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Fact Sheet

VLT® Soft Starter MCD 500

Adaptive Acceleration Control (AAC) automatically employs the best starting and stopping profiles for the application.

Adaptive Acceleration Control means that for each start and stop, the soft starter compares and adapts the process to the chosen profile fitting to the application.

VLT® Soft Starter MCD 500 has a four line graphical display and a logical keypad, making programming easy. Advanced setup is possible displaying operational status.

Three menu systems: Quick Menu, Application Setup and Main Menu provide the optimum programming approach.

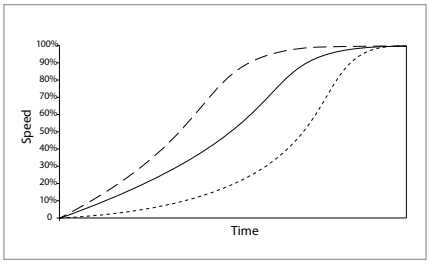
Power range

21 – 1600 A, 7.5 – 850 kW
(1.2 MW inside Delta Connection)
Versions for 200 – 690 VAC

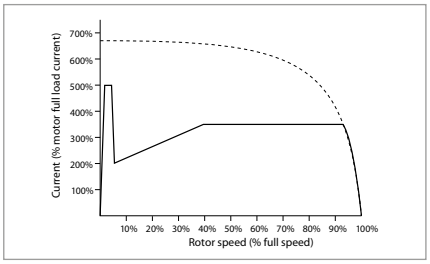
VLT® Soft Starter MCD 500 is a total motor starting solution. Current transformers measure motor current and provide feedback for controlled motor ramp profiles.

Integrated
bypass delivers all-round cost savings

Feature	Benefit
AAC Adaptive Acceleration Control	– Automatically adapts to the chosen starting and stopping profile
Adjustable bus bars allow for both top and bottom entry (360–1600 A, 160–850 kW)	– Space saving, less cable cost and easy retrofitting
DC injection braking distributed evenly over three phases	– Less installation cost and less stress on the motor
Inside Delta (6-wire connection)	– Smaller soft starter can be selected for the application
Log menus, 99 events and trip log provide information on events, trips and performance	– Eases analysis of the application
Auto Reset	– Less down-time
Jog (slow-speed operation)	– Application flexibility
Second-order thermal model	– Allows motors to be used to their full potential without damage from overloading
Internal bypass contactors (21–215 A, 7.5–110 kW)	– Saves space and wiring compared to external bypass – Very little heat dissipates when running. Eliminates costly external fans, wiring or bypass contactors
Auto-start/stop clock	– Application flexibility
Compact size – amongst the smallest in its class	– Saves space in cabinets and other application setups
4-line graphical display	– Optimum programming approach and setup for viewing operational status
Multiple programming setup (Standard Menu, Extended Menu, Quick Set)	– Simplifies the programming, but still holding to maximum flexibility
Multiple languages	– Serving the whole world



Three Adaptive Acceleration Control (AAC) start profiles; early, constant and late acceleration



Constant current/ current ramp – here shown with kickstart

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Fully-equipped soft starter for motors up to 850 kW

- Total motor starting solution
- Advanced start, stop and protection features
- Adaptive Acceleration Control
- Inside Delta connection
- 4-line graphical display
- Multiple programming setup menus

Options

- Modules for serial communication:
  - DeviceNet
  - EtherNet/IP
  - PROFIBUS
  - Modbus RTU
  - USB
- VLT® Control Panel LCP 501
- PC software:
  - WinMaster
  - WinStart
  - VLT® Motion Control Tool MCT 10

VLT® Control Panel LCP 501

- A full-function HMI interface – everything you can do on the VLT® Soft Starter MCD 500 is possible via the LCP 501
- Danfoss "FC" menu structure and button interface concept
- Multiple language selection – incl. Russian and Chinese
- Full graphics
- Real language in 4 lines
- Full parameter list, Quick Menu and application setup
- Adjustable multiple monitoring views
- A "copy-paste" function allows the user to copy parameter settings in the LCP and load to other units.
- IP65, NEMA 12
- 3 m cable and mounting kit included

Specifications

Mains voltage (L1, L2, L3)	
MCD5-xxxx-T5	200 VAC ~ 525 VAC (± 10%)
MCD5-xxxx-T7	380 VAC ~ 690 VAC (± 10%) (in-line connection)
MCD5-xxxx-T7	380 VAC ~ 600 VAC (± 10%) (inside delta connection)
Control voltage (terminals A4, A5, A6)	
CV1 (A5, A6)	24 VAC/VDC (± 20%)
CV2 (A5, A6)	110~120 VAC (+ 10% / - 15%)
CV2 (A4, A6)	220~240 VAC (+ 10% / - 15%)
Mains frequency	50/60 Hz (± 10%)
Rated insulation voltage to earth	600 VAC
Rated impulse withstand voltage	4 kV
Form designation	Bypassed or continuous, semiconductor motor starter form 1
Short circuit capability	
Coordination with semiconductor fuses	Type 2
Coordination with HRC fuses	Type 1
MCD500-0021B to 0215B	Prospective current of 65 kA
MCD500-0245C	Prospective current of 85 kA
MCD500-1200C to 1600C	Prospective current of 100 kA
Electromagnetic capability (compliant with EU Directive 89/336/EEC)	
EMC Emissions (Terminals 13 & 14)	IEC 60947-4-2 Class B and Lloyds Marine No. 1 Specification
EMC Immunity	IEC 60947-4-2
Outputs	
Relay outputs	10A @ 250 VAC resistive, 5A @ 250 VAC AC15 pf 0.3
Programmable outputs	
Relay A (13, 14)	Normally open
Relay B (21, 22, 24)	Changeover
Relay C (33, 34)	Normally open
Analog Output (07, 08)	0-20 mA or 4-20 mA (selectable)
Maximum load	600 Ω (12 VDC @ 20 mA) (accuracy ± 5%)
24 VDC Output (16, 08) Maximum load	200 mA (accuracy ± 10%)
Environmental	
Protection MCD5-0021B ~ MCD5-0105B	IP 20 & NEMA, UL Indoor Type 1
Protection MCD5-0131B ~ MCD5-1600C	IP 00, UL Indoor Open Type
Operating temperature	-10° C to 60° C, above 40° C with derating
Storage temperature	- 25° C to + 60° C
Operating altitude	0 – 1000 m, above 1000 m with derating
Humidity	5% to 95% relative humidity
Pollution degree	Pollution Degree 3
Heat Dissipation	
During start	4.5 watts per ampere

Dimensions

Current rating [A]	Weight [kg]	Height [mm]	Width [mm]	Depth [mm]	Enclosure size
21, 37, 43 and 53	4.2	295	150	183	G1
68	4.5			213	
84, 89 and 105	4.9				
131, 141, 195 and 215	14.9	438	275	250	G2
245	24	440	424	296	G3
331 and 396	30.2				
469, 525, 632, 744, 826 and 961	60	640	433	295	G4
1200, 1410 and 1600	120	856	585	364	G5