

### 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  $\pm 0.025$  F.S. (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

$\pm 0.06$  (0/2-0/200 in. H<sub>2</sub>O),  $\pm 0.07$  (0/0.25-0/1 in. H<sub>2</sub>O) or 0.1% of Span

##### Compensated Temperature Range

20°F to 120°F

##### Temperature Effect

$\pm 0.04\%$  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. H<sub>2</sub>O or higher)  
 $\pm 0.02\%$  of span (ranges below 0/1 in. H<sub>2</sub>O)

##### 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

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

##### Compensated Temperature Range

20°F to 120°F

##### Temperature Effect

Standard:  $\pm 0.04\%$  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 ther-  
mocouples 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 certifi-  
cation documents from datalogged data

**STANDARD RANGES**

AQS-2 psi (gauge and absolute pressure)	AQS-1 H <sub>2</sub> O (gauge/ differential pressure)	Other Engineering Units**
*5	0.25*	psi
10	0.5*	in. H <sub>2</sub> O
15	1.0*	in. Hg
30	2.0*	ftSW
50	3.0*	Bar
60	5.0*	mBar
100	10*	kPa
150	15*	mPa
200	25*	mmHg
250	50*	cmH <sub>2</sub> O
300	100*	mmH <sub>2</sub> O
500	150*	kg/cm <sup>2</sup>
600	200*	User Selectable
1000		
1500		
2000		
2500		
3000		
5000		
6000		
7500		
10,000		
<b>vacuum</b>		
*5		
10		
15		
<b>compound</b>		
±5	±0.125*	
±10	±0.25*	
±15	±0.5*	
-15/+30	±1.0*	
-15/+60	±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 mod-  
ules scaled in primary  
units other than in. H<sub>2</sub>O  
(AQS-1) or psi (AQS-2)  
are also available. Con-  
sult 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)

**8) Specify Options**

- "zero temperature error over compen-  
sated 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