



# DS900 SERIES

5 channel signal conditioner - USB interface



- Small, portable
- 5 Analog inputs
- Integrated amplifier for 3 channels
- USB-output, plug-and-play
- Sensor excitation via USB <sup>(1)</sup>
- Up to 21 bits resolution
- 50 kHz max. sampling rate
- Software included

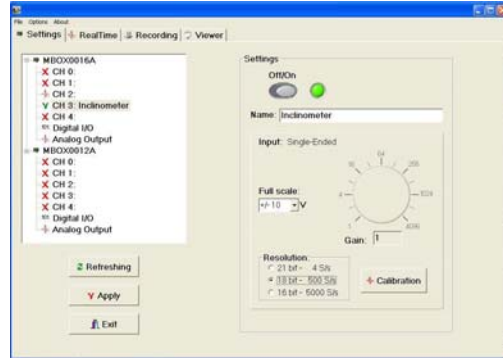
FGP Sensors offers comprehensive measurement solutions including electronic signal conditioning and display units.

Module **DS900** is an all-in-one data acquisition system supplying sensors with power and performing accurate and rapid signal processing, directly to the PC, where readings can be displayed on-line and saved.

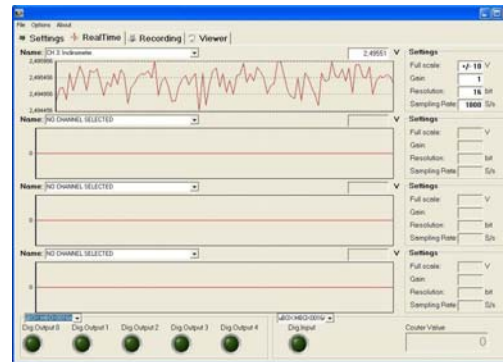
The USB based, plug-and-play connection and easy to use configuration and acquisition software make it simple and fast to set-up the measuring chain, without need for additional amplifiers or converters. With its small size and being powered by the PC, the DS900 is ideal for laboratory use as well as on-site testing.

Offering 5 data channels, resolution up to 21 bits and one high speed channel with a 50 kHz sampling rate, the system adapts to a wide range of demanding applications.

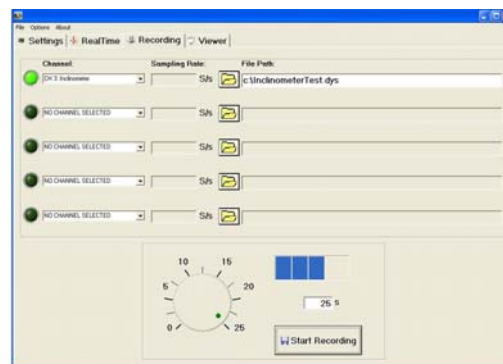
## Setup...



## Read-out...



## Acquisition...



Analog Inputs	Resolution	Sampling Rate	Input Range	Analog Output	32 bits Counter
3	21 bits	4,5 kS /s max.	±1 mV...±5 V, 0-5 V	1	1
1	21 bits	4,5 kS /s max.	±10 V, 0-5 V, 0-10 V		
1	10 bits	50 kS /s max.	0-5 V		

<sup>(1)</sup> depending on power consumption. Otherwise external power supply (refer to option CMC).

## Technical Specifications

### Analog Input

Number and Type of Channels : 3 (differential), 1 (single-ended), 1 (10 bits)  
Gain : Programmable in steps of 1, 2, 4, 8, 16, 32, 128, 256, 512, 1024, 2048, 4096 (differential channels)  
Input Range :  $\pm 1\text{mV} \dots \pm 10\text{ V}$  (differential), 0-5 V, 0-10 V (single-ended), 0-5 V (10 bits)  
ADC Resolution : 21 bits (10 S/s), 18 bits (500 S/s), 16 bits (4,5 kS/s), 10 bits (50 kS/s)

### Analog Output

Number of Channels : 1  
Output Range : 0-5 V  
Maximum Update Rate : 200 Hz  
Output Current Drive : 10 mA  
Output Impedance : 220  $\Omega$   
Short-circuit Protection

### Digital Output

Number of Channels : 5  
Digital output can be triggered for each channel  
Type : Open-collector  
Compatibility : CMOS, TTL  
Internal pull-up resistor : 4.7 k $\Omega$  to 5 Vdc  
Absolute maximum voltage range : -0.5 to 6 Vdc

### Counter

Number of channels : 1  
Resolution : 32 bits  
Counter Measurements : Edge counting (falling edge)  
Maximum Input Frequency : 5 MHz  
Input High Voltage : 2 Vdc  
Input Low Voltage : 0.5 Vdc

### Electrical Characteristics

Sensor Excitation :	$\pm 5\text{ Vdc}$	$\pm 12\text{ Vdc}$
Maximum Current :	50 mA	100 mA
Accuracy :	0.5 %	11.3 Vcc min., 12.7 Vcc max.
Voltage Reference Temperature Drift :	$\pm 25\text{ ppm / }^\circ\text{C}$	$\pm 100\text{ ppm / }^\circ\text{C}$

Power Requirement from USB port : 4.5 to 5.2 Vdc, 110 mA typical, 500 mA max.  
Power Requirement from external supply : 6 to 10 Vdc, 500 mA typical

### General Characteristics

Dimensions (l x h x d) : 22 x 50 x 80 mm  
Aluminium housing  
Weight : 80 grammes  
Operating Temperature Range : 0 to 55  $^\circ\text{C}$   
Storage Temperature Range : -40 to 85  $^\circ\text{C}$   
Relative Humidity Range : 10% to 90%

### Software

Set-up, read-out and data acquisition in csv format  
Driver for LabView

### Certifications

Safety : IEC 61010-1, EN 61010-1  
EMC : EN 61326, EN 55011

### Product References

#### USB Data Acquisition System

##### Model

DS900

##### Option(s)

CMC : Connection kit including external power supply, 0.5 m cable,  
25-pin shielded clamp terminal <sup>(2)</sup>

CMC



(2) for use with more than one channel

Performance specifications nominal and subject to change without notice. Current specifications see web-site. January 12, 2007

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