



THS/210[®]-MBH5

STATE-OF-ART METAL DETECTION SYSTEM FOR
DRY FOOD-PROCESSING AREAS



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Quality control at its finest

CEIA THS/210®-MBH5 is a next-generation metal detection system designed to meet the evolving needs of the **dry food processing and packaging industry**. Based on advanced **multi-spectrum technology** and a **fully digital architecture**, the system delivers high detection sensitivity, rapid setup, and reliable performance in environments with complex product characteristics and high throughput demands.

Developed with a focus on **usability, hygienic design, and seamless integration**, the THS/210®-MBH5 supports efficient cleaning procedures typical of dry food zones and features a robust construction compatible **with low-pressure washdown** and **dust-prone environments**. The system complies with applicable industrial and regulatory standards, offering secure connectivity, traceability, and process control functionalities in line with modern quality assurance frameworks.

APPLICATIONS

- **BAKERY** (bread and rolls, biscuits and cookies, cakes and pastries, crackers and breadsticks, chocolate and candy, sugar and cocoa products)
- **CEREALS, GRAINS** (breakfast cereals, muesli and granola bars, rice and rice cakes, dry mixes)
- **POWDERED & DRY SEASONINGS** (spice and herb packagings, salt processing, dry soup and sauce mixes, bouillon cubes)
- **BEVERAGE INGREDIENTS (DRY)** (roasted and ground coffee, tea leaves and sachets, instant coffee or tea mixes, drink powder blends)
- **PASTA AND DRY PREPARED FOODS** (dried pasta, noodles, couscous, bulgar, freeze-dried meals)
- **SNACK AND NUT PROCESSING** (dried fruits, roasted nuts and seeds, trail mixes, potato chips and extruded snacks, energy bars and protein snacks)
- **PET FOOD** (dried kibble for dogs and cats, treats and chews, small animal dry feed)
- **VARIOUS FOOD AND NON-FOOD PRODUCTS** not requiring a heavy wash-down environment



Supermarket
Specifications
Compliant



HIGHLIGHTS

- EXCEPTIONAL METAL DETECTION PERFORMANCE**
 Detects ferrous, non-ferrous, and stainless-steel contaminants with high sensitivity—even in complex, product types
- SMART, INTUITIVE USER INTERFACE**
 Rugged touchscreen panel with easy-to-navigate controls for faster operation and minimal training
- SELF-OPTIMIZING TECHNOLOGY**
 Auto-Learn and self-calibration features streamline setup and maintain consistent, high-accuracy detection
- BUILT-IN AUTO-QC FUNCTION**
 Automates quality control tests to support HACCP and internal quality compliance protocols
- PRECISION EJECTOR MANAGEMENT**
 Advanced control ensures fast, accurate removal of contaminated products with full reject traceability
- FUTURE-READY CONNECTIVITY**
 Gigabit Ethernet, wireless access, and full compatibility with major fieldbus systems—seamless integration into your production line
- THS PRODUCTION 4.0 COMPATIBLE**
 Full support for CEIA's digital suite: centralized monitoring, data integrity, ERP/MES integration, and complete traceability
- ADVANCED EVENT LOGGING**
 Up to 500,000 events locally securely stored for audits, analysis, and full traceability. Unlimited events when networked with THS Production 4.0
- 21 CFR PART 11 COMPLIANCE**
 Ready for FDA-regulated environments requiring electronic records and signature integrity
- REMOTE SUPPORT BUILT IN**
 Integrated diagnostics and web server access reduce downtime and improve service responsiveness
- FAST START-UP, LONG-TERM RELIABILITY**
 Fully digital, firmware-based electronics designed for cybersecurity and robust performance
- HYGIENIC, INDUSTRY-READY CONSTRUCTION**
 AISI 316L stainless steel and FDA-certified plastics—engineered for processing zones with high hygiene expectations
- DESIGNED FOR EASY CLEANING**
 Hygienic frame and tool-free access make routine dry cleaning and maintenance simple and efficient
- BUILT TO WITHSTAND DRY FACTORY CONDITIONS**
 IP65-rated enclosure provides protection from dust and low-pressure water spray, ideal for bakery, cereal, and snack environments
- CERTIFIED CONVEYOR CONTROL SYSTEM**
 UL 508A and CSA C22.2 No. 286 listing available on request for North American compliance
- INTEGRATED SAFETY FUNCTIONS**
 Includes Safe Torque Off (STO) compliant EN ISO 13849-1, and ejector de-energization up to PL c (PL d available on request)

CEIA solutions allows food producers to **minimize waste, reduce downtime, enhance detection accuracy, and streamline compliance, delivering consistent, traceable product quality.**

BUILT-IN AUTO- QC FUNCTION

Automated Calibration Check with Exceptional Accuracy.

The THS/210®-MBH5 features a **Built-In Auto-QC Function**, a factory-calibrated verification system that simulates the transit of test spheres (ferrous, non-ferrous, and stainless steel) through the detector aperture. This function allows food producers to **automatically verify the calibration** of the metal detector without interrupting production or requiring manual test passes.

Auto-QC is based on a high-precision, internally generated stimulus that reproduces the exact signals acquired during certified test transits at the centre of the detection aperture—where sensitivity is at its minimum. This signal simulation is validated across the full operating frequency range of the metal detector, ensuring **high repeatability** and **exceptional detection reliability**.

While not intended to replace third-party calibration audits, Auto-QC is designed to eliminate the need for daily manual verification tasks typically performed by Quality Assurance personnel. The result: **significant time savings, reduced labour costs, and improved process efficiency.**

In addition, users can define a **custom balance** between manual and automated calibration checks, allowing for tailored compliance procedures based on internal protocols and audit requirements.

With Auto-QC, even **minimal deviations in detection performance are identified in real time**, supporting the highest standards of food safety and production control.

EXCLUSIVE AUTO-LEARN SYSTEM

Fast, High-Precision Setup for Maximum Metal Sensitivity

- ✓ The CEIA Multi- Spectrum **AUTO-LEARN** system for food products delivers **maximum sensitivity to all metal types**—ferrous, non-ferrous, and stainless steel—**starting from a single product transit.**
- ✓ Thanks to advanced signal processing and multi-spectrum analysis, the system automatically optimizes detection parameters with a level of **precision equivalent to hundreds of conventional learning cycles.** This results in an **unprecedented level of setup efficiency and calibration accuracy**, enabling faster line start-up and consistently high detection performance.



THS/210-MBH5 KEY COMPONENTS

MODULAR BELT ON REMOVABLE WEARSTRIPS



COMMAND BUTTONS

FRONT AND REAR EMERGENCY BUTTONS

THS/210 METAL DETECTOR

EJECTOR (PUSHER OR AIR BLOW)


MULTICOLORS LAMP AND SOUNDER

FAIL SAFE TEST SHUTTER (OPTIONAL)

USB PORT

MAIN DISCONNECT SWITCH

LOCKABLE CASTORS (OPTIONAL)



ROUND FRAME CONSTRUCTION

AIR LOCK OUT VALVE

ELECTRIC BIN LOCK (OPTIONAL)



EJECTION CHECK PHOTOCELL*


EJECTION CONFIRMATION PHOTOCELL*

BIN FULL PHOTOCELL*

*Optionally equipped with fail-safe test shutter

Choose your preferences and fill in the appropriate spaces to configure the device

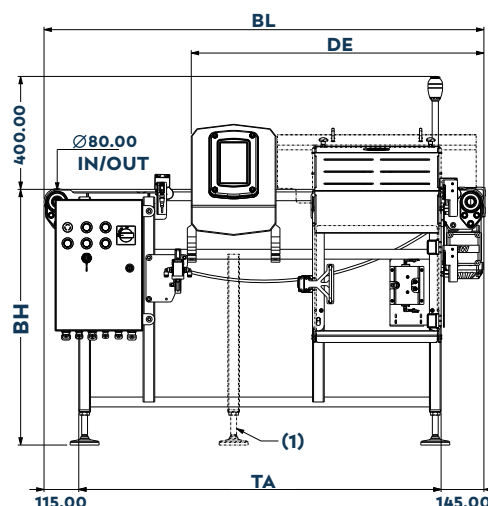
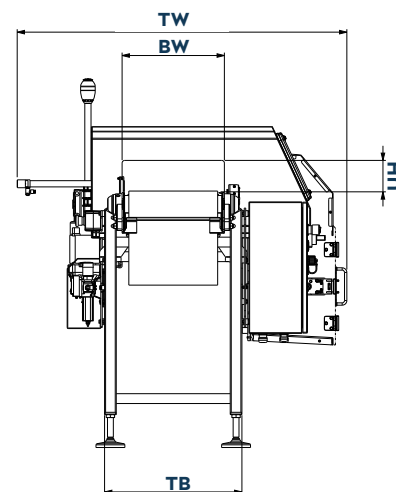
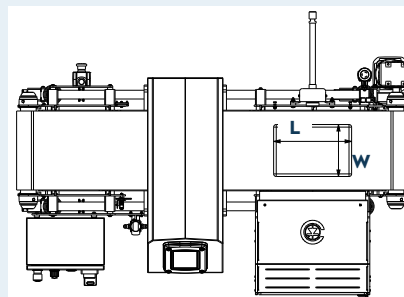
MODEL	CONVEYOR LENGTH [mm]	BELT WIDTH [mm]	USEFUL TUNNEL HEIGHT [mm]	EJECTION TYPE	SYSTEM LAYOUT	ELECTRICAL STANDARD	CONVEYOR SUPPORTS	ENTRANCE COVER	PRODUCT GUIDES	ELECTRIC BIN LOCK	FAIL SAFE TEST SHUTTER
THS/210-MBH5	-	-	-	-	-	-	-	-	-	-	-
	15: 1500	30: 300	040: 40	B: belt stop	L1: left-right; rear-front	CE: CE	F: feet	0: NO	0: NO	0: NO	0: NO
	18: 1800	45: 450	065: 65	P: pusher (4kg product weight max)	R1: right-left; rear-front	U1: UL (115V)	C: castors	1: YES	1: YES	1: YES	1: YES
		60: 600	090: 90	A: air blow (1kg product weight max)	L2: left-right; front-rear	U2: UL (230V)					
			115: 115		R2: right-left; front-rear						
			140: 140								
			165: 165								
			190: 190								
			215: 215								
			240: 240								



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TECHNICAL SPECIFICATIONS

Metal Detector technology	Advanced Multi-Spectrum (highest Sensitivity for dry and wet product)
Human Machine Interface	7" graphic color display with rugged touchscreen
Useful tunnel heights [mm]	40, 65, 90, 115, 140, 165, 190, 215 or 240
Conveyor lengths [mm]	1500 or 1800
Conveyor belt width [mm]	300, 450 or 600
Conveyor height [mm]	875 ± 75
Ejection types	Belt stop, pusher or air blow
Conveyor supports	Feet or castors
Conveyor speed	14 ÷ 54 m/min (adjustable)
Safety functions	- Safe Torque Off (STO) with Performance level (PL*) d - Ejector de-energization with Performance level (PL*) c <i>* according to EN ISO 13849-1</i>
Outputs	7 solid state relays
Inputs	14 (3 opto-isolated)
Communication interfaces	- Gigabit ethernet; USB; Wifi; RS232; BT Wireless - Fieldbus interface (optional): EtherNet/IP; Profibus, Profinet; - Modbus; OPC-UA; EtherCAT - Integrated tool Remote Assistance Service
Construction and materials	- Modular belt (blue color) and wearstrips (removable without tools) in FDA approved plastic - Round frame easy-clean design in AISI316L - Reject bin fully in AISI316L and FDA approved plastic
Product max. weight	Single pack: 1 kg (maximum weight with air blow ejector)* Single pack: 4 kg (maximum weight with pusher)* Total, packs distributed on belt: 40Kg* <i>* It may differ depending on product characteristics</i>
Product max. width and lenght	L: 350 mm W: 250 mm (with rigid packaging)
Operating temperature	-10°÷55° C (14°÷122° F)
Protection rating	IP65. Conveyor Control System (UL version): Type 4X
Power Supply	100÷120 Vac or 200÷240 Vac (single phase, 50/60 Hz)
Certifications	CE; Conveyor Control System (UL version) listed according to UL508A and CSA22.2#286.



MODEL	BL	BW	BH		TA	TB	TW		DE	
			feet	castors			piston	air blow	UH≤140	UH≥165
THS/210-MBH5-15-30	1500	300	875±75	945±75	1240	470	1130	1010	1000	1050
THS/210-MBH5-15-45		450				620	1430	1160		
THS/210-MBH5-15-60		600				770	1730	1310		
THS/210-MBH5-18-30	1800	300	875±75	945±75	1540	470	1130	1010	1300	1350
THS/210-MBH5-18-45		450				620	1430	1160		
THS/210-MBH5-18-60		600				770	1730	1310		

Dimensions in mm

(1) Applicable only for lenght BL=1800 mm



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