



**DAQ3**

**DATA ACQUISITION SYSTEM**

**GENERAL DESCRIPTION**

The new data acquisition device from Conveyor Dynamics, Inc. is intended for recording signals from mechanical systems and will feature 14 analog inputs, 16 digital inputs and be powered from 24V. Simplicity, ease of use and ruggedness define this new field data acquisition system.

**ANALOG INPUTS**

Each analog input has front end conditioning to accept differential signals, reject high common mode voltage and filter high frequency noise. Signals from industrial mechanical systems are usually less than 100Hz, therefore the filtering attenuates signals at a rate of about 40dB per decade of frequency above this with a high quality, active analog filter to provide clean signals in a noisy environment. The signals are then further conditioned with a high quality instrumentation amplifier to reject any residual common mode voltage.

Analog Channels:	14
Resolution:	16 bits
Sampling Rate:	50,000 samples/second total
Signal Voltage:	-10V to +10V
Common Mode Protection:	-270V to +270V
Sampling Method:	Multiplexed
Signal Termination:	3.5mm pitch screw terminal plugs

**DIGITAL INPUTS**

The digital inputs accept AC or DC field sensor signals from 24V to 120V standard. Each input is optically isolated from the main processing board up to 500V and a switchable 10ms filter allows recording AC signals without dropout between AC peaks. Each input also includes a removable current limiting power resistor to allow the recording of digital voltage levels less than about 20V or greater than 120Vrms. The acquisition of all 16 of the digital inputs are scanned synchronously with the analog inputs as a simple binary word. This is in contrast to other systems that require software polling each time a digital signal needs to be recorded.

Digital Channels:	16
Voltage (standard):	20V to 120Vrms
Polarity:	AC or DC
Isolation:	500V
Sampling Method:	Multiplexed synchronously with analog
Signal Termination:	3.5mm pitch screw terminal plugs

## PC CONNECTION AND USER INTERACE

The DAQ3 is designed for continuous connection to a PC while recording.

Two versions of the DAQ3 will be available: a USB version and an Ethernet version. The Ethernet version is recommended for noisy plant environments especially where the device may be located a distance away from the PC. A simple Windows based user interface is included to setup, record, view real time and review data after a test.

PC Connection: .....Ethernet , USB  
PC Operating System: .....Microsoft XP, 7

## POWER

The system is powered from 24V nominal (18 – 36V) DC which negates the risk and noise associated with AC. DC power also means local AC wall voltage is not an issue - no need to find 120V in a 240V plant. The internal DCDC power supply provides the necessary various voltages the internal device requires and features reverse voltage protection and capacitive filtering. This internal supply is easily replaceable in the field in the event of failure such as from over voltage. The power connection is a screw terminal removable plug that connects to any pair of wires.

Power: ..... 18 – 36VDC, 1A

## ENCLOSURE

The housing is a rugged aluminum enclosure. The main board is a standard sized Eurocard that is easy to slide out for access.

