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FUTEK Model CSG110

General purpose 35mm DIN rail amplifier module, DC powered, universal strain gauge signal conditioner



NOTABLE FEATURES

- 1 kHz, 10 kHz, and 25 kHz bandwidth available
- DIP switches for easy setting adjustments
- Overvoltage protection
- Reduced noise from 100 mV to 15 mV (85% improvement from previous version)
- Designed and manufactured in U.S.A.

SPECIFICATIONS

- Bipolar Output, Differential Input
- ±5 or ± 10 VDC DIP Switch Selectable Output, Unipolar Bidirectional Voltage (0-5-10 VDC) also available
- 0–20 mA, 4–20 mA, 0–16 mA, 5–25 mA DIP Switch Selectable Output, Bidirectional Current (4-12-20 mA) also available
- Bridge Excitation Selectable: 5 or 10 VDC
- Ranges: 0.5, 1.0, 1.5, 2.0, 2.5, 3.0, 4.0, 10.0 mV/V (DIP Switch Selectable)
- Interchangeable Socket Mounted 60.4K Shunt Cal
- Externally Accessible Shunt Cal Activation Button
- Externally Accessible Span and Offset potentiometers
- Sensor Polarity Reversal DIP Switch
- Weight: 1.6 oz (45 g)

FUTEK's newly improved CSG110 Strain Gauge Amplifier is an In-Line instrument tooled for any full-bridge strain gauged sensor with a mV/V output. The CSG110 Amplifier provides a Voltage and/or Current output via its built-in regulated bridge excitation source. With several models available, users are sure to find an amplifier matching their specific requirements whether it calls for a bandwidth of 1kHz, 10kHz or 25 kHz. FUTEK even manufactures an OEM version (FSH01447, FSH01450) of this model. The CSG110 is both designed and manufactured in the USA.

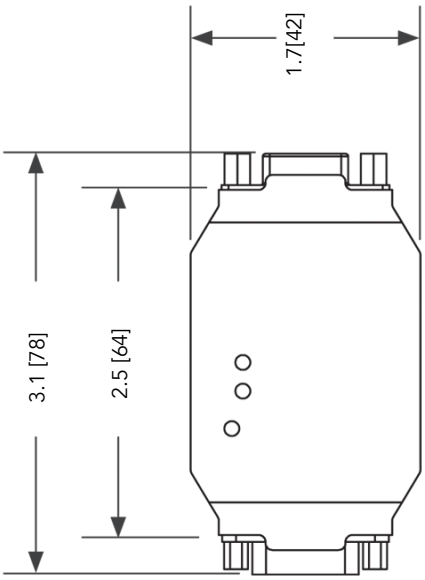
Broadened Bandwidth
FUTEK has now broadened the bandwidth of their CSG110 by adding a 10kHz and 25kHz version of the model to their repertoire. This allows the amplifier to cover a greater scale of applications, making the CSG110 the perfect one-stop-shop for your amplification needs.

Multiple Outputs
Unlike many amplifiers, FUTEK's CSG110 provides the user with multiple output variations giving the user the option to adjust the output per their application's requirements. The unit's output options are: ±5 VDC, ±10 VDC, 0-20 mA, 4-20 mA, 0-16 mA, 5-25 mA, with zero offset versions available upon request.

DIMENSIONS inches [mm]

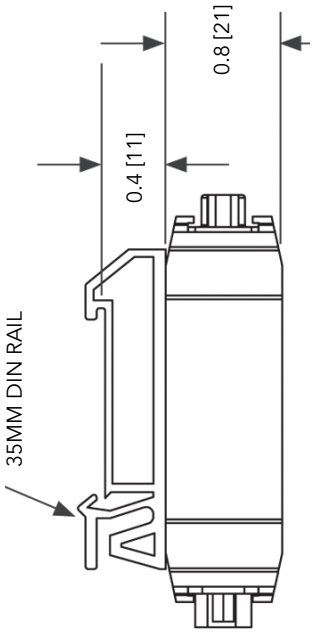
FEMALE







MALE

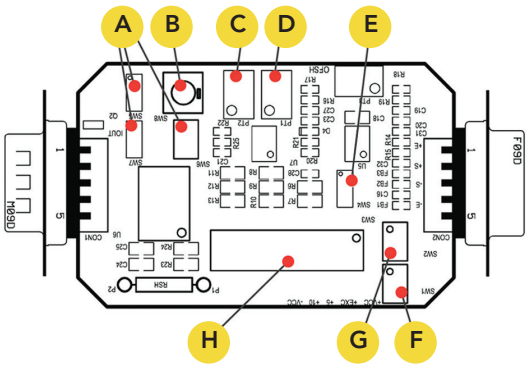


FEMALE DB9 SENSOR SIDE		MALE DB9 POWER SIDE		
PIN #	**WIRING CODE**	**PIN #**	**WIRING CODE**	**CABLE COLOR CODE**
1	+ EXCITATION[1]	9	POWER SUPPLY	RED
2	+ SIGNAL	8	SIGNAL OUT (VOLTAGE)	GREEN
3	– SIGNAL	7	GROUND	ORANGE
4	– EXCITATION[1]	6	GROUND	BLACK
5	GROUND	5	GROUND	N/A
6	GROUND	4	GROUND	N/A
7	GROUND	3	GROUND	N/A
8	GROUND	2	GROUND	BLUE
9	GROUND	1	SIGNAL OUT (CURRENT)[2]	WHITE

[1] For 6 wire sensor connect +SENSE to +EXCITATION and –SENSE to –EXCITATION or Ground
[2] Only available with current output option

A	Current Switches
B	Shunt Button
C	Span Potentiometer
D	Zero Potentiometer
E	Bandwidth Switch
F	Excitation Switch
G	Polarity Switch
H	Gain Switch

MALE



FEMALE

VERSIONS

ITEM #	BANDWIDTH	OUTPUT
FSH01449	1 kHz	±5 VDC, ±10 VDC, 0–20 mA, 4–20 mA, 0–16 mA , 5–25 mA
FSH03546[3]	1 kHz	±5 VDC, ±10 VDC
QSH00602[4]	10 kHz	±5 VDC, ±10 VDC, 0–20 mA, 4–20 mA, 0–16 mA , 5–25 mA
QSH01498[5]	25 kHz	±5 VDC, ±10 VDC, 0–20 mA, 4–20 mA, 0–16 mA , 5–25 mA
FSH03676	1 kHz	0–2.5-5 VDC , 0–5–10 VDC, 4–12–20 mA

OEM Version Available — Contact Factory

[3] For FSH03546: Min. Power Supply is 12.5 VDC
[4] Only for sensitivity of 1 mV/V or greater
[5] Only for sensitivity of 1.5 mV/V or greater

ENVIRONMENT

PARAMETER	MIN	MAX	UNIT
Operating Temperature	32	158	°F
	0	70	°C
Storage Temperature	–40	185	°F
	–40	85	°C

Relative Humidity: 95% at 100°F (39°C)
IP Rating: IP31

ELECTRICAL SPECIFICATIONS

PARAMETER	MIN	TYPICAL	MAX	UNIT
Power Supply[6]	14		26	VDC
Current Draw[7]		30		mA
Output Impedance (voltage)		< 1 Ohms		Ohms
Output Impedance (current)			700	Ohms
Sensor Impedance	100			Ohms
Bandwidth	1000		25000	Hz
Common Mode Rejection Ratio	120			dB
Noise		15		mV p-p
Output Span Range	–10		10	% of Rated Output
Output Zero Range	–10		10	% of Rated Output
Gain Drift with Temperature	–25	X	25	PPM of FSR per degree Celsius
Gain Non-Linearity (Better than)	–0.01	X	0.01	% of FSR
Zero Drift with Temperature	–25	X	25	PPM of FSR per degree Celsius

[6] Minimum power supply varies for OEM models
[7] No load applied (input or output)

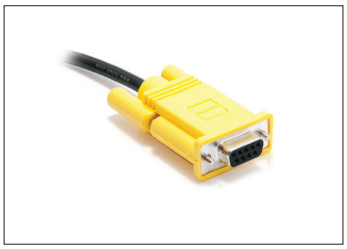
NOTES

- Adjusting zero will not affect calibration
- Adjusting span will affect calibration
- Power supply must source 150 mA minimum
- Carefully remove cover to access DIP switches

WARNING: DO NOT CONNECT DEVICE TO POWER SUPPLY WHEN POWER SUPPLY IS ALREADY ON

RELATED ACCESSORIES

The following accessories are readily available with our CSG110 Strain Gauge Amplifier. Please visit www.futek.com for full details on these items.

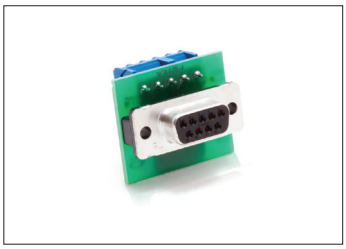


YELLOW MOLDED DB9 FEMALE CABLE ASSEMBLY (INCLUDED)
Item Number: FSH03219

DB9 Female, Yellow Molded Boot, to 26 Awg 6 Conductor Poly Cable, 5 ft Long, CSG110 Power Side



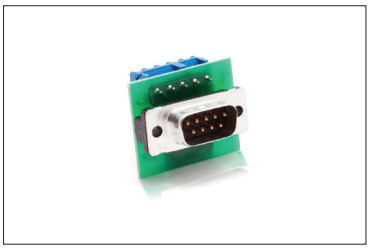
DB9 MALE WITH HOUSING (INCLUDED)
Item Number: FSH01075



SCREW TERMINAL (FEMALE)

Item Number: FSH02237

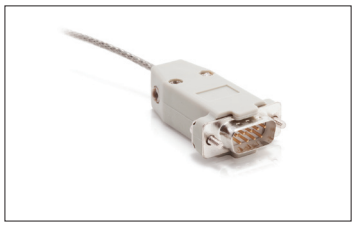
IAC150, Screw Terminal to DB9 Board, DB9 Female, Standard, Power/Output Side of CSG110



SCREW TERMINAL (MALE)

Item Number: FSH02236

IAC150, Screw Terminal to DB9 Board, DB9 Male, Standard, Sensor Side of CSG110



DB9 MALE CABLE ASSEMBLY

Item Number: FSH01129

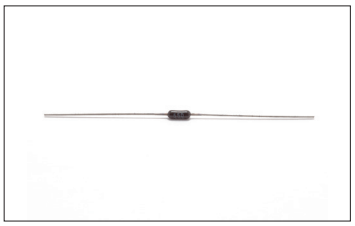
ZCC960, 5 ft Long, DB9 Male to Cable Assembly, Standard, Material - PVC, 28 Awg 4 Conductors, Braided Shielded



POWER SUPPLY KIT FOR CSG110 AMPLIFIER

Item Number: FSH03088

IAC180 , Power Supply Kit for CSG110 , w/ Female IAC150 Screw Terminal Adaptor & 5 ft Long , Standard , Includes 90-264 VAC Input/15 VDC Output Power Supply



SHUNT RESISTOR

Item Number: Visit Website

Multiple Shunt Resistors are available for our CSG110 series. Please visit our website for further details.

TECHNICAL SUPPORT

To access the CSG110 manual and gain setting instructions, visit our support page for detailed instructions: http://www.futek.com/csg/support

Drawing Number: FI1045-Q
FUTEK reserves the right to modify its design and specifications without notice.
Please visit http://www.futek.com/salesterms for complete terms and conditions.

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