

Converteam brings innovation to the field of large drive technology by introducing a new range of high-performance medium voltage drives. Using powerful press-pack IGBTs, the MV7000 offers outstanding performance and excellent reliability in a very compact design.



| Wind farm

### New drive for variable speed applications

Based on powerful press-pack IGBTs (insulated gate bipolar transistors) in conjunction with proven technologies from Converteam, the MV7000 has been developed for all variable speed applications, including dynamic high-performance applications:

- General applications: fans, compressors, pumps, mixers, extruders, wind turbines, wind and water tunnels, mine winders, conveyors, test benches
- High-speed drives for oil and gas: compressors
- Drives for the metals industry
- Drives for marine, naval and offshore applications

### A complete range

MV7000 covers the medium and high power range up to 33 MW. The drives are designed as water cooled PWM (pulse width modulation) inverters assigned with vector-oriented control. They can supply both asynchronous and synchronous machines and are suitable for all speed ranges from marine low-speed propulsion drives to compressor drives without a gearbox. The MV7000 drive is modular and features different options, such as 4 quadrant operation, dynamic brake choppers or connection to a DC link.

### Numerous advantages for the user

The MV7000 drive meets customers

expectations in terms of efficiency, reliability, compactness and low operating costs. The MV7000 also offers the following advantages:

- Virtually sinusoidal machine supply
- Minimal mains pollution (low harmonics, high power factor)
- User-friendly operation via control panel on PC
- Easy to maintain (monitoring and diagnostics, low component count, front access, modular construction)

### Diode front end

The MV7000 features as standard a 12-pulse diode front end (24-pulse available as an option), which is supplied via a 2 phase-displaced secondary windings transformer. The harmonics injected into

#### High Performance

- High level of efficiency
- High torque
- Low reactive power

#### Reliable and robust

- Press-pack IGBT technology
- Fuseless protection
- Low component count

#### Compact, modular design

- Powerful semiconductors
- Front access

#### Low operating costs



| MV7000 phase modul

the network are very low.

The drive complies with international standards for voltage and current harmonic distortion, without any harmonic filters or reactive power equipment.

The drive continues to operate through voltage dips tripping.

When required, electrical braking is ensured by an optional dynamic brake chopper connected to a resistor.

### Optional PWM front end

For reversing applications with frequent braking, a PWM front end ensures the regeneration of power to the network. Moreover, the PWM front end enables a power factor of 1 and negligible sinusoidal harmonics.

For dedicated applications (active power management), the PWM front end can be connected to the network without an AC supply transformer.

### DC link

The front end supplies DC link capacitors that are pre-charged by an auxiliary transformer. The latter can also pre-magnetise the main transformer, thus avoiding in-rush currents and system transients. For multi-motor applications with both motor-driven and regenerated power (typically coils in the metal industry), a common DC link supplied by a single front end will reduce overall equipment cost and the amount of space required.

### Top level PWM inverter

The inverter features the new power semiconductors, the latest generation of press-pack IGBTs with more power and fewer losses, placing the MV7000 drive at the top level in terms of reliability, efficiency and power density.

The PMW inverter is a 3-level neutral point clamped (NPC) inverter that provides excellent output waveforms. As a result, the drive can supply either new machines with standard insulation or existing machines in retrofit applications, regardless of cable lengths.

Moreover, current THD (total harmonic distortion) is very low at less than 2%. Consequently, there is no thermal derating of the motor and the amplitude of the torque pulsation at the motor is negligible and insignificant for the process.

### PWM strategy

The PWM control strategy used by the MV7000 results in high-quality performance from the drive, with adjustable PWM patterns at every operating point, providing a wide range of flexibility for:

- Low commutation losses
- Low motor current THD
- Operation at very low frequencies with full torque
- Operation at a high frequencies up to 300 Hz

MV7000	Volts	Typ. MW	MVA
MV7306	3300	6	7.5
MV7308	3300	8.4	10.5
MV7312	3300	12	15
MV7316	3300	16.8	21
MV7608	6600	8	10
MV7612	6600	12	15
MV7616	6600	16.8	21
MV7624	6600	24	30
MV7632	6600	33.6	42

| MV7000 power range – Shaft power (MW) availability calculated according to application and motor data

Converteam GmbH  
Culemeyerstraße 1  
12277 Berlin (Germany)  
Tel.: +49 (0) 30 76 22 0  
Fax: +49 (0) 30 76 22 21 09  
postoffice.de@converteam.com

France Tel.: +33 (0) 1 77 31 20 00  
UK Tel.: +44 (0) 1788 563 563  
USA Tel.: +1 412 967 0765  
Brazil Tel.: +55 31 3330 5800  
China Tel.: +86 21 6442 1666 ext 8000  
India Tel.: +91 124 4200 190  
Russia Tel.: +7 495 225 1916