

DF10D38**Strain Gage Board Level Signal Conditioner****DESCRIPTION**

The DF10D38 strain gage board level signal conditioning component module offers 1 input channels and can interface to full, half, and quarter bridge sensors using 4-wire or 6-wire connections.

The input channel is configurable for range, alarm limits, and averaging to match the most demanding applications.

High and Low alarms provide essential monitoring and warning functions to ensure optimum process flow and failsafe applications. Hardware lowpass filtering provides anti-aliasing and rejection of unwanted frequencies.

Input-to-Output isolation is a robust 1500Vrms and the input channel is protected against overload in case of inadvertent wiring errors.

The DF10D38 can interface to full bridge, half-bridge (with external bridge completion), or quarter-bridge (with external bridge completion) transducers with a nominal resistance of 100Ω to 2kΩ.

Over-range and under-range up to 2% beyond the specified input values is allowed, and accuracy is guaranteed to these limits.

FEATURES

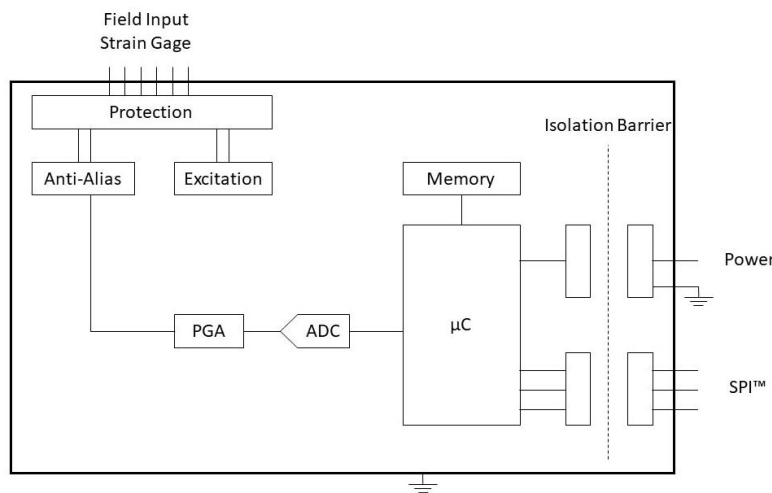
- 1 Input Channel for 4-Wire or 6-Wire Sensors
- Bridge Resistance 100Ω to 2kΩ
- Interface to Full-Bridge Sensors; Half- and Quarter-Bridge Sensors with external bridge completion
- Configurable for Alarms and Averaging
- 24-Bit Resolution
- Excitation, Remote Sense
- 1500Vrms Input-to-SPI™ Isolation
- Protected Against Overload
- Operating temperature: -40°C to +85°C

BENEFITS

- Small footprint
- Simplifies sensor interface and signal conditioning design
- Reduces system BOM
- Provides isolation of external sensors
- Protects sensitive system components
- Breaks ground loops
- Reduces EMC concerns

APPLICATIONS

- Signal Conditioning
- Signal Isolation
- Signal Filtering
- Industrial Process Control
- Test & Measurement
- System & Signal Monitoring



DF10D38 Block Diagram - [For dimensions see page xxx](#)

Specifications

Typical* at T_A = +25°C and +5VDC power

Module	DF10D38-xx
DF10D38-xx	Full Bridge Half, Quarter Bridge with external bridge completion 4-wire or 6-wire connection
Number of Channels	1
Setup	Configurable for alarms and averaging
Input Range	±100mV, 0.8mV/V to 40mV/V Sensitivity
Input Protection	
Continuous	60V
Transient	EN61000-6-2
Excitation Voltage	3.3V, 10V
Bridge Resistance	100Ω to 2kΩ
Shunt Calibration	External
Excitation Protection	
Continuous	60V
Transient	EN61000-6-2
CMV	
Channel-to-Bus	1500Vrms, 1min
Channel-to-Channel	±3V
Transient	EN61000-6-2
CMR	100dB at 50/60 Hz
NMR	60dB/decade
Accuracy ⁽¹⁾	±0.03% Span
Linearity	±0.005% Span
Resolution	24-bit
Stability	
Zero	50ppm/°C
Span	75ppm/°C
Bandwidth	100Hz
Sampling Rate, Simultaneous Alarms	400S/s per channel High, Low
Output	
Resolution	24-bit
Interface	SPI™
Clock Input	5MHz
Power Supply Voltage	+2.8VDC to +5.5VDC
Power Supply Current	100mA
Mechanical Dimensions (h)(w)(d)	TBD" x TBD" x TBD"
Vertical package	(TBDmm x TBDmm x TBDmm)
Horizontal package	TBD" x TBD" x TBD"
(TBDmm x TBDmm x TBDmm)	
Environmental	
Operating Temp. Range	-40°C to +85°C
Storage Temp. Range	-40°C to +85°C
Relative Humidity	0 to 95% Noncondensing
Emissions EN61000-6-4	ISM, Group 1
Radiated, Conducted	Class A
Immunity EN61000-6-2	ISM, Group 1
RF	Performance A ±0.5% Span Error
ESD, EFT	Performance B

NOTES:

*Contact factory or your local Dataforth sales office for maximum values.

(1) Includes linearity, hysteresis and repeatability.

Ordering Information

Model	Channels	Output
DF10D38-01	1 Channel	SPI™