

# EFFICIENCY

## AVN Automatismes du val noir

Identifying and weighing on the fly  
during conveying – France.

## Customer profile

AVN, located in the heart of the Monts du Lyonnais region, builds conveyor lines for the French, Western European, North African, and Middle Eastern markets. AVN develops conveyor solutions for manufacturing and packaging processes for customers in the logistics, food, pharmaceutical, and cosmetics industries. The company is also successful in many other sectors, supplying solutions for baggage logistics at airports and in the field of waste treatment/sorting. AVN's range of solutions includes equipment and systems for storing, sorting, weighing, marking, and labeling.

## Customer objectives

AVN has developed a modular machine for certifying weight and volume measurements when bar-coded parcels or objects are passing in a continuous product stream. The machine consists of several conveying elements, which ungroup and segregate the incoming products into single units and identify/weigh/measure them while they are being conveyed. There is no need to stop products for weighing and scanning, as in the previous machine. This allows a significant increase in flow capacity, up to 6,000 pieces per hour for the fastest version, even with the new certified volume measurement feature introduced by the AVascaN. Last but not least, the weight volume and barcode information used to calculate the shipping costs can be stored in a database, which is required for certified data (Alibi memory).

The basic machine can be supplemented with an infeed module and/or a module for outfeed/sorting.

AVN had to design a completely new automation solution for this machine, and sought out a one-stop-shopping partner who could also offer engineering services. The plan was to have an automation solution consisting of 4 or 5 conveyors moved by motors with variable speed drives, an HMI application, data management, and a PLC-based control solution for fast response with sensor inputs. All the core parts of the automation solution should match, and should be available as a kit.

Despite the compact design of the machine, elements should be easy to disassemble for transportation. All of the automation equipment should be located in the HMI cabinet.

## Customer benefits

Lower engineering costs due to:

- Support by Schneider Electric application design engineers
- A consistent solution based upon a TVDA (Tested, Validated and Documented Architecture) for conveyor applications
- Energy saving methodology
- Expertise of Schneider Electric engineers on the application aspects

## Goal

To have an automation solution consisting of 4 or 5 conveyors, with variable speed drives, an HMI application, data management, and a PLC-based control solution for fast response with sensor inputs

## Story

AVN developed a modular machine for certifying weight and volume measurements for bar-coded parcels or objects passing in a continuous product stream. Despite its compact design, they needed it to be easy to disassemble for transportation

## Solution

- Support/engineering service by Schneider Electric Application Design Engineers
- Program based upon the Schneider Electric Application Function Block for conveyor solutions
- Integrated safety function of the ATV32 drive
- M238 controller

## Results

- 30% higher flow capacity
- Lower engineering costs due to:
  - Support by Schneider Electric application design engineers
  - A consistent solution based upon a TVDA (Tested, Validated and Documented Architecture) for conveyor applications
  - Energy saving methodology
  - Expertise of Schneider electric engineers on the application aspects

### Customer testimonies (Verbatim)

“We are particularly grateful for the support and collaboration we received from the application design engineer. The ADE was able to show us all the benefits of new Schneider products. He also highlighted the technical innovations in these new products.

Given the new challenges we face in terms of environmental considerations, we appreciated this collaboration because we can now offer our customers solutions that help them achieve real energy savings.”

### Implementation methodology

The first prototype was built with an M238 controller, in which conveyors were controlled by the Function blocks from the SoMachine Solution Library for conveying applications. Different algorithms and weighing modules were coded and tested to increase the flow rate.

For the commissioning phase, AVN chose a solution based on the M258 controller for fast response, ATV32 drives for the integrated safety functions, and Sick/ Bizerba specialized products for the certified measurement system.

### How did we estimate the energy savings

AVN considers energy savings to be a key value for their customers.

- The system automatically slows down the conveyors when no product is detected, and stops the line based upon an “eco” timer.

- The gears have a good performance ratio.
- An energy dashboard (based on power consumption by the drives) is included in the HMI application.

### Schneider Electric differentiating values vs. competitors

Schneider is a solutions provider with a portfolio for one-stop shopping.

SoMachine is an easy and powerful engineering tool.

With its short cycle times, the Modicon PLC M258 ensures fast communication with drives via the Canopen network, the RS485 barcode reader, and the third-party HMI software installed on the PC.

The integrated safety function of the ATV32 drive is an important feature for AVN.

The AVascaN machine allows maintenance and troubleshooting via remote access. The controller writes alarms and events into a local file, which is available via FTP.

### Solution overview

- Support/engineering service by Schneider Electric Application Design Engineers
- Program based upon the Schneider Electric Application Function Block for conveyor solutions

## Key Figures

- 30% higher flow capacity
- Support by Application Design Engineers



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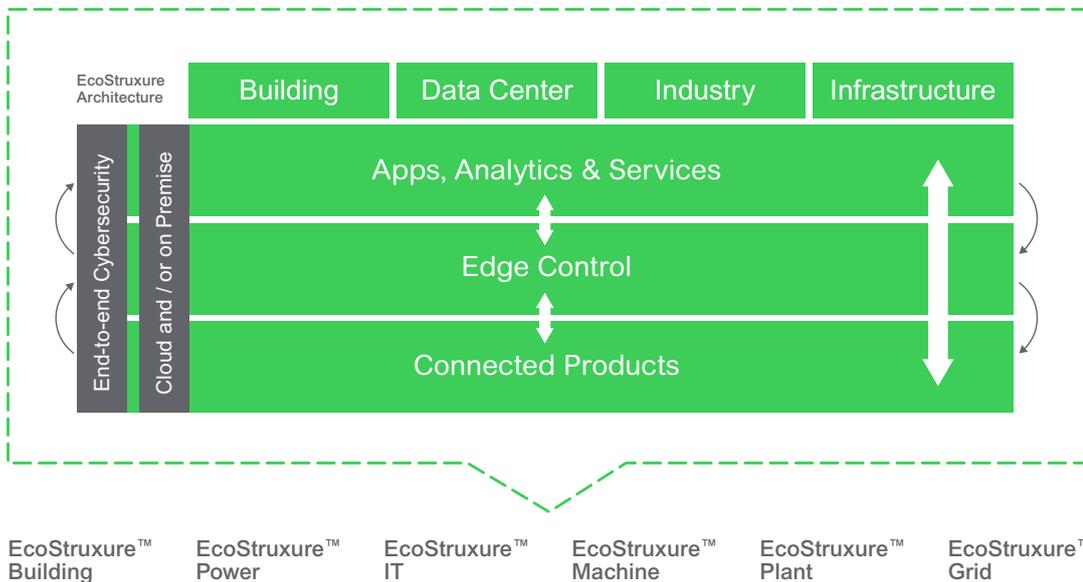
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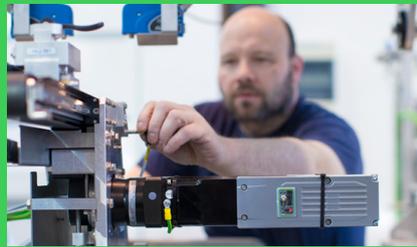
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