



LCD Digital Indicator, Type ST-2A Pressure, Temperature, Voltage and Current Measurement

Standard Features

- **Dual display – simultaneous measurement and display of pressure, temperature, voltage or current in any combination**
- **Accuracy ratings of $\pm 0.1\%$, $\pm 0.05\%$ and $\pm 0.025\%$ of span (pressure)**
- **Pressure ranges from 0.25 inches of water to 10,000 psi**
- **Interchangeable pressure and temperature modules**
- **Multiple engineering units – 12**
- **High static DP measurement capability**
- **Temperature measurement with most common RTDs and thermocouples**
- **Programmable damping**
- **Tare capability**
- **Display hold**
- **RS232 two way communications**

- **Standard NIST traceable certificate of calibration**

Optional Features

- **24 Vdc power supply**
- **Data logging – Automatic, manual and delayed actuation**
- **Data logging formatted for cert generation and computer based maintenance record keeping**
- **Relays – hi/lo programmable configurations – N/O and N/C**
- **Battery power – 5 AA NiCads with built-in charger**

The ST-2A is the perfect bench companion product to the Ashcroft® ATE-100 field handheld calibrator. This bench top (or panel mounting) package shares the same pressure and temperature modules and interfaces with the same software packages as



the Ashcroft ATE-100. An intuitive, menu-driven user interface puts all of the ST-2A's power at the simple press of a key. It uses the AQS (Ashcroft Quick-Select™) modular sensor system to provide the ultimate in measurement flexibility.

PRODUCT SPECIFICATIONS

PHYSICAL SPECIFICATIONS

Dimensions

10.9 in. (L) x 6.74 in. (W) x 4.0 in. (H)

Panel Cutout

6.56 in. x 3.53 in.

Weight

Max. 4.08 lbs. w/2 pressure modules installed

Case Material

High impact ABS

Sensor Module Capacity

2 bays for Ashcroft AQS "Quick Select"™ sensor modules

Display

2 line LCD, 0.037 in. height per line. Can display simultaneous readings from 2 modules.

Electrical Connection

Standard banana jacks

BASE UNIT OPERATING SPECIFICATIONS

Operating Temperature Range

32° to 120°F

Storage Temperature

-4° to 158°F

Update Rate

130 ms (nominal) with one sensor installed

Resolution

$\pm 0.002\%$ of span, 60,000 counts (max)

Warm-Up

5 minutes for rated accuracy

Electrical Measurements

0-50 mA or 0-30 Vdc

Options

Datalogging with Hi-Lo Relay Feature – Datalogging manually or automatically stores up to 643 measured values for upload to PC. Includes upload utility software. Hi-Lo relay feature allows

programming of setpoints for activation of alarms or control valves. (Hi-Lo not available with FM approval.)

Backlit Display

Built-in NiCad Rechargeable Battery Pack

Built-in 24Vdc Loop Power Supply

Handle

Panel Mounting Brackets

Power Requirements

Standard: ac adapter provided for 110Vac/60 Hz

Available: ac adapter provided for 220Vac/50 Hz

ac adapter provided for 100Vac/60 Hz

Optional: Built-in rechargeable NiCad Battery Pack*

* (Life: 20 hours nominal without backlit LCD, 2 hours nominal with backlit LCD. Activating RS232 results in approximately 30% reduction in battery life.)

Certification

N.I.S.T. Traceable certification document provided for base display unit and sensor modules

PRESSURE SENSOR MODULE SPECIFICATIONS

AQS-1

Pressure Types

Gauge, differential & compound

Available Ranges

(See Chart)

Available Accuracies

± 0.06 (0/2-0/200 in. H₂O), ± 0.07 (0/0.25-0/1 in. H₂O) or 0.1% of Span

Compensated Temperature Range

20°F to 120°F

Temperature Effect

$\pm 0.004\%$ of Span per °F over compensated range (from reference temperature range of 70° $\pm 3^\circ$)

Repeatability

$\pm 0.01\%$ of span (range 0/1 in. H₂O or higher)
 $\pm 0.02\%$ of span (ranges below 0/1 in. H₂O)

Sensitivity

$\pm 0.002\%$ of span (typical)

Media Compatibility

Clean, dry, non-conductive, non-corrosive gas

Under/Overpressure Capability

-15 to 50 psi

Maximum Static (line) Pressure

100 psi

Process Connection

Standard: 1/8 NPT female

Optional: G 1/8 British standard

AQS-2

Pressure Types

Gauge, absolute, compound and vacuum

Available Ranges

(See Chart)

Available Accuracies

± 0.025 , 0.05 or 0.1 % of Span (± 0.025 & 0.05% not available on 0/10,000 psi range)

Compensated Temperature Range

20°F to 120°F

Temperature Effect

Standard: $\pm 0.004\%$ of Span per °F over the compensated range (from reference temperature range of 70° $\pm 3^\circ$)

Optional: No additional error due to temperature over the compensated range

Repeatability

$\pm 0.01\%$ of span

Sensitivity

$\pm 0.002\%$ of span (typical)

Media Compatibility

0/5 psi range only: Clean, dry, non-conductive, non-corrosive gas

0/10-0/10,000 psi ranges: Any medium compatible with 316 SS isolation.

Optional: Cleaned for Oxygen Service
(0/10-0/10,000 psi ranges only)

Overpressure Capability

200% for ranges up to 1000 psi
150% for ranges over 1000 psi

Process Connection

Standard: 1/8 NPT female
Optional: 1/8 NPT female with flush port
(ranges 10 psi and over)
G 1/8 British standard
G 1/8 British standard with flush port
(ranges 10 psi and over)
Welded VCR fitting with standard
finish

TEMPERATURE INTERFACE MODULES

AQS-RT1 and AQS-RT2 interface modules allow the ST-2A to measure temperature with an RTD:

AQS-RT1: Accommodates Pt100, Ni120, Cu120 and other common 2, 3 or 4 wire probes with resistance outputs of 400 ohms or less.

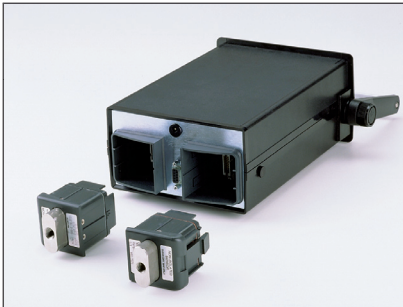
AQS-RT2: Accommodates Pt1000 and other common 2, 3 or 4 wire probes with resistance outputs of 4000 ohms or less.

Selectable Units of Measure

°C, °F, °K, °R and ohms

Input Receptacle

Accepts TA4F type RTD connector



RTD Probes Available

Pt-100 probes, 6" or 12" length, with or without handle. DIN Class A accuracy. Includes mating TA4F connector. Consult factory for details and availability.

The AQS-TC1 interface module allows the ST-2A to measure temperature with a thermocouple:

AQS-TC1

Compatibility

Programmed to provide direct temperature readout from types J, K, T, E, R, S, B & N thermocouples or direct millivolt readout from any thermocouple.

Reference Junction

Automatic internal or manual external

Resolution

Automatic or manually selectable, up to .01°

Units of Measure

Selectable; °C, °F, °K, °R and millivolts

Receptacle

Accepts "miniature thermocouple connector", Omega® type SMP

ACCESSORIES

110Vac/60 Hz ac Adapter
220Vac/50 Hz ac Adapter
Field Link 2 Software package – to create certification documents from datalogged data

STANDARD RANGES

AQS-2 psi (gauge and absolute pressure)	AQS-1 in.H ₂ O (gauge/ differential pressure)	Other Engineering Units**
5		
10	0.25*	psi
15	0.5*	in.H ₂ O
30	1.0*	in.Hg
50	2.0*	ftSW
60	3.0*	bar
100	5.0*	mbar
150	10*	kPa
200	15*	MPa
250	25*	mmHg
300	50*	cmH ₂ O
500	100*	mmH ₂ O
600	150*	kg/cm ²
1000	200*	User Selectable
1500		
2000		
2500		
3000		
5000		
6000		
7500		
10,000		
vacuum		
5		
10		
15		
compound		
±5		
±10	±0.125*	
±15	±0.25*	
-15/+30	±0.5*	
-15/+60	±1.0*	
	±1.5*	
	±2.5*	
	±5.0*	
	±7.5*	
	±12.5*	
	±25*	
	±50*	
	±75*	
	±100*	

**Note: Engineering units identified above are accessible through the unit select feature. However, readout will default to the primary unit of measure on start-up. Sensor modules scaled in primary units other than in. H₂O (AQS-1) or psi (AQS-2) are also available. Consult factory.

* Non-isolated, for clean dry gas only

TO ORDER

Base Unit

- Specify Model: ST-2A
- Specify Power Requirements: 110, 220 or 100Vac
- Specify Options: (Datalogging, Backlit Display, etc.)

Sensor Modules

- Type (AQS-1 or AQS-2)
- Pressure Range and Unit of Measure (see range chart)
- Pressure Type (see specifications)
- Accuracy (see specifications)
- Specify Options
 - "zero temperature error over compensated range" (AQS-2 only)
 - Optional fitting (see specifications)
 - Clean for Oxygen Service (AQS-2, 0/10-1/10,000 psi only)

Temperature Interface Module

- Type (AQS-RT1, AQS-RT2 or AQS-TC1)
- RTD Probe Type (when required. Consult factory for probe P/N)

Accessories

- Specify required accessories