MEASURINGPAD

SPECIFICATIONS

Scanning, Monitoring, and Recording

Scan Rate: 10 kHz per analog input; 10 kHz per digital input 16-bit A/D conversion

Overall Accuracy (All Measurements): ±0.1% of full scale or better

Overrange (All Measurements): 10% of full scale

Logging Modes:

Manual: A single "snapshot" record taken via touchscreen button

Timed: Records taken automatically between specified start and stop times; user-specified rate from one second to 24 hours

Event-Triggered: Records taken while any triggering limit violation or digital input occurs; user-specified rate from one millisecond to 24 hours, or "burst" speed (as fast as possible); overrides timed logging, and may include "pretrigger" data, if desired

User-enabled beeper for setpoint violation alert

Test / Process Interface

Up to four external sensor interface pods per MeasuringPAD unit (ordered separately)

Four DC-coupled differential analog inputs of the same type per pod (see below)

Two digital inputs per pod (see below)

EEPROM per pod, for ID and storage of calibration values

Analog Inputs

Low Voltage Pod

Operating Range (Differential and Common-Mode): ±0 to 30 VDC or 0 to 24 VAC RMS

Input Impedance: 4 MΩ (differential); 1 MΩ (common-mode)

Accuracy: ±0.1% of full scale up to 400 Hz; ±1.0% of full scale up to 5 kHz

Connection: Five-way binding posts

High Voltage Pod

Operating Range (Differential and Common-Mode): ±0 to 600 VDC or 0 to 480 VAC RMS

Input Impedance: 40 MΩ (differential); 10 MΩ (common-mode)

Accuracy: ±0.1% of full scale up to 400 Hz; ±1.0% of full scale up to 5 kHz

Connection: Safety banana jacks

Low Current

Operating Range (Differential): ±0 to 20 mADC or 0 to 20 mAAC RMS

Input Impedance: 250 Ω (differential); 1 MΩ (common-mode)

Accuracy: ±0.1% of full scale up to 400 Hz; ±1.0% of full scale up to 5 kHz

Connection: Five-way binding posts

Thermocouple

Accepts Types B, E, J, K, N, R, S, and T

Test / Process Interface (continued)

Resolution: 0.1 degree

Input linearization via NIST table

Accuracy: ±0.1% of full scale DC ± 0.5° C cold-junction compensation

Connection: Mini jacks

Digital Inputs (All Pods, unless otherwise indicated)

Maximum Frequency: 20 kHz

Minimum Time Interval (for timed inputs): 1 msec

V_H: 4.5 to 24 VDC

V_L: 0 to 0.6 VDC

R_{IN}: 6.0 kΩ, approximate

Isolation: Optically isolated to 750 VAC RMS, common-mode

Frequency and quadrature inputs configurable for limit logic

Connection: Five-way binding posts

DC Strain Gauge

1, 2, 4 & 10 mV/V

Accuracy: ±0.1% of full scale up to 400 Hz; ±1.0% of full scale up to 5 kHz

Connection: Screw Terminals

General Specifications

Dimensions (HWD): 12" x 2.5" x 8" (30 cm x 6.4 cm x 20.3 cm)

Weight: 4.2 lb. (1.9 kg)

Operating Temperature: -10° to 50° C (14° to 122° F)

Storage Temperature: -40° to 85° C (-40° to 185° F)

Humidity: 95%, noncondensing

System Time Clock: Crystal-controlled; 1-second resolution

Display: Contrast-adjustable 320 x 240 LCD color touchscreen with audible feedback and programmable backlight timeout; available languages include English, French, Italian, German, Spanish

Memory Card: Compact flash 256M supplied

AC Power Adapter supplied (90-264 VAC, 47-63 Hz)

Supporting easel and carry strap supplied

Optional Accessories

Low Voltage and High Voltage Cable Sets

Soft-Sided Carrying Case

Field-Replaceable Battery Pack

External Battery Charger

Weatherproof Container

Reusable Shipping Container

Lockable Portable Case

USB Flash Card Reader

Current Probes: TR25XX (1-3000A) Clamp-on RR30XX (30/300/3000A) Flexible

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MEASURING PAD

A versatile, short-term data acquisition solution for maintenance, troubleshooting and energy measurement applications
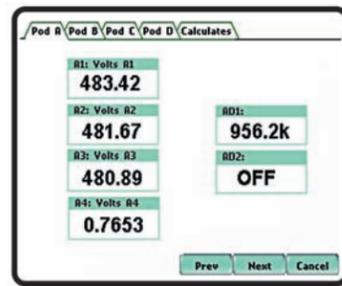
For temporary but critical on-site data acquisition, the portable, high-speed MeasuringPAD™ offers a convenient, economical alternative to an elaborate test and measurement installation. This sturdy hand-held instrument can be used in a wide range of manufacturing, laboratory, plant operations, and quality control applications. Rapidly collecting, monitoring, and displaying multiple sensor inputs, it can be used for troubleshooting, maintenance, process tuning, fault recording, trend analysis, and much more. Configured and operated through an easy-to-use color touchscreen interface, MeasuringPAD continuously scans all active inputs, digitizing with 16-bit A/D while checking for limit-violation triggers and refreshing its memory buffer of 10 kHz per input.

Measuring PAD

Real-Time Data Monitoring

MeasuringPAD provides live readout of up to sixteen differential analog inputs and up to eight logic-level digital inputs. As numerical measurements are monitored for exact conformance to user-en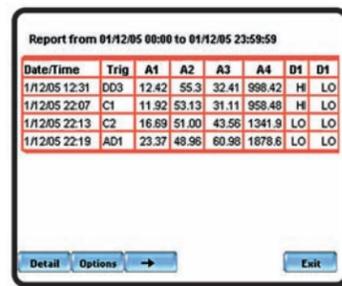tered setpoints, the vivid color-coded status display lets you size up your test or process at a glance. To ensure true "finished-answer" readability, analog signals are easily scalable to desired engineering units.

Convenient input "pods" allow fast and easy hookup of machine- or process-dedicated sensors – including DC/AC Low and High Voltage sources (from 100 mV to 300 V), DC/AC Low Current sources (4 to 20 mA), and most Thermocouple types. Digital inputs are standard TTL-level signals from switches, contacts, encoders, pickups, and other frequency-generating devices. They may be used to trigger the logging of data, to perform programmable counting and timing operations, and to monitor frequency and quadrature. Up to eight internal cross-channel math calculations can also be set up to display and monitor additional process variables such as horsepower, efficiency, and corrected flow – plus signal max/min and average values.

High-Speed Data Recording

You can instruct MeasuringPAD to sample scaled measurements at a regular time interval – or, immediately on detection of any specified trigger event, to begin recording at a special rate that can be up to a microsecond-level "burst" speed. Instantly stored on a standard CF memory card in a simple and universally compatible ASCII text format, data records are both time- and trigger-stamped, and may be directly imported by all kinds of third-party programs for post-analysis and report generation, without the need for special drivers or version-dependent operating systems. If desired, records of data values as they existed just prior to a triggering event can be included in the stored data file. The touch of a button will display a scrollable spreadsheet report of all currently logged data, including time and event indication.
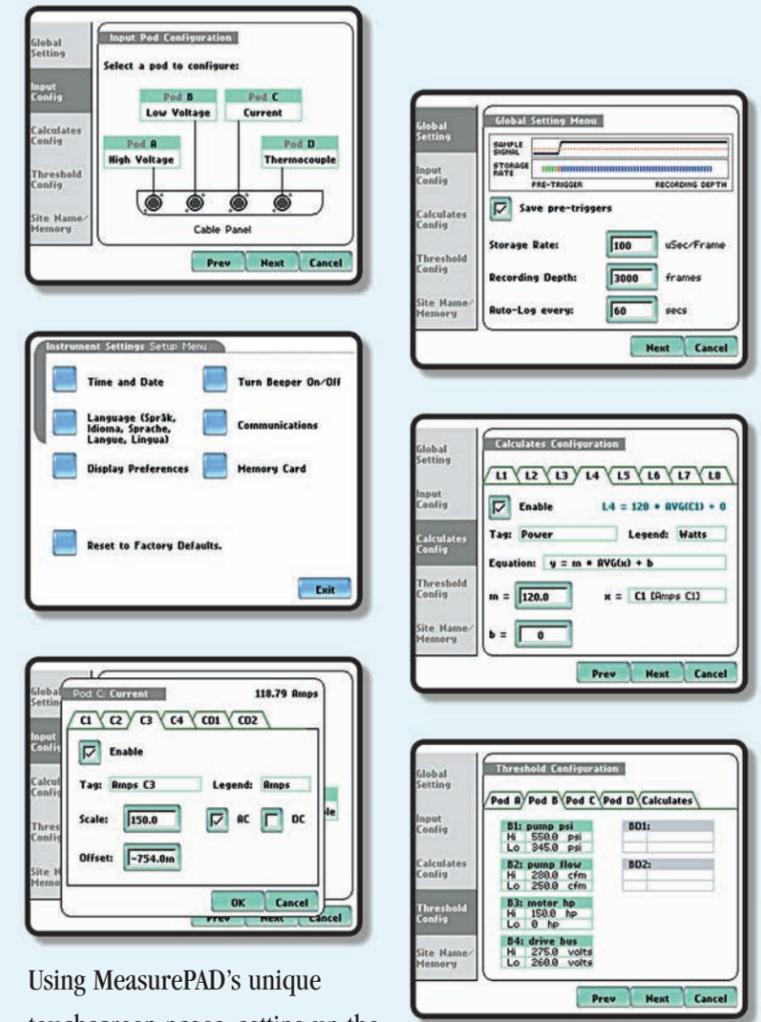
Using MeasurePAD's unique touchscreen pages, setting up the instrument literally takes seconds. Simple user selections and clear, intuitive pathing make the setup process both easy to use and easy to learn. Once created, multiple test-specific setups can be stored for instant reloading.

Multichannel Data Display

For instant operator interpretation of measurement results, the backlit color LCD furnishes real-time display of measured and calculated values in a number of programmable formats, including

- **bargraph,** for rapid visual comparison of up to sixteen active parameters

- **trend,** for simultaneous, independent timeplotting of up to four active parameters. Ideal for comparing energy and process/production parameters for energy reduction studies.

- **scope,** for live display of up to four active waveform inputs in a conventional oscilloscope mode

- **discrete Fourier transform (DFT),** for harmonic analysis of a selected analog input.