
		 CI (Count in) Number of transits through the gate in the direction defined by parameter GD (gate direction). The read-out is updated in real time.
 Fig. III-5	CO (Count out)	 Number of transits through the gate in the opposite direction to that defined by parameter GD (gate direction). The read-out is updated in real time.

N.B.: the messages described above remain activated until the or key is pressed: this allows the operator to check, for example, the number of inward transits over the whole shift.

Visual alarm zone indication

The special feature of this model is that it indicates the height of the metal mass intercepted inside the archway by means of the LED bar located on the transmitter antenna. In the case of an alarm, one or more groups of the lights that make up the bar will come on to indicate the zones in which the metal masses have been detected.

Under non-alarm conditions, a power-indicator light (continuous or blinking depending on the value of parameter BM; see Programming section) can be seen at the top of the bar display.

The panel model has two light bars, the function of which is set by the GD parameter.

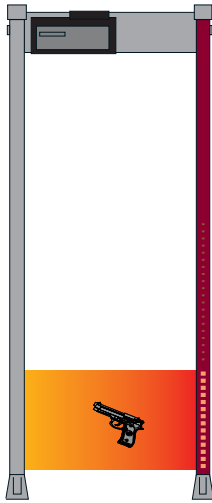


Fig. III-6a - alarm indication for a single metal mass

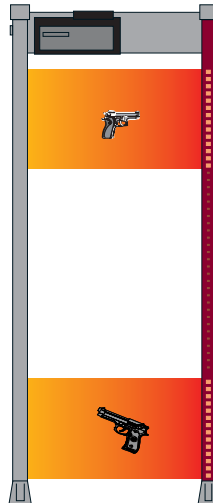


Fig. III-6b - alarm indication for two metal masses

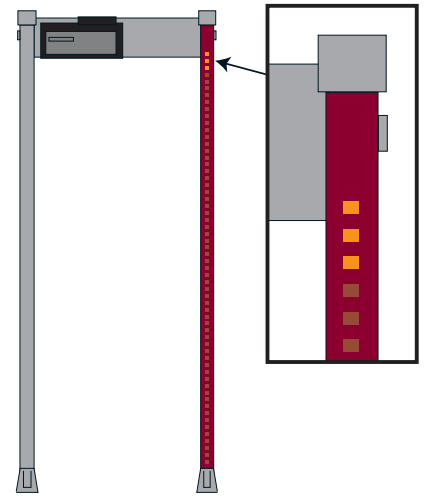
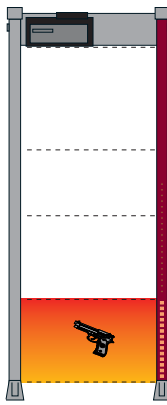
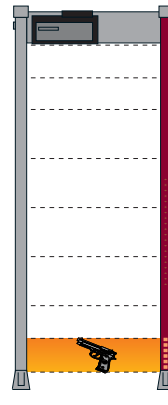
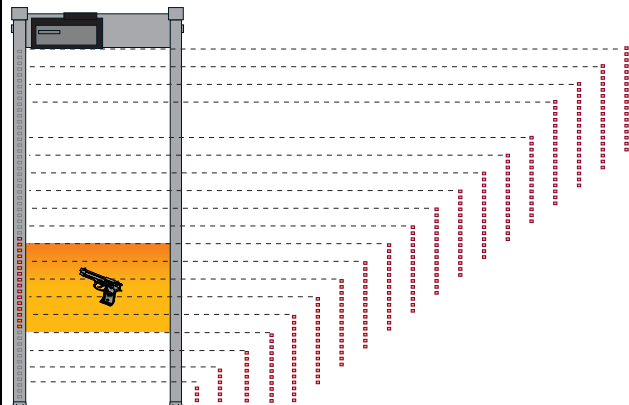


Fig. III-6c - power indicator

Three choices of operating mode, **floating** (standard), **4 fixed zones** and **8 fixed zones** can also be chosen using the ZN function (see Programming section).

		
Fig. III-6d - 4-zone operation (ZN=4): when a metal mass is detected, one of 4 distinct zones, each of fixed height and position, lights up.	Fig. III-6e - 8-zone operation (ZN=8): when a metal mass is detected, one of 8 distinct zones, each of fixed height and position, lights up.	Fig. III-6f - Floating-zone operation (ZN=FLOA): a group of LEDs lights up at the height of transit of the metal mass (20 different zones of variable height and position).
In fixed-height zone operation, the alarm threshold can be adjusted individually for each zone using the settings Z1...Z4 or Z1...Z8 (see Programming section).		

Stand-by

The standard version Metal Detector is not fitted with an On/Off switch.

To allow deactivation of the detector without disconnecting it from the power supply, it is fitted with a software power switch that allows the equipment to be placed in stand-by condition (**PW** function, see also Programming section).

In this case power consumption is reduced. The command can also be executed in remote mode (with metal detectors which are not connected in a network) .



Fig. III-7 – On stand-by the electronics unit display is off, while the cp1 connection module LED indicator stays on.

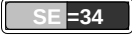
	PROG	enter the programming phase
	ENTER	press ENTER (enter password, if defined)*
		select PW function using the arrow keys
:		
		select "OFF" setting using the arrow keys
	ENTER	
	PROG	exit from the programming phase
		switch off

Fig. III-8a switching off the metal detector

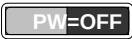
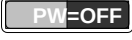
	PROG	enter the programming phase directly
	ENTER	
		select "ON" setting using the arrow keys
	ENTER	
	PROG	exit from the programming phase
		switch on

Fig. III-8b switching on the metal detector: (always possible without entering the password(s), even if these have been defined at both user [operator] and super-user [supervisor] level.*)

* See the section "Advanced programming – use of the password".

IV - PROGRAMMING



Before working with the device read the warnings and instructions in this section and in the paragraph "Installation, use and safety information" carefully. Please note that CEIA is not responsible for any damage that may result from installations that do not follow these guidelines.

Local programming

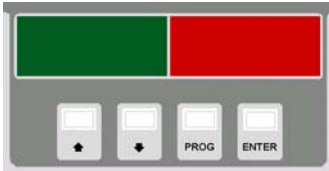


Fig. IV-1 display and programming keypad

Use the keypad on the inside panel of the control unit.

The **PROG** key is used to enter and exit the programming phase.

The **↑** (increase) and **↓** (decrease) keys are used to choose the function and select the data to enter; confirmation is via the **ENTER** key.

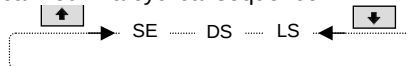


During programming, the metal detector is deactivated.

Display	Keyboard	Action/Meaning
---	PROG	Press PROG key.
-- --	ENTER	Press ENTER key: the last selected function will appear.
U SE =35		programming phase , U: operator ("User") level (see below).
:	-	-
U AV = 6	PROG	The programming phase is ended by pressing the PROG key.

Command execution - Local programming

a) The commands are scanned in a cyclical sequence:



This can occur in two directions by pressing the **↑** and **↓** keys.



Depending on how the metal detector is programmed, only some of the commands may be displayed.

b) Some functions are purely **commands** and do not have a value assigned to them. In this case the function is activated by pressing **ENTER**. Some commands also require confirmation before execution.

Example: Counter alarm reset:

U CR	ENTER	command activation
OK ? N	↑	confirmation request: the value changes from N (NO) to Y (YES) by pressing ↑
OK ? Y	ENTER	command execution
U CR		return to the sequence of commands

Other functions are parameters whose values are altered while the metal detector is in use (e.g. the alarm counter). In this case the current value can be read (**status request**) by pressing **ENTER**. To exit from the command press **ENTER** once more.

E.g.: value reading for working time.

U WT	ENTER	parameter activation
WT 456	ENTER	visualisation of the current value (456 hours)
U WT	ENTER	return to the sequence of commands

The remaining parameters can be both visualised and modified by the operator (the parameter can therefore function as a **status request** or as a **command**). The current value of the parameter is

visualised on the display to the right of the function code. Any modification of the value is activated by pressing **ENTER**.

E.g.: modifying the volume of the audible signal from value 4 to value 6.

U AV = 4	ENTER	current value (4) starts flashing
U AV = 4	↑	the value increases by one
U AV = 5	↑	the value increases by one once more
U AV = 6	ENTER	confirmation of the new value: the value stops flashing

Time out

The programming session will be terminated automatically if no commands are entered for a period of **2 minutes**.

Description of the commands



To see the standard values and the full list of the commands available at user level see the **TEST RECORD (Factory Acceptance Test Report)** at the end of this booklet (* : enabled command).



Code of the function type :

C= command

R= status request

S= the command can only be accessed at the supervisor ("Super-user") level

Reception Parameters



The reception signal parameters determine for the most part the Metal Detector's detection capability (just consider the sensitivity adjustment). If any variation is to be implemented, it must be checked for compatibility with security specifications.

Code	Meaning	Possible values	Type	Notes
SE	Sensitivity of the Metal Detector	0-99	C/R	0: minimum sensitivity, detection of large metal masses 99: maximum sensitivity, detection of small metal masses
Z1 : Z8	Zone sensitivity adjustment	-99..+99	C,R	In ZN=4 or ZN=8 mode, selects the gain of the individual zone. The rate of increase/decrease corresponds to that of the sensitivity setting SE Ex.: Z3=0 : no correction in zone 3 Ex.: Z3=-15 : reduction of 15 points in the sensitivity of zone 3 relative to the general sensitivity setting SE. NOTE: for each zone the sum of the general sensitivity setting SE and of the zonal sensitivity Zx must be in the range 0 to 99
LS	Minimum detection speed	0-9	C/R	0 = minimum limit 9 = maximum limit
DS	Maximum detection speed	0-9	C/R	This is correlated to the level of immunity to environmental interference: the lower the immunity level, the faster the maximum detection speed. 0 corresponds to the minimum detection speed (max. rejection of interference); 9 corresponds to the max. detection speed (min. rejection of interference). REMARK Decreasing of this parameter must be carried out according to the Security specifications.
LC	Uniformity coefficient of the electromagnetic field emitted by the antenna - ground level	-20, . ,-1, 0, 1, . 20	C/R	-20 maximum field attenuation 0 no change (standard) +20 maximum field increment This command is available on certain probe models only
NL	Noise limitation coefficient	0-9	C/R	0 automatic attenuation level 1 minimum attenuation 9 maximum attenuation N.B.: setting 0 must be selected if synchronisation between two or more devices is required.

Transmission parameters

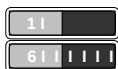
Code	Meaning	Possible values	Type	Notes
TP	Transmission program	0-99	C/R	To choose a different program from the one pre-set in the factory, contact CEIA's technical department.
CH	Transmission channel	0 - 99	C/R	0 - 49 for 50Hz power supply 50 - 99 for 60Hz power supply

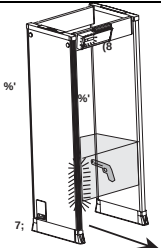
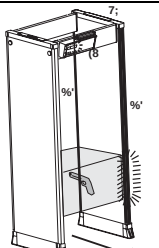
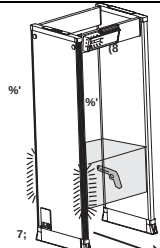
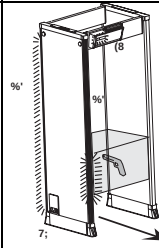
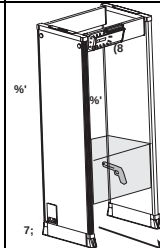
Alarm signal parameters

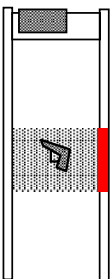
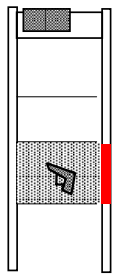
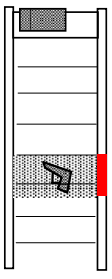
Code	Meaning	Possible values	Type	Notes
AD	Alarm duration	0P-5P 0C-5C	C/R	First range: proportional alarm indication 0P reset time = 0,3 s 1P reset time = 1 s 2P reset time = 2 s 3P reset time = 3 s 4P reset time = 4 s 5P reset time = 5 s In this case the display will always provide an indication proportional to the metal mass in transit, using the red sector on the right when there is an alarm. Second range: constant alarm indication 0C reset time = 0,3 s 1C reset time = 1 s 2C reset time = 2 s 3C reset time = 3 s 4C reset time = 4 s 5C reset time = 5 s In this case, during normal operation the display will indicate the selected sensitivity; when there is an alarm, 4 asterisks light up in the red section on the right.
AV	Alarm volume	0-9	C/R	0 (disconnected alarm) 9 (maximum volume). During local programming, the device provides an audible signal using the selected tone.
MV	Minimum alarm volume	0-9	C/R/S	0 (disconnected alarm) 9 (maximum volume). This determines the minimum value of the AV parameter In the standard settings this parameter can be accessed by the superuser only
AT	Alarm tone	0-9	C/R	5 different continuous tones ranging from 0 (deep sound) to 4 (high sound) 5 different pulsed tones ranging from 5 (deep sound) to 9 (high sound). During local programming, the device provides an audible signal using the selected tone.

Management of the Metal Detector

Code	Meaning	Possible values	Type	Notes
BR	Serial interface transmission speed (Baud rate)	110, 150, 300, 600, 1200, 2400, 4800, 9600	C/R	The change of serial transmission speed becomes operative when the programming session is terminated using the PE command.
NP	New password	XXXXXX X = any alpha-numeric character	C	This selects a new password to allow access the programming phase. The password must be made up of 6 letters (either upper or lower case) and/or numbers. The password is displayed to facilitate entry. Once the new password has been entered, it will be effective immediately. ATTENTION! For security reasons, once a password has been entered it will no longer be possible to read it. Should the access code be forgotten, assistance will be required from C.E.I.A. personnel.
AC	Number of alarms detected	0-999999	R	Model HI-PE with photocells It displays: - the number of passages through the antenna (P, 6 figures), - the number of passages with alarm (A, 6 figures) - the net alarms/passages ratio as a percentage (RR -- ring rate, 2 figures and one

Code	Meaning	Possible values	Type	Notes
				decimal) the total number of alarms (T, 6 figures) All counters are reset by the CR function. Note: during local programming, the values are displayed according to a cyclical sequence by pressing the  and  keys. Note: Passages carried out in the opposite direction to that selected with the GD function are not counted.
CR	Alarm counter reset	-	C	This command requests confirmation NOTE There are two counters, one at operator level and one at supervisor level (see also "Advanced Programming" section): only the counter at the current level of programming is reset.
WT	Working time of the system	0-999999	R	
GN	General environmental noise measurement	YES,NO	C	Displays the value of the signal received by the probe. 100 different values ranging from 0 to 99 can be displayed. Readings under 6 are also displayed via bar-graph:  Local programming: display of the noise level is activated by selecting "YES" and exiting from the programming. Measuring ends when the function is turned off (GN= NO): on exiting from the programming mode the display will show the normal operating message (sensitivity level). Remote programming: this function is activated by pressing the ENTER key: the numeric values will then appear on the right, from 0 to 99, continually updated. To end measurement, press any key  If both GN and EN functions are activated, function EN has priority.
EN	Environmental electromagnetic noise measurement	YES,NO	C	Similar to the GN function, but for electromagnetic environmental noise NOTE: the function is terminated automatically after 2 minutes. NOTE when the measurement phase is terminated a short beep is uttered and the display shows the message: 
SL	Self-diagnostic level	P, C	C,R,S	P limited programme of checks, (without monitoring of TX, RX and control sections). C complete programme of checks. Partial self-diagnosis (SL=P) is useful for technical testing. In the standard settings this parameter can be accessed by the superuser only
PV	Management programme version	-	R	
GD	Gate direction	1,2,3,4	C,R	Selects the direction of transit through the antennae relative to the positioning of the archway and the type of alarm signalling. GD=1 if you look at the gate from the point of entry, the transmitter antenna should be on the right. The LED bar activated is BD1. GD=2 if you look at the gate from the point of entry, the transmitter antenna should be on the left. The LED bar activated is BD2. GD=3 similar to GD=1, but both LED bars are activated. GD=4 similar to GD=2, but both LED bars are activated. GD=5 similar to GD=1, but in the case of an alarm LED bar BD1 identifies the metal mass, whilst bar BD2 lights up completely. GD=6 similar to =2, but in the case of an alarm LED bar BD2 identifies the metal mass,

Code	Meaning	Possible values	Type	Notes
				whilst bar BD1 lights up completely. GD=7 similar to GD=1, but both LED bars are deactivated. GD=8 similar to GD=2, but both LED bars are deactivated.
				    
				GD=1 GD=2 GD=3 GD=5 GD=7
BM	LED bar operating mode	CONT BLIN	C,R	CONT during normal operation, the top segment of the LED bar on the probe is continuously lit. BLIN during normal operation, the top segment of the LED bar on the probe blinks.
ST	Stores a set of parameters selected by the user	1-10	C	Each detector is equipped with 10 sets of parameters specifically designed for some of the most common applications The ST command, however, allows another 10 sets of parameters to be stored in memory. These parameters are set by the user: in order to do so the operator simply programs the apparatus for the required operational application and then activates the ST command, assigning an identification number. From that moment onwards the detector stores that programming set-up in memory and the operator may retrieve it for use should the programming be modified for any reason. Obviously, if a set of parameters is recorded under an identification number that is already in use, the new program overwrites the previous one. ATTENTION! If a problem occurs in the programming memory, the "PROG" message will appear and the operation will not be executed.
LD	Loading stored parameters	1-10	C	See function ST.
IS	International Security Standard	see the following table	C,R	During normal operation the current Security Level is displayed by pressing the  or  keys (see the following table).
UP	Selects the commands that can be accessed by the user	Y,N	C,S	The command codes will be displayed followed by an indication in brackets of the current status: (Y) = activated, (N) = deactivated Local programming The status of each command is changed by pressing the  or  keys. If you do not wish to change the state of the command you need only press  and the display will scroll to show the following command. Press the  key to interrupt the selection procedure Remote programming (see below) The state of each command is changed by entering the opposite value to the current one to the right of the # character. If the user does not wish to change the command state, he/she can simply press ENTER, and the cursor will move on to the following command. Press "." to interrupt the selection procedure.
AU	Autoset	-	C	Selects the factory-set standard values of operating parameters controlled by some commands. These standard values make up an additional set of parameters to those numbered 1 to 10 which can be recalled with the LD function. By executing the AU command the detector will be set to the most generally-used operating parameters, or alternatively to those which is best suited to a particular type of application specified by the user (for customised models). The command only relates to some parameters. This command requests confirmation.

Code	Meaning	Possible values	Type	Notes
PO	Output level	HEA.C ASTM 50364 ACGIH IEEE 364LO ENVDE	R,C	The parameter is pre-set in the factory according to the regulations regarding human exposure to electromagnetic fields, applicable in the destination country. Any modification to this pre-setting is the responsibility of the installer. For further information contact the competent bodies. CEIA's technical/sales department can provide further clarification. HEA:C Health Canada - Medical Devices Bureau ASTM ASTM FXXXX-99 "Standard Specification for Field Strength of Hand-Held Metal Detectors" (U.S.A.) 50364 EN50364:2001 (basic restrictions) ACGIH American Conference of Governmental Industrial Hygienists-1999 IEEE standard IEEE C95.1-1999 364LO EN50364: 2001 (derivated reference levels) ENVDE VDE 0848-3-1
SN	Serial number of the Metal Detector	-	R	
PW	Power ON/OFF	ON,OF	C	ON metal detector ON OF metal detector on stand-by For details of the procedure, see the "Use of the Metal Detector" section.
ZN	Number of zones	FLOA 4 8	C,R	Selects the LED bar signalling mode:  FLOA a single floating zone: a group of LEDs lights up at the height of transit of the metal mass (20 different zones of variable height and position)  4 when a metal mass is detected, one of 4 distinct zones, each of fixed height and position, lights up.  8 when a metal mass is detected, one of 8 distinct zones, each of fixed height and position, lights up.

ANALYSIS PROGRAMS AVAILABLE WITH THE COMMAND "IS"

PROGRAM IS	DISPLAY MESSAGE	SECURITY LEVEL / APPLICATION	SAMPLES
1	NILECJ 1	Standard : NILECJ-STD-0601.00 Security Level 1	AM9
2	NILECJ 2	Standard : NILECJ-STD-0601.00 Security Level 2*	AM7; AN7
3	NILECJ 3	Standard : NILECJ-STD-0601.00 Security Level 3*	AM5; AN5
4	NILECJ 4	Standard : NILECJ-STD-0601.00 Security Level 4	AM3; AN3; B6
5	NILECJ 5	Standard : NILECJ-STD-0601.00 Security Level 5	AM1; AN1; B2
6	3GUN TST	Standard : 3-GUN-TEST (FAA - USA)	OTP and weapons foreseen by the Standard
7	3GUN TSE	Standard : ENHANCED 3-GUN-TEST	OTP and weapons foreseen by the Standard
8	SPH.44.4	-	Sphere AISI 420 ø44.45
9	SPH.41.3	-	Sphere AISI 420 ø41.275

* N.B.: security levels NILECJ 2 and NILECJ 3 include the additional requirements foreseen by the Standard.



The unit is programmed in the factory to ensure operation according to the IS standards for the passage width listed in the " Factory Acceptance Test Report" included at the end of the manual. If, for any reason, the passage width has been changed, this correspondence is not guaranteed

Installation Checks



The operating parameters of each detector are pre-selected in the factory, based on its application. In general, installation does not cause any particular problems when the tips given in the "General Installation Instructions" have been followed.



The final user is responsible for selecting the appropriate security level/sensitivity for their application. After this selection has been made, and programming has been adjusted accordingly, it is also the final user's responsibility to verify calibration using their selected test object. Additionally, this test should be carried out periodically to insure no changes have been made to the equipment.

There follows a guide to the sequence of operations to be followed if the **Metal Detector** is to operate at maximum efficiency. After completing the detector's mechanical installation and electrical connections, switch it on and proceed as follows:

a) choice of optimum transmission channel (command CH). In the case of multiple installations, follow the instructions in the section "Installation of coupled metal detectors: synchronisation".

b) sensitivity adjustment (command SE)

The sensitivity is pre-set in the factory according to the type of application. Generally, it is only necessary to check proper detection of a sample supplied with the device or defined by security specifications

Procedure

- Take the metal mass considered to be the smallest sample to be detected, and make several passages through the probe. The mass must be passed along the centre line of the archway, changing the orientation of the sample each time.
- Carry out the test passing the sample at different heights, so as to find the sensitivity level that ensures interception of the sample over the whole of the useful archway, as defined in the security specifications.

The correct sensitivity setting is the lowest which ensures detection of the sample at all heights and in all orientations.

c) Specific security level (commands AU, IS and SE):

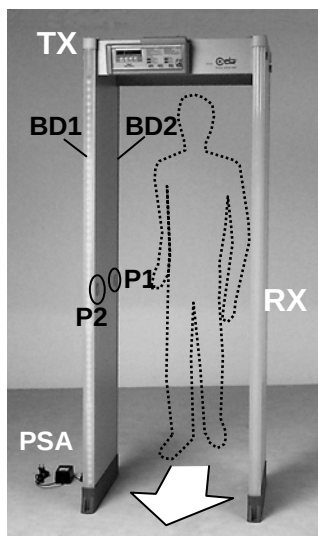
The detector is delivered pre-programmed in the AUTOSSET configuration. If this configuration does not permit detection of a reference sample defined by the customer, the sensitivity setting SE can be modified.

If a security level specified by international regulations is required, it can be selected via the IS command (see Programming section). Thanks to CEIA Metal Detectors' extreme consistency of performance, this command allows adjustment of the detector to the specifications of the selected standard without having to carry out the test procedure physically.

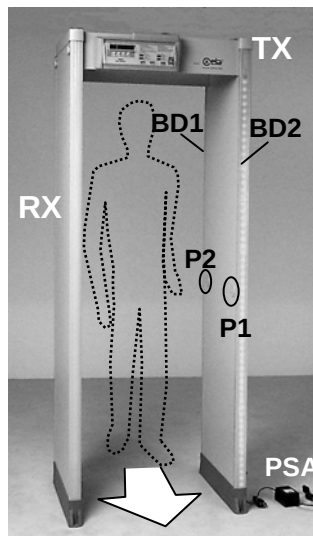
d) check for electrical noise. Check that activation of electrical devices around the Metal Detector does not cause interference: **the display should not show more than one asterisk in the green sector**  .

e) check for mechanical noise. Check that the movement of metal masses around the Metal Detector (metal structures in general, doors, furnishings, trolleys, ...) does not cause interference: **the display should not show more than one asterisk in the green sector**  .

- f) **Selection of the transit direction (model with photocells only - command GD).** Operation of photocells changes according to the direction of transit through the archway :



in the first case (the TX panel is on the right hand side as you pass through) the **p1** photocell is at the entrance of the passage while the **p2** photocell is at the exit: **select 1 for GD function** (see also GD function, paragraph "Management of the Metal Detector ").



In the second case (the TX panel is on the left hand side as you pass through) the **p2** photocell is at the entrance while the **p1** photocell is at the exit: **select 2 for GD function** (see also GD function, paragraph "Management of the Metal Detector ").

Fig. IV-2

Fig. IV-3



The metal detector can only count people passing through the gate if the correct value of **GD** is selected.



Proper operation of the photocells can be checked using the "Autotest Programme": See the Maintenance section.

- g) **Personalisation of general management parameters.** Set the general management parameters, such as the volume and tone of the alarm (commands AV, MV and AT), according to your particular requirements

If by any chance the Metal Detector does not operate correctly after the procedure described above has been followed, please consult the "Maintenance" section of this manual. We would also like to remind you that our Technical Department is always at your complete disposal for further clarification.

Advance notice must be given to the Security Manager regarding **any movement of the Metal Detector to a position** different from that of the original installation. The operation itself must be performed by technicians trained in the installation and validation of calibration procedures.

Advanced programming - Remote programming

Serial communication

CEIA Metal Detectors can be programmed via the device's keypad and/or from a remote PC station via a serial line connection to the RS 232 interface. The figure shows how to connect one or more Metal Detectors to a computer or modem.

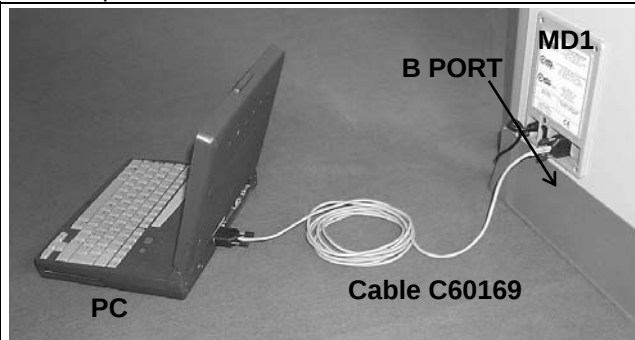


Fig. IV-4a connection of a metal detector (MD1) to a PC

Note: to connect more than one Metal Detector (MD1, MD2), a special cable is required (code C60363 + C60158). Selection of **each** apparatus is carried out by software, using a **different** programming password.

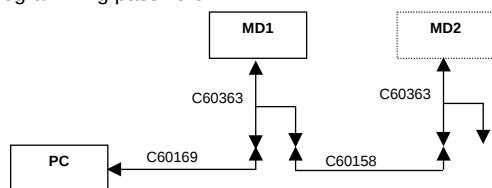


Fig. IV-4b

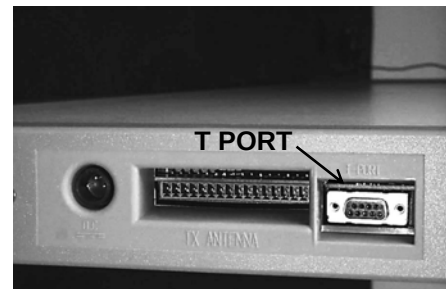


Fig. IV-5 : Detail of the metal detector connectors

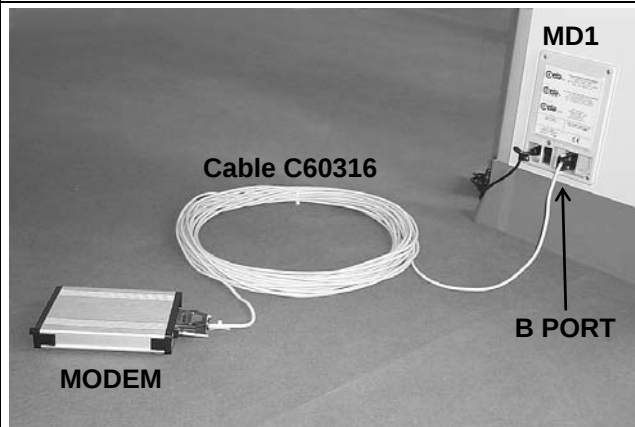


Fig. IV-6 : Connection of a metal detector (MD1) to a MODEM



Fig. IV-7 - diagram of the connections by linking telephone line: PC: personal computer; MD1, MD2: metal detectors; c1: cable for modem; TL telephone line



The archway is fitted with two connection modules, one module in the lower part of the antenna and another module at the top: make the connections for serial communication to the module used for the power supply connection. Place the power supply and serial communication cables together, in order to avoid loops.



If the **ALP** card is set to enable the functioning of the **RCU** unit, a +28V supply is connected to pin 1 of the connectors **B PORT**: in order to avoid any damage to the PC's interface, make sure that the cable connecting the metal detector to the PC does not include a connection to pin 1 or, in any case, set the **ALP** card in the standard operation mode (**RCU** unit disabled). **WARNING!** This voltage is always present at the upper connector **T PORT**, no matter which position the selector on card ALP has been set to.

Communication system configuration

Metal Detector	Terminal or computer
Select the baud rate on the Metal Detector (function BR)	Select the function mode on the computer: - type: ANSI/BBS, VT100 - baud rate - 8 data bits - 1 stop bit - no transmission protocol - automatic line feed - tabulation every 8 characters - full duplex (fdx)

Free access to programming phase (without password)

Press **ENTER** to access the programming phase. The prompt " > " will appear on the terminal.
E.g.:

```

ENTER
>      programming phase

```

Execution of commands in remote programming

Everything entered via the terminal keyboard will be displayed on the monitor.
The delete key (BACKSPACE) can be used to correct any possible input errors. The command will be executed once the carriage return key has been pressed (ENTER)
The syntax for the commands is strict. If any non-valid syntax is entered, an error message will be sent by the Metal Detector. Either upper or lower case characters can be used to enter commands.
At the end of the programming session , enter the PE (Programming End) command. E.g.: PE ENTER

Simultaneous access request by remote and local programming

Local and remote programming sessions can never be open at the same time.

If you press the PROG key on the electronics unit keypad when a **remote programming session** is in progress, the following message will appear on the Metal Detector display: **BUSY**

This message will disappear when any key is pressed. Should the remote programming session be terminated while the "BUSY" message is still on the display, you will be directly entered into the programming session.

If you attempt to execute a command in remote mode during a **local programming session** the message **BUSY** will appear and the connection will be automatically interrupted.

ADVANCED PROGRAMMING: use of the password

Programming levels

Access to the programming phase may be controlled by a **password** or be unprotected.

There are two programming levels: the **user (operator) level** and the **super-user (supervisor) level**.

user level , accessed by entering the "user password": - The terminal displays the " > " prompt ; in local programming the display shows "U" on the left. - The user can define his/her own password using the NP function. . - Only some of the functions are available to the user (these are selected by the super-user using the UP function)	super-user level , accessed by entering the "super-user password": - In remote programming, the terminal displays the " # " prompt ; in local programming the display shows "S" on the left - All the functions are available for the super-user. - The super-user can define his/her own password using the NP function. - The super-user can also decide which functions are available for the user (see function UP).
---	---



At each programming level, only the password relating to that same level can be modified.

The equipment is usually delivered from CEIA with a password already set for super-user level, while user level access is unprotected.



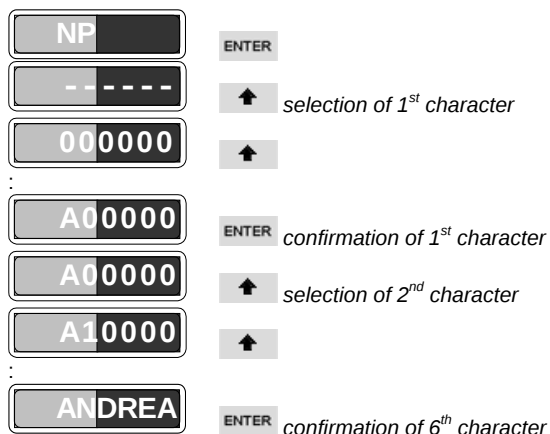
We recommend changing the password immediately after installation and at intervals thereafter, to prevent access to programming by unauthorized persons.

Password definition

The password can be changed by means of the **NP** command, **during a programming phase**.

Local Programming: use  and  keys to select the characters, press the  key to confirm. The password is made up of 6 letters or numbers.

E.g.: (example password: ANDREA)



Remote Programming: insert the password by means of the keyboard.

The password is made up 6 letters or numbers in upper case or lower case which are then followed by a carriage return (**ENTER**).

Do not use spaces or other punctuation characters.

E.g.: (example password: ANDREA)

NP=ANDREA ENTER

Access to the programming phase using the password

Starting from normal operation, enter the password using the built-in keypad (local programming) or the terminal keyboard (remote programming).

Local Programming	Remote Programming
a) The password is made up of 6 letters or numbers. b) Press PROG key: 6 dashes will appear on the display: ----- The first dash flashes to indicate the position of the cursor. c) Insert the password by activating the and keys to select the characters and then pressing the ENTER key to confirm. d) After entering the last character, the programming phase starts. If the password is not recognised, the password must be re-entered (go to point b). e) At the end of the session, press PROG .	a) After powering up the terminal and Metal Detector (wait the end of the initial warming up period), enter the password by means of the keyboard. b) If the password is recognised, the programming phase prompt will appear (> for user level, # for super-user level). Otherwise the password must be re-entered. After the third failed attempt to enter the password, the device will pause for 10 seconds to avoid any computerised search for the password by ill-intentioned persons. c) At the end of the session, enter the PE command (Programming End, see below).
E.g.: correct operation (password: ANDREA):	E.g.: correct operation, user level: ENTER <i>entering of the password</i> > <i>programming phase (user level)</i>
If a mistake is made, the display returns to the normal operation sign .	If a mistake is made, the prompt does not appear

Programming without password

To avoid having to use a password, the code "-----" must be assigned to the password. This can be done at both user and super-user level using the NP function.

Local programming	Remote programming
	Enter the "-----" password via the keyboard NP=----- ENTER



ATTENTION! If both levels (user and super-user) have free access, any subsequent programming request is at super-user level.

Parameters accessible from remote programming only



Function code :

C= command

R= status request

S= the command can only be accessed from the super-user level

Code	Meaning	Possible value	Type	Notes
CI	Number of inward transits	0-999999	R	This function displays the number of transits made through the gate, in the direction defined by parameter GD, since the last time the alarm counter was reset (command CR). During normal operation, the current value of this parameter can be seen on the display if the  or  key is pressed
CO	number of outward transits	0-999999	R	This function displays the number of transits made through the gate, in the direction opposite to that defined by parameter GD, since the last time the alarm counter was reset (command CR). During normal operation, the current value of this parameter can be seen on the display if the  or  key is pressed
RE	Alarm reset	-	C	ATTENTION! The metal detector will operate under manual reset only during a programming session and with the reset mode set on "manual" (see the RM function). Outside of the programming session, the device will operate under automatic reset. If the RE command has not been authorised for the user environment, the mechanism will operate under automatic reset during a programming session at user level.
RM	Alarm reset mode	M, A	C/R	M Mode: corresponds to manual reset via command RE. The alarm is kept in memory until the RE command is executed. (N.B.: any reset button that might be connected to terminal PP1 will not have any effect) A Mode: corresponds to automatic reset: the alarm stops shortly after the transit through the transducer is completed.
AA	Indication of the size of the metal mass detected	0-4	R	Displays the size of the metal mass detected (during an alarm in manual reset mode, see RM function). 5 different values can be adjusted, ranging from: • 0 (no alarm) • 1 (small mass) • . • . • 4 (large mass). Status reading does not reset the Metal Detector alarm.
HE	HELP	-	R	This selects a display of the meaning of the programming codes. The read-out will give the correspondence table (function – function code) The * character indicates that the command is enabled at user level (see the UP command).
PE	Programming end	-	C	This command will be executed automatically if no commands are entered for a period of 2 minutes.
PT	Parameter table	-	R	Displays the values of the operating parameters. The serial number of the device appears at the top. The character * indicates that the command is enabled at user level (see command UP).
SC	Self-diagnosis		R	Displays the status of the Metal Detector. When operating properly, this message appears: OK System working perfectly If one of the device's components is faulty, a message will be displayed (in descending order of priority). For more details see the "Maintenance" section. N.B.: The SC command can only be executed in remote programming. The self-diagnosis device is permanently active, and any indication of malfunction is given automatically on the display.

V - Technical characteristics

Walk-through gate

Designed and constructed according to the most advanced technological criteria, the gates are extremely robust and stable, yet elegant and fully protected against the effects of weather and wear-and-tear.

Central electronics unit

- **Degree of protection:** IP 20 (IEC 529), with standard casing; IP65 with waterproof casing in stainless steel
- **Dimensions and weight:** IP 20: 380 x 157 x 82mm; 1,3 kg. ; IP65: 387 x 178 x 80mm; 2 kg

Inputs/Outputs:

- **Power supply:** 115/230V~ +10/-15%, 50 ÷ 60 Hz, 40 VA
- **Alarm:** NC-NO-C switch alarm relay, NC-NA-C, 1A-24V~/24Vcc.
- Input for manual resetting of alarm (N.C. contact) or for connecting photocells to count number of transits.
- **Serial interface:** RS-232C type with low impedance for connection to terminal, computer or external modem at a distance of up to 100 m.

Environmental conditions

- **Temperature:**

Protection degree	Working temperature	Storage temperature
IP20	-10 ... +65°C (14...149°F)	-35...+70°C (-31...158°F)
IP55	-20 ... +70°C (-4...158°F)	-35...+70°C (-31...158°F)
- Relative humidity: 0 – 95%, without condensation.

Alarm modes

Signalling

- Detection of masses in transit (automatic or manual resetting)
- Sabotage or internal self-diagnosis

Type of signalling

- Visual: fixed or proportionate to the mass in transit - visible from 6m under lighting of 4000lux.
- **Visual with zonal subdivisions** via a vertical LED display on the antenna. Resolution: 20 distinct alarm lights. Signalling via a single **floating group** of LEDs, or via **4 or 8 individual zones** each of fixed height and position..
- Audio: fixed 90 dB(A) at 1m
- By means of relay

PROGRAMMING

Presets

SE	100	sensitivity levels
DS	10	maximum detection speed settings
LS	10	minimum detection speed settings
LC	2	independent sensitivity areas
NL	10	electrical impulse interference limitation levels
CH	100	transmission frequencies
AV	10	levels of alarm volume
AT	10	levels of alarm tone
AD	10	levels of alarm duration
BR	8	serial transmission speeds
NP	2	programming passwords
LD/ST	10	storable programming sets
AU	1	autoset function
GD	2	gate direction

Readout parameters

- AA Alarm intensity indicator
- AC Alarm counter (transits, alarms and percentage of alarms on photocell models)

- CI Number of inward transits
- CO number of outward transits
- GN Measurement of general environmental noise
- EN Measurement of environmental electromagnetic noise
- HE On-line help
- PT Table of operating parameters
- PV Program version in use
- WT Total operating time of the metal detector

Automatic functions

- IS Direct selection of International Security Standards

SPECIAL FEATURES

Technology

- Professional high-integration, optimum-reliability electronics
- D.S.P. analysis with numeric filter of the signal received (patented).
- High immunity demodulation of the signals (patented).

Signalling

- **Indication via a vertical LED display on the antenna of the position of one or more metallic masses passing through the archway.**
- Immediately-available display of security level and number of transits made in both directions.

Programmability

- Programmability of all the parameters protected by passwords.

Transit flow

- Very reduced reset time for a rapid flow-rate (detection speed: up to 15m/sec.)

Multiple installations

- Automatic synchronisation between 2 or more metal detectors with a reciprocal distance of down to 5 cm without the use of cables.

Remote control

- Capacity for total remote control through an RS-232C serial line.

Installation and maintenance

- Automatic adjustment to environmental parameters and absence of initial or periodic calibrations.
- Proper environmental installation checked by means of a read-out of the general noise "GN" and electromagnetic noise "EN".
- Autoset function to reset the default operating parameters

Metal Detector Utilities

- A complete range of accessories for calibration and advanced management of CEIA Metal Detectors.

Certifications and conformity

Harmlessness

- Certified as harmless to wearers of pacemakers, invalids, pregnant women and so forth.
- Harmless to magnetic media (floppy disks, tapes, etc...).

Standards

- Conforms to the NILECJ-0601 standards for all security levels and to the FAA "3-Gun Test" standard.
- Conforms to the international standards currently applicable for electrical safety and EMC, and to the applicable EC Regulations.
- Approved Ministries and Authorised public bodies.
- Complies with Scandinavian CAA specifications.

VI - MAINTENANCE



Before working with the device read the warnings and instructions in this section and in the paragraph **"Installation, use and safety information"** carefully. Please note that CEIA is not responsible for any damage that may result from installations that do not follow these guidelines.

Suggested Maintenance Schedule

Operation	Tools required	Items required	Execution		Period	
			Operator	Maintenance Technician	Replacement	Inspection
Battery replacement	Medium size Phillips screwdriver (PH1)	2 batteries		●	Recommended: 3 years (maximum: 5 years)	-
Autotest	-	-		●	-	12 months
General cleaning	A slightly moist, non-abrasive cloth		●		-	4 months
Visual check that all components of the metal detector are undamaged.	-	-	●		-	4 months
Visual inspection of connectors and power supply cables.	-	-		●	-	4 months
Floor anchoring inspection: ensure that the archway is firmly anchored to the floor. *	-	-		●	-	4 months
Cross-bars inspection: ensure that the cross-bar screws are properly tightened.	Supplied Allen Key N°8	-		●	-	4 months
Control unit inspection: ensure that the fixing screws are properly tightened.	Supplied Allen Key N°5	-		●	-	4 months
Verification of the calibration	Test piece specified by the Security Standard in use	-	●		-	● Daily ● At shift changes ● In case of doubt of proper operation

* Advance notice must be given to the Security Manager regarding **any movement of the Metal Detector to a position** different from that of the original installation. The operation itself must be performed by technicians trained in the installation and validation of calibration procedures

Diagnosis

Message	Possible cause	Recommended action
RX ERR	fault in the receiving section	• Check the choice of transmission channel (function CH) if more than one metal detector is installed (see related para. in "Installation" section) • replace the electronics unit
GATE	connecting cable damaged or disconnected damaged transducer	• check the connections between electronics unit and antennae • check that no nails or screws have been driven into the transducers without prior consultation with the technical department of CEIA. • replace the connecting cable • replace the transducer
PROG	loading of data via the LD or IS commands from an unprogrammed memory cell	• Programme the memory cell (ST command) or use a pre-programmed memory cell.
RS232	serial interface malfunction	• check the serial line connections • check that serial transmission mode has been selected correctly at both the detector and the remote terminal (see Programming section) • replace the electronics unit
BUSY	attempt to access programming in local mode while a session is already underway in remote mode, or vice-versa.	• Exit from programming phase
WAIT	Metal detector not operative	• Temporary adjustment phase following to the modification of either the receiving or the transmitting parameters (e.g.: channel "CH"); wait for normal functioning indication.
RESTART	Metal detector not operative	• Temporary adjustment phase following to the exit from the EN function.

Troubleshooting



Before analysing possible faults, please check:

- that the connectors are properly connected
- that the operating parameters have the correct values (see the test check-sheet included at the end of the manual).

There follow some indications regarding possible causes of malfunction and check procedures to be carried out in order to restore the metal detector to its correct operational status.

Fault	Possible cause	Recommended action
Display off	PW = OFF	Set PW = ON
	Electronics unit fault	• check all the power connections (mains cable, electronics unit - TX antenna connecting cable, connector J2 on electronics unit) • If the power supply voltage is present at the electronics unit (Autotest procedure or instrument check on connector J2, contacts +I/- and -I/GND), replace the electronics unit • If the power supply voltage appears at connector J2 only when it is disconnected from the electronics unit, replace the electronics unit.
	Fault in the supply section	• check all the power connections (mains cable, electronics unit - TX antenna connecting cable, connector J2 on electronics unit) . • Check that the LED on the ALP card is on. • If the LED is off, replace the external PSA power adapter. • If the LED is on, replace the ALP card.
	<u>Model with emergency batteries</u> . Flat batteries	Connect the equipment to the mains supply and recharge the batteries.
	Malfunction of ALP card	• Check the battery voltages. Replace damaged batteries. • If batteries are flat, check the recharging section: • activate the on/off switch and check that the light on the card is on with batteries connected and off with batteries disconnected. • replace card ALP
Power comes on and goes off in succession	Power supply voltage unstable or too low	• Check the power supply voltage with instruments or by carrying out the Autotest procedure.
<u>Model with photocells:</u> no passage detection	malfunction of the photocells	• Wrong programming of GD function: refer to paragraph Autotest program • Dirty or defective photocell: check with the Autotest procedure. If necessary, replace it.
The Metal Detector does not give any alarm when a metal object is in transit, even if sensitivity is at its highest setting.	Malfunction of power supply section	Check the power supply voltage by carrying out the Autotest procedure.
	Malfunction of transmitting section	check transducer-electronics unit connections
	Incorrect programming	• Check that the programming procedure works properly: if not, replace the electronics unit. • Buzzer off: set AV>0
If the Metal Detector still does not operate properly, please contact our Technical Department for advice.		

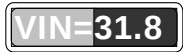
Compatibility aspects

Failure	Check and action
The Metal Detector gives irregular alarms with no people or objects passing through it and without neighbouring mechanical structures being shaken High environmental interference (display indication  or higher)	Check electrical interference using the EN function If EN>3: - eliminate the source of interference - move the source of interference away from the metal detector, especially from the receiver antenna RX; in particular, check that: - there are no electric power lines running near the sensitive probe. - The probe-electronics unit connecting cable runs in its own duct, and not together with power supply cables to motors, relays or various slave devices. - screen the source of interference using an iron container. - if the source of interference can not be eliminated, move the metal detector, especially the receiver antenna RX, away from it. - change the transmission channel (CH function) and select the value that corresponds to the minimum amount of electrical noise. In the case of multiple installation, select different transmission channels on the individual detectors (see section "Installation of coupled metal detectors: synchronisation"). - set the noise limiter NL to 9 (not possible in the preceding situation) - decrease DS value (verify the compliance to the selected Security level !). if the mechanical interference signal is strong (EN =0 but GN>0) without the neighbouring structure being shaken, replace the electronics unit.
The Metal Detector gives irregular alarms when the neighbouring mechanical structures move slightly or vibrate High environmental interference (display indication  or higher)	If EN >3, the interference is of an electrical nature; see the preceding point. If EN ≤3, the interference is of a mechanical nature: - Make sure the probe is anchored securely. Avoid vibration or any other movement of the metal detector. - make sure that no nails or screws have been driven into the transducers - move the metal detector away from the source - eliminate the source of interference : - if the source consists of movement of large metal masses in the vicinity of the probe: - avoid movement of the metal masses, or move them away from the probe; - if this is impossible, replace them with parts made of insulating material (glass, wood, plastic ...) - if the source consists of modifications of the mechanical structure which are shaken during operation and create intermittent loops which cause strong variations in the magnetic field: - identify and eliminate these metal structures, or, where this is not possible, insulate them. - in the case of installation near big metallic structures (distance less than 0.5 m), check that when these latter are physically shaken (e.g. by knocking them) they do not cause interference in the metal detector. (*) If the signal received by the metal detector has a high variation (GN ≥ 8 or in any event if the display shows more than one asterisk in its green sector ), increase the stability of the system Access system with two interlocked metal doors If the signal does not change noticeably when vibrations occur, try opening and closing the entry doors: if the interference is linked to this kind of movement, the signal will vary. Two possibilities can be noted: - The variation is slow and follows the door movement: <u>in general</u>: move the Metal detector further away from the door which causes the interference <u>door made of metal sections</u>: break the loop formed by the sections <u>metal parts which pass close to the metal detector during movement of the door</u>: replace with corresponding parts made of insulating material <u>deformation of the supporting structure</u>: strengthen the structure or reduce the weight of the door - The variation is fast and sudden, and occurs especially when the door slams. In this case the variation is not due to the door but to intermittent points of contact in the structure. See point (*) for the steps to take.
If the source of the interference is still not clear, please contact our Technical Department and we will give you all the information you need	

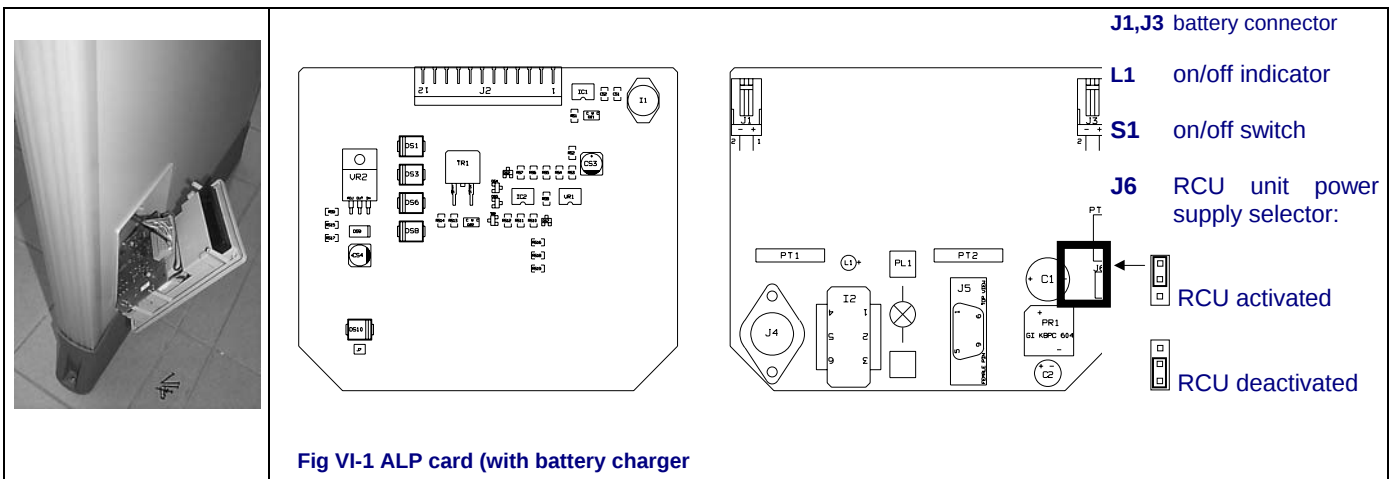
Procedures

Autotest program

When the detector is switched on, a program may be run to test some of its components.

	Operations to carry out	Display
Activating the test	Turn on the detector and keep the PROG key of the central electronics unit pressed down until the signal shown on the right appears .  the program can also activated by means of the PW command.	
Test display	First phase Checks correct functioning of all the segments of the display, which should give the signal shown on the right. Press the ENTER key on the electronics unit keypad to go on to the second phase.	
	Second phase Checks the correct functioning of all the segments of the display, which should now give the signal shown on the right. Press the ENTER key of the electronics unit.	
Photocell test (if photocells are installed)	The display of the electronics unit shows the signal: PI- PO- (see right) without any object or person passing through the passageway: the photocells do not "see" anything.  If the test is being carried out on a metal detector that is not fitted with photocells, press ENTER to pass to the next phase.	
	Cover the first photocell relative to the direction of passage (see the GD function, Programming section). The display should indicate the passage of an object through the entrance photocell (PI*).	
	Cover the second photocell relative to the direction of passage. The display should indicate the passage of an object through the exit photocell (PO*).	
	Press the ENTER key of the electronics unit.	
Voltage	The electronics unit display shows the DC voltage of the electronics unit, updating the data continuously (in the example to the right, 31.8Vdc). The correct voltage levels are between 22 and 35 Vdc.	

ALP card: trouble-shooting diagram



Battery replacement procedure

Necessary tools	Medium size Phillips screwdriver PH1	Necessary items	CEIA Spare batteries (2 pieces)
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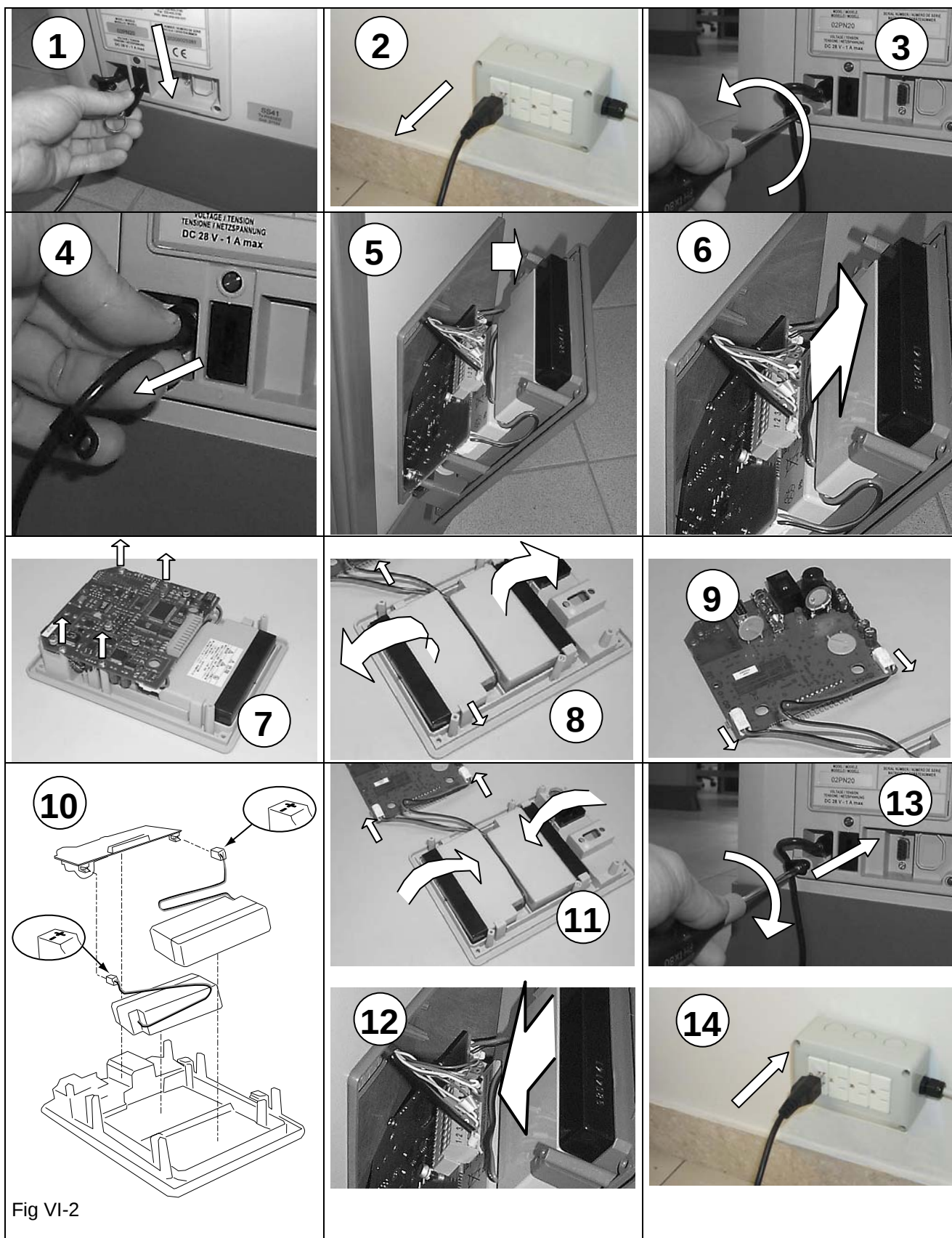


Fig VI-2

VII - Appendices

DECLARATION OF CE CONFORMITY

DECLARATION OF CONFORMITY CE DECLARATION DE CONFORMITE CE KONFORMITÄTSERKLÄRUNG CE DECLARACION DE CONFORMIDAD CE DICHIARAZIONE DI CONFORMITÀ CE				
Manufacturer <i>Fabricant / Hersteller / Fabricante / Costruttore:</i>	CEIA S.p.A. <i>Zona industriale Viciomaggio 54/G 52040 Viciomaggio - Arezzo - ITALY</i>			
<i>Declares that the product</i> <i>déclare que ce produit / erklärt, daß das Produkt / declara que el producto / dichiara che il prodotto:</i>				
<i>Product name:</i> <i>Nom du produit: / Produktname:</i> <i>Nombre del producto: / Nome:</i>	Walk-Through Metal Detector <i>Détecteur de Métaux / Elektronischer Metalldetektor Detectores de metales / Metal Detector Elettronico</i>			
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%; vertical-align: top; padding: 5px;"> Model <i>Série / Serie / Serie / Modello:</i> </td> <td style="width: 40%; text-align: center; vertical-align: middle; padding: 5px;"> HI-PE Multi-Zone </td> <td style="width: 30%; vertical-align: top; padding: 5px;"> <i>all models</i> <i>tous modèles/ alle Modelle</i> <i>todos los modelos/ tutti i modelli</i> </td> </tr> </table>		Model <i>Série / Serie / Serie / Modello:</i>	HI-PE Multi-Zone	<i>all models</i> <i>tous modèles/ alle Modelle</i> <i>todos los modelos/ tutti i modelli</i>
Model <i>Série / Serie / Serie / Modello:</i>	HI-PE Multi-Zone	<i>all models</i> <i>tous modèles/ alle Modelle</i> <i>todos los modelos/ tutti i modelli</i>		
<i>conforms to the following Product Specifications</i> <i>est conforme aux spécifications suivantes / folgenden Produktspezifikationen entspricht</i> <i>es conforme a las siguientes especificaciones / è conforme alle seguenti specifiche di prodotto:</i>				
Safety / Sécurité / Sicherheit / Seguridad / Sicurezza: EN 61010 - 1 (2001) <i>Safety requirements for electrical equipment for measurement, control, and laboratory use -- Part 1: General requirements</i> EN 61558 - 1 (1998) <i>Safety of power transformers, power supply units and similar -- Part 1: General requirements and tests</i> EN 50364 (2001) <i>Limitation of human exposure to electromagnetic fields from devices operating in the frequency range 0 Hz to 10 GHz, used in Electronic Article Surveillance (EAS), Radio Frequency Identification (RFID) and similar applications</i> This product complies with the requirements of the Low Voltage Directive 73/23/EEC and following modifications indicated in the 93/68/EEC Directive. <i>Le produit ci-dessus répond aux exigences de la Directive 73/23/CEE et aux modifications suivantes mentionnées dans la Directive 93/68/CEE concernant la basse tensions.</i> <i>Dieses Produkt entspricht den Anforderungen an Niederspannungsgeräte gemäß der Norm 73/23/EEC und nachfolgender, in der Norm 93/68/EEC angegebener Änderungen.</i> <i>El producto indicado cumple los requisitos de la Low Voltage Directive 73/23/CEE y siguientes modificaciones indicadas en la Directiva 93/68/EEC.</i> <i>Il prodotto è conforme alle norme della direttiva 73/23/EEC e successive modifiche indicate nella direttiva 93/68/EEC sulla bassa tensione.</i>	EMC EN 61000-6-1 (2001) <i>Electromagnetic compatibility (EMC) -- Part 6-1: Generic standards - Immunity for residential, commercial and light-industrial environments</i> EN 61000-6-3 (2001) <i>Electromagnetic compatibility (EMC) -- Part 6-3: Generic standards - Emission standard for residential, commercial and light-industrial environments</i> This product complies with the requirements of the EMC Directive 89/336/EEC and following modifications indicated in the 91/263/EEC, 92/31/EEC, 93/68/EEC and 93/97/EEC Directives. <i>Le produit ci-dessus répond aux exigences de la Directive 89/336/CEE et aux modifications suivantes mentionnées dans les Directives 91/263/EEC, 92/31/EEC, 93/68/CEE et 93/97/EEC concernant les interférences électromagnétiques.</i> <i>Dieses Produkt entspricht den Anforderungen der EMC-Norm 89/336/EEC und nachfolgender in den Normen 91/263/EEC 92/31/EEC, 93/68/EEC und 93/97/EEC angegebener Änderungen.</i> <i>El producto indicado cumple los requisitos de la Directiva EMC 89/336/CEE y siguientes modificaciones indicadas en las Directivas 91/263/EEC, 92/31/EEC 93/68/EEC y 93/97/EEC.</i> <i>Il prodotto è conforme alle norme della direttiva EMC 89/336/EEC e successive modifiche indicate nelle direttive 91/263/CEE, 92/31/EEC, 93/68/EEC e 93/97/CEE.</i>			
Arezzo, 2005 - 01 - 31  Person in charge Lab. EMC Resp. Laboratoire EMC / Laborattaché EMC Resp. Laboratorio EMC / Resp. Lab. EMC Ing. E. Sorini Eugenio Sorini				

Electrical connections

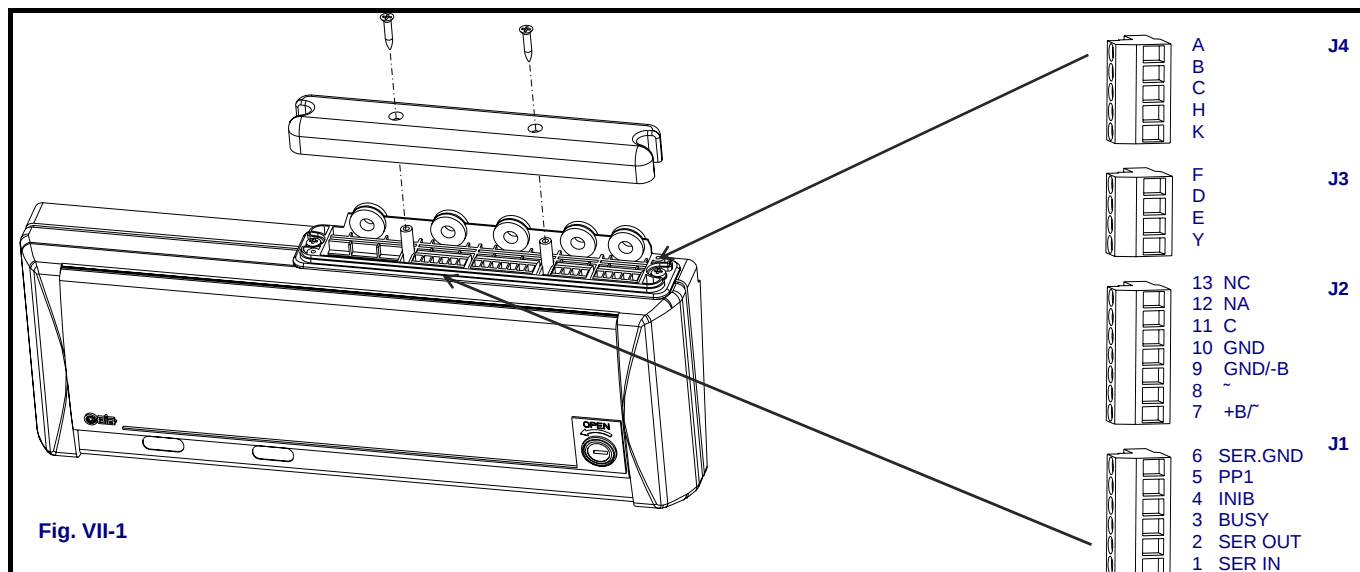


Fig. VII-1

Function	Connector	Pins	Description
Serial communication	J1	6 - SER GND 3 - BUSY 2 - SER OUT 1 - SER IN	ground busy line data output data input The BUSY line is used to monitor the communication network between several Metal Detectors; it is normally at "high" level (+5V); when a Metal Detector effects a data transfer, the line goes down to "low" level (0V) and indicates to the other devices that the network is busy.*
Photocells - monitoring of the transits through the gate (optional)	J1	6 - SER GND (ground) 5 - PP1	Contacts PP1-SER.GND on the J1 terminal board are connected to two photocells p1, p2 (located on the antenna) . N.B. manual reset is not available
Manual reset - alarm memorisation	J1	6 - SER GND (ground) 5 - PP1	Connect a normally closed push-button: when an alarm occurs this button keeps the output relay in alarm condition until it is pressed
Indicator bar driver	J1	6 - SER GND (ground) 4 - INIB	Reserved
Relay	J2	11 - C (common) 12 - NA (norm. open) 13 - NC (norm. closed)	A switch contact NC-C-NA , where position NC coincides with the normally closed contact and position NA with the normally open one (closed when there is an alarm)..
Power supply	J2	10 GND 9 GND/-B 8 ~ 7 +B/~	Reserved
Antenna connection	J4 - J3	A B C H K F D E Y	Reserved

ACCESSORIES

RCU



Fig. VII-2

The RCU, connected to the detector via serial line, allows remote programming. It also provides audible and light-based alarm signalling with a bar-graph indication proportional to the metal mass detected.

Dimensions: 217x140x75 mm.

Code: 3423

MAIN & BATTERY SUPPLY UNIT



Fig. VII-3

The MAIN & BATTERY SUPPLY UNIT is a portable device for providing power to CEIA metal detectors in outdoor applications or in particularly difficult environmental conditions.

The unit comprises two 12V, 7Ah batteries and a charger, and allows about 6 hours independent operation when mains power is not available. Recharging takes place automatically when mains voltage is present.

Protection level: IP65.

Code: MBSU-1

Personal Effects Depository



Fig. VII-4

This article acts both as a spacer between the X-ray unit and the metal detector and as a temporary depository for metal personal effects which are not of dubious nature and therefore not required to undergo X-ray analysis (coins, keys and so on).

Dimensions: 610 x 360 x 975 mm

Code: 18074

SPARE PARTS



All of spare part orders should bear the serial number of the equipment!

HIPE/PTZ

Validity: revision 8

Spare parts		
Description	Quantity	Code
IP20 electronics unit	1	24848
RX antenna - Code S100	1	24342
RX antenna - Code S100/S	1	36730
TX antenna - Code S100	1	32809
Electronic cards of the antenna luminous bar	1	21146
Installation kit	1	24258
Front cover with lock	1	24873
Keys of the keypad (4)	1	29415
Options		
Description	Quantity	Code
Cables connecting the antenna to the electronics unit - 720mm cross-bar	1	25034
Cable connecting the antenna to the electronics unit - 820mm cross-bar	1	25035
720mm cross-bar with holes	1	24255
720mm cross-bar without holes	1	24256
760mm cross-bar with holes	1	24253
760mm cross-bar without holes	1	24254
820mm cross-bar with holes	1	24251
820mm cross-bar without holes	1	24252
230Vac Power supply adaptor for Europe	1	19360
115Vac Power supply adaptor for USA	1	19361
100Vac Power supply adaptor for Japan	1	36481
Photocell assembly (1 card + 1 cover)	1	32716
Power supply module with battery-charger	1	24343
12V-0.8Ah battery	1	19
Power supply module without battery-charger	1	24344

HIPE/PTZ-WP

Validity: revision 3

Spare parts		
Description	Quantity	Code
IP65 electronics unit	1	23841
Keys of the keypad (4+4)	1	29415
RX antenna S100	1	23821
TX antenna S100	1	23820
Cables connecting the antenna to the electronics unit - 760mm cross-bar	1	23843
760mm cross-bar with holes	1	23470
760mm cross-bar without holes	1	23471
Electronic card of the antenna luminous bar	1	21146
Photocell assembly	1	32824
Upper protection	1	23701
Threaded knob for the upper protection	4	24966
Installation kit	1	24259
Power supply module with battery-charger	1	23835
12V-0.8Ah battery	1	19
External protection	1	23670
Options		
Description	Quantity	Code
230Vac Power supply adaptor for Europe	1	19360
115Vac Power supply adaptor for USA	1	19361
100Vac Power supply adaptor for Japan	1	36481

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