

**DF10D30****Analog Millivoltage Input Board Level Signal Conditioner****DESCRIPTION**

Each DF10D30 millivoltage analog input module interfaces to a wide range of sensors and equipment used in industrial and test and measurement applications which output millivolt level signals.

Each module provides a single channel of analog input which is filtered, isolated, amplified, and converted to 24-bit digital data for precise measurement of voltage signals.

The analog input channel is configurable for alarm limits and averaging to match the most demanding applications. Alarms provide essential monitoring and warning functions to ensure optimum process flow and fail-safe operation. Hardware low-pass filtering provides rejection of 50 and 60Hz power line frequencies.

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

Over-range and under-range up to 2% beyond the specified input values is allowed, and accuracy is guaranteed to  $\pm 0.5\%$ .

The DF10D30 is housed in a vertically standing or horizontal package and is fully specified over the  $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$  temperature range.

**FEATURES**

- Interface to Millivolt Level Signals
- 1 Input Channel
- Configurable for Alarms and Averaging
- 1500Vrms Input-to-SPI™ Isolation
- Protected against Overload
- CE compliant
- 24-Bit Resolution
- Operating temperature:  $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$

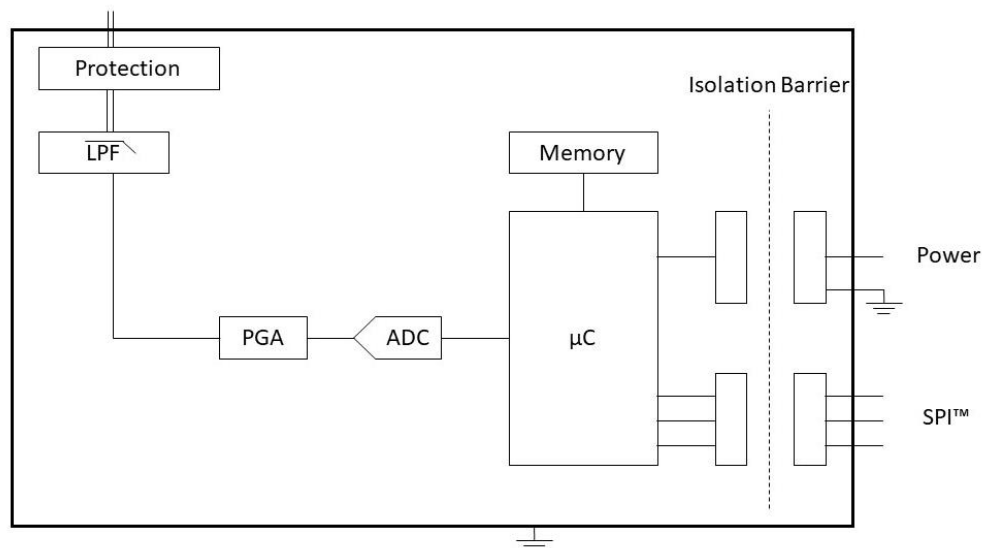
**BENEFITS**

- 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

Field Input  
Input Channel, mV



DF10D30 Block Diagram - [For dimensions see page xxx](#)

## Specifications

Typical\* at T<sub>A</sub> = +25°C and +5VDC power

Module	DF10D30-xxx
DF10D30-xxx	1 input channel, mV
Channel Setup	Configurable for alarms and averaging
Input Range	
DF10D30-01x	±10mV
DF10D30-02x	±50mV
DF10D30-03x	±100mV
DF10D30-04x	±1000mV
Input Protection	TBD Vrms max
Continuous	CE
Transient	
CMV	
Channel-to-Bus	1500Vrms, 1min
Transient	CE
CMR	TBD
NMR	30dB/decade
Accuracy <sup>(1)</sup>	±0.035% Span
Linearity	±0.002% Span
ADC Resolution	24-bit
Stability	
Zero	TBD ppm/°C
Span	TBD ppm/°C
Bandwidth, -3dB	3Hz
Sampling Rate	TBD S/s
Alarms	High, Low
Digital Output	
Resolution	24-bit
Interface	SPI™
Clock Input	5MHz
Power Supply Voltage	+2.8VDC to +5.5VDC
Power Supply Current	TBD mA
Mechanical Dimensions (h)(w)(d)	
Vertical package	TBD" x TBD" x TBD" (TBDmm x TBDmm x TBDmm)
Horizontal package	TBD" x TBD" x TBD" (TBDmm x TBDmm x TBDmm)
Environmental	
Operating Temp. Range	Storage -40°C to +85°C
Temp. Range	Relative Humidity -40°C to +85°C
Emissions EN61000-6-4	0 to 95% Noncondensing
Radiated, Conducted Immunity	ISM, Group 1
EN61000-6-2	Class A
RF	ISM, Group 1
ESD, EFT	Performance A ±0.5% Span Error
	Performance B

## Ordering Information

Model	Channels / Input	Output
DF10D30-01V	1 Channel, ±10mV, vertical	SPI™
DF10D30-02V	1 Channel, ±50mV, vertical	SPI™
DF10D30-03V	1 Channel, ±100mV, vertical	SPI™
DF10D30-04V	1 Channel, ±1000mV, vertical	SPI™
DF10D30-01H	1 Channel, ±10mV, horizontal	SPI™
DF10D30-02H	1 Channel, ±50mV, horizontal	SPI™
DF10D30-03H	1 Channel, ±100mV, horizontal	SPI™
DF10D30-04H	1 Channel, ±1000mV, horizontal	SPI™

### NOTES:

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

(1) Includes linearity, hysteresis and repeatability.