

Model 1062 Environment Monitor

Continuously Monitors Environment

- Temperature
- Humidity
- Barometric Pressure
- Line Voltage
- Line Frequency

Applications

Manufacturing

The 1062A Environment Monitor will ensure that your ATE system's operating environment is properly controlled. The 1062A continuously monitors temperature, humidity, barometric pressure, line voltage, and line frequency. Up to 12 independent sensors plus the optional barometric pressure sensor can be connected to the 1062A. The sensors can be placed hundreds, even thousands, of feet away from the 1062A. The 1062A's compact half rack size, 3.5 inches high and 8.25 inches wide, makes it easy to rack mount directly into your ATE system rack thus freeing up table top and bench space.

Calibration Labs

The 1062A Environment Monitor and its sensors are traceable to the U.S. National Institute of Standards and Technology. Providing both high accuracy measurements and full GPIB and RS-232C programmability, the 1062A eliminates the need for chart recording and maintaining cumbersome paper records. Environmental data can be transferred directly to your calibration systems reports and Statistical Process Control programs. The 1062A provides you with the ability to correlate test failures or measurement perturbations with changes in environmental conditions, all in a "Paperless Calibration" environment.

Computer, Control and Clean Rooms

The large display and full function keyboard make the 1062A easy to read from a distance and easy to operate. Continuously monitoring the operating environment of sensitive electronic equipment, the 1062A will display the time at which the upper and lower extremes were measured for each channel. The 1062A supports the other 4 mA to 20 mA loop-powered or self-powered sensors for measuring many different parameters such as pH, conductivity, flow, position, level, current, dc voltage, tension, pneumatic and differential pressure, RPMs, and temperature (both RTDs and Thermocouples). Each channel's display can be customized for your specific application.

Description

14 Channels with Flexible Displays

The 1062A offers 12 independently selectable 4 mA to 20 mA input channels, plus an AC line voltage/frequency monitoring channel and a dedicated channel for the optional Barometric Pressure sensor. Each channel's parameters can be independently set including: display title, display units, number of digits displayed, input and output scaling factors, alarm limits, and alarms activated. For your convenience, all parameters and settings are preset at the factory in both English and metric units.

Limits, Alarms, Min.Max Readings

Every 200 milliseconds all 14 channels are individually sampled, measured, converted to display units and compared against selectable alarm conditions and previous minimum and maximum readings. Any or all of the alarm indications can be activated including: audible alert, visual display, rear panel contact closure (or contact open), and computer SRQ interrupt over the GPIB interface.

Built-in Real Time Clock

The built-in real time clock provides you both current time and time-of-event information. The time-of-event data for each channel's minimum and maximum reading is stored in memory for later recall.

Calibration, Diagnostics and Special Functions

The 1062A is simple to calibrate. Only one manual adjustment is ever required - adjusting the time base frequency. All other adjustments can be made from the front panel keyboard or remotely over the GPIB or RS-232C. To insure proper operation the 1062A performs an extensive diagnostic check of its internal circuitry when first turned on. The 1062A offers many special functions including: number of measurements averaged per reading, RS-232C setup, audible alarm sound level, internal battery voltage, and metric or English default units.

Rear-Panel Recorder Output

The 1062A's user selectable recorder output lets you perform external signal processing of any of the 14 input channels. The recorder output's scaling factor is individually settable for each channel.

Features/Controls

Display

16 character alphanumeric vacuum-fluorescent display (VFD).

Mode Selection

Channel 1 to 12, time, line voltage, line frequency, barometric pressure, recorder and setup.

Setup Parameters

Upper limit (20 mA), lower limit (4 mA), alarm parameters (upper limit, lower limit, on/off for both limits and error condition), title (up to 10 ASCII characters), number of decimal places displayed to the

right of the decimal point (0, 1, or 2), mA/V "raw" display, recorder upper/lower limits, special measurement modes, and min/max values.

Setup Presets

English and metric units for default parameters. Preset settings for each channel: option 01/03 temperature, option 01 humidity, or undefined.

Min-Max Function

Tracks minimum and maximum values and time-of-event for each channel 1 to 12, plus line voltage, frequency, and barometric pressure. Min-max is reset using "START" function.

Real-Time Clock

Quartz-crystal real-time clock with battery backup. Time may be set from the front panel or via remote programming interface.

Alarm

Activated by error conditions (open, overload, etc.) on any channel. Also activated by out-of-limits conditions on any channel. Alarm limits may be different than the channel upper/lower limits. All alarm conditions may be selectively disabled. Selectable alarm indications include: visual display, audible alert (with variable volume adjustment), contact closure (NO or NC), and computer SRQ interrupt.

Programmability

GPIB (IEEE-488.2) and RS-232C (300 baud to 19200 Baud).

Chart Recorder Output

Plot any channel's instantaneous value, scaled between limits of your choice, on any standard chart recorder. Output is ± 5 Vdc.

Model 1062A Specifications

Inputs:

4 mA to 20 mA Inputs:

- Accuracy ± 0.1 % of full scale
- Resolution 12 bits (0 mA to 25 mA) (A/D converter)
- Supply voltage (loop-powered mode): 24 Vdc ± 25 %;
- (self-powered mode): 0 Vdc; internally-switched
- Load resistance 200 Ohm + 1 diode drop, while measuring that channel
- 10 Ohm maximum, standby
- Fusing 250 mA, each input
- 250 mA, + 24 V supply, for each group of 4 channels
- Fuses are internal

- Input connectors Phoenix pluggable type, 5 mm centers (mating connectors provided)
- Compatible sensors Temperature, Humidity, Barometric Pressure, Line Voltage, Line Frequency, pH, Conductivity, Flow, Position, Level, Current, Voltage, Tension (Strain Gauges), Pneumatic Pressure, RPMs (Tachometer), Specialized Temperature Ranges (RTDs & Thermocouples)

Line Monitor Input:

- Range Voltage: 0 Vrms to 400 Vrms
- Frequency: 20 Hz to 500 Hz
- Accuracy Voltage: $\pm (0.25 \% + 1 \text{ Vrms})$, at 47 Hz to 63 Hz
- Frequency: $\pm 0.027 \%$
- Resolution Voltage: 0.1 Vrms, maximum
- Frequency: 0.01 Hz, maximum
- Input impedance 2 Mohm, balanced to ground
- Input connectors Standard banana jacks

Outputs:

Alarm Outputs:

- Relay NO/NC (SPDT)
- Rating 24 Vac or Vdc, 250 mA maximum
- Connectors Phoenix pluggable type, 5 mm centers (mating connectors provided)

Recorder Outputs:

- Voltage $\pm 5 \text{ Vdc}$
- Load 200 Ohm minimum
- Connectors Phoenix pluggable type, 5 mm centers (mating connectors provided)

General:

Physical:

- Supply Power 100 Vac, 200 Vac, 220 Vac, 240 Vac $\pm 10 \%$, 47 Hz to 63 Hz single phase, 30 VA maximum
- Weight 4 kg (9 lbs), net, 7 kg (16 lbs), shipping
- Dimensions 100 mm H x 210 mm W x 400 mm D (3.95 in x 8.25 in x 15.8 in) (with feet and handles)

Communications:

- IEEE-488 SH1, AH1, T6, L4, SR1, RL1, PP0, DC1, DT0, C0, E2

Environmental:

- Temperature, Operating 0 °C to + 50 °C
- Temperature, Nonoperating - 40 °C to + 75 °C

Calibration:

- Interval One (1) year
- Traceability The 1062A Environment Monitor's measurement functions are traceable to the U.S. National Institute of Standards and Technology. We provide a Certificate of Compliance and Traceability evidencing traceability at the time of purchase and whenever maintenance or calibration are performed at our facility.

Option Specifications:

Specifications for these options are derived from the instrumentation uncertainties of the Model 1062A, and the manufacturer's specifications for the sensors. Performance verification at Arbiter Systems, Inc. is limited to the measurement of the 1062A instrumentation uncertainties.

Option 01 RH/Temperature Sensor:

- Manufacturer's part number 3HMW20YB, Vaisala Sensor Systems Div.; Helsinki Finland; Woburn, MA USA

Relative Humidity

- Range 0 % to 100 % RH
- Accuracy ± 2.1 % RH, 0 % to 90 % RH
- ± 3.1 % RH, 90 % to 100 % RH
- (at 20 °C, including 1062A instrumentation uncertainty)
- Resolution ≤ 0.04 % RH
- Temperature coefficient ± 0.04 % RH/°C
- Response time 15 seconds

Temperature

- Range - 5 ° to + 55 °
- Accuracy ± 0.26 °C (at 20 °C, including 1062A instrumentation uncertainty)
- Resolution ≤ 0.03 °C
- Temperature coefficient ± 0.02 °C/°C
- Linearity < 0.2 °C
- Sensor RTD, Pt 100 Ohm 1/3 DIN 43760B

Housing

- Size 110 mm x 85 mm x 32 mm (4.33 in x 3.35 in x 1.26 in) nominal
- Material ABS thermoplastic
- Mounting Wall mount
- Weight 115 g (4 oz) nominal
- Cable 30 m (100 ft) Belden 8443 o/e plus mating connectors

Option 02 Barometric Pressure Sensor:

- Manufacturer's part number 3PTA427, Vaisala Sensor Systems Div.; Helsinki Finland; Woburn, MA USA

- Range 800 hPa to 1060 hPa (800 mbar to 1060 mbar)
- Total accuracy 0.6 hPa (at 20 °C, including 1062A instrumentation uncertainty and drift for one year)
- Temperature coefficient 0.6 hPa (at 20 °C, including 1062A instrumentation uncertainty and drift for one year)
- Stability 0.3 hPa/year
- Stability due to shock ± 0.3 hPa
- Resolution ≤ 0.06 hPa
- Underpressure limit 500 hPa (5500 m or 18,000 ft altitude)

Option 03 Temperature Sensor:

- Manufacturer's part number TT155PD1GW/S472PDY4K0, Minco Products Inc., Minneapolis, MN USA
- Accuracy ± 0.51 °C (including 1062A instrumentation uncertainty and temperature - 5 °C to + 55 °C)
- Resolution ≤ 0.04 °C
- Sensor RTD, Pt 100 Ohm, per DIN 43760, class B

Housing

- Size 115 mm x 70 mm x 40 mm (4.5 in x 2.75 in x 1.56 in) nominal
- Material High-impact thermoplastic with aluminum faceplate
- Mounting Wall mount
- Cable 30 m (100 ft) Belden 8442 o/e plus mating connectors

Rack Mount Kits:

- AS0014401 Rack Mount Kit, single unit
- AS0014601 Rack Mount Kit, two units side-by-side