

Wireless CBM Telemetry Unit Model 7002000-1



Input Specifications:

- Operates six 100mV/g low impedance accelerometers (e.g. ICP, ISOTRAN, etc...)
- Generates required power to operate the sensor from long life battery

Data Specifications:

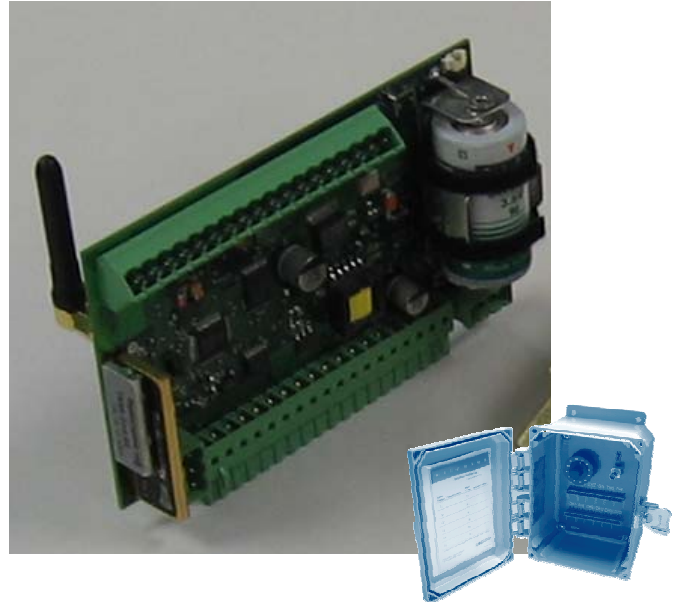
- 1Hz to 65kHz Sampling Rate
- Up to 65,534 Sample Count
- 16 bit Resolution
- Data includes:
 - Acceleration RMS (g)
 - Acceleration Time Waveform (g) ¹
 - Reference Voltage Level
 - Battery Energy Status
 - Board Temperature

Wireless Specifications:

- License Free 902-928 MHz ISM Band ²
- Transfer speed up to 3.5kb/s ³
- Transfer Distance up to 250 feet in the building
- Polling mode (data on demand)

General Specifications:

- Battery Powered (C Li)
- Nominal Battery Life of 2+ Years ⁴
- Plug in card for Wilcoxon Switch Boxes



¹ Velocity, displacement and spectrum information with data processing software

² 869MHz units available on special order request

³ Information transfer speed

⁴ Polling mode off (up to 6 month with polling mode on)

Description

The 7002000-1 combines the cost effectiveness of utilizing commercially available accelerometers with the flexibility and power of wireless communication. The unit contains a constant current power source, amplifiers, filters, digital signal processor, data memory, wireless transceiver, internal battery, and an antenna. Powered with an internal Lithium battery, the unit collects and transmits vibration data securely via a wireless link. Unit reports reference voltage level, battery energy status and board temperature through status via a wireless link. The 7002000-1 is a component of the Maintenance Watchdog™ System which provides all the tools needed to collect and analyze vibration data.

The 7002000-1 can be operated with either an internal lithium battery or a 24VDC power source.

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Applications

- Condition Based Maintenance
- Vibration Monitoring
- Vibration Analysis
- Machine Diagnostics

Performance: $T_C=25^\circ\text{C}$ unless otherwise specified.

Parameter	Min.	Typ	Max	Units
Number of Accelerometers Supported		6		NA
Range		100		mV/g
Calibration Accuracy ¹ (Stored in on board EEPROM)	-1		+1	%
Acceleration Sensitivity		0.003		g
Frequency Response (+/-3 dB)	0.45		10,000	Hz
Frequency Response (+/- 5%)	3		1,000	Hz
A/D Resolution over Selected Range (User Selectable)		16		Bits
Sampling Rate	1		65,535	Hz
Sample Count	4		65,534	Samples
Scheduling Resolution		1		Second
Scheduling Interval	1		>1000000	Min
Excitation Current		2		mA
Excitation Compliance Voltage			18	VDC
Max Mechanical Shock			2500	g
Sensitivity Temperature Shift (0 to 50C)			0.02	%FSO/°C
Non-Linearity (0 to + 90% of Full Scale)		0.1		% of span
Weight Including Lithium Battery		5.6		oz
Transceiver Operational Frequency		914.50		MHz
Radiated Power (ERP)			0	dBm
Receiver Sensitivity		-100		dBm
Range		250		feet
Battery Capacity (Lithium Thionyl Chloride)		8500		MAH
Sensor Battery Life (4 measurements per day)	2.0	2.5		years
DC Input power range ²	11	24	30	VDC
Operating Temperature	-20 (-4)		+50 (122)	°C (F)
Storage Temperature	-40 (40)		+85 (185)	°C (F)

¹This accuracy assumes the sensor is 100mV/g. Any deviation of the sensor from this value will result in additional amplitude errors in the readings. Frequency information will be unaffected.

²The 7002000-1 can be operated with either an internal lithium battery or a 24VDC power source. This spec refers to the 24VDC power input.

Ordering information

Part Number: **7002000-1** Cable & accelerometer provided by user.
 LS26500 Battery

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The 7002000-1 is used as part of a complete wireless data gathering system automatically collecting CBM data in industrial environments. The system includes wireless piezoelectric sensors, tethered wireless nodes, wireless laser tachometers, repeaters, Ethernet gateway, database storage, and control/display software. Hundreds of sensors may share the same radio network communicating with access points which bridge the wireless network to Ethernet network, eliminating expensive wiring costs. System operation is possible on a simple networked PC or a complex Enterprise network.

Rev A.5. Specifications subject to change without notice.