ENGINEERING
TOMORROW

Fact Sheet: VLT® Enclosed Drives

Extended functionality and real LHD for high-performance operation

VLT® Enclosed Drives have been designed to meet the most demanding requirements for flexibility, robustness, compactness and service-friendliness, making them a smart choice for diverse applications. They are ideal for low harmonic drive (LHD) usage, with outstanding harmonic mitigation performance.

VLT® Enclosed Drives are configurable with input/output filters, control and enclosure options to meet practically all requirements of the application, eliminating the need for an extra enclosure.

Selectable input/output filters ensure highest quality of the voltage on motor terminals, as well as the lowest harmonics content of mains currents – TDD <3% and it is a best choice, when harmonics frequencies above 2 kHz in the power supply network is a concern to fulfil the IEC 61000-2-4 requirements for harmonics up to 9 kHz.

Back-channel cooling

A unique ducted back-channel passes cooling air over heat sinks with minimal air passing through the electronics area. There is an IP54/Type 12 seal between the back-channel cooling duct and the electronics area of the VLT® drive. This allows 90% of the heat losses to be exhausted directly outside of the enclosure, improving reliability and prolonging life by dramatically reducing temperature rise and contamination of the electronic components. Input/output filters also use the IP54/ Type 12 -rated back-channel for cooling.

<3%

Total harmonic distortion, even up to 9 kHz

Real LHD

Available for enclosure sizes D and E

- VLT® AutomationDrive FC 302
- VLT® AQUA Drive FC 202
- VLT® HVAC Drive FC 102
- VLT® Refrigeration Drive FC 103

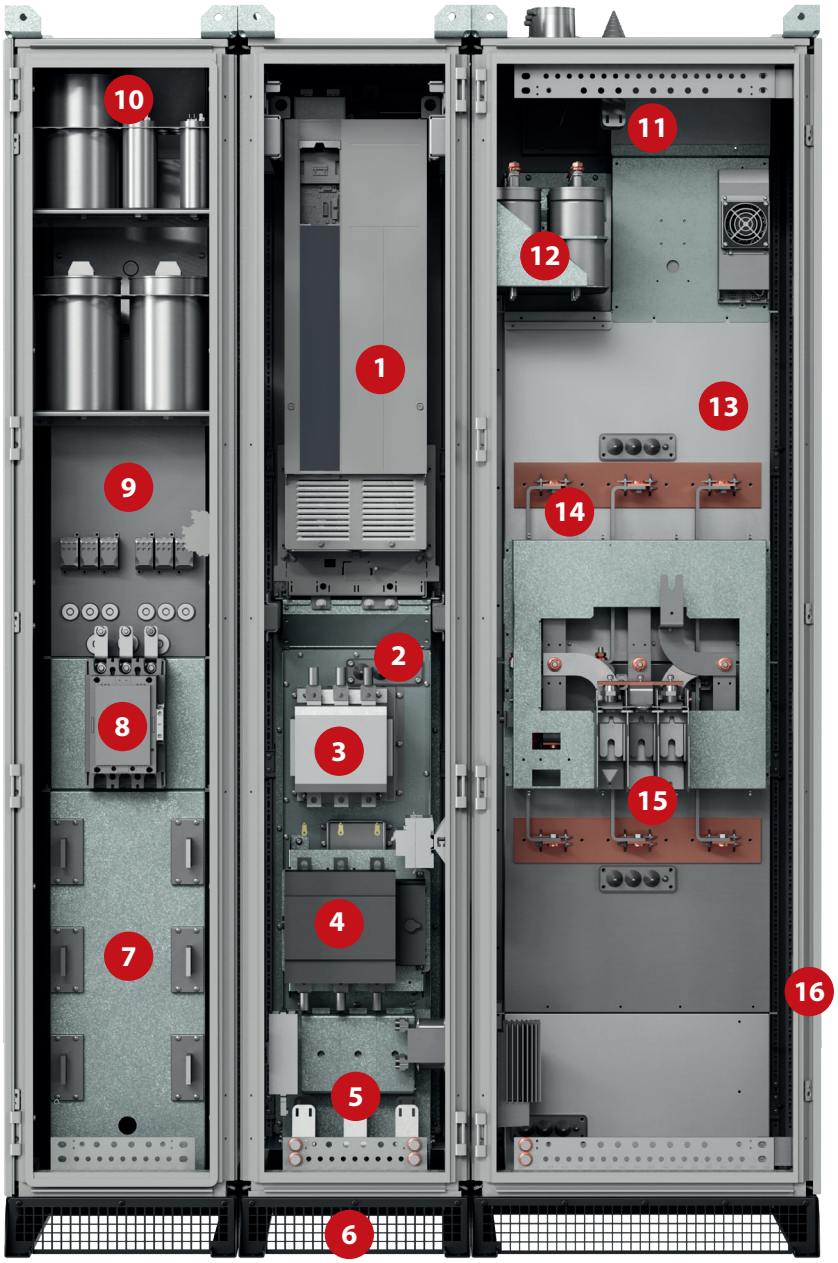
Protection ratings

- IP21 (Type 1)
- IP54 (Type 12)

Supply voltage and power ranges

- 380-480/500 V……90 kW-500 kW
- 525-690 V…….90 kW-710 kW with 150% overload

Feature	Benefit
Built-in options	Eliminate the need for an extra cabinet when options are required. Save cost on equipment and reduce space requirements.
Back-channel cooling	Reduce the scale of air conditioning required for the room, and even reduce the room size, for savings in up-front cost and operating expenses.
Variable speed cooling fans	Improve efficiency of the drive and reduce audible noise.
VLT® drives family with common graphical LCP	Know one drive, know them all. Save time and cost for training, service, ordering and spare parts logistics.
Integrated selectable input/output filters	Ensure highest quality of the voltage on motor terminals, as well as the lowest harmonics content of the mains currents.
Door-mounted control compartment	Safe accessibility to control terminals, also during operation of the drive.



1 VLT® drive: Drives with enclosure size D and E with selectable control options cards.

2 Back-channel cooling assembly ensures utilization of the drive's back-channel cooling concept in the cabinet.

3 Mains contactor is a selectable mains power option.

4 Mains switch disconnect is a selectable mains power option

5 Bottom entry establishment ensures IP54/NEMA12 connections to the power supply.

6 Plinth is available as an option in 100 mm, 200 mm, and 400 mm sizes.

7 Magnetics of the input filter assembly
ensures the low harmonics content of mains currents - TDD<3%.

8 Contactor to control the harmonics filter of the drive.

9 Back-channel cooling assembly for input harmonic filter ensures efficient cooling of magnetics.

10 Capacitors assembly of the input harmonics filter.

11 Top-exit establishment ensures IP54/NEMA12 connections of motor cables from the top.

12 Capacitors assembly of the output sine-wave filter.

13 Back-channel cooling assembly for magnetics of the output sine-wave filter.

14 Sine-wave filter magnetics of the output filter, as a selectable power option.

15 Motor connection terminals are placed in the sine-wave filter cabinet of the enclosed drive.

16 Enclosed drive cabinet utilizes Rittal TS8 baying system.