4B GROUP
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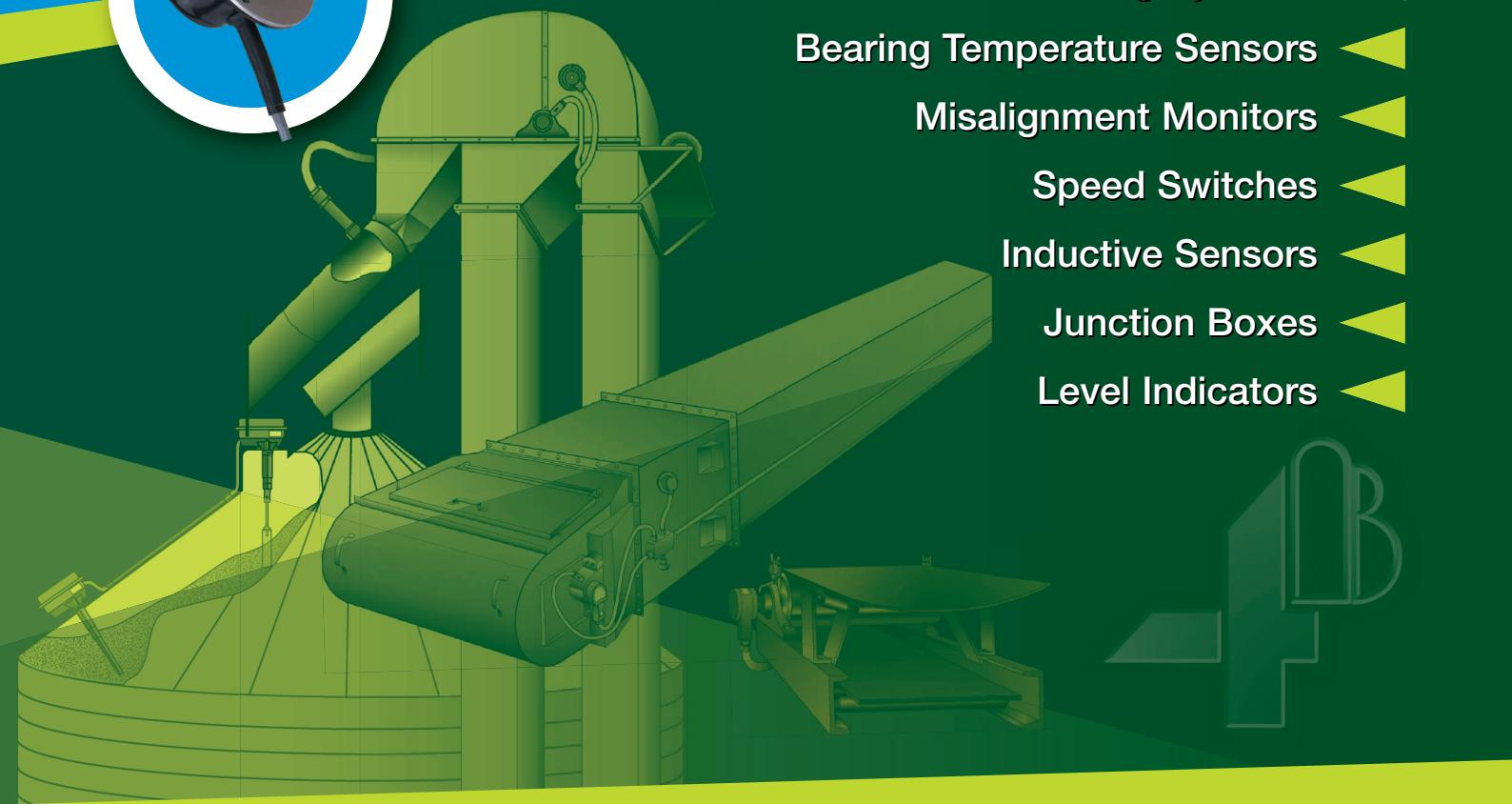
Electronic components
& monitoring systems

- Hazard Monitoring Systems
- Bearing Temperature Sensors
- Misalignment Monitors
- Speed Switches
- Inductive Sensors
- Junction Boxes
- Level Indicators



nqa. ISO 9001 Registered · IECEx · CSA C US · CE APPROVED · PCT AB 28 · Ex

BETTER BY DESIGN

SENSOR APPLICATIONS

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

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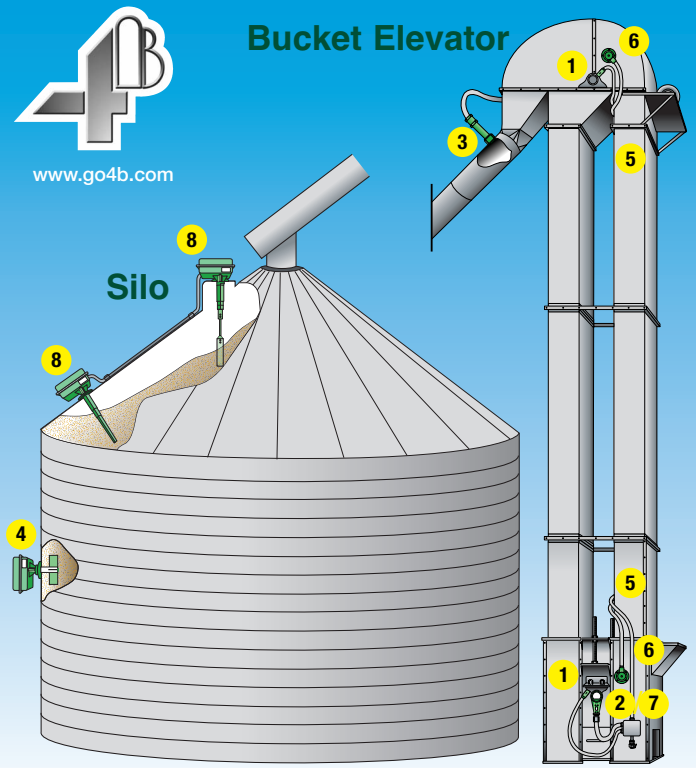
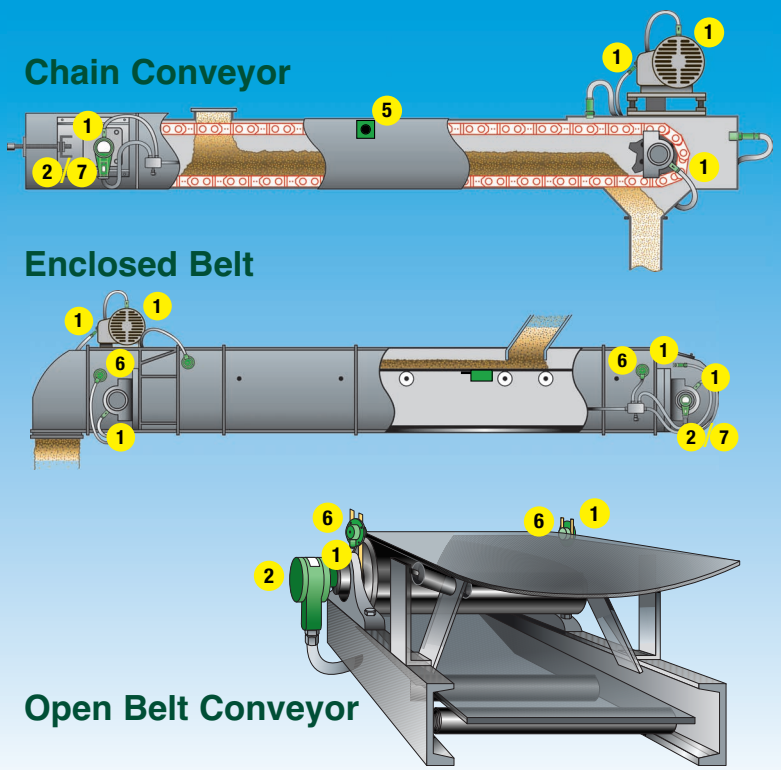
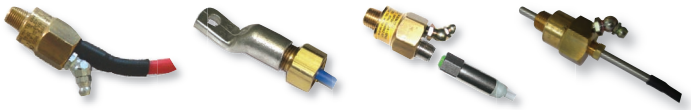




Sensors

1 Bearing Temperature Sensors page 13

The WDB, MDB & 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. Most series are available with either a PTC thermistor with various factory set trip points, or a NTC thermistor with a user adjustable trip point, or as a Pt100 RTD version.



2 Speed Switches page 11

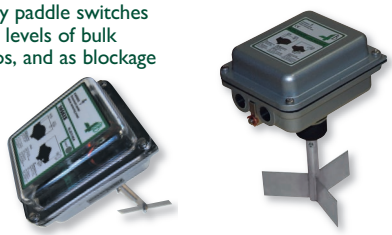
Monitors rotating machinery for dangerous underspeed conditions. An inductive sensing device located in the nose of the enclosure will detect a metal target. Set to the normal machine RPM, 4B Speedswitches provide alarm and shutdown signals underspeed and stopped motion.
**Can be used with the Whirligig universal shaft sensor mount*

3 Binswitch page 16

The Binswitch detects level or plug conditions 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.

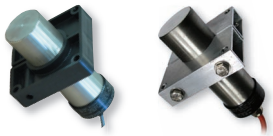
4 Roto Level Series page 16

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.



5 WDA 3 page 9

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 75mm from the sensor. It can also be used as a chain break detector.



6 Touchswitch page 9

The Touchswitch is an electro-mechanical limit-switch style sensor with no moving parts. It is designed to detect belt 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.

7 Inductive Sensors page 12

4B inductive proximity sensors are designed to detect shaft speed, shaft position, gate position, or object presence. No contact is made between the sensor and the target being monitored. Sensors will detect a ferrous object at 12mm and a non-ferrous metal object at a distance of 8mm.
**Can be used with the Whirligig universal shaft sensor mount.*

8 Autoset Series page 15

The Autoset 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 Autoset Series incorporates simple push-button calibration with microprocessor enable/disable switch for totalprotection of stored values. Once the unit is calibrated for a specific application, it never has to be re-calibrated.

4B – Your Experts on Hazard Monitoring & Explosion Prevention

Preventative maintenance can help reduce the risk of equipment failure and consequent downtimes. When it comes to monitoring your bucket elevators and belt conveyors, 4B can recommend you the ideal combination of sensors and monitoring systems to suit your requirements and budget.

4B provides an extensive range of their own ATEX / IECEx / CSA / GOST-R approved hazard monitoring systems, misalignment switches and bearing temperature monitors and level controls. We can offer you anything from a replacement sensor to a fully integrated hazard monitoring system which can be operated either as a stand-alone system or connected to your PLC.

And if you do not want to install hazard monitoring sensors on every piece of equipment in your plant straightaway, we can offer you a scalable solution starting with carefully chosen equipment and systems that can be expanded at a later date to encompass other machines in the plant.

We can also offer an installation service, and we do provide competent after-sales technical support to help you overcome any technical problems with your monitoring equipment.

To get a recommendation from our engineers, please contact 4B.

CONTENTS

IECEx · CSA C US · CE APPROVED · PG AB 28 · Ex

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ELEVATOR / CONVEYOR MONITORING SYSTEMS

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Combined Monitoring Systems

Product	Watchdog Super Elite™	Watchdog Elite™	T500 Elite – Hotbus™
	 Page 4	 Page 4	 Page 5
Bearing temperature	Y (continuous) max. 6 sensors + 2 ambient temp. sensors	Y (continuous) max. 6 sensors	Y (continuous) max. 256 inputs*
Belt speed	Y (continuous) max. 2 inputs – Differential speed monitoring	Y (continuous) max. 1 input Single speed monitoring	Y (continuous) max. 256 inputs*
Belt alignment	Y Pulses / Contact / Rub* Blocks 4 inputs	Y max. 4 sensors (Touchswitch)	Y max. 256 sensors*
Plugged condition	Y	Y	Y
Pulley alignment	Y	Y	Y
Communication interfaces	Ethernet and RS-485 Onboard	All major industrial protocols supported via F500 Gateway	All major industrial protocols supported via F500 Gateway
Test function	Y	Y	Y
Alarm & shutdown function	Y	Y	Y
Applications	Single elevator or conveyor	Single elevator or conveyor	Multiple elevators & conveyors; remote monitoring across site
Hazardmon.com (Cloud based hazard monitoring)	Y (Ethernet onboard)	N	Y (via F500)
Certifications	ATEX / CSA / IECEx / GOST	ATEX / CSA / IECEx / GOST	ATEX / CSA / IECEx / GOST

* total number of inputs / sensors, all sensors combined.

Specialised Monitoring Systems

Product	T400N Elite	T400 Elite	A400 Elite	B400 Elite
	 Page 8	 Page 8	 Page 8	 Page 8
Bearing temperature	Y (continuous) max. 8 sensors	Y (discreet PTC) max. 16 sensors	N	N
Belt speed	N	N	Y	N
Belt alignment	N	N	Y	Y
Plugged condition	N	N	N	Y
Pulley alignment	N	N	N	Y
Communication interfaces	Modbus RTU (RS-485)	N	N	N
Test function	Y	Y	Y	Y
Alarm & shutdown function	Y	Y	Y	Y
Applications	Elevators & conveyors	Elevators & conveyors	Elevators	Elevators & conveyors
Hazardmon.com (Cloud based hazard monitoring)	N	N	N	N
Certifications	ATEX / CSA / IECEx / GOST	ATEX / CSA / IECEx / GOST	ATEX / CSA / IECEx / GOST	ATEX / CSA / IECEx / GOST

HAZARD MONITORING SYSTEMS

Combined Monitoring Systems

The **Watchdog Super Elite™** is a complete elevator and conveyor monitoring system with inputs for most of the types of sensors standard in the industry. Offers top-of-the-class flexibility and approvals. Unprecedented user friendliness via a 3.5" full colour bespoke design graphics screen. Controller settings can be set up either directly on the unit or via a PC application and transferred between the WDC4s and PC via a SD card. In-built Ethernet port with full support for the Hazardmon.com cloud based monitoring service.

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.

NEW

WATCH DOG Super Elite

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

WATCH DOG elite

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

Combined Monitoring Systems

Watchdog Super Elite™

Features
- Belt speed monitoring (single and differential speed)
- Belt alignment monitoring (contact, pulsed and rub blocks)
- Bearing temperature monitoring
- Pulley alignment monitoring
- Plug condition monitoring
- Acceleration monitoring
- Jog prevention
- 3.5" Colour graphics LCD display
- SD card for settings save / restore and firmware updates
- Ethernet RJ45 port
- Hazardmon.com support for real-time remote monitoring and historical analysis

Powered by HazardMon.com

Sensor options
- WDB, MDB, ADB: bearing temperature
- WDA Series: motion alignment
- Touchswitch: belt alignment
- Inductive Proximity Sensors: speed (P1001V34A/P3001V34AI)
- Binswitch: plugswitch

Input supply voltage
100 to 240 VAC
24 VDC
(universal supply)

Sensor supply
24 VDC

Approvals
- Europe - ATEX
- USA, Canada - CSA
- Russia and CIS - GOST-R
- Worldwide - IECEx

H x W x D
308 x 241 x 137mm

Applications
Bucket elevators and conveyors

Watchdog Elite™

Features
- Monitors elevators and conveyors
- User friendly menu set-up
- LED belt speed indication
- LCD message screen displaying status
- Fully programmable to optimize elevator/conveyor operation
- LED alarm indication and power status
- Relay contacts and RS485 outputs
- PLC interface (optional)
- Alarm and shutdown features

Sensor options
- WDB, MDB, ADB: bearing temperature
- WDA Series: motion alignment
- Touchswitch: belt alignment
- Inductive Proximity Sensors: speed (P1001V34A/P3001V34AI)
- Binswitch: plugswitch

Input supply voltage
100 to 240 VAC
24 VDC
(universal supply)

Sensor supply
24 VDC

Approvals
- Europe - ATEX
- USA, Canada - CSA
- Russia and CIS - GOST-R
- Worldwide - IECEx

H x W x D
308 x 241 x 137mm

Applications
Bucket elevators and conveyors

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For more detailed product information, please visit: www.go4b.com

HAZARD MONITORING SYSTEMS

Combined Monitoring Systems

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.

HOTBUS

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

Combined Monitoring Systems

T500 Elite - Hotbus™

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
- Works with many types of sensors
- Enter your own sensor/location names for easy identification
- Alarm and shutdown features
- Gateways available for various PLC connections
- HazardMon.com® cloud based hazard monitoring compatible

Powered by HazardMon.com

Sensor options

- WDB, MDB, ADB: bearing temperature
- Touchswitch: belt alignment
- M300 Speedswitch: speed
- Autoset Series: level indicator
- Roto-Level Series: level indicator
- Binswitch: level and plug indicator

Input supply voltage

100 to 240 VAC
24 VDC
(universal supply)

Sensor supply

Use external 24 VDC supply

Approvals

- Europe - ATEX
- USA, Canada - CSA
- Russia and CIS - GOST-R
- Worldwide - IECEx

H x W x D

246 x 188 x 102mm

Applications

Bucket elevators and conveyors

www.go4b.com

Accessories for T500 Elite

Powered by HazardMon.com

HazardMon.com®

HazardMon.com® is a secure cloud based hazard monitoring solution providing status notifications and data logging for bucket elevators and conveyors. Live system status, graphs and historical data can be viewed on any web-enabled device (smartphone, tablet PC, desktop or laptop computer). Emails can be sent to notify users whenever a change in the system's health is detected. An automated maintenance feature allows site operators to verify that all sensors on the system are operational and working correctly.

F500 Elite Fieldbus Gateway

The F500 is a communications gateway that allows for single point access to a maximum of four T500 Elite Hotbus™ systems via Fieldbus protocol. Fieldbus communication protocols supported include: Ethernet IP, Modbus TCP, Modbus RTU, DeviceNet, Profibus and others.

R500 Elite Alarm Relay Interface

The R500 is a microprocessor-controlled unit, which accepts signals from the T500 Elite Hotbus™ monitor, and is able to cause alarm or shutdown of equipment when a sensor exceeds its programmed alarm tolerance.

Hotbox Node – TN4 (Input Node)

The TN4 is a four input sensor node, powered by 24 VDC. Each input can be an NTC thermistor, PTC thermistor or Volt-Free Contact input; the types may be interchanged on a single node. The Node has a unique 4 digit address which is used to communicate to the T500 via a two wire serial RS485 connection. The TN4 Node processes information from electrical inputs into network data inputs for WDB, Binswitch or Touchswitch.

Hotbox Node – SN2 (Speed Node)

The SN2 is a two input speed node, powered by 24 VDC. The node is able to monitor two independent pulse (speed) sources for dangerous under speed conditions. The SN2 will support pulses which are PNP or sourced. The Node has a unique 4 digit address which is used to communicate to the T500 via a two wire RS485 connection. The SN2 processes information from electrical inputs into network data.

Hotbus™ Node Tester

The Hotbus Node Tester is a portable testing unit that can be used in the field to determine the operational status of any Hotbus communications node and network to quickly identify wiring or node issues.

Simply plug the network connection cable directly to the node. A digital display on the tester will show the status of the node which can determine if the node is operating correctly. The unit can also be connected to a PC for more detailed diagnostics data.

For more detailed product information, please visit: www.go4b.com

HAZARDMON

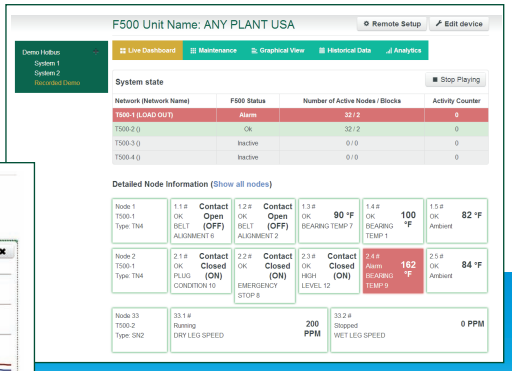
Cloud-Based Hazard Monitoring

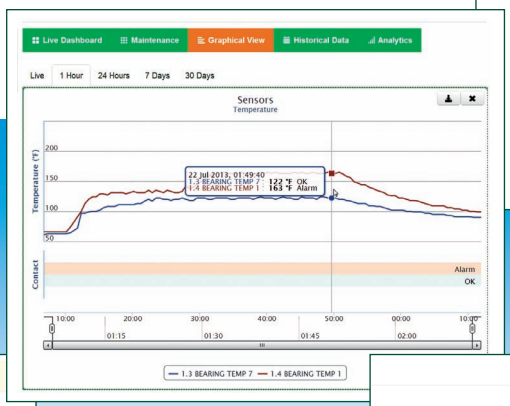
NEW

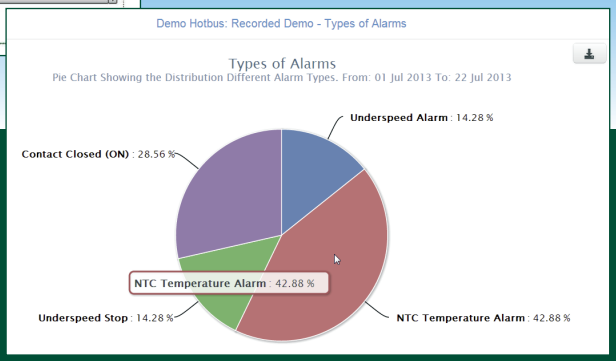
HazardMon.com® is a secure cloud based hazard monitoring solution providing status notifications and data logging for bucket elevators and conveyors. Live system status, graphs and historical data can be viewed on any web-enabled device (smartphone, tablet PC, desktop or laptop computer). Emails can be sent to notify users whenever a change in the system's health is detected. An automated maintenance feature allows site operators to verify that all sensors on the system are operational and working correctly.

Features:

- Secure Cloud Based Hazard Monitoring
- Works with T500 Elite Hotbus™ & Watchdog Super Elite
- Real Time System Status & Alert Email Notifications
- Data Logged Automatically
- Automated Maintenance
- View on Any Web-Enabled Device







Visit **www.hazardmon.com** to sign up for a FREE demo account, and see what the cloud can do for you!

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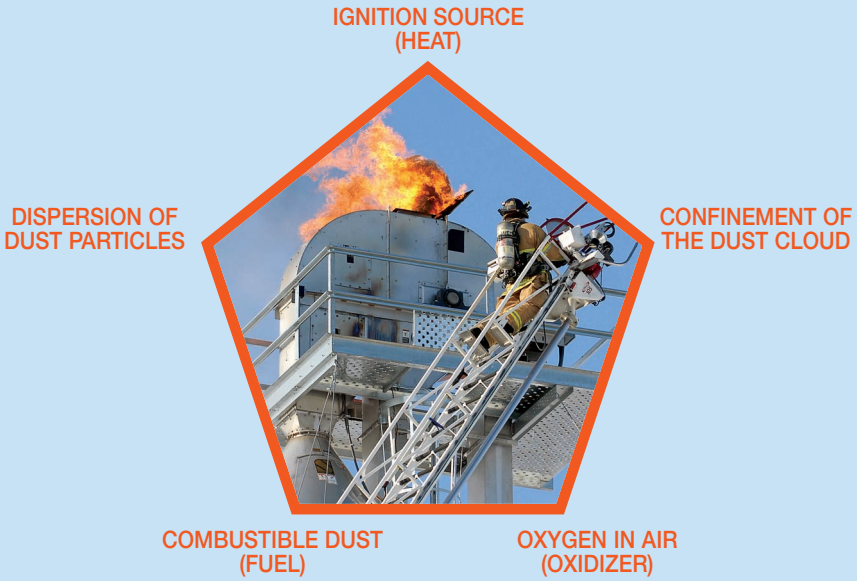
DUST EXPLOSION PREVENTION

It is well known that transporting certain dry dusty materials, such as grain, can create explosive atmospheres.

Five conditions, known as the **"Dust Explosion Pentagon"**, have to exist in order for the explosive state to occur. First, there needs to be a high concentration of dust (fuel), followed by an ignition source (heat) and oxygen (oxidizer). If all of these appear in a confined space with dispersion, an explosion can occur.
The most common ignition sources on bucket elevators and conveyors have long been identified as over-heated bearings, misaligned belts and belts that are slipping.



Installation Images

< T500 Elite – Hotbus™

Watchdog Elite™ >

www.go4b.com

4B Commissioning Service

After 4B products have been installed by a qualified electrician, **4B's commissioning service** is available to inspect and certify proper installation of our sensors and control units prior to operation. A brief overview of the service is listed below -

General:

- All rigid and flexible conduits inspected for: cracks, breaks, tightness of connections, and suitability for purpose.
- All wiring inspected for: ground faults, shorts, suitability for purpose.
- All sensors and controls inspected for correct installation, and wiring to National Electrical Code (NEC) standards.
- All sensors and controls inspected for any signs of damage, and tested to insure proper working order.
- Detailed written inspection and testing report with any recommendations given to client.

Belt & Pulley Alignment Sensors:

- Sensors are removed from their location to ensure that they were centered on the belt.
- Each sensor is physically inspected for damage and wear.
- Sensor LED and alarm contacts are tested.
- Wire terminations are inspected.

Temperature Sensors:

- All sensors are inspected and resistance is checked.
- Sensors are also checked for correct identification, location and sensor type.
- Freeze spray is used to ensure that the sensor displays a change in temperature, or the ADB sensor tester is used to heat up the sensor to the alarm / trip point.
- Wire terminations are inspected.

Speed Switches:

- All speed switches are checked for proper installation.
- Sensors are checked for proper underspeed alarm and shutdown set points using 4B's SpeedMaster™.
- Wire terminations are inspected.

Warning: 4B recommends that all sensors are wired to provide automatic shutdown of monitored equipment, when a hazardous condition is detected.

HAZARD MONITORING SYSTEMS

Temperature Monitoring

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.

The **T400 Elite - Hotswitch** is a microprocessor controlled temperature monitor, which works in conjunction with PTC temperature sensors to monitor up to 48 bearings and can provide an alarm and automatic shutdown when a high bearing temperature condition is detected.

Belt Alignment Monitoring

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 **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/ underspeed condition is detected.

Bearing temperature monitor

Bearing temperature monitor

Conveyor or bucket elevator belt alignment monitoring system

Bucket elevator belt alignment monitoring system

Temperature Monitoring

T400N Elite - Hotswitch

Features
- Monitors up to 8 NTC bearing sensors
- Includes 2 separate alarm and 2 separate stop relays (2 machines monitored).
- Short circuit/ open circuit fail-safe detection
- Status LEDs provide quick location of the hot bearing condition
- A range of alarms temperatures available from 45°C to 80°C
- Alarm mute with automatic time delayed reactivation
- PLC board (optional)

Sensor options
- WDB - MDB - ADB Series: bearing temperature
- Extensive range of sensors available from 50 - 100°C
- Continuous temperature sensors
- Modbus RTU connection

Input supply voltage
100 to 240 VAC
24 VDC (universal supply)

Sensor supply
24 VDC

Approvals
- Europe - ATEX
- USA, Canada - CSA
- Russia and CIS - GOST-R
- Worldwide - IECEx

H x W x D
246 x 188 x 102mm

Applications
Bucket elevators and conveyors

T400 Elite - Hotswitch

Features
- Monitors 8 zones with up to 6 PTC sensors in each zone (48 total)
- Status LEDs provide quick location of the hot bearing condition
- Sensors are positively mounted grease through
- Alarm mute
- PLC board with 8 contact outputs (optional)
- Cold / hot status only

Sensor options
- WDB - MDB - ADB Series: bearing temperature
- Extensive range of sensors available from 50 - 100°C
- PTC type - step sensors

Input supply voltage
100 to 240 VAC
24 VDC (universal supply)

Sensor supply
24 VDC

Approvals
- Europe - ATEX
- USA, Canada - CSA
- Russia and CIS - GOST-R
- Worldwide - IECEx

H x W x D
246 x 188 x 102mm

Applications
Bucket elevators and conveyor

Belt Alignment Monitoring

B400 Elite

Features
- 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 for general testing

Sensor options
- Touchswitch: force activated
- Binswitch: capacitance proxy (open belt conveyors)

Input supply voltage
100 to 240 VAC
24 VDC (universal supply)

Sensor supply
24 VDC

Approvals
- Europe - ATEX
- USA, Canada - CSA
- Russia and CIS - GOST-R
- Worldwide - IECEx

H x W x D
246 x 188 x 102mm

Applications
Belt bucket elevators and conveyors

A400 Elite

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

Sensor options
- WDA Series: motion alignment
- BAP Series: motion alignment

Input supply voltage
100 to 240 VAC
24 VDC (universal supply)

Sensor supply
24 VDC

Approvals
- Europe - ATEX
- USA, Canada - CSA
- Russia and CIS - GOST-R
- Worldwide - IECEx

H x W x D
246 x 188 x 102mm

Applications
Belt bucket elevators

www.go4b.com

MISALIGNMENT SENSORS

Touchswitch

The **Touchswitch** is an electro-mechanical limit switch with no moving parts, that detects the misalignment of both pulleys and belts in conveyors and bucket elevators. The sensor detects the lateral force of the belt or pulley and activates a voltage free relay contact. This relay contact can be used to activate an alarm or shutdown the machine. The sensors are normally installed in pairs on opposite sides of the belt/pulley.

WDA High Power Sensor

The **WDA** sensor detects moving ferrous material and is designed for use with bucket elevators to detect buckets, for measurement of speed and alignment. It is a non contacting extended range sensor to detect targets which are up to 100mm from the sensor. It can also detect ferrous bolts where non ferrous buckets are being used. The sensor is used in conjunction with a PLC or with a Watchdog, T500 Elite or A400 Elite control unit.

BAP

The **BAP** detects moving ferrous material and is designed for use with bucket elevators to detect buckets, for measurement of speed and alignment. It can also detect ferrous bolts where non ferrous buckets are being used. The sensor is used in conjunction with a PLC or with a Watchdog, T500 Elite or A400 Elite control unit.

Touchswitch
Belt/pulley misalignment sensor

High temperature version

WDA
Belt alignment/speed and chain break monitor

BAP
Belt alignment/speed monitor

Belt Misalignment Monitors

TS1V4AI

Features
- Hardened, annealed stainless steel face
- External test knob for quick and simple sensor/system testing
- Not affected by dust or material build up
- Visual indication by an LED
- No calibration needed
- No moving parts

Supply voltage
24 VDC

Compatible 4B Control Unit
- Watchdog
- T500
- B400

Approvals
- Europe - ATEX
- USA, Canada - CSA
- Russia and CIS - GOST-R
- Worldwide - IECEx

Applications
Belt/pulley misalignment on elevators and conveyors

WDA3V34AI

Features
- Long range magnetic sensor unaffected by material build up
- Continuously monitors the moving elevator, with visual indication by an LED
- 25-75mm range depending on the size of the target, easily adjusted from the sensor itself or from the optional independent control unit
- Mounting bracket included
- Stainless steel construction
- High temperature version available

Supply voltage
24 VDC

Compatible 4B Control Unit
- Watchdog
- T500
- A400

Approvals
- Europe - ATEX
- USA, Canada - CSA
- Russia and CIS - GOST-R
- Worldwide - IECEx

Applications
Belt alignment and speed sensor
Chain break monitor (see page 17)

BAP21V34AI

Features
- Magnetic sensor unaffected by material build up
- Continuously monitors the moving elevator, with visual indication by an LED
- 12-50mm range depending on the size of the target, easily adjusted from the sensor itself or from the optional independent control unit

Supply voltage
12/24 VDC

Compatible 4B Control Unit
- Watchdog
- T500
- A400

Approvals
- Europe - ATEX
- Russia and CIS - GOST-R
- Worldwide - IECEx

Applications
Belt alignment and speed sensor

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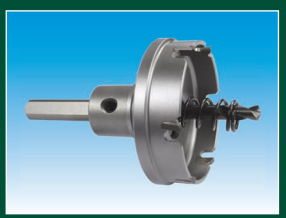


Touchswitch™ Belt Alignment Sensor Hole Saw

MISALIGNMENT SENSORS

CBS2

The **CBS2** is an electro-mechanical system to detect the misalignment of a belt conveyor. Two outputs are given at 15 and 30 degrees which can be used as alarm and stop signals respectively. Works in conjunction with a CBS2 Elite control unit. The sensors are normally installed in pairs, one on either side of the belt, and up to 4 sensors per CBS2 Elite control unit.

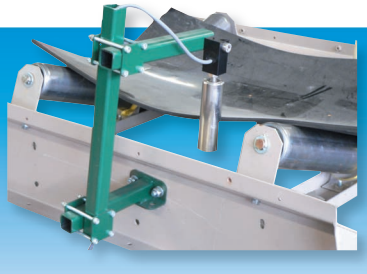
Bulldog

The **Bulldog** alignment and rip detection switch is an electro-mechanical system designed to detect dangerous belt misalignment and belt tear damage on open belt conveyors. The switch will detect horizontal misalignment of belts when contact is made with the roller; the roller arm will be forced to pivot by the belt activating a switch at **15° to trigger an alarm, and 30° to trigger a shut down**. The sensors are usually installed in pairs on opposite sides of the belt. A flexible wire is set below the running conveyor belt attached by a rare earth magnet at each end. If the belt is ripped or damaged the wire is pulled away releasing the magnet connection which in turn will activate a switch to trigger an alarm or shut down.

SAFETY SWITCHES

Pullswitch

The **Pullswitch** is a failsafe taut wire emergency pull cord stop switch for open conveyors.
PVC coated steel pull wires and pigtails connect between the switches to provide easy installation and continuous emergency stop access along the length of the entire conveyor. Pullswitches can be installed at 50m intervals, reducing overall system cost. Quick location of a tripped switch is provided by a standard reflector or optional flag marker, and the tripped signal can be wired back to an indicator panel, 4B controller or PTC.



CBS2VNA
Conveyor belt alignment monitor

Bulldog
Belt Alignment & Rip Detection Switch

Pullswitch
Conveyor Safety Stop Switch

Conveyor Belt Alignment Switch

CBS2VNA

Features
- Two outputs at 15° & 30° for alarm and shutdown
- Nylon and stainless steel rollers available
- Self assembly adjustable support system

Supply voltage
110-240 VAC

Compatible 4B Control Unit
- CBS2 Elite

Approvals
- Europe - ATEX

Applications
Conveyor belt alignment monitoring

Belt Alignment & Rip Detection Sensors

Bulldog

Features
- Easy installation without calibration
- Solid construction
- Triggers an alarm at 15° and a shutdown of the machine at 30°
- Wire rope for optional belt rip detection

Supply voltage
110-240 VAC

Compatible 4B Control Unit
- Watchdog
- T500
- B400

Approvals
- Europe - ATEX
- Worldwide - IECEx

Applications
Conveyor belt alignment monitoring, belt rip detection.

Conveyor Safety Stop Switch

Pullswitch

Features
- Pullwire safety switch provides a safe and reliable means of stopping conveyors
- Double ended pull mechanism as standard
- Slack or taut wire operation
- Tough UV stabilised lightweight polycarbonate enclosure
- Designed for arduous environments e.g. quarries, open cast mines

Approvals
- Europe - ATEX
- USA, Canada - CSA
- Worldwide - IECEx

Applications
Safety stop switch for open belt conveyors

CBS2VOA
Control unit for belt alignment sensors

For more detailed product information, please visit: www.go4b.com

www.go4b.com

SPEED SWITCHES

Stopswitch

The **Stopswitch** is a straightforward shaft speed monitoring device. The 2-wire technology saves you time and makes installation hassle-free. If the shaft stops rotating, the **Stopswitch** will provide an output. It requires no calibration to operate and is a great tool for process control, motion verification and stopped shaft indication.

Slipswitch

User friendly and easy to install, the **Slipswitch** is a simple shaft speed monitoring device. Available in 2-wire and 5-wire models, the **Slipswitch** is self-calibrating and provides a 20% underspeed output to protect against dangerous belt slip and underspeed conditions.

Speedswitch

A solid state unit with no moving parts, the **M800** is maintenance free. The unit operates using an inductive sensing device and requires no contact with the monitored machine. The **M800** is calibrated to the machine's normal RPM. If the shaft speed falls by 10%, the **M800** will alarm, and by 20% it will shut the machine down.

M100 Stopswitch
Stopped motion monitor

M300 Slipswitch
Intelligent underspeed switch 2 or 5-wire version available

M800 Speedswitch
Intelligent underspeed switch with three outputs

Stopswitch	Slipwitch	Speedswitch
M100 Stopswitch	**M300 Slipswitch 2 or 5-wire**	**M800 Speedswitch**
Features • Small 18mm diameter • Totally sealed • 5m cable • Status LED's	**Features** • Totally sealed • Auto calibration • 2 or 5-wire connection • 5m cable • Status LED's	**Features** • Totally sealed • Auto calibration • 1/2-inch conduit entry with 2m cable • Status LED's
Style 18mm cylindrical	**Style** 30mm cylindrical	**Style** DIN (40mm x 40mm)
Supply voltage 24 to 240 VAC 12/24 to 240 VDC (universal supply)	**Supply voltage** 24 to 240 VAC 12/24 to 240 VDC (universal supply)	**Supply voltage** 24 to 240 VAC 12/24 to 240 VDC (universal supply)
Output Stopped motion signal Triac with maximum load of 200mA	**Output** 1 x 20% underspeed relay	**Output** 1 x 10% underspeed relay 1 x 20% underspeed relay 1 x opto-isolated pulse (All 3 outputs in 1 unit)
Approvals • Europe - ATEX • USA, Canada - CSA	**Approvals** • Europe - ATEX • USA, Canada - CSA • Worldwide - IECEx	**Approvals** • USA, Canada - CSA
Applications Process control. Provides a signal when the shaft has stopped rotating.	**Applications** Conveyors, bucket elevators, any speed sensitive shaft for automatic 20% underspeed detection.	**Applications** Conveyors, bucket elevators, any speed sensitive shaft for automatic underspeed detection with 10% alarm and 20% shutdown.

All 4B speed and inductive sensors are compatible with the Whirligig universal shaft sensor mount.

www.go4b.com

* shown with M300 Slipswitch

Whirligig®

- Fully Guarded Target for Easy Mounting of Motion Sensors
- For DIN Style and Standard Cylindrical Inductive Sensors
- Easy Installation – Only Requires M12 Tapped Hole in the Machines Shaft or Use a Mag-Con™ for Magnetic Connection
- Available with 1, 2 or 4 Targets

INDUCTIVE SENSORS

P100 Inductive Sensor

P300 Inductive Sensor

Inductive proximity sensors used to signal the position of equipment in conveyors, elevators and other mechanical assemblies. Also used as pulse generators for speed detection.

P100
Inductive Proximity Sensor

P300
Inductive Proximity Sensor

P100 Inductive Sensor

P1001V10A - normally closed
P1002V10A - normally open
P1001V34A - NO/NC selected by polarity

Features
- IP 65
- Watchdog and PLC compatible
- Visual indication of output state by LED
- 8mm detection range

Style
18mm cylindrical body with 1.5 ISO threaded body

Supply voltage
Universal voltage 24-240V AC/DC
(P1001V34A - 10-30VDC)

Output
FET Transistor with maximum load of 200mA
(P1001V34A - PNP or NPN, 100mA maximum load)

Approvals
- Europe - ATEX

Applications
Conveyors, elevators and other mechanical assemblies.
Note: For use with 4B control monitors use P1001V34A/P3001V34AI

P300 Inductive Sensor

P3001V10AI - normally closed
P3002V10AI - normally open
P3001V34AI - NO/NC selected by polarity

Features
- IP 65
- Watchdog and PLC compatible
- Visual indication of output state by LED
- 15mm detection range

Style
30mm cylindrical body with 1.5 ISO threaded body

Supply voltage
Universal voltage 24-240V AC/DC

Output
FET Transistor with maximum load of 200mA

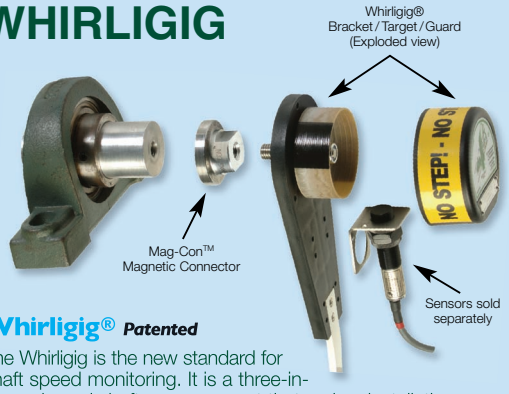
Approvals
- Europe - ATEX
- Worldwide - IECEx

Applications
Conveyors, elevators and other mechanical assemblies.

For more detailed product information, please visit:
www.go4b.com

Accessories for Speed Switches

WHIRLIGIG



Whirligig® *Patented*

The Whirligig is the new standard for shaft speed monitoring. It is a three-in-one universal shaft sensor mount that makes installation simple and more reliable for all inductive shaft speed sensors.

Your sensor mounts to the Whirligig and the complete assembly bolts to the machine's shaft. Machine and shaft vibration does not affect the performance of the sensor, as the whole assembly moves with the shaft. Personal safety is also improved since the rotating target is completely enclosed behind a tough plastic cover.

MagCon™ Magnetic Connector

Patented

50mm diameter magnetic coupler with 150 lb/660N of pulling force for connecting M12 thread to rotating shaft. Saves on drilling and tapping.

ENCODERS

Encoder

The Encoder is a safe heavy-duty option for protecting against dangerous underspeed and belt slip conditions. With its tough aluminium or stainless steel construction (polyester version available), the Encoder is used in the most severe industrial environments. It requires no guards as rotating components are encased inside the aluminium encoder. And since the encoder is bolted to an moves with the shaft, it needs no brackets.

1 **Shaft Encoder**
Heavy-duty shaft mounted speed monitor/encoder

2 **Wheel Encoder**
Return belt mounted heavy-duty belt speed monitor/encoder

ACCESSORIES

Tacho Display

Bright 25mm high LED display unit for connection to any PNP or NPN transistor output sensor to indicate shaft speed.
The unit incorporates a user-adjustable under-speed relay contact output. Quadrature display also available.

Speed Relay

DIN rail mounted speed relay can be used with any PNP or NPN pulsed output sensor for providing a user-adjustable underspeed relay contact output to alarm or shutdown machinery.

SpeedMaster™

Speed Switch Tester

The Speedmaster is a calibration and testing device that 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.

NEW

BEARING TEMPERATURE SENSORS

ADB

The **ADB** series have been designed to allow the depth of the sensor to be adjustable depending on your application. Three standard versions are available with probe lengths of 50, 100 and 200mm (other lengths available for special order). The sensors screw directly into a bearing housing through the existing grease zerk thread. Each sensor is fitted with a grease zerk to allow lubrication of the bearing without the need for removal of the sensor. The ADB style sensors are available with a standard NTC thermistor for 4B's Hotbus and Watchdog systems, or a 4-wire Pt100 - RTD type for PLC and DCS systems.

WDB8

The **WDB8** series is a range of bearing temperature sensors designed to screw directly into an existing 1/4" BSP 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.

MDB

The **MDB** series is a range of bearing sensors manufactured to screw directly into a bearing housing through the existing 1/4" BSP threaded grease zerk (can be installed in 1/8" NPT grease zerk fitting with an adapter). Each sensor is fitted with a grease zerk to allow lubrication of the bearing without the need for removal of the sensor. The sensor is fitted with a M12 connector for use with a separately supplied cable and socket assembly which can be connected directly to a PLC or to a hazard monitoring system, such as 4B's T500 Hotbus Elite, Watchdog Elite, or T400 Elite. The connections are not polarity sensitive therefore special connection requirements are eliminated.

WDB7 LUG STYLE

The **WDB7** series is a lug style NTC, PTC, Pt100 thermistor model for continuous **surface temperature monitoring** and has been designed to bolt directly onto a bearing housing, motor, gearbox, or machine casing. The mounting hole is 8mm from the factory, but can be drilled up to 13mm if needed. The sensor can be connected to a PLC or to a hazard monitoring system, such as 4B's T500 Hotbus Elite, Watchdog Elite, or T400 Elite. The connections are not polarity sensitive therefore special connections requirements are eliminated.

ADB8

WDB8

MDB8

WDB7 LUG STYLE

Bearing Temperature Sensors

ADB8

Features
- Screw in positive mount installation
- Grease zerk for bearing lubrication
- Adjustable depth (50, 100, 200mm probes)
- 1/4" NPT (brass body)
- NTC or Pt100 RTD versions – continuous temperature

Sensor options
- NTC or Pt100 4 wire
- Adjustable depth (50, 100, 200mm probes)

Input supply voltage
12/24 VDC (current limited)

Compatible 4B control unit
- Watchdog
- T500
- T400

Approvals
- Europe – ATEX
- USA, Canada – CSA
- Russia and CIS - GOST-R
- Worldwide - IECEx

Applications
Bearing temperature control

WDB8

Features
- Screw in positive mount installation
- Grease zerk for bearing lubrication
- 1/4" BSP (brass body)
- Cable with protective anti-bend cover

Sensor options
- NTC -10 to +105 °C
- PTC
- Pt100 -10 to +105 °C

Input supply voltage
12/24 VDC (current limited)

Compatible 4B control unit
- Watchdog
- T500
- T400

Approvals
- Europe – ATEX
- USA, Canada – CSA
- Russia and CIS - GOST-R
- Worldwide - IECEx

Applications
Bearing temperature control

MDB8

Features
- Screw in installation
- Grease zerk for bearing lubrication
- Wiring connector

Sensor options
- NTC, PTC or contact versions
- Pt100 version available (2, 3 or 4-wire)

Input supply voltage
12/24 VDC (current limited)

Compatible 4B control unit
- Watchdog
- T500
- T400

Approvals
- Europe – ATEX
- USA, Canada – CSA
- Russia and CIS - GOST-R
- Worldwide - IECEx

Applications
Bearing temperature control

WDB7 – Lug Style

Features
- Surface mount installation
- 8mm to 13mm bolt entry
- 1/2" NPT conduit entry
- Continuous temperature monitoring

Sensor options
- NTC -10 to +105 °C
- PTC
- Pt100 -10 to +105 °C

Input supply voltage
12/24 VDC (current limited)

Compatible 4B control unit
- Watchdog
- T500
- T400

Approvals
- Europe – ATEX
- USA, Canada – CSA
- Russia and CIS - GOST-R
- Worldwide - IECEx

Applications
Surface temperature control

For more detailed product information, please visit: www.go4b.com

Bearing Sensor Accessories

ADB Bearing Sensor Tester

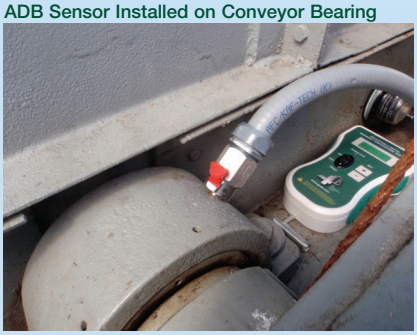
NEW

The **ADB Sensor Tester** has been designed to test 4B adjustable depth bearing (ADB) 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.

During planned maintenance or periodic testing, the ADB Sensor Tester can be used as a diagnostic tool to verify the alarm and shutdown sequences of the control unit are functioning as expected. To test, the heater block should be set above the control units alarm operating temperature. Remove the ADB bearing sensor probe from the housing and insert it into the heater block. As the heater block reaches the alarm temperature, the ADB sensor will relay this data to the control unit, allowing you to verify that the alarm and shutdown sequences run as expected.

Features:
- ADB Bearing Sensor Tester
- Hand Held Portable Unit
- Exact Alarm Point Testing
- Exact Shutdown Point Testing
- Easy To Read Display

ADB Sensor Installed on Conveyor Bearing



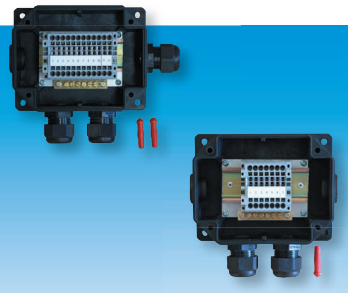
JUNCTION BOXES

4BJ Junction Boxes

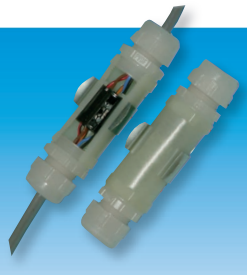
4B Atex approved junction boxes allow for the easy installation of sensors in potentially explosive dust hazard environments.

D5M Inline Junction Box

The D5M's unique moulded body with Atex approved glands and mounting clip/bracket allows for in-line connection closer to the sensors simplifying connections and reducing the time of intervention during maintenance operations or repairs.



4BJ
Junction Boxes



D5M
Inline Junction Box

4BJ Junction Boxes

4BJ

Features
- Robust glass reinforced nylon casing
- Up to 4 gland inputs
- Dust and water tight seal
- Detachable cover for easy terminal access

Terminal springs
6 x 2.5mm^2 or 12 x 2.5mm^2

Approvals
Europe – ATEX zone 21, IP66

Applications
Electrical installations in dust – explosive environments

D5M Inline Junction Box

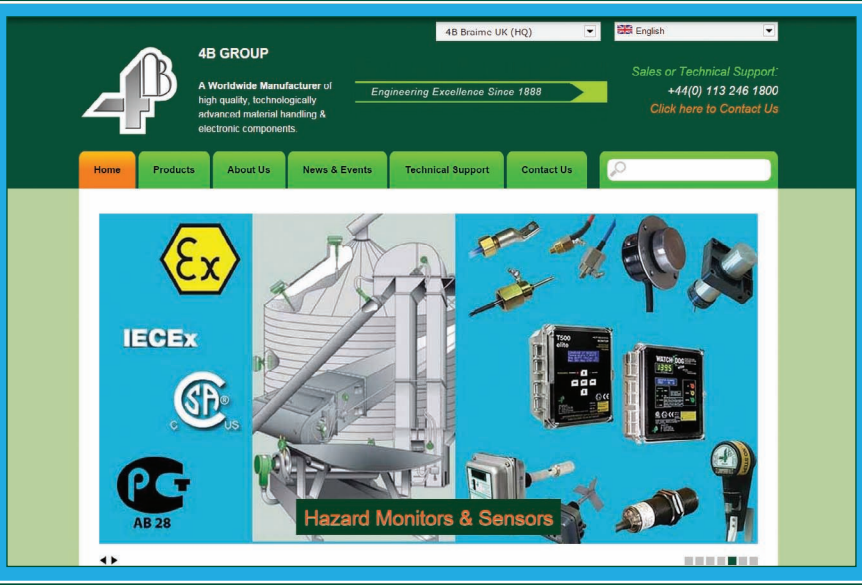
D5M

Features
- Inline junction box ideal for extending sensor cables within Atex hazard areas. ID zone 20 rated
- Complete with Atex glands and mounting bracket

Terminal springs
5 x 2.5mm^2

Approvals
Europe – ATEX zone 20, IP66

Applications
Electrical installations in dust – explosive environments



VISIT OUR WEBSITE FOR DETAILED TECHNICAL INFORMATION:

www.go4b.com

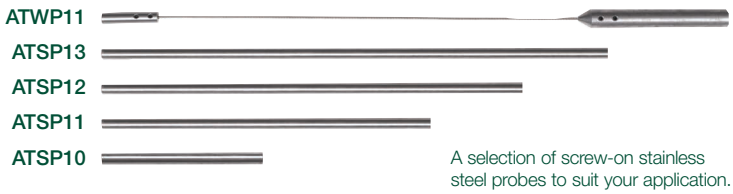
- Technical Manuals
- Installation Guides
- Wiring Guides
- CAD Drawings
- Certificates...

www.go4b.com

LEVEL INDICATORS

Auto-Set™

A user friendly, reliable point level indicator for bulk granular solids, powders and liquids. Digital display, push-button calibration and material build-up compensator make this unit the elite point level sensor.



A selection of screw-on stainless steel probes to suit your application.

Auto-Set™ Remote

A user friendly, reliable point level indicator for bulk granular solids or powders where there is high vibration and/or temperature involved. Remote electronic display/control unit allows for remote calibration/set-up away from vibration or heat.

ATS6
RF capacitance point level indicator

ATS6 with Extended Power Shield
RF capacitance point level indicator for thick-walled silos

ATS6 Flush Probe
RF capacitance heavy-duty plugswitch

Auto-Set™ Remote Probe
Polyprop probe - 120˚ C
PEEK probe - 250˚ C
Ceramic probe - 600˚ C

Auto-Set™ Remote Control
Remote control unit with digital display and calibration push buttons

Auto-Set™

ATS6

Features
- Push button calibration
- Digital display
- Internal timer
- Automatic material build-up compensator
- Attachable SS probes

Style
1 inch BSP

Supply voltage
120/240 VAC
24 VDC
(universal supply)

Output
1 set of voltage-free changeover relay contacts

Approvals
- Europe - ATEX
- USA, Canada - CSA

Applications
Material point level indication in silos, bins and other vessels. Plug condition in chutes and discharges.

ATS6 with Extended Power Shield

Features
- Push button calibration
- Digital display
- Internal timer
- Automatic material build-up compensator, 12 or 16 inches long
- Attachable SS probes

Style
1 inch BSP

Supply voltage
120/240 VAC
24 VDC
(universal supply)

Output
1 set of voltage-free changeover relay contacts

Approvals
- Europe - ATEX
- USA, Canada - CSA

Applications
Material point level indication in thick-walled concrete silos.

ATS6 Flush Probe

Features
- Push button calibration
- Digital display
- Internal timer
- Automatic material build-up compensator
- No moving parts

Style
100mm diameter probe with integral mount

Supply voltage
120/240 VAC
24 VDC
(universal supply)

Output
1 set of voltage-free changeover relay contacts

Approvals
- Europe - ATEX
- USA, Canada - CSA

Applications
Plugswitch for conveyors and bucket elevators.

Auto-Set™ Remote

Auto-Set™ Remote Probe

Features
- No moving parts
- No electronic components
- Automatic material build-up compensator
- Attachable SS probes
- High temperature available

Style
1 inch BSP

Supply voltage
From control unit

Output
To control unit

Approvals
- Europe - ATEX

Applications
Material point level indication in surge bins, vibratory feeders and high temperature processes.

Auto-Set™ Remote Control

Features
- Push button calibration
- Digital display
- Internal timer
- DIN rail mountable

Style
DIN rail mountable enclosure

Supply voltage
120/240 VAC
24 VDC
(universal supply)

Output
1 set of voltage-free changeover relay contacts

Approvals
- Europe - ATEX

Applications
Material point level indication in surge bins, vibratory feeders and high temperature processes.

www.go4b.com

For more detailed product information, please visit: www.go4b.com

LEVEL INDICATORS

RLI Shaker

The RLI "Shaker" rotary paddle switch is used to detect high / low levels of bulk granular solids in bins, tanks and silos. It can also be used to detect plug conditions in spouts, where long life and failsafe detection is required.

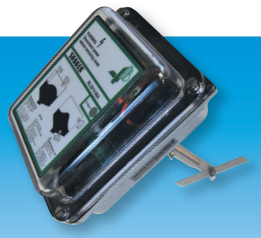
Utilizing a unique stepper motor drive, the RLI "Shaker" rotates clockwise, then counter-clockwise and then shakes to shed any excess material build-up. If the paddle rotation is impeded at any time by the bulk material then the electronic circuit provides a signal for level indication or control.

Roto-Safe™

Rotary level indicators for point level indication of bulk granular materials in bins and silos. These electro-mechanical rotary units are simple to use and reliable. The **Roto-Safe** incorporates a sensor to detect that the paddle is rotating for failsafe monitoring.

Binswitch

A popular range of capacitance proxy level/plug detectors for detecting dry bulk granular material level in bins, silos, hoppers and chutes. Available in 2-wire and 5-wire models, this simple but robust point level indicator has no moving parts, is self-contained with all potted electronics, and can be used in areas of high vibration. The units are simple to install on the sides or tops of steel bins/hoppers and are small enough to be used as plug detectors in discharge chutes.



RLI Shaker
Failsafe rotary level indicator

Roto-Safe™
Failsafe rotary level indicator

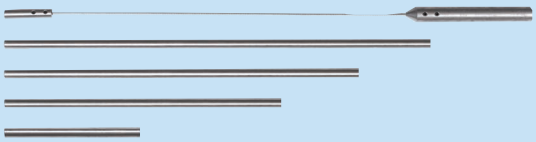
Binswitch
Binswitch capacitive proximity sensor
2 or 5-wire version available

RLI Shaker	Roto-Safe™	Binswitch
Features • Failsafe rotation detection • Glass-fibre reinforced nylon housing • Vertical extensions to 2m (maximum) wire rope • Shaking action for shedding material build-up • User adjustable torque control • Direct stepper motor drive • No clutch and no gearbox • Built in adjustable timer	**Features** • Failsafe paddle rotation detection • Glass-fibre reinforced nylon housing • Vertical extensions to 5m are available • Internal sensitivity adjustment • Adjustable timer • Automatic power shut-off	**Features** • User adjustable sensitivity • LED status lights • Fully potted electronics • 5m cable • 2 or 5-wire device • Relay contact output
Style Rotary level indicator with 1 1/4-inch NPT mounting thread	**Style** Rotary level indicator with 1 1/4-inch NPT mounting thread	**Style** 30mm cylindrical
Supply voltage 110/240 VAC 24 VDC (universal supply)	**Supply voltage** 110/240 VAC 24 VDC (universal supply)	**Supply voltage** 110/240 VAC 12-24 VDC (universal supply)
Output 1 set of voltage-free changeover relay contacts	**Output** 1 set of voltage-free changeover relay contacts	**Output** 1 set of voltage-free changeover relay contacts
Approvals • Europe - ATEX	**Approvals** • Europe - ATEX • USA, Canada - CSA	**Approvals** • Europe - ATEX • USA, Canada - CSA • Worldwide - IECEx
Applications Material point level indication in bins, silos, hoppers and other vessels where failsafe detection is required, or for dust hazard areas.	**Applications** Material point level indication in bins, silos, hoppers and other vessels where failsafe detection is required, or for dust hazard areas.	**Applications** Dry free flowing material level detection in bins, silos, hoppers and chutes.

Accessories for Level Indicators

Auto-Set™ Probes

A selection of screw-on stainless steel probes to suit your application.

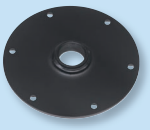


Rotary Level Paddles

Complete range of stainless steel paddles for Roto-Level Indicators.

Mounting Plate

Powder-coated mild steel mounting plates with 1 1/4-inch NPT or 1 inch BSP, half or full coupling. Use with Autoset, Roto-Level Indicators and Binswitches with adapters. (Also available in stainless steel.)

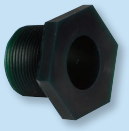


BAS3 Abrasion Shield

Polyethylene abrasion shield for ATEX Binswitch

BMPA Mount

Urethane compression fitting mount for use with Binswitch. 1 1/4-inch NPT external thread.



Gland Mount

Plastic gland mount for use with the Binswitch.

BTAS Teflon Abrasion Shield

Teflon Abrasion Shield screw-on end cap for ATEX Binswitch.

Installation Images

Binswitch Installed on Bucket Elevator Spouting (with SMP, BAS & conduit adapter)

Auto-Set™ Flush Probe Installed on Belt Conveyor Discharge

Auto-Set™ Flush Probe Installed on Screw Conveyor Discharge

www.go4b.com

Slack Chain Detection

www.go4b.com

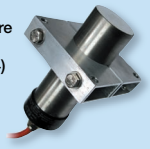
The 4B high power WDA reluctance sensor will detect a moving ferrous object up to 4" away. It is not affected by dust or material build up. It can be used as a **slack/broken chain detector** when installed as shown below. The sensor has an adjustable sensing range (1" – 4") and an LED helps with field adjustment.

Using the mounting block supplied, cut a 4" diameter hole in the sheet metal and position the mounting block so that the sensor is centered on this hole. Alternatively, the sensor and mount can be installed on a stainless steel plate without drilling a hole for the sensor. In this case, the sensor will not be affected because the sensing field can pass through the stainless steel plate.

WARNING - Make sure that there is no ferrous steel (such as the machine's frame) within the sensing field.

Speed Relay

WDA Sensor (WDA3V34C)

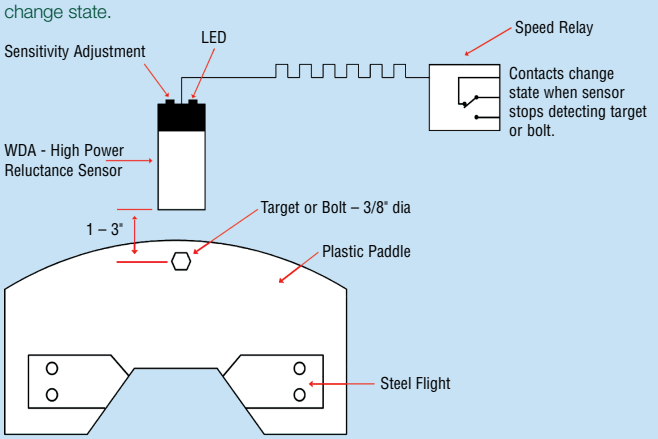


WDA High Temperature Sensor (HTAS1V34)

Option 1

Sensor Detecting Bolt Installed on the Paddle

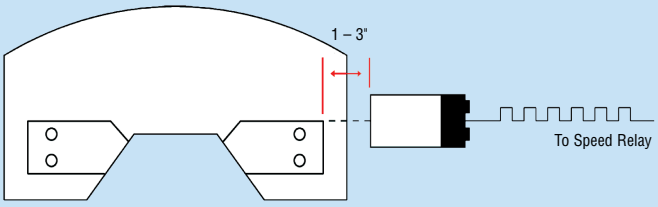
Under normal running conditions, the target bolt passes through the sensor's field and a pulse is sent to the speed relay. If the chain becomes slack, the target bolt will drop below the field and the pulses will stop, causing the relay contact to change state.



Option 2

Sensor Detecting Steel Flight

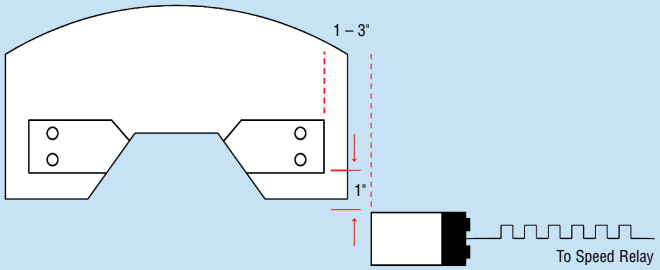
Under normal running conditions, the steel flight passes through the sensor's field and a pulse is sent to the speed relay. If the chain becomes slack, the steel flight will drop below the field and the pulses will stop, causing the relay contact to change state.



Option 3

Sensor Waiting to Detect Steel Flight

Under normal running conditions, the steel flight is out of the sensor's field, so no pulses are sent to the speed relay. If the chain becomes slack, the steel flight comes into the sensor's field and a pulse is sent to the speed relay, causing it to change state.



Detailed specification, wiring diagrams and installation/operating instructions available immediately upon request.

Tools & Services

NEW

4B offers an array of **tools and services** to support you and your products. The 4B Tech Team can answer your installation and operating questions, and provide on-site inspection, testing or commissioning services for our products. 4B has developed testing tools to easily check our sensors in the field during routine maintenance. We also have a selection of tools available to help with the installation of our products.

SpeedMaster™

The SpeedMaster™ is the only device that accurately tests the calibration of a speed switch, and allows testing of the alarm and shutdown features of the sensor while installed on the machine shaft.

- Speed Switch Calibration Testing
- Exact Alarm & Shutdown Point Testing
- No Need To Modify Sensor Assembly For Testing

Hotbus™ Node Tester

The Hotbus Node Tester is a portable testing unit that can be used in the field to determine the operational status of any Hotbus communications node and network to quickly identify wiring or node issues.

- Portable & Compact
- Optional PC Connection for extensive data analysis

ADB Bearing Sensor Tester

The ADB sensor tester has been designed to test 4B adjustable depth bearing (ADB) style temperature sensors in the field. 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.

Touchswitch™ Belt Alignment Sensor Hole Saw

- Recommended Tool for Touchswitch™ Sensor Installation
- 57mm Carbide Teeth for Optimum Performance and Durability
- Cobalt Steel Pilot Drill with Split Point Tip Prevents Walking
- Built in Flange Stop Prevents Over Drilling
- Ejector Spring Makes Removal of Slug Easier

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Open at a predetermined pressure, controlling any excessive pressure of flames, and containing fragments within a safe area in the event of an explosion.

Conveyor Chains

Drop Forged Chains

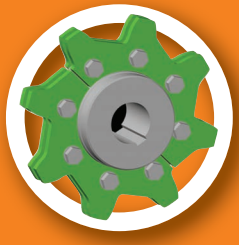
- Made from special heat treated alloy steel
- Case hardened to Rockwell C57 - C62, with ductile core hardness of Rockwell C40
- Maximum shock and wear resistance

Double / Triple Links

- For use with 2 and 3-strand chain applications
- Ultimate strengths
- For high capacity applications

Bolt 'n' Go Chains

- Easy assembly system using bolt-on flights instead of welding
- Available for forged and round link chains



Sprockets & Trailers

- For drop forged chains
- Manufactured from high grade heat treated steel
- Minimum hardness of 57 HRC

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