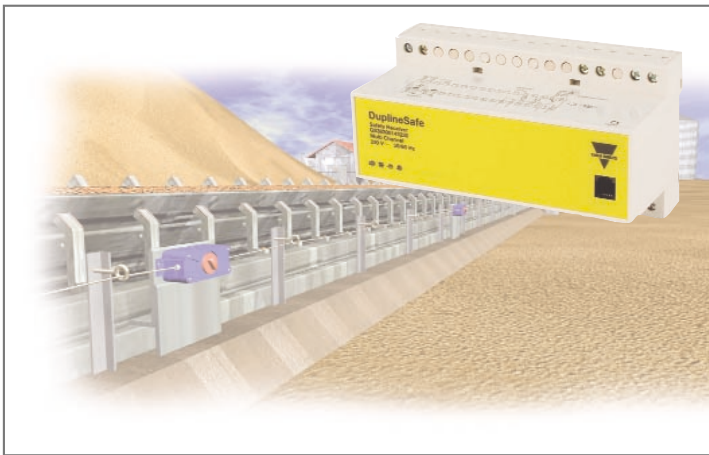


# CG APPLICATIONS

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**Application Note :** 16 January 2006

**Market involved :** Material Handling

**Product :** DuplineSafe

**Customer :** ---

**Subject :** Emergency stops on conveyors

## CUSTOMER ISSUE :

Along many conveyors, there are several emergency stop switches connected to a pull-wire, enabling the workers to stop the belt at any point in case of an emergency situation or a fault on the belt.

In order to reduce costly downtime of the belt, it is important that the location and nature of the problem is reported as fast as possible.

The traditional wiring solution with serial connection of all the safety switches does not provide this diagnostics, however, it merely stops the belt. Parallel wiring can provide the diagnostics, but it is a difficult and costly solution, since a 3-5 Km conveyor may have more than 50 switches installed.

## OUR SOLUTION:

A single two-wire bus cable is pulled along the conveyor. At each pull-cord switch location, a small DuplineSafe input module continuously transmits the status of the safety switch using the DuplineSafe address assigned to the module. The power supply for the input module is derived from the two-wire bus, hence no local power supply is required.

A DuplineSafe Relay Output Module is continuously monitoring the bus and the status of all the safety switches. If one of them is activated or if a bus fault is detected, the Output Module will deactivate its Safety Relay. The status of the safety switches can be monitored from a text display, PLC or PC providing fast and precise diagnostics.

## ACHIEVED BENEFITS:

- Due to the fast and precise diagnostics, machine stops can be fixed faster, leading to higher production efficiency.
- Safer than the traditional solution with serial wired safety switches, where a short-circuit can create an undetected loss of safety function.
- The DuplineSafe solution is approved by TUV Rheinland, according to IEC61508-SIL3 and EN954-1 Cat 4
- The high noise immunity of DuplineSafe means high system availability - false trips avoided
- Easy to design, install and commission a system.
- Easy to expand the safety system as the plant is enhanced.

