



**Soft starters/three-phase regulators DM4: product features**

The DM4 series devices round off Moeller's soft starter programme. With a rating range from 7.5 kW, the DM4 soft starters are ideal for demanding automation tasks. The series' main features are:

- Current limitation
- High overload withstand capability
- Large rating range up to 500 kW (or 900 kW in delta connection)
- Predefined parameter sets can be selected for standard applications
- All parameters also individually adjustable
- Keypad with plain text display (optional)
- Programmable relay and analog outputs
- Networkable
- Voltage regulator function (generalized phase control) can be implemented for each software changeover.

**Operation as 3-phase soft starter**

The DM4 series devices are soft starters for standard three-phase asynchronous motors.

The connection method determines the rating range:

- Inline connection (upstream of load, standard): 7.5 kW to 500 kW at 400 V
- Delta connection: 11 kW to 900 kW at 400 V, each phase of the soft starter being connected in series with the individual motor windings (6 lines required, motor delta-connected only).

**Typical applications as soft starter**

- Pump drives: pressure surges are prevented through soft starting. The mechanical load on the whole plant is reduced and the plant components' service life increases.
- Fan drives and compressors: The soft start prevents belt slippage and premature wear. This reduces operating costs and extends service life.
- Conveyors: The conveyor belt starts up gently instead of with a jerk and the transported goods do not fall over. The mechanical stress on the conveyor is reduced and its lifespan increased.
- Circular and ribbon saws: The current limitation at startup prevents current peaks. This saves energy supply costs and peak load tariffs.
- Agitators, mixers: as above.
- Mills, breakers: as above.

**Operation as three-phase regulator**

The DM4 devices can be changed over with the software to three-phase regulator operation. The performance range is 16 to 900 A at 400 V (standard connection only, in-line connection possible).

They can be operated in pure regulator mode or with a closed-loop control circuit. The units each have two analog inputs for setpoint/actual values and an additional built-in current feedback loop.

A keypad or the serial interface and PC software are required to configure regulator operation.

**Typical applications as three-phase regulator**

- Heater loads: Continuous temperature regulation reduces thermal and mechanical load on heating elements to increase their lifespan.
- Lighting control systems: Gentle switching on of lamps reduce current consumption in cold state. Utilization of the lamps' ideal operating point reduces their current consumption at the same light emission and extends their lifespan. This saves energy supply costs and peak load tariffs.
- Ozone generators: Regulation of high-voltage transformers.

**Documentation**

You can download the documentation for the DM4 soft starters and the DE4-KEY-2 keypad from our website:

<http://www.moeller.net/support>

AWB8250-1341	Hardware and commissioning
AWB8250-1346	Design of soft starters

**Mounting Instructions**

AWA8250-1704	7.5...37 kW
AWA8250-1751	45...75 kW
AWA8250-1752	90...200 kW
AWA8250-1783	250...500 kW





#### LCD keypad DE4-KEY-2

The DM4 soft starters are factory-preset for the most common applications. For various standard applications, parameter sets can be selected via an application selector switch. There is no longer a need for manual setting for different applications and its associated risk of errors.

The preset application parameter sets can also be selected via an optional keypad with plain text display. With the keypad, all parameters can be viewed, edited and adapted for specific applications.

The keypad is also required for reprogramming the soft starter's digital and analog inputs and outputs. Interface modules can be used as an alternative to the keypad. The soft starters can be interfaced with a PLC via Suconet K, PROFIBUS-DP or INTERBUS. Assigning parameters via the PLC offers the same range of functions as are possible via the keypad.

#### Documentation

For a detailed description, see the documentation: AWB8240-1344. The documentation is available on the Internet at [www.moeller.net/support](http://www.moeller.net/support).

#### Part no. overview

##### DE4-COM-2X

RS 485 and RS 422 serial interface

#### Application

The DE4-COM-2X plug-in communication module contains RS 232C and RS 485 serial interfaces for direct connection to a PC (point-to-point connection).

For use with the following devices:

- Soft starters DM4

#### Function

The DE4-COM-2X module can be plugged in and removed during operation. It provides direct access to all parameters. The drive can be controlled and monitored from the PC. Status and alarm messages are also displayed.

#### Comments

The PS416-ZBK-210 serial interface cable for connecting the serial interface with a PC must be ordered separately.

#### Features

The DE4-COM-2X module receives its power from the basic unit through the AIF slot or through two plug-in screw terminals from an external DC supply (+24 V, max. 80 mA).

RS 232 interface

- 9-pole SUB-D plug
- Pin 2 (Rx/D), pin 3 (Tx/D), pin 5 (GND)
- Point-to-point connection
- Max. cable length 15 m
- Max. baud rate 19200 bit/s

RS 485 interface

- 4-pole plug-in screw terminals
- Network topology: inline
- Max. cable length 1200 m
- Max. baud rate 19200 bit/s

#### Documentation

For a detailed description, see manual AWB823-1279D/GB/F.

This documentation is not supplied with the device. You can download it from our website:

- <http://www.moeller.net/support>





#### Part no. overview

#### DE4-NET-DP2

PROFIBUS DP fieldbus module

#### Application

The plug-in DE4-NET-DP2 communication module is used for direct connection to the PROFIBUS DP fieldbus (DIN 19245 Part 1 and 3).

For use with the following devices:

- Soft starters DM4

#### Function

The DE4-NET-DP2 module can be plugged in and removed during operation. It provides direct access to all parameters. The drive (slave) can be controlled and monitored via the PLC (master). Status and alarm messages are also displayed.

#### Features

The DE4-NET-DP2 module receives its power from the basic unit or through two plug-in screw terminals from an external DC supply (+24 V, max. 60 mA).

Version:

- 9-pole SUB-D plug
- DRIVECOM profile drive control technology 20
- Network topology: PROFIBUS DP line
- Max. cable length: 1200 m up to 93.7 Kbaud, 25 m at 12000 Kbaud

#### Documentation

For a detailed description, see the documentation:

AWB8240-1398D (German)

This documentation is not supplied with the device. You can download it from our website:

- <http://www.moeller.net/support>

