DATAGRAPH VX

sixth sense

## TOUCHSCREEN PAPERLESS VIDEOGRAPHIC RECORDING AND DATA ACQUISITION

Rapidly changing processes often necessitate a high sampling rate in order to provide a detailed data record. With a maximum record rate of 8 samples per second, the Sixth Sense Datagraph VX series provides high speed storage for applications with rapidly changing process variables such as pressure and flow.

The VX series is available with a vivid 5.6" color display or a more economical 5.0" monochrome display. It offers 2, 4, 6, or 12 direct universal inputs as dc voltage, dc current (with external shunt resistor), 9 different types of thermocouples, 6 types of RTD's, or dry contact (event input).

Fast sampling capability calls for high capacity storage. The VX answers the call with the optional compact flash memory card drive (64 million samples max. storage). Recording a single input at 8 samples/second, a 1.44MB floppy diskette would fill in about one day of continuous recording. Contrast that to a 128MB compact flash memory card, which would last over 88 days under the same recording conditions.

In addition to the RS-232 and RS-485 communication options, the VX can alternatively provide an ethernet port (10Base T) so data can be transferred over LAN/WAN using the optional Companion or Guardian software.

Featuring an easy-to-use touchscreen programming interface and an IP65 rated bezel, the VX paperless chart recorder is the solution to applications requiring fast data acquisition, low channel count and low-cost.
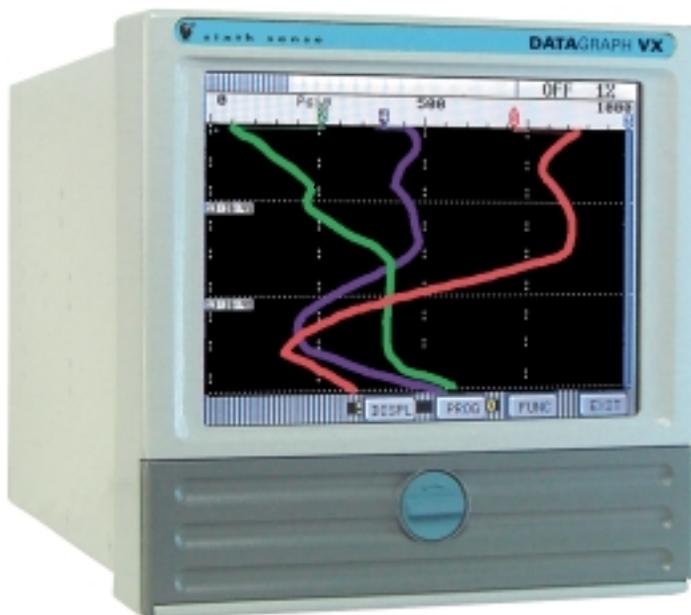
FEATURES

- **High Speed Sampling**

  Record as many as 8 samples per second — ideal for recording process signals that change quickly, such as pressure

- **Brilliant Color Display**

  The 5.6" active matrix TFT touchscreen display is the largest in its class. With the special anti-glare coating, the viewability is second to none

- **Economical**

  Available in a low-cost 2 input, monochrome display version

- **High Capacity Storage Option**

  For recording large amounts of data choose the compact flash card drive option for a maximum storage capacity of 128 megabytes

- **Communications**

  Use the optional RS-232C comm port and a modem to access and download data remotely. The RS-485 option allows installation of the VX into an existing Modbus network or you can connect up to 31 units in series. Connect to LANs and WANs with the ethernet port option; TCP/IP protocol means you can transfer data over the Internet

- **15-Channel Recording Capability**

- **Two-Year Warranty**

  Protects you against factory defects

SPECIFICATIONS

GENERAL SPECIFICATIONS

POWER REQUIREMENTS	100 to 240V AC ±10%, 50/60Hz, 125V DC, 17 watts max. Optional 24V DC ±15%
POWER FAIL PROTECTION	Programmed parameters stored in non-volatile memory. Clock battery backed. Retention time without power > 12 months. Chart and alarm browse buffers preserved
EMC COMPLIANCE	Meets or exceeds EMC 89/336/EEC

DISPLAY

DISPLAY TYPE AND RESOLUTION	Monochrome: CCFL backlit STN LCD, 240 x 128 pixels, 5.0". Color: CCFL backlit active matrix TFT LCD, 320 x 240 pixels, 5.6"
DISPLAY MODES	Graphics (trending, vertical, or horizontal), bar graphs, large digital display, alphanumeric alarm and event data, or combinations on a split screen
VIRTUAL CHART SPEED	Programmable: 0.5 inch/hour to 600 inch/hour. Chart speed is independent of storage rate
VIRTUAL CHART SCALES	2 sets of 8 scales
DISPLAY WINDOWS	Time/date, graphics (bars, large digital, trends), disk status, system status, menu button bar, Unit ID, alarms/events

INPUT AND ACCURACY

INPUT SIGNALS	Thermocouple: J, K, T, E, R, S, B, C, N RTD: 10Ω Cu, Pt100 (385, 392), Pt200 (385, 392), 120Ω Ni, 1000Ω Ni DC Voltage: ±150mV, ±1.25V, ±2.5V, ±12.5V, ±25V; linear, square root, and logarithmic DC Current: 0 to 20mA, 4 to 20mA, 10 to 50mA with external 50Ω shunt resistor
INPUT ACCURACY	Voltage: ±0.05% of programming range Current: ±0.1% using external shunt resistor Thermocouple: ±1.5°C for J, K, T, E, N. ±3°C for R, S, C. ±4°C for B RTD: 0.2% or 0.5°C
INPUT CAPACITY	2, 4, 6, or 12
SCAN RATE	All points scanned every 125ms

RECORDING

RECORDING RATES	User programmable for each channel from 8 samples per second to 1 sample every 600 seconds (10 minutes). Data stored in non-volatile RAM and recorded periodically to internal removable media
FORMAT	MSDOS compatible file system. Proprietary binary format for data security. User file naming
STORAGE CAPACITY	3-1/2 inch floppy diskette: approximately 700,000 samples for a 1.44 megabyte diskette. Flash memory cards: approximately 64 million samples for a 128 megabyte card

FILE TYPES	Up to 15 point (data) files*, Alarm and Event file, Configuration file. Multiple files of different names on a single disk. Full media format and verify capability

FEATURES

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TOUCH SCREEN	Touch sensitive screen for simplified programming and easy operation
MATH PACKAGE*	Algebraic equations (basic math, powers, roots, natural and base 10 logarithms, exponentiation), peak monitoring, differentials, true moving averages, time averages, gated timing, conditionals (Boolean logic), totalization, logarithmic scaling. 15 programmable constants
BUFFER	Internal 1 MB buffer memory enables real time browsing of historic chart data independent of recorded data; Allows user to "hot-swap" media while record mode is active
FILE BROWSE	Browse trend data of any data file on removable media or browse data in buffer memory, even with the unit in record mode. User can search trend data by time, date or signal value
ALARM/EVENTS	User defined alarm points and input events can be saved to an alarm/event table and, if desired, recorded on diskette and routed to a contact closure. Five programmable alarms per channel.
IP65 BEZEL	Front bezel rated for use in wet and dusty environments

OPTIONS

ALARM CONTACTS	3 or 6 isolated form C, 3 amp @ 250VAC or @26V DC; SSR, 0.5 amp @ 30VDC
REMOTE INPUTS	Three isolated inputs, user selectable as dry contact or 5-12V DC activated. Inputs share a common. Configurable for chart speed control, record on/off, record rate selection, alarm acknowledge/reset, event markers, totalizer reset.
COMMUNICATIONS	Serial: ESD protected RS-232 with full hand shaking. Supports modem, or Isolated RS-485 port. Serial Protocol: MODBUS RTU or MODBUS ASCII. Ethernet: 10BaseT. Unit may be remotely configured (using Companion Software)
PRINTER PORT	Parallel printer port, DB25 female

OPERATING AND STORAGE CONDITIONS

OPERATING TEMPERATURE	5 to 40°C (Floppy Disk) -10 to 50°C (PCMCIA Card or flash card drive)
OPERATING HUMIDITY	10% to 80% RH non-condensing
SAFETY & CONFORMITY	UL (3111-1), C-UL (IEC1010-1) CE low voltage directive 73/23/EEC. Complies with EN 61010-1

Number of channels available for calculations = 15 - (# of direct inputs)
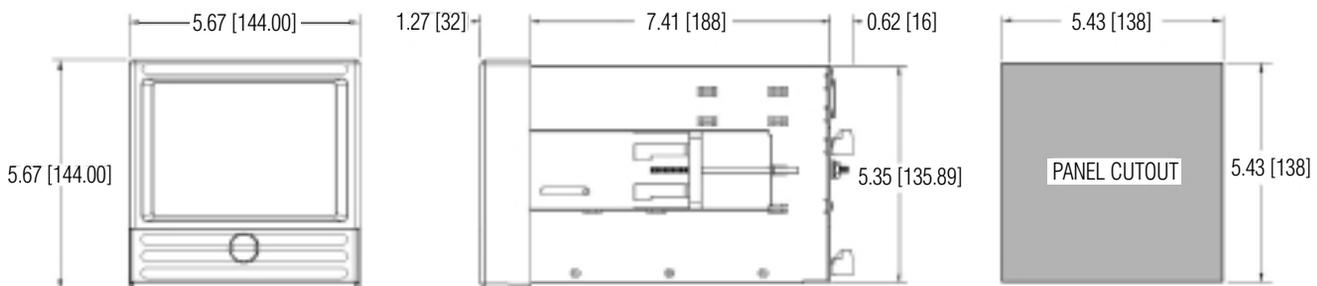
DIMENSIONS ARE IN INCHES [MM]   Weight: 7 lbs.
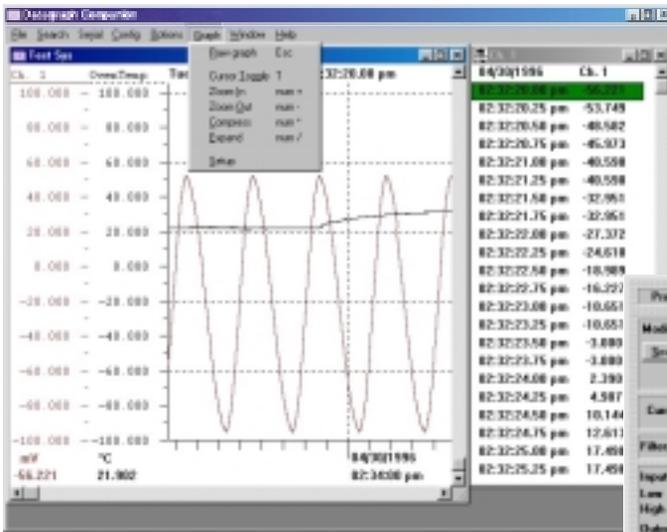
DATAGRAPH SOFTWARE

FREE GETDATA Software

Every Datagraph recorder is shipped with a free copy of GETDATA software. This Windows™-based utility program is required to translate the proprietary structure of the recorded data into an ASCII file. Any program that can read an ASCII file can then be used to view the recorded information (programs such as Excel, Lotus 1-2-3, etc.).

Optional Companion Software

The optional COMPANION software is a powerful and intuitive Windows-based application program that allows you to monitor real time data in digital format, or review previously recorded data in graphical (trend) or tabular format. Data files can be transferred from Datagraph recording media to your local hard drive and then reviewed. A user can quickly search files for specific events, link alarm and event files to trended data, print trend or tabular information, and export files to spreadsheet applications such as Excel. The COMPANION software can easily generate Datagraph configuration files, which can then be saved to recording media or transferred directly to the recorder via communication lines (RS-232, RS-485 and Ethernet).

The real power of the COMPANION software is when it is used in conjunction with a serial communications link with the Datagraph recorder. Users can monitor, configure and control up to 31 recorders with the RS485 MODBUS option or control remote locations via a MODEM link to the recorder RS-232 interface. Whatever the application, the COMPANION software puts you in complete control.

Optional Guardian Software

GUARDIAN software allows real-time monitoring of Datagraph VX series recorders using modbus protocol over an Ethernet connection. Data is displayed within the program windows in bar-chart or pen-trending format. The GUARDIAN software also allows the user to record data simultaneously to a PC hard drive. Sampling rates are from two per second to one every 10 minutes.
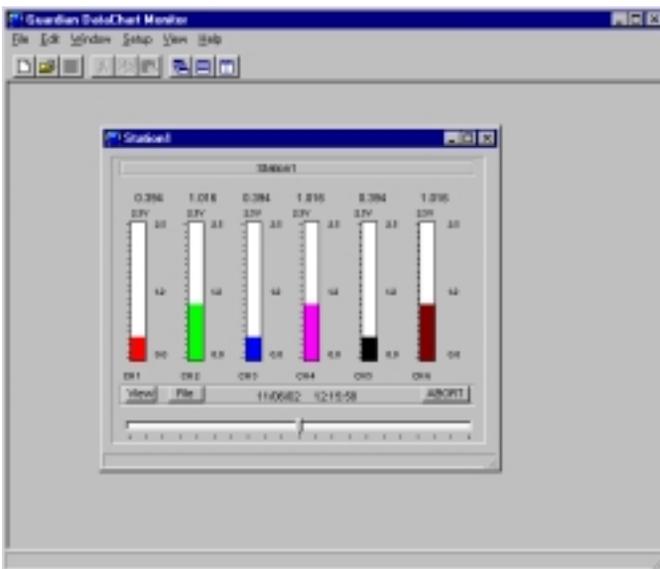
DATAGRAPH VX ORDERING INFORMATION

| V | X | A | A | – | B | B | – | C | D | E | F | G |

To create an ordering code fill in the boxes above with the appropriate number and/or letter from the corresponding box below.

Box A: Base Instrument

M2	= 2-channel monochrome	$ 1,395
M4	= 4-channel monochrome	1,495
M6	= 6-channel monochrome	1,595
M12	= 12-channel monochrome	1,895
C2	= 2-channel color	1,995
C4	= 4-channel color	2,095
C6	= 6-channel color	2,195
C12	= 12-channel color	2,495

Box B: Input Power

A1	= 100–240V AC	N/C
A2	= 100–240V AC, ST *(screw terminal power connect)*	25
D1	= 24V DC *(screw terminal power connect)*	225

Box C: Data Storage — Removable

0	= 3-1/2" Disk drive *(standard)*	N/C
3	= Compact Flash Card Drive	N/C

Box D: Data Storage — Internal

0	= 1 MB RAM *(standard)*	N/C
1	= 2 MB RAM	$ 150

Box E: Output/DI Options

0	= None	N/C
1	= 6 Relay Outputs / 3 Digital Inputs	295
2	= 3 Relay Outputs / 3 Digital Inputs	195
3	= 6 Solid State Relays / 3 Digital Inputs	295
4	= 3 Solid State Relays / 3 Digital Inputs	195

Box F: Communications

0	= None	N/C
1	= RS-485/RS-232	150
2	= Ethernet	150

Box G: Printer Port

0	= None	N/C
1	= Parallel Port	150

ACCESSORIES

CR-3	Compact flash card reader. (Plugs into PC USB port)	$ 125
SW-3T	*Companion* software for record configuration, data file transfer, storage, printing, and export to spreadsheets, etc. (RS-232, RS-485 and Ethernet)	199
ASSY SHUNT 50	50Ω External shunt resistor (0.1% accuracy). One required for each current input requiring 0.1% accuracy.	4.25
MANUAL	Datagraph Manual (One w/ each unit at no charge)	50
MC32MB	32 Megabyte Memory Card	120
MC64MB	64 Megabyte Memory Card	155
MC128MB	128 Megabyte Memory Card	192
GUARDIAN	Software for remote unit monitoring and local data recording (via Ethernet only)	149
SP-0324	24V DC, 3W DIN rail mount power supply	69
PI-EXT	Frequency/Pulse Input Modules (0-10V output), DIN Rail Mount	150