DE-916 Isolated Dynamic Signal Test and Analysis System

DESCRIPTION

DE-916 Isolated Dynamic Signal Test and Analysis System is specially designed for accurate capture of transient signals in a strong interference environment.

By means of multi-layer shielding technique, DE-916 effectively eliminate electromagnetic radiation and conduction interference, and ensure the accurate measurement of force, pressure, stress, strain, displacement, velocity, acceleration and other physical quantities

FEATURES

Modular design, expandable to over 500 channels via Ethernet

Individual 16-bit SAR A/D per channel, Multiple channel parallel operation, no interaction between channels

Built-in bridge completion and Excitation

Multi-layer shielding and advanced isolation technology, effectively eliminates electromagnetic noise and conducted interference

Up to 20MHz per channel transient sampling rates and 1MHz per channel continuous sampling rates

a CMRR of greater than 120 dB

Built-in 24V/4mA biasing circuit, used to acquire the output signal of IEPE acceleration sensors and microphones

Built-in Butterworth low-pass filter

DMA real-time data transfer to ensure the high-speed and stable transmission of data without drop-out

Suport EID and TEDS

Input protection and signal state indication

SPECIFICATIONS

Number of input channels	1 channle/card, 8 card slots(19" 3U chassis)
Input Coupling	GND, Dif-DC, Sin-DC, AC, IEPE
Input Impedance	10MΩ/10pF
Input Voltage Range	±0.01V, ±0.02V, ±0.05V, ±0.1V, ±0.2V, ±0.5V, ±1.0V, ±5.0V, ±10.0V
Indication Error	<0.1% of F.S.
Stability	<0.05%/24h
Nonlinearity	≤0.01% of F.S.
Distortion	≤0.5%
Noise	≤8μV_{RMS}
Zero Drift	<3μV/8h
CMV	±500V(DC/AC peak value)
CMR	⩾120dB
Input Strain Range	±1000με, ±10000με, ±100000με
Bridge Excitation	
Bridge Configuration	Full, half, three-wire quarter bridge
Bridge Completion Resistors	120Ω/350Ω(Three-wire quarter bridge) 50Ω~10000Ω(Half bridge/Full bridge)
Bridge Voltage	2V, 5V, 10V, 24V DC Within 0.01%
Current	Max. 50mA
LPF	
Transfer Characteristic:	Butterworth low-pass filter
Cut-off Frequency（-3dB±1dB	300Hz, 1kHz, 3kHz, 10kHz, 30kHz, 100kHz, 300kHz, PASS
Flatness:	<0.1dB Within 2/3 of cutoff frequency
Stop-band Attenuation:	-18dB/Oct.
Communication	Gigabit Ethernet
A/D Converter	16-bit SAR
Freq. Response	DC~1MHz（+0.5dB~-3dB）
Max. Continuous Sampling Rate	1MHz
Max. Transient Sampling Rate	20MHz
Power Supply	100 to 240V AC, 50-60Hz, 100W
Dimensions	482×133×338 mm
Environmental Conditions	
Operating Temperature	-10 to 50°C
Operating Humidity	20~90%RH@40°C
Storage Temperature	- 40 to 60°C
Storage Humidity	90%RH24h@50°C
Vibration	Frequency cycle range: 5~55~5Hz Drive amplitude (peak): 0.19 mm Sweep frequency: ⩽ 1 Oct. / min Duration of resonant: 10min Vibration direction: x, y, z

SYSTEM CONFIGURATION

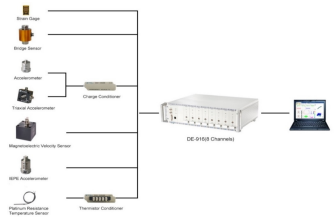

Figure 1 Single system block diagram

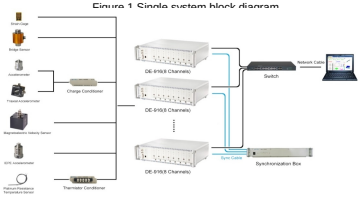

Figure 2 Multi-system block diagram

SOFTWARE

DE-BPS BasicPlatform Software

Running on XP/Win7/Win8/Win10 operating system.

Parameters setting, Function control, Real-time/post-acquisition analysis, data browsing, cursor readouts, scaling curve, data management and simple processing, report generation, long-term continuous data recording, etc..

MODULES / ACCESSORIES

DE-916 DAQ card

1 input channel/Card.
Support DC, AC, GND & IEPE, 1/4 bridge, 1/2 bridge, and full bridge Input.
Input voltage range from ±0.01V to ±10.0V.
Input strain range from ±1000με to ±100000με.
16-bit SAR A/D converter per channel with selectable synchronous continuous sampling rates from 1KHz up to 1MHz per channel.
Selectable synchronous transient sampling rates from 1KHz up to 20MHz per channel.
System uncertainty within 0.1% of F.S..
Frequency response range from DC to 1MHz.
Anti-common mode voltage up to ±500V.

DE-916 Host chassis

CPU based on on-chip system (SOC).
8 Card Slots.
Including control card, Gigabit Ethernet communication Interface.
220V AC, 50-60Hz.

DT5857-8 Charge conditioner(optional)

Max. input charge: 10^5pC
Input Impedance: >10^{11}Ω
Amplifier output sensitivity: 0.1mV/pC and 10mV/pC
Indication error: <1%
Noise: <10×10^{-3}pC
Max. bandwidth: 0.3Hz ~ 1MHz(+0.5dB ~ -3dB)
Distortion: <0.5% (Frequency ≤ 30kHz)

DT3811-8 Current loop conditioner(optional)

1 input channel
Suitable for 2-wire or 3-wire 4~20mA sensor
24V DC power supply

DT3814-8 Thermistor conditioner(optional)

1 input channel.
Suitable for Pt10，Pt100，Pt1000 sensors.
Measuring temperature range from -200°Cto 850°C.
Accuracy: 0.5%±0.5°C
I_{ex}: 1mA±2uA

DE-9-S Signal Source Module(optional)

2 channels / Card
2 irrelevant sources

TM03 Tachometer(optional)

2 input channels.
30r / min ~ 300,000r / min or 5r/min ~ 20,000r/min.
PPR: 1 ~ 512

DT5611A Synchronization box(optional)

8 inputs.
Built-in synchronization clock distributor.
19" 1.5U chassis.

C-1 Cable

1 channel.
Default 5m bare cable or 1.5 m cable with bridge box.