

# VLT<sup>®</sup> Soft Starters now covers the whole range

**Danfoss Drives offered until recently only the renowned soft starter MCD 3000 series as the total motor starting solution providing numerous functionality to control starting and stopping and protect motor and application.**

The MCD 200 soft starter makes Danfoss Drives soft starter program complete. This new, compact soft starter comes in two versions, MCD 201 and MCD 202, both covering the power range 7,5 – 110 kW. The MCD 201 offers a timed voltage ramp up and ramp down, where the MCD 202 offer current limit starts, timed voltage ramp down and motor protection functionality. Both types feature internal relays for thyristor bypass at full speed, which minimises the power loss and therefore the thermal dissipation.

The MCD 200 soft starters can be programmed via rotary switches. A wide range of accessories comes with the MCD 200 products, a Remote Operator panel allows for remote control and with the MCD 202 the Remote Operator feature high-end functionality such as an analogue output proportional to the motor current. Furthermore add-on serial communication modules allow for control via Profibus, DeviceNet and Modbus RTU.

## **Two performance levels**

The difference between the two MCD 200 versions 201 and 202 lies first and foremost in the protection levels. The advanced MCD 202 features selectable trip-class for motor overload protection, detection of correct phase rotation, phase imbalance and maximum start time protection. It has a motor thermistor input and is protected against starting if there is a failure in the mains circuit such as a shorted thyristor.

Another difference is the soft start principle. With the simple MCD 201 the initial torque level can be adjusted from 30 to 70 % of direct online starting torque. When starting, the voltage will be ramped up to mains voltage depending on the preset time – max. 20 seconds. Current controlled soft starters such as the MCD 202 monitor the motor current and use this feedback to adjust voltage during starting so that a user specified starting current is maintained. In connection with this current limit starting function an initial current ramp up can be used, this is especially useful when the load conditions vary between starts.

All MCD 200 types are due to the internal bypass design very compact and easy to install and adjust. There is no need for additional contactors, but an output relay as standard can be used to control a line contactor to provide mains isolation if needed.