Dash 18®
Operations Manual

Part Number: 22834-474

Manual Version 2.4
Software Version 2.1

09/04
Specifications are subject to change without notice

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Appendix A: Specifications

Color Display

Type	Active matrix color LCD (TFT) with 15.4" viewing area
Resolution	1280 x 1024
Touch	Full screen, resistive
Functions	User interface with touch-based icons and menus; Real-time waveform monitoring; Review previous waveform records while recording; Overlay numeric values in Engineering Units

Signal Modules

Number of Modules	Up to 3
Number of Channels	Maximum of 18

Standard Event Inputs

Number of Inputs	8
Connector	D-shell (9 pin)
Input Type	TTL with pull up (0 to 5 V)
Response	Detects if duration > 0.01 msec

Real-time Signal Processing

Filters	Low Pass Stops: 10 Hz to 10,000 Hz; High Pass Starts: 0.1 Hz to 100 Hz; Notch: 50 or 60 Hz center
RMS	Time constant selectable from 0.002 to 2 seconds
Frequency to Voltage	5 Hz to 20 kHz, ± 0.05 % of measurement + 0.1 Hz
Cross Channel	Sum, Difference, Ratio, Product (Power)

Real-time Signal Testing

Basic	All active signals monitored simultaneously
Test Types	Tests include window, slope/level, slew and event pattern
Outputs	Result available for alarms, trigger, abort and external TTL

Data Capture

Recording Method	Internal 9 or 18 GByte hard drive
Max. Sample Rate	100,000 samples/second each channel (all channels)
Min. Sample Rate	1 sample/minute
Dual Sample Rate	Second slower rate available
Total Capacity	Over 4 billion samples
Maximum Record	2 billion samples
Header	Information on units, range, sample rates, etc. saved with data
Events	All standard event inputs captured with waveforms
Trigger Point Lock	Amount of pre- and post-trigger is user adjustable
Auto Re-Arm	Allows automatic stacking of captures
Ext. Sample rate	External TTL sample clock to 40,000 Hz Rates approaching 100 KHz can be used if up to a 10-microsecond jitter is acceptable.

Signal Conditioner Specifications (SM-U)

General Specifications (all input types unless specified otherwise)

Channels per module	6
Isolation	250 Vrms (iso-common to chassis and other iso-commons)
Bandwidth	12 kHz (-3 dB)
Input Coupling	DC
User Engineering Units	Yes
Calibration	Semi-automated to external reference
Input Type	Overvoltage Category II, Pollution Degree 2

Single-ended Voltage Input

Connector	Guarded banana jack
Max Rated Input	± 250 Vrms
Max Transient Input	± 400 V
Specified Ranges	40 to 400 VFS; 4 to 40 VFS; 0.4 to 4 VFS
Accuracy (25 °C)	± 0.5% of attenuator
Intrinsic Noise	Less than .1% of attenuator.
Min Input Impedance	1 Megohm

Differential Voltage Measurements (use for bridge measurements)

Input Type.....Isolated, differential
Connector.....Screw Terminal Header
Absolute Max Input.....± 40 V differential
Measuring Ranges.....200 to 1600 mVFS; 50 to 500 mVFS; 5 to 50 mVFS
Accuracy (25°C).....± 0.5% of attenuator
Min Input Impedance.....200 KOhm
CMR at 60 Hz.....> 60 dB
Intrinsic Noise.....+/- 0.1% of attenuator (100 Hz LPF on 50 mV attenuator)
Auto Balance.....Yes (limited by maximum span)

Thermocouple Measurements

Input Type.....Isolated, differential with Screw Terminal Header Connector
Absolute Max Input.....± 40 V
Specified Range.....Type J: 0 to 760 °C;
Type K: 0 to 1370 °C;
Type T: -160 to 400 °C;
Type E: -100 to 870°C;
Type N: 0 to 1300°C
Accuracy (25°C)..... 0.5% of measurement +2 °C
Bandwidth.....10 Hz (-3 dB)
Intrinsic Noise.....0.5 °C (1 Hz filter)
Linearization.....NIST polynomial
Units.....°C or °F

Excitation

Connector.....Screw Terminal Header
Excitation.....Isolated 10 V @ 20 mA
Adjustable.....0.1 to 10.1 V

Frequency Measurements

[illegible].....Zero-crossing, channels 1, 7 and 13 only
[illegible] Amplitude.....Peak to peak minimum is 20% of attenuator
[illegible].....Yes

Removable Drive

Type ..... 250 MB Zip
Format ..... MSDOS® format
Function ..... Setup files, software upgrades, data transfer/archive

Power

Input Voltage Range ..... 102 to 264 VAC
Frequency Range ..... 47 Hz to 63 Hz
Power Consumption ..... 300 W maximum, 130 W typical w/o printer

Compliance

Safety ..... EN 61010-1, UL 61010A-1 1st Edition, CSAC 22.2 No. 1010. 1-92
EMC ..... FCC Part 15, Subpart B, Class A, EN61326:1998, Class A
Power Harmonics IEC1000-3-2

Physical

Enclosure ..... Aluminum
Dimensions ..... 14.6" L x 13.9" W x 6.4" H
Weight ..... 27 lbs

Environmental

Operating Temp ..... 5 to 40 °C (40 to 105 °F)
Non-operating Temp ..... -20 to 60 °C (-4 to 140 °F)
Operating Humidity ..... 10% to 95% non-condensing

Optional Chart Recorder

Chart Width ..... 11"
Max. Chart Speed ..... 50 mm/sec

Optional DC Input Power

Input Range ..... 9 - 18 V
Input Power ..... 200 W max
Fuse ..... User replaceable 25 A