4B
COMPONENTS
LIMITED

Hazard Monitoring Systems

A complete line of hazard monitoring systems and accessories designed for all your equipment monitoring requirements.

BETTER BY DESIGN

Combined Monitoring Systems

Temperature Monitoring

Serial network system for continuous monitoring of bearing temperature, belt misalignment, and more.

Combined, belt speed, belt alignment bearing temperature, pulley alignment and plugged condition monitoring system.

Bearing temperature monitoring.

Model	**T500 Elite - Hotbus**™	**Watchdog**™ **Elite**	**T400N Elite - Hotswitch**
Description	The T500 Elite - Hotbus is a serial communication system specially designed to monitor up to 256 sensors, including continuous bearing temperature and belt misalignment. With automatic machine shutdown capability and PLC / PC compatibility this advanced microprocessor based system offers low cost installation, versatility and easy system expansion. Logging and trending software is also available for historic data analysis and preventative and predictive machine maintenance.	The Watchdog Elite is a microprocessor controlled unit with combined belt speed, belt alignment, bearing temperature, pulley alignment and plugged condition monitoring for bucket elevators and conveyors. An LCD screen displays machine status messages (available in four different languages) and a super-bright LED display shows belt speed. Calibration and set-up parameters are accessed via a password and front panel touch buttons.	The T400N Elite - Hotswitch is a microprocessor controlled temperature monitor, which works in conjunction with NTC temperature sensors to monitor up to 8 bearings and can provide an alarm and automatic shutdown when a high bearing temperature condition is detected.
Features	• Continuous bearing temperature monitoring with user adjustable trip points • RS485 serial communication • Monitors up to 256 sensors • 4 second scan time with 256 sensors installed • Enter your own sensor/location names for easy identification • Alarm and shutdown features • Can be connected to logging and trending software • Wireless connectivity options	• Monitors elevators and conveyors • User friendly menu set-up • LED belt speed indication • LCD message center screen displaying status • Fully programmable to optimize elevator/conveyor operation • LED alarm indication and power status • Relay contacts and RS485 outputs • PLC interface and optional software • Alarm and shutdown features • Wireless connectivity options	• Monitors up to 8 bearing sensors • Includes 2 separate alarm and 2 separate stop relays • Short circuit / open circuit failsafe detection • Status LEDs provide quick location of the hot bearing condition • Extensive range of sensors available from 110° F to 180° F • Alarm mute - with automatic time delayed reactivation • PLC board (optional)
Sensor Options	① WDB or ADB Series: bearing temp. ⑥ Touchswitch: belt alignment ② M800 Elite Speedswitch: speed ⑧ Autoset Series: level indicator ④ Roto-Level Series: level indicator ③ Binswitch: level and plug indicator	① WDB or ADB Series: bearing temp. ⑤ WDA Series: motion alignment ⑥ Touchswitch: belt alignment ⑦ P800 ProxSwitch: speed ③ Binswitch: plugswitch	① WDB or ADB Series: bearing temp.
Input Supply Volt.	120 to 240 VAC 24 VDC (universal supply)	120 to 240 VAC 24 VDC (universal supply)	120 to 240 VAC 24 VDC (universal supply)
Sensor Supply	Use external 24 VDC supply	24 VDC	24 VDC
Approvals	• US - Class II Div. 2, Groups F, G • Canada - Class II Div. 1, Groups E, F, G • Europe - CE, ATEX, IECEx (available)	• US - Class II Div. 2, Groups F, G • Canada - Class II Div. 1, Groups E, F, G • Europe - CE, ATEX, IECEx (available)	• US - Class II Div. 2, Groups F, G • Canada - Class II Div. 1, Groups E, F, G • Europe - CE, ATEX, IECEx (available)
H" x W" x D"	9.7" x 7.4" x 4"	11.75" x 9.5" x 5.25"	9.7" x 7.4" x 4"
Applications	Bucket elevators and conveyors	Bucket elevators and conveyors	Bucket elevators and conveyors

4B Components Limited

Belt Alignment Monitoring

Bucket elevator belt alignment monitoring system.	Conveyor or bucket elevator belt alignment monitoring system.

Alarm Monitoring

Centralized alarm monitoring system.

|	**Belt Alignment Monitoring**		**Alarm Monitoring**
	Bucket elevator belt alignment monitoring system.	Conveyor or bucket elevator belt alignment monitoring system.	Centralized alarm monitoring system.
Model	**A400 Elite**	**B400 Elite**	**X400 Elite - Alarmswitch**
Description	The A400 Elite is a microprocessor based control unit which uses high power magnetic sensors that detect moving metallic buckets or bolts from either one or two bucket elevators. The unit is able to provide an alarm and automatic shutdown of the elevator when a belt misalignment condition is detected.	The B400 Elite is a microprocessor based control unit which uses sensors to detect belt misalignment by pressure (Touchswitch) from one or two elevators / conveyors. The unit is able to provide an alarm and automatic shutdown of the elevator/conveyor when a belt misalignment condition is detected.	The X400 Elite - Alarmswitch is a microprocessor based control unit which is able to accept contact style signals in 8 separate zones. Alarm and status LEDs provide quick location of the alarm. A single local and optional remote alarm mute push button acknowledges any alarm condition.
Features	• Uses up to 4 magnetic (reluctance) alignment sensors • Monitors alignment of belts in two separate elevators or top and bottom alignment in one elevator • Includes 2 separate alarm and 2 separate stop relays • Simple, reliable, consistent. Fully functional test via push button on front panel	• Uses up to 4 touch or capacitive alignment sensors • Monitors alignment of belts in two separate machines or top and bottom alignment in one machine • Includes 2 separate alarm and 2 separate stop relays • Simple, reliable, consistent. Fully functional test via push button on front panel	• Monitors up to 8 zones • Multiple alarm inputs from different sensors • LED alarm indication and power status • Alarm mute - local and remote (reactivation on new alarm) • Test feature • PLC board (optional)
Sensor Options	⑤ WDA Series: motion alignment	⑥ Touchswitch: force activated ③ Binswitch: capacitance proxy (open belt conveyors)	⑧ Autoset Series: level indicator ④ Roto-Level Series: level indicator ③ Binswitch: level and plug indicator ② M800 Speedswitch: speed ⑥ Touchswitch: belt alignment
Input Supply Volt.	120 to 240 VAC 24 VDC (universal supply)	120 to 240 VAC 24 VDC (universal supply)	120 to 240 VAC 24 VDC (universal supply)
Sensor Supply	24 VDC	24 VDC	24 VDC
Approvals	• US - Class II Div. 2, Groups F, G • Canada - Class II Div. 1, Groups E, F, G • Europe - CE, ATEX – IECEx (available)	• US - Class II Div. 2, Groups F, G • Canada - Class II Div. 1, Groups E, F, G • Europe - CE, ATEX – IECEx (available)	• Europe - CE, ATEX – IECEx (available)
H" x W" x D"	9.7" x 7.4" x 4"	9.7" x 7.4" x 4"	9.7" x 7.4" x 4"
Applications	Belt bucket elevators	Belt bucket elevators and conveyors	Bucket elevators, conveyors, silos and bins

Sensor Applications

These illustrations show typical sensor placements for monitoring: speed, motion, bearing & surface temperature, belt alignment, level / plug indication and slack chain detection.

Drag Chain Conveyor

Enclosed Belt Conveyor

Open Belt Conveyor

Bucket Elevator Leg
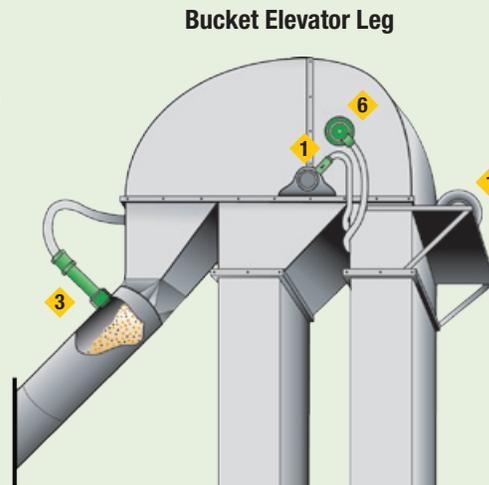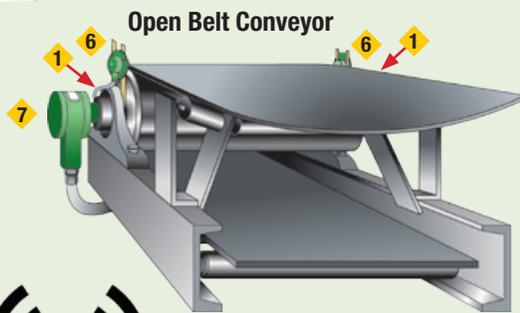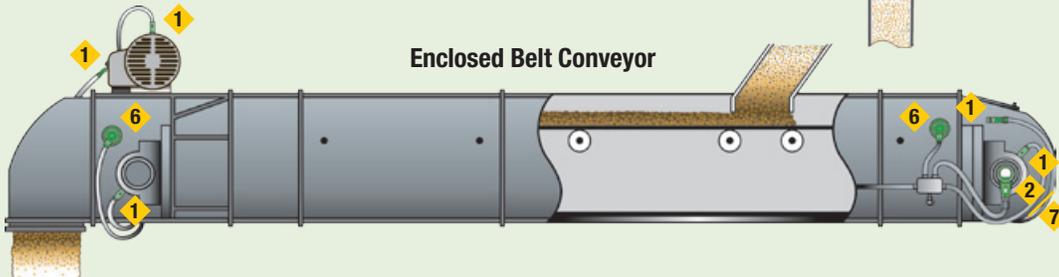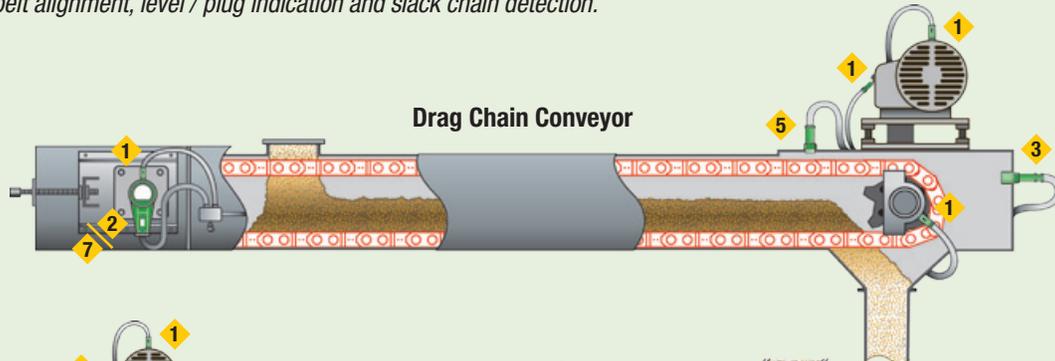
The T500 Elite Hotbus and Watchdog Elite monitoring systems have wireless connectivity options.

Silo
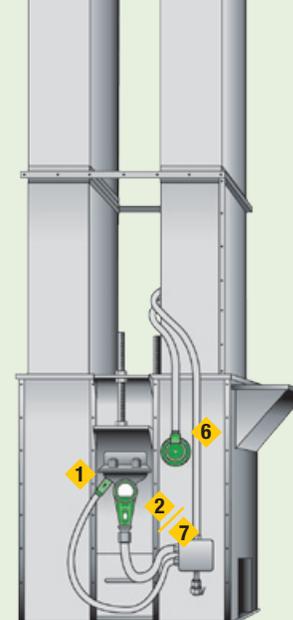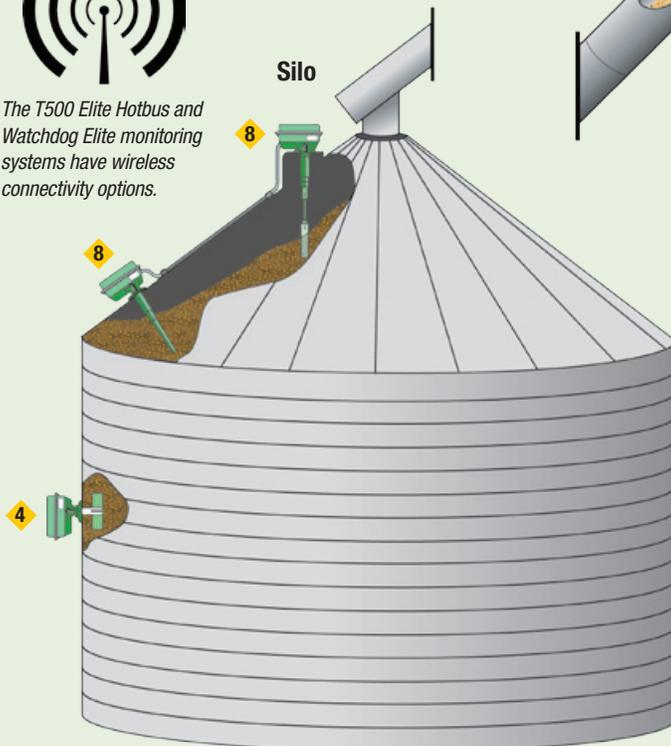
Sensors

1 Bearing & Surface Temperature

The WDB and ADB series bearing temperature sensors are designed to screw directly into an existing grease zerk fitting on a bearing housing. Each sensor is fitted with a grease nipple to allow lubrication of the bearing without the need for removal of the sensor. The WDB series is available with either a PTC thermistor with various factory set trip points or an NTC thermistor with a user adjustable trip point.

The ADB series have been designed to allow the depth of the sensor to be adjustable depending on your application. The ADB series is available with NTC thermistors and have probe lengths of 2", 4" and 8".

RTD Platinum (PT100) sensors are also available.

Other surface mount and adjustable depth sensors are also available.

WDB 7 Surface Mount

WDB 1 & 2

WDB 6

WDB 3

ADB

2 M800 Elite - Speed Switch

The M800 monitors rotating machinery for dangerous underspeed conditions. An inductive sensing device located in the nose of the M800 Elite enclosure will detect a metal target. Once the unit is set to the normal machine RPM, it provides alarm and shutdown signals at 10% and 20% underspeed.

- *Can be used with the Whirligig® shaft sensor mount*

Exploded View of the Whirligig® Universal Shaft Sensor Mount

M800 Elite

3 Binswitch - Plug Sensor

The Binswitch Sensor detects level or plug situations for bulk granular solids or liquids in tanks, bins, or silos and can be used as a plug or choke detector in chutes, conveyors and elevator legs. Programmable features include time delay on material arriving or leaving, and failsafe relay settings for high and low levels.

4 Roto-Level Series - Plug Sensors

The Roto-Level Series are rotary paddle switches designed to detect high and low levels of bulk granular solids in bins, tanks, silos, and as blockage detectors in spouts.

RLI SHAKER

Roto-Switch™

RLI

5 WDA Series: Motion Alignment

The WDA Series are non-contacting extended range magnetic sensors used to detect ferrous targets (such as bucket bolts or steel buckets) at a distance of up to 3 inches from the sensor.

WDA - High Temperature

WDA - Standard

6 Touchswitch™ - Belt Misalignment

The Touchswitch™ is an electro-mechanical limit-switch with no moving parts, which detects tracking and misalignment problems on bucket elevators and conveyors. Unlike a rub block that utilizes friction (heat) to activate, the Touchswitch™ is pressure sensitive for safer and more reliable monitoring.

NOTE: Rub blocks are available for special applications. Call the 4B Tech Team to discuss the requirements for your specific application.

7 P800 - ProxSwitch

The P800 is an inductive proximity sensor designed to detect shaft speed, shaft position, gate position, or object presence. No contact is made between the sensor and the target being monitored. The P800 will detect a ferrous object at 1/2" and a non-ferrous metal object at a distance of 5/16".

- *Can be used with the Whirligig® shaft sensor mount*

P800

P800 Installed on the Whirligig® Universal Shaft Sensor Mount

8 Auto-Set™ Series - Plug Sensors

The Auto-Set™ Series are self-contained point level monitors with digital displays for high, intermediate, or low-level detection of liquids, powders or free-flowing granular solids. The Auto-Set™ Series incorporates simple push-button calibration with microprocessor enable/disable switch for total protection of stored values. Once the unit is calibrated for a specific application, it never has to be re-calibrated.

Autoset™ with Extended Power Shield

Autoset™ Flush Probe

Autoset™ with Power Shield

Autoset™ Remote Probes and Control Unit

Testing & Commissioning Service

4B has a dedicated team of technicians providing free over the phone 24 hour technical support to trouble shoot any issue that can occur during or after installation.

Additionally, 4B offers an on site commissioning service to ensure our products have been properly set up and are functioning correctly after your initial installation.

4B also offers service contracts to periodically test and verify that our products are being maintained and working properly to help protect your equipment. For a quote on these services, please contact a 4B technical support representative.

*Speed*Master™ Speed Switch Tester

The *Speed*Master™ accurately tests the calibration of a speed switch, and allows testing of the 10% alarm and 20% shutdown features of the sensor while installed on the machine shaft.

Patent Pending

NEW PRODUCT

ADB Sensor Tester

The ADB Sensor Tester has been designed to test 4B adjustable depth bearing (ADB) style temperature sensors in the field. This hand held test unit features an integrated heating block specifically designed to have a 4B ADB sensor directly inserted. With integral controls and temperature display, the unit heats the sensor to the desired trip point, and allows quick and easy real life testing of the sensor and temperature monitoring system.

NEW PRODUCT

4B monitoring systems are unsurpassed in quality and performance.

Manufactured to ISO9001 quality standards, monitoring systems also carry 3rd party approvals for USA, Canada and Europe.

C US   ATEX   CE

IECEx   **RoHS**

4B COMPONENTS LIMITED

When it comes to supplying you with virtually any material handling component, 4B has it.

Speed Switches
Level Monitors
Elevator Buckets & Bolts
Forged Conveyor Chain
& More!

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With subsidiaries in North America, Europe, Asia, Africa and Australia along with a worldwide network of distributors, 4B can provide practical solutions for all your applications no matter the location.

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4B is proud to be a member of the following organizations:

AFIA AMERICAN FEED INDUSTRY ASSOCIATION

Grain & Feed Association of Illinois Member

NFPA® MEMBER

NGFA®

4B participates in GEAPS programs, see us at the next GEAPS Exchange

GEAPS Grain Elevator and Processing Society