



METAL DETECTOR
HI-PE
*Additional information for the
HI-PE/CF Series*

ATTENTION!

Keep the transducer matched with the electronics unit and the Technical Booklet which have the same serial number.

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I - DESCRIPTION

Document contents

*Externally, CEIA **HI-PE/CF** Series metal detectors appear identical to standard HI-PE models, and only differ in having some modifications to the antenna and to the programming parameters.*

This document illustrates these specific modifications, and we would refer users to the manual included with all models for more general information.

Special features of the *HI-PE/CF* Series

The transit of metal personal effects in common daily use through Metal Detector checkpoints generates signals which often exceed those of some types of fire-arms available on the market. Discrimination of these by the Metal Detector therefore becomes a necessary condition for establishing access systems with high flow rates.

As a solution to this problem, CEIA presents its new *HI-PE/CF* Metal Detector which, with its detection functions based on an innovative signal analysis system, **raises the threshold of discrimination between medium-sized fire-arms and personal effects to a level up to 400% above that of the 02PN8 HI-PE model.**

The advantages of using this new Metal Detector are the following: a notable reduction in the need for branch staff to act to check inward- and outward-bound traffic; increase in convenience of access to the bank for customers; and, not least, the opportunity to increase the level of security.

Statistical data obtained in real operating situations with the *HI-PE/CF* Metal Detector have demonstrated the almost total elimination of false alarms compared with earlier systems, at the same level of detection capability relating to fire-arms of conventional construction and in light metal, such as the Beretta 6.35mm.

The *HI-PE/CF* Metal Detector keeps the same dimensions and programming characteristics as the 02PN8 HI-PE Metal Detector, so that it can be fitted into systems which were designed for the earlier model. As far as its application is concerned, the parameters already in use for walk-through Metal Detectors remain valid, in particular the importance of the electromagnetic compatibility of the metal structure.

In order to guarantee the levels of performance described above, use of this new Metal Detector is restricted to cabins previously certified for electromagnetic compatibility with the *HI-PE/CF* Metal Detector.

Construction of the Metal Detector

Electronics Unit

The *HI-PE/CF* electronics unit differs externally from the standard version only in the model logo.



Fig. I-1: *HI-PE/CF* electronics unit

Antenna

The following table illustrates the special features of the *HI-PE/CF* antenna models:

Model	Modifications
HI-PE/CFPNAS600	Corresponds to model HI-PE/PN-AS-600. Useful passage width: 680-820mm
HI-PE/CF	No external modification compared with version HI-PE/CN-AS-140. Useful passage width limited to 740mm (widened passage width version HI-PE/CN-AS-140L not available).
HI-PE/CF-EN	Corresponds to model HI-PE Elliptic. No external modification
HI-PE/CF-EW (waterproof)	Corresponds to model HI-PE Elliptic waterproof. No external modification



Fig. I-2a: 02PN8 *HI-PE/CF-AS*

Fig. I-2ba: 02PN8 *HI-PE/CF-EN*

Fig. I-2c: 02PN8 *HI-PE/CF-PN-AS-600*

II - INSTALLATION

Assembly

Mechanical assembly

Fixing the antenna in a cabin: column orientation

Installation of the antenna in a metal cabin generally requires a test by qualified CEIA technicians.

As a result of the test, the installer is provided with any technical notes needed for installation, including instructions on how to orientate the antenna when attaching it to the base structure.

Orientation of the columns is achieved by referring to the two coloured markings **C** to be found near the electronics unit connecting cable.

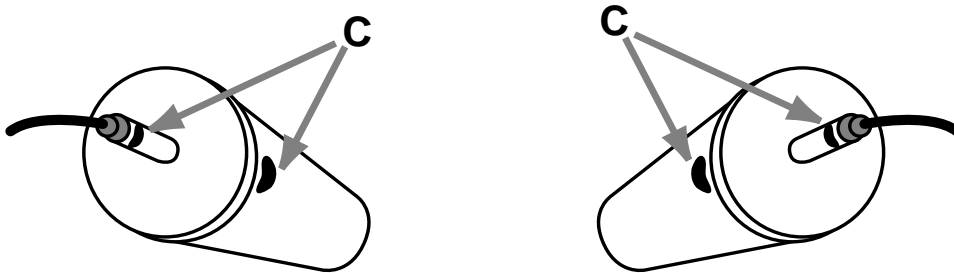


Fig II-1a – Example of column antenna arrangement, with markings C facing each other

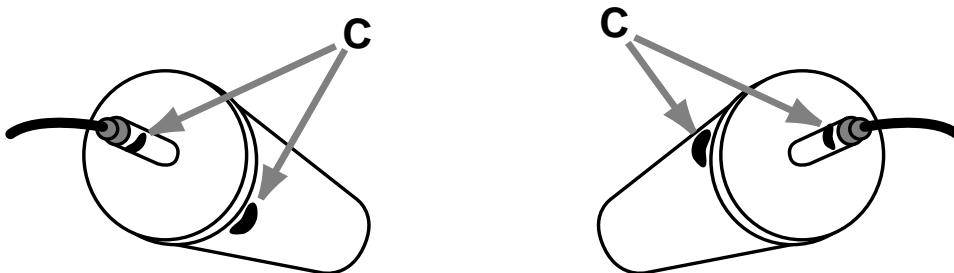


Fig II-1b - Example of column antenna arrangement, with markings C not aligned

III – INSTRUCTIONS FOR USE

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:






	MANUFACTURER
	MODEL
	ALARM INDICATION TEST
	INITIAL ADJUSTMENT PHASE
	NORMAL OPERATION
















Fig. III 1

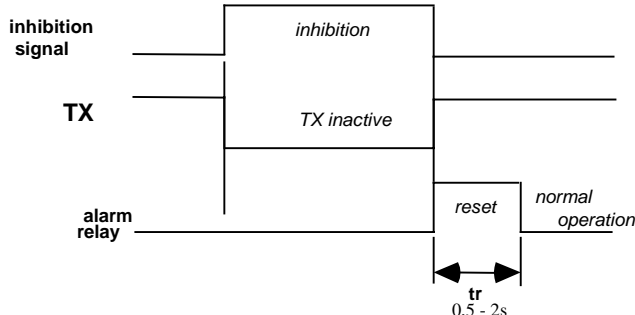
IV - PROGRAMMING

Characteristics


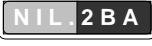
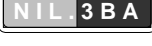
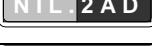
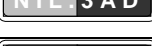

Programming parameters not applicable	SS, G1, G2, TP, CS, AU, FQ
New programming parameters, or those only present on some standard models	CM, RO, TI
Modified programming parameters	IS
New functions, or those only present on some standard models	Direct display of the level of security IS


New programming parameters, or those only present on some standard models


Code	Meaning	Possible values	Type	Notes																		
CM	Cabin model	0-4	C/R	<p>Siting of an HI-PE/CF antenna inside a metal structure generally requires a test to be carried out by CEIA technicians. For installation to be possible in cabins with different characteristics, these tests must be carried out on a sample unit of each type.</p> <p>CEIA stores the optimum configuration of the device for each cabin which has been tested.</p> <p>The CM command allows the installer to select the configuration according to the cabin used.</p> <p>The correspondence between the numerical values of the CM setting and the type of cabin is specified in the CEIA test report, which also specifies the string of characters which appears on the display during selection as a concise denomination of the type of cabin. The 0 setting is usually reserved for the open-space configuration without surrounding metal structure.</p> <p>E.g. :</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">Message</th> <th style="width: 20%;">Numerical value</th> <th style="width: 50%;">Comment</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;"></td> <td style="text-align: center;">0</td> <td>Metal detector without surrounding metal structure, useful passage width 680mm (model HI-PE/CF-AS-140)</td> </tr> <tr> <td style="text-align: center;"></td> <td style="text-align: center;">1</td> <td>Metal detector installed in a cabin of the 1st type</td> </tr> <tr> <td style="text-align: center;"></td> <td style="text-align: center;">2</td> <td>Metal detector installed in a cabin of the 2nd type</td> </tr> <tr> <td style="text-align: center;"></td> <td style="text-align: center;">3</td> <td>Metal detector installed in a cabin of the 3rd type</td> </tr> <tr> <td style="text-align: center;"> future</td> <td style="text-align: center;">4</td> <td>Free memory, usable for a new configuration in the future</td> </tr> </tbody> </table>	Message	Numerical value	Comment		0	Metal detector without surrounding metal structure, useful passage width 680mm (model HI-PE/CF-AS-140)		1	Metal detector installed in a cabin of the 1 st type		2	Metal detector installed in a cabin of the 2 nd type		3	Metal detector installed in a cabin of the 3 rd type	 future	4	Free memory, usable for a new configuration in the future
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RO	Read out of the reception signal	0-9995	R	This displays the result of the processing of the reception signals, by means of a numerical indication. It can display values from 0 to 9,995.																		

Code	Meaning	Possible values	Type	Notes
				<u>Display indication:</u> When the value is under the alarm threshold, the indication is green, when the value is above the alarm threshold, the indication is red.
IS	International Security Standard	see the following table	C,R	
TI	Transmitter inhibitor	NO, YES		<p>Deactivates the transmitter if the Metal Detector is inhibited. The Metal Detector behaves as follows in the two different situations:</p> <p>TI=NO the metal detector is immediately operational when the inhibition signal is switched off</p> <p>TI=YES when the inhibition signal is switched off, the Metal Detector resets; in this case, it is necessary to wait a few moments (0.5 – 2 sec) before the Metal Detector is operational (tr in the diagram below)</p> <div style="text-align: center;">  </div> <p style="text-align: right;">Fig. IV-1</p> <p>Delay before the metal detector is operational with TI=ON: after deactivation of the inhibition signal, it is necessary to wait for time tr before the detector reactivates</p>

ANALYSIS PROGRAMS AVAILABLE WITH THE COMMAND "IS"

PROGRAM IS	DISPLAY MESSAGE*	SECURITY LEVEL / APPLICATION	SAMPLES
1		Standard : NILECJ-STD-0601.00 Security Level 1	AM9
2		Standard : NILECJ-STD-0601.00 Security Level 2 Basic specifications	AM7
3		Standard : NILECJ-STD-0601.00 Security Level 3 Basic specifications	AM5
4		Standard : NILECJ-STD-0601.00 Security Level 2 Additional specifications	AM7; AN7
5		Standard : NILECJ-STD-0601.00 Security Level 3 Additional specifications	AM5; AN5
6		Level with high immunity to environmental interference (corresponding approximately to level NILECJ 2, with additional specifications).	-

* The display message also appears when not in programming if the  key is pressed.

 The unit is programmed in the factory to ensure operation according to the IS standards for the passage width listed in the "Hardware and software configuration sheet" included at the end of the manual. If, for any reason, the passage width has been changed, this correspondence is not guaranteed.

V - Technical characteristics

Main characteristics

- Adjustable sensitivity with wide range of settings.
- International standards: Direct selection of International Security Standards.
- Extremely high discrimination.
- Extremely high immunity to both mechanical and electromagnetic interference.
- Programmable operation controlled by microprocessor.
- Programming: via incorporated keypad and display or via RS232/RS485 serial link from a personal computer or computer network.
- Access to programming protected by mechanical lock and two alphanumeric passwords.
- Automatic, cable-free synchronisation between two or more metal detectors, at a minimum distance of 5cm from each other.
- Highly integrated, highly reliable professional electronics.
- Electronics control unit separate from the detector.
- No initial or periodic calibration.
- Easy maintenance. The electronics unit can be replaced in less than one minute.
- Colour: light grey, RAL 7040

Alarms

- Audible signal: Buzzer - 90 dBA (1 m).
- Relay output: Switch contact NA, NC, C - 1 A - 24 Vdc.
- Reset: PP input, automatic or manual, N.C. contact.
- Inhibition: INI input, N.A. contact.
- Self-diagnosis: Incorporated, with intermittent audible signal.

Certification and compliance

- Harmless to wearers of pacemakers, life-support systems, pregnant women and magnetic media (floppy disks, audio-cassettes, video-cassettes and similar).
- Complies with NILECJ-0601-00 standards for all security levels.
- Complies with EC regulations and international standards on electrical safety and electromagnetic compatibility (EMC).

Installation data

- power supply: 20 ÷ 30 Vdc, 25VA max.
- Inputs: RS-232C interface for connection to a terminal, computer or external modem; RS-232C interface for connection to other CEIA Metal Detectors.
- Temperature and relative humidity: from -15°C to +70 °C; from 0 to 95% (without condensation)
- Dimensions and weight of the electronics unit: 380 x 157 x 82 mm / 1.2 kg.

Accessories / Options

Metal test samples.


VI - MAINTENANCE

Spare parts

HI-PE/CF-AS-140

Validity: revision 1.0, 17/07/1999


Replacement parts		
Description	Quantity	Code
Electronics unit IP20	1	18292
Electronics unit card 06012SCD60	1	18754
Connector cap	1	12521
Column RX N076	1	18290
Column TX N076	1	18291
Complete electronics unit container	1	19045
Cover complete with lock	1	4074
Electronics unit key kit	1	8471

 **In all component orders please indicate the serial number of the device**

Accessories

Validity: revision 1.0, 9/11/1999

Replacement parts		
Description	Quantity	Code
European mains power supply unit	1	19208
USA mains power supply unit	1	19825
MDScope	1	17469
Nilecj Std 0601.00 level 1 samples	1	3501
Nilecj Std 0601.00 level 2 samples	1	3497
Nilecj Std 0601.00 level 3 samples	1	3498

 **In all component orders please indicate the serial number of the device**

DECLARATION OF CE CONFORMITY**DECLARATION OF CONFORMITY CE**

DECLARATION DE CONFORMITE CE KONFORMITÄTSERKLÄRUNG CE
DECLARACION DE CONFORMIDAD CE DICHIARAZIONE DI CONFORMITÀ CE

Manufacturer CEIA S.p.A.
Fabricant / Herstellere / Fabricante / Costruttore:
Strada Provinciale di Pesciola 54/G 52040
Viciomagio - Arezzo - ITALY

Declares that the product
déclare que ce produit / erklärt, daß das Produkt / declara que el producto / dichiara che il prodotto:

Product name: Metal Detector
Nom du produit: / Produktname: Décteur de Métaux / Elektronischer Metalldetektor
Nombre del producto: / Nome: Detectores de metales / Metal Detector Elettronico

Model HI-PE/CF
Série / Serie / Serie / Modello:

conforms to the following Product Specifications
est conforme aux spécifications suivantes / folgenden Produktspezifikationen entspricht / es conforme a las siguientes especificaciones / è conforme alle seguenti specifiche di prodotto:

Safety / Sécurité / Sicherheit / Seguridad / Sicurezza:

EN 61010-1 - 1 (1993)

This product complies with the requirements of the Low Voltage Directive 73/23/EEC and following modifications indicated in the 93/68/EEC Directive.

*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.
Dieses Produkt entspricht den Anforderungen an Niederspannungsgeräte gemäß der Norm 73/23/EEC und nachfolgender, in der Norm 93/68/EEC angegebener Änderungen.
El producto indicado cumple los requisitos de la Low Voltage Directive 73/23/CEE y siguientes modificaciones indicadas en la Directiva 93/68/EEC.
Il prodotto è conforme alle norme della direttiva 73/23/EEC e successive modifiche indicate nella direttiva 93/68/EEC sulla bassa tensione.*

EMC

CISPR 11: 1990 / EN 55011: Group 1 - Class B
EN 61000-4-2: 1995
EN 61000-4-3: 1995
EN 61000-4-6: 1995
ENV50204:1994
EN 61000-4-4: 1995

This product complies with the requirements of the EMC Directive 89/336/EEC and following modifications indicated in the 93/68/EEC Directive.

*Le produit ci-dessus répond aux exigences de la Directive 89/336/CEE et aux modifications suivantes mentionnées dans la Directive 93/68/CEE concernant les interférences électromagnétiques.
Dieses Produkt entspricht den Anforderungen der EMC-Norm 89/336/EEC und nachfolgender, in der Norm 93/68/EEC angegebener Änderungen.
El producto indicado cumple los requisitos de la Directiva EMC 89/336/CEE y siguientes modificaciones indicadas en la Directiva 93/68/EEC.
Il prodotto è conforme alle norme della direttiva EMC 89/336/EEC e successive modifiche indicate nella direttiva 93/68/EEC.*

Arezzo, 1997 / 11 / 15



Person in charge Lab. EMC
Resp. Laboratoire EMC / Laborattaché EMC
Resp. Laboratorio EMC / Resp. Lab. EMC
Ing. E. Sorini