

## Modular Conveyor Controls Save Time and Money

Even though conveyor equipment is often standard or even out of a catalog for most conveyor manufacturers; the control systems they require are custom and very specific to a given application and installation. Conventional control system hardware is made up of one or more large centrally located electrical panels that require custom engineering and programming as well as a concerted field wiring effort. To make matters worse; unless this custom design is infinitely flexible enough to predict all possible permutations of the customer's future expansion and modification requirements, it is difficult (if not impossible) to implement, modify, and upgrade conveyor control systems in a short time frame at reasonable costs. Insight Automation has solved this problem with their ConveyNet® intelligent conveyor control system. The ConveyNet® family of modular controls allows the control system hardware to more closely follow the physical flow of the conveyor equipment and its installation. This approach distributes the control system hardware throughout the conveyor path thus making the installation wiring mostly localized as opposed to being pulled to large centrally located panels. This results in a faster, easier, and more error-free electrical installation. Modular distributed control systems

have been applied to conveyor systems before, but ConveyNet® is the first modular control system designed specifically with conveyor systems in mind by providing quick disconnect cabling as standard and a universal emergency stop design. A perfect illustration of the benefits of



ConveyNet® was for a project done by Insight Automation for a Becton Dickenson (BD) facility that manufactures test tubes for the medical industry. BD makes over 4 million tubes a day at this facility that runs 24/7. The plant has a 2 week summer shut down window each year in order to implement any new systems or modify existing ones to meet the coming year's production projections. For the summer 2003 shut down they had an ambitious plan to put in roughly 1000 ft. of conveyor including more than 30 new motor drives. This new conveyor would also need to interface with over a dozen production machines. If that wasn't enough of a project in itself, the area for the new system had to be de-commissioned cleared of old equipment

and the dozen or so new production machines had to be located into the area along with the conveyor equipment. It became clear to BD that the modularity of the ConveyNet® approach was the only way a system of this size and complexity could be implemented in such a short time. The ConveyNet® hardware and control devices (sensors, actuators, etc.) were essentially mounted and wired to the conveyor as it was set in place. The ConveyNet® data communications and emergency stop network topography was designed such that certain areas of the system could be commissioned independent of others so the debug team did not have to wait for installers to be completely done to energize parts of the system.

Also, because control devices are wired to the nearest ConveyNet® module, it was easy for the team to make "on the fly" decisions quickly on final locations of operator pertinent devices such as emergency stops and pushbuttons, etc. Contrast this with a conventional centralized panel approach which would make it next to impossible to relocate or add devices once the wires have been pulled from the main panel. The expandability feature of the ConveyNet® approach really came into focus for BD for the 2004 plant shutdown. BD needed to add more

production machines to the system installed the previous year, plus they wanted to add and modify other conveyor systems on the same floor. With the expandable modularity of ConveyNet®, installing and commissioning the modifications were as simple as mounting the new hardware and connecting the network cables. The communication and emergency stop networks were designed to accommodate the additions.



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