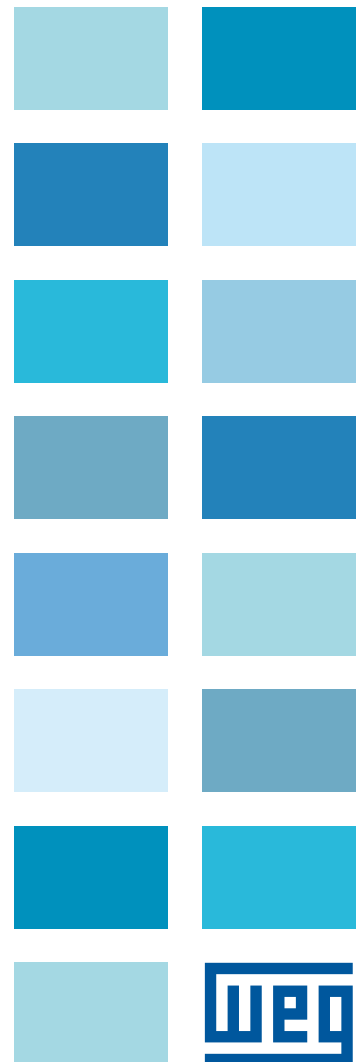


# Drives & Motors

## European Product Lines 2014



Our global structure allows us to be closer to our customers. Over 32 subsidiaries established in key countries are prepared to provide you with technical and commercial support; our manufacturing plants strategically located in the main markets can serve you with short deliveries; and our network of over 1,250 Authorized Service Agents located in the five continents are fully equipped to give you prompt after sales and service support.

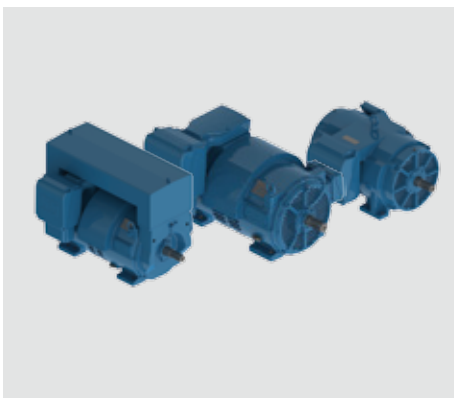
# What's **Coming** for **2014!**



## New Concept of Motors with Permanent Magnets

### **W22 Magnet Drive System IE5**

W22 Magnet are synchronous AC motors driven by WEG CFW11 frequency drive. The operation is similar to the induction motor, but without the need to induce currents in the rotor as it already has its own magnetic field generated by magnets. The absence of induced currents eliminates Joule losses in the rotor, resulting in the motor with the highest level of efficiency in the market.

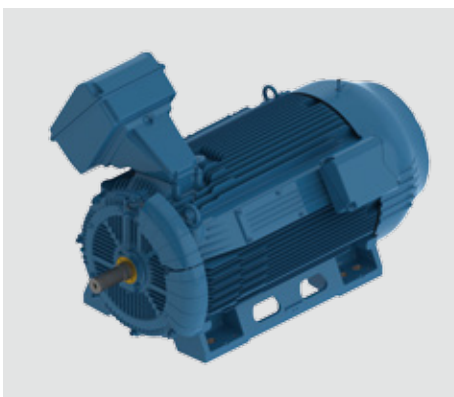


## New Generation of Open Motors

### **W40**

The W40 is a general purpose motor dedicated for environments with reduced dirt and moisture level. The new line has an enclosure designed to provide maximum ventilation and heat dissipation, offering low vibration levels, high mechanical rigidity and durability.

W40 are compact motors with high power density and ideal for applications in pumps and compressors.



## New High and Low Voltage Motor Line Designed to Operate in Severe Applications

### **W50**

The W50 motors offer excellent performance and comply with the strictest efficiency and safety criteria in the most severe applications. W50 are compact motors and provide high performance and low vibration levels.

The new mechanical concept not only optimizes characteristics like mass and length, but also makes the product versatile and requires less maintenance.



## New Motor Line for Hazardous Atmospheres

### **W22Xd**

The W22Xd line represents all that is most modern in driving equipment for explosive atmospheres. The line is an evolution in the market of classified area products offering high efficiency levels, energy saving, low operational costs, extended lifetime, low maintenance and assured safety!

# What's **Coming** for **2014!**



## Servo Drive

### SCA06

The SCA06 is a high performance product that allows the speed, torque and position control of three-phase sine-wave alternate current servo motors. It features excellent cost-benefit, with PLC function, positioning blocks, free programming software and CANopen communication included in the standard product that can be used in all kinds of applications.



## Variable Speed Drive

### CFW500

Developed for fast commissioning, the CFW500 VSD is perfect for machines. Extremely compact and cost-effective, it fulfills the needs of machine manufacturers, integrated systems, panel assemblers and users for a wide range of applications.

- Fast commissioning
- Innovative and compact design
- Configurable cost x benefit



### CFW501 HVAC

The CFW501 HVAC is a variable-speed drive intended for use with asynchronous motors when heating, ventilation, air conditioning and refrigeration applications are to be met.

#### Mainly applications

- Hospitals
- Shoppings
- Commercial buildings
- Universities
- Schools
- Airports
- Hotels
- Clean rooms
- Pump and fan applications in general







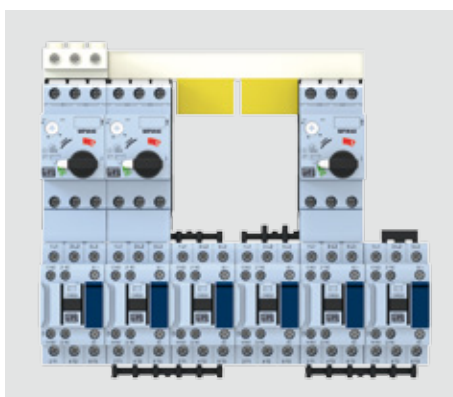
## WEG Motor Drive

### MW500

The MW500 is a high-performance variable-speed drive developed for decentralized solutions. It can be installed on top of the motor or wall mounted, according to the customer need.

Due to the high degree of protection, IP66 (NEMA4X), MW500 is suitable for wet environment and applications, such as:

- Centrifugal pumps
- Compressors
- Process pumps
- Fans/exhaust fans
- Mixers/bottlers
- Washers/driers
- Conveyor belts
- General machinery



## WEG CWB Contactor

### Easy Starters

CWB Contactors, Overload Relays and Motor Protective Circuit-Breakers and accessories up to 18.5 kW @ 380/415 V (AC-3) and 25 hp @ 460/480 V (UL 3-ph) 45 mm wide.

Easy connection busbars and connectors for DOL, (reversing and non-reversing) and star-delta starters saving assembly time.










## Decentralized Control Stations

### PBW

The new WEG control stations and emergency stop stations, PBW line, has been developed according international standards UL and CE. With IP66 degree of protection, the PBW line is available for a wide range of applications, meeting the most demanding requirements of quality, robustness and modular design.

## VSD Comparison

				
		<b>CFW11</b>	<b>CFW700</b>	<b>CFW500</b>
<b>Motor power</b>		1 to 600 HP (1.1 to 400 kW)	1.5 to 150 HP (0.75 to 110 kW)	0.25 to 10 HP (0.18 to 7.5 kW)
<b>Power supply</b>	Single-phase voltage	200-240 V ac (+10% - 15%)	200-240 V ac (+10% - 15%)	200-240 V ac (+10% - 15%)
	3-phase voltage	220 - 230 V ac 380 - 480 V ac 500 - 600 V ac 660 - 690 V ac (+10% - 15%)	220 - 230 V ac 380 - 480 V ac 500 - 600 V ac (+10% - 15%)	220 - 230 V ac 380 - 480 V ac (+10% - 15%)
	Frequency	50 / 60 Hz (48 ... 62 Hz)	50 / 60 Hz (48 ... 62 Hz)	50 / 60 Hz (48 ... 62 Hz)
	cos $\phi$ (displacement power factor)	Greater than 0.98	Greater than 0.98	Greater than 0.97
<b>Degree of protection</b>	Drive	IP20 - IP21 - IP54 NEMA1 / IP20 NEMA1 / IP21	IP21 NEMA1 / IP21	IP20 / NEMA1
	Remote keypad	NEMA12 / IP54	NEMA12 / IP54	IP54
<b>Flange mounting (through panel)</b>	-	Yes	Yes	No
<b>Control</b>	Power supply type	Switched mode power supply	Switched mode power supply	Switched mode power supply
	Control type	V/f Voltage vector (VWV) Sensorless vector (without encoder) Vector with encoder	V/f Voltage vector (VWV) Sensorless vector (without encoder) Vector with encoder	V/f Voltage vector (VWV) PWM SVM (space vector modulation)
	Switching frequency	Default 2/2.5/5 kHz (selectable 2.5 to 10 kHz)	2 to 10 kHz	Default 5 kHz (selectable 2.5 to 15 kHz)
	Output frequency	0 Hz to 300 Hz	0 Hz to 300 Hz	0 Hz to 500 Hz
<b>Performance</b>	Permitted overload	ND: 110% for 60 sec every 10 min HD: 150% for 60 sec every 10 min	ND: 110% for 60 sec every 10 min HD: 150% for 60 sec every 10 min	150% for 60 sec every 10 min
	Efficiency	> 97%	> 97%	> 97%
	V/f speed control	Regulation: 1% of rated speed Speed variation range: 1:20	Regulation: 1% of rated speed Speed variation range: 1:20	Regulation: 1% of rated speed Speed variation range: 1:20
	VWV speed control	Regulation: 1% of rated speed Speed variation range: 1:30	Regulation: 1% of rated speed Speed variation range: 1:30	Regulation: 1% of rated speed Speed variation range: 1:30
	Sensorless vector speed control	Regulation: 0.5% of rated speed Speed variation range: 1:100	Regulation: 0.5% of rated speed Speed variation range: 1:100	-
	Vector with encoder speed control	Regulation: 0.01% of rated speed with 14-bit analog input (IOA) Regulation: 0.05% of rated speed with 12-bit analog input	Regulation: 0.01% of rated speed with 14-bit analog input (IOA) Regulation: 0.05% of rated speed with 12-bit analog input	-
	Vector modes torque control	Regulation: 10% (sensorless) of rated torque (above 3 Hz) Regulation: 5% of rated torque (with encoder)	Regulation: 10% (sensorless) of rated torque (above 3 Hz) Regulation: 5% of rated torque (with encoder)	-
<b>Inputs and outputs</b>	Digital	6 isolated inputs, 24 V dc, programmable functions	8 isolated inputs, 24 V dc, programmable functions 4 open drain outputs (24 V / 80 mA)	4 insulated inputs. Programmable functions 1 insulated digital output open sink *With CFW500-IOS accessory
	Relay	3 relays with NO / NC contacts, 240 V ac / 1 A, programmable functions	1 relay with NO / NC contacts, 240 V ac / 1 A, programmable functions	1 relay with NO / NC contacts, 240 V ac / 0.5 A, programmable functions *With CFW500-IOS accessory
	Analog	2 differential inputs isolated by differential amplifier, programmable functions, 2 isolated outputs, programmable functions	2 differential inputs, programmable functions, 2 outputs, programmable functions	1 insulated input. Levels: (0 to 10) V or (0 to 20) mA or (4 to 20) mA. Programmable functions. *With CFW500-IOS accessory 1 insulated output. Levels (0 to 10) V or (0 to 20) mA or (4 to 20) mA. *With CFW500-IOS accessory

				
<b>MW500</b>	<b>CFW10</b>	<b>CFW100</b>	<b>CFW701</b>	<b>CFW501</b>
3 to 5 HP (2.2 to 3.7 kW)	0.5 to 5 HP (0.25 to 4 kW)	0.25 to 1 HP (0.18 to 0.75 kW)	1.5 to 150 HP (0.75 to 110 kW)	0.25 to 10 HP (0.18 to 7.5 kW)
200-240 V ac (+10% - 15%)	110 - 127 V ac 200 - 240 V ac	200-240 V ac (+10% - 15%)	200-240 V ac (+10% - 15%)	200-240 V ac (+10% - 15%)
220 - 230 V ac 380 - 480 V ac (+10% - 15%)	200-240 V ac (+10%, -15%)	-	220 - 230 V ac 380 - 480 V ac 500 - 600 V ac (+10% - 15%)	220 - 230 V ac 380 - 480 V ac (+10% - 15%)
50 / 60 Hz (48 ... 62 Hz)	50 / 60 Hz (48 ... 62 Hz)	50 / 60 Hz (48 ... 62 Hz)	50 / 60 Hz (48 ... 62 Hz)	50 / 60 Hz (48 ... 62 Hz)
Greater than 0.97	Greater than 0.97	Greater than 0.97	Greater than 0.97	Greater than 0.97
IP66 / NEMA4x	IP20	IP20	IP20 - IP21 NEMA1 / IP21	IP20 / NEMA1
-	-	IP54	-	-
No	-	No	Yes	No
Switched mode power supply	Switched mode power supply	Switched mode power supply	Switched mode power supply	Switched mode power supply
V/f Voltage vector (VWV) PWM SVM (Space vector modulation)	V/f linear or quadratic	V/f Voltage vector (VWV) PWM SVM (Space vector modulation)	V/f Voltage vector (VWV) Sensorless vector (without encoder) Vector with encoder	V/f Voltage vector (VWV) PWM SVM (space vector modulation)
Default 5 kHz (selectable 2.5 to 15 kHz)	2.5 to 15 kHz	Default 5 kHz (selectable 2.5 to 15 kHz)	2 to 10 kHz	Default 5 kHz (selectable 2.5 to 15 kHz)
0 Hz to 500 Hz	0 Hz to 300 Hz	0 Hz to 300 Hz	0 Hz to 300 Hz	0 Hz to 500 Hz
150% for 60 sec every 10 min	150% for 60 sec every 10 min	150% for 60 sec every 10 min	ND: 110% for 60 sec every 10 min HD: 150% for 60 sec every 10 min	150% for 60 sec every 10 min
> 97%	> 95%	> 97%	> 97%	> 97%
Regulation: 1% of rated speed Speed variation range: 1:20	Regulation: 1% of rated speed Speed variation range: 1:20	Regulation: 1% of rated speed Speed variation range: 1:20	Regulation: 1% of rated speed Speed variation range: 1:20	Regulation: 1% of rated speed Speed variation range: 1:20
Regulation: 1% of rated speed Speed variation range: 1:30	-	Regulation: 1% of rated speed Speed variation range: 1:30	Regulation: 1% of rated speed Speed variation range: 1:30	Regulation: 1% of rated speed Speed variation range: 1:30
-	-	-	Regulation: 0.5% of rated speed Speed variation range: 1:100	-
-	-	-	Regulation: 0.01% of rated speed with 14-bit analog input (IOA) Regulation: 0.05% of rated speed with 12-bit analog input	-
-	-	-	Regulation: 10% (sensorless) of rated torque (above 3 Hz) Regulation: 5% of rated torque (with encoder)	-
4 insulated inputs. Programmable functions 1 insulated digital output open sink *With CFW500-IOS accessory	4 programable isolated inputs	4 isolated inputs, 24 V dc, programmable functions	8 isolated inputs, 24 V dc, programmable functions, 4 open drain outputs (24 V / 80 mA)	4 insulated inputs. Programmable functions, 1 insulated digital output open sink (uses as reference the 24 V dc power supply)
1 relay with NO / NC contacts, 240 V ac / 0.5 A, programmable functions *With CFW500-IOS accessory	1 programable output, reversible NO/NC contacts		1 relay with NO / NC contacts, 240 V ac / 1 A, programmable functions	2 relay output with NO / NC contacts, 240 V ac / 0.5 A, programmable functions
1 insulated input. Levels: (0 to 10) V or (0 a 20) mA or (4 to 20) mA. Programmable functions. *With CFW500-IOS accessory 1 insulated output. Levels (0 to 10) V or (0 to 20) mA or (4 to 20) mA. *With CFW500-IOS accessory	1 insulated input. Levels: (0 to 10) V or (0 a 20) mA or (4 to 20) mA.	-	2 differential inputs, programmable functions, 2 outputs, programmable functions	2 insulated input. Levels: (0 to 10) V or (0 a 20) mA or (4 to 20) mA. Programmable functions, 1 insulated output. Levels (0 to 10) V or (0 to 20) mA or (4 to 20) mA.

## VSD Comparison

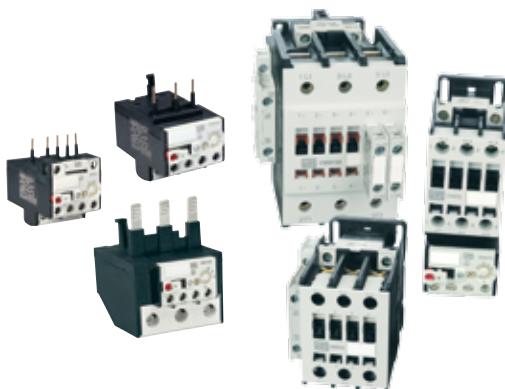
				
		CFW11	CFW700	CFW500
Communication	Built-in	Modbus-RTU	Modbus-RTU	-
	W/ optional accessories	Profibus-DP, DeviceNet, CANopen, Ethernet IP, USB	Profibus-DP, DeviceNet, CANopen	CANopen, Modbus-RTU, Profibus-DP and DeviceNet
Safety	Protections	Output overcurrent	Output overcurrent	-
		DC link under and overvoltage	DC link under and overvoltage	-
		VSD overtemperature	VSD overtemperature	Overcurrent/phase-phase
		Motor overload (i x t)	Motor overload (i x t)	short circuit in the output
		External fault	External fault	Overcurrent/phase-ground
		Internal fault	Internal fault	short circuit in the output
		Keypad connection fault	Keypad connection fault	Under/overvoltage
		Overtemperature in the VSD	Overtemperature in the VSD	Overtemperature in the heatsink
		Motor overload	Motor overload	Overload in the motor
		Output short-circuit	Output short-circuit	Overload in the power module (IGBTs)
		Ground fault	Ground fault	External alarm / fault
		Line and Motor phase loss	Line and Motor phase loss	Setting error
		Motor overspeed	Motor overspeed	-
		Motor and encoder connection fault	Motor and encoder connection fault	-
		Braking resistor overload	Braking resistor overload	-
Ambient	Temperature	0...50 °C	0...50 °C	0...50 °C
		2% of current derating for each °C above the specific operating temperature, limited to an increase of 10 °C	2% of current derating for each °C above the specific operating temperature, limited to an increase of 10 °C	2% of current derating for each °C above the specific operating temperature, limited to an increase of 10 °C
	Humidity	5...90% without condensation	5...90% without condensation	5...90% without condensation
	Altitude	0.....1,000 m (up to 4,000 m with 1% / 100 m in the output current)	0.....1,000 m (up to 4,000 m with 1% / 100 m in the output current)	0.....1,000 m (up to 4,000 m with 1% / 100 m in the output current)
Keypad	Control	Start/stop	Start/stop	Start/stop
		Up/down (speed)	Up/down (speed)	Up/down (speed)
		Parameter setting	Parameter setting	Parameter setting
		JOG, reverse and local/remote selection	JOG, reverse and local/remote selection	JOG, reverse and local/remote selection
	Monitoring	Motor output frequency	Motor output frequency	Motor output frequency
		Inverter status	Inverter status	Inverter status
		Digital input and output status	Digital input and output status	Digital input and output status
		Motor speed	Motor speed	Motor speed
		Motor output current (A)	Motor output current (A)	Motor output current (A)
		Motor output voltage (V)	Motor output voltage (V)	Motor output voltage (V)
		Load torque	Load torque	Load torque
		Relay output status	Relay output status	Relay output status
Features	Braking transistor	Standard in sizes A, B, C and D	Standard in sizes A, B, C and D	Standard in sizes B,C and D. For frame A "DB" models has to be used. An extra resistor must be fitted in for dynamic braking capability
	DC braking	Yes	Yes	Yes
	Optimal braking	-	Yes	No
	+24 V dc source available	Yes	Yes	Yes
	Conformal coating	Yes	Yes	Yes
	PID	Yes	Yes	Yes

				
<b>MW500</b>	<b>CFW10</b>	<b>CFW100</b>	<b>CFW701</b>	<b>CFW501</b>
-	-	-	BACnet MS/TP, Metasys N2 and Modbus-RTU	BACnet MS/TP, Metasys N2 and Modbus-RTU
CANopen, Modbus-RTU, Profibus-DP and DeviceNet	-	CANopen and Modbus-RTU	-	-
-	-	-	-	-
-	-	-	-	-
Overcurrent/phase-phase		Overcurrent/phase-phase	Overcurrent/phase-phase	Overcurrent/phase-phase
Short circuit in the output	Output overcurrent	Short circuit in the output	Short circuit in the output	Short circuit in the output
Overcurrent/phase-ground	DC link under and overvoltage	Overcurrent/phase-ground	Overcurrent/phase-ground	Overcurrent/phase-ground
Short circuit in the output	VSD overtemperature	Short circuit in the output	Short circuit in the output	Short circuit in the output
Under/overvoltage	Motor overload (i x t)	Under/overvoltage	Under/overvoltage	Under/overvoltage
Overtemperature in the heatsink	External fault	Overtemperature in the heatsink	Overtemperature in the heatsink	Overtemperature in the heatsink
Overload in the motor	Internal fault	Overload in the motor	Overload in the motor	Overload in the motor
Overload in the power module (IGBTs)	Keypad connection fault	Overload in the power module (IGBTs)	Overload in the power module (IGBTs)	Overload in the power module (IGBTs)
External alarm / fault	-	External alarm / fault	External alarm / fault	External alarm / fault
Setting error	-	Setting error	Setting error	Setting error
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
0...50 °C	0...50 °C	0...50 °C	0...50 °C	0...50 °C
2% of current derating for each °C above the specific operating temperature, limited to an increase of 10 °C	2% of current derating for each °C above the specific operating temperature, limited to an increase of 10 °C	2% of current derating for each °C above the specific operating temperature, limited to an increase of 10 °C	2% of current derating for each °C above the specific operating temperature, limited to an increase of 10 °C	2% of current derating for each °C above the specific operating temperature, limited to an increase of 10 °C
5...90% without condensation	5...90% without condensation	5...90% without condensation	5...90% without condensation	5...90% without condensation
0.....1,000 m (up to 4,000 m with 1% / 100 m in the output current)	0.....1,000 m (up to 4,000 m with 1% / 100 m in the output current)	0.....1,000 m (up to 4,000 m with 1% / 100 m in the output current)	0.....1,000 m (up to 4,000 m with 1% / 100 m in the output current)	0.....1,000 m (up to 4,000 m with 1% / 100 m in the output current)
Start/stop	Start/stop	Start/stop	Start/stop	Start/stop
Up/down (speed)	Up/down (speed)	Up/down (speed)	Up/down (speed)	Up/down (speed)
Parameter setting	Parameter setting	Parameter setting	Parameter setting	Parameter setting
JOG, reverse and local/remote selection	Variable speed potentiometer	JOG, reverse and local/remote selection	JOG, reverse and local/remote selection	JOG, reverse and local/remote selection
Motor output frequency	-	-	Motor output frequency	Motor output frequency
Inverter status	Motor output frequency	Motor output frequency	Inverter status	Inverter status
Digital input and output status	Intermediate circuit voltage	Inverter status	Digital input and output status	Digital input and output status
Motor speed	Speed proportional value	Digital input status	Motor speed	Motor speed
Motor output current (A)	Heat sink temperature	Motor speed	Motor output current (A)	Motor output current (A)
Motor output voltage (V)	Motor output current (A)	Motor output current (A)	Motor output voltage (V)	Motor output voltage (V)
Load torque	Motor output voltage (V)	Motor output voltage (V)	Load torque	Load torque
Relay output status	Fault indication	Load torque	Relay output status	Relay output status
Yes	Frame sizes 2 and 3	No	Standard in sizes A, B, C and D	Standard in sizes B,C and D. For frame A "DB" models has to be used. An extra resistor must be fitted in for dynamic braking capability
Yes	Yes	Yes	Yes	Yes
No	-	Yes	Yes	No
Yes	-	No	Yes	Yes
Yes	Yes	Yes	Yes	Yes
Yes	Yes	Yes	Yes	Yes



## Contactors and Overload Relays

### CWM and RW



### Contactors and Overload Relays

- Complete line from 9 to 800 A (AC-3)
- 3-poles and 4-poles versions
- Quick mounting on 35 mm DIN rail or screw mounting
- Coils available in AC and DC voltage
- Direct mounting on overload relays up to 105 A
- Wide range of accessory
- Star-delta and reversing wiring kits (easy connection) allow fast mounting and reduce space in the panel
- Overload relays with phase failure sensitivity, according to IEC 60947-4-1 and tripping class 10
- Special contactors for capacitor switching available
- Certifications: UL, CE, Gost, IRAM

### CWC0



### Compact Contactors

- AC-3 operation up to 22 A
- Spring terminal version available up to 12 A (AC-3)
- Quick mounting on 35 mm DIN rail or screw mounting
- Allows operation under the AC-4 duty
- Built-in auxiliary contacts (AC-15)
- Low-consumption DC coil allowing direct connection with PLCs output
- Direct mounting on overload relays
- Compact contactors CWC07 to CWC016 AC and DC coil with the same dimensions
- Fast mounting (clip on) of surge suppressors
- Miniature electronic timing with right-side fast mounting
- Front mounting and quick assembly of mechanical interlock and latch block
- Certifications: UL, CE, Gost, IRAM

## Motor Protective Circuit-Breakers

### MPW



### Motor Protective Circuit-Breaker

- Compact solution for electric circuit protection, motor starting/protection up to 45 kW @ 400/415 V
- Adjustable thermal tripping for motor overload protection with phase failure-sensitivity, according to IEC 60947-4-1, with tripping class 10
- Magnetic tripping (protection against short-circuit) fixed at 13xIn
- High short-circuit breaking capacity

## Enclosed Starters

### DLW, ETW, ESW, PESW



### Enclosed Starters

- Three-phase and single-phase DOL starters up to 450 kW @ 400 V / 50 Hz and 600 HP @ 480 V / 60 Hz
- Star-Delta starters up to 800 kW @ 400 V / 50 Hz and 1,250 HP @ 480 V / 60 Hz
- Reversing starters up to 355 kW @ 400 V / 50 Hz and 500 HP @ 480 V / 60 Hz
- Thermoplastic and metallic enclosure
- IEC and UL versions

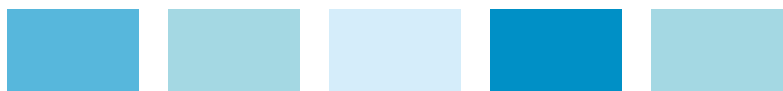
## Smart Relays

### SRW01



### Smart Relays

- Reliability and precision on monitoring, operation and protection of low-voltage electric motors
- Supply voltage: 24 V ac/V dc or 110-240 V ac/V dc
- System modularity and easy expansion
- Current measurement from 0.25 to 840 A
- Voltage measurement up to 690 V
- Parametrization, programming and monitoring via WLP (WEG Ladder Programming)
- Programming using network communication or USB
- Digital expansion unit increasing the number of digital inputs and outputs
- The HMI makes the configuration and operation user friendly
- Communication protocols: DeviceNet, Modbus-RTU and Profibus-DP are defined using a proper protocol installed in communication module
- The plug-and-play concept automatically recognizes and configures the SRW01 for safe operation
- Certifications: UL, CE, IRAM



## Circuit-Breakers

### DWA and DWB



#### Molded Case Circuit-Breakers

- Modern and compact design
- Rated currents from 16 to 1,600 A
- Short-circuit breaking capacity from 16 to 80 kA @ 380/415 V ac
- Versions for electrical circuit, generators and motor branch circuit protection
- Wide range of accessories
- UL listed MCCB upon request

#### DWB\_D and DWA Circuit-Breakers for Electrical Circuit and Transformer Protection

Designed for electrical circuit and transformer protection against overload and short-circuit conditions, the trip units are thermomagnetic with fixed type up to 160 A and adjustable type from 250 A on. Their fixed magnetic releases are set to trip at  $10I_n$  and the adjustable magnetic releases between 4 and  $10I_n$ . These circuit-breakers have short-circuit breaking capacity versions from 16 to 80 kA @ 380/415 V.

#### DWB\_M and DWM Circuit-Breakers for Motor Branch Circuit Protection

Comprised of magnetic releases only (short-circuit protection). For rated currents up to 95 A the magnetic trip units are fixed and set at  $12I_n$ . Within the range of 100 to 1,000 A, the releases are adjustable from 7.5 to  $15I_n$ . These circuit-breakers perform high short-circuit breaking capacity. In case of overload conditions, the motor must be protected through a separate overload relay.

#### DWB\_G and DWG Circuit-Breakers for Generator Protection

The making current in short-circuit situations on installation fed by a generator can be 3 to 5 times of its full load current, this way the DWG circuit-breakers have their trip units adjusted to trip under these conditions.

#### IWA and IWB Switch-Disconnectors

The WEG switch-disconnectors have the same frame sizes and accessories of DWA and DWB circuit-breakers, however they are not supplied with trip units. They can be used in any electrical-circuit disconnecting application, without built-in releases.

### ACW



#### Molded Case Circuit-Breakers

- Modern and compact design
- Rated currents from 20 to 800 A
- Short-circuit breaking capacity from 85 to 150 kA @ 380/415 V ac
- Versions for electrical circuit and motor branch circuit protection
- Wide range of accessories
- UL listed MCCB upon request

### ABW



#### Air Circuit-Breakers

- Rated currents up to 6,300 A
- Available in two versions: fixed and withdrawable
- Position of power terminals can be adapted according to application
- Control terminal with removable terminal strip and plug-in connections
- Standard trip units feature:
  - Earth fault protection (G)
  - Selectivity between circuit-breakers
  - More compact circuit-breaker
  - More flexibility of assembly
  - Standard trip unit with a larger number of built-in protections
  - 3 and 4-poles versions available
  - Wide range of accessories

## Miniature Circuit-Breakers

### MDW



#### Miniature Circuit-Breakers 3 kA

- Rated currents from 2 to 100 A
- Tripping characteristic curves B and C
- MCB in 1, 2, 3 and 4 poles
- Short-circuit breaking capacity:
  - 3 kA acc. to IEC 60898 (residential purpose)
  - 5 kA acc. to IEC 60947-2 (industrial purpose)
- Accessories: auxiliary contact block, bus bars and padlock

### MDWH



#### Miniature Circuit-Breakers 10 kA

- Rated currents from 6 to 63 A
- Tripping characteristic curves B and C
- MCB in 1, 2, 3 and 4 poles
- Short-circuit breaking capacity:
  - 10 kA acc. to IEC 60898 (residential purpose)
  - 10 kA acc. to IEC 60947-2 (industrial purpose)
- Accessories: auxiliary contact block, bus bars and padlock

### SIW



#### Switch-Disconnectors

- Electrical circuit disconnection up to currents of 100 A
- Available in 2, 3 and 4 poles
- Technical specification acc. to IEC 60947-3
- Accessories: auxiliary contact block, bus bars and padlock

Drives

Industrial Motors

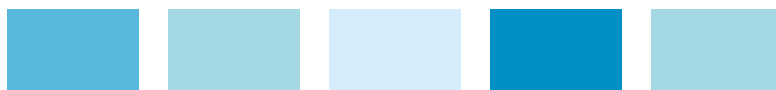
## Residual Current Circuit-Breakers

### RDW



#### Residual Current Devices (Earth Leakage Switches)

- Protection against earth leakage conditions
- Rated residual operating current of 30 mA (life protection) or 300 mA (installation protection)
- Rated currents from 25 to 100 A
- Available in 2 and 4 poles
- Accessory: padlock



## Surge Suppressors

### SPW



#### Surge Suppressors

- Protection of equipment and installations
- Class I (direct discharges) and II (indirect discharges)
- 12.5 kA (class I)
- 12, 20, 45 and 60 kA (class II)
- Mechanical status indication on the front of the device
- Plug-in connection
- Remote status indication (optional)

## Distribution Boards

### QDW

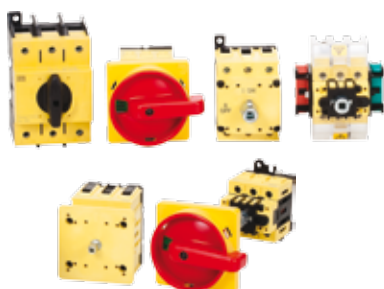


#### Distribution Boards

- Slots for 4, 8, 12, 18, 24 and 36 poles
- Flush type and wall-mounted type DB board available
- Front cover in smoked and white colors
- Bus bars for connection and distribution (optional accessory)
- Neutral and ground bus bars (optional accessory)

## Switch Disconnectors

### MSW



#### Switch-Disconnectors

- Rated thermal current of 32, 40, 63, 80, 100, 125 e 160 A
- Door panel, base or DIN rail mounting
- Rated insulation voltage of 690 V
- Wide range of accessories
- Available in 2 color versions: yellow-red and black-gray
- Designed according to IEC/EN 60974-3
- Certifications: CE, UL

### FSW



#### Fuse-Switch-Disconnectors

- Rated thermal current of 100, 160, 250, 400, 630 A
- For fuses size NH000, NH00, NH1, NH2, NH3
- Transparent cover to see the fuse states
- Voltage measure access without disconnect the fuses
- Rated insulation voltage of 1,000 V
- Designed according to IEC/EN 60974-3
- Certifications: CE



## Fuses

### FNH-aR



#### High Speed Fuses

- NH type with four size and current range up to 1,000 A
- Class aR to protect semiconductors in short circuit
- Short circuit breaking capacity of 100 kA - 690 V ac
- Reduced I<sup>2</sup>t values
- Designed and tested according to IEC 60269
- Certifications: CE, IRAM

## Electronic Relays

### ERWT, ERWM, RNW, RTW, RPW



#### Electronic Timing and Monitoring Relays

- ERWT Multifunction Electronic Timer Relays with 8 different functions
- ERWM Multifunction Three-Phase Monitoring Relays with 5 different functions
- RTW timers up to 150 hours with 9 temporization functions
- RPW electronic monitoring relays for functions: phase loss, phase sequence, phase loss and sequence, undervoltage and overvoltage and temperature monitoring with PTC sensor
- RNW level relays - for filling or draining functions
- LEDs for status indication
- High reliability contacts
- Developed with high precision electronic circuit and line noise immunity
- Can be assembled on 35 mm DIN rail or with screws
- Compact, with a 22.5 mm width frame
- Certifications: UL, CE, Gost, IRAM, Bureau Veritas

## Pushbuttons and Pilot Lights

### CSW

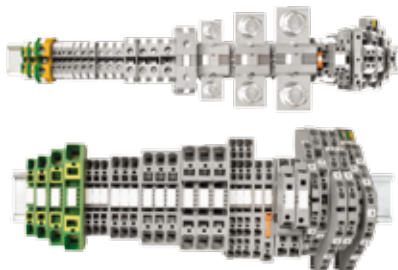


#### Pushbuttons and Pilot Lights

- Pushbuttons, pilot lights, selector switches, mushroom and E-Stop pushbuttons
- Designed according to IEC/EN 60974-5-1
- Degree of protection IP66
- Pilot light blocks with integrated LED (high efficiency)
- Contacts blocks and flanges with quick and easy mounting system
- Self-cleaning contacts
- Wide range of accessories
- Certifications: UL, CE, Gost, RCC, IRAM, Bureau Veritas
- Decentralized Control Stations and Emergency-Stop Stations (PBW) available
- Self-monitoring contact block for emergency pushbuttons

## Terminal Blocks

### BTW



### Terminal Blocks

- Complete line from 2.5 mm to 240 mm
- Screw or spring clamp connections
- Terminal block body in PA66 polyamide with excellent dielectric properties and high mechanical resistance
- Internal conductor element with high current conduction capacity
- Wide range of accessories
- Certifications: UL, CE, Gost

## Capacitors for Power Factor Correction

### Manufactured According to Standards IEC 60831-1/2 and UL 810

- Coils produced with metallized polypropylene film, self-healing and dry dielectric
- Discharge resistors incorporated to three-phase units, modules and banks
- Dielectric losses lower than 0.2 W / kVAr
- Anti-explosion protection device
- PCB free

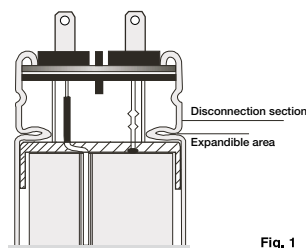


Fig. 1

Fig.1 UCW internal view

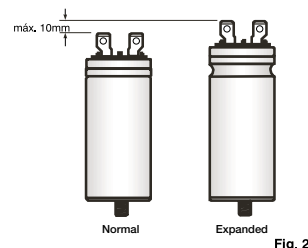


Fig. 2

Fig.2 UCW normal x expanded

### UCW Line



### Single-Phase Capacitive Units

- Power from 0.62 to 6.67 kVAr at voltages 208 to 240 V, and from 0.62 to 10 kVAr at voltages 380 to 480 V
- Capacitive units for mounting three-phase modules and banks
- Grounding guaranteed by the screw that fixes the capacitive unit to the mounting plate
- Replacement of expanded cells in modules and banks
- Fast-on, philips and box terminals
- Certifications: UL, CE, IRAM, C-Tick

### UCWT Line



### Three-Phase Capacitive Units

- Power from 0.37 to 15 kVAr at voltages 208 to 240 V, and from 0.37 to 25 kVAr at voltages 380 to 480
- Ideal for localized / individual motor correction
- Internally incorporated discharge resistors
- Protecting cover for connections
- Philips and box terminals
- Grounding guaranteed by the screw that fixes the capacitive unit to the mounting plate
- Certifications: UL, CE, IRAM, C-Tick

## Capacitors for Power Factor Correction

### MCW Line



### Three-Phase Capacitor Module

- Power from 1.85 to 10 kVAR at voltages 208 to 240 V, and from 1.85 to 15 kVAR at voltages 380 to 480
- Power up to 60 kVAR with 4 modules in parallel
- Internally incorporated discharge resistors
- Single-phase capacitive units connected in delta
- Equipped with discharge resistors (30s, 1/10  $U_n$ )
- Certifications: UL, CE, IRAM, C-Tick

### CWMC



### Contactors for Switching Capacitors

- Available for switching capacitor banks up to 60 kVAR at 400/415 V
- Mounting with screws or directly on 35-mm DIN rail
- Developed with pre-charge resistances to reduce high in-rush currents



## General Purpose Variable Speed Drives

WEG VSD incorporate the most advanced worldwide technology for speed variation.

### CFW10



Potentiometer version

#### Variable Speed Drive

- Power rating: 0.25 to 5 HP (0.18 to 4 kW)
- Power supply: 110-127 V and 200-240 V
- Single and three phase power supply
- 150% current overload capacity
- 2.5 to 15 kHz adjustable switching frequency
- V/F linear or quadratic control
- Cold Plate version
- Ambient temperature: 50 °C
- EMC filters (built-in)
- Compact dimensions, simplified installation and operation
- Speed adjustment via potentiometer is available
- Certifications: UL, CE, IRAM, C-Tick

### CFW08



#### Variable Speed Drive

- Power rating: 0.25 to 20 HP (0.18 to 15 kW)
- Power supply: 200-240 V and 380-480 V
- 150% current overload capacity
- 2.5 to 15 kHz adjustable switching frequency
- V/Hz (scalar) or sensorless vector control
- EMC filters (built-in)
- Modbus-RTU communication (built-in), CANopen, DeviceNet and Profibus-DP (optional)
- PID regulator
- Remote Human Machine Interface (HMI)
- IP66 and NEMA4X version (wash duty)
- Certifications: UL, CE, IRAM, C-Tick

### CFW100



#### Variable Speed Drive

- Power rating: 0.25 to 1 HP (0.18 to 0.75 kW)
- Power supply: 200-240 V (single-phase)
- Control modes: scalar (V/Hz) or voltage vector VVW
- Plug and play philosophy
- Human Machine Interface incorporated
- Surface or DIN rail assembly
- IP20 enclosure
- Ambient temperature: 50 °C
- Removable external fan
- Remote Human Machine Interface (HMI) - optional
- Flash memory module - optional
- Pending certifications: UL, CE, IRAM, C-Tick

**NEW**

## General Purpose Variable Speed Drives

### CFW700



#### Variable Speed Drive

- Power rating: 1.5 to 150 HP (1.1 to 110 kW)
- Power supply: 200-240 V, 380-480 V and 500-600 V
- LCD display with backlight and soft-keys
- Plug and play accessories
- Memory card (optional)
- Encoder interface built-in
- RS485 port available through terminals (Modbus ready)
- Communication modules Profibus-DP-01 and CANopen
- SoftPLC function allows for ladder programming development
- Smart motor and drive thermal management
- Normal and heavy duty ratings (ND/HD)
- DC choke built-in (no requirement for minimum power supply impedance)
- Safety stop board (EN 954-1/ ISO 13849-1 compliant)
- 24 V dc power supply board for control feeding - There is no need to power up drive for configuration purpose
- I/O expansion module CCK-01 gives the drive 2 additional digital outputs, total of 3 relay outputs is offered with this board
- Certifications: UL, CE, IRAM, C-Tick

## Machinery Variable Speed Drive

### CFW500



#### Variable Speed Drive

**NEW**

- Power rating: 0.25 to 10 HP (0.18 to 7.5 kW)
- Power supply: 200-240 V ac for single-phase models and 200-240 V ac or 380-480 V ac for three-phase models
- Control modes: scalar (V/Hz) or voltage vector VVW
- LCD display with backlight and soft-keys
- SoftPLC function allows for ladder programming development
- Plug and play accessories:
  - Communication modules for Modbus-RTU (RS232 or RS485), Profibus-DP, DeviceNet and CANopen
  - I/Os expansion modules
  - USB expansion module
  - Flash memory module
- Certifications: UL, CE, IRAM, C-Tick



## Industrial and System Variable Speed Drive

### CFW11



#### Variable Speed Drive

- Power rating: 1 to 600 HP (0.75 to 400 kW)
- Power supply: 200-240 V, 380-480 V and 500-690 V
- Human-machine interface (HMI) with backlight, graphic display and soft-keys, and real time clock
- Plug and play philosophy
- USB connection
- Memory card built-in
- Great variety of control accessories:
  - I/O expansion boards (digital and analog)
  - Incremental encoder interface and communication
- PLC board (positioning applications can be performed)
- Communication:
  - Profibus, DeviceNet, CANopen, Ethernet / IP, Modbus-RTU (optional) and Profinet
- Intelligent thermal management
- Protections with failure and alarm warnings
- Normal duty and heavy duty ratings to adapt optimally to all kinds of load
- IP20 enclosure
- IP21 (NEMA1) and IP54 (option)
- DC choke built-in (no requirement for minimum powers supply impedance)
- Certifications: UL, CE, IRAM, C-Tick

### CFW11M



#### Modular Variable Speed Drive

- Power rating: 350 to 2,500 HP (270 to 2,000 kW)
- Power supply: 380-480 V, 500-600 V and 660-690 V
- Configurable rectifier unit for 6, 12, 18 pulses or even regenerative (AFE)
- Control board, human machine interface (HMI) and control accessories common to entire CFW11 line
- Built-in input reactors, USB connection and memory card
- Up to 5 compact power units can be connected in parallel (easy servicing)
- Assembled in IP42 cabinet with high speed fuses, main circuit breaker and control power supply circuits (ready to run cabinet)

Books (modules)	380/480 V	500/600 V	660/690 V
1	370 kW (500 HP)	400 kW (500 HP)	400 kW (500 HP)
2	700 kW (900 HP)	710 kW (900 HP)	800 kW (1,000 HP)
3	1,050 kW (1,400 HP)	1,120 kW (1,400 HP)	1,200 kW (1,500 HP)
4	1,400 kW (1,800 HP)	1,500 kW (1,800 HP)	1,600 kW (2,000 HP)
5	1,750 kW (2,300 HP)	1,850 kW (2,300 HP)	2,000 kW (2,500 HP)

# HVAC Variable Speed Drive

## CFW501



### Variable Speed Drive

**NEW**

- Power rating: 0.25 to 10 HP (0.18 to 7.5 kW)
- Power supply: 200-240 V ac for single-phase models and 200-240 V ac or 380-480 V ac for three-phase models
- Control modes: scalar (V/Hz) or voltage vector VVW
- Normal duty ratings (ND)
- Special electronic design - better power factor and no requirement for minimum power supply impedance
- LCD display with backlight and soft-keys
- SoftPLC function allows for ladder programming development
- Plug and play accessories:
  - Communication modules for Backnet, Modbus-RTU (RS232 or RS485), Profibus-DP, DeviceNet and CANopen
  - I/Os expansion modules
  - USB module
  - Flash memory module
- Certifications: UL, CE, IRAM, C-Tick

## CFW701



### Variable Speed Drive

- Power rating: 1.5 to 150 HP (0.75 to 110 kW)
- Power supply: 200-240 V, 380-480 V and 500-600
- LCD display with backlight and soft-keys
- Plug and Play accessories
- Memory card (optional)
- RS485 port available through terminals (Modbus-RTU, Metasys, BACnet, ready)
- SoftPLC function allows for ladder programming development
- Smart motor and drive thermal management
- Normal and heavy duty ratings (ND/HD)
- DC choke built-in (no requirement for minimum power supply impedance)
- RFI filter built-in for all frame sizes (C3 category compliant)
- 24 V dc power supply board for control feeding. There is no need to power up drive for configuration purpose
- IP20/21 and NEMA1 options
- Specific functionalities for HVAC applications:
  - Fire mode
  - Broken belt
  - Energy saving
  - Dry pump
  - Bypass
  - Engineering units available
  - 3 PID controllers
- Certifications: UL, CE, IRAM, C-Tick

## HMI



### Operator Interface

It is used for command, viewing and adjustment of parameters on the CFW701. Two operation modes are offered: monitoring and programming. The display is equipped with engineering units specifically developed for HVAC and status indication that make configuration and operation easier. It can be remotely mounted.

## Decentralized Variable Speed Drive

### MW500



#### Decentralized Variable Speed Drive

**NEW**

- Power rating: 3 and 5 HP (2.2 and 3.7 kW)
- Power supply: three-phase 380-480 V ac
- Control modes: scalar (V/Hz) or voltage vector VVW
- Heavy duty ratings (HD)
- Special electronic design - better power factor and no requirement for minimum power supply impedance
- Ready, alarm and fault LED lights
- LCD display with backlight and soft-keys (accessory)
- SoftPLC function allows for ladder programming development
- Plug and Play accessories:
  - Communication modules for Modbus-RTU (RS232 or RS485), Profibus-DP, DeviceNet and CANopen
  - I/Os expansion modules
  - USB module
  - Flash memory module
- Certifications: UL, CE

## Soft-Starters

WEG soft-starters, microprocessor controlled and fully digital, have been designed to provide high performance in starting and stopping electric motors. The keypad offers a friendly interface for parameter adjustment making the operation much easier.

### SSW05



#### Micro Soft-starter

- Power rating: 0.75 to 75 HP (0.55 to 55 kW)
- Power supply: 220-575 V and 575-690 V
- Built-in bypass
- DSP control
- Remote keypad (optional)
- Built-in motor protections
- PID regulator
- Ambient temperature up to 55 °C (131 °F)
- Certifications: UL, CE, IRAM, C-Tick

### SSW06



#### Soft-starter

- Power rating: 30 to 2,650 HP (22 to 1,950 kW)
- Power supply: 220-575 V and 575-690 V
- Built-in bypass
- Removable HMI with LED and LCD display
- Kick-start function for loads with high inertia
- Pump control for intelligent pumping system control
- Full digital / 32 bits RISC microcontroller
- Electronic motor protection
- Ambient temperature up to 55 °C (131 °F)
- Certifications: UL, CE, IRAM, C-Tick

## Soft-Starters

### SSW07 and SSW08



#### Soft-starter

- Power ratings: 6 to 450 HP (4.5 to 315 kW)
- Voltage: 220-575 V
- Built-in bypass
- Built-in EMC filter
- SSW07 applied for heavy load starts
- SSW08 applied for light and moderate load starts
- Three-phase controlled
- Integral motor and starter protections
- Programmable KICK-START function to start high break-away torque loads
- Remote HMI
- Very compact product
- It is able to operate in 55 °C without derating
- Certifications: UL, CE, IRAM, C-Tick

## Automation Systems

### SCA06



#### Servo Drives

**NEW**

- Power supply: 220-230 V or 380-480 V
- Rated current:
  - Single-phase 220-230 V / 4 A
  - Three-phase 220-230 V / 5, 8, 16, and 24 A
  - Three-phase 380-480 V / 5.3 and 14 A
- Built-in CANopen
- Modbus-RTU, Profibus or Ethercat (accessory)
- Built-in PLC programmed via WEG Ladder Programmer (WLP) according to IEC 1131-3 standard
- USB port for WLP programming and on line monitoring
- RFI filter or safety stop (optional)
- Built-in TRACE function (digital oscilloscope)
- Backup of the SCA06 parameters and PLC program via memory stick
- Real time clock
- Certifications: UL, CE

### SWA



#### Servomotors

- Torque: 0.8 up to 40 Nm
- IP65 protection degree (without brake)
- Resolver feedback
- Media inertia
- Low maintenance
- Low level of noise and vibration
- Electromagnetic brake (optional)
- Certifications: UL, CE

## Medium Voltage Variable Speed Drive

### MVW01



### Medium Voltage Variable Speed Drive

- Motor voltage: 2.3 kV; 3.3 kV; 4.16 kV and 6.9 kV
- Power ratings: 500 HP to 22,500 HP (400 kW to 16,000 kW)
- Input rectifier: 12, 18 or 24 pulses (for the 4.16 kV line) and 36 pulses (for the 6.9 kV line)

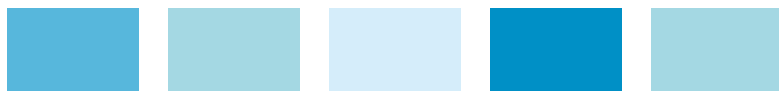
### Main Advantages of WEG MVW01 VSD

- Voltage source (VSI) multilevel power topology (NPC 3/5 up to 4.16 kV and 5/9 up to 6.9 kV) with high dynamic performance
- Latest generation of power semiconductors with 6.5 kV IGBT's
- Use of dry-type plastic film power capacitors only (much longer life time than electrolytic capacitors)
- Reduced number of power and control components allowing high efficiency and reliability
- Withdrawable power cells for easy and fast servicing
- High security level with mechanical and electrical interlocking
- Phase shifting transformer for very low harmonics levels, higher incoming voltage installations and to eliminate common mode voltage problems increasing motor life time
- Flexibility for choosing the transformer (dry/oil type)
- Possibility of installing the transformer inside or outside the electrical room allowing energy and financial savings with the refrigeration system



Keypad - Human machine interface (HMI) with graphic display (3") and backlight

The highest efficiency on the market (>99% true measurement with rated load)





## Medium Voltage Soft-Starter

### SSW7000



IP41 Enclosure - IEC



NEMA12 Enclosure

#### Medium Voltage Soft-Starter

- Motor voltage: 2.3 kV; 3.3 kV; 4.16 kV and 6.9 kV
- Power ratings: 750 HP to 4,500 HP (560 kW to 3,300 kW)
- Overload: 450% for 30 sec

#### Main Characteristics of WEG SSW7000

- Allows across-the-line full voltage motor starting for emergency back-up with complete motor protection
- Possibility of setting the best protection mode for the motor with thermal protections, alarm and fault notifications for current, voltage, temperature, etc.
- Totally Flexible Torque Control (TFTC) - technology that uses WEG VFD's concept for controlling the motor torque
- High flexibility for choosing the control type: voltage ramp, current limiting, pump control and torque control (constant, linear or quadratic)
- Built-in input disconnect switch with medium voltage fuses, vacuum contactors (input and bypass) and independent withdrawable power modules (one per motor phase)
- Fieldbus communication protocols (DeviceNet, Profibus-DPV1, Ethernet/IP and Modbus-RTU, RS232 or RS485 interface)
- Keypad (HMI) with real time clock (RTC)
- SoftPLC function with USB programming interface

## Variable Speed Drive Assemblies

### AFW11



#### Cabinet Built in Variable Speed Drive

- Power rating: 50 to 600 HP (37 to 450 kW)
- Power supply: 380-480 V, 500-600 V and 660-690 V
- Configurable rectifier unit for 6, 12, 18 pulses
- Regenerative rectifier (AFE) available as optional above 132 kW
- Control board, human machine interface (HMI) and control accessories common to entire CFW11 line
- Indoor enclosed cabinet, IP42 as standard or IP54 as option
- Ready to run cabinet with high speed fuses, main circuit breaker or switch-disconnector and control power supply circuit
- Customized solution that makes it flexible to fit customer needs

### APW11



#### Free Standing Variable Speed Drive

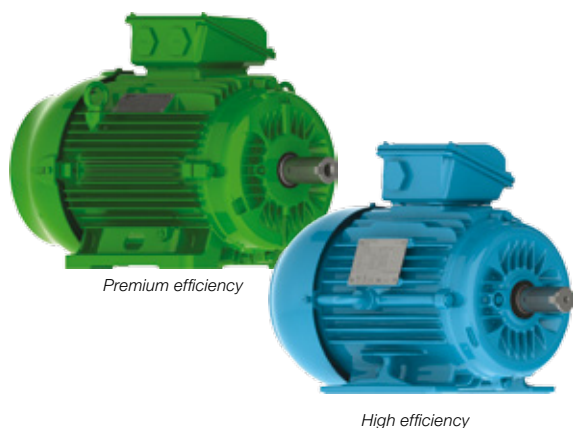
- Power rating: 75 to 600 HP (55 to 450 kW)
- Power supply: 380-480 V
- Control board, human machine interface (HMI) and control accessories common to entire CFW11 line
- Built-in DC choke
- Indoor compact cabinet, IP20/21 as standard
- High speed fuses and main switch-disconnector as standard configuration
- Easy to install and operate
- Normal duty and heavy duty ratings

## Industrial Motors



### W22

A high efficiency product, enhancing the productivity to generate the maximum benefit to the customer. This is the focus of the W22 Line, designed to provide not only significantly lower energy consumption, but lower noise and vibration levels, higher reliability, easier maintenance and lower cost of ownership. A motor that anticipates the concepts about energy efficiency, performance and productivity.



### Low Voltage Motors

#### Standard Features

- Output: 0,12 kW to 500 kW
- Number of poles: 2, 4, 6 and 8
- Frequency: 50 Hz
- Voltage:
  - 220-240/380-415 V (up to 100 L)
  - 380-415/660 V (from 112 M and up)
- Frames: 63 to 355A/B
- Colour:
  - Premium efficiency - IE3: RAL 6002 - green
  - High efficiency - IE2: RAL 5009 - blue

#### Versions Available

- High efficiency - IE2
- Premium efficiency - IE3
- Multi speed motors (Dahlander, Double Winding, etc.)
- 10 and 12 poles

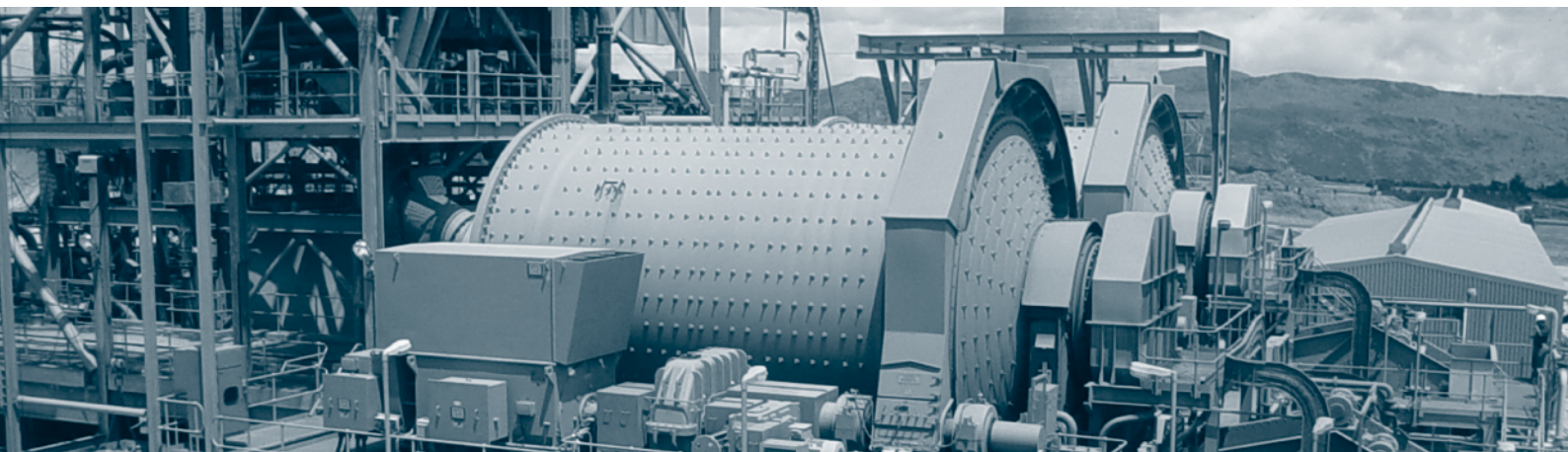
#### Applications

Pumps, compressors, fans, crushers, conveyors, mills, centrifugal machines, presses, elevators, packaging equipment, grinders, etc.

Features	Benefits
Efficiency levels	High Efficiency - IE2 - Exceeds the IE2 efficiency levels specified in the IEC 60034-30 and the requirements of the EuP-Directive 2005/32/EC Premium Efficiency - IE3 - Exceeds the IE3 efficiency levels specified in the IEC 60034-30 to provide significant energy savings and a fast return on investment
New frame and endshields design	Higher mechanical stiffness and excellent heat dissipation
New terminal box design	Diagonally split oversized terminal box provides optimal conditions for operators to access main and accessories terminals Provides easy and fast modification to the terminal box mounting position (for frames 225S/M to 355A/B)
Low bearing operating temperature	Extended lubrication intervals and longer bearings lifetime
Exclusive WSeal® Sealing System	Preventing the ingress of contaminant agents into the motor interior (for frames 225S/M to 355A/B)
New ventilation system	Fins design allows an optimized air flow distribution over the frame and reduces the noise levels
Solid and integrated feet	Stiffness, easy alignment and installation
WISE® insulation system	Increases stator electrical strength and allows the motor operation by frequency inverters, without damage by voltage peaks <sup>1)</sup>

Note: 1) For more information about Frequency Inverter Operation, please see page 40.

# Industrial Motors



## W22

WEG presents its W22 Super Premium Efficiency motor line, exceeding the IE4 efficiency levels defined in IEC technical specification IEC/TS 60034-31 and draft IEC standard 60034-30 edition 2. High overall performance which is translated into a lower total cost of ownership, due to its reliability, easy maintenance and energy savings.



## Super Premium Efficiency

### Standard Features

- Output: 3 to 355 kW
- Number of poles: 2, 4 and 6
- Frequency: 50 Hz
- Voltage: 400/690 V
- Frames: 132S to 355A/B
- Colour: RAL 6002 - green

### Applications

Pumps, compressors, fans, crushers, conveyors, mills, centrifugal machines, presses, elevators, packaging equipment, grinders, etc.

Drives

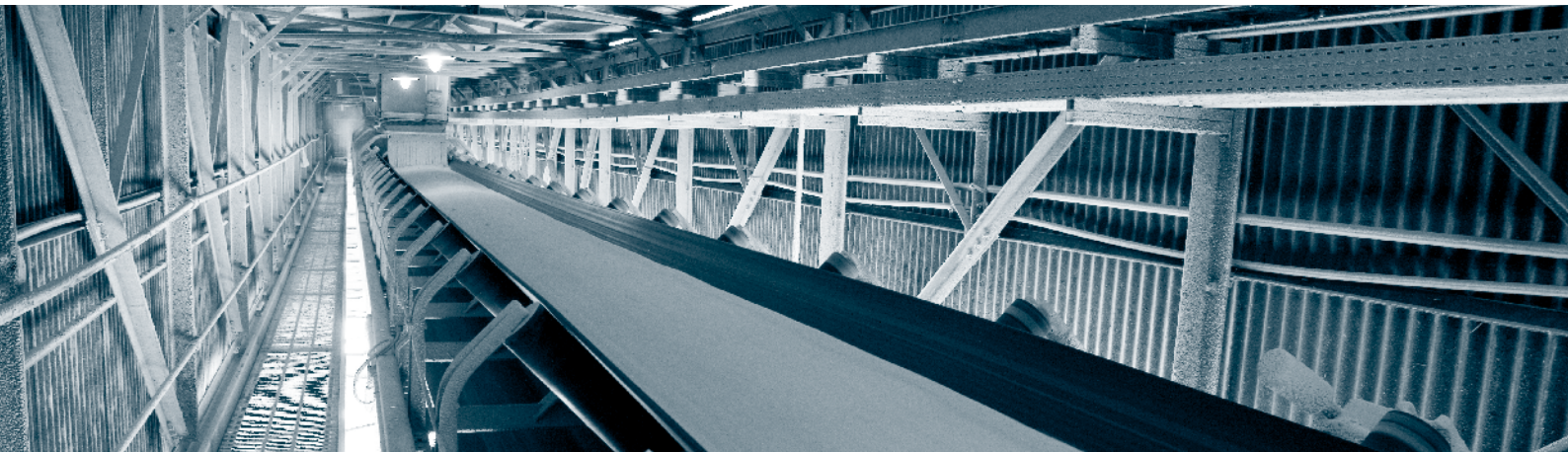
Industrial Motors

Features	Benefits
Efficiency level	Exceeding the IE4 Efficiency Levels defined in IEC Technical Specification IEC/TS 60034-31 and draft IEC Standard 60034-30 edition 2
W22 platform	Counts on all the innovative features of the W22 General Purpose Motors Platform
Same output x frame ratio when compared to conventional induction motors	Totally interchangeable with existing induction motors
WISE® insulation system	Increases stator electrical strength and allows the motor operation by frequency inverters, without damage by voltage peaks <sup>1)</sup>

Note: 1) For more information about Frequency Inverter Operation, please see page 40.



## Industrial Motors



### W21

WEG Aluminium frame motors with removable feet were specially designed to meet market requirements in reference to mounting flexibility since they allow all mounting positions. The foot mounting system offers great flexibility and allows changing of the mounting configuration without requiring any additional machining process or modification to the motor feet. Motor terminal boxes can be rotated at 90 degrees allowing motor leads to be connected at any motor side. Besides that these motors are fully interchangeable with existing cast iron frame motors. Reduced stock is needed as only one motor is required for all mounting positions.



### Aluminium Motors

#### Standard Features

- Output: 0.12 kW to 37 kW
- Number of poles: 2, 4, 6 and 8
- Frequency: 50 Hz
- Voltage:
  - 220-240/380-415 V (up to 100 L)
  - 380-415/660 V (from 112M and up)
- Frames: 63 to 200 L
- Colour:
  - Premium efficiency - IE3: RAL 6002 - green
  - High efficiency - IE2: RAL 5009 - blue
  - Standard efficiency - IE1: RAL 5009 - blue

#### Applications

Pumps, compressors, air conditioning systems, fans, cranes, conveyors, machine tools, winding machines, drawing machines, presses, hoists, cranes, elevators, looms, grinders, injectors, extruders, cooling towers, packaging machines, etc.

Features	Benefits
Multimounting	Flexible and easy to change mounting configurations without requiring machining operations or additional changes to the motor feet
Aluminium frame	Provides high protection to the enclosures offering lower and better heat dissipation
Definite purpose derived lines Extended range	W21 Aluminum Multimounting motors line counts on, besides the General Purpose line, several definite purpose derived lines, such as Brake Motors, Single-Phase Motors and Fan & Exhaust Motors (TEAO) The introduction of the 160, 180 and 200 frames allow the W21 aluminum multimounting line to offer rated outputs up to 37 kW, enabling the line to cover even more applications
Extended range	The introduction of the 160, 180 and 200 frames allow the W21 aluminium multimounting line to cover rated outputs up to 37 kW, enabling this line to cover even more applications
WISE® insulation system	Increases stator electrical strength and allows the motor operation by frequency inverters, without damage by voltage peaks <sup>1)</sup>

Note: 1) For more information about Frequency Inverter Operation, please see page 40.

## Industrial Motors



### W22 Magnet IE5

The motor with the greatest efficiency and savings on the market. The rotor with permanent magnets guarantees high performance, making it possible to draw more power per frame, reducing installation space and noise, in addition to guaranteeing efficiency levels greater than high and premium efficiency motors defined by standards. The motor is driven by a WEG frequency inverter and offers constant torque in a wide speed range, guaranteeing operation at low speeds, with no need of a forced ventilation kit.



### Permanent Magnet Motor

#### Standard Features W22 Magnet IE5

- Output: 7.5 to 315 kW
- Speed range: 3,000, 1,500 and 1,000 rpm
- Voltage: 400 V
- Frames: 132S to 315S/M
- Color: 091A.3145 – gray

#### Applications

Compressors, elevators, pumps, fans, exhausters, conveyors, textile industry machines and other applications where speed variation, high efficiency, low noise levels and reduced volume are mandatory.

Features	Benefits
Ultra premium efficiency levels	The motor efficiency meets the impending IE5 levels, offering energy savings and reduction in CO <sub>2</sub> emissions
Rotor fitted with permanent magnets	Motor extended lifetime, higher output / frame size ratio, higher efficiency, higher power factor and reduced bearing and overall motor temperature
Synchronous operation	Easy speed synchronization with multiple motors fed by the same variable frequency inverter
Wide speed range with constant torque	Ensures operation at lower speeds with the same performance, without requiring a forced ventilation kit, demanding less floor space for motor and MCC installation
WISE® insulation system	Increases stator electrical strength and allows the motor operation by frequency inverters, without damage by voltage peaks <sup>1)</sup>

Note: 1) For more information about Frequency Inverter Operation, please see page 40.



## Industrial Motors



### W22 Quattro

The WQuattro line was developed for users who consider energy saving a priority. The WQuattro is an environmentally friendly motor that due to its very efficient performance will demand less energy from the grid. That will translate into a low total cost of ownership and the reduction of CO<sub>2</sub> eq emissions. WQuattro is a hybrid motor with squirrel cage rotor fitted with high energy permanent magnets making it suitable for direct on line start.



### Hybrid Motor

#### Standard Features W22 Quattro Super Premium Efficiency

- Output: 0.37 kW to 7.5 kW
- Number of poles: 4 and 6
- Frequency: 50 Hz
- Voltage: 230/440 (up to 100L), 400/690 V (from 112M and up)
- Frames: 80 to 132M/L
- Color: RAL 6021 - green

#### Applications

Centrifugal pumps and normal exhausters and fans.

Features	Benefits
Interchangeability	Interchangeable with induction motors (same output x frame ratio)
Less maintenance	Low bearing temperature - extended life and less maintenance
Synchronous operation	Easy speed synchronization with multiple motors fed by the same inverter
WISE® insulation system	Increases stator electrical strength and allows the motor operation by frequency inverters, without damage by voltage peaks <sup>1)</sup>

Note: 1) For more information about Frequency Inverter Operation, please see page 40.



## Industrial Motors



### W22

Using electrical design optimizations software and taking advantage of its technical know-how in manufacturing compact pre-formed coils, WEG developed the W22 High Voltage General Purpose Motors Line. The line counts on all innovative features introduced with the launch of the W22 Low Voltage Motors line and represents the best solution for cost-benefit ratio of General Purpose applications that requires High Voltage motors.



### High Voltage Motors

#### Standard Features

- Output: 90 kW to 440 kW
- Number of poles: 2, 4, 6 and 8
- Frequency: 50 Hz
- Voltage: 1.2 to 6.6 kV
- Frames: 315L and 355A/B
- Colour: RAL 5009 - blue

#### Applications

Pumps, compressors, fans, crushers, conveyors, mills, centrifugal machines, presses, elevators, packaging equipment, grinders, etc.

Drives

Industrial Motors

Features	Benefits
Compact construction	One of the most compact High Voltage machines available on the market
W22 Platform	Counts on all the innovative features of the W22 General Purpose Motors Platform
New accessories terminal box	Placed in the top of the frame close to the fan cover, provides easy and safe connection for accessories separated from main terminals, thus avoiding signal interference

## Industrial Motors

**NEW**

### W40

The W40 motor is a general purpose line designed for environments where dirt and moisture are minimal. The W40 cast iron frame is designed to provide maximum ventilation and heat dissipation, offering low vibration levels, high mechanical stiffness and durability. The W40 line meets or exceeds the efficiency levels determined by the International Standards and the minimum efficiency level programs in force worldwide.



### Open Induction Motors

#### Standard Features

- Output: 11 kW to 1,400 kW
- Number of poles: 2 and 4
- Frequency: 50 Hz
- Voltage: 208 to 4,160 V
- Frames: 160L to 450 K/J
- Color: Frames 160L to 280L IE2 efficiency (RAL 5009 - blue)  
Frames 315D/E to 450K/J IE3 efficiency (RAL 6002 - green)

#### Versions Available

- High efficiency - IE2
- Premium efficiency – IE3
- Close-coupled pump motors (JM/JP)

#### Applications

Pumps, compressors, fans, exhausters, kneader and mixer machines, cutting and sawing machines, presses, industrial machines, conveyors, blowers, cranes, packaging equipment and other sheltered and protected industrial environment applications.

Features	Benefits
High performance	The open enclosure allows more compact design for the same output compared with totally enclosed motors, resulting in the most cost-effective option for the driven equipment
New IEC 355, 400 and 450K/J frame sizes	WEG is now introducing frames sizes 355, 400 and 450 in W40 portfolio. This represents an important improvement in the offered rated output, from the previous 370 kW to 1,400 kW in 50 Hz (600 to 2,250 HP in 60 Hz). This new range features an entirely new concept, offering low noise levels, improved mechanical stiffness and heat dissipation. The introduction of the design allowed WEG to offer the W40 motors in medium and high voltage ratings, being available up to 6.6 kV
Low noise levels	The innovative design of the new fans system combined with the new frame concept, ensure to the W40 motors maximum air flow with reduced noise levels
Modular construction	Easy and quick transformation among all possible configurations
WISE® insulation system	Increases stator electrical strength and allows the motor operation by frequency inverters, without damage by voltage peaks <sup>1)</sup>

Note: 1) For more information about Frequency Inverter Operation, please see page 40.

## Industrial Motors

**NEW**

### W50

The WEG W50 motor line is a product designed for industrial applications ensuring high performance and reliability even under the most severe operating conditions. The W50 motor complies with the strictest criteria of efficiency and safety.



### Low and High Voltage Motors

#### Standard Features

- Output: 75 to 1,250 kW
- Number of poles: 2 to 12
- Frequency: 50 Hz and 60 Hz
- Voltage: 380 to 6,600 V
- Frames: 315H/G to 450J/H
- Color: RAL 5009 (blue)

#### Versions Available

- Standard
- W50 Mining
- W50 Vertical HT
- W50Xn
- W50 API 541
- W50 IEEE 841

#### Applications

Cooling towers, pumps, mixers, agitators, compressors, grinders, conveyors and others.

Features	Benefits
New frame design	New frame design aimed at best equation between mechanical rigidity and thermal dissipation possible for enclosures, thereby reducing motor vibration and increasing lifetime
Low bearing temperature	Unique fin distribution design which ensures excellent thermal performance
Low noise levels	The mounting system of the grid and internal baffle ensures low noise levels, even lower than noise levels established by the standards
Compact design	A high performance and robust product with a compact design
Reliability	Low vibration levels which increase lifetime
Electrical performance	WISE insulation on low voltage motors and VPI insulation for high voltage motors which increases stator electrical strength
Modularity	Can be provided with sleeve bearings, wide range of accessories, modular blower kit, oversized terminal box and others

Drives

Industrial Motors



## Industrial Motors



### Fan and Exhaust Motors

Suitable for the most demanding specifications of OEM's ventilation customers, the fan and exhaust design allows high output in light and compact frame sizes for several fan applications.



### Fan and Exhaust Motors

#### Standard Features

- Output: 0.12 kW to 500 kW
- Number of poles: 2, 4, 6 and 8
- Frequency: 50 Hz
- Voltage:
  - 220-240/380-415 V (up to 100 L)
  - 380-415/660 V (from 112M and up)
- Frames:
  - 63 to 355A/B (for cast iron frames)
  - 63 to 132M (for aluminum frames)
- Colour:
  - Premium efficiency - IE3: RAL 6002 - green
  - High efficiency - IE2: RAL 5009 - blue
  - Standard efficiency - IE1: RAL 5009 - blue

#### Versions Available

- High efficiency - IE2
- Standard efficiency - IE1
- 10 and 12 poles
- Multi speed motors (Dahlander, Double Winding, etc.)
- Cast iron or aluminium enclosures

#### Applications

Fan and exhausters for: tunnels, metros, subways, shopping centres, car parks, supermarkets, etc.

Features	Benefits
Efficiency level	Exceeding the IE4 Efficiency Levels defined in IEC Technical Specification IEC/TS 60034-31 and draft IEC Standard 60034-30 edition 2
W22 Platform	Counts on all the innovative features of the W22 General Purpose Motors Platform
Same output x frame ratio when compared to conventional induction motors	Totally Interchangeable with existing induction motors
WISE® insulation system	Increases stator electrical strength and allows the motor operation by frequency inverters, without damage by voltage peaks <sup>1)</sup>

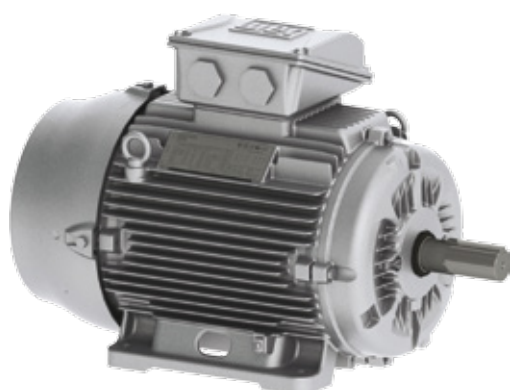
Note: 1) For more information about Frequency Inverter Operation, please see page 40.

## Smoke Extraction Motors



### Smoke Extraction Motors

Assuring safety in commercial and industrial facilities is one of the main concern of designers and company owners during the design of shopping centres, factories, warehouses, covered parking lots, tunnels and other places in which a large concentration of people are present. Smoke Extraction motors are suitable for extracting operation in high temperature and guarantee rapid smoke and heat extraction and delay in fire propagation, allowing free access to emergency exits.



### Smoke Extraction Motors

#### Standard Features

- Output: 0.12 kW to 500 kW
- Number of poles: 2, 4, 6 and 8
- Frequency: 50 Hz
- Frames: 80 to 355A/B
- Voltage:
  - 220-240/380-415 V (up to 100 L)
  - 380-415/660 V (from 112M and up)
- Colour: RAL 9006 - aluminium

#### Versions Available

- TEFC (Totally Enclosed Fan Cooled) or TEAO (Totally Enclosed Air Over)
- Premium efficiency - IE3
- High efficiency - IE2
- Standard efficiency - IE1
- 10 and 12 poles
- Multi speed motors (Dahlander, Double Winding, etc.)
- F200 (200 °C/2 hrs), F300 (300 °C/2 hrs) and F400 (400 °C/2 hrs)

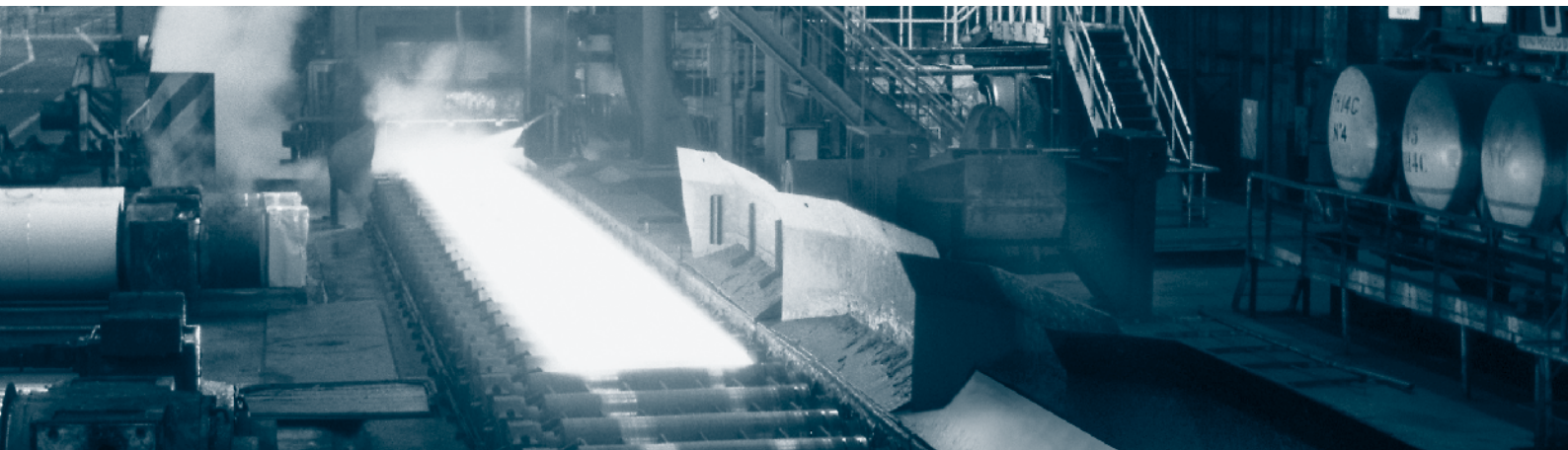
#### Applications

Fan and exhausters for: tunnels, metros, subways, shopping centres, car parks, supermarkets and other applications with large concentration of people.

Features	Benefits
Mounting flexibility	Fan and Exhaust motors can be supplied with the following features: pad, foot or flange mounted Besides the mounting configurations the motor can be also supplied with T-box and terminal block or without T-box and loose cable leads allowing remote assembly of the T-box
W22 platform	Offers on all the innovative features of the W22 General Purpose Motors platform (for foot or flange mounted)
Special design for high ambient temperature	Components carefully designed to withstand the operation in extreme temperature conditions
Extensively tested and approved according to EN 12101-3	Safety and reliability
WISE® insulation system	Increases stator electrical strength and allows the motor operation by frequency inverters, without damage by voltage peaks <sup>1)</sup>

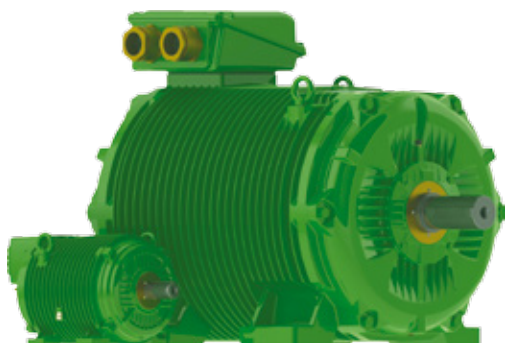
Note: 1) For more information about Frequency Inverter Operation, please see page 40.

## Roller Table Motors



### Roller Table Motors

Severe operating conditions require stronger motors. The Roller Table motor's frame is fitted with radial fins that prevent residue accumulation on the frame surface. The line is also fitted with an advanced sealing system, high protection against corrosion and high mechanical strength, thus requiring low maintenance and providing high durability and productivity.



### Roller Table Motors

#### Standard Features

- Output: 3,0 kW to 260 kW
- Number of poles: 4, 6, 8, 10 and 12
- Frequency: 50 Hz
- Frames: 112M to 400
- Voltage: 380-415/660/440-460 V
- Colour: Ral 6003 - green

#### Applications

Roller tables and laminating machines for the steel industry.

Features	Benefits
Premium Efficiency - IE3	Exceeds the IE3 efficiency levels specified in the IEC 60034-30 to provide significant energy savings and a fast return on investment
Radial/circular fins	Prevent residue accumulation on motor frame
W3Seal® sealing system and IP66W degree of protection	Protect the motor against the ingress of contaminants into the motor frame
Sealing at cable inlet and sealing between endshield and frame	Protect the motor against the ingress of contaminants into the motor frame
Shaft, bolts and nameplate are made of stainless steel	Provides high corrosion resistance
Internal epoxi anti-corrosion painting	Prevents corrosion of internal motor components and improves protection of windings
Painting plan for aggressive environments	Provides more resistance in corrosive environments
WISE® insulation system	Increases stator electrical strength and allows the motor operation by frequency inverters, without damage by voltage peaks <sup>1)</sup>

Note: 1) For more information about Frequency Inverter Operation, please see page 40.



## Industrial Motors



### W22 Brake Motors

W22 Brake Motors are ideal for applications that require precise, fast and secure braking. The motors provide easy maintenance and can be supplied with micro-switches to monitor the brake (open/closed and wear).



### Brake Motors

#### Standard Features

- Output: 0.12 to 55 kW
- Number of poles: 2, 4, 6 and 8
- Frames: 63 to 250S/M
- Frequency: 50 Hz
- Voltage:
  - 220-240/380-415 V (up to 100 L)
  - 380-415/660 V (from 112M and up)
- Colour:
  - Premium efficiency - IE3: RAL 6002 - green
  - High efficiency - IE2: RAL 5009 - blue
  - Standard efficiency - IE1: RAL 5009 - blue

#### Applications

Packing equipment, conveyors, washing and bottling machines, overhead cranes, elevators, printing machines, gates, wood machinery, etc.

Drives

Industrial Motors

Features	Benefits
High performance braking system	Ensures quick and safe stops and accurate load positioning and requires low maintenance
Manual brake release	Possibility to keep the motor free during emergency situations or whenever necessary
Aluminium frame available	Lower weight with the same reliability
WISE® insulation system	Increases stator electrical strength and allows the motor operation by frequency inverters, without damage by voltage peaks <sup>1)</sup>

Note: 1) For more information about Frequency Inverter Operation, please see page 40.

## Industrial Motors

**NEW**

### W22Xd

The W22Xd line represents all that is most modern in driving equipment for explosive atmospheres. The mechanical design of the W22Xd line is based on the highly successful W22 general purpose motor range, with the incorporation of some innovative new features, including: modern frame design with new fins and feet to ensure higher mechanical rigidity and excellent heat dissipation; redesigned endshields to reduce bearing operating temperatures thus increasing the re-lubrication intervals; and an advanced cooling system to reduce noise levels and significantly improve heat dissipation.



### Flameproof Motors

#### Standard Features

- Output: 0.12 to 37 kW
- Number of poles: 2, 4, 6 and 8
- Frequency: 50 Hz
- Voltage:
  - 220-240/380-415 V (up to 100 L)
  - 380-415/660-690 V (from 112 M and up)
- Frames: 71 to 200M/L
- Colour:
  - Premium efficiency - IE3: RAL 6002 - green
  - High efficiency - IE2: RAL 5009 - blue

#### Version Available

- Premium efficiency - IE3
- High efficiency - IE2
- Multi speed motors (Dahlander, Double Winding, etc.)
- 10 and 12 poles

#### Applications

Pumps, compressors, fans, blowers, conveyors and other severe duty applications in explosive atmospheres classified as Zones 1 and 2, gas groups IIA, IIB or IIC.

Features	Benefits
W22 platform	Offers on several innovative features of the W22 General Purpose Motors platform
High efficiency levels	Even though the EN directive does not cover explosion-proof motors, WEG feels that since the introduction of the ATEX Regulations there has been an increase in demand for high-efficiency hazardous area products. Due to this increase, WEG launches the W22X line with the IE2 efficiency level as standard for all IEC motors
New terminal box	The terminal box was designed with plenty of internal space, allowing easy access and safe handling of the power cables, even when large size cables are required
Wide range of certified accessories	The new W22X line offers a wide range of accessories affording suitability for a wide range of customer specifications, without losing focus on the safety of the application
Zone 21 and 22 certified	To enable a higher functionality to the W22X line, these motors will be also certified for applications in ambients where combustible dusts/fibers may be expected to be present
IIC group certified	Safety for hydrogen gases family hazardous areas
Protection	Motor suitable to operate in hazardous locations classified as Zones 1 and 2
WISE® insulation system	Increases stator electrical strength and allows the motor operation by frequency inverters, without damage by voltage peaks <sup>1)</sup>

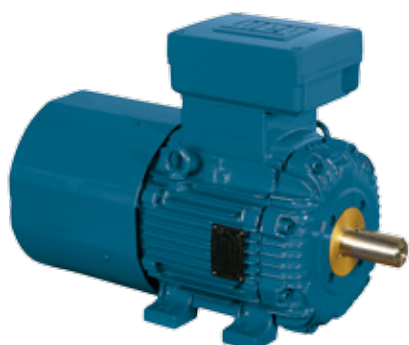
Note: 1) For more information about Frequency Inverter Operation, please see page 40.

## Industrial Motors



### Flameproof Motors with Brake

The installation of electric motors where flammable products are continuously handled, processed or stored must comply with the most demanding safety standards in order to guarantee life protection, machines and environment. Following to highest safety standards, WEG explosion-proof motors integrate the high performance of the brakes. An effective solution for equipment where fast safety stops are required, as well as precise positioning with safety in hazardous areas such as Zone 1 and Zone 2.



### Flameproof Motors with Brake

#### Standard Features

- Output: 2.2 to 18.5 kW
- Number of poles: 2, 4, 6 and 8
- Frequency: 50 Hz
- Voltage: 380-415/660 V
- Frames: 132 S to 160 L
- Colour:
  - High efficiency - IE2: RAL 5009 - blue
  - Standard efficiency - IE1: RAL 5009 - blue

#### Versions Available

- High efficiency - IE2
- Standard efficiency - IE1

#### Applications

Pumps, compressors, fans, blowers, conveyors and other severe duty applications in explosive atmospheres classified as Zones 1 and 2, gas groups IIA or IIB.

Features	Benefits
High performance braking system	Ensures quick and safe stops and accurate load positioning and requires low maintenance
Manual brake release	Possibility to keep the motor free during emergency situations or whenever necessary
Modern flame retention system with robust frame, endshields and T-box	Avoid flame propagation from inside the motor to the external side, guaranteeing safety life protection, machines and environment
W3Seal® sealing system and IP66W degree of protection	Protect against the ingress of contaminants inside the motor frame
Additional nameplate	Easy identification of the motors in the factory and traceability
Painting plan for severe environments	Special for industrial severe environments, sheltered or not, which may contain
Protection	Motor suitable to operate in hazardous locations classified as Zones 1 and 2
WISE® insulation system	Increases stator electrical strength and allows the motor operation by frequency inverters, without damage by voltage peaks <sup>1)</sup>

Note: 1) For more information about Frequency Inverter Operation, please see page 40.



## Industrial Motors



### W22Xtb

The W22Xtb motor has been specially designed to maximize safety and quality of motors applied in explosive atmospheres - Zone 21 (grain processing, cereals, textile fibers, powder coating, polymers, etc.) Reliability and safety is ensured at the presence of conductive dust suspension (cloud) or dust layer (up to 5 mm), according to IEC standards.



### Dust Ignition Proof Motors

#### Standard Features

- Output: 0.12 to 450 kW
- Number of poles: 2, 4, 6 and 8
- Frequency: 50 Hz
- Voltage:
  - 220-240/380-415 V (up to 100 L)
  - 380-415/660 V (from 112 M and up)
- Frames: 63 to 355A/B
- Colour:
  - Premium efficiency - IE3: RAL 6002 - green
  - High efficiency - IE2: RAL 5009 - blue
  - Standard efficiency - IE1 - RAL 5010 - blue

#### Applications

Sugar refining plants, breweries, cement plants, textiles, pharmaceutical, chemical, agricultural process industries and other applications in explosive atmospheres classified as Zones 21 and 22.

Features	Benefits
Reduced surface temperature	Safety. Prevents the ignition of combustible dust or fibers in contact with the motor
Conductive material fan	Safety, avoiding sparks that could cause the ignition of the combustible material present on the environment
Degree of protection IP66	Protect against the ingress of contaminants inside the motor frame
Winding thermal protection	Protection the motor at abnormal operating conditions, preserving the designed surface temperature
WISE® insulation system	Increases stator electrical strength and allows the motor operation by frequency inverters, without damage by voltage peaks <sup>1)</sup>

Note: 1) For more information about Frequency Inverter Operation, please see page 40.

## Industrial Motors



### W22Xn

The installation of electric motors where a flammable mixture is not frequently present but may represent risks, must comply with the most demanding safety standards for life protection, machines and environment. Following to the highest safety standards WEG Ex nA/Ex tc motors are flexible to adapt to various applications allowing your company agility during installation, easy operation, low maintenance cost and safety.



### Non-Sparking Motors

#### Standard Features

- Output: 0.12 kW to 450 kW
- Number of poles: 2, 4, 6 and 8
- Frequency: 50 Hz
- Voltage:
  - 220-240/380-415 V (up to 100 L)
  - 380-415/660 V (from 112M and up)
- Frames: 63 to 355A/B
- Colour:
  - Premium efficiency - IE3: RAL 6002 - green
  - High efficiency - IE2: RAL 5009 - blue
  - Standard efficiency - IE1 - RAL 5010 - blue

#### Applications

Pumps, compressors, fans, mills, presses, elevators, machine tools, woodworking, grinders, looms, packaging machines, conveyors, bottling machines and other applications in explosive atmospheres classified as Zones 2 and 22.

Features	Benefits
Certifications	Guarantee of compliance with the tests of the world's most demanding certification bodies
Protection	Dual certification for Zone 2 (gas) + Zone 22 (non-conductive dusts)
Thermal protections	Safety. Two sets of PTC's; one to prevent the ignition of gases present at the explosive atmosphere and other to ensure low motor surface temperature and the ignition of combustible dusts
Premium motor	IE3 efficiency level available for all motors range
WISE® insulation system	Increases stator electrical strength and allows the motor operation by frequency inverters, without damage by voltage peaks <sup>1)</sup>

Note: 1) For more information about Frequency Inverter Operation, please see page 40.



## Industrial Motors



### Water Cooled Motors

WEG Water Cooled motors can be used in a wide variety of applications and are mainly recommended where space and noise level reduction is required. Areas with difficult access for maintenance are also part of the scope of application of WEG Water Cooled motors.



### Water Cooled Motors

#### Standard Features

- Output: 18.5 kW to 450 kW
- Number of poles: 2, 4, 6 and 8
- Frequency: 50 Hz
- Voltage: up to 660 V
- Frames: 180L to 355M/L
- Colour: RAL 5009 - blue

#### Applications

Compressors, injection machines, water treatment plants, textile industries, mining equipment, vacuum pumps, power train and marine equipment.

Features	Benefits
Cooling method IC71W	Water jacketed system offers excellent heat exchange, increasing bearing and motor lifetime
Higher output x frame ratio	Demands less space on plant, facilitating the access for maintenance operations
Pt-100 thermal detectors	Thermal resistances Pt-100 supplied in windings and bearings provide precise and constant temperature monitoring and a rapid detection of any abnormal operation condition
WISE® insulation system	Increases stator electrical strength and allows the motor operation by frequency inverters, without damage by voltage peaks <sup>1)</sup>

Note: 1) For more information about Frequency Inverter Operation, please see page 40.



## Industrial Motors



### Single-Phase Motors

Flexible and compact motors, designed with highest technological available tools and suitable for the most varied domestic, rural and industrial applications.



### Single-Phase Motors

#### Standard Features

- Output: 0.25 kW to 7.5 kW
- Number of poles: 2 and 4
- Frequency: 50 Hz
- Voltage: 220 / 440 V
- Frames: 63 to 132M
- Colour: RAL 5009 - blue

#### Versions Available

- Cast iron or aluminum enclosures
- Start and run capacitors or run capacitors

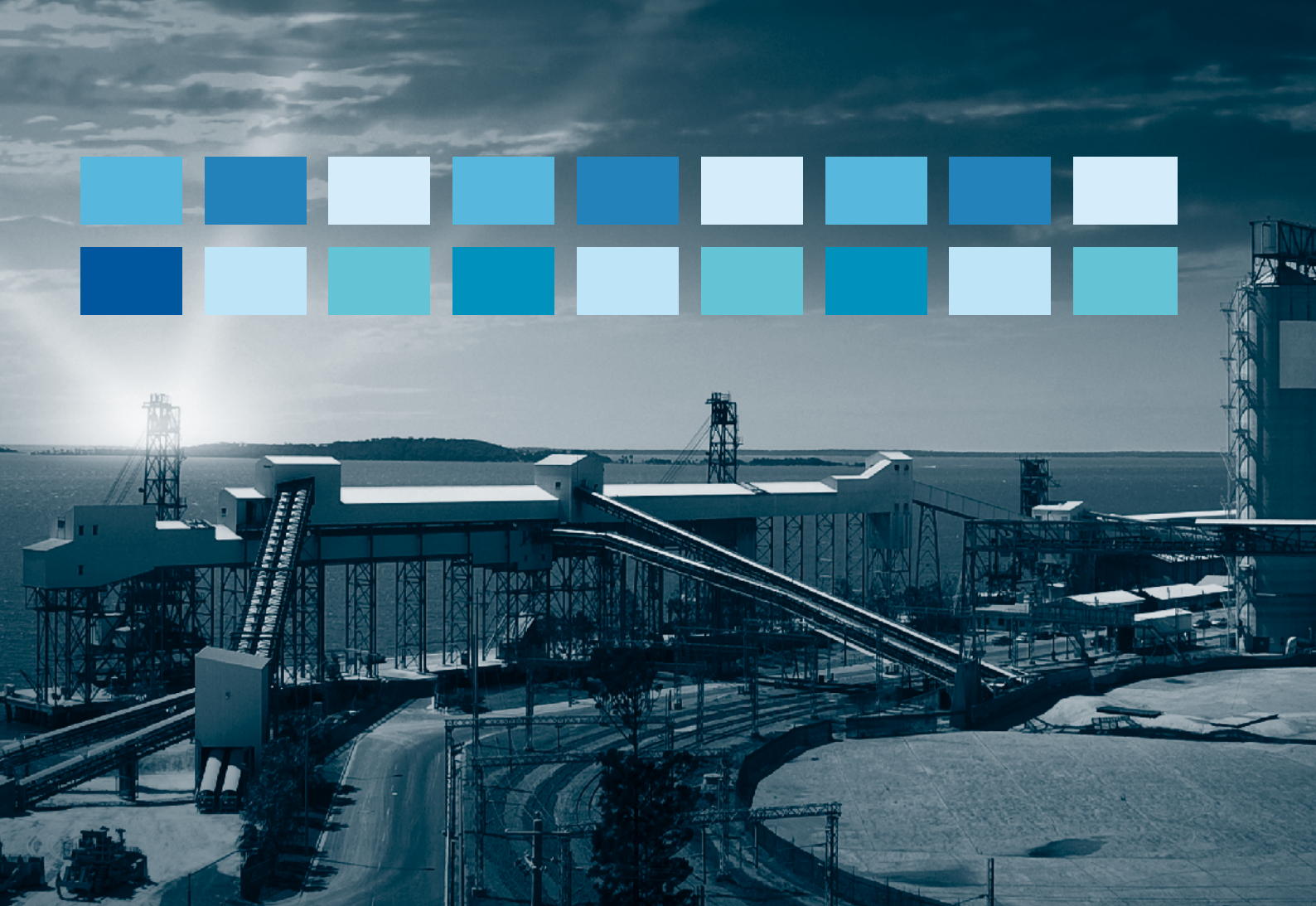
#### Applications

Fans, compressors, pumps, pulleys, cranes, continuous conveyors, silo unloaders, grinders and other general applications.

Drives

Industrial Motors

Features	Benefits
Performance	High starting and operating torques
Start capacitor	High starting torque for most varied severe applications
Run capacitor	Easy adaptation to for double frequency with low vibration and higher reliability
Easy installation and operation	Suitable for domestic and rural power supply conditions
Flexibility	Design adaptable for the most varied applications and needs. Several definite purpose lines available If more information about single-phase dedicated application motors is required, please contact WEG



## Applying Motors with Frequency Drives

The stator windings of WEG motors are wound with class “F” insulation (class H optional) and are suitable for either DOL starting or via variable speed drive. They incorporate the WEG exclusive insulation system - WISE® (WEG Insulation system Evolution) - which ensures superior electrical insulation characteristics. The stator winding is suitable for variable speed drive application, taking into account the limits shown in the table below:

Motor rated voltage	Voltage spikes	dV/dt <sup>1)</sup>	Rise time <sup>1)</sup>	Time between pulses
	At motor terminals (phase-phase)			
Vrated ≤ 460 V	≤ 1,600 V	≤ 5,200 V/μs	≥ 0.1 μs	≥ 6 μs
460 V < rated ≤ 575 V	≤ 1,800 V	≤ 6,500 V/μs		
575 V < Vrated ≤ 690 V	≤ 2,200 V	≤ 7,800 V/μs		

Notes: 1) dV/dt and rise time definition according to NEMA Std. MG1 - part 30.

- In order to protect the motor insulation system, the maximum recommended switching frequency is 5 kHz.
- If one or more of the above conditions is not met, a filter (load reactor or dV/dt filter) must be installed at the output of the VSD.
- General purpose motors with rated voltage greater than 575 V, which at the time of purchase did not have any indication of operation with VSD, are able to withstand the electrical limits set in the table above for rated voltage up to 575 V. If such conditions are not fully satisfied, output filters must be used.
- General purpose motors of the dual voltage type, for example 380/660 V, which at the time of purchase did not have any indication of operation with VSD, are able to be driven by a VSD in the higher voltage only if the limits set in the table above for rated voltage up to 460 V are fully attended in the application. Otherwise, a load reactor or a dV/dt filter must be installed in the VSD output.
- From frame size 315S/M upwards additional measures should be taken in order to avoid detrimental bearing currents. This can be accomplished by means of the use of an insulated bearing or an insulated hub endshield at the non drive end side and a shaft grounding brush mounted on the drive endshield.
- Motors operating with frequency inverters may present a higher temperature rise than when operating under sinusoidal supply due to the combined effects of the loss increase resulting from the PWM harmonics and the reduction in ventilation experienced by self-ventilated motors when operating at low frequencies. Under these conditions, please contact WEG.
- For the application of motors for potentially explosive atmosphere with variable frequency inverters, please contact WEG.

[illegible]

[illegible]

[illegible]



Grupo WEG - Motors Business Unit  
Jaraguá do Sul - SC - Brazil  
Phone: +55 47 3276 4000  
[motores@weg.net](mailto:motores@weg.net)  
[www.weg.net](http://www.weg.net)

Distributore Ufficiale

**FERRARI** S.r.l.

26015 Soresina (CR) Italy

Via Cremona, 25

Tel. 0374 **340404** Fax 0374 **342413**

[www.ferrarisrl.it](http://www.ferrarisrl.it)

[ferrarisrl@ferrarisrl.it](mailto:ferrarisrl@ferrarisrl.it)