



METAL DETECTION SYSTEMS

FOR GRANULAR
& POWDER
PRODUCTS



THS/G21 SERIES FOR FREE-FALL
OR PIPE LINE APPLICATIONS



THS/FFV21-CB FOR FREE-FALL APPLICATIONS
WITH COW BELL VALVE



THS/FFV21-S
FOR FREE-FALL APPLICATIONS WITH FLAP EJECTION VALVE



HEAT AND CONTROL

✉ info@heatandcontrol.com

www.heatandcontrol.com

Quality Control at its finest

THS/G21

METAL DETECTORS SERIES FOR FREE-FALL OR PIPE LINE APPLICATIONS

GENERAL DESCRIPTION

- ✓ The **THS/G21** 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/G21 becomes a system that **detects and removes any contaminating metals, both magnetic and non-magnetic.**
- ✓ **Alternatively, when mounted on a packaging machine, the THS/G21 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.
- ✓ 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/G21 allows the contaminated portion of product to be removed without slowing down the production flow.
- ✓ The system is designed to **communicate with external control systems**, either connected directly or via a communications network.



***THS/G21-F series** with Reduced Metal Free Zone for limited space installations, while maintaining optimal detection of all metals.*



FUNNEL KIT



CONTROL POWER BOX




THS/G21 series - Standard anti-static pipe sizes available to suit all applications (ATEX ZONE 21 version available)



THS/FFV21-S

FREE-FALL INTEGRATED SYSTEM WITH METAL DETECTOR AND FLAP EJECTION VALVE FOR POWDER PRODUCTS

GENERAL DESCRIPTION

- ✓ **THS/FFV21-S** Integrated System is especially designed for the inspection of **powder products** and the **elimination of any contaminating metals, whether magnetic, non-magnetic or stainless-steel.**
- ✓ The **carefully selected materials** used in construction of the **THS/FFV21-S do not interact with food products,** and thus do not modify or alter their composition.
- ✓ The design of the system incorporates a **fast reject valve drive response time** to detect and reject the contaminant without slowing down the product flow.
- ✓ The construction guarantees **quick, easy cleaning of the components that are in contact with the product.** The technological choices made by CEIA allow the parts in contact with the product to be disassembled and maintained in a short time.
- ✓ **ATEX ZONE 21** available on demand 



FAST DETECTION AND REJECTION SPEED

THROUGHPUT

Available inlet aperture diameters:
2,9-3,9-5,9-7,8 inch

ADVANCED AUTOTEST FUNCTION

ROBUST

AISI 316L stainless steel construction

FAIL-SAFE OPERATIONS

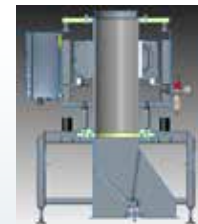
FAST DETECTION AND REJECTION SPEED



MULTI-SPECTRUM TECHNOLOGY

Unique metal detection technology that both optimises sensitivity to all metal contaminants and minimizes product effect in a very wide range of possible products

Parts in contact with the product have a surface roughness below 1 Ra



FLAP REJECTION VALVE

THS/FFV21-CB

FREE-FALL INTEGRATED SYSTEMS WITH COW BELL VALVE FOR GRANULAR PRODUCTS

GENERAL DESCRIPTION

- ✓ The **THS/FFV21-CB** Integrated System is **especially designed for the inspection of granular products** and the elimination of any contaminating metals, whether magnetic, non-magnetic or stainless-steel.
- ✓ The carefully selected **materials do not interact with food products**, and thus do not modify or alter their composition.
- ✓ The design of the system incorporates a **fast reject valve drive response time** to detect and reject the contaminant without slowing down the product flow.
- ✓ The construction guarantees **quick, easy cleaning of the components** that are in contact with the product.
- ✓ The technological choices made by CEIA allow the **parts in contact with the product to be disassembled and maintained in a short time**.



OPTIMIZED DESIGN FOR GRANULES

DETECTION

Best in class detection to magnetic and non-magnetic metals

ROBUST

AISI 316L stainless steel construction

STRAIGHT PASSAGE OF THE PRODUCT

on the rejection system area in order to avoid product jam



CERTIFIED TEST SAMPLES



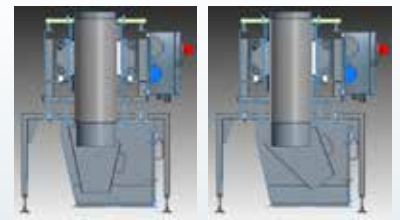
THROUGHPUT

Available inlet aperture diameters: 2,9-3,9-5,9-7,8 inch

MARKED COMPLIANCE

Control Power Box available according to UL 508A and CSA-C22.2 No. 286

MINIMUM MAINTENANCE REQUIRED (no gasket)




COW BELL REJECTION VALVE

THS/PH21N-FFV

INTEGRATED SYSTEMS FOR GRANULAR AND POWDER PRODUCTS

KEY FEATURES

- State-of-the Art Quality Control of powder and granular products
- Detection and ejection of magnetic, non-magnetic and stainless steel metal contaminants
- Automatic Calibration Test
- Very Compact size
- FDA 21 CFR part 11 compliant
- Fast detection and rejection speed
- Fail-Safe Operations
- AISI 316L stainless steel construction
- ATEX ZONE 21 available on demand 




AUTO-QC™ TEST FUNCTIONS

THS/FFV21SG

INTEGRATED SYSTEMS FOR GRANULAR AND POWDER PRODUCTS

KEY FEATURES

- Superior and consistent detection
- Ultra High Sensitivity to all metals
- Automatic Calibration Test
- FDA 21 CFR part 11 compliant
- Marked Control Power Box available according to UL 508A and CSA-C22.2 No. 286
- ATEX ZONE 22 available on demand 

BENEFITS

- ✓ INCREASE PRODUCTIVITY
- ✓ ENSURE COMPLIANCE
- ✓ ENHANCE OPERATOR SAFETY



AISI 316L STAINLESS STEEL CONSTRUCTION

AUTOTEST AND AUTO-QC™ TEST FUNCTIONS

Industrial Metal Detectors for food application are usually equipped with basic diagnostic functions based on their emitter/receiver signals monitoring.

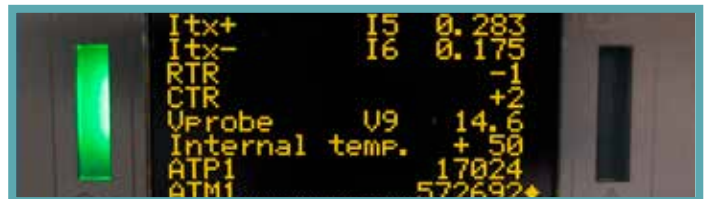
This type of diagnosis is not able to detect aging as well as thermal drift and other sources of minor deviations. Any of the above may result in a sensitivity reduction that could lead to non-detection of metal contamination.

THS/21 & THS/MS21 SERIES METAL DETECTORS ARE NATIVELY EQUIPPED WITH AN ADVANCED AUTOTEST FUNCTION ENSURING THE FOLLOWING FEATURES:

✓ **CONTINUOUS BACKGROUND REAL-TIME MONITORING**
and **STABILIZATION**
of the amplitude and phase response for each working frequency



✓ **CONTINUOUS COMPENSATION**
of environmental and age-related changes



✓ **IMMEDIATE ALERTING**
in case of permanent out of standard conditions

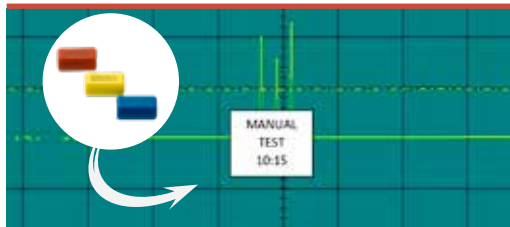




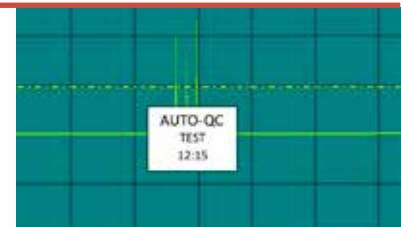
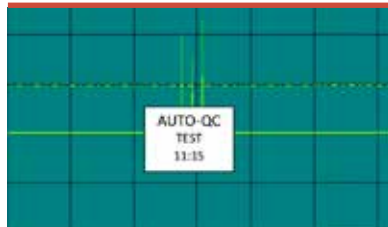
In addition to the AUTOTEST function, THS/21 and THS/MS21 detectors can be programmed so that **periodic verifications of the calibration are carried out automatically. This feature is called AUTO-QC™ TEST.**

AUTO-QC™ TEST EXAMPLE

AT 10:15 A MANUAL TEST, after product setup, is requested during which the Metal Detector records the signals of three user-defined Test Samples.



AT 11:15 AND 12:15 THE METAL DETECTOR PERFORMS TWO AUTO-QC TESTS, providing the previously recorded signal stimuli to the probe-emitter-receiver system and verifying the actual detection and product ejection (if applicable).



The example below shows an **extract of the Metal Detector Events Buffer** relevant to a manual and automatic test:





<p>MANUAL TEST</p>	[015]	10/11/22 - 14:16:06 Product: PRODUCT1 Name: USER04 -066133-	Test Passed Fe diameter: 0.8 Surname: USER04	Amplitude(Fe): 6.1 dB Descript: USER04	<p>AUTO-QC TEST</p>	[058]	10/11/22 - 15:16:06 Product: PRODUCT1 -126135-	AUTO-QC Test Passed Ej.Op.time: 0.102	Amplitude(Fe): 6.1 dB
	[015]	10/11/22 - 14:16:07 Product: PRODUCT1 Name: USER04 -036533-	Test Passed Fe diameter: 0.8 Surname: USER04	Amplitude(NFe): 5.0 dB Descript: USER04		[058]	10/11/22 - 15:16:07 Product: PRODUCT1 -156237-	AUTO-QC Test Passed Ej.Op.time: 0.105	Amplitude(NFe): 5.0 dB
	[015]	10/11/22 - 14:16:08 Product: PRODUCT1 Name: USER04 -135178-	Test Passed Fe diameter: 0.8 Surname: USER04	Amplitude(SS): 7.2 dB Descript: USER04		[058]	10/11/22 - 15:16:08 Product: PRODUCT1 -035510-	AUTO-QC Test Passed Ej.Op.time: 0.103	Amplitude(SS): 7.2 dB

AUTO-QC™ BENEFITS

- ✓ The **AUTO-QC TEST** allows the manual verification of calibration by the operator to be reduced or eliminated
- ✓ The **METAL DETECTOR** provides a programmable output that can be connected to the conveyor line stop during the AUTO-QC test to avoid product ejection and waste during automatic test
- ✓ **CEIA AUTO-QC TEST provides an effective calibration check along with a programmable 0 ÷ 100 % reduction of the manual verifications**, resulting in a corresponding reduction of:
 - LABOR COST
 - ACCIDENTAL PRODUCT CONTAMINATION
 - PRODUCT WASTE



ACCESSORIES

PART	DESCRIPTION
	<p>TEST SAMPLES Ferrous / Non Ferrous / AISI 316L Certified metal spheres to verify the system correct detection capability and ejection functioning.</p>
	<p>TRANSITION KIT FROM RECTANGULAR TO ROUND</p>
	<p>RCU (REMOTE CONTROL UNIT)</p>
	<p>MODULE FOR SAMPLE RETRIEVING DURING TEST ROUTINE</p>

HEAT AND CONTROL, INC. - 21121 Cabot Blvd. Hayward, CA 94545

✉ info@heatandcontrol.com



www.heatandcontrol.com

Heat and Control reserves the right to make changes, at any moment and without notice, to the models, their accessories and options, to the prices and conditions of sale - DP002K0028v3000xUS - 2026