SIDECAR® DATA ACQUISITION UNIT

EXTERNAL SIDECAR® DATA ACQUISITION UNIT ENABLES REAL TIME VEHICLE MAINTENANCE STATUS

The External Sidecar® Data Acquisition Unit* provides access to system test signals without modifications to the system components. The Sidecar® monitors and digitizes up to 120 analog or discrete signals and provides the measurements to a high-speed data bus. The data can be collected and analyzed real-time. There is no interruption or expenditure of system power because the Sidecar® receives its power via the combined data/power Sidecar®cable.

The Sidecar® performs several types of signal sampling on 120 channels, as commanded via the data bus:

- Single Vdc sample
- Periodic Vdc sample
- Fast Vdc sample/waveform analysis

Each Sidecar® broadcasts its data on a Controller Area Network bus (CANbus) per the SAE J1939 or MILCAN Bspecifications, allowing the user to create a highly flexible system.

The system is comprised of a rugged single-board computer with display that evaluates the monitored/ sensed data, dates, and timestamps; stores the data; and communicates diagnostic results in real-time to the vehicle operator and maintainer, as well as off-board to a data analysis center and/or to a whole fleet management system.

Used in conjunction with a Diagnostic Control Assembly (DCA), one or many Sidecars® may be used to complete a Health and Usage Monitoring System (HUMS) that provides vehicle maintenance status, vehicle readiness, and communicates this information to the vehicle operator and commander instantly. Sidecar®optimizes situational awareness and maintains storage of the accumulated vehicle health technical data for further use by the end user, maintainer or the Original Equipment Manufacturer (OEM).

***DRS Test & Energy Management, LLC Patent No. 6,697,763**

Sidecar® Data Acquisition Unit

LEONARDO DRS

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SIDECAR® DATA ACQUISITION UNIT

HIGHLIGHTS

- Built-In-Test (BIT)
- Single Vdc sample
- Periodic Vdc sample
  - 100 mSec or greater period
- Fast Vdc sample/waveform analysis
  - 5 Sec or greater period
  - Calculates frequency, Volts root-mean-square (VRMS), peak to peak, Vdc average
- I2C option using I/O channel
- RS-232 option using I/O channel
- RS-422 option using I/O channel

DATA BUS

- CANbus, SAEJ1939 protocol extended frame format or MILCAN B
- 1 MHz or lower

MEASUREMENT ACCURACY

120 signal/reference inputs available, 8 lines reserved for unique address to the module. Accuracy = +0.01 V

POWER REQUIRMENTS

6 - 32 Vdc	400 mA (max)
Meets	MIL-STD-1275B

Power supply will provide protection against overvoltage, current limiting, reverse polarity, and transients.

PHYSICAL

Length	3.3 inches
Width	6 inches
Height	1.6 inches
Weight	0.9 lb

120 INPUT CHANNELS

Quantity	60 +48 V 1.2M ohm
Voltage Level	40+16 V400K ohm
Input Impedance	20+8 V200K ohm

ENVIRONMENTAL

Operating Temp	-40°C to +60°C
Storage Temp	-55°C to +125°C
Submersible	(LRU version) 1.0m (for 4 hours)
Vibration	4 Gs max to 500 Hz
Shock	200 Gs half sine, 0.5 msec
EMI	MIL-STD-461D

Sidecar® Installed

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