

Fact Sheet

VLT® Multiaxis Servo Drive MSD 510

High-performance central servo motion solution



The VLT® Multiaxis Servo Drive MSD 510 system is a high-performance central servo motion solution, developed specifically for the Food & Beverage, Packaging, Pharmaceutical and Material Handling industries. The servo system comprises a Power Supply Module (PSM 510), Drive Modules (SDM 511, SDM 512), Decentral Access Module (DAM 510) and an Auxiliary Capacitors Module (ACM 510). Modules are available in 2 frame sizes with a width of 50 and 100 mm.

The system offers easy mounting and installation with its unique 'click and lock' backlink concept. DC link and the control voltage supply is integrated in the backlink plate.

Click & Lock

Backlink concept enables easy installation and usage of the MSD 510 system

Depending on the application, the system can be used exclusively in a central system or together with Danfoss Decentral Servo Drives (ISD 510 and DSD 510) in a mixed system. The open system supports the RT Ethernet systems EtherCAT®, Ethernet POWERLINK® and PROFINET®.

VLT® Power Supply Module (PSM 510)

The PSM 510 generates a 565-680 VDC power supply and guarantees high power density. The PSM 510 is available in 3 power sizes and delivers an output power of 10, 20 or 30 kW with 200% overload capability. Furthermore, two PSM can be used in parallel resulting in an output power up to 60 kW.

Drive Modules

VLT® Servo Drive Module (SDM 511)

VLT® Servo Drive Module (SDM 512)

The SDM 511 is a single axis servo drive available in 2 frame and 5 power sizes. The SDM 512 is a double axis servo drive available in the smallest frame size and 3 power sizes. A wide range of feedback options allows the selection of the preferred PM motor.

Furthermore, the drive modules are equipped with digital I/Os and Safe Torque Off (STO).

The motion control is integrated into each drive so that the motion sequences can take place independently. This releases the central PLC and offers a highly flexible servo drive concept. The master can be programmed via IEC 61131-3.

VLT® Decentral Access Module (DAM 510)

The DAM 510 is used to connect the Danfoss Decentral Servo Drives ISD 510 and DSD 510 by a hybrid feed-in cable to the MSD 510 system. This gives the user the flexibility and freedom to design the servo system according to the application need.

VLT® Auxiliary Capacitors Module (ACM 510)

Depending on the application the ACM 510 can be added to the system for controlled machine stop in certain critical situations.

Feature	Benefit
Dynamic servo performance	Fast, accurate, and energy-efficient
Standard servo drive variants in frame sizes 1 and 2	Selection of most suitable servo drive for the application's power requirements
Real-time systems EtherCAT®, Ethernet POWERLINK® and PROFINET®	Fast process communication
Control via IEC 61131-3	Common standard, open system architecture
Local Control Panel (LCP)	Direct connection to the servo drives for fast commissioning, diagnosis, and service
LEDs on each module	Fast and effective monitoring
Mixed systems	Perfect integration of Danfoss Decentral Servo Drives
One user interface	Same SW Tools for the whole servo drive platform
Openness to PM motors	Use the servo motor and feedback type fitting the application need

The perfect solution for:

- Packaging machines
- Food & Beverage machines
- Pharmaceutical machines
- Material Handling machines

Available options

Feedback

- Resolver
- BiSS single-turn
- BiSS multi-turn
- EnDat 2.1*
- EnDat 2.2*
- Hiperface*
- Hiperface DSL*

Supported thermal sensors

- KTY
- PTC
- NTC

Digital I/Os

- 4 digital inputs
- 4 digital outputs

* In preparation

Specifications

PSM 510		
Input voltage	U_{IN}	400-480 V AC $\pm 10\%$, 3-phase
Output voltage	U_{OUT}	565-680 V DC $\pm 10\%$
Rated current	I_N	20, 40, 60 A
Rated power	P_N	10, 20, 30 kW
Enclosure		IP20

Servo Drive Modules SDM 511		
Rated voltage	UDC_{Link}	DC 565 V
Rated current	I_N	2.5, 5, 10, 20, 40 A
Maximum current	I_{max}	10, 20, 30, 40, 80 A
Rated power	P_N	1.4-22 kW
Functional Safety		STO (Safe Torque Off)
Enclosure		IP20

Servo Drive Modules SDM 512		
Rated voltage	UDC_{Link}	DC 565 V
Rated current	I_N	2 x 2.5, 2 x 5, 2 x 10 A
Maximum current	I_{max}	2 x 10, 2 x 15, 2 x 20 A
Rated power	P_N	2.8-11.3 kW
Functional Safety		STO (Safe Torque Off)
Enclosure		IP20

Dimensions

	Depth mm	Width mm	Height mm
Frame size 1	270**	50	380**
Frame size 2	270**	100	380**

** Including backplate