BLACK MAMBA™

Prevent Costly Repair

The Model 1088BM Black Mamba™ Web Press Splice Detection Technology detects the presence of splices in the material web being processed on a high speed web press. The 1088BM generates output signals to notify press print stations that a splice has been detected. The spacing tolerance between the press print heads or station is very close to the web creating potential to damage the print heads by passing splices when the press is in ready position. Detection of a splice in the web is critical to allow the system sufficient time to protect the print heads/station.

In general, the Black Mamba Technology:

1) 100% Reliably detect "ALL" splices in the web.
2) Generate a signal upon detection of a splice.
3) Provide a fail safe mechanism to notify the press system that the sensor subsystem is connected and functioning.

Theory of Operation

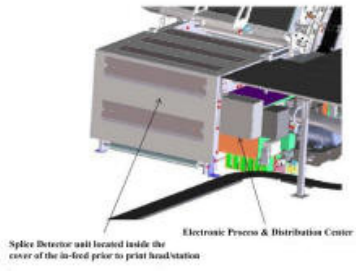
Digital signals relative to the common reference is output from the Black Mamba Control System and input to the web press electronics. The signals are used to indicate three states. The three states represented by the splice signal include the "idle" state, the "splice detected" state, and the "fault" state.

The idle state is represented by a continuous stream of pulses of a defined duration called the heartbeat. The splice detected event is represented by a single pulse of defined duration. The fault state is represented by a continuous (i.e., not pulsing) signal.

The web press electronics will sample and process incoming pulses to determine whether it's a heartbeat, a splice detect event, a combination of both superimposed on each other in time, or a fault condition. Short pulses within a defined tolerance of the heartbeat pulse will be interpreted as a heartbeat. Longer pulses within a defined tolerance will be interpreted as a splice event. Pulse widths that do not match the specification will be considered fault conditions. Missing heartbeat pulses or a static signal state will also be considered a fault condition.

Upon the detection of a "fault" condition the print heads/station will be retracted allowing the defective paper to pass uninterrupted by the print station thus protecting the sensitive print station from damage.

R.K.B. Technology



Splice Detector unit located inside the cover of the in-feed prior to print head/station

The R.K.B. based implementation is comprised of two distinct devices including an RKB Splice Detector and a Central Control Station. The sensor unit detects splices and outputs a pulse to indicate the defect "fault" event. The pulse is input to the central control station which combines incoming splice fault signals with a periodic time based ("heartbeat") signal and control processing circuitry. The resulting signal is output via a set of cabling and isolation circuitry to the web press electronics.

The processing circuits in the control console disables the heartbeat output if the sensor unit is not "powered on" or the splice fault signal is not connected. In addition, an option to disable the "heartbeat" independently for each output channel at field installation time is supported. In the latter case, splice fault events detected by the sensing unit will exist in each channel with or without the "heartbeat" depending on the installations specific settings.

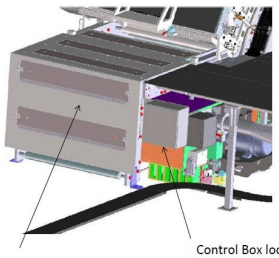
Expect Reliability

With installations in over 120 countries worldwide, our splice detection technologies have been effectively established to ensure delivered product superiority on tens of thousands of materials, coated and non-coated such as papers, films, nonwovens, textiles, and tapes. Our splice detection technologies are installed on many types of machinery including sheeters, on and off machine coaters, extrusion laminators, supercalenders, rotogravure and flexographic printing presses, holographic processes, textile and nonwoven machinery. Low speed to high speed, R.K.B. Splice Detectors are proven time and time again to be the leader in performance, reliability and price.

Benefits

- 100% splice fault detection “Guaranteed”.
- Fail safe to notify the press that the Black Mamba is connected and functioning.
- Limits emergency down time caused by damaged print heads/stations.
- Allows the end user (print maker) to purchase and utilize any roll of paper.
- Eliminates the need for "SPLICE FREE PAPER" to be required saving money.
- Cuts print head/station replacements saving thousands of dollars per year.
- Significantly improves marketability of press sales to end users.
- Facilitates increased market share thus increase annual revenues.

SPLICE DETECT ON T400



Detector located inside the cover on the in-feed on PEM1

1088B™ BLACK MAMBA

TECHNICAL SPECIFICATIONS

Defects Detected:	Splices & Web Breaks
Material Compatibility:	Papers, Plastics & Films
Total Web Thickness:	0.175" (4.45 mm) Max.
Gap Width:	0.25" (6.35 mm)
Maximum Web Speed:	10,000 fpm (3,048 m/min)
Relay Alarm Outputs:	
Dry Output Contact Closures:	2 (Non-inductive)
Current Capacity at 110 VAC:	0.1 Amp
Current Capacity at 220 VAC:	0.05 Amp
Alarm On Period:	1 Second
Electronic Alarm Output:	
Pulse Outputs:	1
Voltage:	24VDC (± 3 V)
Direction:	Positive Going
Duration (3 Selectable):	1 millisecond 10 milliseconds 100 milliseconds
Cabling Specifications	The cabling between splice detect distribution and the customer electronics is flex rated to 10k cycles and meets the following regulatory requirements: • (UL) 105C TYPE CM OR AWM 2661 105C 300V • CSA 105C TYPE CMG or AWM IA/B IIA/B • FT4 105C 300V CE ROHS
Ambient Temperature:	40 to 160° F (4 to 70° C)
Sensor Dimensions:	6.0" X 7.5" X 4.37" (15.24 cm X 19.05 cm x 11.1 cm)
Sensor Weight:	8 lbs/ 3.62 kilogram
Distribution Control Dimensions:	12.0” X 12.0” X 6.00” (30.48 cm X 30.48 cm X 15.24 cm)
Distribution Control Weight:	17.5 lbs/ 7.93 kilogram
Power:	24VDC Operating Level 17VDC minimum 30VDC maximum

Specifications are subject to change without notice.

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