THS 21 SERIES

Quality Control at its finest

CONVEYOR INSPECTION SYSTEMS

Supermarket specifications compliant

FEATURES

- Conveyor belt integrated with Metal Detector and ejection system
- Full compliance with HACCP criteria
- Detection and ejection of magnetic, non-magnetic and stainless steel metals contaminants
- Automatic learning & tracking of product effect
- Digitally-adjustable belt speed
- Structure and components in AISI 316L stainless steel and food-compatible plastic parts (EU, FDA, USDA compliant)
- Multiple ejection systems available: belt stop, air blast, pusher arm and retractable
- Maximum flexibility: all components are reversible

THS/MBB
Modular Conveyor Belt System

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***CEIA** is a manufacturing company **specialized in the design, engineering and production of Metal Detectors** and **Quality Control equipment**.*

***CEIA THS 21 Conveyor Inspection Systems** satisfy the most stringent requirements for functionality, compact construction, accuracy and reliability of response against accidental metal contamination in food products.*

CEIA, leading manufacturer of industrial metal detectors, offers a **complete range of solutions for inspecting food products, both loose and packaged**. The line of Quality Control Detectors includes the Conveyor Inspection Systems, featuring state-of-the-art performance and full compliance with industrial sector regulations.

THS 21 Conveyor Inspection Systems offer total integration between CEIA's high-performance THS 21 Metal Detector and a hygienic structure in AISI 316L stainless steel, equipped with digital control of the speed and of the stages of ejection of non-conforming products. CEIA's THS 21 are available in a wide range of sizes covering the different application requirements.

The supporting structure, the Metal Detector and the belt control box are in stainless steel. The inspection system is certified fully compatible with food product handling (**FDA/USDA compliant**) requirements, as is the protective cover of the ejection area and the container for rejected products.

MULTI-SPECTRUM TECHNOLOGY

Exclusively developed by CEIA, this is **a unique metal detection technology that both optimizes sensitivity to all metal contaminants and minimizes product effect in a very wide range of possible products**.

By recognizing the different frequency response of conductive products and metals, this innovative technology cancels product effect and maintains high performance levels for all types of metal contaminants, both magnetic and non-magnetic.

The autolearn function used by CEIA Multi-Spectrum metal detectors equates to the repetition of hundreds of conventional transits. It explores the whole spectrum of available frequencies in order to determine the best operating conditions resulting in unique detection performance.

*FULL COMPLIANCE WITH **HACCP** CRITERIA*

- IP65/69K compliant
- Structure and components in AISI 316L stainless steel and plastics EU, FDA compliant
- Superior washdown construction

EASY TO CLEAN AND INSPECT

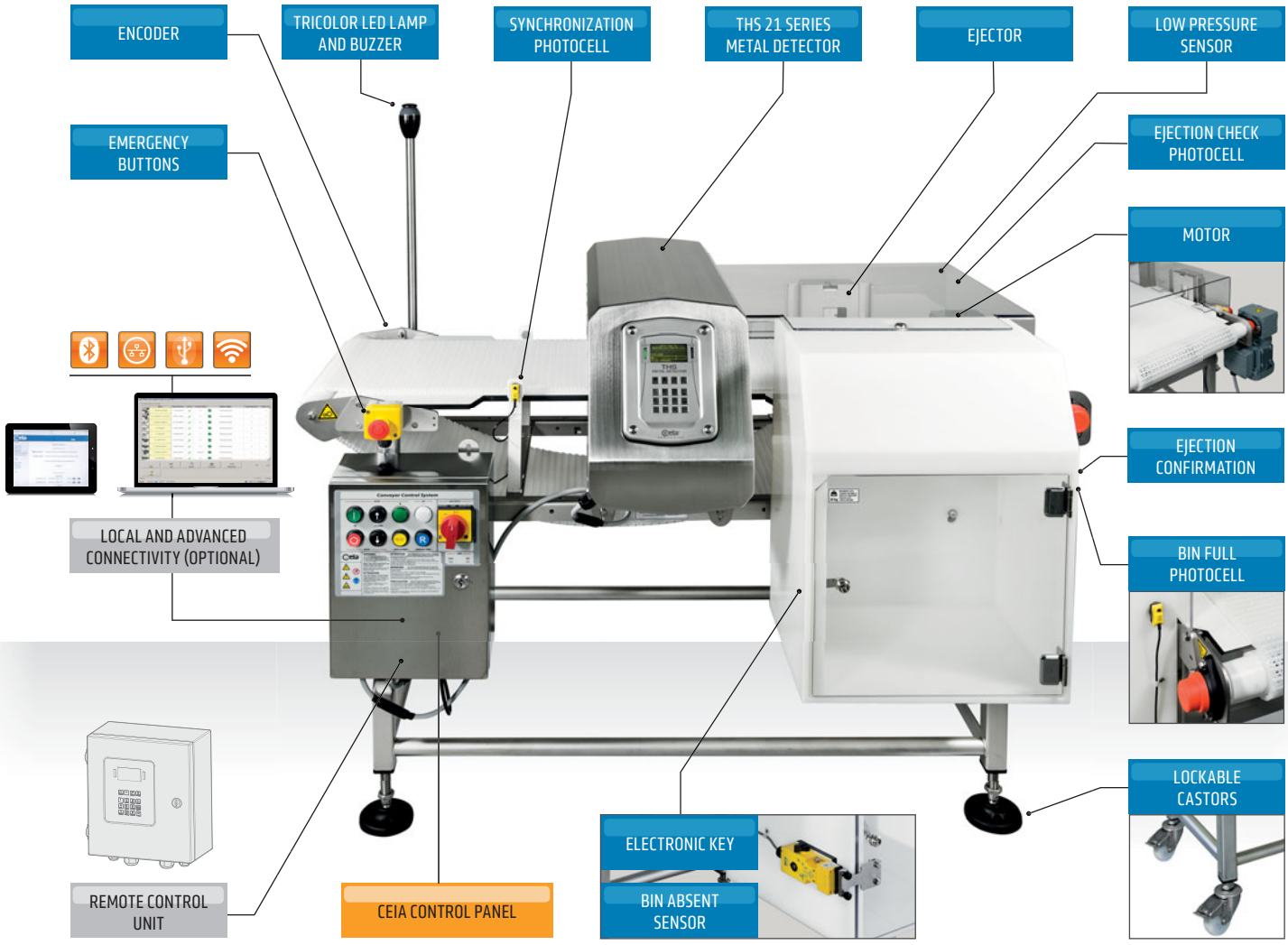
- Conveyor belt can be removed without any tool

The line of CEIA Quality Control equipment includes the Conveyor Inspection Systems, featuring state-of-the-art performance and ***full compliance with industrial sector regulations****.*

CEIA THS 21 Metal Detectors Series has been ***designed to manage all the functions required by the transport systems****.*

UNEQUALLED INTEGRATED I/O AND COMMUNICATION CONNECTIVITY PERFORMANCE

- Control of the belt motor, with speed adjustment
- Automatic ejection management with synchronization of the product transit
- Automatic synchronization with adjacent transport systems
- Verification of the availability of compressed air
- Bar-code readers support to automatically select the product related program in real time
- Verification of the successful ejection of the contaminated product
- Verification of the presence and space availability of the contaminated product container
- Management of encoders for a belt speed monitoring
- Remote management via Ethernet/Wi-Fi



CEIA THS 21 Conveyor Inspection Systems are available in a ***wide range of sizes covering different application requirements****.*

The following tables provides a list of the standard available characteristics and dimensions.

		THS/FBB	THS/MBB	THS/MBR	THS/RB
Belt Type	Flat	●			
	Modular		●	●	
	Round belt				●
Metal Detector	THS/21x	●	●	●	● [2]
	THS/MS21x	●	●	●	● [2]
	THS/21E	●	●	●	● [2]
	THS/MN21	● [1]			
Ejection Type	External signalization relay				●
	Belt stop	●	●		
	Pneumatic piston	●	●		
	Air blow	●	●		
	Reversing belt	●			
	Retracting belt			●	
Belt Length (mm) BL	800				●
	1000	●	●		
	1300	●	●		
	1500	●	●		
	1700			●	
	1800	●	●		
	2000	● [3]		●	
Belt Width (mm) BW	200	●	●		●
	300	●	●	●	●
	400	●	●		●
	450			●	
	500	●	●		
	600		●	●	
	800			●	
Belt Height (mm) BH	700	●	●		
	745 (only with lockable castors)	●	●		
	775	●	●		
	825	●	●		
	875	●	●	●	●
	920 (only with lockable castors)	●	●		
	950	●	●		
	1000	●	●		
	1125	●	●		
Component inversion	Antenna/PSU box	●	●	●	●
	Ejection system	●	●		

[1] Only with belt length of 2000 mm

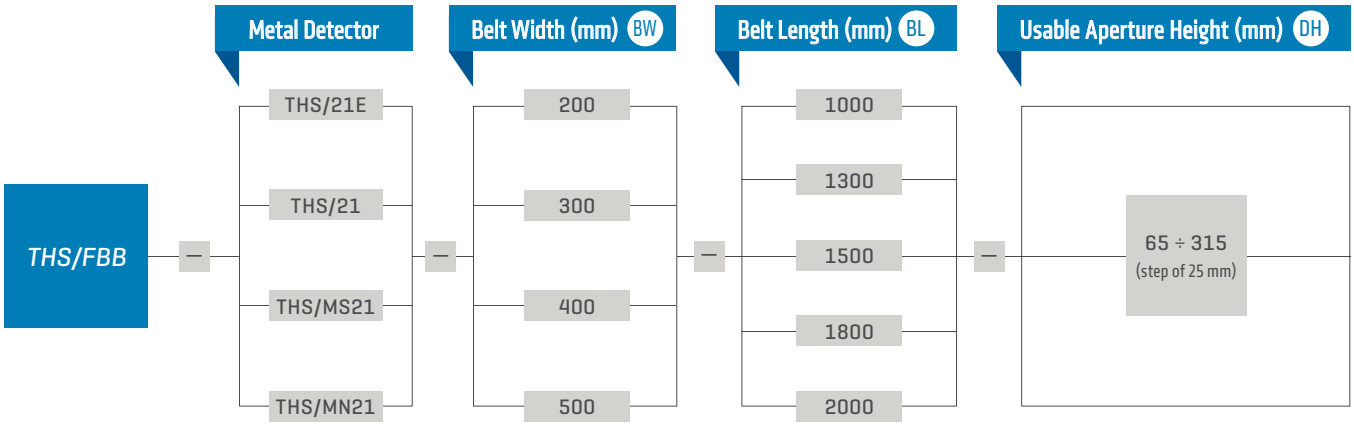
[2] Only SL (Slim Line) version

[3] Only with THS/MN21 probe

For details of customized versions with different dimensions and configurations, contact our Sales Department.

THS/FBB

FLAT CONVEYOR BELT CONFIGURATION



		THS/FBB-X-X-**1000**-X	THS/FBB-X-X-**1300**-X	THS/FBB-X-X-**1500**-X	THS/FBB-X-X-**1800**-X	THS/FBB-X-X-**2000***-X
Signalling lamp		●	●	●	●	●
Synchronization photocell		●	●	●	●	●
Belt variable speed		●	●	●	●	●
Belt height	700 mm	○	○	○	○	–
	745 mm (only with lockable castors)	○[1]	○[1]	○[1]	○[1]	–
	875 mm	●	●	●	●	●
	920 mm (only with lockable castors)	○[1]	○[1]	○[1]	○[1]	–
Height extension	75 mm	○	○	○	○	○
	125 mm	○	○	○	○	○
	250 mm [3]	○	○	○	○	○
Stand type	Adjustable feet ±75 mm	●	●	●	●	●
	Lockable castors ±75 mm	○[1]	○[1]	○[1]	○[1]	–
Ejection system	None (belt stop in case of alarm)	●	●	●	●	●
	Reject pusher cylinder	–	○[3]	○[3]	○[3]	○
	Reject air jet	–	○[3]	○[3]	○[3]	○
Reject bin	Standard	–	○	○	○	○
	Large	–	–	–	○	–
Side panels for product containment		○	○	○	○	○
Ejection confirmation		–	○	○	○	○
Ejection confirmation, bin full alarm, low pressure alarm		–	○	○	○	○
Emergency activation if bin absent		–	○	○	○	○

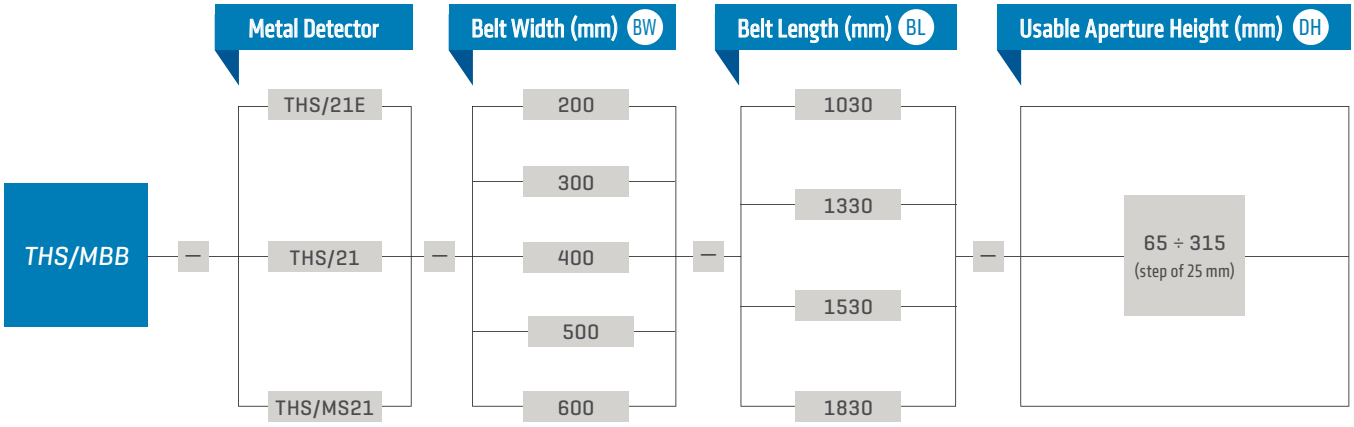
● Standard ○ Accessory / Option

[1] Available only on some models of standard systems, without height extensions [2] Applicable only on belt height 875 - [3] Available only on some configurations -

* Only with THS/MN21 probe

THS/MBB

MODULAR CONVEYOR BELT CONFIGURATION



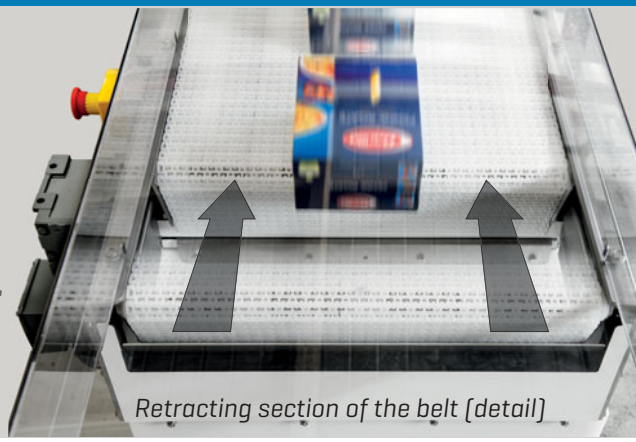
		THS/MBB-X-X-**1030**-X	THS/MBB-X-X-**1330**-X	THS/MBB-X-X-**1530**-X	THS/MBB-X-X-**1830**-X
Signalling lamp		●	●	●	●
Synchronization photocell		●	●	●	●
Belt variable speed		●	●	●	●
Belt type	Flush grid	●	●	●	●
	Flat top	○	○	○	○
Belt height	700 mm	○	○	○	○
	745 mm (only with lockable castors)	○[1]	○[1]	○[1]	○[1]
	875 mm	●	●	●	●
	920 mm (only with lockable castors)	○[1]	○[1]	○[1]	○[1]
Height extension	75 mm	○	○	○	○
	125 mm	○	○	○	○
	250 mm	○[2]	○[2]	○[2]	○[2]
Stand type	Adjustable feet ±75 mm	●	●	●	●
	Lockable castors ±75 mm	○[1]	○[1]	○[1]	○[1]
Ejection system	None (belt stop in case of alarm)	●	●	●	●
	Reject pusher cylinder	–	○[3]	○[3]	○[3]
	Reject air jet	–	○[3]	○[3]	○[3]
Reject bin	Standard	–	○	○	○
	Large	–	–	–	○
Side panels for product containment		○	○	○	○
Ejection confirmation		○	○	○	○
Ejection confirmation, bin full alarm, low pressure alarm		○	○	○	○
Emergency activation if bin absent		○	○	○	○

● Standard ○ Accessory / Option [1] Available only on some models of standard systems, without height extensions

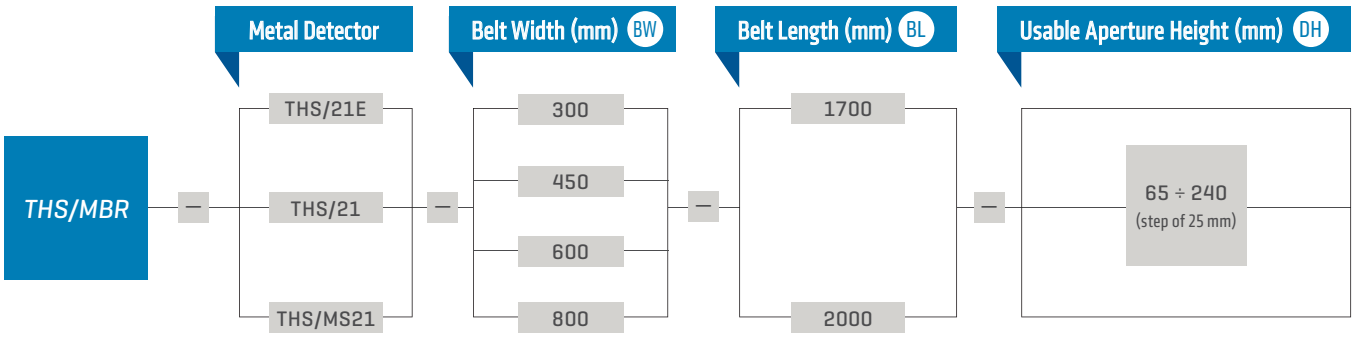
[2] Applicable only on belt height 875 - [3] Available only on some configurations

THS/MBR

MODULAR CONVEYOR RETRACTABLE BELT CONFIGURATION



Retracting section of the belt (detail)



		THS/MBR-X-X-**1700**-X	THS/MBR-X-X-**2000**-X
Signalling lamp		●	●
Synchronization photocell		●	●
Belt variable speed		●	•
Belt type	Flush grid	●	●
	Flat top	○	○
Belt height	875 mm	●	●
Stand type	Adjustable feet ±75 mm	● (x4)	● (x6)
Reject bin	Standard	●	●
Side panels for product containment		○	○
Ejection confirmation, bin full alarm		○	○
Low pressure alarm		○	○
Emergency sensor on rejection bin		○	○

● Standard ○ Accessory / Option

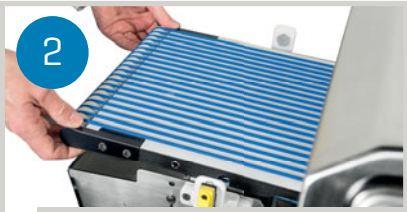
THS/MBR
Modular Conveyor Belt with retractable ejection system

THS/RB

ROUND CONVEYOR BELT CONFIGURATION

TOOL-FREE BELT REMOVAL

Extract the four locking pins



Lift the belt and the skid plate

Remove the belt and the skid plate from the conveyor

METAL DETECTION SYSTEM WITH ROUND BELT FOR IN-LINE APPLICATIONS

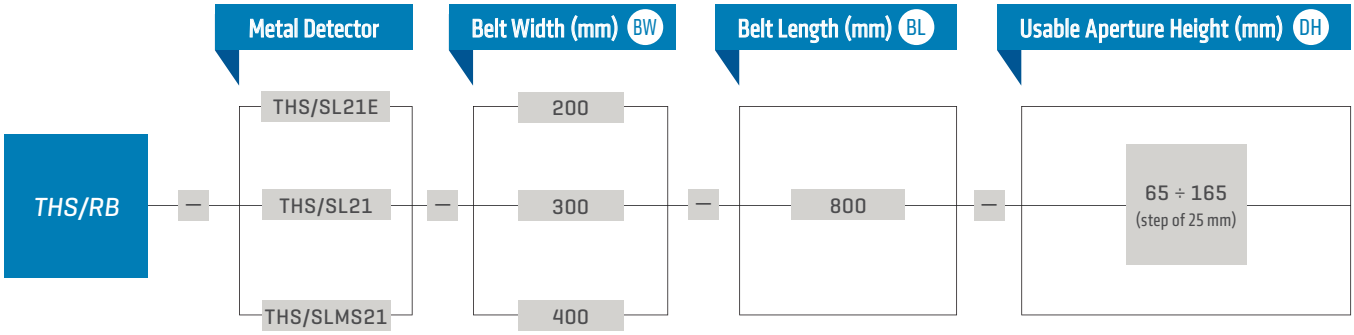
The CEIA THS/RB-800 has been developed as a solution for seamless integration into any checkweigher system and other in-line applications. The main design considerations being a conveyor which allows the best sensitivity performance of the metal detector to be maintained throughout its lifetime.

At a length of 800 mm its footprint is small, and therefore it fits in the line taking up minimal space.

The straightforward electrical integration required allows the metal reject function to be carried out separately using the existing reject systems. Conveyor belt maintenance is minimal due to its unique design, which permits skidplate removal in seconds without the requirement for tools.

The THS/RB-800 is an innovative and unique system *designed for seamless and highly compatible integration into standard checkweigher systems and other in-line applications, so that maximum detection sensitivity can always be achieved.*

The THS/RB-800 offers a high performance cost effective solution where space and best performance are critical.

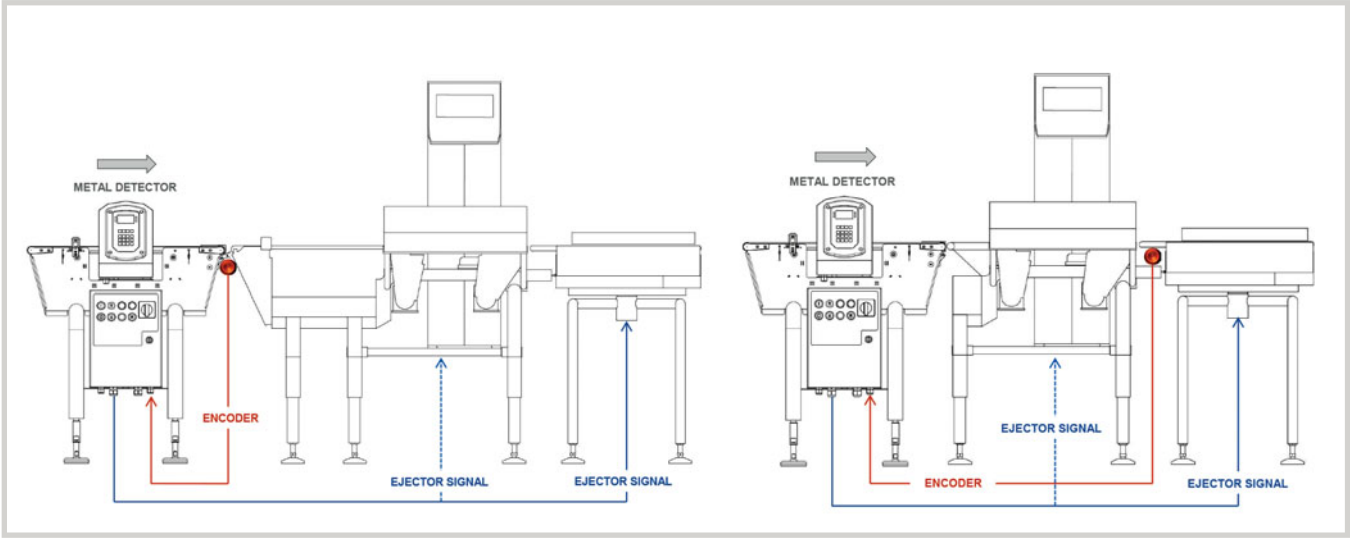


	THS/RB-X-X-**800**-X
Synchronization photocell	●
Variable speed	●
Ejection output relay signal	●
Built-in encoder for following conveyor speed sensing	○

● Standard ○ Option

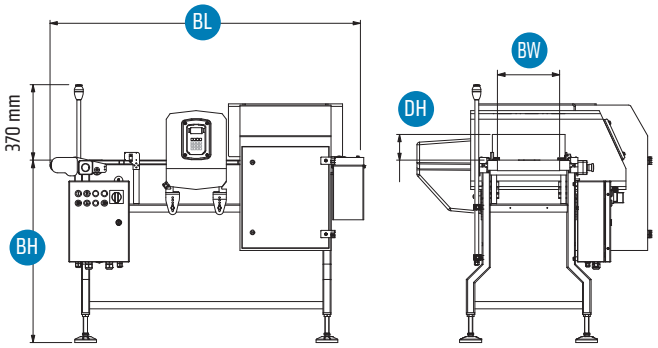
*Round Polyurethane cord (**FDA** approved)*

EXAMPLES OF INSTALLATION

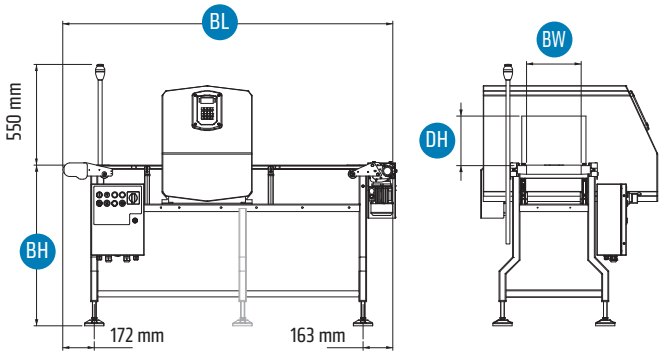


MECHANICAL DRAWINGS

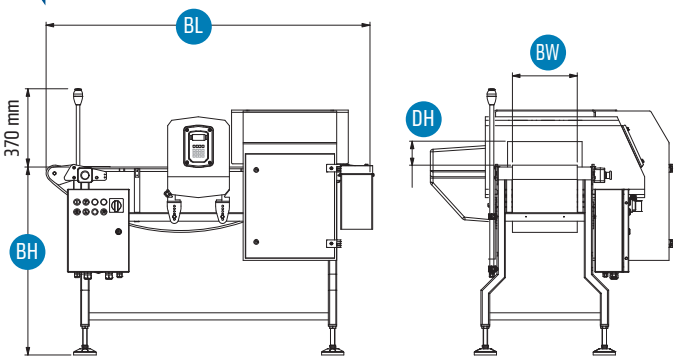
THS/FBB with family A and B probes



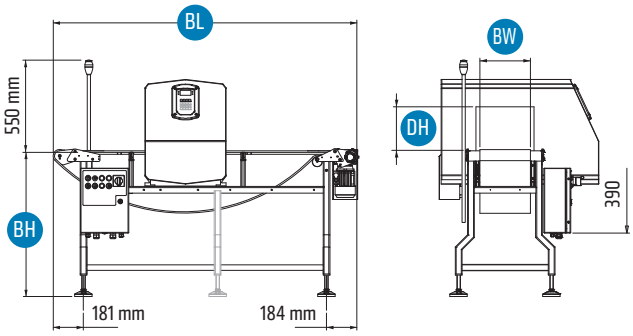
THS/FBB with family C probes



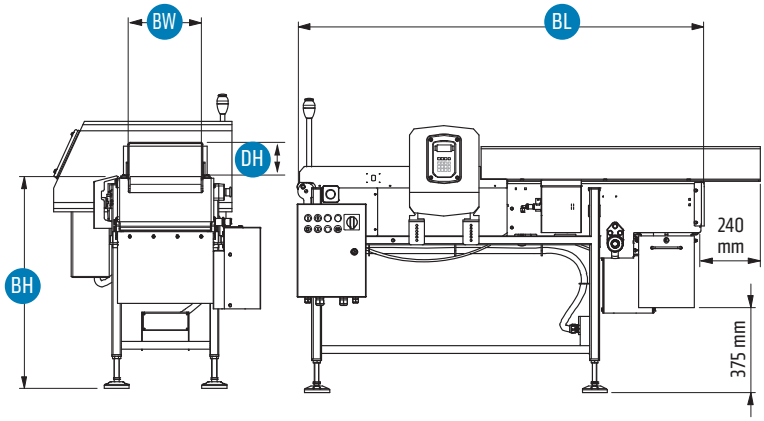
THS/MBB with family A and B probes



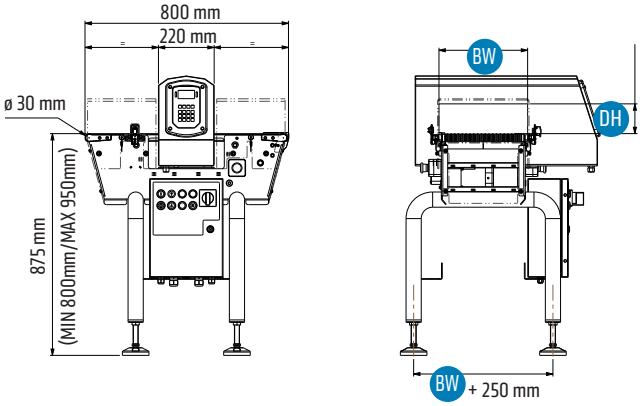
THS/MBB with family C probes



THS/MBR



THS/RB



SPECIFICATIONS

SPECIAL FEATURES	Conveyor belt with integrated THS/21x Metal Detector and ejection system	
	Full compliance with HACCP criteria	
	Structure and components in stainless steel and food-compatible plastic parts (EU, FDA, USDA compliant)	
	Conveyor belt (flat or modular) made from certified food-safe materials	
	System designed to the latest, most stringent safety standards	
	Conveyor Control System compliant with UL 508A and CSA-C22.2 No. 14-05 standards (on request)	
	High-reliability motor with stainless steel protective cover, high drive capacity version	
	Easy belt alignment	
	Digital speed adjustment	
	Quick and easy to clean	
	Easy maintenance and inspection	
	Up to 500 product data memories, selectable by local programming or network software	
	Up to 40 definable users with username and password	
DATA MANAGEMENT	Electronic records and Signature Management compliant with CFR 21, Part 11	Data security
		Data integrity
		Data traceability
EJECTION SYSTEMS	Belt stop, pneumatic pusher ejection, air jet ejection, deviator arm, belt reversing (only on THS/FBB), belt retraction (THS/MBR). Other modes available upon request.	
EVENTS STORAGE	Complete monitoring of occurred events	Ejections
		Test results
		Programming accesses
		Programming operations
		Faults
I/O INTERFACES	RS232, Auxiliary RS232, Bluetooth, Ethernet interface (on request), WI-FI and USB (on request)	
SIGNALLING	Acoustic	Via external buzzer and internal buzzer
	Optical	Graphic display with bar-graph indication
		Light indicators on control unit: RED: Alarm or Fault
		Light indicators on control unit: GREEN: Power on
		External beacon: RED: Alarm or Fault
		External beacon: AMBER: Alarm (optional)
		External beacon: BLUE: Test request (optional)
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)	
INPUTS	Conveyor Control System	Ejection confirmation, Photocell, Reset, Low pressure, Encoder, Bin full, Emergency buttons, Barcode reader, Following Conveyor, Inhibition, Bin absent, Ejector position check, Ejector check
OUTPUTS	Conveyor Control System	Test request, Upstream conveyor, System ready, Ejection in progress, Alarm, Ejector, External beacon
SELF-DIAGNOSIS SYSTEM	An internal self-diagnosis system continuously monitors Metal Detector functional efficiency. In the event of a fault, a message is shown on the control display and all alarm indicators are activated together with corresponding relays.	

SPECIFICATIONS

SAFETY AND SECURITY	Protection degree		THS/21E Metal Detector	IP65
			THS/21 - THS/MS21 Metal Detectors	IP66 – IP69K
			THS/FBB, THS/MBB, THS/MBR	IP55: motor
				IP65: rest of the system
			THS/RB-800	Control System certified: Type 4X-12 (UL 50) available
				Conveyor System: IP54 (IEC 529) - IP69K available on request
			On UL versions, the Conveyor Control System has a 4X-12 certified degree of protection	
	Noise emissions		Noise level as per Directive 2006/42/EC	<70 dB(A); <130 dB(C)
	Electrical insulation		Compliant with international standards for safety and radio interference	
SUPPLY	Control Power Box	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: 11.2 A (15.6 A for THS/MN21)	
			230 V: 11.4 A (15.8 A for THS/MN21)	
	Motor	Nominal voltage	230 V triphase	
		Maximum power	115 V: 0.37 kW (0.5 hp)	
			230 V: 0.75 kW (1 hp)	
	Compressed air	Pressure	600-1000 kPa	
		Flow	50 litres/min (piston ejector)	
			600 litres /min (air blow ejector, optional)	
ENVIRONMENTAL CONDITIONS	Temperature	Operating	-10 to +55 °C	
		Storage	-40 to +70 °C	
	Relative humidity	Operating - Storage	5 to 90 %, non-condensing	
	Altitude	≤1000 m characteristic. For details of other altitudes, contact the Sales Department		
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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