

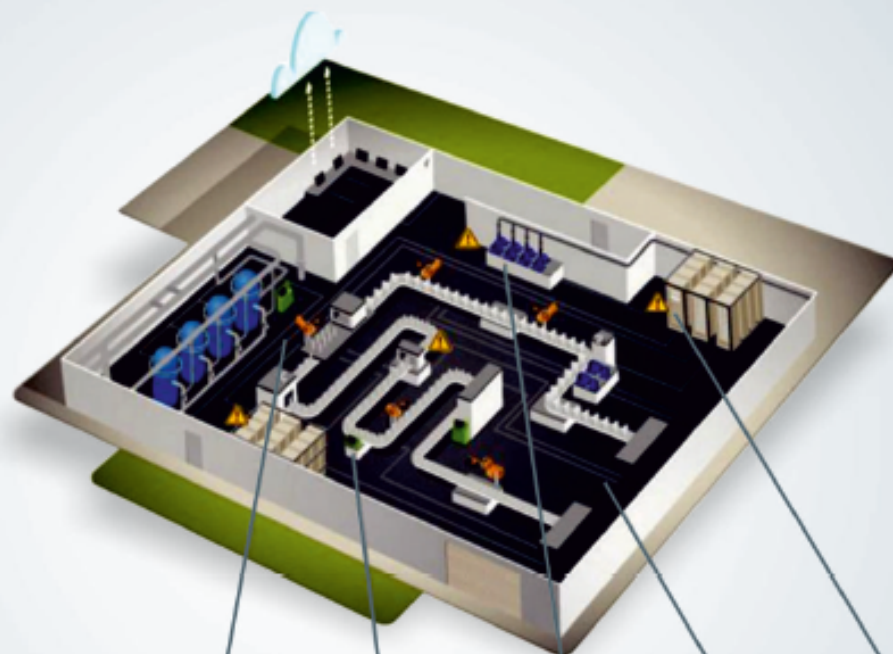
# AUTOMATION & CONTROLS TODAY

[www.aandctoday.com](http://www.aandctoday.com)

The new automation products news magazine

## The Future of Factory Automation

Pg. 20-21



**SENSORS & FIELD TRANSMITTERS**



**HUMAN MACHINE INTERFACE (HMI)**



**INDUSTRIAL MOTOR DRIVE**



**INDUSTRIAL COMMUNICATION**



**PROGRAMMABLE LOGIC CONTROL (PLC)**

**A&C TODAY INTERVIEW**



**Sameer Gandhi**  
MD, Omron Automation India  
Pg. 22-23

### Factory Automation



Pg. 25

Modular contactor

### Process Automation



Pg. 26

Linear Technology

### Mechatronics



Pg. 30

Ethernet Servo Motor Drives

### Industrial Safety & Security Instruments



Pg. 42

Thermal Imaging Camera

**SPECIAL INDUSTRIES FEATURES :**

**Automation For Plastic, Rubber, Printing & Packaging**



**Hakan Persson,**  
Global Product Line Manager Industrial Actuators  
Thomson Industries Inc.  
Kristianstad, Sweden  
E : thomson@thomsonlinear.com

In the past, Videojet used carts consisting of wire boxes on wheels to move inkjet printing and laser marking products from station to station during the assembly process. The major problem with this approach was that the height of the work surface could not be adjusted so tall and short operators had difficulty reaching the printer for assembly operations. In addition, the cart was not able to store subassemblies that traveled with the printer so they had to be carried by hand and sometimes were misplaced. Videojet overcame this problem by building a custom cart using the Thomson LC2000 lifting column to move the work surface up and down for operator comfort and ergonomics. "We selected the LC2000 lifting column because it provides a very low retracted-length-to-stroke length ratio so it can easily accommodate operators from under five feet to well above six feet," said John Forster, Principal Manufacturing Engineer at Videojet. The custom cart also includes shelves that hold the subassemblies that travel with the printer and incorporates electrostatic discharge (ESD) protection.

#### Assembly line challenge

Videojet Technologies Inc. is a leading manufacturer of coding, printing and laser marking products, fluids, and accessories for the product identification industry. Videojet has more than 325,000 continuous ink jet (CIJ), thermal ink jet (TIJ), case coding, thermal transfer overprinting (TTO) and laser marking units installed worldwide. The company builds numerous products at its Wood Dale, Illinois plant. Various models of CIJs, TIJs and laser markers are built on a particular Wood Dale line. The printers range in size from a shoe box to a mini refrigerator.

## Custom Cart with Height Adjustment Helps Videojet Improve First Pass Yield

Lifting column solution boosts production ergonomics



The Thomson LC 2000 lifting columns are self-supporting and height adjustable lifting solutions in a compact, pre-aligned package, perfect for applications requiring telescopic motion.



The LC 2000 provided an easy to install, low-cost ergonomic solution that increased operator comfort and productivity in the Videojet production line

In manufacturing, VideoJet had recently moved from typical stationary workstations to using mobile cart workstations. However, Videojet operators expressed concern over the difficulties of working with the carts, primarily because they had difficulty either reaching up to or bending down to the printers in the carts. Engineers first considered purchasing a cart and looked at a number of off-the-shelf alternatives. Most readily available carts offered only a manual, mechanical height adjustment requiring extra time to adjust. This would also create difficulties for smaller operators when heavier products were on the cart. A few offered an electrical height adjustment but they were expensive and the amount of adjustment did not fully accommodate the differences in height among the operators. None of the carts offered for sale could accommodate the assemblies that travel with the printers.

#### Designing a custom cart

Engineers began looking at ways to make their own cart. The main challenge was finding a lifting column that could deliver the full range of motion required to accommodate the height differences between the company's shortest and tallest operators. They found the Thomson LC2000 lifting column which moves from a compact collapsed position to a fully extended position along a single linear axis while achieving a retraction to extension ratio in excess of 2 to 1. The aesthetic design of the extruded aluminum profiles on the LC2000 allows it to be a visible component, which greatly reduced the effort and cost involved in building the custom carts.

The LC2000 is built around a telescoping lead screw driven by a geared DC motor. This design provides quiet operation and high load capacity with minimum current draw. Engineered polymer bushings are used as the guiding technology between the profiles, creating a high moment load capability in a compact envelope. The lifting column is maintenance free, has built-in end of stroke limit switches, and utilizes dynamic braking for short and consistent stops. With power off, the integrated load holding brake keeps the unit in position. An encoder option is available for synchronous operation of multiple columns, but was not needed for this single axis application.

#### Prototype helps ensure operator buy-in

"We have 12 operators on the line and making them all happy is not easy," Forster said. "The quick delivery of the Thomson prototype helped us gain everyone's buy-in. We made sure that everyone was happy before we built the first cart. The carts only cost us about 1/2 the amount of off-the-shelf



Operators expressed concern over the difficulties of working with the original carts, primarily because they had difficulty either reaching up to or bending down to the printers in the carts.

carts, which would have also required considerable additional expense to adapt them to Videojet's requirements."

"We ordered 25 carts because that's the

maximum number of units that we have in process at any one time," Forster said. "With the subassemblies traveling along with the printers, we have fewer mistakes and so our first pass yield has gone up and we are saving a lot of time in the re-work process. In the near future we are also going to mount our test stands on carts. The focal distance of our different models of laser marking systems can vary so today we have to take the laser off the cart and mount it on an adjustable test stand. In the future we will leave the laser on the cart and use the lifting column to achieve the right focal distance. By eliminating the test stands we will be able to double the number of lasers that we are able to test within the space available, doubling our productivity."

**Thomson Industries, Inc.**



**P:** +44-0-12713 34500

**E:** sales.uk@thomsonlinear.com

## Dual Radio Wireless Access Point/Client/Bridge/Repeater from Antaira

Antaira Technologies is a leading developer and supplier of device networking and industrial communication products and is proud to introduce its newest member of their wireless device family, the APN-320N(-T) simultaneous dual band radio.

Antaira Technologies' new hardened industrial grade wireless product is reliable and versatile. The APN-320N(-T) is able to communicate on both the 2.4 GHz and 5 GHz frequency ranges simultaneously and is IEEE 802.11a/b/g/n compliant. With flexible configuration options, the APN-320N(-T) can be set up to operate as either an access point, client, bridge or repeater. The unit has a maximum data rate of 300Mbps and it can support IEEE 802.11i/802.1x authentication. The APN-320N(-T) incorporates two independent radios within a single housing design. This allows the end user to take advantage of both 2.4 GHz and 5 GHz applications at the same time with a single unit. One advantageous scenario can be achieved by placing 802.11b/g devices on the 2.4 GHz band and 802.11a/n devices on the 5 GHz band. This will ensure that the



maximum performance of all devices can be achieved. Both of the radios within the APN-320N(-T) will have independent IP addresses as well as RJ45 connection ports. This will not only allow the user many different general application options but, will also offer advanced VLAN management options. The unit's connection interface has 2xRJ45 – 10/100 Base T(x) ports per radio. The APN-320N(-T) wireless unit comes with two Omni Directional antennas per radio (total of four antennas) that utilize MIMO technology to improve the communication performance of

each radio. The radio has a wide voltage input range of 12-48VDC making it suitable for both mobile and stationary applications. Users have the ability to use the APN-320N wireless device in various market applications, such as, building automation for two wireless radios within a single unit for enterprise and public networks and also in process control automation for simultaneous dual band wireless within a single unit for different control areas. The APN-320N(-T) also features a hardened industrial grade IP30 metal enclosure. The dimensions of the unit measure 46 x 155 x 115 mm (1.81 x 6.10 x 4.53 in.) and the unit weight is 1.30lbs. The wireless device has an extended operating temperature range of -35 to 70°C and can withstand an ambient relative humidity of 5 to 95% (non-condensing). This device is also compliant with part 15 of the FCC Rules.

**Antaira Technologies**



**P:** 1 (714) 671-9000

**E:** info@antaira.com