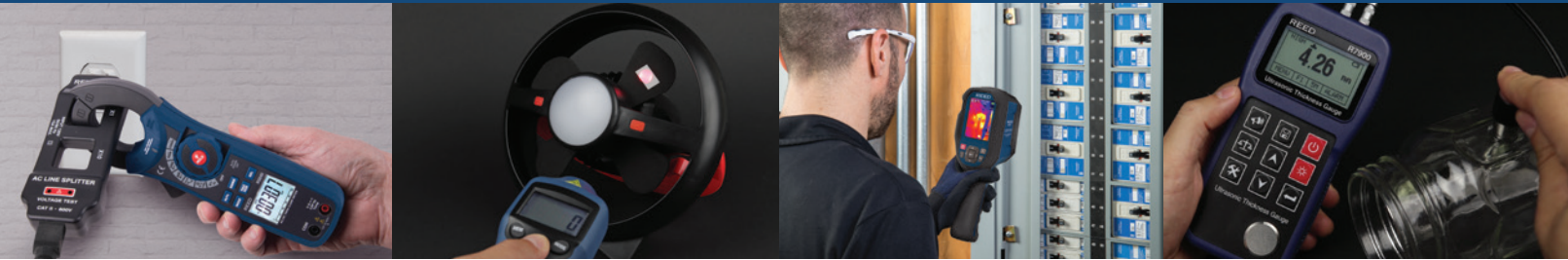# REED INSTRUMENTS | INDUSTRIAL MAINTENANCE

INDUSTRIAL MAINTENANCE refers to the on-going repair and maintenance of different types of equipment and machinery used in an industrial setting. The field of industrial maintenance does not involve just the repair and resolution of already existing malfunctions. Industrial maintenance programs are an important part of the industrial maintenance field as they allow businesses to maximize productivity and ensure the return on investment of expensive equipment. Implementing a thorough Industrial Maintenance program will not only extend equipment longevity but also contribute to a safe working environment. REED INSTRUMENTS has the tools to help identify and diagnose problems, ultimately preventing unscheduled downtime and increasing plant safety.

Video Inspection Camera

- Camera and video functions save high resolution images and video
- 2.5" color LCD monitor and 9mm waterproof (IP67) camera head
- Four high visibility LED lights provide illumination in dimly lit environments
- Includes magnet, hook and mirror attachments, USB cable, batteries and hard carrying case

Model No R8500

Video Inspection Camera System

- Camera and video functions save high resolution images and record video/audio
- High resolution 16:9 7" TFT LCD display
- 12 high visibility LED lights
- Includes camera head, 65.6ft (20m) cable reel and push cable, remote control, hard carrying case with built-in DVR, battery pack and cable, car charger

Model No R9000

Laser Distance Meter

- Measures distances up to 131' (40m)
- Calculates area, volume and sum of lengths
- Addition, Subtraction and indirect 2/3 point (Pythagoras) calculations
- Retains maximum and minimum readings and up to 30 measurements in memory
- Reference point selection
- Integrated bubble level
- Includes batteries

Model No R8004

Laser Distance Meter

- Measures distances up to 328' (100m)
- Calculates area, volume and sum of lengths
- Addition, Subtraction and indirect 2/3 point (Pythagoras) calculations
- Retains maximum and minimum readings and up to 20 measurements in memory
- Dust and splash-proof (IP54 rated)
- Includes wrist strap, screwdriver, batteries and carrying case

Model No R8010

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PREVENTATIVE MAINTENANCE: A well thought out Preventative Maintenance program includes the periodic inspection of equipment and machinery to identify and uncover conditions that lead to product breakdown. An effective program will correct such conditions early in the process before they become major issues, ultimately avoiding major downtime. REED provides digital manometers, tachometers and stroboscopes used by maintenance teams in their Preventative Maintenance toolkits.

Digital Manometer

- Measures gauge and differential pressure up to 30 psi
- 11 selectable units of measure: psi, inH_2O, bar, mbar, kPa, inHg, mmHg, $ozin^2$, ftH_2O, cmH_2O, $kgcm^2$
- Internal memory saves Max and Min measurements
- Data hold function
- Includes 2 connection hoses, battery, and hard carrying case

Model No R3030

Digital Manometer

- Measures gauge and differential pressure up to 100 psi
- 11 selectable units of measure: psi, inH_2O, bar, mbar, kPa, inHg, mmHg, $ozin^2$, ftH_2O, cmH_2O, $kgcm^2$
- Internal memory saves Max and Min measurements
- Data hold function
- Includes 2 connection hoses, battery, and hard carrying case

Model No R3100

Digital Manometer

- Measures gauge and differential pressure up to 5 psi
- 11 selectable units of measure: psi, inH_2O, bar, mbar, kPa, inHg, mmHg, $ozin^2$, ftH_2O, cmH_2O, $kgcm^2$
- Max, Min, Avg, Relative and Data hold functions
- Real-time clock time-stamped measurements
- Includes 4 connection hoses, power adapter, USB cable, software, battery, and hard carrying case

Model No R3002

Anemometer/Manometer

- Simultaneously displays differential pressure, air velocity or airflow and temperature
- Air volume calculations of rectangular or circular duct areas
- Max, Min, Avg, Relative and Data Hold functions
- Real-time time-stamped measurements
- Includes silica tubes, pitot tube, USB cable, software, battery and hard carrying case

Model No R3001

Vane Anemometer

- Low friction rotating vane for improved accuracy and faster response
- Measures air velocity in fpm, m/s, kph, mph and knots
- Min/Max and Data Hold functions
- Designed for one hand operation
- Includes wrist strap and battery

Model No LM-81AM

Vane Thermo-Anemometer

- Simultaneous display air velocity and air temperature on dual LCD display
- Calculates air volume (CFM)
- Measures fpm, m/s, kph, mph and knots
- Continuous air velocity averaging measurements for up to 2 hours
- Min/Max/Avg and Data Hold Functions
- Includes batteries and hard carrying case

Model No 8906

REED PRECISION TEST & MEASUREMENT INSTRUMENTS

PREDICTIVE MAINTENANCE: In a Predictive Maintenance program, equipment conditions are measured periodically or on a continuous basis in order to take timely action. As examples, unusual sounds emitted from equipment could be an early indicator of a future issue; an excessively hot electrical cable could predict future trouble. Effective Predictive Maintenance programs make use of highly sensitive instruments such as vibration analyzers, manometers and temperature gauges to predict potential issues long before equipment failure.

Vane Thermo-Anemometer

- Measure air velocity (fpm, m/s, kph, mph and knots) and air temperature (°C/°F)
- Contact temperature measurement with type J/K thermocouple option
- Min/Max and Data hold functions
- Real-time data logger with integral SD memory card
- Includes rotating vane probe, batteries and hard carrying case

Model No R4000SD

Hot Wire Thermo-Anemometer

- Measure air velocity (fpm, m/s, kph, mph and knots) and air temperature (°C/°F)
- Contact temperature measurement with type J/K thermocouple option
- Min/Max and Data hold functions
- Real-time data logger with integral SD memory card
- Includes telescopic hot wire probe, batteries and hard carrying case

Model No R4500SD

Contact/Photo Tachometer

- Dual function unit with both contact and non-contact capabilities
- Provides RPM measurements of rotating objects and surface speed measurements
- Internal memory holds last reading for 5 mins and recalls min/max and last value
- LCD display reverses depending on measurement mode
- Includes reflective tape, large and small cone tip adapters, funnel adapter, wheel adapter, batteries, and hard carrying case

Model No R7140

Photo Tachometer/Counter

- Measures the RPM (revolutions per minute) of rotating objects without contact
- Digital counter counts moving objects passing through the instrument's field of view
- Internal memory recalls maximum, minimum values as well as last value stored
- Built-in laser pointer identifies target area
- Includes reflective tape, batteries and soft carrying case

Model No R7050

Stroboscope

- Freezes the motion and measures the speed of a rotating object, without contact
- Simply aim the instrument at the rotational object and synchronize the strobe's flash rate (FPM) with object speed (FPM)
- Flash rate speeds from 100 to 10,000 RPM
- Tripod mount for stationary use
- Includes light bulb and power cord

Model No K4020

Vibration Meter/Datalogger

- Measures velocity and acceleration to determine vibration levels
- RMS, Peak hold, Data hold and Max/Min functions
- 10Hz to 1kHz frequency range
- Real-time datalogger with integral SD memory card
- User selectable sampling rate from 1 to 3600 seconds
- Includes vibration probe with cable, batteries and hard carrying case

Model No R70000SD

CORRECTIVE OR BREAKDOWN MAINTENANCE: Corrective or breakdown maintenance implies that repairs are made once the equipment malfunctions and cannot perform its normal function. Under such conditions, production departments call on maintenance teams to correct the issue. At this stage, often times test and measurement instruments are used to identify, troubleshoot and repair the issue at hand.

TRMS mA Clamp Meter

- Measures AC/DC current/voltage, resistance and capacitance
- True RMS AC measurements
- High resolution AC/DC mA readings
- Diode test and continuity check functions
- Non-contact voltage detector with LED indicator built into clamp tip
- V.F.C (variable frequency control) mode
- Includes test leads, batteries and soft carrying case

Model No R5015

AC Clamp Meter, 400A

- Measures AC current, AC/DC voltage, resistance, capacitance, frequency, duty cycle and temperature
- Diode test and continuity check functions
- Built-in non-contact voltage detector with LED indicator in clamp tip
- 4000-count LCD display with display hold and relative mode
- Includes test leads, thermocouple wire probe, thermocouple adapter, batteries and soft carrying case

Model No R5020

TRMS AC/DC Clamp Meter, 1000A

- Measures AC/DC current and voltage, resistance, capacitance, frequency, duty cycle and temperature
- True RMS AC measurements
- Diode test and continuity check functions
- Built-in non-contact voltage detector
- 50,000-count backlit LCD display and analog bargraph
- Includes test leads, thermocouple wire probe, thermocouple adapter, batteries and soft carrying case

Model No R5040

TRMS Digital Multimeter

- Measure AC/DC voltage and current, frequency, resistance, capacitance and temperature
- True RMS AC measurements
- 4-20 mA process loop measurements
- Built-in non-contact voltage detector
- IP67-rated dust and waterproof
- Includes temperature adapter/probe, test leads, weatherproof plugs, soft carrying case and batteries

Model No R5010

TRMS Digital Multimeter

- Measure AC/DC voltage and current, frequency, resistance, capacitance and temperature
- True RMS AC measurements
- Built-in non-contact voltage detector and Type K thermocouple input for contact temperature measurements
- Includes test leads, thermocouple wire probe (type K) with attached adapter and batteries

Model No R5007

TRMS Multimeter/Datalogger

- Measure, record and review AC/DC voltage and current, frequency, resistance, capacitance and temperature
- True RMS AC measurements
- Wireless Bluetooth connectivity
- IP67-rated dust and waterproof
- Includes test leads, type K thermocouple wire probe, thermocouple adapter, weatherproof plugs, li-ion battery, AC adapter and software

Model No R5005

SCHEDULED OR ZERO HOURS MAINTENANCE: Under this type of industrial maintenance program the equipment is verified at scheduled intervals with the goal of identifying and replacing parts showing signs of "wear and tear" before they lead to bigger issues. The ideology of this program is based on "zero hours of operation", that is, to keep the equipment running as if it was were new.

Motor Rotation and 3-Phase Tester

- Tests phase orientation of 3-phase power sources
- Indicates phase orientation (clockwise or counter-clock-wise) and whether each of the three phases is live
- LEDs display motor rotation and phase status
- Includes 3 color-coded cables, 3 alligator clips, battery and soft carrying case

Model No R5004

AC Voltage Detector

- Capable of detecting the presence of AC voltage from a safe distance
- Audible (buzzer) and visual (LED) indicators when voltage present
- Built-in flashlight and pocket clip
- Suitable for outlets or against insulated wire (50 to 1000V AC)
- For use on 50/60Hz circuits
- Includes batteries

Model No R5100

Receptacle Tester with GFCI

- Plug the instrument into the receptacle under test and match the light pattern to the status indicator chart to determine the fault
- Detects most common 3-wire receptacle issues
- LED indicators identify 5 wiring faults
- Built-in GFCI trip test

Model No R5210

Continuity Tester

- Local and remote continuity tester
- Visual (flashing bi-color LEDs) and audible (pulsating beeper) indicators
- Capable of testing cables/wires up to 10,000' (3000m)
- Remote probe allows for one person operation
- Includes battery

Model No R5300

Wire Tracer/Circuit Tester

- Identify and locate wires, validate cable/line connections, verify telephone line continuity/line polarity
- Built-in non-contact voltage detector
- Adjustable sensitivity wheel
- Visual and audible indicators
- Includes transmitter, receiver, micro USB charging cable, RJ11 & RJ45 adapter cables, RJ11 alligator clip adapter cable, and carrying case

Model No R5320

Circuit Breaker Finder

- Simply plug the transmitter into a receptacle and scan breaker box to identify the circuit
- Detects 5 3-wire receptacle wiring faults
- Built-in GFCI receptacle check function
- Adjustable sensitivity wheel
- Audible (buzzer) and visual (LED) indicators assist in identification
- Includes transmitter, receiver and battery

Model No R5500

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ELECTRICAL KNOWLEDGE: A solid understanding of electricity and electrical components will be crucial to many industrial maintenance programs. Test and measurement tools provide reliable and accurate measurements to determine the status of components and systems by measuring various electrical aspects such as the presence and amount of current, voltage, resistance and power. Clamp meters and digital multimeters can be used to test and troubleshoot electrical equipment in order to detect faults or irregular functioning.

Insulation Tester

- Measure 250V, 500V or 1000V test voltages and insulation resistance up to 2000MΩ
- Large backlit dual displays insulation resistance and test voltage simultaneously
- Lo Ω function for testing connections
- Data hold function
- Includes test leads, alligator clip, hanging strap, batteries and hard carrying case

Model No R5600

AC Voltage/Current Datalogger

- Dual input measures 2 voltage or current measurements or 1 of each
- Datalogs up to 256,000 measurements with user programmable sampling rates
- Simultaneously displays time/date, current and Max/Min readings
- Includes AC current clamp sensors (2), voltage sensors (2), alligator clips (4), test probes (4), USB cable, software, AC adapter, batteries, and hard carrying case

Model No R5003

Voltage/Current Simulator

- Setup and calibrate process devices such as transducers, indicators, recorders and controllers
- Provides adjustable 0 to 20mA and 0 to 10V calibration source
- Large, 5-digit LCD display
- Automatic calibration
- Includes test leads, alligator clips, protective holster and batteries

Model No R5800

Loop Calibrator

- mA sourcing, simulation and measurement
- Simulate mA and % with 0.001% display span
- Selectable step or ramp outputs
- Internal 24V loop power supply
- 0-28 VDC measurement to check loop voltage
- Includes test leads, alligator clips, protective holster and batteries

Model No R5820

Temperature Simulator

- Source 8 thermocouple types, including R, S, B, E, K, J, T, N; and 7 RTD types, including Pt 10 (385), Pt100 (385), Pt200 (385), Pt500 (385), Pt1000 (385), Cu10, Cu50; plus volts and ohms
- Internal cold junction compensation
- Easy-to-read 6-digit LCD display and zero adjustment button
- Includes test leads, alligator clips, thermocouple adapter, protective holster and batteries

Model No R2800

REED PRECISION TEST & MEASUREMENT INSTRUMENTS

MECHANICAL KNOWLEDGE: Mechanical knowledge of how machines function including concepts such as mechanical power transmission, fluid power, piping systems, pumps, and compressors are key to a successful program. Industrial equipment and machinery may include a number of mechanical parts that would require test & measurement instruments to locate, diagnose and repair problems.

Phase Rotation/Clamp Meter Kit

- R5004 Motor Rotation and 3-Phase Tester
- R5040 TRMS AC/DC Clamp Meter with Temperature
- R5100 Non-Contact AC Voltage Detector
- R1000 Safety Test Lead Set
- AD-1 Thermocouple Adapter
- TP-01 Beaded Wire Thermocouple Probe
- R9950 Soft Carrying Case

Model No R5004-KIT

Electrical Troubleshooting Kit

- R5500 Circuit Breaker Finder/ Receptacle Tester
- R5100 Non-Contact AC Voltage Detector
- R5300 Continuity Tester
- R9950 Soft Carrying Case

Model No R5500-KIT

Temperature Combo Kit

- R5008 Digital Multimeter with Temperature
- R2300 Infrared Thermometer
- R5100 Non-Contact AC Voltage Detector
- R1000 Safety Test Lead Set
- AD-1 Thermocouple Adapter
- TP-01 Beaded Wire Thermocouple Probe
- R8888 Hard Carrying Case

Model No RTEMP-KIT

Industrial Combo Kit

- R5010 TRMS Digital Multimeter
- R5020 AC Clamp Meter
- R2300 Infrared Thermometer
- R5100 Non-Contact AC Voltage Detector
- R1000 Safety Test Lead Set
- AD-1 Thermocouple Adapter
- TP-01 Beaded Wire Thermocouple Probe
- R8890 Hard Carrying Case

Model No RINDUST-KIT

Ultrasonic Thickness Gauge

- Measures the thickness of steel, cast iron, aluminum, red copper, brass, zinc, quartz glass, polyethylene, PVC, grey cast iron and nodular cast iron up to 7.9" (200mm)
- Displays sound velocity at the touch of a button
- Automatic material calibration
- User selectable unit of measure (in/mm)
- Includes probe, ultrasonic couplant gel, batteries and hard carrying case

Model No TM-8811

Ultrasonic Thickness Gauge

- Measures the thickness of metals, plastic, ceramics, composites, epoxies and glass up to 15.7" (400mm)
- Internal memory stores up to 500 measurements
- Displays sound velocity at the touch of a button
- User adjustable High/Low alarms
- Includes probe, ultrasonic couplant gel, batteries and hard carrying case

Model No R7900

REED INSTRUMENTS has the tools to help identify and diagnose problems, ultimately preventing unscheduled downtime and increasing plant safety. Visually inspect "invisible issues" such as weld integrity with a video borescope. Perform predictive vibration analysis of motors, pumps and rotating machinery with the help of a vibration meter. Troubleshoot electrical components and trace faults with REED digital multimeters. Verify temperatures, rotational speeds and phase sequence of motors with our thermometers, tachometers and phase sequence indicators, respectively.

Infrared Thermometer

- Non-contact temperature measurement of hot, hazardous or hard-to-reach objects from a safe distance
- Built-in laser pointer identifies target area
- 12:1 distance to spot size ratio
- Digitally adjustable emissivity
- Max and Min readings
- High and low alarms
- Includes battery

Model No R2300

Infrared Thermometer

- Measure temperatures up to 1202°F (650°C)
- Built-in laser pointer
- 12:1 distance to spot size ratio
- Digitally adjustable emissivity
- High and low alarms
- Max, Min, Avg and Differential readings
- IP65 rated double-molded housing
- Includes battery and carrying case

Model No R2310

Infrared Thermometer

- Built-in laser pointer identifies target area
- 30:1 distance to spot size ratio
- Digitally adjustable emissivity
- Audible (beep) and visual (tri-color LED) user adjustable alarms
- Max, Min, Avg and Differential readings
- Store up to 5 pre-set high & low alarms and 5 emissivity settings
- Includes battery and soft carrying case

Model No R2320

Infrared Thermometer

- Dual lasers assist with target area identification
- 50:1 distance to spot size ratio
- Digitally adjustable emissivity
- Audible (beep) and visual (tri-color LED) user adjustable alarms
- Max, Min, Avg and Differential readings
- Store up to 5 pre-set high & low alarms and 5 emissivity settings
- Includes battery and soft carrying case

Model No R2330

Thermal Imaging Camera

- 160 x 120 IR resolution (19,200 pixels)
- 0.05°C thermal sensitivity
- 2.8" color TFT display
- Built-in laser and LED flashlight
- Choice of 5 color palettes
- Hot and cold spot temperature and alarm indicators
- Includes USB cable, 16GB micro SD card, lens cover, and soft carrying case

Model No R2160