



# THS 21E SERIES

## Quality Control at its finest



### MULTI-FREQUENCY INDUSTRIAL METAL DETECTORS

#### FEATURES

- Superior detection capability of magnetic, non-magnetic and stainless steel metal contaminants
- Very effective compensation of product effect
- FDA Title 21CFR Part 11 compliant:
  - ✓ Data Security
  - ✓ Data Integrity
  - ✓ Data Traceability
- Rugged AISI 316L stainless steel construction and food-compatible plastic parts [EU, FDA compliant]
- Superior washdown construction

Fully HACCP  
and GMP  
compliant



*THS/21E Multi-frequency  
Technology for maximum sensitivity  
on multiple product lines*



www.ceia.net



phone +39 0575 4181 • fax +39 0575 418296 • qa-detectors@ceia-spa.com

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# ► THS 21E Metal Detectors Series with MULTI-FREQUENCY TECHNOLOGY



## FEATURES

- High sensitivity to all magnetic and non-magnetic metals, including stainless steel
- Multi-frequency Technology for maximum sensitivity on multiple product lines
- High immunity to environmental interference
- AISI 316L stainless steel construction to IP65 protection level
- Control Panels listed according to UL 508A and CSA-C22.2 No. 14-05
- Automatic learning & tracking of product effect
- 250 product data memories, selectable by local programming or network software
- 1.000 storable events
- 4 X 20 character alphanumeric display
- Local programming: 4 keys, 3 with double function



**THS/SL21E**  
Slim Line Metal Detector for applications in limited space.

## MULTI-FREQUENCY TECHNOLOGY

**The Multi-Frequency Technology allows maximum sensitivity for detection of contaminating metals, both magnetic and non-magnetic and including high-resistivity stainless steels, to be maintained.**

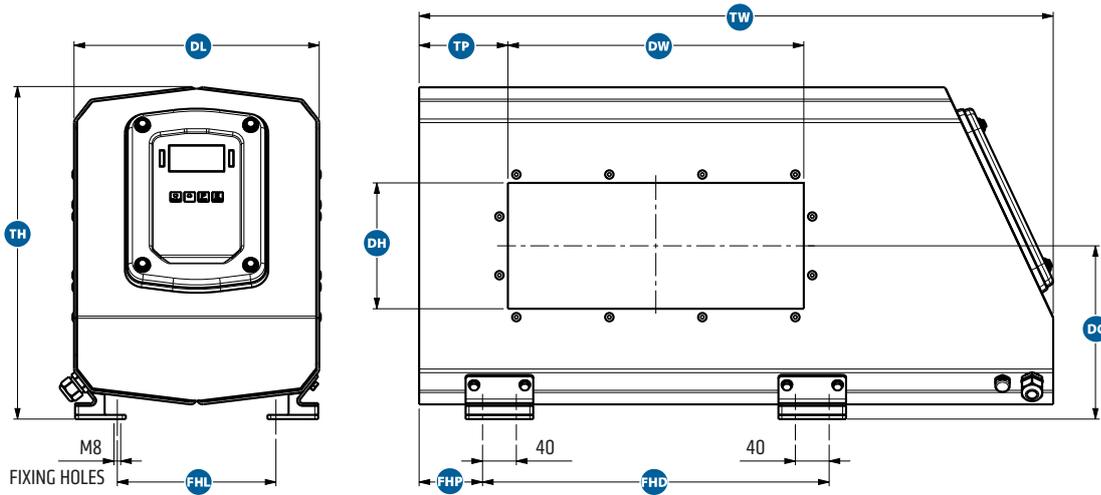
An automatic selection function allows the Metal Detector to choose the optimum frequency for the product in transit during the autolearn phase.

The automatic tracking function eliminates any further variations due to the "Product Effect". The wide pass band of the Metal Detector allows operation at maximum sensitivity at both slow and fast speeds.

The digital analysis of the signal provided by the antenna allows the user to achieve extremely high sensitivity, immunity to interference and operational stability.

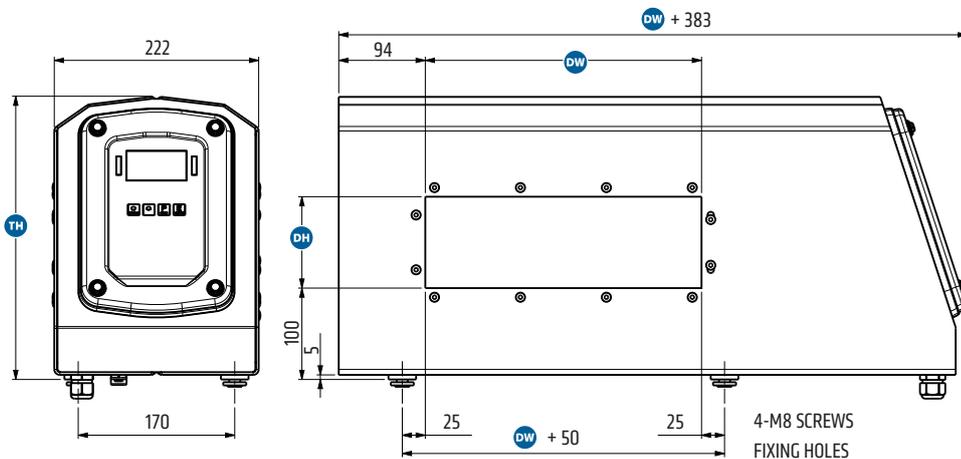


*THS/21E and THS/21E-3F models*



Family	DW DETECTION WIDTH	DH DETECTION HEIGHT	TH TOTAL HEIGHT	DL DETECTOR LENGTH	FHL FIXING HOLES LENGTH	TP TUNNEL POSITION	FHP FIXING HOLES POSITION	FHD FIXING HOLES DISTANCE	DC DETECTION CENTER	TW TOTAL WIDTH	
A	200-250-...-1000	100 - 125 150 - 175	395	290	190	TP-30		DW+60	205	DW+400	
B	350-400-...-800	200-225-250-275	550	390	290				160	280	DW+500
C	450-500-...-1000	300-325-350	635	490	390				210	320	DW+600
D	500-550-600- 700-...-1300	400-450-500	905	490	390				260	455	DW+700

*THS/SL21E model - Slim Line Metal Detector for applications in limited space*



Family	DW	DH	TH
A	150-175 200-...-450	100	310
B		125 - 150	360
C		175 - 200	410
D		225 - 250	460
E		275 - 300	510

Dimensions in mm

# ▶ THS G21E Metal Detectors Series for FREE-FALLING PRODUCT APPLICATIONS



*The THS/G21E series is designed to inspect powders, granules and other loose materials transported in free-fall through tubes and pipelines.*

When fitted with a deflector, the THS/G21E becomes a system that detects and removes any contaminating metals, both magnetic and non-magnetic.

Digital analysis of the signal provided by the antenna allows extremely high levels of sensitivity, immunity to interference and operational stability to be achieved.

The very high detection speed of the THS/G21E allows the contaminated portion of product to be removed without slowing down the production flow.

Alternatively, when mounted on a packaging machine, the THS/G21E system is able to send a command to produce a double layer of packaging around the contaminated product. This can later be identified and removed from the production cycle manually.

The system is designed to communicate with external control systems, either connected directly or via a communications network.



### THS/G21E-F

*THS/G21E-F series with Reduced Metal Free Zone for limited space installations, while maintaining optimal detection of all metals.*

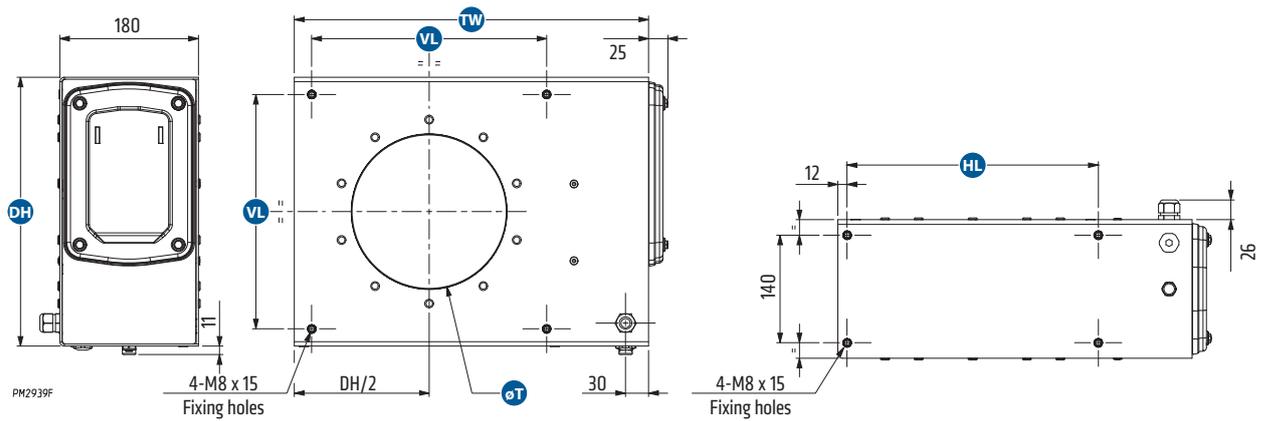
### THS/G21E Control Power Box



*THS/G21E series: Standard pipe sizes available to suit all applications [ATEX version available .*

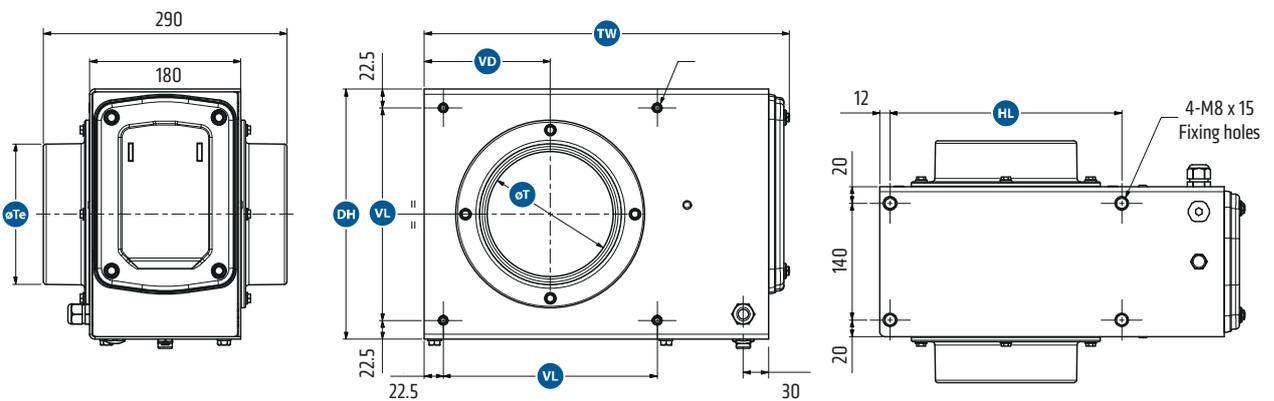


### THS/G21E model



Model	T	TW	DH	VL	HL
THS/G21x-50	50	360	250	205	226
THS/G21x-100	100				
THS/G21x-150	150	410	300	255	276
THS/G21x-175	175	435	325	280	301
THS/G21x-200	200	460	350	305	326
THS/G21x-250	250	510	400	355	376

### THS/G21E-F model



Model	T	Te	TW	DH	VL	HL	VD
THS/G21x-100F	100	118	385	250	205	226	125
THS/G21x-150F	150	168	435	300	255	276	150
THS/G21x-175F	175	193	460	325	280	301	162,5
THS/G21x-200F	200	218	485	350	305	326	175

Dimensions in mm

CEIA THS 21E Metal Detection Systems offer detection, construction quality and reliability characteristics that make them the most suitable and effective solution to automatic elimination of metal contaminants.



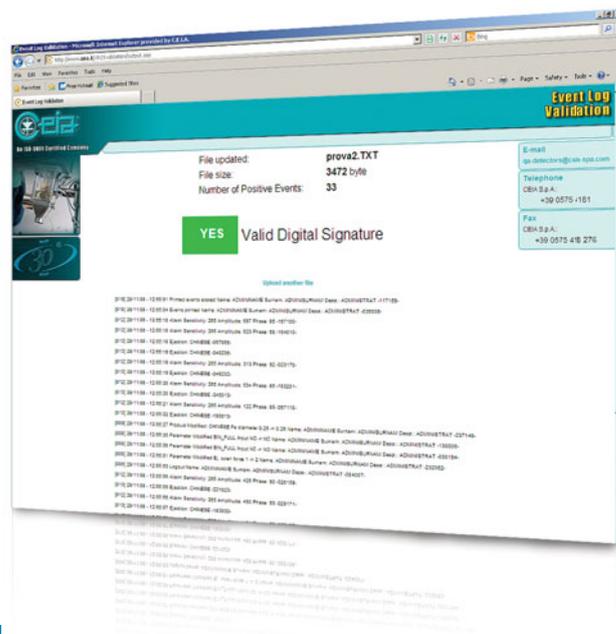
Fully HACCP and GMP compliant, CEIA Metal Detectors are manufactured according to ISO 9001 certified Quality System using EC and FDA approved materials.

FDA 21 PART 11 COMPLIANT

The THS 21E Metal Detector Series is a high-sensitivity, high-precision measuring instrument. The data relating to each detection and ejection are stored in an events memory and certify production quality, the inspection itself and programming operations, as well as the periodic functional test phases using standard test samples.

FDA Code Title 21 Part 11 prescribes rigorous criteria for access to programming and computer data protection which have been fully adopted in the CEIA THS 21E Series firmware.

The requirements regarding Security, Integrity and Traceability are therefore satisfied.



FDA 21 CFR Part 11 Compliant for data security, integrity, and traceability

Real-time embedded Self-Calibration Control

Exclusive Global Auto-Learn System

Modern, rugged and user friendly interface

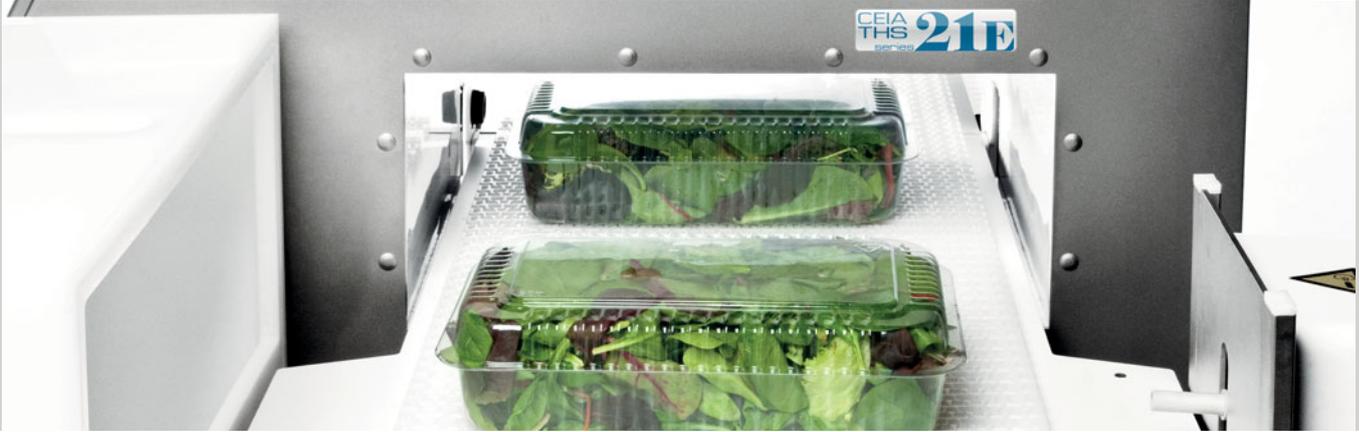
Increase in Sensitivity performance



IXC and Web-Server functions



Automatic verification of the installation Quality and Environmental Compatibility



### EXCLUSIVE GLOBAL AUTO-LEARN SYSTEM

The THS 21E Series employs an **exclusive Auto-Learn system** for food products which provides **simultaneous maximum sensitivity to all metals starting from a single learning transit**. The system allows optimization of the detection sensitivity to all metals with the maximum speed and precision, equivalent to hundreds of conventional learning transits: these results in levels of precision and efficiency have never been obtained before.

**For products with changing or varying product signal after autolearn, the THS 21E Series includes an advanced autolearn function** that runs in the background, to capture this product signal during normal production while still detecting metal. When the recording is ended, the operator has the option to analyze the data immediately, or wait until a later time when the line is stopped so as not to interrupt production. The data that was added during the background autolearn is analyzed, along with the original autolearn data, and the detection parameters are modified in order to also cancel the varying product signal.

### REAL-TIME EMBEDDED SELF-CALIBRATION CONTROL

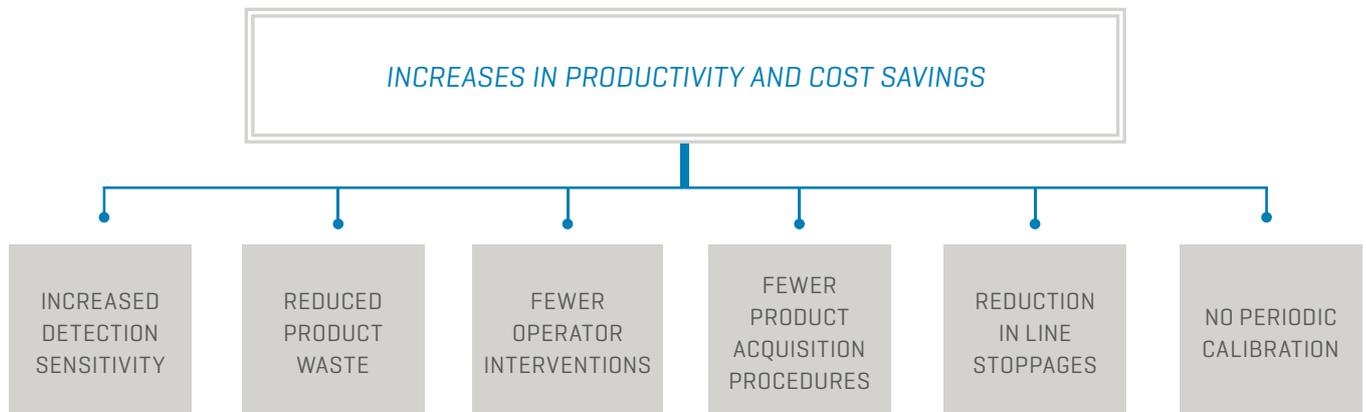
**The Self-Calibration control allows maximum repeatability and performance consistency over time and with environmental changes.** By means of specific signals sent to the transmission and reception chain of the Metal Detector, constant monitoring of the detection characteristics is carried out, with consequent constant compensation for any variations caused by environmental factors.

### AUTOMATIC VERIFICATION OF THE INSTALLATION QUALITY AND ENVIRONMENTAL COMPATIBILITY

**THS 21E Series introduces new tools for the installation and maintenance technicians** which allow them to measure the environmental compatibility of the Metal Detector.

The measurements include general mechanical and electromagnetic environmental compatibility, specific electromagnetic compatibility and the automatic examination of the degree of metal interference from the conveyor belt.

This latter function becomes even more important when the high level of sensitivity of the THS 21E Metal Detector Series is taken into consideration.



## MODERN, RUGGED AND USER FRIENDLY INTERFACE



- Industrial rate design
- Easy to read, high-contrast graphic display
- Large Product Memory: 250 entries with easy alphabetical sorting and pattern matching



RUGGED, ANTIVANDALIC  
STAINLESS STEEL KEYBOARD

EASY TO READ,  
HIGH-CONTRAST DISPLAY

LARGE PRODUCT MEMORY

```
===== Product =====
♦DEFAULT
PRODB1
PRODB2
```

## SOPHISTICATED INTERFACE CAPABILITIES

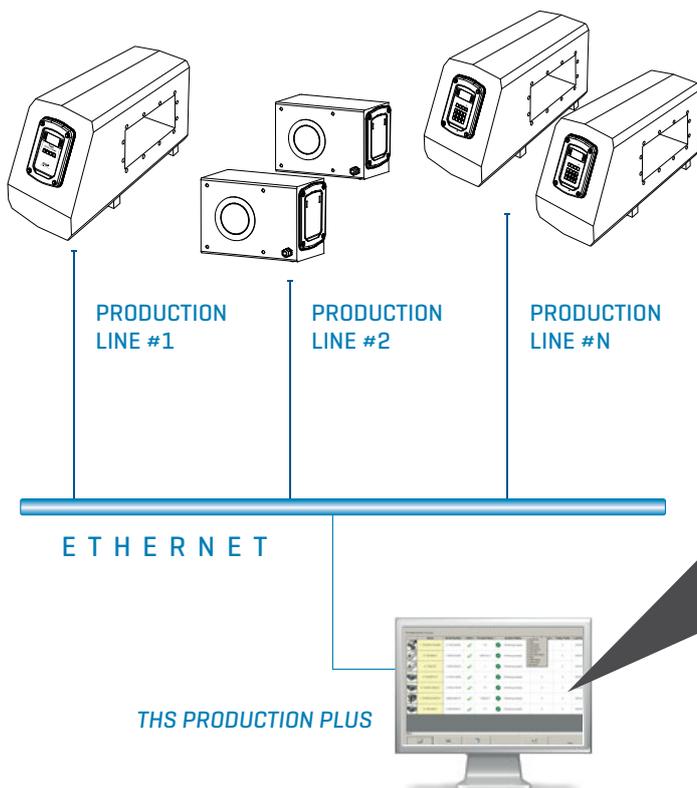


### » BLUETOOTH® CONNECTIVITY

In the THS/21 Series, local connection to the maintenance technician's computer no longer requires physical access to the interior of the detector or the use of unwieldy connection cables. The Bluetooth connection can be used for programming, monitoring of the signals via the CEIA MD-Scope program and the transfer of the data contained in the Metal Detector's events memory.

### » NETWORK COMMUNICATION CAPABILITIES

The Metal Detector can be linked to an Ethernet network [optional IXC module required]. In association with the THS Production Plus Software it enables remote management of production, collection of all technical and operational events, generation of statistical and traceability reports in compliance with FDA 21 CFR part 11 requirements.



### » MD-SCOPE

Software Diagnostic Package complete with connector cable and hardware key:

- Remote programming
- Signal input/output
- Alarm threshold and amplitude of the signal
- Oscilloscope functionalities

### » THS PRODUCTION PLUS

- Connects and Acquires Data from Multiple THS Detectors via Ethernet LAN
- Provides Connection to an External Database and Definition of a Programmable Block of SQL Instructions for each Metal Detector Event
- Enables Data Base Management and Back-Up of Metal Detector events
- Report Data Exportable in HTML and CSV format
- Provides User Authentication and Manages Electronic Signatures and Records
- Allows Data Integrity and Operator Auditing
- FDA Requirements Compliant, Title 21 of the Code of Federal Regulations [CFR]
- Email sender

Name	Serial Number	Online	Product Name	System Status	Serial Number	Today Tests	Last S...
1. THSIPH21N-WP	21100208062	✓	P2	Working properly		0	28/20
3. THSGS21	21000224065	✓	DEFAULT	Working properly		0	28/20
4. THSQ21E	21000238032	✓	Y	Working properly		0	28/20
5. THSFFV21	21100213069	✓	A	Working properly		0	28/20
6. THSFLMS21	21000218048	✓	P1	Working properly		0	28/20
7. THSIPH21N-FFV	20900246015	✓	TABLET1	Working properly		0	28/20
8. TPLMS21	21000205021	✓	P1	Working properly		0	28/20

## IXC AND WEB-SERVER FUNCTIONS

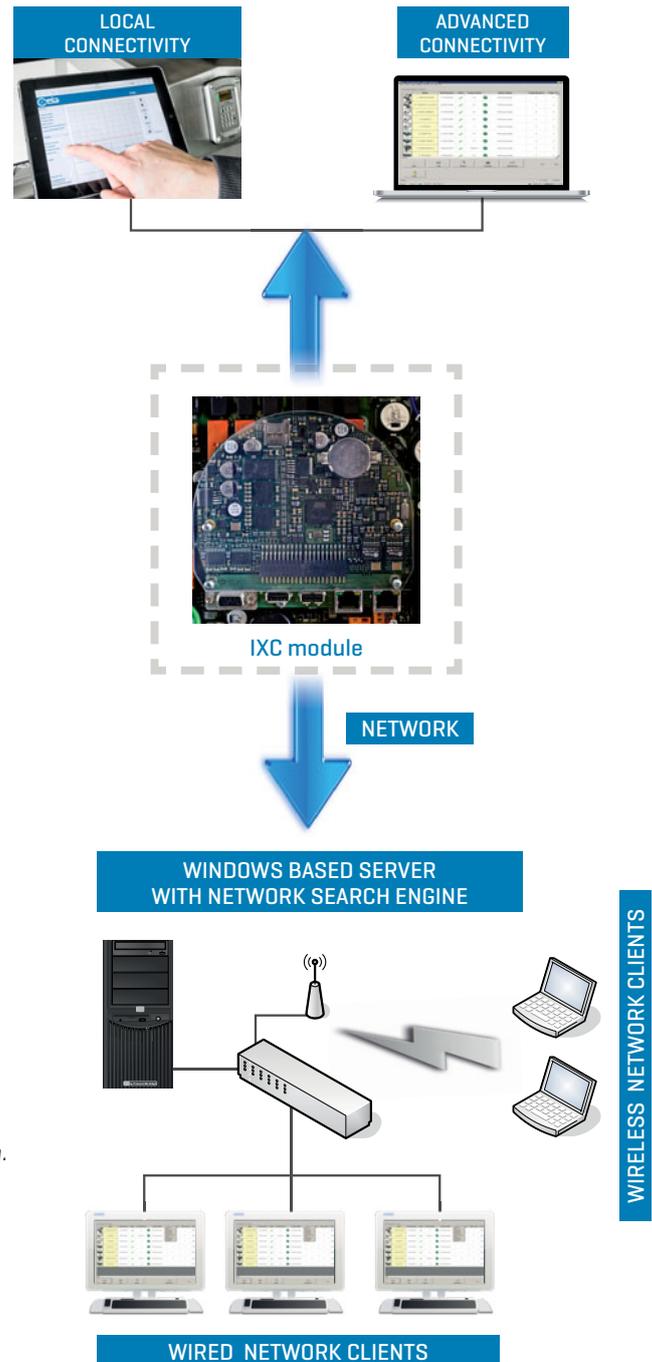


### » IXC MODULE

- Gateway to THS Production Net Management System
- Integrated Web-server
- Dual 100base-T Ethernet
- Dual Full Speed USB interface
- Wi-Fi 802.11b/g
- 100.000 events internal data logger
- Additional web-server functionality

### » WEB-SERVER INTERFACE

- Built-In MD SCOPE  
*The MD Scope functions [including oscilloscopes] are available to every user connected to the Metal Detector via Ethernet or WiFi.*
- Status  
*Replicates every message displayed by the THS [updated each 5 s].*
- Products  
*Displays the list of products stored into the THS memory, the selected product is shown in green. This page allows the product to be changed.*
- Products Export  
*Allows selection of all or part of the products stored in the THS memory in order to export them.*
- Products Import  
*Allows importation of all or part of the products exported.*
- Buffer Export  
*Allows exportation of events occurred in a selected time frame.*
- Configuration Backup/Restore  
*Allows backup or restoring of the connected system configuration.*
- Configuration Export/Import  
*Allows the configuration to be exported or imported from other Metal Detectors of the same model, installed on the same system.*



## SPECIFICATIONS



### SPECIAL FEATURES

### THS/21E

Detection sensitivity	High
Immunity to environmental interference	High
Data display type	Alphanumeric OLED - 4x20 characters
Local programming	4 keys, 3 with double function
Control Power Box or Conveyor Control System according to Standards UL 508A and CSA-C22.2 No. 14-05	on request
Audio and visual detection indicators	
Display of the signal level by means of bar graph	
Inspected/contaminated product counter	
ISO 9001 certified manufacturer	
Extremely compact probe on SL (Slim Line) version	
Detector for magnetic and non-magnetic metals, for use with different types of product thanks to selection of the operating frequency	
Autolearn and automatic tracking of the product effect	
Probe with circular opening for checking material transported in tubing, on THS/G21 series	
Up to 250 product data memories, selectable by local programming or network software	
Up to 40 definable users with username and password	

### DATA MANAGEMENT

Management of electronic production data and electronic signatures as per CFR 21, Part 11	Data security
	Data integrity
	Data traceability

### EVENTS STORAGE

Complete monitoring of occurred events	Ejections
	Test results
	Programming accesses
	Programming operations
	Faults

### I/O INTERFACES

RS232, Auxiliary RS232, Bluetooth, Ethernet/WiFi/USB (optional)
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### SIGNALLING

Acoustic	Via internal buzzer
Optical	Alphanumeric display with bar-graph indication
	Light indicators on control unit: RED: Alarm or Fault / GREEN: Power on

### PROGRAMMING

Local: built-in keyboard and high-contrast display
Remote: through computer connected via Bluetooth, RS232, Ethernet or WiFi and managed with CEIA MD Scope software, THS Production Plus software or any other terminal emulation program or through Web Server (with optional IXC card)

### SAFETY AND SECURITY

Protection degree	THS/21E	IP65
	On UL versions, the Control Power Box and Conveyor Control System have a 4X-12 certified degree of protection	
Electrical insulation	Galvanic isolation of the mains voltage	
	Compliant with international standards for safety and radio interference	

## SPECIFICATIONS



<b>SUPPLY</b>	Control Power Box	Main voltage	100-240 VAC
		Frequency and phase	50/60 Hz - single phase
		Full load current (FLA)	2.2 A
	Conveyor Control System	Main voltage	115 V: 100-120 VAC 230 V: 200-240 VAC
		Frequency and phase	50/60 Hz - single phase
		Full load current (FLA)	115 V version: 11.2 A 230 V version: 11.4 A
		Connected motor nominal voltage	200 ÷ 240 V triphase
Connected motor maximum power		115 V version: 0.37 kW (0.5 hp) 230 V version: 0.75 kW (1 hp)	
Small-size power supply card 00211AL_	Power supply voltage	20 ÷ 30 Vdc o Vac; 2A max.	
<b>ENVIRONMENTAL CONDITIONS</b>	Temperature	Operating	-10 – +55 °C
		Storage	-40 – +70 °C
	Relative humidity	Operating / Storage	5 – 90 %, non-condensing
<b>MANAGEMENT SOFTWARE</b>	THS Production software for statistical and operational management of networked THS systems		
	MD-SCOPE for maintenance and programming operations		



COSTRUZIONI ELETTRONICHE AUTOMATISMI INDUSTRIALI  
Zona Industriale 54/G, 52041 Vicinaggio - Arezzo [ITALY]  
Tel.: +39 0575 4181 Fax: +39 0575 418296 E-mail: qa-detectors@ceia-spa.com

CÔNG TY TNHH CÔNG NGHỆ HOÀNG LONG  
468 Lê Hồng Phong, P.1, Q.10, Tp. HCM  
Hotline: 0907.686.889  
info@congnghehoanglong.com  
www.congnghehoanglong.com