EDDYWISE
Innovative NDE solutions

Grade Sorting Testing Section

Portable Grade Sorting Solution

- *Prevent Grade Mix-Ups*
- *Verify Heat Treatment Grade*
- *Ensure Raw Material Integrity*
- *Portable and Automatic Options*
- *Customized Sensor*

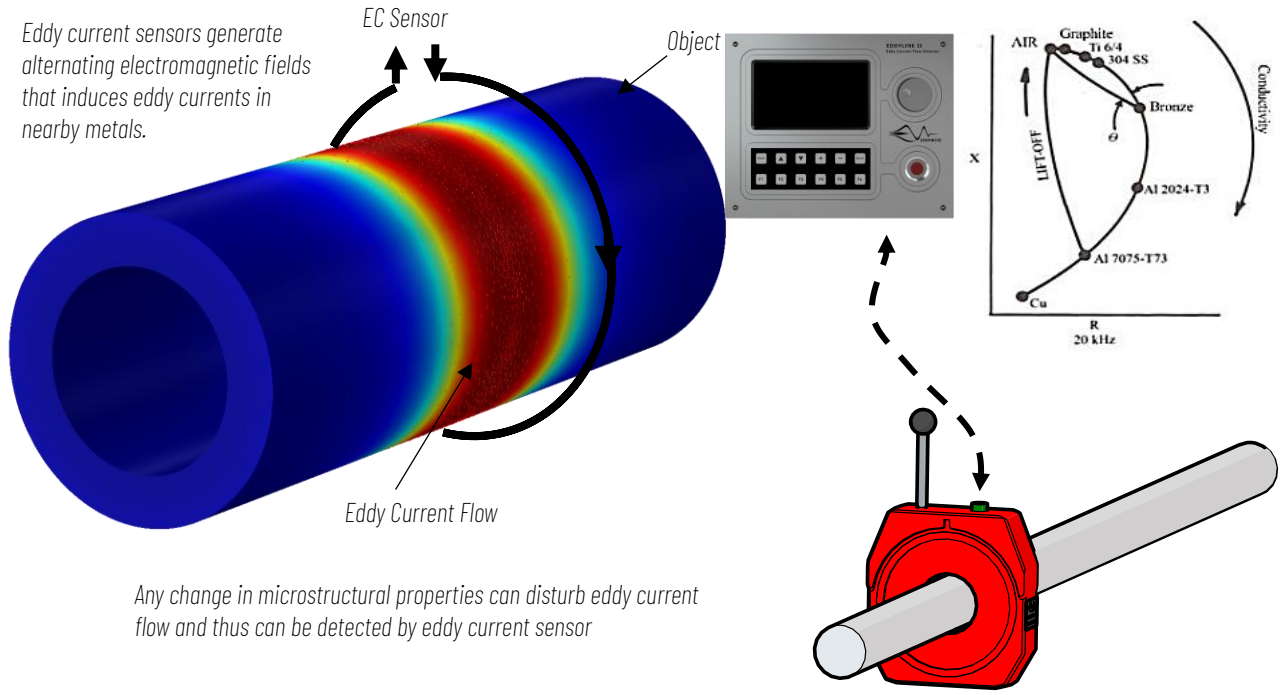
Grade Solutions

Smart Sorting for Confident Manufacturing

Introduction

In today's high-demand manufacturing environment, where productivity, safety, and reliability are essential, the ability to prevent grade mix-ups and verify material consistency nondestructively has become a critical quality control requirement. Grade identification errors in wires, tubes, bars, and billets can lead to serious downstream failures, production recalls, customer dissatisfaction, and even catastrophic safety risks. While the main applications are in the production and finishing of semi-finished products such as wires, tubes, and bars, this technology is also widely used in automotive component manufacturing, where even minor variations in material properties can compromise safety and performance. Beyond manufacturing, eddy current grade verification and microstructural evaluation are increasingly applied in in-service material assessments such as periodic quality checks on spare parts, tools, or critical structural elements. The primary value of this solution lies in its ability to nondestructively characterize material properties, including hardness, heat treatment consistency, and case depth. This enables manufacturers and operators to ensure material integrity, detect deviations from specified grades, and prevent the use of unsuitable materials—all without cutting, damaging, or removing the component from the production flow.

Eddy current sensors generate alternating electromagnetic fields that induces eddy currents in nearby metals.



Any change in microstructural properties can disturb eddy current flow and thus can be detected by eddy current sensor

Any variation in the material's microstructure or alloy composition can result in changes in electrical conductivity and magnetic permeability, which in turn affect the coil impedance. These variations are detected by the system's sensors, allowing our eddy current grade sorting device to accurately detect grade deviations and identify material mix-ups. This approach, aligned with ASTM E566, ensures high-precision grade sorting based on the part's inherent electromagnetic properties.

Two Tailored Solutions for Grade Sorting & Material Verification:

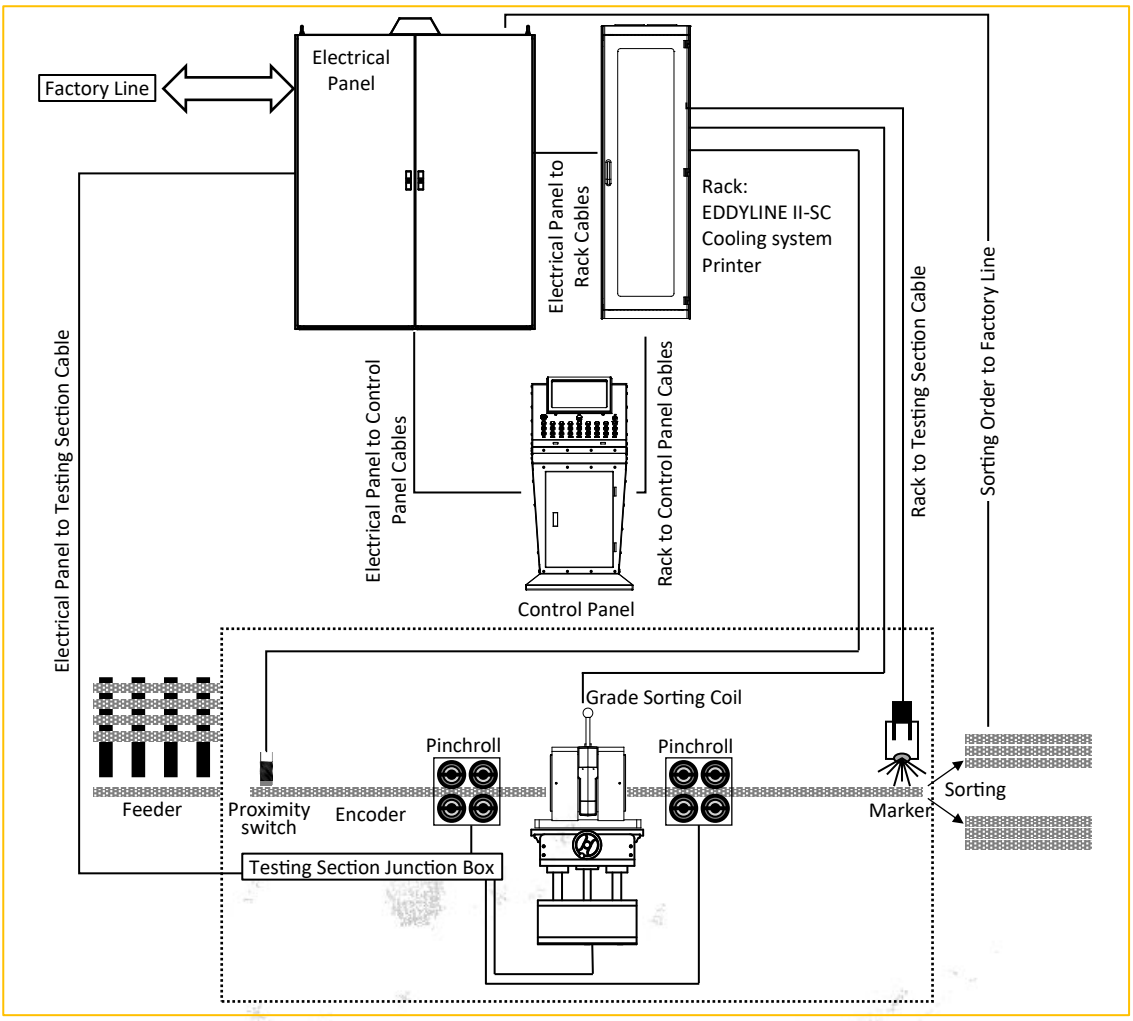
- *Grade Sorting Testing Section (For Fully Automated, Inline and Offline Sorting)*
  - *Designed for high-speed, inline, or offline material verification in industrial production lines.*
  - *Uses encircling coils for detecting electromagnetic property variations based on reference calibration blocks.*
  - *Fully automated—detects incorrect grades, heat treatment deviations, and sorts materials accordingly.*
  - *Integrates with MES systems, offering real-time reporting and data traceability for full compliance.*
  - *Meets industry standards, including ASTM E566, ensuring high-precision impedance analysis for grade sorting.*
  - *Minimizes operator involvement, ensuring repeatable and reliable results with minimal setup adjustments.*
  - *Built-in Error Indicators to help operators quickly identify issues such as incorrect configurations, connectivity problems, or Electrical faults*

- *VIVA – Portable Eddy Current Testing (For Quick, On-Site Inspections)*
  - *A lightweight, handheld device designed for rapid checks in warehouses, production lines, and quality control labs.*
  - *Detects cracks, heat treatment inconsistencies, thickness variations, and alloy sorting issues in real-time.*
  - *Simple to operate, with advanced signal processing that provides clear pass/fail indications.*
  - *Perfect for preventing grade mix-ups before coiling, forming, or shipment.*
  - *No permanent inline setup required—flexible deployment anywhere!*
  - *Customized sensor and fixture for easy operation*

Grade Sorting Testing Section

The Grade Sorting Testing Section is a smart, automated eddy current system engineered for fast and accurate material verification in production environments. Whether inline or offline, it evaluates each test piece by analyzing its electromagnetic signature—specifically changes in electrical conductivity and magnetic permeability—to detect grade inconsistencies. Calibrated against known reference samples, it identifies materials outside the defined acceptance range, making it an ideal solution for sorting wires, rods, bars, and tubes before coiling, cutting, or dispatch.

With seamless integration into MES networks, the system supports real-time monitoring, automated marking, and dynamic sorting with minimal operator input. It features intelligent automation such as auto height adjustment, material presence detection, dual-mode testing (manual/automatic), and built-in safety interlocks. Its user-friendly software provides impedance plane analysis and long-term data storage for trend tracking. Fully compliant with ASTM E566, the Grade Sorting Section is a plug-and-play solution for smart factories looking to eliminate grade mix-ups and enhance quality control through precise, non-destructive material characterization.



Grade Sorting Testing Section: Test Piece Diameter: 20 – 100 mm

Intelligent Control for Superior Operation

Control Panel is the central command center for the entire eddy current testing line. It incorporates a user-friendly interface with a 15-inch display for real-time data visualization, system monitoring, and operator control. Key features include:

15" Intuitive Touchscreen Interface

Use the touchscreen to set up parameters and to access testing and reporting options quickly

Testing Section Control Items

Emergency Button, Line Speed Volume, Mode Selector Switch (Automatic/Manual/Idle), Reset Button, Error Indicator, Start/Stop, Test line Adjustor control, Manual Testing Options, ...

Connection to Electrical Panel and Rack

data communication for optimal performance and minimized downtime

***Automated Control**: Seamlessly integrates with the testing line for automated operation, including pre-programmed test sequences and automatic parameter adjustments.*

***Enhanced Safety**: Incorporates robust safety features such as emergency stop buttons, safety interlocks, and alarm systems to ensure operator safety and equipment protection.*

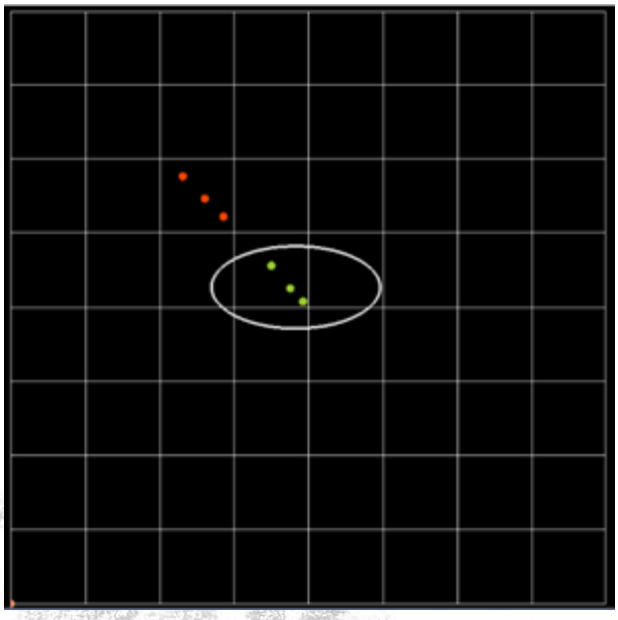
***Data Acquisition and Analysis**: Collects and displays real-time testing data, enabling operators to monitor the inspection process and identify potential issues.*

***User-friendly Interface**: Provides an intuitive interface with clear and concise displays for easy operation and system monitoring.*

Real-Time Displays

Impedance Plane

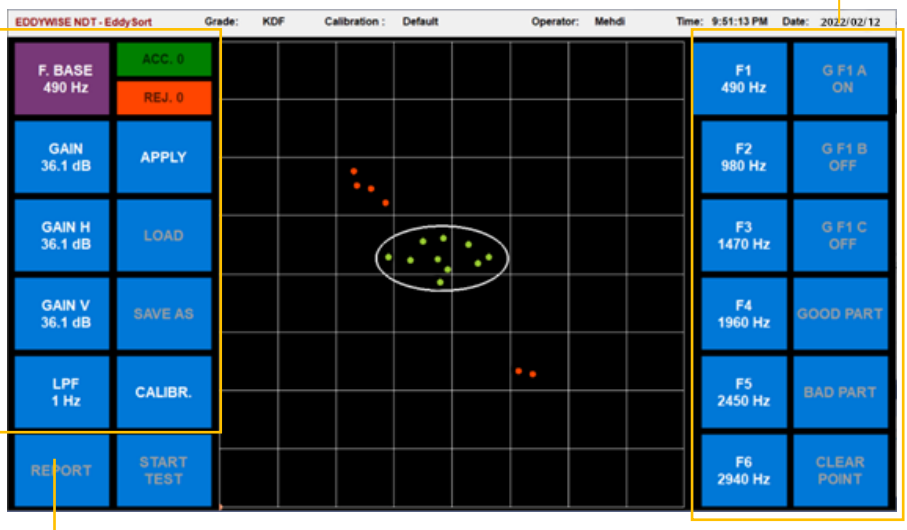
The EddyLine II-S utilizes an advanced impedance plane diagram to graphically represent the relationship between the resistive (R) and reactive (X) components of the eddy current signal. Each test sample generates a point on this plane, reflecting its unique electromagnetic signature. To facilitate reliable classification, the system employs ellipse-shaped masks (gates) over the impedance plane—regions that define the acceptable range of signal variation for specific grades. When a material's signal falls inside the defined ellipse, it is considered acceptable; deviations outside the mask trigger a reject. This intuitive, visual approach enables fast, accurate grade discrimination and microstructural evaluation, making it ideal for inline or offline automated sorting of semi-finished metallic products.



Software & Reporting

Channel Parameters

EddyLine II-S (EddySort) streamlines channel parameter configuration through an intuitive, icon-based interface that supports rapid setup and minimal training time. Operators can easily adjust key inspection variables such as gain, test frequency, and low-pass filtering to fine-tune sensitivity and noise rejection based on material type and test requirements. The system allows real-time tuning for each channel independently, enabling quick adaptation to different production batches or grade groups. During calibration, Good Parts and Bad Parts are registered into the system as reference profiles. Once calibrated, the instrument enables the nondestructive testing of each piece, comparing its electromagnetic signature against the stored references to determine acceptability. Additional features like Erase, quick calibration recall, and real-time counters for accepted and rejected parts enhance traceability, ease of use, and production consistency.



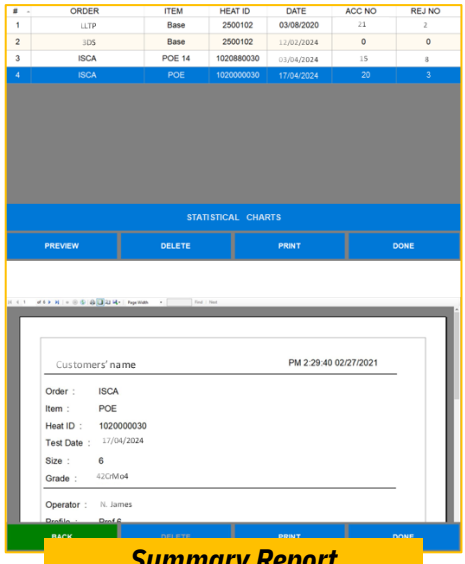
Reporting

The EddyLine II system incorporates robust reporting capabilities to ensure comprehensive quality control and facilitate data-driven decision making. We recommend generating two types of reports:

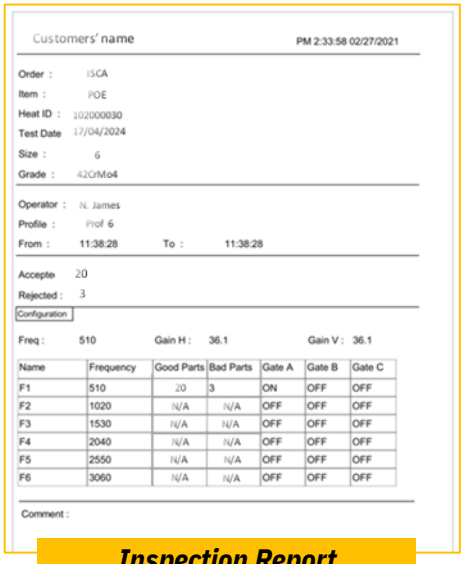
- ***Inspection Reports:** Capture critical information for each batch, including inspection date/time, operator identification, product details (part number, Grade), equipment details (including calibration records), and detailed test results (e.g., defect locations, measurements images).*
- ***Summary Reports:** Aggregate data from detailed reports for defined periods (e.g., shifts, day). These reports summarize key performance indicators (e.g., system uptime, pass/fail rates), identify trends and patterns, and enable statistical analysis to support continuous improvement initiatives.*

Furthermore, both detailed and summary reports can be automatically exported in various formats (e.g., .doc, .xlsx, .pdf) for seamless integration with Manufacturing Execution Systems (MES) or other data analysis tools, enabling real-time data analysis and improved efficiency in quality control processes.

Reports

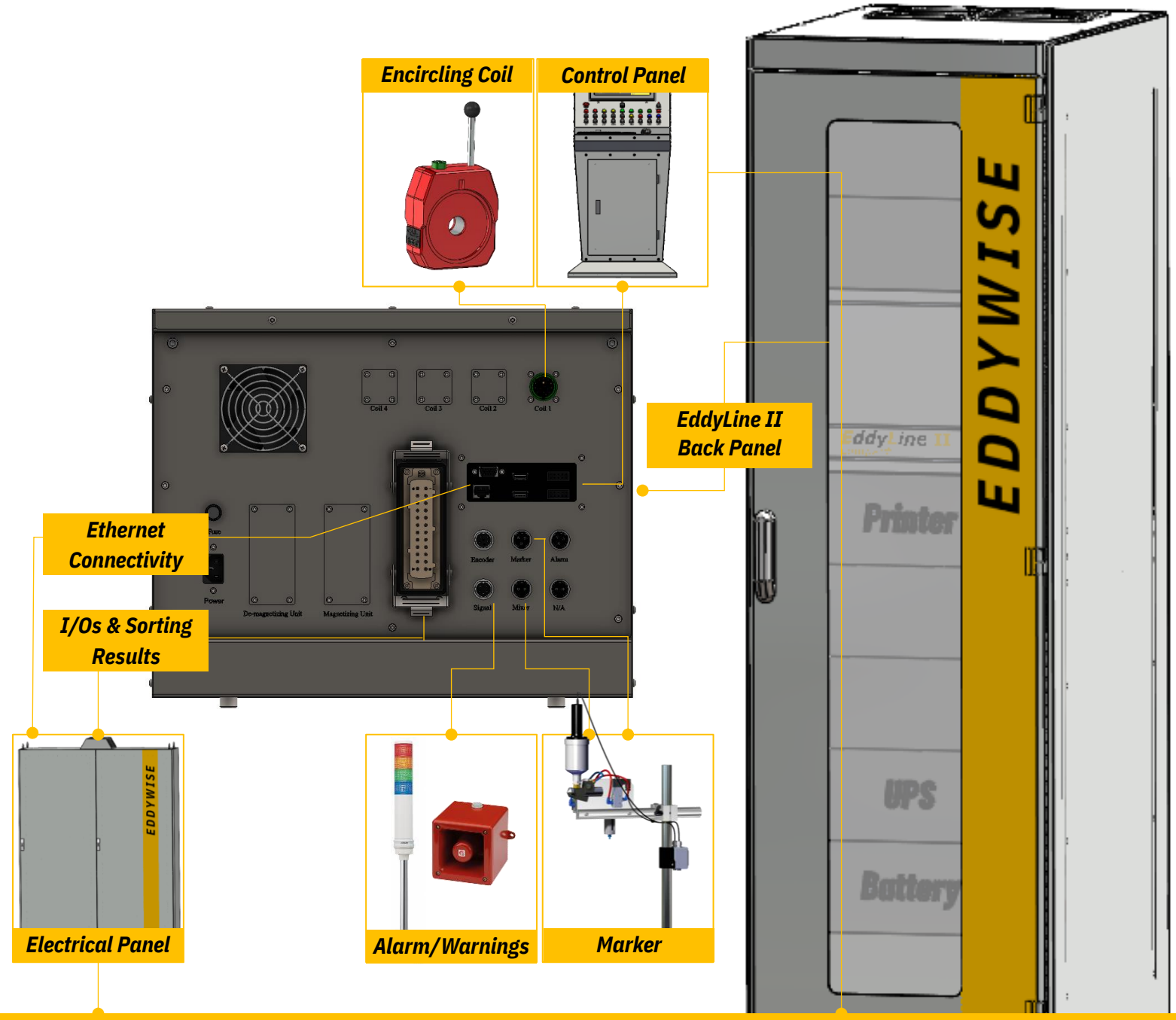


Summary Report



Inspection Report

EddyLine II – Rack Features



Industry 4.0 - Connected Inspection System

MES Integration:

Stream real-time data to MES for predictive maintenance, proactive quality adjustments, and improved overall equipment effectiveness.

Data-driven Dashboards:

Visualize key performance indicators (KPIs), identify root causes of defects, and optimize production processes based on real-time and historical data.

Remote Access:

Securely access and control the system from any location with internet connectivity.

Open API:

Integrate seamlessly with smart sensors, robotics, and other Industry 4.0 technologies through an open API.

Data Storage:

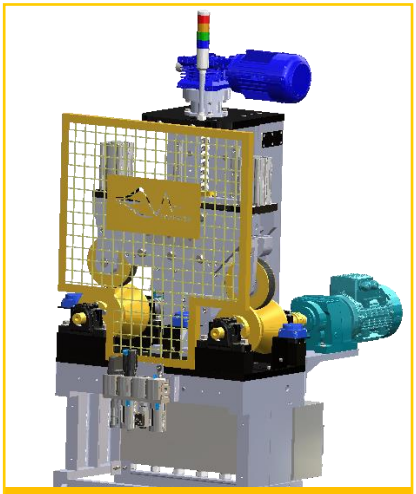
Utilize robust data storage solutions to ensure data security, facilitate centralized management, and enable efficient data access and retrieval.

Predictive Maintenance:

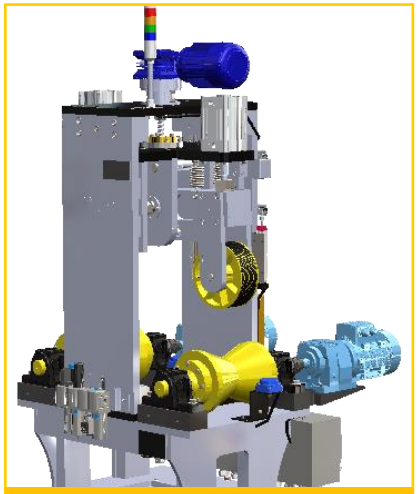
Leverage data analytics to predict potential equipment failures, allowing for proactive maintenance scheduling and minimizing downtime.

Pinchroll

Pinchrolls are critical components in eddy current testing systems, ensuring accurate and reliable inspection results. They play a vital role in controlling the movement of the test piece through the inspection zone, ensuring consistent speed, precise positioning, and the ability to move the material both forward and backward as needed. Both Pinchroll types are designed to handle a range of test piece sizes and weights, with Type C suitable for smaller diameters (20-100 mm) and lighter loads (up to 800 kg), while Type G accommodates larger diameters (70-200 mm) and heavier loads (up to 2 tons). Each type utilizes two independently driven rollers powered by AC motors with gearboxes, ensuring precise control over material movement.



Type C - 1t



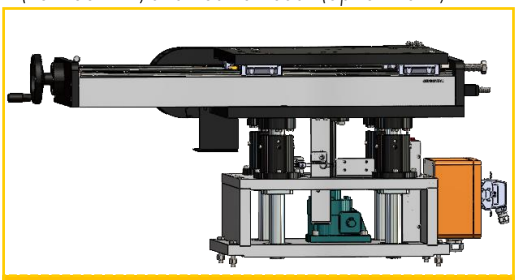
Gate - 2t

A linear guide with a lead screw mechanism facilitates height adjustments, accommodating varying test piece diameters. Type C employs a C-type clamp, while Type G utilizes a gate-type clamp, both providing secure and reliable clamping for accurate material handling.

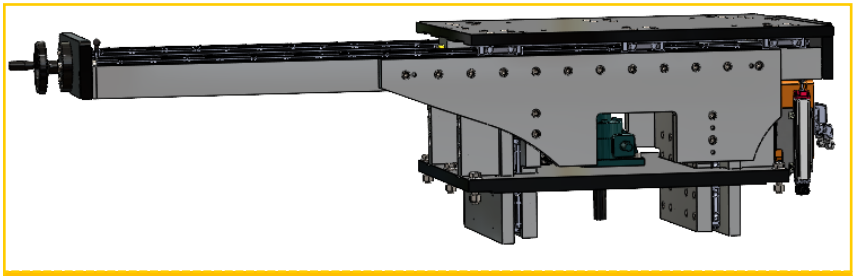
Adjustable Table

In eddy current testing, adjustable tables are essential for precise sensor positioning, ensuring accurate alignment with the test piece. They automate height adjustments through a control panel, bringing the sensor close to the desired position, with final manual adjustments by an operator for precision. These tables maintain axis symmetry between the coil and test piece while preventing collisions with guides or sensors, ensuring reliable testing conditions.

The Adjustable Table 1t-yz and 2t-yz models are designed to accommodate a wide range of test piece dimensions and weights. The 1t-yz model is designed for smaller diameter test pieces (20–100 mm) and lighter loads (up to 800 kg), while the 2t-yz model accommodates larger diameters (70–200 mm) and heavier loads (up to 2 tons).



1t-yz



2t-yz

Chassis

The chassis is the load-bearing framework of EddyWise Testing Sections, supporting all instruments and mounting to the foundation. It features modular sections for pinch rolls and adjustable tables, with 600 mm width for 1t testing sections and 800 mm width for 2t testing sections.

Available Models for

CHS-600-PMP: 1T testing for 20–100 mm diameters (1 desk), two pinchrolls sections and one adjustable table section.

CHS-800-PMP: 2T testing for 70–200 mm diameters (1 desk), two pinchrolls and one adjustable tables.

Electrical Panel

The electrical panel is the heart of the eddy current grade testing system, ensuring reliable and safe operation. It incorporates advanced components to deliver optimal performance

High-efficiency Inverters: *Optimize energy consumption by precisely controlling motor speeds, reducing energy waste, and lowering operating costs.*
Robust Circuit Protection: *Adjustable MCCBs safeguard against overloads and short circuits, enhancing system reliability and minimizing downtime.*
Superior Noise Suppression: *Advanced EMI filters eliminate electromagnetic interference, ensuring signal integrity and preventing data corruption.*
Intelligent Control: *Integrated PLC automates control sequences, facilitates data exchange, and supports predictive maintenance for proactive system upkeep.*
Enhanced Safety: *Redundant safety interlocks, emergency stop buttons, and safety guard monitoring ensure operator safety and prevent equipment damage.*

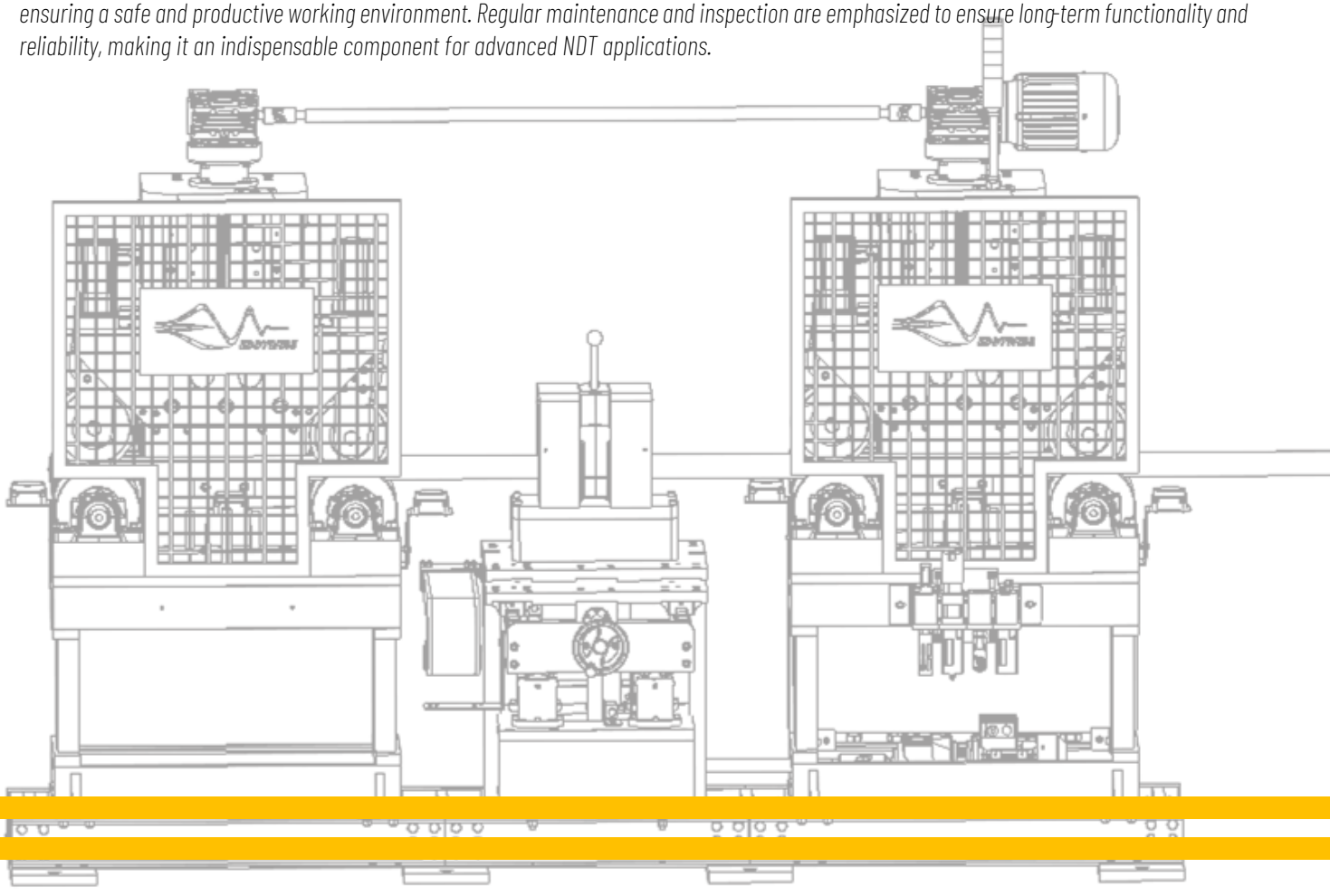
Advanced Features and Customization

The EddyWise electrical panel is designed for maximum efficiency and adaptability, featuring:

24V/10V Power Supplies: *Provide consistent voltage regulation for PLCs and testing section components.*
Isolator Cards: *Protect PLCs from signal interference, ensuring reliable operation.*
8-Channel Relay Cards with LED Indicators: *Enable real-time status monitoring and control of high-voltage circuits.*
Three-Phase Monitoring Device: Tracks voltage, current, frequency, and power factor for optimal power quality.

Customizable Configurations: Tailored to specific testing section requirements, with variations in inverters, MCCBs, EMI filters, and I/O setups.

These advanced features contribute to a highly reliable and efficient electrical system, maximizing uptime, minimizing operational costs, and ensuring a safe and productive working environment. Regular maintenance and inspection are emphasized to ensure long-term functionality and reliability, making it an indispensable component for advanced NDT applications.

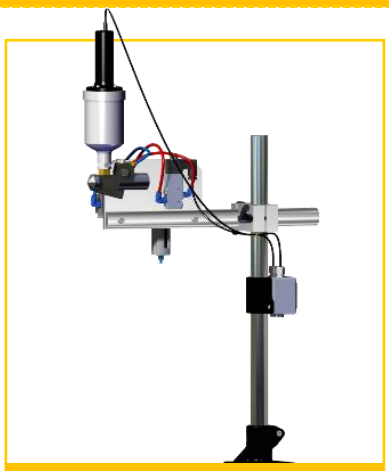


Marker

In the Grade Sorting Testing Section, a dedicated marking system can be employed to identify parts that deviate from the target grade during inspection. Although EddyLine II-S is equipped with independent digital outputs to control external devices like marking units, this feature is activated only upon customer request during commissioning.

When enabled, the system triggers an industrial spray marker that applies a quick-drying ink mark to any part classified as "Reject" due to grade mismatch. The marking system is capable of operating at high speeds and uses an adjustable nozzle to ensure clean, visible markings without slowing down production.

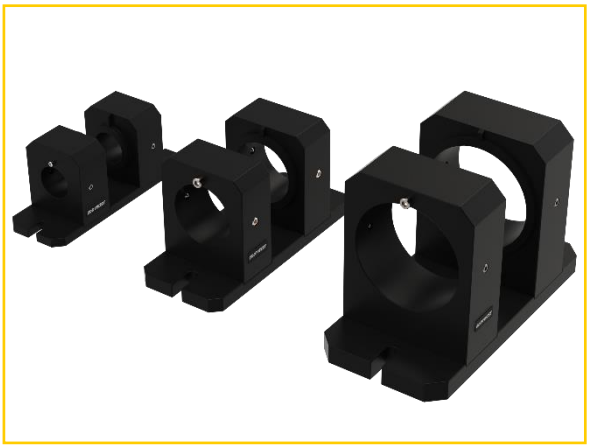
This optional feature improves traceability and efficiency by allowing operators and automated handlers to quickly identify and remove off-grade materials, supporting a streamlined, error-free sorting process in fully or semi-automated production lines.



One Nozzle

Coil Holder

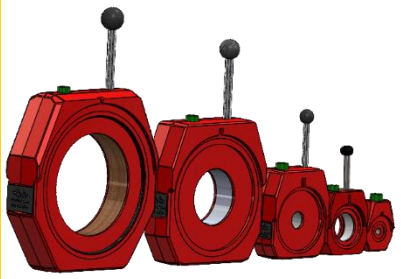
In the Grade Sorting Testing Section, the encircling coil holder plays a pivotal role in ensuring accurate and reliable eddy current inspections. This robust fixture securely positions the encircling coil around the test material—be it wires, rods, bars, or tubes—maintaining precise alignment and stability throughout the inspection process. By eliminating unwanted movements and vibrations, the coil holder ensures consistent proximity between the coil and the test piece, which is essential for detecting variations in electrical conductivity and magnetic permeability that indicate grade differences. Constructed from durable materials, the holder is designed to withstand the rigors of industrial environments, ensuring longevity and minimal maintenance. Additionally, its adaptable design allows for quick adjustments or replacements of coils to accommodate different material sizes and profiles, enhancing the system's versatility and efficiency.



Encircling Coil

Encircling coils used in the Grade Sorting Testing Section are purpose-built to evaluate variations in material properties—particularly those related to heat treatment and alloy composition—through eddy current response. These coils operate on the principle of inducing and detecting eddy currents in the test piece as it passes through the coil, enabling precise measurement of electromagnetic characteristics such as electrical conductivity and magnetic permeability.

Available in five optimized sizes, the coils are designed to match a wide range of diameters commonly used in semi-finished products like wires, rods, tubes, and bars. Each coil is securely mounted using a dedicated coil holder fixture, ensuring stable positioning and consistent signal quality during inspection. These coils are optimized for non-contact, high-throughput operations and are especially effective for monitoring heat treatment uniformity and grade variation across production batches.



Size 1 to 5

Viva: Portable Grade Sorting Solution

Customized Fixture-Based Sensors



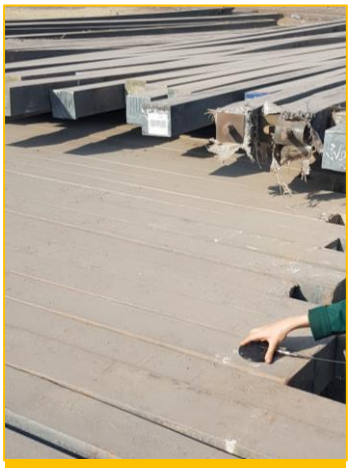


Viva is a compact, portable eddy current device engineered for on-site grade verification and microstructural evaluation of critical components such as billets, bolts, Tubes, shafts, and machined parts. Built for industrial use, Viva enables operators to quickly check material and assess heat treatment conditions without destructive testing. Viva empowers manufacturers with a reliable, real-time solution for avoiding grade mix-ups and ensuring material integrity—right at the point of use.

In addition to standard probes, EDDYWISE offers a variety of customized sensors designed for different part geometries, including:

- *T-Probes for inspecting fasteners and automotive components*
- *Pancake Probes for surface-level alloy identification*
- *Customized Fixture-Based Sensors for stable, repeatable measurements on complex or cylindrical parts*

Crankshaft Inspection



Square Billet Inspection

Key Features:

- *Accurate material identification for both ferrous (FE) and non-ferrous (NFE) alloys*
- *Can be customized for heat treatment evaluation, including hardness variation and case depth trends*
- *Portable, rugged, and ideal for warehouse checks, quality audits, and raw material checks*

Testing Section Specifications

Testing Section

Power Supply: Total Harmonic Distortion: THD<3%, Voltage: 380-400 V AC, Voltage: 380-400 V AC, Frequency: 50/60 Hz.
Rated power: 20.5 kW (TSO-MU-70-200), 18.5 kW (TSO-DG-20-100), 26.5 kW (TSO-RMU-20-100)
Ambient Temperature: -5 to 45°C
Dimensions: TSO-MU-70-200: 4000x2203x2248, TSO-DG-20-100:2700x1956x1680, TSO-RMU-20-100: 5101x1956x1680
Maximum time to change test piece size: 5 MIN

Electrical Plan

Types: EP-O-121
Features: Inverters, MCCB, EMI filter, Network type advanced slim PLC, 24V/10V power supply, Isolator card, 8-channel with LED signaling relay card, three-phase monitoring
Dimensions: 1160x470x2180

Pinch Roll

Types: TSO-MU-70-200 (Gate – 2t): PR-OG-2t- IN, PR-OG-2t- MID, PR-OG-2t- OUT, TSO-RMU-20-100 and TSO-DG-20-100 (Type C-1t): PR-TC-1t – IN, PR-TC-1t – MID, PR-TC-1t – OUT
Features:
Adjustable Height mechanism linear guide with lead screw, Test piece deviation per length: 1.5 mm per meter.
Clamping mechanism:
Gate – 2t: Gate with pneumatic jack,
Type C-1t: C-Type with Pneumatic Jack
Dimensions: TSO-MU-70-200 (Gate – 2t):1400x1350x2007, TSO-RMU-20-100 and TSO-DG-20-100 (Type C-1t): 760x1300x1810

Adjustable Table

Types: TSO-MU-70-200 (2t-yz): AT-HS-2t-R, AT-HS-2t-S
TSO-RMU-20-100 and TSO-DG-20-100 (1t-yz): AT-HS-1t-R, AT-HS1-1t-S
Features: Adjustable Height mechanism (z-direction): Jack Screw with lead screw, Adjustable Height mechanism (y-direction): Linear Guide with lead screw and slider lock
Dimensions: TSO-MU-70-200 (2t-yz): 1800x660x600
TSO-RMU-20-100 and TSO-DG-20-100 (1t-yz): 972x600x460

Chassis

Types: CHS-800-PMP, CHS-600-PMP
Features:
CHS-800-PMPM: This model has four 1000 mm-longitudinal sections designed for mounting two pinch rolls and two Adjustable Tables.
CH-600: Two sizes in longitudinal, 700 mm and 1000 mm for mounting pinch roll and adjustable table, respectively.

Control Panel

Types: CP-O-121
Features: Emergency button, Line speed volume knob, Mode selector switch (Automatic mode, Manual mode, and Idle mode), Reset button, Error indicator light, CLAMP indicator light, Calibration indicator light, Line ready indicator light, Power indicator light, Manual accept button, Start button, Stop button, Clamping diameter adjustment switch, Adjustable table sliding controls (up to 4), Part request button, Manual reject button, Manual reverse button, Manual forward button, Table height adjustment switch, Pinch roll clamping control switch (two per each pinch roll), 15-inch LED display
Dimensions: 670x743x1320

Rack

Types: R-O-DG
Features: Eddy current instrument (MU, Grade Sort, and/or FluxRoto) and/or dimension measurement instrument, USB Port, RS232 port, inputs: an encoder, marker, magnetizing unit, a proximity switch, a coil or/and probe sensor, and/or a dimension device), housing of 42-unit IP42 cabinet with industrial cooling system.
Dimensions: 42 unit

Cables

Types: Pinchroll to junction box cables, Adjustable table to junction box cables, Electrical panel to junction box cables, Coil cable, Marker cable, Mixer cable, Power cable, IO cable, Rack to control panel cable, Electrical panel to control panel.
Features: Use good quality cables and connectors that are durable, reliable, and compatible with the network devices.
The selected cables and connectors can handle the network signals' required bandwidth, voltage, and current without causing attenuation, distortion, or noise.

Marker

Types: *one nozzle (MA-24-991-a), two nozzles (MA-24-992-a)*
Power Supply*: 5-24 VDC*
Resolution*: 500 Pulse/rev, 1* mm*/pulse*
Features: Fast response, short drying time of paint or ink, paint mixer (CA-XX-ME2-MA), marker control unit (MA-CU2-99X-a), marker paint gun (MA-P-99X-a), marker stand (ST-001-MA), connected to EddyLine II using marker cable (CA-XX-ME2-MA) and mixer cable (CA-XX-ME3-MA)

Coil Holder

Types: *1-15* mm*:* CH-01-999-E, *5-50* mm: CH-02-999-E, *19-87* mm: CH-03-999-E, *76-158* mm: CH-04-999-E, *144-230* mm: CH-05-999-E.
Features: Using for inspection of non-ferromagnetic materials with encircling coils, grade sorting of materials, and acts as Holder for encircling coils.

Grade Sorting Encircling Coil

Types: *0A: Simple Absolute Winding*
Coil Size*: 1-15 mm: EC-01-0Af-xyz, 5-50 mm: EC-02-0Af-xyz, 19-87 mm: EC-03-0Af-xyz, 76-158 mm: EC-04-0Af-xyz, 144-230 mm: EC-05-0Af-xyz; where, xyz indicates the nominal diameter of the coil, the value of which depends on the test piece diameters, and f is frequency number.*
Frequencies*: 0: 1kHz - 20kHz 1: 10kHz - 50kHz 2: 20kHz - 100kHz 3: 50kHz - 200kHz 4: 100kHz - 500kHz. Other frequency range can be customized per order.*
Features: *it* can be mounted in encircling coil holder.

EddyLine II-S Specifications

Eddy Current Specifications

Sensor Types: Absolute in either bridge or reflection configuration. The instrument is fully compatible with EDDYWISE probes.
Sensor Connectors: *15 Pins Military*
Frequency Range: *10 Hz to 2 MHz*
Gain: *0 dB to 90 dB in 0.1 or 1 dB increment*
Rotation: *0° to 359.9° in 0.1° or 1° increment*
Sweep: *Variable from 0.005 s to 10 s per division*
Filters:
Low-pass: 0 Hz to 1000 Hz
Probe Drive: *HIGH (20 V) into 100 Ω.*
Display Erase: *0.1 s to 60 s*
Available Alarm Types: *supports 3 user-defined regions with OR logic, classifying parts as Good or Bad based on impedance plane boundaries.*
A/D Resolution: *16 Bits*
Number of Channels: *1 Absolute*
Signal Resolution: *16ksps*

Applications

Field of Application: *Wire and Bar Production, Tube Manufacturing, Bright and Black Bar Processing, Automotive Component, Raw Material Inspection, Heat Treatment Line Monitoring, Warehouse & Dispatch Quality Control*
Max Speed: *500 m/min*
Production Lines:
Inline (Welding Lines)
Offline (Tubes/Bar)
Stop and Go (Cold Forming)
Continuous (Drawing Lines)

Coil Monitoring

Break and Disconnect Monitoring: Yes
Short Circuit Monitoring: Yes
Smart Sensor: Yes

Data Processing

Signal Processing and Defect Evaluation:
Signal evaluation with masks and up to 3 Elliptical mask
Test Results:
Compilation on 3 levels: Test piece (or section for continuous applications), batch, shift

Hardware

Screen: *10.1" diagonal color display for normal configuration. Without screen for testing section configuration (15" display available on control panel)*
Input: *Touch Screen, Knob, Keypad, Standard Keyboard*
Data Storage: *SSD*
Shielded Housing: *Yes*
Power requirements: *90-250 VAC / 50 Hz to 60 Hz / 1000W*
Dimension (Width × Height × Depth): *440 mm × 350 mm × 610 mm*
Weight: *approx. 35 kg*

Software

User interface:
Touchscreen operation using icons
Multitasking real-time operating system
Archiving of testing parameters for later retrieval
Sample test mode: testing of individual lengths for quality control checks and parameter verification
Software in English
Online help for each menu, available in English
Password-protected supervisor level for adjusting basic testing parameters and locking parameter access in the main level
Reporting Software
Data Logger: *Recording/viewing signals and data (opt.)*
EDDYWISE Viewer: *Graphic display of signal location.*
Data Transfer: *Standard LAN: Ethernet (TCP/IP)*

Input and Output Terminals

General Inputs: *8× Opto-Isolated Inputs*
General Outputs: *4× N.O/N.C Outputs*
Special Outputs:
Marker (Delayed)
Alarm (Undelayed)
Signal Tower Light
Color Mixer
External Display:
1×VGA interface for external monitor,
1×VGA interface for external monitor
Network: *1× Ethernet (TCP/IP)*
USB: *2× USB connectors*

Environmental Conditions

Operating temperature: *0°C to 50 °C (32°F to 122°F)*
Internal cooling unit: *Fan cooling*
IP rating: *Designed to meet the requirements of IP40.*

Website: http://www.eddywise.com/

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Viva Specifications

Eddy Current Specifications

Sensor Types: Absolute and Differential in either bridge or reflection configuration. The instrument is fully compatible with EDDYWISE probes.
Sensor Connectors: *12 Pins LEMO, 1 pin LEMO (Absolute)*
Frequency Range: *10 Hz to 10 MHz*
Gain: *0 dB to 90 dB in 0.1 or 1 dB increment*
Rotation: *0° to 359.9° in 0.1° or 1° increment*
Sweep: *Variable from 0.005 s to 10 s per division*
Filters:

- *Low-pass: 0 Hz to 1000 Hz*
- *High-pass: off or 2 Hz to 1000 Hz*
- *Continuous null (Low-Freq. HP filter): 0.2 Hz, 0.5 Hz, 1.0 Hz*

Probe Drive: *HIGH (20 V) into 100 Ω.*
Display Erase: *0.1 s to 60 s*
Available Alarm Types: *3 simultaneous alarms, choices include Box (Rectangle), ellipse, sector (pie), sweep (time-based), CONDUCTICITY (per order), and COATING THICKNESS (per order)*
A/D Resolution: *16 Bits*
Number of Channels: *One Channel (1 Differential or 1 Absolute)*
Signal Resolution: *10ksps*

Grade Sorting Applications

Fastener inspection, Automative components, heat treatment validation, warehouse and dispatch control, maintenance and repair operation (MRO), Incoming material Inspection

Hardness, Conductivity, and Coating Thickness Measurement

Hardness: *Dependent on conductivity range, probe frequency and range of calibration*
Digital Conductivity: *0.9% to 110% IACS or 0.5 to 64 MS/m. Accuracies are dependent on conductivity range, probe frequency, and range of calibration.*
Nonconductive Coating Thickness: *Both ferrous and non-ferrous base material. Accuracies are dependent on conductivity range, probe frequency, and range of calibration.*

Scanners

Scanner Compatibility: 120 rpm to 3000 rpm

Probe Monitoring

Break and Disconnect Monitoring: Yes
Short Circuit Monitoring: Yes
Smart Sensor: Yes

Hardware

Screen: *8" diagonal color display (176.6 mm x 99.36 mm x 203.8 mm)*
Display Type: *Full VGA (800 x 480 pixels), color, TFT*
Grid and Display Tools: Yes
Data Storage: *Micro SD*
Power requirements: *100-240 VAC / 50 Hz to 60 Hz*
Battery Type*: Lithium-ion rechargeable battery with BMS – 14.4V*
Battery Life*: up to 12 hours for standard operation*
Dimension (Width × Height × Depth): *272 mm × 185 mm × 88 mm*
Weight: *approx. 3 kg, including Lithium-ion battery*

Software

User Interface:

- *Touchscreen operation using icons*
- *Multitasking real-time operating system*
- *Archiving of testing parameters for later retrieval*
- *Recording and viewing saved files and data*
- *Data transfer using standard LAN*
- *Password protected supervisor level for adjusting basic testing*
- *Two real-time readings measuring signal characteristics*

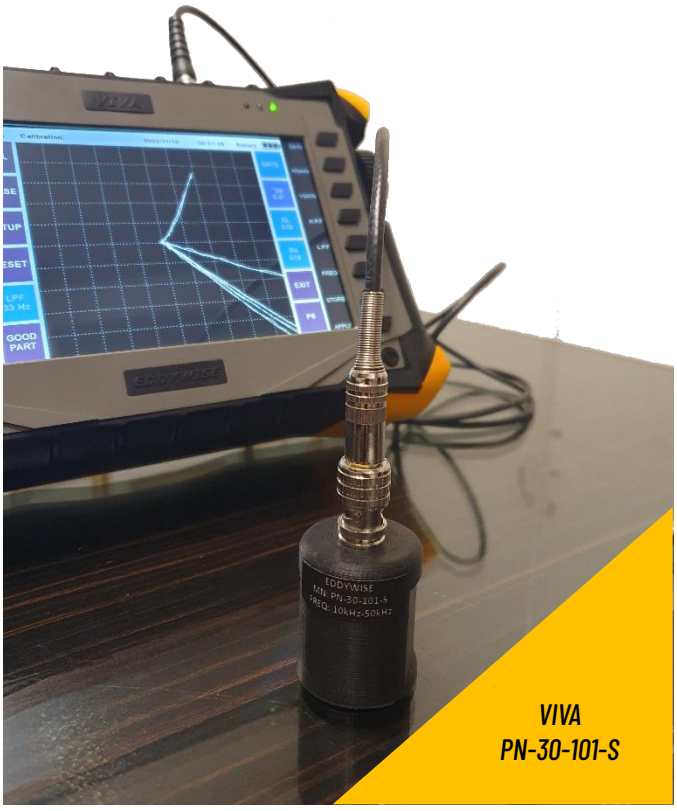
Language: *English*

Input and Outputs

Inputs: *2 15-Pins TTL, One encoder, 12 pins LEMO, 1 pin LEMO.*
Network: *1× Ethernet (TCP/IP)*
External Display: *1×HDMI interface for external monitor*
USB*: 1 USB connector*

Environmental Conditions

Operating temperature: *-10°C to 50°C (14°F to 122°F)*
Storage temperature: *0°C to 50°C (32°F to 122°F) [with batteries] and -20°C to 70°C (-4°F to 158°F) [without batteries]*
IP rating: *Designed to meet the requirements of IP64.*



Viva General Accessories Specifications

Pencil Probes

Types: *0°*: PN-03-00f-S, *30°-90°*: PN-03-39f-S, *45°*: PN-03-45f-S, *90°*: PN-03-90f-S, *90°-bent*: PN-03-91f-S
where, 03 indicates the nominal diameter of the core, and f is frequency number.
Frequencies*: 0: 1kHz - 20kHz 1: 10kHz - 50kHz 2: 20kHz - 100kHz 3: 50kHz - 200kHz 4: 100kHz - 500kHz, 5: 200kHz – 1MHz. Other frequency range can be customized per order.*
Application: *Ideal for small surface defect detection, Access to tight or hard-to-reach areas (e.g., under fasteners, within holes), Suitable for aircraft structure & engine inspection, Enables paint layer assessment around rivets, Effective for stress corrosion cracking detection in stainless and carbon steels, Available in various lengths, angles, and drop configurations, Ergonomic, pencil-style design for precise handling*
Features: *Core: Ferrite, Probe Diameter: 3 mm, Probe Recognition: auto, Connector: LEMO, Probe Drive: High, Operating Temperature: -10°C to 50°C, IP rating: IP63*
Dimensions: *0°*: 150mmx12mm, *30°-90°*: 150mmx55mm, *45°*: 170mmx14mm, *90°*: 170mmx23mm, *90°-bent*: 167mmx26mm

Spring Loaded Probes

Types: *SL-03-10f-S*
where, 03 indicates the nominal diameter of the core, and f is frequency number.
Frequencies*: 0: 1kHz - 20kHz 1: 10kHz - 50kHz 2: 20kHz - 100kHz 3: 50kHz - 200kHz 4: 100kHz - 500kHz, 5: 200kHz – 1MHz. Other frequency range can be customized per order.*
Application: *Consistent contact pressure, ideal for spot checking material properties.*
Features: *Core: Ferrite, Probe Diameter: 3 mm, Probe Recognition: auto, Connector: LEMO, Probe Drive: High, Tip Angle: Straight, Operating Temperature: -10°C to 50°C, IP rating: IP63.*
Dimensions: 115mm L x 20mm D

T-Probes

Types: *PT-G-T0f-S*
where, G indicates this probe is suitable for grade solutions, and f is frequency number.
Frequencies*: 0: 1kHz - 20kHz 1: 10kHz - 50kHz 2: 20kHz - 100kHz 3: 50kHz - 200kHz 4: 100kHz - 500kHz, 5: 200kHz – 1MHz. Other frequency range can be customized per order.*
Application: *Wobble removal, Reformer Tube condition monitoring, Bolt inspection*
Features: *Core: Ferrite, Probe Recognition: auto, Connector: LEMO, Probe Drive: High, Tip Angle: Straight, Operating Temperature: -10°C to 50°C, IP rating: IP63*
Dimensions: 115mmx 45mm

Sliding Probes

Types: *PS-03-1Sf-xyz*
where, 03 indicates the nominal diameter of the core, and f is frequency number. xyz is customized diameter coverage.
Frequencies*: 0: 1kHz - 20kHz 1: 10kHz - 50kHz 2: 20kHz - 100kHz 3: 50kHz - 200kHz 4: 100kHz - 500kHz, 5: 200kHz – 1MHz. Other frequency range can be customized per order.*
Application: *Optimized for large curved surfaces such as pipes, tanks, and rollers*
Features: *Core: Ferrite, Probe Diameter: 3 mm, Recognition: auto, Connector: LEMO, Probe Drive: High, Tip Angle: Straight, Temperature: -10°C to 50°C, IP rating: IP63*
Dimensions: 100 mm x 40 mm x 40 mm

Simple Surface Probes

Types: *Absolute probe: PN-ab-10f-S, Differential probe: PD-ab-10f-S*
where, ab indicates the nominal diameter of the core and can be 03: 3mm, 05: 5mm, 10: 10 mm, and 30: 30 mm (only absolute probe), and f is frequency number.
Frequencies*: 0: 1kHz - 20kHz 1: 10kHz - 50kHz 2: 20kHz - 100kHz 3: 50kHz - 200kHz 4: 100kHz - 500kHz, 5: 200kHz – 1MHz. Other frequency range can be customized per order.*
Application: *Optimized for large curved surfaces such as pipes, tanks, and rollers*
Features: *Core: Ferrite, Probe Recognition: auto, Connector: LEMO/BNC, Probe Drive: High, Tip Angle: Straight, Operating Temperature: -10°C to 50°C , IP rating: IP63*
Dimensions: 100 mm L x 10 mm D. for Absolute probe with ferrite core 30 mm: 20 mm L x 30 mm D

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