

Watchdog Takes a Bite Out of Conveyor Monitoring Hassles!

This unique and powerful dual microprocessor controlled, bucket elevator monitoring system can now be programmed for use with belt conveyors. A Speedswitch mounted at the tail pulley sends a speed signal through the capacitance style alignment switches mounted on the sides of the conveyor. When the belt is aligned correctly, the alignment switch contacts are closed and allow the speed pulses to pass through to the control unit. When the belt misaligns, the alignment switch opens and the control unit sees this as a belt misalignment, while still monitoring for belt speed/slip.

Alarm and Shutdown relay contacts are provided, along with serial communication and PLC interfaces. With optional bearing temperature monitoring (6 Zones), plug condition and pulley alignment monitoring, the Watchdog "elite" system is quickly becoming the system of choice for complete belt conveyor protection. 🐶



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Please call for in-depth product information, or visit our website at:

www.go4b.com

Employee Profile



Rollin Meeker

Hello, my name is Rollin Meeker. I joined the 4B Electronics team in September 2000. I am a graduate of ITT Technical Institute in Nashville, TN. When not at work, I enjoy family time with my wife and 13 month old daughter. Fishing, hunting, and baseball are my other pastimes. I grew up in Pekin, IL and enjoyed my time at Pekin high school especially during football season, when I played defensive tackle for the school team. I love the fast pace and team spirit within 4B, and I look forward to growing within the electronics department. 📶

**LOOK OUT
for 4B
Ebay Auction**

Wednesday, November 14th



Your Legs Never Had It So Good!

Nowhere else will you be able to find a more versatile selection of elevator buckets, than at 4B. Whether your interest is in steel or polymer, or standard replacements versus leg capacity increase, 4B has the right choice for your elevator legs.

The "**Big J Jumbo**" super series with the "Iceberg Edge" was built to work hard for your investment dollars. The "iceberg edge" was scientifically designed by 4B to combine the thickest polymer elevator bucket walls for a standard duty bucket, with a less potentially damage causing, streamlined leading edge. This bucket, which was the first on the market with the "wingless profile", was developed by 4B to enhance bucket filling efficiency for the closer spacing, higher capacity elevator legs required today. The compound curve bucket bottom replaces the archaic "brakes" in the old CC-HD buckets. 4B devised this improvement to give extra capacity, smoother discharge with reduced back-legging and longer bucket life. Don't forget that this bucket is offered in the deep drawn pressed "**seamless steel**", no welds to wear and fail. This bucket provides stronger construction, longer life and cleaner discharge.

Need more capacity?

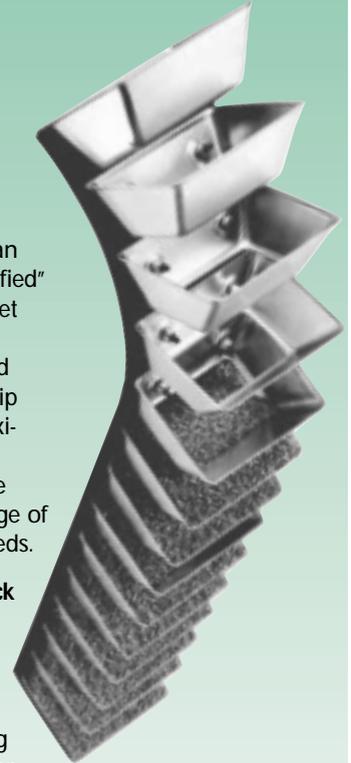
The premier bucket system offered to the industry is the "**Starco Super Low Profile**". Available in polymer or steel, this better concept in bucket design provides greater capaci-

ties to elevator legs than any other "modified" low profile bucket manufactured. Correctly tapered sides and front lip angle allow maximum filling and proper discharge over a wide range of pulleys and speeds.

There's no gimmick

to the 4B GB "Bottomless" bucket system, another proven leader in moving "more bushels for your bucks" in elevator legs. Mounted on close spacing, this steel bucket, offered in a wide range of sizes, will deliver enormous capacities. Material is lifted in a continuous column, and the carrying space normally wasted between conventional buckets is fully utilized to achieve astounding capacities. **Great for sticky materials**, as this style bucket is virtually self cleaning!

So take your legs to "**new heights**" with the favored 4B bucket systems when requiring new buckets, replacements or increase in capacities. **Your legs will never have had it so good!** 📶



New Web-Site

On September 17, 2001, 4B Components Ltd. launched their new Web-site www.go4b.com. The new and exciting 4B web-site is full of detailed information and exciting news about 4B. It contains technical infor-

mation, Trade Show dates which 4B will be attending, and a Questionnaire if you are looking for free engineering. So next time when you think of Technology-Innovation-Quality-Value, think of 4B Components Ltd. 📶

2001 – 2002 Trade Shows

AFIA Equip. Mfrs. Conference Nov. 1 - 3rd 2001
Kiawah Island

Cornbelt GEAPS Table Top Nov. 20th, 2001
Mini Show – Covington, IN

Canadian Prairies GEAPS Jan. 16th-17th, 2002
Table Top – Winnipeg, Manitoba

Illinois Grain & Feed Show Feb. 18th-19th, 2002
Crowne Plaza – Springfield, IL

AFIA/AGRO – Mexico Feb 28th-Mar. 2nd, 2002
Jalisco, Guadalajara

GEAPS Exchange March 2nd-5th, 2002
Vancouver, B.C., Canada

Powder Bulk Solids May 6th-9th, 2002
Chicago, IL

4B Components, Ltd. Key Personnel



Chris Robinson
Senior Vice President



Gayle Hawks
Office Manager



Rick Fifer
Vice President of Sales



Mike Robinson
Warehouse Manager,
Production & Logistics



Johnny Wheat
Electronic Products
Manager



Beatriz Poloney
Latin America Sales

4B Accepts Governor's Export Award

On August 16th, 4B proudly accepted the State of Illinois Governor's Export Award. During the Illinois State Fair, 4B Components Ltd., which was brought to the area by the Economic Development Council in 1984, was presented with a Governor's Award for Export. This award is annually presented to outstanding Illinois companies who have demonstrated superior performance and expertise in the area of exporting. 🍀



Left to Right:
Rick Fifer, Vice President of Sales, 4B Components Ltd.
Sharon Galantino, Deputy Managing Director,
State of Illinois European Office
Beatriz Poloney, Latin America Sales, 4B Components Ltd.

SPARKY'S SHOCKERS



Johnny Wheat
Manager Electronic
Products

Question: I have some conveyors in my plant that I want to fit with motion monitors. However they all run at different speeds and my electrician says that I must install 500 pulse encoders so that we detect belt slip quickly. Is this true?

Shaft Speed (rpm)	# of Targets	Reaction Time (seconds)
30 to 60	2	1.1 to 0.56
15 to 30	4	1.1 to 0.56
6 to 15	10	1.1 to 0.44
3 to 6	20	1.1 to 0.56
1 to 3	60	1.1 to 0.37
0.5 to 1	120	1.1 to 0.5

Answer: Usually the number of pulses produced by a sensor in one minute is the product of the shaft speed and the number of targets mounted on the shaft (special cases exist for quadrature encoders). Therefore a shaft running at 33 revolutions per minute (33rpm) with 2 targets would produce 66 pulses per minute (66ppm). If the under-speed alarm is set at 10% of normal running speed, then the alarm point is 59.4ppm. The reaction time for a certain trip point is the time for the sensor to see the next pulse when run-

ning at the trip speed. Therefore at the 59.4ppm alarm point the reaction time in seconds is 60/59.4, which is about 1 second. A 1-second reaction time is more than adequate for detecting underspeed on a belt conveyor. If you used the 500 pulse per rev. encoder on the same shaft, the number of pulses per minute would be 16,500. This would give us a 10% underspeed alarm point of 14,850 ppm and a reaction time of 60/14,850 seconds (4mS). Even if the control circuitry

could count this fast, this super quick reaction time is not required on a belt conveyor and provides no benefit to its protection. Working the math backwards, the 500-pulse encoder would provide a 1-second reaction time for a shaft running as slow as 0.133rpm. That's only 8 revolutions per hour! Only if your conveyor was moving so slowly that you could not even see it move, would you require a 500 or greater pulse encoder. The table shows the reaction times for certain shaft speeds and targets. 🍀

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