

The Heise® Model ST-2H Digital Indicator

The ST-2H is the perfect bench companion product to the Heise® PTE-1 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 Heise PTE-1. An intuitive menu-driven user interface puts all of the ST-2H's power at the simple press of a key. It uses the HQS (Heise Quick-Select™) modular sensor system to provide the ultimate in measurement flexibility.

Now you can purchase a calibration system to serve your field and bench mounting requirements while enjoying the significant cost savings gained through the availability of common pressure modules and software.

APPLICATION CAPABILITIES

- **Switch testing** including trip, reset and deadband.
- **Leak detection** in either leak rate or pressure decay modes.
- **Flow velocity and volume measurement** using standard pitot tubes and anubars.
- **Automatic % error calculation** simplifies transmitter or transducer calibration.
- **Valve test and set** using the Min/Max tracking feature.

HQS (Heise Quick-Select) modules offer the ultimate in "plug-and-play" flexibility. They can be inserted and removed at the push of a button. The ST-2H automatically recognizes the sensor with no need for adjustments.

The HQS-1 pressure module provides ultra-low pressure measurement solutions from 0/0.25 inches of water to 0/200 inches of water in gauge, compound and differential. They are designed for clean dry gas service and are durable with up to 1440 inches of water (50 psi) overpressure capability.

The HQS-2 pressure module provides ranges from 5 to 10,000 psi in gauge, vacuum, absolute and compound with 316SS isolation for severe media service available.

The HQS-RT temperature module provides an interface for 2, 3, and 4 wire RTDs. It is factory programmed with standard curves to support Pt100 (385 and 392), Ni 120, Cu 10. Another module supports Pt1000 temperature probes. Both can be programmed to support eight RTD curves.

The HQS-TC1 thermocouple interface module allows the ST-2H to measure temperature with types J, K, T, E, R, S, B and N thermocouples and includes an automatic reference junction.

For more information on HQS modules request Bulletin PTE-1.

STANDARD RANGES		
HQS-2 psi (gauge and absolute pressure)	HQS-1 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	±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 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

STANDARD FEATURES

- **Measurement** of pressure, temperature, voltage and current.
- **Two channel** – simultaneous measurement and display of pressure, temperature, voltage or current in any combination.
- **Accuracy ratings** of ±0.06 (0/2-0/200in H₂O), ±0.07 (0/0.25-0/1 H₂O±0.1), 0.05 and 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 factory-programmed plus one user-programmable engineering unit.
- **Temperature measurement** with most common RTDs and thermocouples
- **Programmable** damping.
- **Tare** capability.
- **Display** hold.
- **RS232** two-way communications.
- **Standard N.I.S.T.-traceable** certificate of calibration.

OPTIONAL FEATURES

- **Supplies 24 Vdc** to power transmitters, transducers, switches.
- **Data logging** – Automatic, manual and delayed actuation (user programmable).
- **High static differential** pressure measurement with dual sensor.
- **Relays** – Hi/Lo programmable configurations – N/O and N/C.
- **Battery power** – 5 "AA" NiCads with built-in charger.



HEISE MODEL ST-2H INDICATOR SPECIFICATIONS

Standard Display: Alphanumeric LCD, 0.37-inch height, 2 lines, 16 characters/line.

Optional Display: Backlit LCD alphanumeric with 2 lines and 16 characters/line.

Display Resolution: $\pm 0.002\%$ of span, 60,000 counts (max).

Display Update Rate: 130ms (nominal) with one sensor installed.

Engineering Units: psi, in.H₂O, in.Hg, ftSW, bar, mbar, kPa, MPa, mmHg, cmH₂O, mmH₂O and kgcm² and any single user-programmable engineering unit.

Damping: Programmable averaging from zero through 16 consecutive readings.

TEMPERATURE SPECIFICATIONS

Standard Operating Range: 32° to 120°F (0 to 49°C).

Compensated Range: 20° to 120°F (-7° to +49°C).

Reference Temperature: 70 \pm 3°F.

Standard Temperature Effect: $\pm 0.004\%$ of span per degree Fahrenheit over the compensated range.

Optional: HQS-2 Quick-Select modules are available calibrated to maintain rated accuracy from 20° to 120°F (-7° to +49°C) with no temperature compensation.

Storage Limits: -4°F to +158°F (-20° to +70°C).

ELECTRICAL SPECIFICATIONS

Electrical Sourcing Specification: 24 Vdc at 25mA.

Electrical Measurement Specification:

Input (volts)	Accuracy
0/10 Vdc	$\pm 0.025\%$ F.S.
0/30 Vdc	$\pm 0.10\%$ F.S.

Input (mA)	Accuracy
0/20mA	$\pm 0.03\%$ F.S.
0/50mA	$\pm 0.05\%$ F.S.

Auto-ranging 10/30 Vdc and 20/50mA

Temperature Effects Electrical

Measurement: $\pm 0.001\%$ of span per °F over the compensated range.

INTERFACE AND DATA LOGGING

RS232 Serial Interface: with 9-pin D type at 300, 1200, 2400, 9600 baud.

Field Calibration: Calibration module and proper pressure and electrical standards are required.

Optional Data Logging capacity:

Standard measurements: 714 records.

Date/time stamped measurements: 384 records.

Provides prompts for storage of calibration history information, including instrument tags, As Found/As Left data and corresponding ambient temperature.

MECHANICAL SPECIFICATIONS

Weight: ST-2H Base unit: 3.0 lb (1.4 kg).

Housing: Molded, high-impact ABS case.

Electrical Connections: Standard banana jacks.

Optional Battery Power Supply:

5 "AA" nicads with built-in charger or 5 "AA" alkaline (non-rechargeable)

External Power Supply: AC adaptor 9 Vdc, 500mA.

Portable Operation: 20 hours with optional backlight off, 2 hours with backlight on.

Warm-up: 5 minutes for rated accuracy (maximum), 30 minutes for complete stability.

ACCESSORIES

AC Adaptors: provide 9 Vdc output.

Part Number	Adapts from
831X016-01	110 Vac, 60Hz
831X016-02	100 Vac, 50Hz
831X016-03	220 Vac, 50Hz

Calibration Quick-Select Module:

For calibration of base unit electronics.

Part Number: CQS.

System Protection Module: Protects base unit when only one measurement module is required.

Part Number: HQS-XS.

Cable Assembly: Connects base unit to 9-pin female serial port on computer.

Part Number: 838X011-01.

Adapter 9-pin to 25-pin: Serial port connector on computer.

Part Number: 838X012-01.

Hoses: provide 1/2-20 UNF internal fittings. For use with pumps and general process connections.

3 ft hose, **Part Number:** 840X007-01.

5 ft hose, **Part Number:** 840X007-02.

1/8 NPT male fitting adapter to convert hose connector from 1/2-20 to NPT.

Part Number: 840X006-01.

FOR MORE INFORMATION

Request the following documents:

Temperature Module: HQS-1 and HQS-TC1

Pressure Modules: PTE-1

Pumps: HACC-P

How to Order: See Price Sheet ST-2H-1 for ordering information.

Contact us at: 203-925-4000.

Visit our Website: www.heise.com

Datalog up to 714 records



Optional backlight

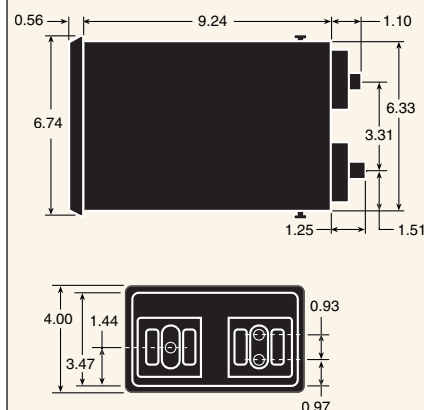
Min/max memory

Tare to remove pressure preload



HQS Modular Sensor System

ST-2H Dimension Drawings



Instrument Division Sales and Customer Service Locations

U.S. Headquarters

**Dresser Instrument,
Dresser Inc.
Control Instrument
Operations**
Two Research Drive
Shelton, CT 06484
Tel: (203) 925-4000
Fax: (203) 925-4010
U.S. Sales Offices

Midwest Region
400 W. Lake Street
Suite 318
Roselle, IL 60172-3573
Tel: (630) 980-9030
Fax: (630) 980-9440

Southwest Region
605 Bel Air Blvd.
Suite 10
Mobile, AL 36606
Tel: (251) 473-1692
Fax: (251) 473-1782

Southeast Region
605 Bel Air Blvd.
Suite 10
Mobile, AL 36606
Tel: (251) 473-1692
Fax: (251) 473-1782

Northeast Region
250 E. Main Street
Stratford, CT 06614-5145
Tel: (203) 385-0670
Fax: (203) 385-0756

Pacific Region
250 E. Main Street
Stratford, CT 06614-5145
Tel: (203) 385-0399
Fax: (203) 385-0402

International Operations

Brazil
Dresser Industria e
Comercio Ltda.
Rua Senador Vergueiro #433
09521-320 Sao Caetano do Sul
Sao Paulo, Brazil
Tel: 55-11-4224-7400
Fax: 55-11-4224-7477
E-Mail: vendas.instrumentos@
dresser.com

Brazil (Jacarei)
Dresser Industria e Comercio Ltda.
Divisao Masoneilan
Rua Particular- Estrada
Velha Rio De Janeiro -
Sao Paulo, KM 101Jacarei,
Sao Paulo Caixa
Postal 167, CEP 12305-330
Tel: 55-11-3958-2011
Fax: 55-11-3958-2670
E-Mail: dresserjac@uol.com.br

Canada
Dresser Canada, Inc.
2135 Meadowpine Blvd.
Mississauga,
Ontario L5N 6L5 Canada
Tel: 905-826-8411
Fax: 905-826-9106
E-Mail: Lance_Barette@dresser.com

China
Dresser Industries, Inc.
Room #2404, Capital Mansion
No. 6 Xin Yuan Nan Road Beijing
People's Republic of China 100004
Tel: 86-10-84862440/1/2/3/4
Fax: 86-10-84862445
E-Mail: dresser@public3.bta.net.cn

France
Dresser Europe GmbH
206 ZA Le Mandinet
Rue des Campanules
F 77185 Lognes, France
Tel: 33-1-60372530
Fax: 33-1-60372539
E-Mail: dresser.europe@wanadoo.fr

Germany
Dresser Europe GmbH
Postfach 11 20 Max-Planck-Str. 1
D-52499 Baesweiler, Germany
Tel: 49-24-01-8080
Fax: 49-24-01-7027
E-Mail: jbiermans@dresserbae.de

Germany
Ebro Electronic GmbH
Peringerstr 10D-85055
Ingolstadt, Germany
Tel: 49-84-1-95478-0
Fax: 49-84-1-95478-80
E-Mail: info@ebro.de

Japan

Dresser Japan Ltd.
Room 818, Shin Tokyo Building
3-1 Marunouchi 3-Chome,
Chiyoda-ku, Tokyo, Japan
Tel: 813-3201-1501
Fax: 813-3213-6567
E-Mail: yuichi.yamamoto@
dresserjapan.co.jp

Korea

Dresser International, S.A
#2015 Kuk Dong Bldg.
60-1, 3-KA, Choongmu-Ro,
Chung-ku, Seoul, Korea 100-705
Tel: 82-2-2274-0792
Fax: 82-2-2274-0794
E-Mail: dkisjlee@chollian.net

Mexico

Dresser Instruments S.A. De C.V.
Mexico Operations
Henry Ford No. 114
Esq. Foulton Fracc.
Industrial San Nicolas
54030 Tlalnepantla,
Edo De Mexico
Tel: (52)55-53-10-72-17
(52)55-53-10-89-83
(52)55-53-10-28-29
(52)55-53-10-28-75
Fax: (52)55-53-10-26-08
E-Mail: mendiet@avantel.net

Saudi Arabia

Dresser Al Rushaid Valve &
Instrument Co. (DARVICO)
P.O. Box 10145
Jubail Industrial City
Saudi Arabia 31961
Tel: 966-3-341-0278
Fax: 966-3-341-7624
E-Mail: bill_dumasia@darvico.com
E-Mail: sam_dastur@darvico.com

Singapore

Dresser Singapore
Instrument Operations
Block 1004 Toa Payoh North
#07-15/17 Singapore 318995
Tel: 65-6252-6602
Fax: 65-6252-6603
E-Mail: john.wong@dresser.com.sg

United Kingdom

Dresser Europe GmbH
East Gillibrands, Skelmersdale
Lancashire, WN8 9TU
United Kingdom
Tel: 44-16-95-52600
Fax: 44-16-95-52693
dresser-instrument.co.uk
E-Mail: sales@dresser-instrument.co.uk

Venezuela

Manufactures Petroleras
Venezolanas (M.P.V.)
KM 7 Carretera A El Mojan Calle 18,
#15B355 ZONA Ind. Norte Sector
Canchancha Maracaibo Edo
Zulia Venezuela
Tel: 58-61-579-762/070
Fax: 58-61-579-461
E-Mail: contactenos@mapvensa.com
E-Mail: ventasmpv@telcel.net.ve



ST-2H Digital Indicator

For Pressure, Temperature,
Voltage and Current
Measurement



ISO 9001
REGISTERED FIRM

DRESSER
Measurement
& Control

BULLETIN ST-2H-1