SIEB & MEYER

SD2M

Three-level Frequency
Converter for Turbo Blowers
and Turbo Compressors

Our Experience in High-speed Technology – Your Advantage!

SIEB & MEYER stands for competence in drive and control technology. Our strategy includes continuous research in new technologies – such as one of the first three-level frequency converters in a power range over 55 kW. The consistent success story of the SD2M proves that we have identified a gap in the market. Over the years, we have continuously optimized the solution and today it proves to be a true all-rounder in numerous application areas.

The main advantages of the SD2M*

Up to **60 % reduced installation space** for the required electrical components

Up to **50 % reduced weight** for the required electrical components

significantly **less wiring- and assembly work**

cost reduction for the drive chain

improved efficiency of the overall system

improved availability due to the reduced number of components

reduced environmental footprint due to lower energy consumption

* compared to today's standard technology and the overall system

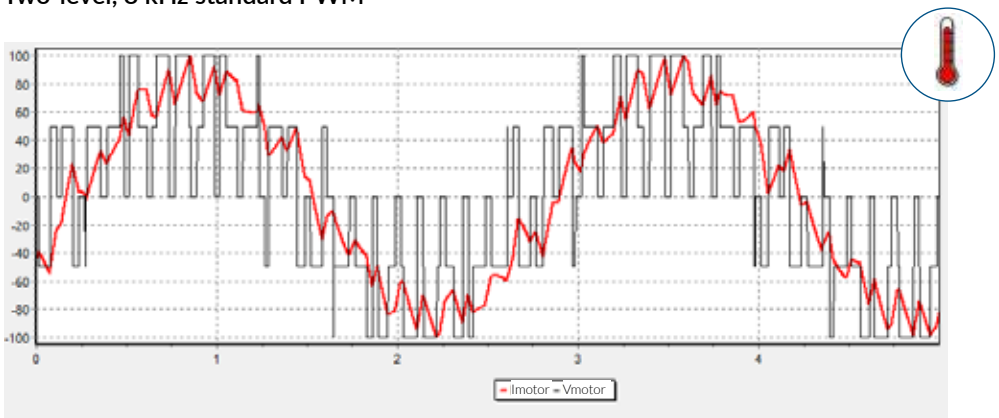
What Makes the Difference?

Standard converters in the higher power classes typically use the well-known technology of two-level pulse width modulation (PWM) with max. 8 kHz switching frequency. In most high-speed applications, this requires additional components such as LC filters or chokes to minimize the additional losses in the engine.

SIEB & MEYER frequency converters of series SD2M are specially designed for high-speed applications and use the innovative three-level technology – also called multi-level technology. This is of great advantage in these applications because in most cases the SD2M converters do not require motor filter elements. This additional value is achieved by the three-level technology, as well as the PWM switching frequency of up to 16 kHz as standard. The combination leads to a considerably improved motor current quality, which significantly reduces the undesired rotor losses – by up to 90 %!

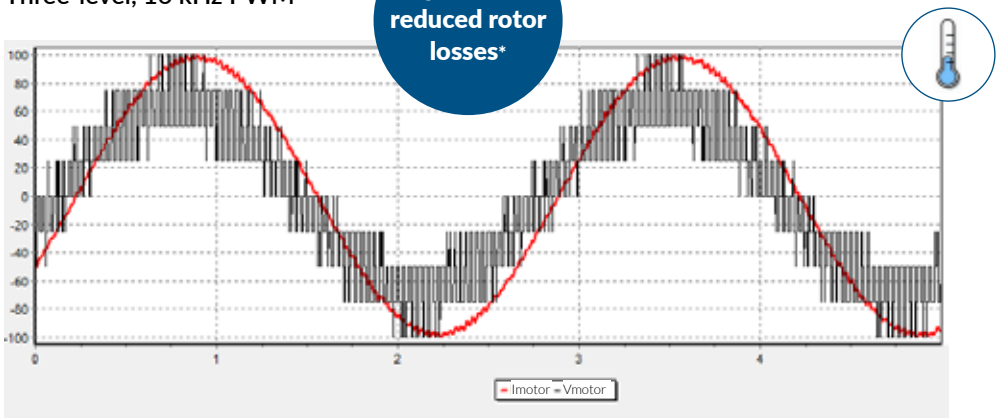
Technology / System-Property	**SD2M** Three-level PWM	**Standard converter** Two -level PWM with motor choke	**Standard converter** Two-level PWM with LC filter
Low weight	✔	x	x
Small installation space	✔	x	x
No risk of resonance effects	✔	✔	x
Total costs	✔	x	x

Two-level, 8 kHz standard PWM



Three-level, 16 kHz PWM

Up to 90 % reduced rotor losses*



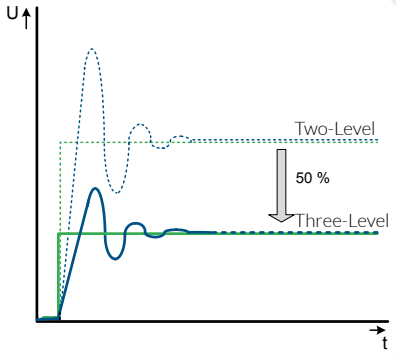
* compared to today's standard technology


5
10
15
16
0
KL1.6


MADE IN GERMANY
Developed and produced
in Lueneburg, Germany
CAUTION
CAUTION
90 min

Good to Know

- Currently available power classes from 55 to 330 kW (75 to 440 HP), with up to 630 Arms rated current
- Liquid cooling as standard (water-based), air cooling on request
- NRTL/CSA certifications in progress for all versions
- Reducing the switching PWM amplitude by 50 % leads to very low insulation stress of the motor *(see diagram on the right)*
- Optional DC voltage supply for active magnetic bearings via internally fused terminals (intermediate DC circuit)
- In case of a power failure the magnetic bearings are protected by the intermediate DC circuit which is maintained by the process of an active emergency breaking
- Designed for 100 % load 24/7
- All power components are designed for 10 years continuous operation at nominal load
- Designed for worldwide 3-phase supply networks - also IT grids without grounding
- Efficient software *drivemaster2* for parameterization and diagnosis
- Customized solutions can be realized
- 3C3 protective coating of the PCBs for operational reliability in aggressive environments



Scan for more technical data

Accessories

We offer our customers full support in the selection of necessary electrical accessories – up to the point of delivery. Electrical accessories are for example line commutating chokes or EMC line filters.

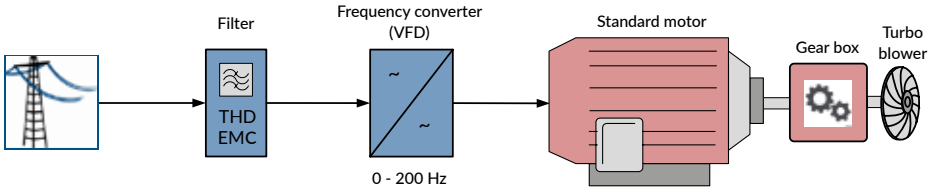
The selection of the necessary accessories depend on the

- local conditions
- national regulations
- type of grid
- required EMC-level

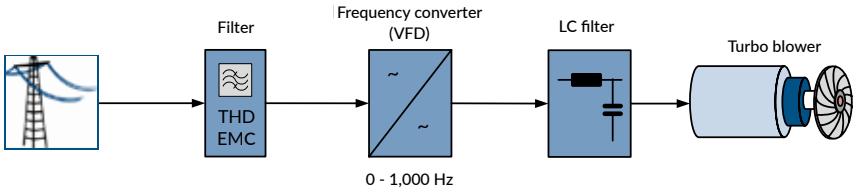
Our experience and flexibility guarantee effective solutions!

Solutions for conventional bearings or foil bearings

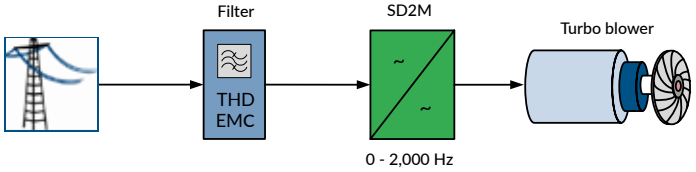
Solution with standard converter, standard motor and gear unit



Solution with converter and directly driven turbo blower

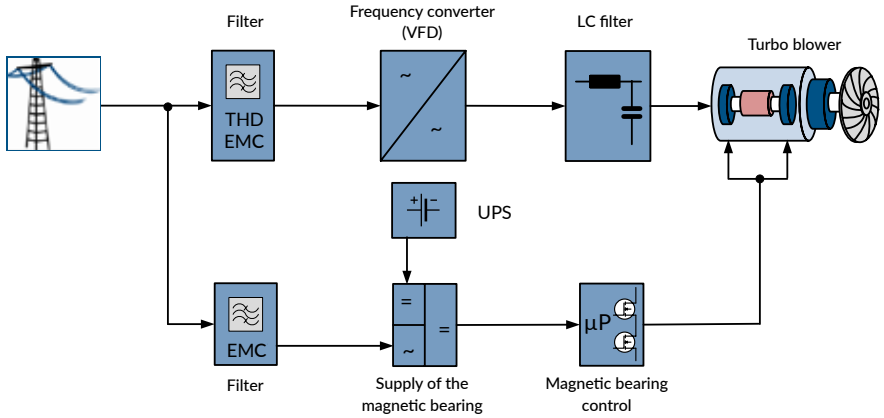


Solution with SD2M and directly driven turbo blower

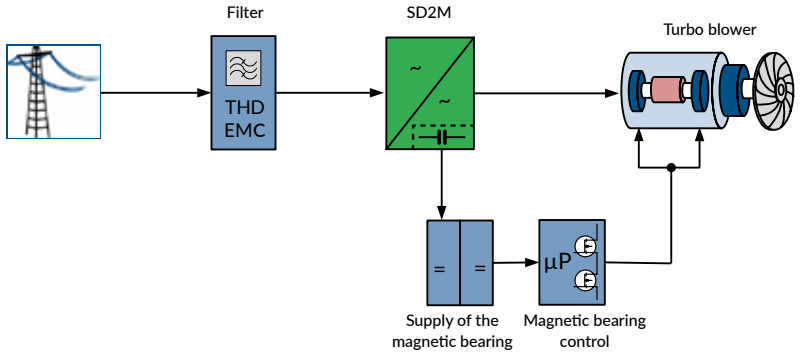


Solutions with magnetic bearings

Solution with standard converter and magnetic bearing turbo blower



Solution with SD2M and magnetic bearing turbo blower



SD2M – a Frequency Converter Redefines Turbo Applications

With the step towards three-level technology and an increase in the performance range, SIEB & MEYER has laid the foundation for raising existing and new turbo systems to a new level. Our customers benefit from increased performance and helpful additional functions such as the possibility of supplying active magnetic bearings with the necessary DC voltage via clamp connections. Even in case of a power failure / missing grid the process of emergency breaking maintains the DC circuit.

SIEB & MEYER AG
Auf dem Schmaarkamp 21
21339 Lüneburg (Germany)
Telefon +49 4131 203 0
Telefax +49 4131 203 2000
info@sieb-meyer.de
www.sieb-meyer.de

SIEB & MEYER ASIA Co. Ltd.
5th Fl., No. 578, Sec.1, Min-Sheng N. Rd.
Kwei-Shan Hsiang, Tao-Yuan Hsien 33393
Taiwan, R.O.C.
Telefon +886 - 3 - 3115560
Telefax +886 - 3 - 3221224
smasia@ms42.hinet.net
www.sieb-meyer.com

SIEB & MEYER (SHENZHEN) TRADING Co. Ltd.
Room A208, 2/F, Internet Innovation and
Creation Services Base Building (2)
No.126, Wanxia road
Shenzhen City, 518067, China
Telefon +86 - 755 - 26811417 / - 26812487
Telefax +86 - 755 - 26812967
sm_china_support1@163.com
www.sieb-meyer.com

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