Frequency Converter
FC80

SIEB & MEYER

Top Technology made in Germany

SIEB & MEYER was founded in 1962 and has been an internationally successful company in the field of industrial electronics since then. With 300 employees we develop and manufacture control and drive technology. Our product range includes controllers for the machine construction and automation technology, servo amplifiers for various drives, frequency converters for high-speed applications and feed-in technology for renewable energy. Concentration on our core competence results in a worldwide leading position for controllers in the field of PCB tooling and routing machines. Close cooperation with our customers from the development up to the troublefree operation of our products is the basis of our quality philosophy. Highly qualified engineering teams and a modern manufacturing process lead to a maximum amount of innovations and flexibility in serving our customers. Worldwide service and customeroriented training are guaranteed with our headquarters in Lueneburg and our subsidiaries.

SIEB & MEYER

The Frequency Converter FC80 Sets New Benchmarks

With the SIEB & MEYER frequency converters new standards in high-speed applications are set. FC80 can be used for driving asynchronous as well as synchronous motors with speeds up to 480,000 rpm. Due to the sensorless control a speed sensor is not needed.
The intelligent magnetization control reduces the heating of the spindle and provides the maximum torque when required. This robust control technique allows operating the spindle via a standard data set while no manual adjustment is necessary.

Why sensorless? The magnetization control of FC80 allows operating the spindle without evaluation of a speed sensor. Since no speed sensor is required, costs are saved and the installation work to be done by the machine manufacturer is reduced. Speed sensors susceptible to vibrations and humidity and signal lines sensitive to electromagnetic interferences are no longer needed. This increases the availability of the machine and reduces the cycle costs of the machine.

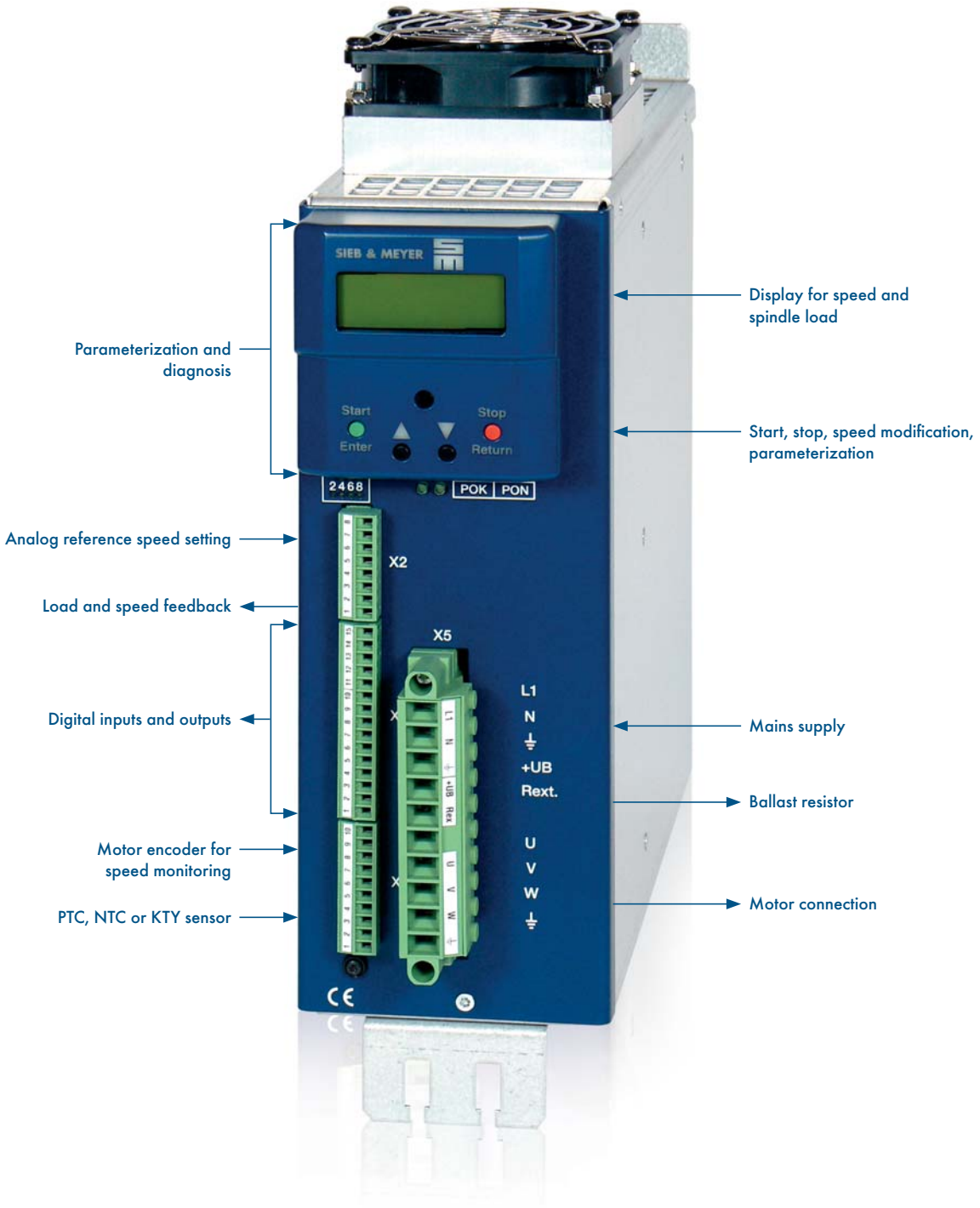
Frequency Converter FC80 – The All-Rounder in the Control Cabinet

FC80 is available with a single-phase power supply in the performance range from 1 to 3.8 kVA. The three-phase devices provide performances up to 173 kVA.
The stand-alone device is operated via a PC or an operating unit mounted at the frequency converter or in the door of the switch cabinet. Reference values and numerous feedback signals are provided for the integration of FC80 into a machine. Typical fields of application are grinding, drilling and routing of modern materials as well as driving turbo compressors and turbines. Besides high speeds of 2-pole motors the maximum output frequency of 8,000 Hz of the HF variant and 5,333 Hz of the standard device also allows the use of high-pole motors in high-speed applications.
The modulation frequency of the power output stage can be set via parameters according to the connected motor winding and the motor speed. Thanks to the maximum switching frequency of 100 kHz the use of a smaller motor choke is in many cases possible or even dispensable. The devices with performances up to 15 kVA are equipped with an integrated ballast resistor and a line filter.

Frequency Converter FC80T – The Table Top Device for Spindles with Small Powers

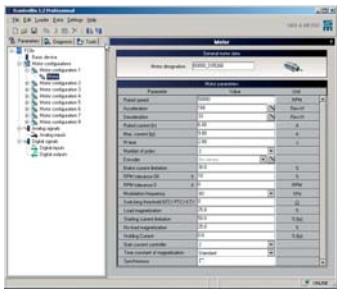
The table top variant of FC80 provides the same control conditions as the device for switch cabinets. It is conceived for spindles with small powers and easy system integration. For this purpose the operating elements, line filter, output choke and ballast resistors are already integrated in the device. An optionally installed transformer provides the corresponding protective voltage for hand held tools. The table top variants with output voltages of 220 V or 50 V are available for output powers up to 3.8 kVA.

The Interfaces of FC80

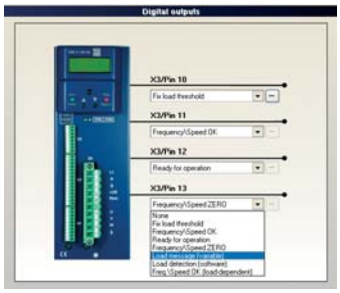


Software for Initial Operation and Parameterization: *fcontrol8x*

The *fcontrol8x* software delivered together with the device allows parameterization of up to eight data sets in the device. Data sets for different spindles or different tools can be saved and selected as desired. The *fcontrol8x* software provides numerous tools for analysis allowing optimization of the behavior of the drive in real applications.

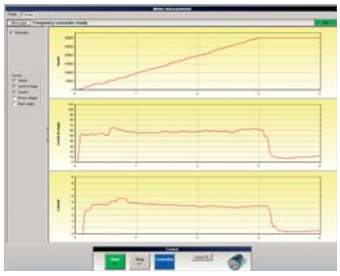


Only a few data must be known for the parameterization of the spindles. This data can either be derived from the motor data sheet or from the recommendations of the software documentation.



The digital inputs and outputs can be assigned with functions as desired. This allows for example parameterization of a load threshold signaling a contact with the work piece via a digital output.

Various diagnosis functions allow analyzing and optimizing the application without external measuring equipment.



The oscilloscope function records the measured values over an adjustable time. This allows analyzing the device's behavior during acceleration or critical machining processes.

Technical Specifications FC80

Frequency Converter FC80 up to 40 kVA

1 x 50 V mains supply (AC)			
0.26 kVA	I_r: 3 A	I_P: 7 A	295 x 79 x 256 mm
0.65 kVA	I_r: 8 A	I_P: 12 A	314 x 88 x 256 mm
0.9 kVA	I_r: 11 A	I_P: 16.5 A	314 x 88 x 256 mm

1 x 230 V mains supply (AC)			
1.0 kVA	I_r: 3 A	I_P: 7 A	295 x 79 x 256 mm
2.0 kVA	I_r: 6 A	I_P: 9 A	314 x 88 x 256 mm
3.8 kVA	I_r: 11 A	I_P: 16.5 A	314 x 88 x 256 mm

3 x 230 V mains supply (AC)			
4.1 kVA	I_r: 11 A	I_P: 21 A	366 x 134 x 255 mm
5.7 kVA	I_r: 15 A	I_P: 28 A	366 x 134 x 255 mm
9.5 kVA	I_r: 25 A	I_P: 40 A	366 x 153 x 255 mm
12.2 kVA	I_r: 32 A	I_P: 56 A	366 x 153 x 255 mm
17.1 kVA	I_r: 45 A	I_P: 90 A	366 x 275 x 255 mm
22.8 kVA	I_r: 60 A	I_P: 120 A	366 x 275 x 255 mm

3 x 400 V mains supply (AC)			
5 kVA	I_r: 7.5 A	I_P: 15 A	366 x 134 x 255 mm
7 kVA	I_r: 11 A	I_P: 22 A	366 x 134 x 255 mm
10 kVA	I_r: 15 A	I_P: 30 A	366 x 153 x 255 mm
15 kVA	I_r: 23 A	I_P: 43 A	366 x 153 x 255 mm
20 kVA	I_r: 30 A	I_P: 60 A	366 x 275 x 255 mm
30 kVA	I_r: 45 A	I_P: 90 A	366 x 275 x 255 mm
40 kVA	I_r: 60 A	I_P: 120 A	366 x 275 x 255 mm

I_r = rated current, I_P = peak current. Stated currents are rms values.
Voltage limits at 50 V: 50 V -20%/+10%, related to the input voltage.
Voltage limits at 230 V: 200 V -10% up to 230 V +10%, related to the input voltage.
Voltage limits at 400 V: 400 V -10% up to 480 V +10%, related to the input voltage.
The device dimensions are defined as height x width x depth, related to the mounting dimensions.

FC80 with 55 kVA ...173 kVA

FC80 can be combined with air-ventilated power output stages with 55 kVA and 70 kVA. Furthermore, water-cooled output stages with 100 kVA, 125 kVA, 150 kVA and 173 kVA are provided. External power supply modules are used for output stages from 55 kVA.

Technical Specifications FC80T

230 V mains supply, 50 V output voltage			
0.26 kVA	I_r: 3 A	I_P: 6 A	110 x 373 x 276 mm
0.6 kVA	I_r: 7 A	I_P: 14 A	110 x 373 x 276 mm

230 V mains supply, 220 V output voltage			
3.8 kVA	I_r: 11 A	I_P: 21 A	110 x 373 x 276 mm

I_r = rated current, I_P = peak current. Stated currents are rms values.
Voltage limits at 50 V: 50 V -20%/+10%, related to the input voltage.
Voltage limits at 230 V: 200 V -10% up to 230 V +10%, related to the input voltage.
The device dimensions are defined as height x width x depth, related to the mounting dimensions.

- **CNC Controllers**
- **Drive Electronics**
- **Feed-in Technology**

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