Digital Signal Conditioning and Wireless Control Unit (SCON-1400)

- 850 MHz micro-processor with 256 MB RAM and 2 GB solid state disk.
- 2 kHz maximum loop rate
- Wireless (WiFi) communication
- Adaptive digital servo control with Windows™ interface software.
- Four (4) total strain gage (load cell, Pressure transducer, etc.) and DC (temperature) input channels with 10 VDC excitation voltage.
- Four (4) AC sensors input channel with 3 V_{rms} excitation voltage @ 3 kHz frequency.
- Two (2) 0-5 VDC inputs.
- Four (4) servo proportional control outputs with ±10 volt signal output and 24 VDC supply (1 amp. Maximum). Configurable 16-bit resolution and 325 mA maximum output servo amplifier board to drive servo valves.
- Automatic sensor recognition.
- 16-bit (+/-0.003%) resolution.
- Null and Gain digital control.
- Watchdog timer to detect control program status for automatic interlock shutdown.
- Motor on/off control signal and remote oil temperature and oil level readouts as well as power, motor and filter status feedback.
- Internal & external temperature monitoring.

DESCRIPTION

The SCON-1400 is a digital signal conditioning and wireless control unit. It features an integrated microprocessor based digital servo controller and includes the CATS software. This is a complete and self-contained module featuring built in function generator, data acquisition, and digital I/O unit. Utilizing state-of-the-art Signal Conditioning boards, this system can accept load cells, pressure transducers, LVDTs, or other analog input signals. Each channel features digital offset and gain, 16-bit resolution, and anti-alias filter.

The SCON-1400 is a compact solution for a digital controller of servo controlled systems. It accommodates up to 8 sensor and 4 control outputs. The signal conditioning electronics are fully digital with settings directly manipulated by the software. Different equipment configurations are saved making it very easy to change sensors like load cells or deformation transducers. At the same time, the digital settings are protected from inexperienced users to eliminate accidental modifications to sensor calibrations and amplifications. In addition, the system incorporates automatic sensor recognition that will automatically load the correct sensor setup upon connecting or changing a transducer.

Included with this system is CATS software with a Universal Test module that allows the user to create an unlimited variety of wave forms including user generated profiles such as a digitized earthquake record. The standard system also includes calculated inputs from one or several analog channels that can be directly servo controlled or monitored in real time.