



Delivering test and measurement advantages for professionals worldwide

Test the TPI advantage



Accessories

Adapters | Cables & Connectors | Oscilloscope Probes | Test Leads

Clamp-on Meters (Current)

Combustion Efficiency Analyzers (Flue Gas Analyzers)

Food Safety, Processing, & Preparation

Gas Detection

Carbon Monoxide (CO) | Combustibles | Refrigeration Leak Detectors

Indoor Air Quality (IAQ)

Manometers (Pressure)

Multimeters (DMMs)

Oscilloscopes (Handheld)

Specialty Testers

Insulation | Multifunction | Photo-tachometer

Temperature

Contact | Non-contact (IR) | Pocket Digital Thermometers

Temperature Probes

J-Type | K-Type | T-Type | Thermistor

Test Leads & Accessories

Fused | Modular | Screw-on | Push-on

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Combustion Efficiency Analyzers (Flue Gas Analyzers)



708



709/
709R



712



714

QUICK AND SIMPLE SET UP

All TPI analyzers feature quick and simple set up. Fast purge and the ability to perform fuel selection during start up enables tests to be performed quickly. TPI analyzers use the last selected fuel as the default setting, preventing the need to perform fuel selection every time the analyzer is turned on.

The carbon monoxide sensor used in TPI combustion efficiency analyzers feature an on-board filter capable of filtering NO (nitric oxide), NO2 (nitrogen dioxide) and NOX (combination of NO and NO2) to prevent cross sensitivity errors.

PRODUCT No.	MEASUREMENTS	RANGES	FEATURES & BENEFITS	APPLICATIONS
708 Combustion Efficiency Analyzer	CO O2 CO2 Temperature Efficiency Excess air CO/CO2 ratio CO Air Free	0 to 9,999ppm 0 to 25% 0 to 25% calculated -58°F to 1832°F -50°C to 1,000°C 0 to 100% calculated	<ul style="list-style-type: none"> • Quick and simple operation • Large, easy-to-read 3-line display • Infrared printing capabilities • 10 pre-programmed selectable fuels • Real time date stamp • 50 data storage locations 	<ul style="list-style-type: none"> • Tuning of residential furnaces and domestic boilers • Ambient and stack testing for CO • CO safety measurements in and around combustion sources • Differential temperature testing
709 Combustion Efficiency Analyzer w/ Differential Digital Manometer	CO O2 CO2 Temperature Efficiency Excess air CO/CO2 ratio CO Air Free Pressure	0 to 9,999ppm 0 to 25% 0 to 25% calculated -58°F to 1832°F -50°C to 1,000°C 0 to 100% calculated	<ul style="list-style-type: none"> • Quick and simple operation • Large, easy-to-read 3-line display • Infrared printing capabilities • 10 pre-programmed selectable fuels • Dual input differential manometer • Real time date stamp • 50 data storage locations • Protective rubber boot 	<ul style="list-style-type: none"> • Tuning of residential furnaces and domestic boilers • Ambient and stack testing for CO • CO safety measurements in and around combustion sources • Differential temperature testing • Gas pressure checks
709R	Same features as the 709 with the addition of rechargeable battery and larger A795 water trap/filter assembly			
712 Flue Gas Analyzer	CO O2 CO2 Temperature Efficiency Excess air CO/CO2 ratio CO Air Free Pressure Leak Detector (combustible gas)	0 to 9,999ppm 0 to 25% 0 to 25% calculated -58°F to 1832°F -50°C to 1,000°C 0 to 100% calculated -150 to 150mBar 0 to 10,000ppm (Methane)	<ul style="list-style-type: none"> • Quick and simple operation • Large, easy-to-read 3-line display • Infrared printing capabilities • 10 pre-programmed selectable fuels • Real time date stamp • 50 data storage locations • Protective rubber boot • Data logger (100 step, 4 pages) • PC data analysis software (optional) • Ni-MH or AC/DC adapter operation 	<ul style="list-style-type: none"> • Tuning of residential furnaces and domestic boilers • Ambient and stack testing for CO • CO safety measurements in and around combustion sources • Differential temperature testing • Dual input differential manometer with 3 selectable units of measure: kPa, mBar, inH2O • Built in tightness pressure test • Built in CO room test
714 Flue Gas Analyzer	CO O2 CO2 NO NOX Temperature Efficiency Excess air CO/CO2 ratio CO Air Free Pressure	0 to 9,999ppm 0 to 25% 0 to 25% calculated 0 to 5,000ppm Calculated -58°F to 1832°F -50°C to 1,000°C 0 to 100% calculated	<ul style="list-style-type: none"> • Quick and simple operation • Large, easy-to-read, 3-line display • Infrared printing capabilities • 10 pre-programmed selectable fuels • Real time date stamp • 50 data storage locations • Protective rubber boot • Data logger (100 step, 4 pages) • PC data analysis software (optional) • Ni-MH or AC/DC adapter operation 	<ul style="list-style-type: none"> • Tuning of residential furnaces and domestic boilers • Ambient and stack testing for CO • CO safety measurements in and around combustion sources • Differential temperature testing • Dual input differential manometer with 3 selectable units of measure: kPa, mBar, inH2O

See the TPI website for kit options: www.tpi-thevalueleader.com



Sulfur Filter for Oil Application A773

Use the A773 when working on oil fired appliances to extend the life of your sensors by eliminating acid gas exposure to your analyzer



Draft Probe A797

Draft probe for use on natural draft appliances including water heaters, boilers and furnaces for use with all TPI combustion efficiency analyzers



Magnetic Strap A125

Magnetic Hanging Strap for use with all TPI combustion efficiency analyzers



IR Printer A740

IR printer for use with all TPI combustion efficiency analyzers

See pages 4 & 10 for combustion and digital manometer accessories.

CO Analyzers, Ambient CO & Combustible Gas

National Ambient Air Quality Primary Standards in the US call for less than 9ppm carbon monoxide for an 8 hour average during any 12 month period. Concentrations of 1 to 2 ppm may be found in homes with a normal operating gas furnace, to well over 1,000ppm in homes with a faulty furnace. Just 200ppm CO over 2 to 3 hours can cause slight headache, fatigue, dizziness, and nausea. Carbon Monoxide testing is crucial service provided by HVAC/R technicians.

PRODUCT No.	MEASUREMENTS	RANGES	FEATURES & BENEFITS	APPLICATIONS
706 Advanced High CO Meter	CO	0 to 9,999ppm over 9,999 ppm reddout in % 1.0 to 9.9%	<ul style="list-style-type: none"> • Quick and simple operation • Large, easy-to-read 3-line display • Infrared printing capabilities • Real time date stamp • 50 data storage locations • Auto range • Protective rubber boot 	<ul style="list-style-type: none"> • Tune forklifts by testing exhaust
707 Advanced CO Meter	CO	0 to 9,999ppm	<ul style="list-style-type: none"> • Quick and simple operation • Large, easy-to-read 3-line display • Infrared printing capabilities • Real time date stamp • 50 data storage locations • Protective rubber boot 	<ul style="list-style-type: none"> • Ambient CO safety checks • Checking flue gasses for the amount of carbon monoxide present



706



707



775



770

PRODUCT No.	MEASUREMENTS	RANGES	FEATURES & BENEFITS	APPLICATIONS
775 Ambient CO & Combustible Gas Leak Detector	CO Combustible Gases	0 to 2,000ppm Methane > 50ppm	<ul style="list-style-type: none"> • Quick and simple operation • Large, easy-to-read LCD • Visual and audible tic rate • 16" gooseneck handle length • Optional earphone attachment • One hand operation • Visual and audible alarm 	<ul style="list-style-type: none"> • CO safety measurements in and around combustion sources • Ambient CO safety checks • Locate combustible gas leaks
770 Carbon Monoxide Monitor	CO	0 to 999ppm	<ul style="list-style-type: none"> • Quick and simple operation • Large, easy-to-read LCD • Visual and audible alarm • Optional earphone attachment • Built-in alarm 	<ul style="list-style-type: none"> • Ambient CO safety checks
A771 Carbon Monoxide Adapter	CO Use with DMM or clamp on	0 to 2,000ppm	<ul style="list-style-type: none"> • Quick and simple operation • Visual and audible alarm • Built-in alarm is preset to 30ppm 	<ul style="list-style-type: none"> • Ambient CO safety checks



A771



725

PRODUCT No.	MEASUREMENTS	SENSITIVITY	FEATURES & BENEFITS	APPLICATIONS
725 Pocket Combustible Gas Leak Detector	Combustible Gases	>1,000ppm Methane	<ul style="list-style-type: none"> • Quick and simple operation • Pocket sized • Visual and audible leak detection 	<ul style="list-style-type: none"> • Trace natural gas lines and fittings for leaks • Check gas operated equipment for leaks
719 Combustible Gas Leak Detector	Combustible Gases	>30ppm Methane	<ul style="list-style-type: none"> • Quick and simple operation • Visual and audible leak detection • Adjustable tic rate • Optional earphone attachment • One-hand operation • 16" gooseneck probe length 	<ul style="list-style-type: none"> • Detect combustible gases including natural gas methane, propane (LPG), gasoline, diesel, kerosene, etc. • Trace natural gas lines and fittings for leaks • Check gas operated equipment for leaks
720b Combustible Gas Leak Detector	Combustible Gases	>10ppm Methane	<ul style="list-style-type: none"> • Quick and simple operation • Visual and audible leak detection • Adjustable tic rate • Optional earphone attachment • One-hand operation • 16" gooseneck handle length 	<ul style="list-style-type: none"> • Detect combustible gasses including natural gas methane, propane (LPG), gasoline, diesel, and kerosene • Trace natural gas lines and fittings for leaks • Check gas operated equipment for leaks
721 Combustible Gas Leak Detector with ppm + % LEL Display	Combustible Gases	> 10ppm Methane	<ul style="list-style-type: none"> • Quick and simple operation • Visual and audible leak detection • Audio and visual alarm with user adjustable alarm setting • Display leaks in real ppm, stepped ppm, and %LEL (Lower Explosive Limit). • Two line display with bargraph and backlight • Adjustable tic rate • Optional earphone attachment. • 16" gooseneck probe length 	<ul style="list-style-type: none"> • Detect combustible gases including natural gas methane, propane (LPG), gasoline, diesel, kerosene, etc. • Test areas for lower explosive limit (%LEL) concentration of combustible gases. • Trace natural gas lines and fittings for leaks • Check gas operated equipment for leaks



719



720b



721

Digital Manometers



608



621

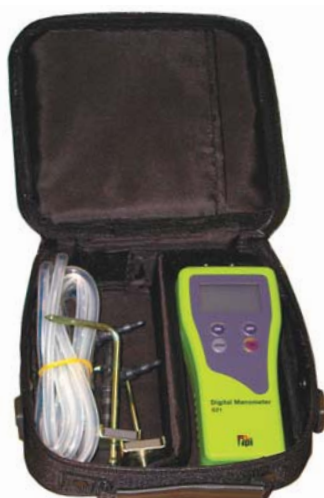
PRODUCT No.	MEASUREMENTS	RANGES	FEATURES & BENEFITS	APPLICATIONS
608 Single Input Manometer	inH2O mbar kPa psi	±60 ±150 ±15 ±2.175	<ul style="list-style-type: none"> • Four selectable units of measure • Temperature compensated • Auto power off • Backlight display • Wall hook and magnets for hands free use 	<ul style="list-style-type: none"> • Adjust appliance regulators • Set delivery pressures • Leakage “shut-in” tests • Regulator adjustments for pressure and lock-up tests • Test pressure switch operation on a 2-stage gas furnace in both positive and negative pressures
621 Dual Input Manometer	inH2O mbar kPa psi mmH2O mmHg inHg	±120 ±300 ±30 ±5 ±3,000 ±220 ±9	<ul style="list-style-type: none"> • 0.001 inH2O resolution less than 40 inches of water; 0.01 inH2O resolution over 40 inches • Dual input • Autoranging • Seven selectable units of measure 	<ul style="list-style-type: none"> • Adjust appliance regulators • Setting delivery pressures • Leakage “shut-in” tests • Regulator adjustments for pressure and lock-up tests • Test pressure switch operation on a 2-stage gas furnace in both positive and negative pressures

Pressure Kit 621C3

- Temperature compensated for improved accuracy
- Adjust appliance regulators
- Set delivery pressures
- Leakage “shut-in” tests
- Regulator adjustments for pressure and lock-up tests
- Test pressure switch operation on a 2-stage gas furnace in both positive and negative pressures
- Test air flow, static pressure drop, and draft pressure measurements
- When setting up a high efficiency gas hot water heater, you need to check the static pressure in the exhaust stack. Do this by using the static tip and firing up the gas hot water heater, then capture the min and max readings. If not enough pressure out the exhaust, wind can blow down the exhaust and extinguish the pilot light.

621C3 Pressure Kit includes:

- 621 Dual Input Digital Manometer
- A774 6' silicone tubing
- A776 (2) static tip
- A605 (2) 1/4" tapered "T"
- A603 (2) brass fitting, 1/4" NPT to 1/4" barb
- A908 shoulder strap carrying case
- A612 protective rubber boot



621C3



665

PRODUCT No.	MEASUREMENTS	RANGES	FEATURES & BENEFITS	APPLICATIONS
665 Dual Input Manometer with Data Logging and optional PC interface	inH2O bar kPa psi mmH2O mmHg inHg,	±2,810 ±7,000 ±700.0 ±101.5 ±71.38 ±5,250 ±206.7	<ul style="list-style-type: none"> • Measure differential pressure • Store up to 16 measurements • Log up to 5,000 measurements with date and time stamp for retrieval with optional A665 docking station and software • MIN / MAX record • Seven selectable units of measure • 5 digit dual line display with backlight • Auto power off • Data hold • A614 protective rubber boot with magnets 	<ul style="list-style-type: none"> • Check for proper pressure in pneumatic systems • Check utility supply gas pressure • Check for proper pressures in clean rooms • Industrial HVAC systems • Check operation of industrial pressure systems



PC Communication A665

Software USB cable data logging station for 665.



Static Tip A776

Measure static pressure with A776. It has a magnet to secure place in duct work, 1/4" hole required to use.



Gas Valve Pressure Adapter A611

Use for checking gas pressure on gas valve where the inert gas is in a tight or hard to reach location. Can be used with any TPI digital manometer.



Universal T Fitting A605

Ideal for use on setting pressure switches.



Silicone Tubing A774

6 foot length of silicone tubing for pressure measurements. Very flexible in extreme temperatures.



Brass Hose Barb Fitting A603

Use for checking gas pressure on gas valves 1/4" hose barb x 1/8 NPT thread.



Protective Rubber Boot A612

Protective rubber boot with tilt stand for the following manometers: 610, 615, 620, and 625.

Indoor Air Quality (IAQ): particle counters, air flow, humidity, temperature, CO2, & CO

1020



PRODUCT No.	SPECIFICATIONS	FEATURES & BENEFITS	APPLICATIONS
1020 Handheld Particle Counter	Particle Size Range: 0.3, 0.5, 1, 2, 5 micron size selectable Concentration Range: 0 to 3,000,000 particles per cubic foot Sensitivity: 0.3 microns Display: 16 character 2 line LCD	<ul style="list-style-type: none"> Single channel with ranges of 0.3, 0.5, 1, 2, 5 microns capable of showing cumulative particle counts USB2 output Simple menu system to select particle sizes and sample time 	<ul style="list-style-type: none"> Controlled environments Indoor air quality Process control Filter testing Compliance testing Emission sourcing Remote sampling
1025 Handheld Particle Counter	Particle Size Range: 0.3 to 5 microns Concentration Range: 0 to 3,000,000 particles per cubic foot Sensitivity: 0.3 microns Display: 16 character 4 line LCD	<ul style="list-style-type: none"> Two channels with a range of 0.3 to 5 microns capable of showing differential or cumulative particle counts RS232 output Simple menu system to select particle sizes, sample time, and alarm settings Store up to 4,000 records for download to a PC or optional printer 	<ul style="list-style-type: none"> Controlled environments Indoor air quality Process control Filter testing Compliance testing Emission sourcing Remote sampling
1030 Handheld Particle Mass Profiler & Counter	Mass Mode Mass Concentration Ranges: PM1, PM2.5, PM7, PM10, and TSP Concentration Range: 0-1 mg/m3 Particle Mode Particle Size Range: 0.3 to 5 microns Concentration Range: 0 to 3,000,000 particles per cubic foot Sensitivity: 0.5 microns Display: 16 character 4 line LCD	<ul style="list-style-type: none"> Particle counts automatically converted to mass Accommodation for special particulate with different densities is provided through user programmable "K" factors Two channels with a range of 0.3 to 5 microns capable of showing differential or cumulative particle counts RS232 output Simple menu system to select particle sizes, sample time, and alarm settings Store up to 4,000 records for download to a PC or optional printer 	<ul style="list-style-type: none"> Controlled environments Indoor air quality Hospitals & clinics Process control Filter testing Mining & ore processing Compliance testing Emission sourcing Remote sampling

1025/1030



575C1

PRODUCT No.	MEASUREMENTS	RANGES	FEATURES & BENEFITS	APPLICATIONS
575C1 Digital Combo vane & hotwire anemometer	Air Velocity Temperature	Vane: 1.3 to 80 fps 0.4 to 25 m/s Hot Wire: 0.7 to 65 fps 0.2 to 20 m/s -5°F to 175°F (-20°C to +80°C)	<ul style="list-style-type: none"> Measure air velocity and temperature simultaneously Record max, min & avg Multiple measuring units: m/s, km/h, ft/min, knots, mile/h Download to a computer using the optional A500 cable 	<ul style="list-style-type: none"> Air velocity measurements in heating, ventilation and air conditioning systems Air duct analysis Fume hoods Floor registers Exhaust grills
597C1 Digital Hygrometer/Psychrometer	Relative Humidity (RH) Ambient Temperature Dew Point Wet Bulb	0 to 100% -40°F to 176°F -40°C to 80°C -40°F to 176°F -40°C to 80°C 41°F to 140°C 5°C to 60°C	<ul style="list-style-type: none"> Data record function for maximum & minimum temperature of humidity reading Serial output through RS-232 39" cable length, hard wired Auto power off Protective rubber boot 	<ul style="list-style-type: none"> Building maintenance Computer rooms Heating & air conditioning systems Bakeries Humidistats calibration
1008 Handheld Indoor Air Quality Meter	CO2 Temperature	0 to 5000ppm -5 to 140°F (-20 to 60°C)	<ul style="list-style-type: none"> Measure Carbon Dioxide (CO2) levels Measure ambient air temperature Log up to 48 readings in 30 minute intervals 	<ul style="list-style-type: none"> Check ambient CO2 levels in work and living spaces Monitor results of control systems Measure Ambient air temperature
1010 Handheld Indoor Air Quality Meter w/ CO and humidity measurement	CO2 Temperature Relative Humidity Dew Point Wet Bulb CO % outside air (calculated)	0 to 5000ppm -5 to 140°F (-20 to 60°C) 5 to 95% -47 to 135°F (-44 to 57°C) 3 to 135°F (-16 to 57°C) 0 to 500ppm 0 to 100%	<ul style="list-style-type: none"> Calculate percent outside air to maintain acceptable CO2 levels in buildings and work spaces Measure and display Carbon Dioxide (CO2) and Carbon Monoxide (CO) and Carbon Monoxide Measure ambient air temperature Measure relative humidity, dew point and wet bulb Log up to 10,000 readings in 1 second to 1 hour intervals 	<ul style="list-style-type: none"> Check ambient CO and CO2 levels in work and living spaces Monitor results of air control systems Ambient air temperature and Humidity Test dew point and wet bulb humidity
1011 Handheld Indoor Air Quality Meter w/ CO, humidity, and air velocity measurement	All of the measurements and ranges of the 1010 plus: Air velocity Air flow	59 to 2952fps 0 to 140,000cfm	All of the features and benefits of the 1010 plus: <ul style="list-style-type: none"> Measure air velocity Measure air flow (CFM) 	Same as 1010 plus: <ul style="list-style-type: none"> Air flow measurements in heating, ventilation and air conditioning systems Air duct analysis Check air handling systems for total CFM output

597C1



1008, 1010, 1011

1008



Measure and display carbon dioxide (CO2) and temperature

1010



Measure and display carbon dioxide (CO2), carbon monoxide (CO), temperature, and humidity

1011



Measure and display air velocity, air flow (CFM), temperature, humidity as well as carbon dioxide (CO2), carbon monoxide (CO), temperature, and humidity.

Digital Clamp-On Meters & AC Safety Volt Check



265



270/275



293/296

PRODUCT No.	MEASUREMENTS	RANGES	FEATURES & BENEFITS	APPLICATIONS
265 Digital Clamp-On Meter	Basic DC Accuracy DC Voltage AC Voltage AC Amps Frequency Capacitance Resistance	0.5% 600V 600V 400A 40MHz 4,000uF 40MΩ	<ul style="list-style-type: none"> • Auto & manual ranging • Data hold button • Auto power off • Slim-jaw and body design for use in crowded electrical panels • 4,000 count display • Capacitance range up to 4,000 microfarads to test run and start capacitors • 0.1 DC millivolt resolution to accurately measure thermocouples and use optional adapters • 0.01 AC amp resolution to measure heat anticipator current • Frequency measurement capability 	<ul style="list-style-type: none"> • Test start and run capacitors • Measure motor run current • Measure heat anticipator current • Determine thermocouple voltage • Test line and control voltage • Measure heating element resistance • Measure and adjust variable frequency drives
270 Digital Clamp-On Meter	Basic DC Accuracy DC Voltage AC Voltage AC Amps Resistance Frequency Capacitance Temperature	0.5% 600V 600V 400A 40MΩ 400MHz 4,000uF 1,000°F	<ul style="list-style-type: none"> • Measure motor in-rush current • Measure temperature differential • Non-contact voltage feature can be used to see if power is being supplied to the 24VAC control circuit of thermostats • Frequency, min/max/record, data hold and peak hold • Up to 4,000 microfarads to test run and start capacitors • 4,000 count display with 41 segment analog bargraph • Auto and manual ranging 	<ul style="list-style-type: none"> • Measure flame safety control current • Test run and start capacitors & motors • Measure motor run current and capture peak motor start up and amperage • Measure heat anticipator current • Determine thermocouple voltage • Test line and control voltage • Measure heating element resistance • Measure air temperature in ducts • Test for the presence of voltage in circuits without contacting the circuit • Measure temperature differential using relative mode
275 Digital Clamp-On Meter with True RMS, AC/DC amps 11,000 Count	Basic DC Accuracy DC Voltage AC Voltage AC Amps DC Amps Resistance Frequency Capacitance Temperature	0.5% 600V 600V 400A 400A 110MΩ 110MHz 4,000uF 1,000°F	<ul style="list-style-type: none"> • True RMS AC/DC amps • Measure motor in-rush current • Measure temperature differential with relative mode • Non-contact voltage feature can be used to see if power is being supplied to the 24VAC control circuit of thermostats • Frequency, min/max/record, data hold, and peak hold • Up to 4,000 microfarads to test run and start capacitors • 11,000 count display with 41 segment analog bargraph • Auto and manual ranging 	<ul style="list-style-type: none"> • Measure flame safety control current • Test run and start capacitors & motors • Measure motor run current and capture peak motor start up and amperage • Measure heat anticipator current • Determine thermocouple voltage • Test line and control voltage • Measure heating element resistance • Measure air temperature in ducts • Test for the presence of voltage in circuits without contacting the circuit • Measure temperature differential using relative mode
293 Digital Clamp-On Meter with True RMS,	Basic DC Accuracy DC Voltage AC Voltage AC Amps Resistance Frequency	0.75% 600V 600V 700A 40MΩ 10KHz	<ul style="list-style-type: none"> • True RMS • Measure AC/DC volts • Measure AC amps • Trim mode for stable readings • 4,000 count with 34 segment bar graph • Data hold • Sleep mode • HDR mode to determine if signal is clean or dirty 	<ul style="list-style-type: none"> • Heat anticipator current in thermostats • Line voltage • Control circuit voltage • Heating element resistance • Compressor winding resistance • Contactor and relay coil resistance • Motor and compressor start up current • Continuity of wiring • Frequency on control and line voltage • Record/min/max voltage of controls and line voltages • Bar graph to indicate rapid fluctuations
296	All the features of the 293 plus DC amp measurement up to 700A			



50



40

PRODUCT No.	MEASUREMENTS	RANGES	FEATURES & BENEFITS	APPLICATIONS
50 AC Safety Volt Check	Non-contact voltage	50 to 1,000 VAC	<ul style="list-style-type: none"> • Prevent electrical shocks • Troubleshoot electrical circuits • No on/off switch always ready for use • Audible & visual alert • Bright red glow indicates voltage • UL listed 	<ul style="list-style-type: none"> • Check for presence or absence of AC voltage in: wires, wall receptacles, fuses, junction boxes, switches, defective grounds, and any other voltage carrying electrical circuits
40 Low AC Locator	Non-contact voltage	24 to 90 VAC	<ul style="list-style-type: none"> • Visual red alarm in presence of low AC voltage • Detects 24 to 90 VAC • UL listed • No on/off switch, always ready for use 	<ul style="list-style-type: none"> • Check lawn irrigation equipment, thermostat controls, vending machine changers, and other low voltage equipment

DMMs & Specialty Electrical Testers

100



PRODUCT No.	MEASUREMENTS	RANGES	FEATURES & BENEFITS	APPLICATIONS
100 Easy, One Button Operation DMM	Basic DC Accuracy DC Voltage AC Voltage Resistance	0.5% 600V 600V 40MΩ	<ul style="list-style-type: none"> • Easy, one button operation • Automatically measures DC volts, AC volts, and ohms (resistance) • 0 to 600 volts AC/DC • 10M ohm impedance • Auto power off • Protective rubber boot 	<ul style="list-style-type: none"> • Measure line and control circuit voltages • Measure resistance of motor windings, transformers and solenoids • Make general AC/DC voltage and resistance measurements • Measure the resistance of elements and electric heater cores • Test continuity of wiring • Verify voltage at breakers and outlets • Use as a back-up meter in your tool box
133 Manual Ranging DMM	Basic DC Accuracy DC Voltage AC Voltage AC Amps DC Amps Resistance	0.5% 1,000V 750V 10A 10A 20MΩ	<ul style="list-style-type: none"> • 2,000 count LCD • Measures AC/DC volts, AC/DC amps, resistance, diodes and continuity • Data hold • Protective rubber boot 	<ul style="list-style-type: none"> • Thermocouples in furnaces and gas appliances • Heat anticipator current in thermostats • Line and control voltages • Flame safety control current • Heating element resistance • Continuity of wiring • Line current up to 10 amps • Power supply current
183A True RMS DMM with temperature, capacitance, duty cycle, & low-pass filter	Basic DC Accuracy DC Voltage AC Voltage DC Microamps Temperature Capacitance Resistance AC Amps DC Amps Frequency	0.5% 1,000V 750V 40uA -40°C to 1,300°C 4,000uF 40MΩ 10A 10A Up to 10MHz	<ul style="list-style-type: none"> • 4,000 count • True RMS for more accurate measurements • Auto/manual ranging • Temperature measurement • Duty cycle to measure the amount of time the motor is on • Low pass filter for noisy environments • Separate battery and fuse compartment • Auto power off • IR serial interface 	<ul style="list-style-type: none"> • Test run and start capacitors • Measure ambient and duct temp. • Test control (thermostat, thermocouple, flame safety) and line voltages • Measure resistance and test for continuity • Line current up to 10 amps (in series)
194 50,000 count True RMS DMM with Logging	Basic DC Accuracy DC Voltage AC Voltage DC Amps AC Amps Resistance Frequency Temperature Capacitance Inductance Conductance Duty Cycle Pulse Width dB	0.05% 1000V 1000V 10A 10A 50MΩ 5MHz 2462°F 20000uF 300mH 50nS 0.1 to 99.9% 500mS, 1S 60dB	<ul style="list-style-type: none"> • 0.05% basic accuracy true RMS DMM • 50,000 count display with backlight • CATIV 600V rated for safety • Time stamp data logging • Two hold system • Min/max record • Relative and compare modes • PC communication (optional A192 cable & software required) • Diode test and audible continuity 	<ul style="list-style-type: none"> • Measure line and control circuit voltages in CAT IV applications safely • Check power distribution in industrial equipment • Monitor equipment over time to detect intermittent problems • Test run and start capacitors • Measure ambient and duct temperatures • Check and adjust variable frequency drive motors
196 Process Control DMM	Basic DC Accuracy DC Voltage AC Voltage DC Amps AC Amps Resistance Frequency Process source output	0.05% 1000V 1000V 1A 1A 50MΩ 500KHz 0 to 24mA DC	<ul style="list-style-type: none"> • 0.05% Basic accuracy DMM • 0 to 24mA DC output for simulating and testing process loop controls • 50,000 count display with backlight • Two hold system • Min/max record • Relative and compare modes • PC communication (optional A192 cable & software required) • Diode test and audible continuity 	<ul style="list-style-type: none"> • Test and calibrate process loops and controls • Test 4-20mA transducers (pressure, strain, temperature, flow, level) • Check loop powered isolators • Test two wire transmitters • Check valve positioners, signal conditioners and process scaled indicators
440 Handheld Oscilloscope with True RMS DMM	Bandwidth Sample Rate Basic DC Accuracy DCV ACV DCA/ACA Ohms Capacitance Frequency	1MHz 20 megasamples per second 0.3% Up to 1,000 volts Up to 750 volts Up to 10 amps Up to 30MΩ Up to 400uF Up to 2 MHz	<ul style="list-style-type: none"> • 4,000 count • True RMS DMM • 1MHz oscilloscope • Trend mode • Component test • Logic test • Frequency counter 	<ul style="list-style-type: none"> • View industrial signals such as motor control, UPS, switching power supplies and PLC controls with 1MHz bandwidth • Capture noise spikes, glitches and intermittents with 20 megasamples per second sampling rate • Full autoranging, true RMS DMM • Continually updated display provides a live presentation



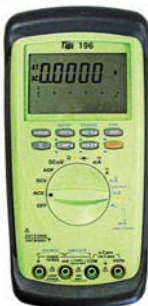
133



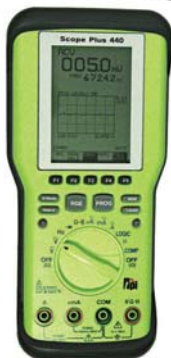
183A



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440

Non-Contact (IR) & K-type Temperature Probes

Use non-contact (IR) to measure hard-to-reach, sensitive, or moving surface temperature



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376

Probe Sold Separately

PRODUCT NO.	MEASUREMENTS	RANGES	FEATURES & BENEFITS	APPLICATIONS
368 Infrared Thermometer	Surface Temperatures (IR) Distance to spot ratio	-8°F to 248°F -22°C to 120°C 1:1.17	<ul style="list-style-type: none"> Easily fits in your pocket Min/max function 	<ul style="list-style-type: none"> Tubing, piping and sheet metal temperature Leaks around cooler or freezer doors
381 IR Thermometer	Surface Temperatures (IR) Distance to spot ratio	-4°F to 572°F -20°C to 300°C 9:1	<ul style="list-style-type: none"> Fast and simple operation Pocket size and easy to use Non-contact measurement for quick, safe surface measurements Laser pointer 	<ul style="list-style-type: none"> Remote vent and return temperature measurement Tubing, piping and sheet metal temperature Leaks around cooler or freezer doors Locate electrical panel hot spots
383 IR Thermometer	Surface Temperatures (IR) Distance to spot ratio	-31°F to 999°F -35°C to 537°C 9:1		
384 IR Thermometer	Surface Temperatures (IR) Distance to spot ratio	-4°F to 1,832°F -20°C to 1,000°C 9:1		
376 Digital Hygro-Thermometer	Surface Temperatures (IR) K-type Thermometer Distance to spot ratio	-58°F to 950°F -50°C to 510°C -40°F to 2,192°F -40°C to 1,200°C 11.5:1	<ul style="list-style-type: none"> Fast and simple operation Large, easy to read display Non-contact and contact temperatures Adjustable emissivity (0.3 to 0.99) for precise measurements Laser pointer Record function Data hold Operation lock function 	<ul style="list-style-type: none"> Heating & AC/R system measurements on all non-metallic and many metallic surfaces Troubleshooting overheat devices Remote vent and return temperature measurements Tubing, piping, and sheet metal temperature

Distance-to-spot ratio (D:S) is the ratio of the distance to the object and the diameter of the temperature measurement area. For example, if the D:S ratio is 9:1, measurement of an object 9 inches away will average the temperature over a 1 inch diameter area.



CK22M

- K-type surface probe
- Quick response and excellent heat transfer
- 45° angle stem to measure hard to reach surfaces
- 3' coiled lead for durability and long reach
- Exposed junction for fast response



GK11M

- Standard K-type thermocouple probe
- 4' fiberglass covered lead
- Exposed junction for fast response



GK12M

- Standard K-type thermocouple probe with oven clip
- 4' fiberglass covered lead
- Oven clip to shield sensor from direct radiated heat
- Exposed junction for fast response



GK13M

- Standard K-type thermocouple probe
- 4' FDA approved insulated lead
- Exposed junction for fast response



FK11M

- General purpose penetration into semi-solids and liquids
- 4" sealed stem for immersion into liquids, gels and semi solids
- 3.2 mm diameter stem for durability and strength
- 3' coiled lead for durability and long reach
- Stem sealed to protect sensing area



PIPE CLAMP PROBE CK21M

- K-type thermocouple pipe clamp
- Normal jaw opening 0.75" for pipe diameters up to 1.2" (30mm)
- For temperatures up to 212° F (100° C)
- Lead length 40" (100 cm) purpose probe

PIPE CLAMP PROBE CK20M

- Same as CK21M except nominal jaw opening of 0.25" for pipe diameters up 0.79" (20mm)

Refrigeration Leak Detectors, Digital Vacuum Gauge & Contact Thermometers

PRODUCT No.	MEASUREMENTS	SENSITIVITY	FEATURES & BENEFITS	APPLICATIONS
750a Refrigeration Leak Detector	Detects all refrigerants including blends R404A, R410A, and R507	0.2 oz/year	<ul style="list-style-type: none"> • Quick and simple operation • Visual & audible leak detection • Two selectable sensitivity ranges • Optional earphone attachment • One-hand operation • 16" gooseneck handle length 	<ul style="list-style-type: none"> • Automatically detects all existing refrigerants including blends: R-404A, R-410A and R-507 • Testing for leaks in air conditioning, refrigeration, or automotive AC
753a Refrigeration Leak Detector	Detects all refrigerants including blends R404A, R410A, and R507	0.1 oz/year	<ul style="list-style-type: none"> • Quick and simple operation • Visual & audible leak detection • Two selectable sensitivity ranges • Optional earphone attachment • One-hand operation • 16" gooseneck handle length • Pump driven for fast response 	<ul style="list-style-type: none"> • Automatically detects all existing refrigerants including blends: R-404A, R-410A and R-507 • Testing for leaks in air conditioning, refrigeration, or automotive AC

PRODUCT No.	MEASUREMENTS	RANGES	FEATURES & BENEFITS	APPLICATIONS
605 Digital Vacuum Gauge	Vacuum	Down to 15 microns	<ul style="list-style-type: none"> • Fast and simple operation • Easy-to-read LCD • Seven selectable units of measure • Display updates every 0.5 seconds • Auto power off after 10 minutes when vacuum above 12,000 microns (12 Torr) 	<ul style="list-style-type: none"> • Verify the vacuum before you change a refrigeration system • Prevents moisture and air being left in the system • Finds small leaks • 300 PSI overpressure

PRODUCT No.	MEASUREMENTS	RANGES	FEATURES & BENEFITS	APPLICATIONS
343C2 Dual K-type Thermometer for Low Temperature Under 400°F	Low Temperature	< 400°F	<ul style="list-style-type: none"> • Field calibratable • Large, easy-to read display • Record/min/max • Temperature differential • Data hold • °C/°F selectable • Protective rubber boot 	<ul style="list-style-type: none"> • Ambient air • Calibrate thermostats • Compressor heads • Registers • Temperature differential • Vents • Grill and surface temperatures
343C1	High Temperature	> 400°F	(Comes complete with (2)GK11M fiberglass, beaded K-type probes)	
343C3	Differential Temperature		(Comes complete with (2)CK21M pipe clamp probes and (2)GK13M teflon, beaded k-type probe)	

343 Auto Field Calibration Perform ice bath calibration to achieve ±1°F system accuracy (343 plus probe) within the 30°F to 120°F temperature range. Calibration is easy two-step process performed with keypad, no additional tools needed.

PRODUCT No.	MEASUREMENTS	RANGES	FEATURES & BENEFITS	APPLICATIONS
367D Data Logging Thermometer	Temperature Thermistor probe K-Type thermocouple probe T-Type thermocouple probe	-58°F to 302°F (-50°C to 150°C) -328°F to 1112°F (-200°C to 600°C) -328°F to 752°F (-200°C to 400°C)	<ul style="list-style-type: none"> • Field calibrate to +/-1°F system (probe & tester) accuracy • Data log up to 16,000 readings with sampling interval from 1 second up to 24 hours. • Real time and logged data transfer to PC via optional USB docking station & software (A367) • Save up to 16 readings • Min/max record, data hold and °C/°F selectable • Large two line LCD display with clock display, alarm clock, alarm timer and over temperature alarm • Uses Lumberg type probe connection 	<ul style="list-style-type: none"> • Ambient air tests • Calibrate thermostats • Log temperature over time to check HVAC system performance • Measure register and vent temperatures • Compressor heads

367D Auto Field Calibration Perform ice bath calibration to achieve ±1°F system accuracy (367D plus probe) within the 30°F to 120°F temperature range. Calibration is easy two-step process performed with keypad, no additional tools needed.

PRODUCT No.	MEASUREMENTS	RANGES	FEATURES & BENEFITS	APPLICATIONS
310C Pocket Digital Thermometer	Temperature	-58°F to 300°F	<ul style="list-style-type: none"> • Field calibratable to ±2°F • Reversible LCD head rotates for best viewing • Easy-to-read LCD • Data hold • Penetration tip • Auto off 	<ul style="list-style-type: none"> • Ambient air • Calibrate thermostats • Vents • Compressor heads • Registers • Grill & surface temperatures • Serving temperatures
315C Pocket Digital Thermometer	Temperature	-58°F to 300°F	<ul style="list-style-type: none"> • Field calibratable to ±2°F • Rugged and waterproof • 3.1mm tapered stem for "Pete's" plug • Magnetic clip • Penetration tip • Auto off 	<ul style="list-style-type: none"> • Ambient air • Calibrate thermostats • Vents • Compressor heads • Registers • Grill & surface temperatures • Serving temperatures

317	In 315 housing but with an air tip			
318	In 315 housing but with a chisel tip			
319	In 315 housing but with a contact tip			

Auto Field Calibration Perform to +/- 2 F accuracy in less than 10 seconds in an ice water bath for all "C" version pocket digital thermometer.



750a



753a



605



343C1
343C2
343C3



367D

Probe sold separately uses Lumberg type probe connection
See the website for additional information



310C



315C

Combustion & Digital Manometer Accessories

TPI Analyzer Care

TPI combustion analyzers use state of the art electrochemical sensors. This sensor technology provides the longest lasting, most accurate and reliable means for performing combustion tests. The sensors need to be replaced periodically and calibration is recommended annually.

- Always keep the battery of your analyzer charged so power is constantly being supplied to your sensors.
- Always make sure the in-line filter/water trap is installed properly and periodically check and replace the filter as needed.
- Always remove water or condensation from the inside of the in-line filter/water trap assembly and hose prior to performing tests.
- Always use the optional oil filter (p/n A773) when performing tests on oil burning equipment.



Gas Valve Pressure Adapter A611

Use for checking gas pressure on gas valves where the test point is in a tight or hard to reach location. Can be used with any TPI digital manometer. A611 can also be used with any TPI combustion efficiency analyzer.



Magnetic Hanging Strap A124

For use with any TPI combustion efficiency analyzer. Enables analyzers to be attached to a metal surface and used hands free.



Magnetic Strap with Boot Hook A125

For use with any TPI combustion efficiency analyzer. Enables analyzers to be attached to a metal surface via the magnetic strap or hung using the included A103 hook for hands free use.



Universal T Fitting A605

Ideal for use on setting pressure switches. For use with all TPI manometers.



Sulfur Filter for Oil Application A773

Use the A773 when working on oil fired appliances to extend the life of your sensors by eliminating acid gas exposure to your analyzer.



Replacement CO Sensor A760

Replacement carbon monoxide sensor for the 707 through 714 combustion analyzers.



Brass Hose Barb Fitting A603

Use for checking gas pressure on gas valves 1/4" hose barb x 1/8 NPT thread. For use with all TPI manometers.



Static Tip A776

Measure static pressure with A776. It has a magnet to secure in place in duct work. 1/4" hole required to use. For use with all TPI manometers.

4" Adapter Tubing for Pressure Connection A791

Flexible tubing for connecting to larger fittings.

PC Software for 712 A772

Allows the 712 to communicate with a PC.

IRDA Adapter A767

Allows the 712 to communicate with a PC.



IR Printer A740

IR printer for use with For use with all TPI combustion efficiency analyzers.



Replacement Paper Roll A746

Replacement thermal paper roll for the A740 (2 pack).



Threaded Pipe Plug TP-1

Use for plugging combustion efficiency test holes in high efficiency furnaces. Material: High density polyethylene Temperature: up to 250°F 1/8" NPT thread. 10 threaded pipe plugs.



Silicone Tubing A774

6 foot length of silicone tubing for pressure measurements. Very flexible, great for extreme temperatures. For use with all TPI manometers.



Replacement Oxygen Sensor A761

Replacement oxygen sensor for the 708 through 715 combustion analyzers.



Watertrap / Filter Assembly A794

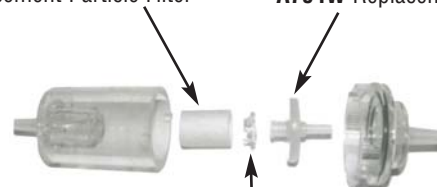
For use with condensing boilers.

ALSO AVAILABLE:

- Large watertrap/filter assembly A795.
- Replacement particle filter A794F.
- Replacement water filter A794W.

A794F Replacement Particle Filter

A794W Replacement Water Filter



A794D Filter Disc

Fiber Optic Inspection Tool, Smoke Test Pump and other specialty testers

Fiber Optic Inspection Tool 810

- Small 0.26 inch tip diameter
- Hi-resolution 8,000 pixel image offers enhanced vision and clarity
- 48 inch obedient wand maintains position after adjustment and protects fiber optic bundle
- Sealed tip for use in non-corrosive liquids
- Detect refrigerant dye with optional A813 blue light source



APPLICATIONS

- Perform non-destructive inspections of heat exchangers
- Examine heating & cooling ductwork integrity
- Check for blocked evaporator coils in air conditioning equipment
- Inspect boilers without costly disassembly
- Look inside oil burning furnaces for igniter components
- Use to show customers evidence of a cracked heat exchanger



Smoke Test Pump A788

Includes:

- Smoke pump tester
- Smoke pump test paper
- Smoke scale

Smoke Pump Accessories

Replacement smoke pump test paper A789

TDS/Salt Meter 390



- Test condensate water in cooling tower and humidifier reservoir applications to prevent bacterial growth
- Test TDS levels in make-up water to prevent scale formation, corrosion and embrittlement
- Determine when to perform blowdown and add make-up water
- Prevent contamination and corrosion of control valves, heat exchangers and steam traps
- Verify automated TDS controllers are functioning properly
- Prevent low quality wet steam generation in boilers due to foaming caused by high TDS levels

Handheld Refractometer 395



The 395 is designed to give an accurate reading regarding the freezing point of fluids used in hydronic heating systems. Measures propylene, ethylene, glycol and battery fluid.

Photo / Contact Tachometer and Surface Speed 505



The 505 is a combination photo and contact tachometer that also measures surface speeds of belts and wheels.

Photo Tach:	6 to 30,000 RPM
Contact Tach:	6 to 20,000 RPM
Surface Speed:	0.9 to 3,046 m/min
	2.0 to 9,990 ft/min

Insulation Resistance Tester

Check compressors, motor windings and transformers for insulation breakdowns. TPI insulation resistance testers are ideal for preventative maintenance and performing resistance tests.



Analog Insulation Resistance Tester SAIT25

- Test voltages: 250V/500V/1,000V
- Insulation resistance: 100M Ω /200M Ω /400M Ω
- Continuity: 2 Ω /20 Ω
- Includes A085 UL listed silicone test lead set with screw on alligator clips and A073 test lead set with large alligator clips.



Digital Insulation Resistance Tester with AC volts SDIT300

- Test voltages: 250V/500V/1,000V
- Insulation resistance: 20M Ω /200M Ω /2,000M Ω
- AC voltage: 200V/600V
- Continuity 20 Ω /200 Ω
- Includes A085 UL listed silicone test lead set with screw on alligator clips and A073 test lead set with large alligator clips.



Test Leads & Accessories

HVACR Test Lead Kit TLSHVACR1



- **A052** Screw-on modular adapter: Use to adapt TPI screw tip test leads for use with modular accessories.
- **A054** Sharp steel test prod: use to probe connections, connectors, and terminals.
- **A057** Modular back probes: use to check wiring harnesses and molex type connectors.
- **A066** Modular crocodile clips: use to test jumpers, terminals, and ground lugs.
- **A067** Modular grabbers: use to attach to terminals, including terminal strips, and hard to reach places.
- **A081** Shutter plug to fixed shroud lead set: safety double insulated CAT IV 600V 10A, CAT III 1000V 10A CULus 61010-1 / IEC 61010 listed, flexible multi-strand wire, long life silicone insulation, flame resistant.

Silicone Test Leads A085

Consists of the A080 UL listed silicone test lead set with A150 screw on alligator clips.

- CULus 61010-1
- IEC 61010
- Flexible (stranded wire)
- Long life (silicone insulation)
- Safety (double insulated CAT IV 600V 10A, CAT III 1000V 10A)
- Flame resistant
- Can be used with A052 modular banana adapter to increase versatility



Fused Test Lead Kit A089



Increase the overall safety of your test instrumentation. The fuse in a meter is designed to protect the meter against damage. Fused test leads are designed to protect the user. The A089 fused test lead kit offers versatility and safety featuring in-line 1,000V 0.5A fuses for maximum protection.

About TPI Test Leads

Silicone insulated test leads (A080, A081, A089)

- Double insulated for safety
- Flame retardant
- More flexible because of higher strand count and silicon insulation

In-Line Fuse:

Each fused test lead has a user replaceable in line fuse designed to protect the user.

Agency Listed:

cULus 61010-1 and IEC 61010 CAT IV 600V 10A, CATIII 1000V 10A

Modular Back Probes A057

Back probes provide the ability to probe connectors without removing them from the circuit. Use with A052 male banana plug adapters.



Modular Banana Adapters A052

Screw on male banana plug adapters for use with TPI screw tip test leads like the A080. Enables the use of female banana lead accessories like the A057 back probes.



Modular 1,000V Crocodile Clip A066

Fully insulated large crocodile clips provide the ability to safely connect to larger electrical buses and connectors. Can be used with the A052 banana adapters.



Modular Grabber Clips A067

Push activated grabber clips provide long reach and secure connection to electrical bus bars and connectors. Can be used with the A052 banana adapters.



Thermocouple Adapter A115

Use the A115 to check thermocouples in series with the furnace running.



Flame Current Lead Set A020

Use to check flame safeguard current on controls with a 3.5mm test jack.



Zippered safety green pouch TLSCASE1

Carrying pouch includes velcro belt loop, nine inside pockets with plenty of room for test leads, accessories, and will even fit a full size DMM. The inside pockets will not crack in cold weather. Easily holds the TLSHVACR1 test lead kit.



Magnetic Strap with Boot Hook and Boot Adapters A127

For use with TPI test instruments equipped with a rubber protective boot. Enables instruments to be attached to a metal surface via the magnetic strap or hung using the included A103 hook for hands free use. Includes two boot adapters A132 and A133.

Distributed By:

TEST US!!!

Call 800.368.5719

For additional products, specifications, and info contact TPI at tpi-thevalueleader.com