



VLT® Decentral drives and AutomationDrive save space and money in primary tobacco equipment

ITM Poland is a part of Dutch company ITM who specialise in production of wide range of equipment for tobacco industry. They produce full range primary and secondary equipment for tobacco plants.

ITM Poland was founded in 1991 and now produce the widest range of equipment in the whole ITM group. The primary and secondary equipment is sold to global tobacco producers like Phillip Morris, Imperial Tobacco, Scandinavian Tobacco, BAT including plants in Europe, Russia, Far East, Latin and North America, and South Africa.

From 1994 ITM Poland prepared to install new control units its for renovated machines. ITM Poland used VLT® 2000 and VLT® 3000 drives to control slicers and cutters. The following years VLT® drives were applied in other primary equipment.

Primary equipment operates in very harsh environmental conditions. Dust from processed tobacco leaves is very hygroscopic and tend to penetrates enclosures. and very. All electronic and electric equipment are therefore installed in tight cabinets with forced ventilation and sometimes internal air-conditioning.

For plants in Africa, Middle and Far East this expensive solution was the only possible. All drives were mounted in cabinets.



The compact VLT® drives mounted in a air conditioned cabinet

The drives ranged from 0,55 kW up to 18,5 kW. After introduction of VLT® 5000 and VLT® 2800 these replaced series 2000 and 3000.

During this change-over ITM Poland introduced Profibus for remote control of the drives. Gradually all equipment was furnished with Profibus.

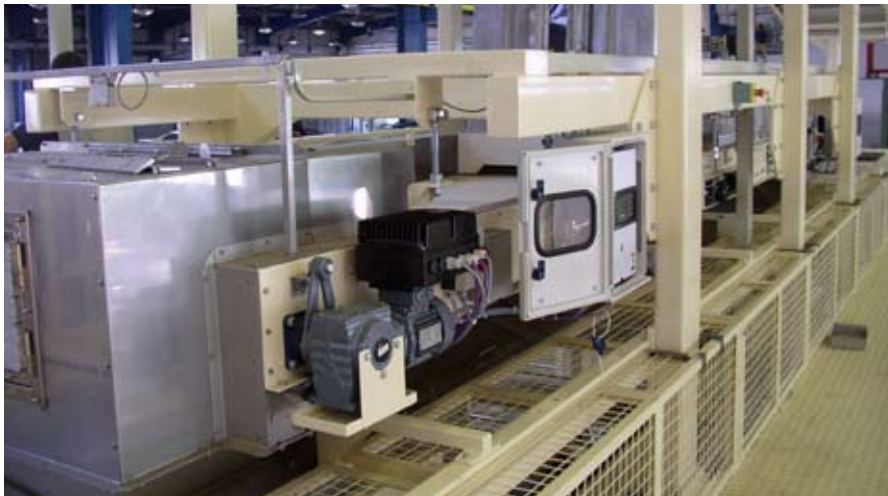
When Danfoss proposed VLT® Decentral FCD 300 with IP66 enclosure these were employed for all motors below 3 kW. Thanks to the very high enclosure class, most frequency converters were mooved out from the cabinets.

The decentral drives are installed directly on the motor or close by the motor.

Motors above 3 kW were controlled by VLT® 2800 mounted in cabinets - and VLT® 5000 – some in IP54 enclosure mounted directly on the machine

After introduction of VLT® AutomationDrive extensive trainings was offered the automation designer team and sample units were offered for tests.

After a few months ITM Poland decided to replace VLT® 2800 and VLT® 5000 above 3 kW by VLT® AutomationDrive in IP55 enclosure.



VLT® Decentral Drives installed on vertical slicer.



VLT® Decentral Drive FCD300 on prototype of flavour application system

Now only tobacco reclaimer Delphi use VLT®2800/5000, but is forecasting to modernise during 2007. After this, all converters will be installed outside cabinets.

Modernization using decentral VLT® drives and AutomationDrive gives ITM countable benefits. Cabinets with force ventilation are no longer needed. Only CPU controllers with the necessary peripherals are still installed in cabinets.

Long screened motor cables are replaced with very short ones or the drives are installed directly on motor.

All drives are controlled via Profibus without I/O digital and analog cabling.

Recently it was considered to introduce of frequency converters for control of tippers.

Formerly this machine didn't need to be

operated via a frequency converter. A new concept introduced in 2006 to improve the capacity required frequency converters with brake.

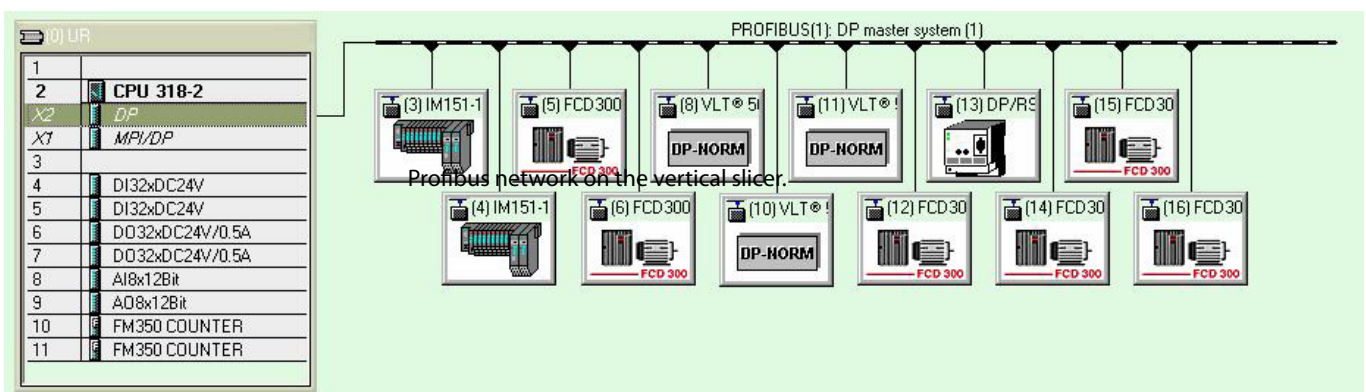
In a tipper the drive is working in conditions similar to hoist applications.

After tests in Radom, our service team equipped VLT® AutomationDrive FC302 P4K0 with 10% flat pack brake resistors and equipped seven tippers with this solution .

ITM Poland has chosen Danfoss frequency converters as result of wide tests. The VLT® drives were compared with frequency converters from three other global drives providers

Reasons to chose VLT® drives:

- reliable under difficult environmental conditions
- good technical support
- fast reaction
- worldwide service
- user friendly and intuitive
- good price





The shift

The shift to VLT® Decentral drives and VLT® AutomationDrive caused practically no problems.

Only the new solutions required assistance from service engineers.

Introducing Profibus network with the decentral drives met some problems with correctly grounding.

Formerly, when the frequency converters were installed in cabinets, some problems arose with wet tobacco dust penetrating cabinets and the enclosures of the frequency converters. Wet tobacco dust on the electronics caused short circuits, faults, and failures.

After introducing a maintenance programme, problems with failures disap-

peared. Diagnosis was very troublesome and time consuming because all cases happened during normal operation in plants all over the world.

ITM Poland is planning to use VLT® AutomationDrive FC 302 to control PM motors in new cutters.

Also operation of knives, lowering of sharpening units and mowing of diamants will be controlled by VLT® drives to increase capacity.

ITM Poland confirms that Danfoss is chosen as preferred supplier of drives for all applications in primary equipment.

Customer benefits from the installation:

- Expensive and unpractical cabinets with forced ventilation are avoided.
- More flexible application control due to profibus network between drives and control system for the whole production lines.

ITM Poland evaluate at least 15% cost reduction caused by mounting decentral VLT® drives and AutomationDrives outside cabinets - despite the fact that the price per unit is higher then VLT® 2800 and VLT® 5000.

Contact:

Andrzej Gizicki
Danfoss Poland