

DATAGRAPH II SERIES VIDEOGRAPHIC RECORDER

HIGH RESOLUTION 6.1" SCREEN WITH 18 CHANNELS AND PLUG & PLAY I/O

The Datagraph II is the newest, most advanced paperless recorder available. It is ideal for monitoring, recording, and evaluating processes in a variety of applications, including: laboratory, chemical, petrochemical, semiconductor, automotive, food & beverage, and environmental monitoring.

The Datagraph II is the first modular paperless recorder that allows for up to 18 analog inputs or a mix of analog and digital I/O cards. Other industry-leading features include: high-resolution color display (640 x 480 pixels), infrared detector for prolonged display life, plug & play I/O card, shallow unit depth, and user-friendly interface. The low-voltage and bench-top kit options also make the Datagraph II ideal for portable applications.

Multiple display formats and easy-to-access keys make monitoring and setup extremely easy. Data can be stored in flash ROM, on a compact flash card, or on a PC via RS232/422/485 or Ethernet options. The Datagraph II meets UL, CSA, and CE approval standards.



Panel Mounted Style



Bench Mount — Portable Style

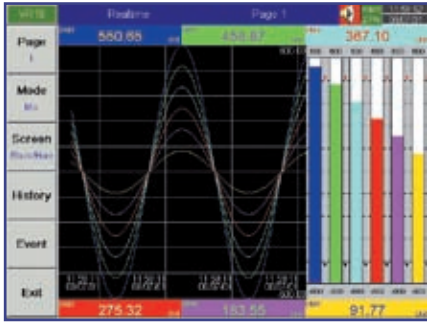
KEY FEATURES

- **6.1" Color TFT LCD with 640x480 pixels resolution**
- **18 Isolated Analog Input Channels**
- **Plug & Play I/O Cards, 6 Slots**
- **High Flexibility**
User configurable I/O card; Expandable modular architecture; Flexible screen configuration
- **User-Friendly**
Soft keys coupled with interactive dialog simplify setup & operation procedures; Easy-to-access function keys
- **Auto LCD Shut Off**
Infrared detector shuts off LCD automatically to prolong LCD life and save power
- **Compact**
Only 6.9" (174 mm) depth behind panel
- **Various Display Formats**
Vertical trend, Horizontal trend, Bar Graph, Numerical or mixed
- **Data saved on Compact Flash Card or download directly to PC**
- **Ethernet Interface Standard**
Optional RS-232/422/485
- **High Accuracy**
18-bit A-D analog input, 15-bit D-A analog output
- **Fast Sampling Rate**
Within 200 msec for all channels; Programmable Filter or Moving Average Sampling Method
- **Math Function Option**
Statistics with instant, average, min./max. values
- **Programmable Alarms and Messages available**
- **Portable/Bench-Top Assembly Kit available**

DATAGRAPH II, CONTINUED

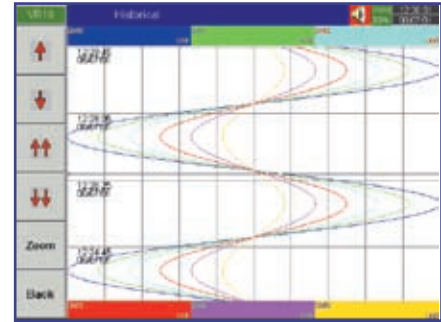
DATAGRAPH II SPECIFICATIONS

Mixed Mode



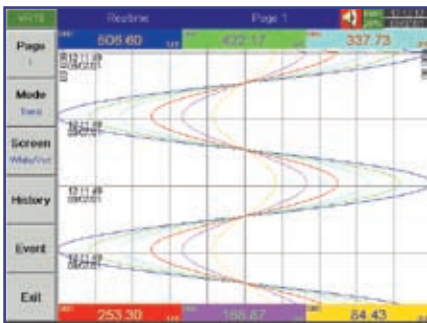
- View a maximum of 6 mixed real-time data trends horizontally
- Display data in Bars and Digits together with Mixed Trends
- Recognize data trends easily by different colors and names
- Switch to other configured pages easily by "Page" function key
- Display current "Date/Time" information
- Remind the user of "Alarm" or "Disk full"

Historical Mode



- Display a maximum of 6 sets of historical data simultaneously
- View desired data section by "↑" and "↓" function keys
- Access precise data value at a point selected by moving the ruler
- "Zoom" to expand/contract the display time span
- View historical data trends and their respective data values

Trend Mode



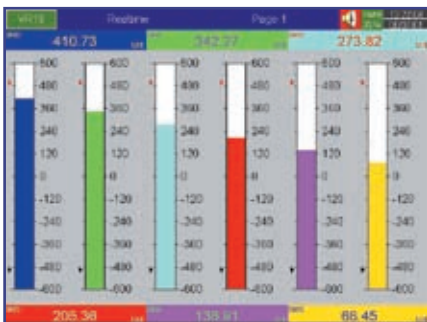
- View a maximum of 6 mixed real-time data trends vertically
- Recognize data trends easily by different colors and names
- Switch to other configured pages easily by "Page" function key
- Display current "Date/Time" information
- Remind the user of "Alarm" or "Disk full"

Alarm Mode

Act	Type	Alarm	Actual Time	Clear Time	Status
3	Event	SMV06	2001/07/12 21:57	2001/07/12 22:30	Cleared
4	LoAlarm	SM6	2001/07/12 21:41	2001/07/12 22:44	Cleared
5	LoAlarm	SM10	2001/07/12 21:41	2001/07/12 22:44	Cleared
6	LoAlarm	SM10	2001/07/12 21:41	2001/07/12 22:44	Cleared
7	LoAlarm	SM10	2001/07/12 21:41	2001/07/12 22:44	Cleared
8	LoAlarm	SM10	2001/07/12 21:41	2001/07/12 22:44	Cleared
9	LoAlarm	SM10	2001/07/12 21:41	2001/07/12 22:44	Cleared
10	LoAlarm	SM10	2001/07/12 21:41	2001/07/12 22:44	Cleared
11	LoAlarm	SM10	2001/07/12 21:41	2001/07/12 22:44	Cleared
12	LoAlarm	SM10	2001/07/12 21:41	2001/07/12 22:44	Cleared
13	LoAlarm	SM10	2001/07/12 21:41	2001/07/12 22:44	Cleared
14	LoAlarm	SM10	2001/07/12 21:41	2001/07/12 22:44	Cleared
15	LoAlarm	SM10	2001/07/12 21:41	2001/07/12 22:44	Cleared
16	LoAlarm	SM10	2001/07/12 21:41	2001/07/12 22:44	Cleared
17	LoAlarm	SM10	2001/07/12 21:41	2001/07/12 22:44	Cleared
18	LoAlarm	SM10	2001/07/12 21:41	2001/07/12 22:44	Cleared
19	LoAlarm	SM10	2001/07/12 21:41	2001/07/12 22:44	Cleared
20	LoAlarm	SM10	2001/07/12 21:41	2001/07/12 22:44	Cleared
21	LoAlarm	SM10	2001/07/12 21:41	2001/07/12 22:44	Cleared
22	LoAlarm	SM10	2001/07/12 21:41	2001/07/12 22:44	Cleared
23	LoAlarm	SM10	2001/07/12 21:41	2001/07/12 22:44	Cleared
24	LoAlarm	SM10	2001/07/12 21:41	2001/07/12 22:44	Cleared
25	LoAlarm	SM10	2001/07/12 21:41	2001/07/12 22:44	Cleared
26	LoAlarm	SM10	2001/07/12 21:41	2001/07/12 22:44	Cleared
27	LoAlarm	SM10	2001/07/12 21:41	2001/07/12 22:44	Cleared
28	LoAlarm	SM10	2001/07/12 21:41	2001/07/12 22:44	Cleared
29	LoAlarm	SM10	2001/07/12 21:41	2001/07/12 22:44	Cleared
30	LoAlarm	SM10	2001/07/12 21:41	2001/07/12 22:44	Cleared

- List all the alarm records clearly with useful information
- Browse through the alarm list or acknowledge alarm easily by function keys on the vertical bar
- Remind the user of alarm status in different colors

Bar Graph Mode



- View a maximum of 6 mixed real-time data trends in Bar Graphs
- Scan individually
- Display data value and name in different colors
- Mark "Hi/Lo" alarm limits

Configuration Mode

Pen	Type	SetPoint	Job1	Job2
1	H	500.00	LogAlarm	NoAction
2	L	500.00	LogAlarm	NoAction

- Configure pen (input/output, pen name, event, job, etc.)
- Configure page (color, pen, decimal, pen width, etc.)
- Configure timer
- Configure instrument (storage media, display, communication, time/date, etc.)

DATAGRAPH II, CONTINUED

DATAGRAPH II SPECIFICATIONS

ANALOG INPUT

RESOLUTION	18 bits
SAMPLING RATE	5 times/second
MAXIMUM RATING	-2 VDC minimum, 12 VDC maximum
TEMPERATURE EFFECT	±1.5 $\mu\text{V}/^\circ\text{C}$ for all inputs except mA input ±3.0 $\mu\text{V}/^\circ\text{C}$ for mA input
SENSOR LEAD RESISTANCE EFFECT	T/C: 0.2 $\mu\text{V}/\text{ohm}$ 3-wire RTD: 2.6 $^\circ\text{C}/\text{ohm}$ of resistance difference of two leads
BURN-OUT CURRENT	200nA
INPUT TYPES	J, K, T, E, B, R, S, N, L, PT100 (DIN), PT100 (JIS), mV, mA, 0-1V, 0-5V, 1-5V, 0-10V
ACCURACY	J, K, T, E, N, L: ±1 $^\circ\text{C}$; B, R, S: ±2 $^\circ\text{C}$; Pt100 (DIN), Pt100 (JIS): ±0.4 $^\circ\text{C}$ mV, mA, 0-1VDC, 0-5VDC, 1-5VDC, 0-10VDC: ±0.05%

DIGITAL INPUT

CHANNELS	6 per card
LOGIC LOW	-30V minimum, 0.8V maximum.
LOGIC HIGH	2V minimum, 30V maximum
EXTERNAL PULL-DOWN RESISTANCE	1KOhm maximum
EXTERNAL PULL-UP RESISTANCE	1.5MOhm minimum

DIGITAL OUTPUT

CHANNELS	6 per card
CONTACT FORM	N.O. (form A) .
RELAY RATING	5A/240 VAC, life cycles 200,000 for resistive load

COMMUNICATIONS

INTERFACE	RS-232 (1 unit), RS-485 or RS-422 (up to 247 units)
PROTOCOL	Modbus Protocol RTU mode
ADDRESS	1-247
BAUD RATE	0.3-38.4 Kbits/sec.
DATA BITS	7 or 8 bits
PARITY BIT	None, Even or Odd
STOP BIT	1 or 2 bits

STANDARD ETHERNET COMMUNICATION

PROTOCOL	Modbus TCP/IP, 10 BaseT Auto polarity correction for 10 BaseT
PORTS	AUI (Attachment Unit Interface) and RJ-45 Auto-detect capability

INFRARED DETECTOR

DISTANCE	Detect moving human body within 2 meters
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GENERAL SPECIFICATIONS

POWER	90-264VAC, 47-63Hz, 60VA, 30W maximum 11-18 or 18-36 VDC 60VA, 30W maximum
DISPLAY	6.1" TFT LCD, 640X480 pixel resolution, 256 colors
MEMORY	Storage Memory on board: 8MB. CF Card: 16MB standard. Optional 64,128MB
OPERATING TEMPERATURE	5 $^\circ\text{C}$ to 50 $^\circ\text{C}$
STORAGE TEMPERATURE	-25 $^\circ\text{C}$ to 60 $^\circ\text{C}$
HUMIDITY	20 to 80% RH (non-condensing)
DIELECTRIC STRENGTH	3000VAC, 50/60 Hz for 1 minute
VIBRATION RESISTANCE	10-55 Hz, 10m/S ² for 2 hours
SHOCK RESISTANCE	30m/S ² (3g) for operation, 100g for transport
DIMENSIONS (WxHxD)	166 x 144 x 174mm (6.54" x 5.67" x 6.85") for panel mount; 166 x 192 x 194mm (6.54" x 7.56" x 7.64") for Bench top
PROTECTIVE CLASS	IP 30 front panel, indoor use, IP 20 housing and terminals
EMC	Emission: EN50081-1, EN61326 (EN55011 class B, EN61000-3-2, EN61000-3-3) Immunity: EN50082-2, EN61326 (EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11, EN50204)

APPROVAL STANDARDS

SAFETY	UL873 (11th edition, 1994) CSA C22.2 No. 24-93 CE: EN61010-1 (IEC1010-1)
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DATAGRAPH II, CONTINUED

DATAGRAPH II ORDERING INFORMATION

V **G** **1** **8** - **A** **B** **C** **D** - **E** **F** **G** - **H** **I** **J**

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

Box A: Power

4 = 90-250 VAC, 47-63 Hz	N/C
6 = 11-18 VDC	N/C
7 = 18-36 VDC	N/C

Box B: Analog Input Card

1 = 1 channel	1599
2 = 2 channel	1629
3 = 3 channel	1699
4 = 4 channel	1799
5 = 5 channel	1899
6 = 6 channel	1999
A = 9 channel	2199
B = 12 channel	2299
C = 15 channel	2399
D = 18 channel	2499

Box C: Digital Input Card

0 = None	N/C
1 = 6-channel	160
2 = 12-channel	320

Box D: Digital Output/Relay Card

0 = None	N/C
1 = 6 relay	160
2 = 12 relay	320

Box E: Communication

0 = Standard Ethernet interface	\$ N/C
1 = RS232/422/485 (three in one) + Ethernet interface	90

Box F: PC Software

1 = Free basic software Observer I for non-communication application	N/C
2 = Extensive software Observer II for communication via RS-232/422/485 or Ethernet	100

Box G: Firmware

0 = Basic function	N/C
1 = With Mathematics, Counter & Totalizer	200

Box H: Storage Media

1 = 16MB Compact Flash card (CF)	N/C
2 = 64MB CF card	70
3 = 128MB CF card	95

Box I: Case/Mounting

1 = Standard panel mounting	N/C
2 = Bench top/portable style with handle	130

Box J: Special Option

0 = None	N/C
1 = 24VDC auxiliary power supply (for transmitter, 6 inputs)	125

Notes:

- The recorder is built with 6 rear slots. These slots and a combination of input/output cards restrict the ordering code above. For example, 12-channel analog input requires 4 slots fitted with 3-channel analog input card, VG18-AI3, leaving 2 empty slots for other I/O cards.
- The basic PC software Observer I is supplied free with the recorder. There is an additional charge for the extensive PC software, Observer II (VG18-SW2), for use with RS-232/422/485 or Ethernet communications option.

FIELD INSTALLABLE I/O OPTIONS

VG18-AI1	1-channel analog input card	\$ 100
VG18-AI2	2-channel analog input card	180
VG18-AI3	3-channel analog input card	230
VG18-DI6	6-channel digital input card	160
VG18-DO6	6-channel relay output card	160

OPTIONAL ACCESSORIES

VG18-CR	PC card reader	\$ 100
VG18-PK	Portable handle assembly kit	130
VG18-64CF	64 megabyte Compact Flash Card	100
VG18-128CF	128 megabyte Compact Flash Card	150
VG18-SW2	Extensive Software, Observer II	100