

The Thermo Scientific APEX 300 metal detector offers state-of-the-art performance in a compact, easy-to-install package. It brings the technological advantages of the industry-leading APEX™ family to a new class of applications, enabling you to protect your brand and fulfill your legal obligations.

## Thermo Scientific APEX 300

Flexible metal detection for drop through, pipeline and checkweigher combination systems



### Features and Benefits

- High sensitivity in a compact, easy-to-install system
- Styles for horizontal and vertical product flows
- Software optimized for gravity-fed and pipeline applications
- Unique, icon-driven interface with multilingual Help and Autocalibrate functions
- Quality Assurance Test (QAT) and AuditCheck™ features to verify detector performance
- Dual frequency operation for application flexibility
- Available with Thermo Scientific reject systems designed to your specifications

The Thermo Scientific APEX 300 metal detector brings all the technological advantages of the state-of-the-art APEX 500 to a wide range of new applications. Available in many sizes and several mounting arrangements, the 300 model is the most flexible member of the APEX family of products. By utilizing a unique, (patent pending) multi-coil design to make magnetic flux more consistent in the aperture, all APEX 300 models have improved metal signal levels, resulting in the highest level of detection available today.

For gravity-fed and pipeline installations, new filtering algorithms are used making the APEX 300 ideally suited in these applications. Thermo Scientific AuditCheck,

a unique, patented device that automatically validates performance, is available as an option on any APEX 300 metal detector. This option is particularly valuable in bulk applications because it is often impossible to insert test pieces in the product flow.

Supported by the global Thermo Fisher service network, the APEX 300 meets the reliability, environmental and hygienic needs of the food industry. It has been designed for failsafe operation with built-in fault notification and has been fully tested to meet IP66/NEMA 4X/ATEX requirements. Only food-grade materials are employed in construction, including the stainless steel case and ABS control panel.

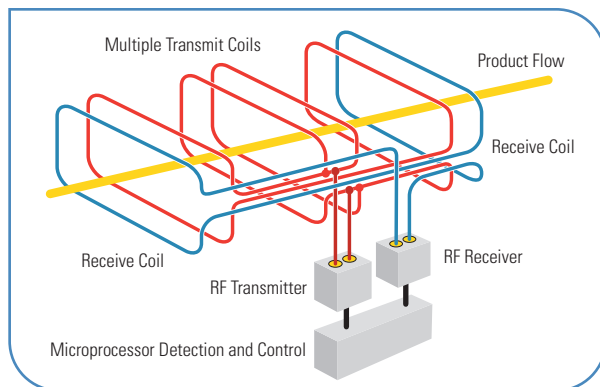
**APEX 300D Drop Through with Reject System**



**Extending the Technology of the APEX 500**

The combination of proprietary multi-coil design and new digital signal processing software has made the APEX 500 the performance leader in the industry. This technology was leveraged in the APEX 300 family to reduce the size of the metal detector while maintaining sensitivity. New digital signal processing filters were also created to remove noise and detect metal in fast/variable speed applications like pipelines. Further enhancements were made to optimize reject timing, make metal detection more robust, enable remote service and improve overall ease of use.

**APEX 300 Multi-Coil Architecture**



**AuditCheck — A Patented Performance Verification System**

In bulk applications where material is moving rapidly in tubes or pipes, it's difficult to periodically test a metal detector by inserting test pieces in the product flow. This is where our proprietary AuditCheck option comes in. Available on the APEX 300 (and APEX 500), AuditCheck automatically passes an air driven test shuttle through the metal detector and compares both the magnetic and conductive signals to calibrated levels. This operation goes far beyond a simple go/no-go test. Because signal levels are measured and compared to acceptable levels, problems can be identified before they happen. Since the AuditCheck is integral to the APEX software, it is failsafe and a complete record of all tests is available for full traceability.

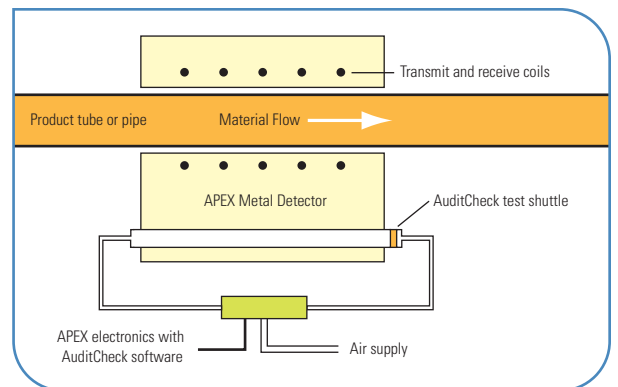
**A Metal Detector for Any Purpose**

To meet HACCP and Global Food Safety Initiative (GFSI) requirements, a metal detector such as the APEX 500 or APEX 100 is typically installed at the end of the line on a conveyor immediately prior to packing and shipment of product. In some cases though, a foreign object detection approach like this isn't possible due to the type of product being produced, the style of packaging used or the physical space available. This is why we developed the APEX 300. Its small size and multitude of form factors make it ideal for gravity-fed applications, VFFS (Vertical Form Fill and Seal) machines, pipeline metal detection and combination systems with checkweighers. The APEX 300 completes the state-of-the-art APEX family by offering new software and head styles for just about any application.

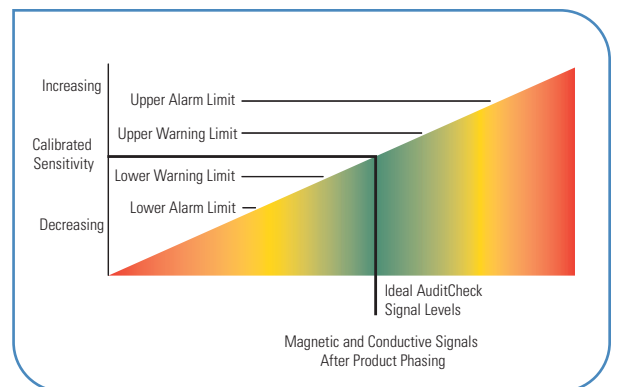
**Thermo Scientific VersaWeigh® Combination System**



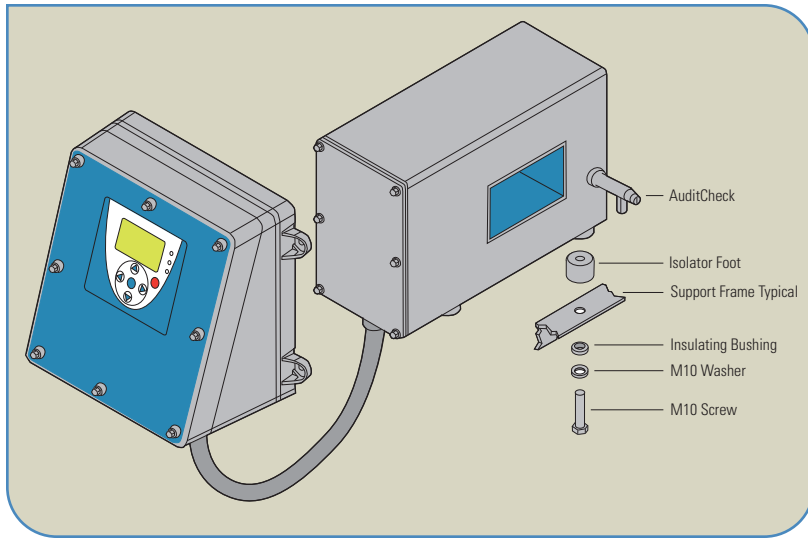
**AuditCheck Diagram**



**AuditCheck Principle of Operation**



## APEX 300 Control Panel Mounting (Remote or Integral with Optional Mounting Bracket)



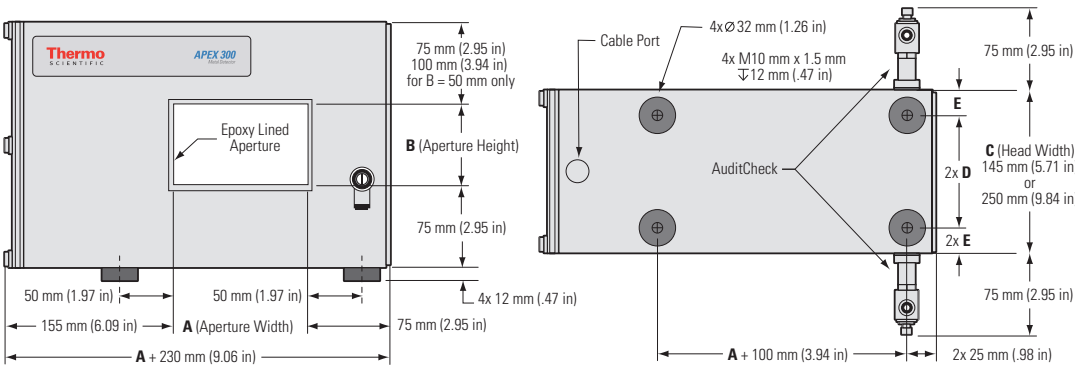
## Aftermarket Services

A full range of aftermarket services is available worldwide to support the APEX 300 throughout its lifetime. This includes application evaluation, installation, training and preventive maintenance. To ensure maximum operational efficiency, we also offer on-site maintenance contracts and a full spare-parts service.

## Available Options

- AuditCheck performance validation system
- Field compression flanges
- On-head control panel mounting plate
- Locking pivot mount frames for drop-throughs
- Mounting kits to convert from DSP 1/2/3, Metal Eliminator and Metal Scout to APEX 300
- Certified test spheres
- Reject verification/bin full sensors

## APEX 300 Horizontal Flow, Horizontal Aperture Metal Detector



### Foot dimension

| C<br>mm (in) | D<br>mm (in) | E<br>mm (in) |
|--------------|--------------|--------------|
| 145 (5.71)   | 100 (3.94)   | 22.5 (0.89)  |
| 250 (9.84)   | 200 (7.87)   | 25 (0.98)    |

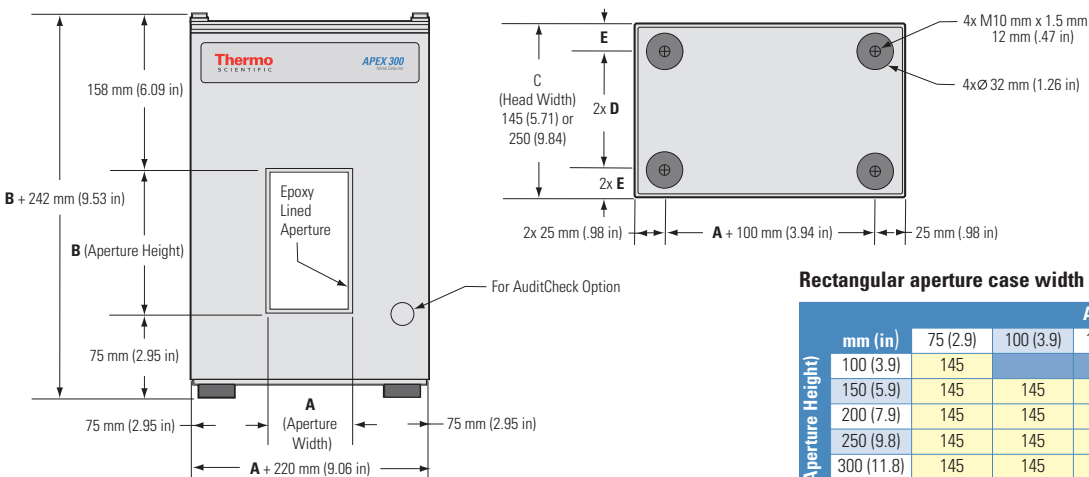
### Rectangular aperture case width (C) dimension in millimeters

|                     |           | A (Aperture Width) |           |            |            |            |            |            |            |            |            |            |
|---------------------|-----------|--------------------|-----------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
|                     |           | mm (in)            | 100 (3.9) | 150 (5.9)  | 200 (7.9)  | 250 (9.8)  | 300 (11.8) | 350 (13.8) | 400 (15.7) | 450 (17.7) | 500 (19.7) | 550 (21.6) |
| B (Aperture Height) | 50 (1.9)  | 145                | 145       | 145        | 145        | 145        | 145        | 145        | 145        | 145        | 145        | 145        |
|                     | 75 (2.9)  | 145                | 145       | 145        | 145        | 145        | 145        | 145        | 145        | 145        | 145        | 145        |
|                     | 100 (3.9) |                    | 145       | 145        | 145        | 145        | 145        | 145        | 145        | 145        | 145        | 145        |
|                     | 125 (4.9) |                    | 145       | 145        | 145        | 145        | 145        | 145        | 145        | 145        | 145        | 145        |
|                     | 150 (5.9) |                    |           | 145 or 250 | 145 or 250 | 145 or 250 | 145 or 250 | 145 or 250 | 145 or 250 | 145 or 250 | 145 or 250 | 145 or 250 |
|                     | 175 (6.9) |                    |           | 145 or 250 | 145 or 250 | 145 or 250 | 145 or 250 | 145 or 250 | 145 or 250 | 145 or 250 | 145 or 250 | 145 or 250 |
|                     | 200 (7.9) |                    |           |            | 145 or 250 | 145 or 250 | 145 or 250 | 145 or 250 | 145 or 250 | 145 or 250 | 145 or 250 | 145 or 250 |
|                     | 225 (8.9) |                    |           |            |            | 145 or 250 | 145 or 250 | 145 or 250 | 145 or 250 | 145 or 250 | 145 or 250 | 145 or 250 |
| 250 (9.8)           |           |                    |           |            |            | 145 or 250 | 145 or 250 | 145 or 250 | 145 or 250 | 145 or 250 | 145 or 250 |            |

### Square aperture case width (C) dimension in millimeters

| A & B (mm) | C (mm)     |
|------------|------------|
| 75 (2.9)   | 145 or 250 |
| 100 (3.9)  | 145 or 250 |
| 125 (4.9)  | 145 or 250 |
| 150 (5.9)  | 145 or 250 |
| 175 (6.9)  | 145 or 250 |
| 200 (7.9)  | 145 or 250 |
| 225 (8.9)  | 145 or 250 |
| 250 (9.8)  | 145 or 250 |

## APEX 300 Horizontal Flow, Vertical Aperture Metal Detector



### Foot dimension

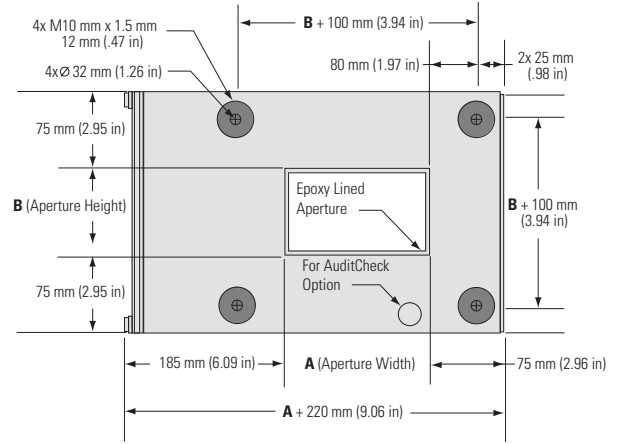
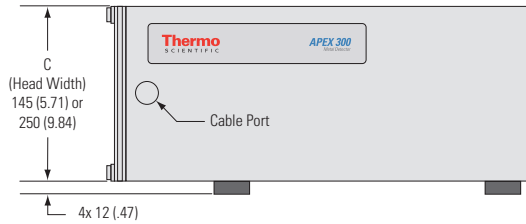
| C<br>mm (in) | D<br>mm (in) | E<br>mm (in) |
|--------------|--------------|--------------|
| 145 (5.71)   | 100 (3.94)   | 22.5 (0.89)  |
| 250 (9.84)   | 200 (7.87)   | 25 (0.98)    |

### Rectangular aperture case width (C) dimension in millimeters

|                     |            | A (Aperture Width) |          |            |            |            |            |            |
|---------------------|------------|--------------------|----------|------------|------------|------------|------------|------------|
|                     |            | mm (in)            | 75 (2.9) | 100 (3.9)  | 125 (4.9)  | 150 (5.9)  | 175 (6.9)  | 200 (7.9)  |
| B (Aperture Height) | 100 (3.9)  | 145                |          |            |            |            |            |            |
|                     | 150 (5.9)  | 145                | 145      | 145        |            |            |            |            |
|                     | 200 (7.9)  | 145                | 145      | 145        | 145 or 250 | 145 or 250 |            |            |
|                     | 250 (9.8)  | 145                | 145      | 145        | 145 or 250 | 145 or 250 | 145 or 250 |            |
|                     | 300 (11.8) | 145                | 145      | 145        | 145 or 250 | 145 or 250 | 145 or 250 | 145 or 250 |
|                     | 350 (13.8) | 145                | 145      | 145        | 145 or 250 | 145 or 250 | 145 or 250 | 145 or 250 |
| 400 (15.7)          | 145        | 145                | 145      | 145 or 250 | 145 or 250 | 145 or 250 | 145 or 250 |            |

# Specifications

## APEX 300 Drop Through Metal Detector



### Rectangular aperture case width (C) dimension in millimeters

| B (Aperture Height) | A (Aperture Width) |           |           |            |            |            |            |            |            |            |            |
|---------------------|--------------------|-----------|-----------|------------|------------|------------|------------|------------|------------|------------|------------|
|                     | mm (in)            | 100 (3.9) | 150 (5.9) | 200 (7.9)  | 250 (9.8)  | 300 (11.8) | 350 (13.8) | 400 (15.7) | 450 (17.7) | 500 (19.7) | 550 (21.6) |
| 50 (3.9)            | 145                | 145       | 145       | 145        | 145        | 145        | 145        | 145        | 145        | 145        | 145        |
| 75 (2.9)            | 145                | 145       | 145       | 145        | 145        | 145        | 145        | 145        | 145        | 145        | 145        |
| 100 (3.9)           |                    | 145       | 145       | 145        | 145        | 145        | 145        | 145        | 145        | 145        | 145        |
| 125 (4.9)           |                    | 145       | 145       | 145        | 145        | 145        | 145        | 145        | 145        | 145        | 145        |
| 150 (5.9)           |                    |           | 145       | 145 or 250 | 145 or 250 | 145 or 250 | 145 or 250 | 145 or 250 | 145 or 250 | 145 or 250 | 145 or 250 |

### Square aperture case width (C) dimension in millimeters

| A & B (mm) | C (mm)     |
|------------|------------|
| 75 (2.9)   | 145 or 250 |
| 100 (3.9)  | 145 or 250 |
| 125 (4.9)  | 145 or 250 |
| 150 (5.9)  | 145 or 250 |
| 175 (6.9)  | 145 or 250 |
| 200 (7.9)  | 145 or 250 |
| 225 (8.9)  | 145 or 250 |
| 250 (9.8)  | 145 or 250 |

## Thermo Scientific APEX 300

### General Specifications

|   |  |
|---|--|
| Construction                            | Stainless steel 304 straightlined case, ABS plastic control panel  |
| Protection Ratings                      | IP 66, NEMA 4X, ATEX zone 22, hazardous location Class II Division 2 Groups F&G  |
| Operating Temperature                   | -10°C to +40°C (+14°F to +104°F)   |
| Relative Humidity                       | 20% to 80% non-condensing  |
| Electrical Supply                       | 85 volts to 260 volts AC single phase plus earth ground; 47 Hz to 65 Hz, 100 watts maximum   |
| Air Supply (for AuditCheck)             | 5.5 bar (80 psi)   |
| Product Speed                           | 0.5 m/min (1.7 ft/min) to 1000 m/min (3,300 ft/min)  |
| Outputs                                 | 6 Relays outputs; Relays: 250 volt AC 2 amp max. 50 volt DC 1 amp max.   |
| Output Allocation (selectable via menu) | Reject 1, Reject 2, AuditCheck, Fault, Alarm, Warning, QA lamp   |
| Inputs                                  | 6 Inputs - Active 12v DC+12 volt auxiliary supply for input sensors  |
| Input Allocation (selectable via menu)  | Speed Sensor, Keylock, Product Select 1, Product Select 2, Infeed PEC, Reject Confirmation 1 (bin full), Reject Confirmation 2, External Suppression |
| Communications                          | Optional AnyBus modules  |
| Safety and Export Approvals             | cCSAus, CE, ATEX zone 22   |
| Manufacturing Quality                   | ISO9001 certified  |
| Help-Text, Users Manual Languages       | English, Spanish, French, German, Italian, Dutch, Chinese, Czech, Russian, Polish  |

© 2008 Thermo Fisher Scientific Inc. All rights reserved. All trademarks are the property of Thermo Fisher Scientific Inc. and its subsidiaries. Results may vary under different operating conditions. Specifications, terms and pricing are subject to change. Not all products are available in all countries. Please consult your local sales representatives for details. Literature Code PL.0062.0708

|   |  |  |   |
|---|--|--|---|
| Argentina<br>+54 (0) 11 4334 3827<br>+54 (0) 11 4334 9159 fax | France<br>+33 (0) 160 92 48 00<br>+33 (0) 160 92 49 00 fax | Mexico<br>+52 (01) 55 5638 0237<br>+52 (01) 55 5639 2227 fax   | United Kingdom<br>+44 (0) 1788-820300<br>+44 (0) 1788-820301 fax                        |
| Australia<br>+61 (0) 8 8208 8200<br>+61 (0) 8 8234 3772 fax   | Germany<br>+49 (0) 208-824930<br>+49 (0) 208-852310 fax    | Netherlands<br>+31 (0) 76-579-5555<br>+31 (0) 76-571-4958 fax  | United States<br>+1 (800) 227-8891<br>+1 (763) 783-2525 fax<br>+1 (763) 783-2500 direct |
| Canada<br>+1 (905) 888-8808<br>+1 (905) 888-8828 fax          | India<br>+91 (20) 6626 7000<br>+91 (20) 6626 7001 fax      | Poland<br>+48 (0) 22 651 75 30<br>+48 (0) 22 651 75 35 fax     |   |
| Chile<br>+56 (0) 2-335-3388<br>+56 (0) 2-335-1590 fax         | Italy<br>+39 05 217886-1<br>+39 05 212729-14 fax           | South Africa<br>+27 (0) 11-609-3101<br>+27 (0) 11-609-3110 fax |   |
| China<br>+86 (0) 21 6865 4588<br>+86 (0) 21 6445 1101 fax     | Malaysia<br>+60 (0) 3 5122 8888<br>+60 (0) 3 5121 8899 fax | Spain<br>+34 (0) 91-484-5965<br>+34 (0) 91-484-3597 fax        |   |

[www.thermo.com/detect](http://www.thermo.com/detect)

**Thermo**  
SCIENTIFIC