SENSLOG - Handheld Display

Battery-powered Touchscreen and Logger for High-Precision Measurements from mV/V, VDC, and mA Sensor Inputs

FEATURES

- Supports mV/V, VDC, and mA inputs including industry standard current ranges (0-20, 4-20, 0-25, an 5-25 mA)
- TEDS support for automatic sensor recognition
- 13 user customizable sensor profiles for quick switching between sensor setups
- High-resolution 6-digit 5" display[9] with selectable decimal point
- Log up to 16 sessions with more than 2.7 million points each
- Provides 12 selectable ADC sampling rates ranging from 2.5 to 4800 SPS
- ASCII Streaming for system integration
- Rechargeable battery with extended runtime and USB-C Charging
- Supports multiple calibration methods including live, manual, dual scaling, and 2-point, with advanced multi-point calibration available via SENSIT Calibration Software
- Fault Detection Alerts Available
  - Open and Short Circuit Warnings
  - Low Memory Slots Warning
  - Temperature Out of Range Warning
  - 24 V Power Supply Error
- ¼"-20 Mounting Hole
- Portrait and Landscape Display Orientation[10]
- Active Protection against ESD, Overcurrent, and Overvoltage Events
- Digitally Controllable 24 V Amplified Sensor Excitation

SPECIFICATIONS

GENERAL

Item Number	FSH04438
Data Logging	2,790,000 points per log
Profile Storage	17 profiles (3 reference profiles[3], 13 user customizable profiles, and 1 TEDS profile)
Sampling Rate	Up to 4800 SPS (See NFR tables)
Bandwidth	Up to 1077 Hz (See NFR tables)
Internal Resolution	32 Bits
On Chip Memory	64 Kb
Stored Calibration	Up to 22 points per profile
Weight	1.32 lb (0.60 kg)
Material	Aluminum enclosure
IP Rating	IP64

STRAIN GAUGE mV/V INPUT

Differential Input Range	Up to ± 16 mV/V (FDR[2])
Non-linearity[1] (Max)	± 0.002% of FSR[4]
Min/Max Bridge Resistance	87.5 to 5000 Ω
Bridge Excitation	5 VDC (Fixed) at ~60 mA (Max)
Resolution (Noise Free)	Up to 20 bits (See table)
Reading Error	0.15% of Reading

VOLTAGE INPUT

Amplified Voltage Input	Up to ± 12 VDC (FDR[2])
Non-linearity[1] (Max)	± 0.002% of FSR[4]
Amplified Sensor Excitation	24 VDC (Fixed) at ~100 mA (Max)
Resolution (Noise Free)	Up to 22.1 bits (See table)
Reading Error	0.06% of Reading

CURRENT INPUT

Amplified Current Input	Up to 30 mA (FDR[2])
Non-linearity[1] (Max)	± 0.004% of FSR[4]
Amplified Sensor Excitation	24 VDC (Fixed) at ~100 mA (Max)
Resolution (Noise Free)	Up to 18.8 bits (See table)
Reading Error	0.04% of Reading

CONNECTORS

USB-C	Charging and Communication (Charger Kit Part Number: FSH04926)
Mating Connector	12-Pin Sensor Binder Mating Connector

[1] Note 1: Nonlinearity calculated at 2.5 SPS
[2] Note 2: FDR (Full Dynamic Range)
[3] Note 3: The 3 reference profiles are mV//V, VDC, and mA. These profiles are set by the manufacturer and cannot be changed by the user.
[4] Note 4: The Full Scale Range (FSR) is 5 mV/V for mV/V output, 10 V for VDC output, and 16 mA for mA output.

ANSI Z540-1   ISO 17025   ISO 9001   ISO 13485   U.S. Manufacturer

12 PIN BINDER CONNECTOR

PIN	FUNCTION	DESCRIPTION
A	+ E	+ Excitation
B	+ S	+ Signal
C	– E	– Excitation/TEDS Return (Ground[6])
D	– S	– Signal
E	TEDS	TEDS Data
F	24V	On-Board Amplified Sensor Excitation
G[5]	GND/Shield	Ground[6]
H	N/C	Not Connected
J	– V/mA	– Amplified Input (Ground[6])
K	+ V/mA	+ Amplified Input
L	N/C	Not Connected
M	N/C	Not Connected

[5] Note 5: Shield can be connected to Ground and should be grounded on one end, either the sensor side or the SENSLOG connection side. All grounds are internally connected.

[6] Note 6: All grounds are internally connected
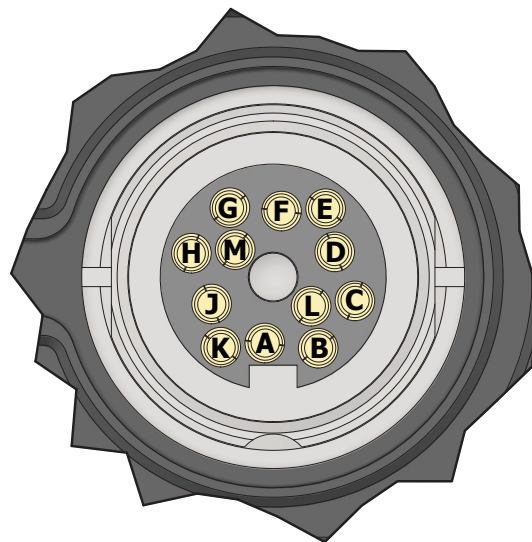
SPECIFICATIONS continued

ENVIRONMENT

Operating Temperature	Charging: 32 to 113°F (0 to 45°C) Discharging: 14 to 131°F (-10 to 55°C)
Storage Temperature	-4 to 140°F (-20°C to 60°C)
Temperature Coefficient	10 ppm/°C of FDR[2] (mV/V and VDC) 25 ppm/°C of FDR[2] (mA)

CONFORMITY

RoHS	2011/65/EU
CE	EN IEC 61326-1:2021, FCC 15.107:2024, FCC 15.109:2024, FCC 15.109(g):2024, ICES-003:2020, VCCI-CISPR 32:2016
UN	UN38.3
IEC	IEC 62133-2:2017IEC 62133-2:2017/AMD1:2021

DISPLAY

Display size	5.0 in (127 mm)
Resolution	800 × 480 pixels
Display type	TFT IPS (In-plane switching)
Brightness	900 cd/m²
Blacklight Color	White
Touch Panel	Capacitive (TPC) with Gorilla glass and optical bonding

BATTERY[7]

Battery Type	Rechargeable Lithium-ion Polymer (LiPo)
Nominal Capacity	5000 mAh (5Ah)/ 36 Wh
Charge Current	2 A
Continous Discharge Current	2 A
Battery Runtime (3 W Load)	Up to 13 hours
Battery Runtime (no Load)	Up to 40 hours
Battery Charge Time (no Load)	Up to 5 hours

TEDS

Compatibility	ISO/IEC/IEEE 21451-4:2010/TEDS
Supported TEDS Devices	DS2431, DS24B33, & DS28EC20
Supported Cable Length	Up to 30 ft (9.14 m)
Supported Templates	30 and 33

ASCII PARAMETERS[8]

Data	8 Bits
Baud Rate	1,000,000 bps
Parity	None
Stop	1 Bit
Flow Control	None
Format	Data, Unit, LF

[7] Note 7: Default settings are 2.5 SPS, display off, 50% brightness, 100% contrast, mV/V profile with amplified sensor excitation off, datalogging turned off, and may vary based on device set up and connected offload.
[8] Note 8: ASCII streaming feature is auto-enabled upon startup. This feature only works for sampling rates up to 1200 SPS and is auto-disabled for higher sampling rates
[9] Note 9: Auto dimmer time out is always 50% of screen saver setting
[10] Note 10: Landscape orientation is available only on select pages

NOISE FREE RESOLUTION (Amplified Input)

SPS	NFR Voltage Input (bits) ±10 V	NFR Current Input (bits) 16 mA	Bandwidth (Hz)
2.5	21.4	18.8	0.58
5	21	18.1	1.15
10	20.7	17.8	2.28
16.6	20.4	17.4	3.80
20	20.2	17.2	4.63
50	19.7	16.8	11.40
60	19.3	16.7	13.70
100	18.9	16.3	22.80
400	18.1	15.4	91
1200	16.9	14.1	273
2400	16.2	13.7	544
4800	15.9	12.9	1077

NOISE FREE RESOLUTION (mV/V)

SPS	NFR (bits) ±5 mV/V	Bandwidth (Hz)
2.5	20	0.58
5	19.2	1.15
10	18.6	2.28
16.6	18.3	3.80
20	18.1	4.63
50	17.5	11.40
60	17.4	13.70
100	17.1	22.80
400	16.2	91
1200	15.3	273
2400	14.6	544
4800	14	1077

COMPATIBILITY

SYSTEM	NOTES
Software	Programming Platforms: DLL file available for programing support, such as LabVIEW, Visual Studio, and Xcode. Support Operating System: Windows 10 and 11.

AVAILABLE ACCESSORIES

ITEM #	DESCRIPTION
FSH04926[11]	Charger kit (USB-C)
GOD02975[12]	12-Pin Sensor Binder Mating Connector
FSH04877 / FSH04878	FUTEK's SENSIT® Software 14 Day Trial - Available to download on FUTEK website. A license is required, per seat, after 14 days to benefit the features such as data logging, graphing, etc. Trial version turns into basic read-out ONLY after 14 days and a product key is required to enable the features.

[11] Note 11: FSH04926 is the manufacturer certified kit. The usage of this kit is highly recommended to ensure validity of conformity, battery performance, and all specifications stated in this spec sheet.
[12] Note 12: Search 99 5129 00 12 on FUTEK.com for additional cable mating options

DIMENSIONS inches [mm]

USB C
Charging LED Indicator[13]

12 Pin Input Connector

Power ON/OFF Button

5.00 [127.0]

6.46 [164.2]

Model: IHH505 Pro
S/N: 1234567

4.00 [101.6]

(2.00 [50.8])

1.22 [31.1]

1.33 [33.7]

(.62 [15.6])

1/4-20 UNC - 2B ▼ .30 [7.6]

[13] Note 13: LED Indicator Behavior:
Device ON
• Solid orange LED: Charging
• LED OFF: Fully charged or no charger connected

Device OFF
• Solid orange LED: Charger connected (LED stays ON regardless of charge level)

Drawing Number: FI1584-B

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