



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



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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 (3F version)
- 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
and THS/SL21E-3F**

*Slim Line Metal Detector for
applications in limited space.*

MULTI-FREQUENCY TECHNOLOGY (3F VERSION)

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.

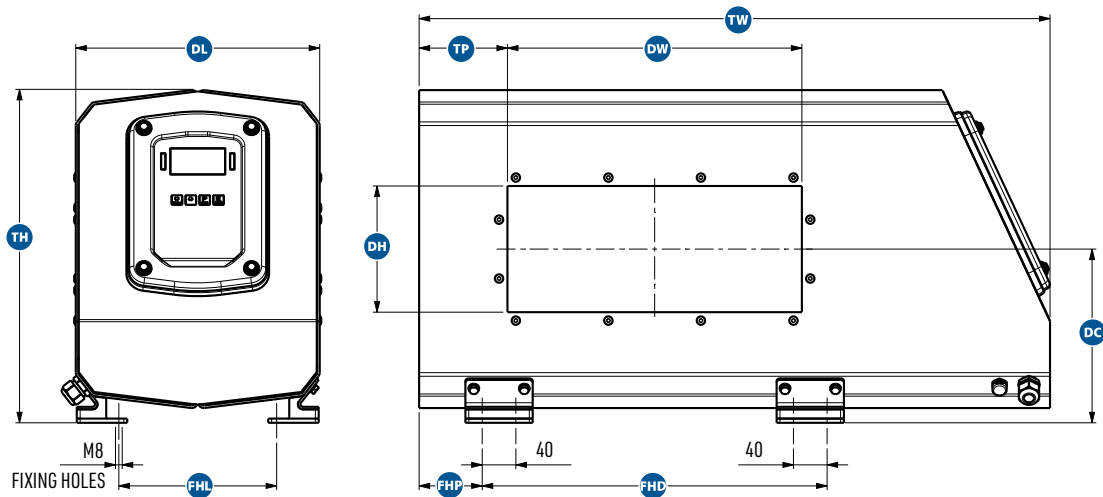
An automatic selection function allows the Metal Detector to choose the optimum frequency for the product in transit during the autolearn phase.

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.

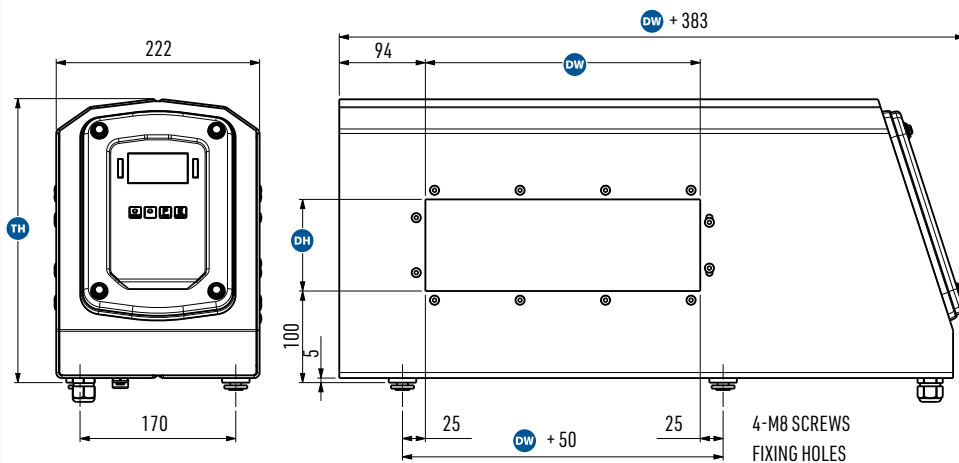


THS/21E and THS/21E-3F models



| 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 | 105 | 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 and THS/SL21E-3F models - 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 bag around the contaminated product. This can later be identified and removed from the production cycle automatically.

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.

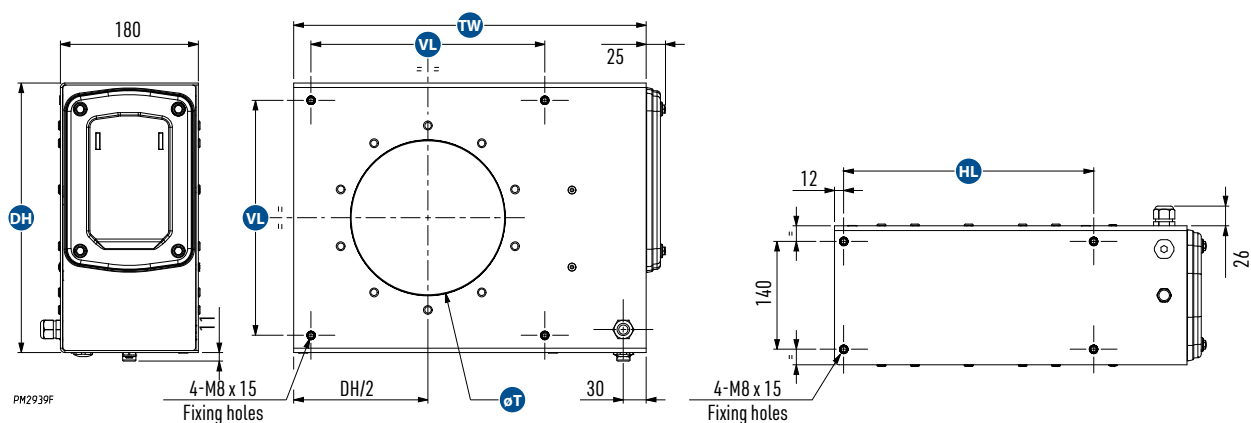
THS/G21E Control Power Box



THS/G21E series: Standard pipe sizes available to suit all applications.

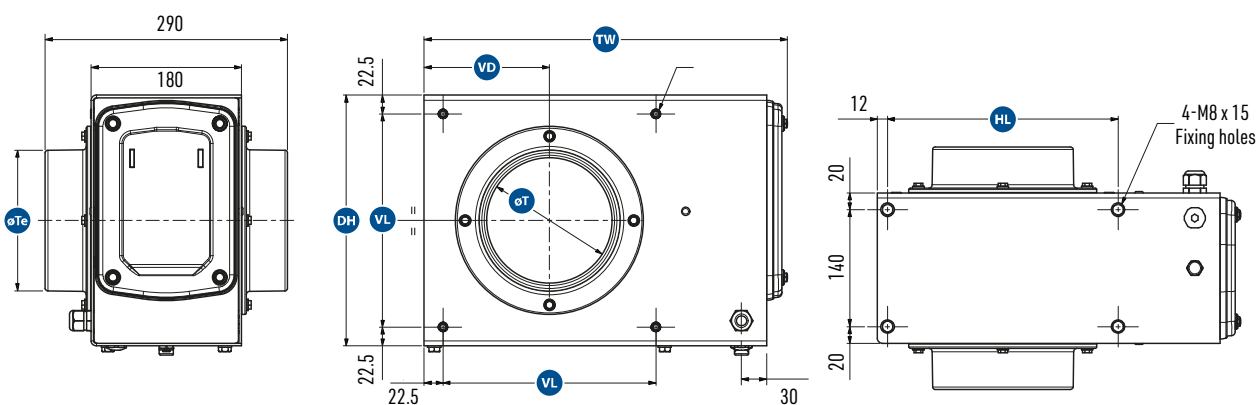


THS/G21E model



| 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.

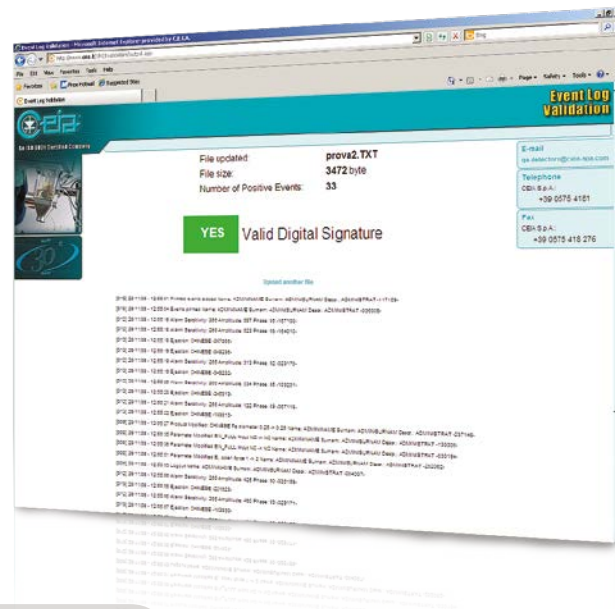


FDA 21 PART 11 COMPLIANT

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

Increase in Sensitivity
performance

Modern, rugged and
user friendly interface

Automatic verification of the installation
Quality and Environmental Compatibility

IXC and Web-Server functions





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.

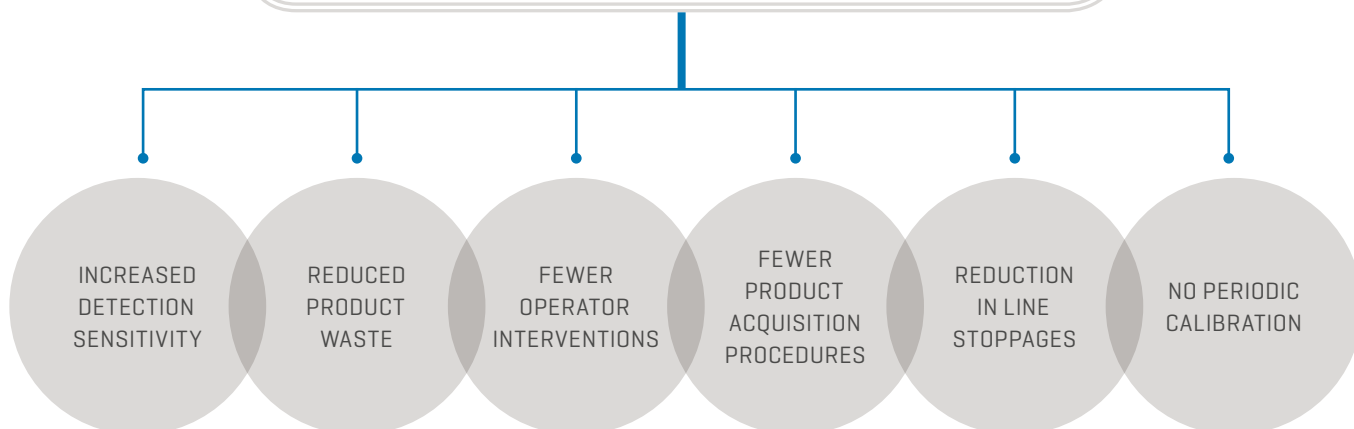
AUTOMATIC VERIFICATION OF THE INSTALLATION QUALITY AND ENVIRONMENTAL COMPATIBILITY

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.

INCREASES IN PRODUCTIVITY AND COST SAVINGS



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
♦ GEMME
POM SECCHI
Search: █



SOPHISTICATED INTERFACE CAPABILITIES

THS Production

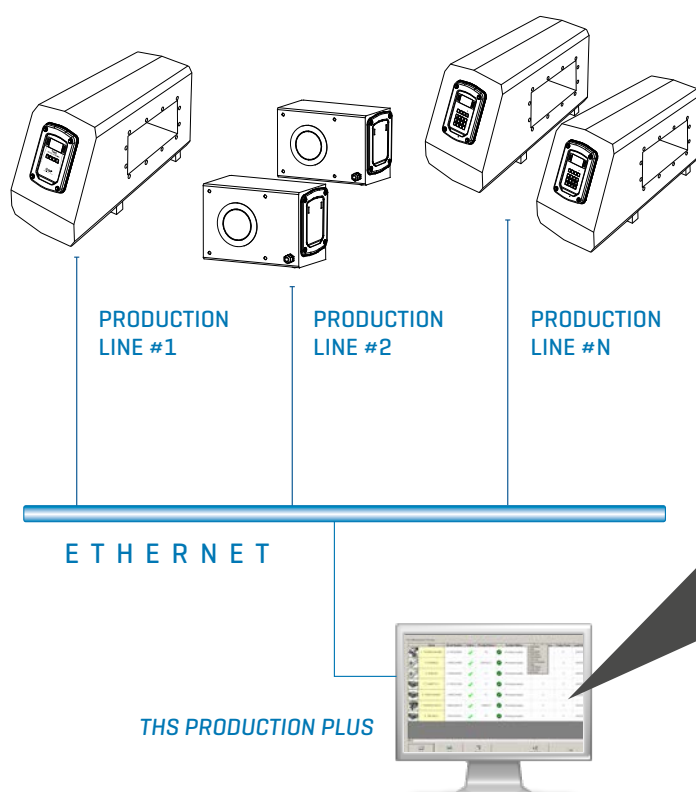
BLUETOOTH® CONNECTIVITY

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]
- E-mail sender

| Name | Serial Number | Online | Product Name | System Status | Serial Number | Today Tests | Last D. |
|---------------|---------------|--------|--------------|------------------|---------------|-------------|---------|
| 1 THSPH21NWP | 2110020062 | ✓ | P2 | Working properly | Serial Number | 0 | 20/20 |
| 3 THSM521 | 21000224365 | ✓ | DEFAULT | Working properly | Online | 0 | 20/20 |
| 4 THS21E | 21000238032 | ✓ | Y | Working properly | Product Name | 0 | 20/20 |
| 5 THSFFV21 | 21100213069 | ✓ | A | Working properly | System Status | 0 | 20/20 |
| 6 THSPLVM521 | 21000218048 | ✓ | P1 | Working properly | Folder Name | 0 | 20/20 |
| 7 THSPH21NFFV | 20800348015 | ✓ | TABLET1 | Working properly | Folder Status | 0 | 20/20 |
| 8 THPLMS21 | 21000205021 | ✓ | P1 | Working properly | Folder Name | 0 | 20/20 |

IXC AND WEB-SERVER FUNCTIONS



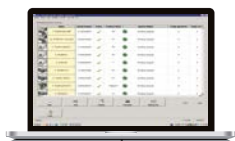
IXC MODULE

- 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

LOCAL CONNECTIVITY

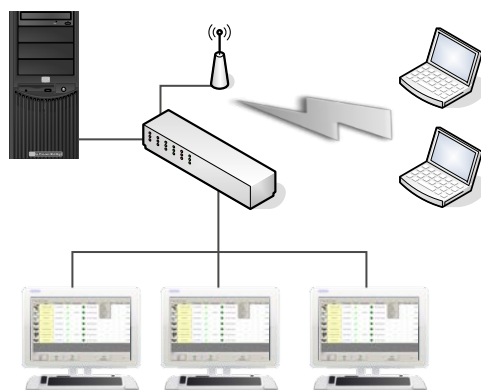


ADVANCED CONNECTIVITY



NETWORK

WINDOWS BASED SERVER WITH NETWORK SEARCH ENGINE



WIRED NETWORK CLIENTS

WIRELESS NETWORK CLIENTS

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)

SIGNALLING

Acoustic
Optical

Via internal buzzer
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



| | | | |
|--------------------------------------|---|---------------------------------|--------------------------|
| SUPPLY | 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 card00211AL_ | Power supply voltage | 20÷30 Vdc o Vac; 2A max. | |
| ENVIRONMENTAL CONDITIONS | Temperature | Operating | -10 – +55 °C |
| | | Storage | -40 – +70 °C |
| | Relative humidity | Operating / Storage | 5 – 90 %, non-condensing |
| MANAGEMENT SOFTWARE | THS Production software for statistical and operational management of networked THS systems | | |
| | MD-SCOPE for maintenance and programming operations | | |



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