

Fact Sheet

# VLT® Soft Starter MCD 600 delivers superior performance for fixed-speed applications



**Integrated**  
bypass delivers  
all-round cost  
savings

The VLT® Soft Starter MCD 600 combines the latest in advanced controls and protections with an increased level of intelligence for superior performance in fixed-speed applications.

The MCD 600 is more flexible than ever to install, thanks to a wide variety of Ethernet and serial-based communication option cards, application-dedicated smart cards and support for eight languages.

The integrated bypass ensures both extremely high efficiency and harmonic-free operation at full speed, reducing energy consumed and required cooling capacity.

Ease of use is also greatly increased with new capabilities, such as the pump-clean function, PowerThrough operation, and

calendar or run time-based scheduling. Furthermore, enhanced protection ensures more uptime.

### Mains voltage range

- 3 x 200-525 VAC (T5)
- 3 x 380-690 VAC (T7)

### Current range and enclosure

- S1 / IP20 : 20 - 129 A FLC
- S2 / IP00: 144 - 579 A FLC
- S3 / IP00: 654 - 1250 A FLC

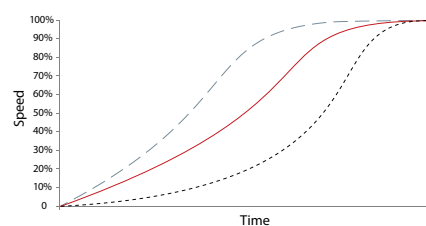
### Bypass configuration

Select the best configuration for your application:

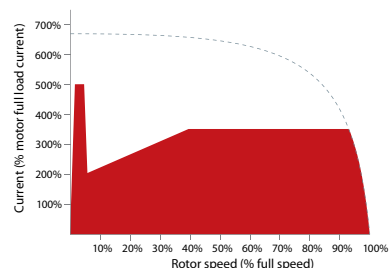
- S1, S2, S3 : Built in bypass contactor
- S2, S3 : No bypass
- S3 : External bypass

External bypass increases FLC performance by up to 30%

Feature	Benefit
Intuitive application setup	Save commissioning time.
Extended simulation mode with full simulation of start behavior	Test your soft starter without connecting mains supply or motor.
Built-in timers and schedulers	Easy to set up a timer. No need to install external controller or components.
Pump Clean (Deragging) function	More uptime and longer pump life.
Reverse control function	Run the MCD 600 in both forward and reverse directions. MCD 600 will maintain full control over starting current and protection. To use this function, install a reversing contactor in the application.
Power Through function	More uptime - bypasses damaged components to keep your motor running.
Emergency mode	Asset protection - keeps the pump or fan running for as long as possible in an emergency.



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



Constant current/current ramp - here shown with kickstart

### Additional features

- Advanced start, stop and protection features
- Auto start/stop clock
- Compact size
- DC injection braking
- 4-line graphical display
- Multiple programming setup menus
- AAC Adaptive Acceleration
- Emergency mode
- Power Through
- Simulation mode

### Available options

- Fieldbus communication modules:
  - EtherNet/IP
  - PROFINET
  - Modbus TCP
  - PROFIBUS
  - DeviceNet
  - Modbus RTU
- Remote LCP Option
- Application card
  - Smart Pump
- PC software:
  - WinStart
  - VLT® Motion Control Tool MCT 10



### VLT® Control Panel LCP 601

- Remote mountable option kit
  - IP65 enclosure class
  - 3 m cable included
- Features:
  - Graphical, multi-line display
  - Multiple language selection, incl. Russian and Chinese
  - Real-time graphing
  - Full parameter list, Quick Menu and application setup
  - User defined labels possible in LCP

### Specifications

Mains voltage (L1, L2, L3)	
MCD6-xxxxB-T5	200-525 VAC (± 10%)
MCD6-xxxxB-T7	380-690 VAC (± 10%) (in-line connection)
Control voltage (terminals A4, A5, A6)	
CV1 (A8, A9)	24 VAC/VDC (± 20%), 2.8 A
CV2 (A8, A9)	110-120 VAC (+ 10% / -15%), 600 mA
CV2 (A8, A9)	220-240 VAC (+ 10% / -15%), 350 mA
Mains frequency	50/60 Hz (± 5%)
Rated insulation voltage to earth	690 VAC
Rated impulse withstand voltage	6 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
Electromagnetic capability (compliant with EU Directive 2014/35/EU)	
EMC Immunity	IEC 60947-4-2
EMC Emissions	IEC 60947-4-2 Class B
Inputs	
Input rating	Active 24 VDC, 8 mA (approximately)
Motor thermistor (TER-05, TER-06)	Trip > 3.6 kΩ, reset > 1.6 kΩ
Outputs	
Relay outputs	10 A @ 250 VAC resistive 5 A @ 250 VAC AC15 pf 0.3
Main Contactor (13, 14)	Normally open
Relay output A (21, 22, 23)	Changeover
Relay output B (33, 34)	Normally open
Analog Output (AO-07, AO-08)	0-20 mA or 4-20 mA (selectable)
Maximum load	600 Ω (12 VDC @ 20 mA) (accuracy ± 5%)
Environmental	
Protection MCD6-0020B ~ MCD6-0129B	IP20
Protection MCD6-0144B ~ MCD6-1250B	IP00
Protection MCD6-0160C ~ MCD6-1134C	IP00
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
Vibration	IEC 60068-2-6
Heat Dissipation	
During start	4.5 watts per ampere
During run	
MCD6-0020B~MCD6-0042B	≤ 35 W approximately < 50 W
MCD6-0063B~MCD6-0129B	≤ 50 W approximately < 95 W
MCD6-0144B~MCD6-0244B	≤ 120 W approximately < 200 W
MCD6-0287B~MCD6-0579B	≤ 140 W approximately < 365 W
MCD6-0654B~MCD6-1250B	≤ 180 W approximately < 585 W

Data on all models can be found in Winstart for MCD600 tool

### Dimensions

Current rating [A]	Weight [kg]	Height [mm]	Width [mm]	Depth [mm]	Enclosure size
21, 34, 42	4.8	336	152	231	S1
63, 69	4.9				
86, 108, 129	5.5				
144, 171, 194, 244	12.7	495	216	243	S2
287, 323, 410	15.5	523			
527, 579	19				
654, 736	51	618	447	310	S3
950, 1154, 1250	62, 63, 65				

Any information, including, but not limited to information on selection of product, its application or use, product design, weight, dimensions, capacity or any other technical data in product manuals, catalogues descriptions, advertisements, etc. and whether made available in writing, orally, electronically, online or via download, shall be considered informative, and is only binding if and to the extent, explicit reference is made in a quotation or order confirmation. Danfoss cannot accept any responsibility for possible errors in catalogues, brochures, videos and other material. Danfoss reserves the right to alter its products without notice. This also applies to products ordered but not delivered provided that such alterations can be made without changes to form, fit or function of the product. All trademarks in this material are property of Danfoss A/S or Danfoss group companies. Danfoss and the Danfoss logo are trademarks of Danfoss A/S. All rights reserved.