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sales@hydrorex.com - eli@hydrorex.com Office: 832 277 1182

13360 TELGE RD #606 CYPRESS TEXAS 77429 USA

SP-REX SERIES

HYDROSTATIC UNIT

WITH

DIGITAL CHART RECORDER

Dimensions: 25"L x 12"H x 19"W

Shipping Dimensions: 26"L x 16"H x 23"W

Weight: 60 Lbs Shipping Weight: 85 Lbs

HS Code: 8413.50.5000





Digital Chart Recorder

The world's first Hydrostatic unit with digital chart recorder with a 0.15% accuracy in multiple pressure ranges with customizable test reports in a lightweight yet rugged mobile weatherproof case.

Replace outdated mechanical chart recorders with today's technology at an affordable price. No more paper, pens, or batteries!

The Digital Chart Recorder offers a rugged design against harsh environments with the ease of a Window's operating system. This system utilizes a Digital Pressure Transducer and has been designed to measure, analyze and record pressure directly on the mobile tablet without the need for costly I/O interface boards. It allows the user to measure up to 10 pressure & temperature inputs simultaneously and create customized test reports.





Features and Benefits

- Records and graphs pressure from vacuum to 56,000 PSI. Multiple Pressure ranges available.
- The SP-REX system allows the user to measure up to 9 pressure and temperature inputs simultaneously and create customized terreports.
- Easy setup, configuration and reporting. The software interface allows for real-time pressure and temperature recording using a 10" anti-glare touchscreen tablet.
- Easy Software Interface for Real-Time Pressure & Temperature Monitoring & Reporting
- Digital test report shareable via USB and wireless
- Bulkhead connections available in NPT or High Pressure.
- Light Weight Design (10 lbs.)
- 110 V Female Connection for standard Shop Power (220V Available)



SP-REX Series





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The transducer adjustable sample rate enables dynamic pressures to be measured with up to 21 bit resolution at user selectable speeds up to 1,000 Hz. For real-time analysis, data transferred to the PC is achieved without loss of accuracy or bandwidth. Data can be displayed in graphical or tabular form, with a choice of pressure units and fully adjustable scales. Data can be saved to a file or exported to Excel/PDF. The unique Silicon-on-Sapphire sensor technology provides outstanding performance and gives excellent stability over a wide temperature range. Excellent measurement accuracy provides high resolution with a precision greater than 1 in 10,000.

ТҮРЕ	SP-REX MODELS						
Sensor Technology:	Silicone-on-Sapphire						
Windows Tablet	10.1" Display with Touchscreen Interface						
Standard Pressure Ranges:	 0 to 1,000 PSI - SP-1000REX 0 to 3,000 PSI - SP-3000REX 0 to 6,000 PSI - SP-6000REX 0 to 10,000 PSI - SP-10000REX 0 to 15,000 PSI - SP-15000REX 0 to 20,000 PSI - SP-20000REX 0 to 28,000 PSI - SP-28000REX 0 to 40,000 PSI - SP-40000REX 0 to 56000 PSI - SP-56000REX 						
Overpressure Safety:	2x up to 6,000 PSI; 1.5x for 15,000 PSI; 1.1x for 21,500 PSI; 1.5x for 30,000 PSI; 1.25x for 60,000 PSI+						
Other Pressure Ranges:	PSI, bar, mBar, MPa, Pa, mH2O, mmHg, atm, kg/cm2, kPa						
Accuracy NLHR:	$\leq \pm 0.15\%$ of span BFSL						
Temperature Ranges:	°F or °C						
Operating Ambient Temperature:	32°F to +115°F						
Storage Temperature:	-4°F to +140°F						
Temperature Effects:	±1.5 %FS total error band for -14°F to +176°F. Typical thermal zero and span coefficients ±0.015 %FS/ °C						
Pressure Media:	All fluids compatible with Stainless Steel (¼" NPT) or Titanium Alloy (¼" HPF)						
Wetted Parts:	¼" NPT – Stainless Steel 316¼" HPF – Titanium Alloy						
Pressure Connection:	1/4" NPT or 1/4" High Pressure Female (1/4" HPF) / F250C						

PRESSURE TRANSDUCER USED ON SP- REX SERIES

QSI Genspec[®]GS4200-USB USB POWERED DIGITAL PRESSURE TRANSDUCER



DESCRIPTION

The GS4200-USB© Digital Pressure Transducer has been designed to measure, analyse and record pressure directly on your computer without the need for costly I/O interface boards. It allows the user to measure up to 16 pressure inputs simultaneously and easily create customised test certificates.

The transducer is powered by the computer's USB port, data is then presented on the PC via the ESI-USB© configurable Windows Interface software supplied with the transducer. It has instant connection with auto-detection, and will configure automatically with your desktop or laptop pc via USB protocol. The sample rate enables dynamic pressures to be measured with up to 21 bit resolution. For real-time analysis, data transferred to the PC is achieved without loss of accuracy or bandwidth. This pressure transducer is USB 1.1 and USB 2.0 compatible, the ESI-USB© interface configuration and analysis software is compatible with Windows© 8, Windows© 7 (32bit & 64bit), Vista, XP & 2000. Data can be displayed in graphical or tabular form, with a choice of pressure units and fully adjustable scales. Data can be saved to a file or exported to Excel or Word (automated report generator).

The unique Silicon-on-Sapphire sensor technology provides outstanding performance and gives excellent stability over a wide temperature range. Excellent measurement accuracy provides high resolution with a precision greater than 1 in 10,000. Pressure ranges are available from 2.5bar to 4000bar (0-30psi to 60,000psi). Each unit is supplied with ESI-USB© software, 2m USB lead rated to IP68 and a convenient carry case.

SILICON-ON-SAPPHIRE SENSOR TECHNOLOGY

- PRESSURE RANGES -1-2.5bar to 0-4000bar (Vac-30psi to 0-60,000psi)
- ACCURACY 0.15% NLHR
- AUTO DETECTION AND CONFIGURATION
- USB 1.1 AND USB 2.0 FULL SPEED COMPATIBLE
- ESI-USB© SOFTWARE SUPPLIED
- 2m USB CABLE & CARRY CASE INCLUDED
- MEASURES UP TO 16 INPUTS SIMULTANEOUSLY
- CREATE CUSTOMISED
 TEST CERTIFICATES
- INCLUDES BUILT-IN
 TEMPERATURE MONITORING









PRESSURE RANGES GS4200-USB

Range (bar/psi)		Order Code	Range (bar/p	Order Code	
-1-2.5 bar	(Vac-30 psi)	02.5	0-2000 bar	(0-30,000psi)	2000
0-16 bar	(0-200 psi)	0016	0-3000 bar	(0-43,500 psi)	3000
0-100 bar	(0-1,500 psi)	0100	0-4000 bar	(0-60,000 psi)	4000
0-400 bar	(0-6,000 psi)	0400			
0z-1500 bar	(0-20,000 psi)	1500			

DIMENSIONS (in mm)



ELECTRICAL CONNECTION/OPTION

2 metre A to USB mini B lead PROCESS CONNECTION 1/4" BSP male thread 1/4" NPT male thread 9/16" x 18 UNF-2B F250C Autoclave (2000bar + /30,000psi+) EXAMPLE 2 metre A to USB mini B lead Pressure range 0-100barg (0-1,500 psi) Pressure connection 1/4" NPT male Correct Part Number

For options not listed contact sales team

DISCLAIMER : ESI operates a policy of continuous product development. We reserve the

right to change specification without prior notice. All products manufactured by ESI are calibrated using precision calibration equipment with traceability to international standards.

GS4200-USB Order Code AB AM DE Order Code GS4200-USB

Order Code

GS4200-USB 0100 AM GS4200-USB0100AM

GENSPEC

SPECIFICATION

PRESSURE REFERENCE

Gauge (default). Absolute reference input by user.

OVERPRESSURE

Pressure can exceed rated range by the multiple shown below with no damage or change in calibration above $\pm 0.5\%$ FS.

2x for ranges up to 400bar	(6,000 psi)
1.5x for 1500bar	(20,000 psi)
1.5x for 2000bar	(30,000 psi)
1.25x for 4000bar	(60,000 psi)

OUTPUT SIGNAL

USB 1.1 and USB 2.0 full speed connection.

RECALIBRATION

Fully configured and re-calibrated via PC software, including pressure unit selection linearity and temperature compensation adjustment.

SUPPLY VOLTAGE

5Vdc via USB bus.

ACCURACY (NON LINEARITY, HYSTERESIS & REPEATABILITY)

±0.15%FS Typical Max. Best fit straight line.

PRESSURE MEDIA

All fluids compatible with titanium alloy.

RESOLUTION

Up to 21 bit pressure measurement.

OPERATING TEMPERATURE RANGE

 Ambient/Media:
 -20°C to +85°C

 Media:
 -50°C to +125°C

 Storage:
 +5°C to +40°C

-20°C to +85°C (-4°F to +185°F) -50°C to +125°C (-58°F to +257°F) +5°C to +40°C (41°F to +104°F)

ELECTROMAGNETIC CAPABILITY

Certification: CE marked

PRESSURE CONNECTION

1/4" NPT male, 1/4"BSP male or F250-C (Autoclave)

ELECTRICAL CONNECTION

Mating to USB Mini B socket for cable connection to PC. Supplied with 2m USB lead rated to IP68 as standard.



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AIR DRIVEN PUMP

SC-Hydraulic Engineering pumps 10-5 Series have been used in Hydrorex SP-REX series, air driven operated require 80-100 Psi of air supply.

When operating from 0 to rated hydraulic pressure, air consumption will be approximately **22 SCFM** of free air at 100 psi output. At lower air pressures and higher hydraulic pressures, air consumption will be reduced proportionately to flow rates indicated.



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Measurements &	Approximate /	Air to Hydraulio	c Pressure Ra	tios – Static C	conditions
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SP-REX Series R Model	Ratio	Hydraulic Piston Diameter (in)	Volume per Stroke (in3)	Output Port Size	Air Pressure (PSI)									
					10	20	30	40	50	60	70	80	90	100
SP-1000REX	10:1	1.1875	1.390	1/4" FNPT	80	180	280	375	475	575	675	770	870	1000
SP-3000REX	30:1	0.6250	0.384	1/4" FNPT	300	675	1050	1450	1800	2175	2525	2875	3225	3000
SP-6000REX	55:1	0.5000	0.245	1/4" FNPT	500	1040	1620	2200	2750	3340	3850	4475	5000	6000
SP-10000REX	105:1	0.3750	0.138	1/4" FNPT	950	1850	2900	3800	4850	5900	6875	7900	8900	10000
SP-15000REX	140:1	0.3125	0.096	1/4" FNPT	1300	2700	4150	5700	7100	8600	9900	11200	12600	15000
SP-20000REX	195:1	0.2500	0.061	1/4" FMP	2100	4400	6750	8750	11250	13250	15250	17500	19750	20000
SP-28000REX	280:1	0.2180	0.047	1/4" FHP	3400	6000	8500	12400	14600	17000	20900	23500	26900	28000
SP-40000REX	440:1	0.2500	0.061	1/4" FHP	5000	8000	12500	16500	21000	25500	34000	38000	42500	40000
SP-56000REX	555:1	0.2187	0.048	1/4" FHP	6250	12500	18750	25000	31250	37500	47500	51250	55000	56000

SP-REX SERIES APPROXIMATE RATE OF DISCHARGE







SP-REX SERIES APPROXIMATE RATE OF DISCHARGE







SP-REX SERIES

APPROXIMATE RATE OF DISCHARGE



Liquid Pump Cut-a-way









MANUFACTURER'S OPERATING INSTRUCTIONS

series - Serie SP-REX

HYDROSTATIC UNIT WITH DIGITAL RECORDER

Prior to testing any high pressure line, please check all connections, hoses and fittings to assure that they are properly tightened and in good working order. No frays, tears, or cuts. REQUIRED: Air compressor capable of 60-100 PSI.

Liquids: Water, Hydraulic, Oils, Glycol and many more.



CONNECTING THE PUMP

1. Connect the output pressure hose provided. Position the Test Pump within 8 feet of test environment. 2. Connect the air line from the compressor to the inlet port on the combination

regulator/air filter.

NOTE: AIR FILTER SHOULD BE DRAINED OF ANY WATER OT DIRT PARTICLES BEFORE, AND AFTER USE. Drain valve is located on the bottom of the filter body.

OPERATING THE PUMP

1. Open your liquid inlet ball valve

2. Open the return/bleed valve on the control panel or your test line to bleed off excess air.

NOTE: this should be done several times during test cycle.

3. Start the your air shop compressor.

4. Turn on the Digital pressure chart recorder.

How to use the software follow the instructions of digital chart recorder manual provided

5. Once the compressor has reached operating pressure 100 psi (This will give maximum operating output) open the air valve on control panel slowly, which will allow the air to flow to the regulator.

6. Adjust the air regulator, Pull up on the black knob and turn clockwise to increase pressure, or counter-clockwise to decrease pressure. Once the inlet air pressure is set, push down on the knob to lock it in place.

7. Start turning regulator clockwise, pressure will begin building as soon as air flows. When desired test pressure

has been met, close the outlet needle valve to isolate test environment (Isolation valve on control panel). To turn off pump while testing, turn regulator counter clockwise and decrease or stop air flow, or disconnect air compressor supply.

If a pressure drop is indicated, check the following:

- a. Output hose connection at pump.
- b. Output hose connection at test line.

c. Leaking test line or air in the test environment.

8. When you are done with the hydrostatic pressure test run, release the pressure open slowly the needle valve on control panel (Pressure Release).

If the pressure gauge remains constant, turn off air ball valve and monitor gauge for your prescribed test time. When test is complete, open the pressure release valve located on control panel, Bleed off the liquid pressure. Repeat the above steps for multiple lines. Be sure the air pressure gauge reads zero before disconnecting the air line from the pump.



LIMITED WARRANTY

SC a Hydrorex manufactured products are warranted free of original defects in material and workmanship for a period of 6 months y from date of purchase to first user. This warranty does not include packing, seals or failures caused by lack of proper maintenance, incompatible fluids, foreign materials in the air media, in the fluid media or application of pressures beyond catalog ratings. Products believed to be originally defective may be returned, freight prepaid, for repair and/or replacement to the distributor, authorized service representative or to the factory. If upon inspection by the factory or authorized service representative and the problem is found to be originally defective material or workmanship, repair or replacement will be made at no charge for labor and materials, F.O.B. the point of repair or replacement. Permission to return under warranty should be requested prior to shipment. A Return Material Authorization Number (RMA), the original purchase date, purchase order number, serial number, medel number, reason for return or other pertinent data to establish warranty claim must be included in the documentation to expedite the return or replacement to the owner.

If the unit has been disassembled, misused, or altered without prior **written** authorization, warranty is void. If it has been improperly reassembled or substitute parts have been used in place of factory manufactured parts, warranty is void.

Any modification to any HYDROREX system or products which you have made or may make in the future will void warranty. SC disclaims any and all liability obligation, or responsibility for the modified product, and for any claims, demands or causes of action for damage or for personal injuries resulting from the modification and/or use of such a modified SC & HYDROREX systems and products.

SC's obligation with respect to its products shall be limited to replacement, and in no event shall SC be liable for any loss or damage, consequential or special, of whatever kind or nature, or any other expense which may arise in connection with or as a result of such products or the use or incorporation thereof in a job. This warranty is expressly made in lieu of all other warranties of merchantability and fitness for a particular purpose. No express warranty and no implied warranties whether of merchantability or fitness for a particular purpose or otherwise, other than those expressly set forth above, shall apply to SC products.