

MW500 – DECENTRALIZED VSD – MOTORDRIVE

**For decentralized
solutions,** the VSD
wherever you need it.

Industrial Motors
Commercial &
Appliance Motors
Automation
Digital &
Systems
Energy
Transmission &
Distribution
Coatings



Driving efficiency and sustainability



S U M M A R Y

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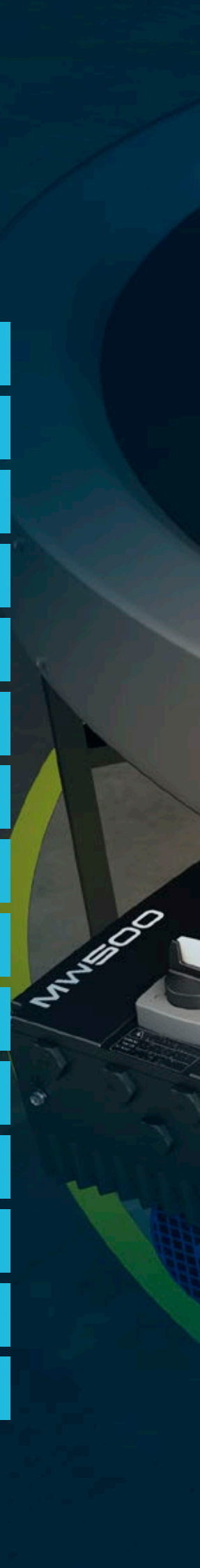
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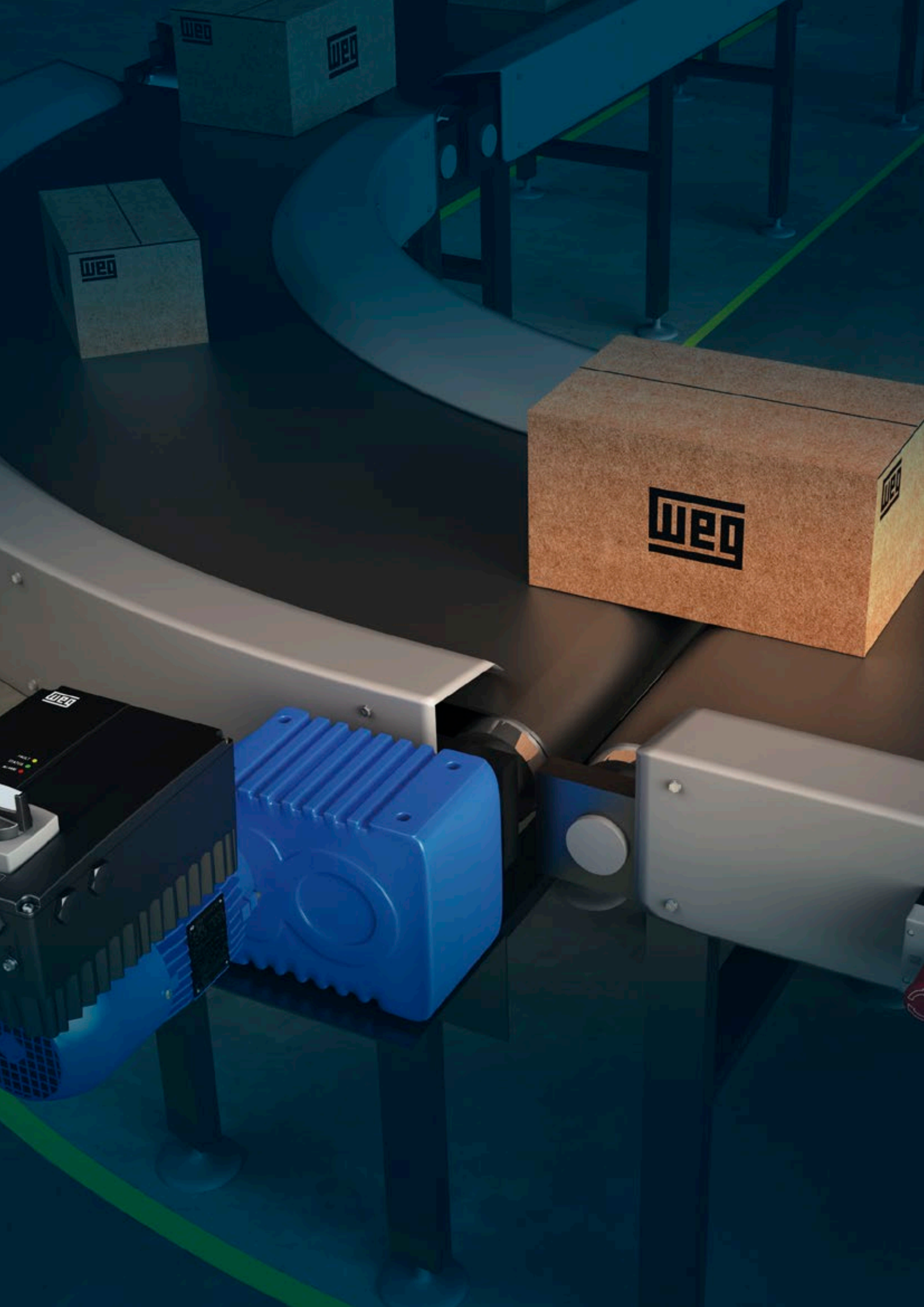
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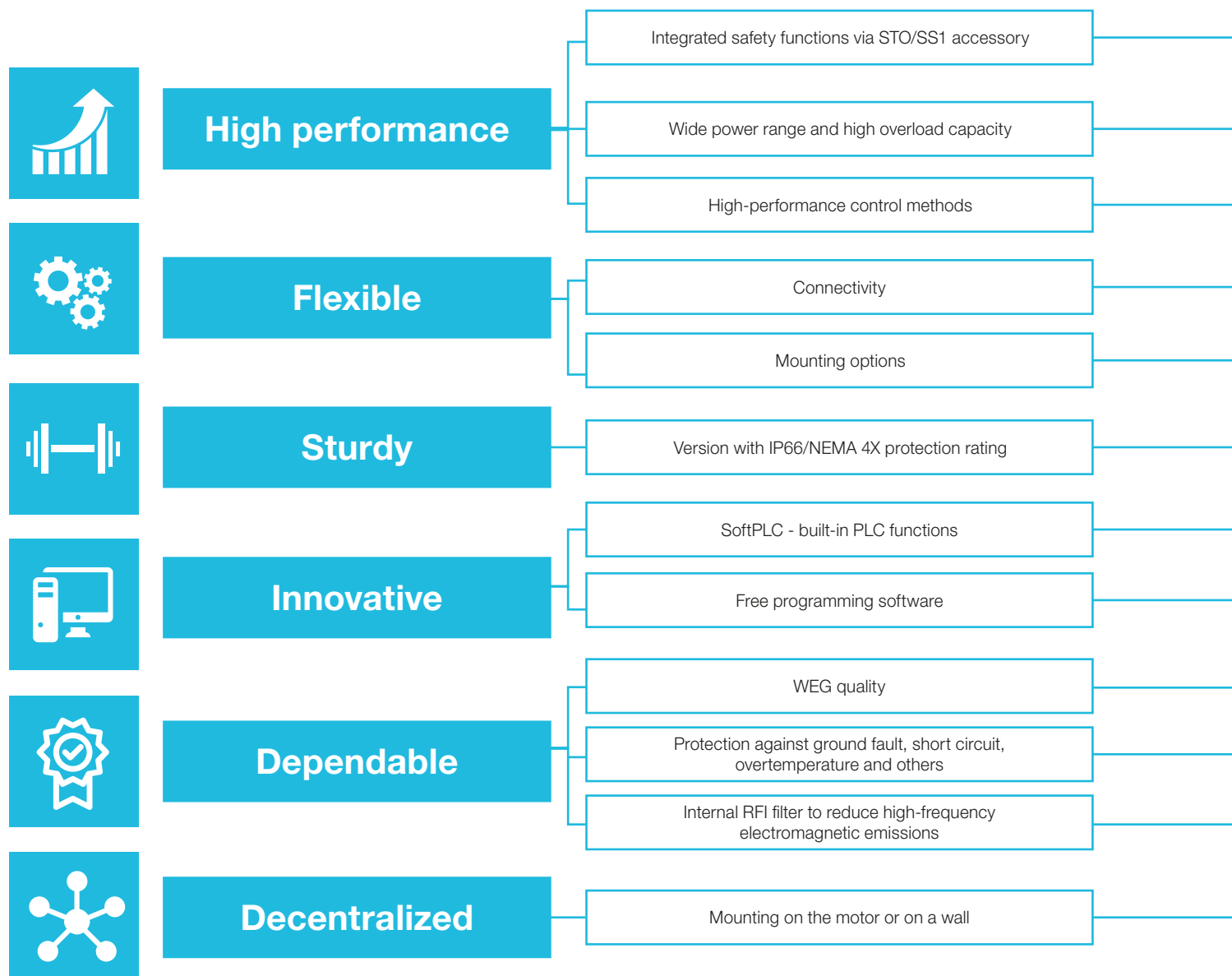




MW500

For decentralized solutions, the VSD wherever you need it.

The MW500 is a high-performance frequency inverter used to control three-phase induction motors. Its dedicated functions and **high degree of protection (IP66/NEMA 4X)** allow its use in applications that require a **high level of precision and robustness**. Furthermore, the MW500 presents excellent **flexibility**, as it can be directly installed on the wall or mounted on the motor, reducing the cabling and panel costs.





STO (Safe Torque Off) and SS1 (Safe Stop 1) functions that meet safety performance requirements SIL 3/PLe, in accordance with IEC 61800-5-2, EN ISO 13849-1, EN 62061, IEC 61508 and IEC 60204-1

Provides machine manufacturers with an excellent cost effective solution to implement protective measures and meet safety standards requirements

Models from 1.3 to 16 A (0.25 kW / 0.37 cv to 7.5 kW / 10 cv) at 200-240 V or 380-480 V

Offers a variety of control options, such as VVW vector control, V/F scalar, vector with encoder, sensorless vector and control for permanent magnets

Allows the MW500 to be used in a wide range of applications, increasing their performance

USB communication modules and also for the main industrial networks, such as CANopen, DeviceNet, Profibus-DP, EtherNet/IP, PROFINET IO or Modbus-RTU

Full integration with the process network

The VSD allows easy and practical wall mounting

A convenient solution to optimize space and ensure efficient and safe installation

Complete protection against contact with internal parts, preventing the ingress of dust or water

The high degree of protection does not require the use of a panel, reducing installation costs

The VSD, motor and application can work interactively due to the possibility of customizing logic

Ideal for machine manufacturers

Free WPS programming software available at www.weg.net

100% of inverters are factory tested under full load and maximum temperature conditions

High reliability

Conformal coating or tropicalization level 3C2 as standard, in accordance with IEC 60721-3-3, and 3C3 as optional, for protection against corrosive gases in aggressive environments

Increases equipment lifespan

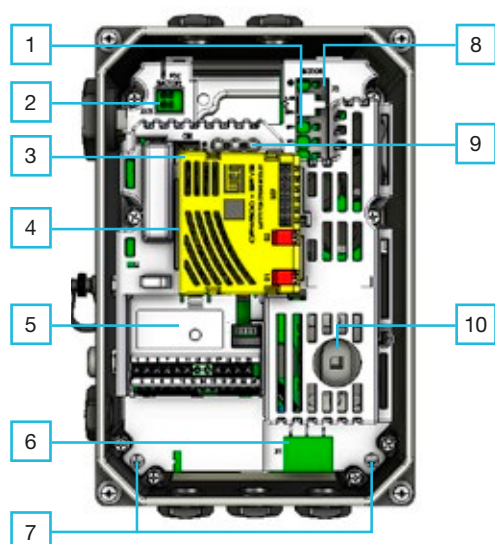
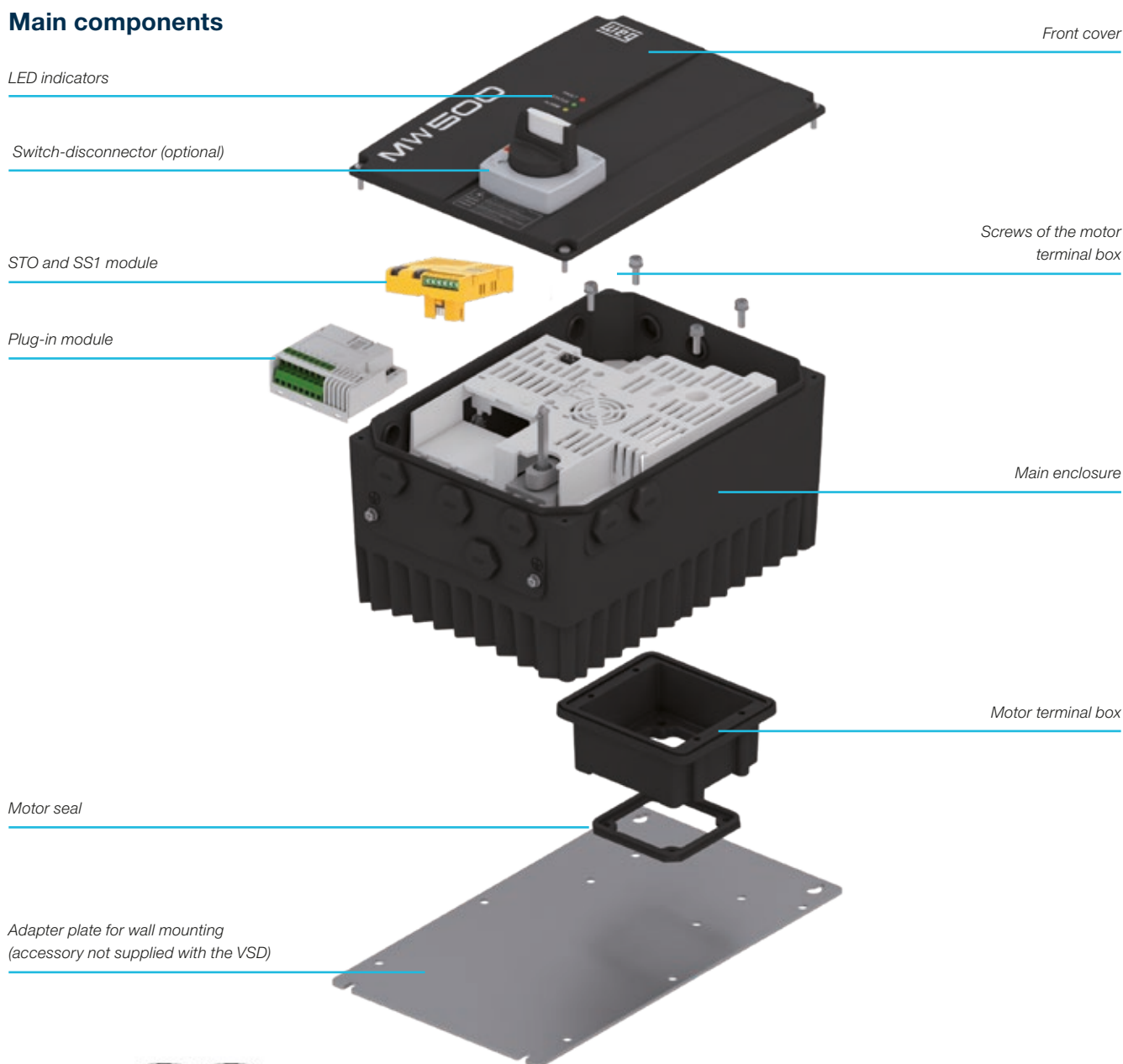
Protects against damage to the VSD that may be caused by adverse situations, normally external factors

The MW500 can be mounted directly onto W22 motors using the terminal box fitting

Facilitates commissioning by saving space and cables, that is, reducing installation costs

Easy configuration

Main components



- | | |
|-----------------------------------|---------------------------------|
| 1 - Motor connection | 6 - Power connection |
| 2 - Motor PTC input | 7 - Grounding points |
| 3 - S10 DIP switches | 8 - Braking resistor connection |
| 4 - Module connection CFW500-SFY2 | 9 - LED indicators |
| 5 - Slot for plugin | 10 - Handle connection |

Certifications





GREATER savings!



Space saving and flexible solution



Greater robustness



Reduced cable costs



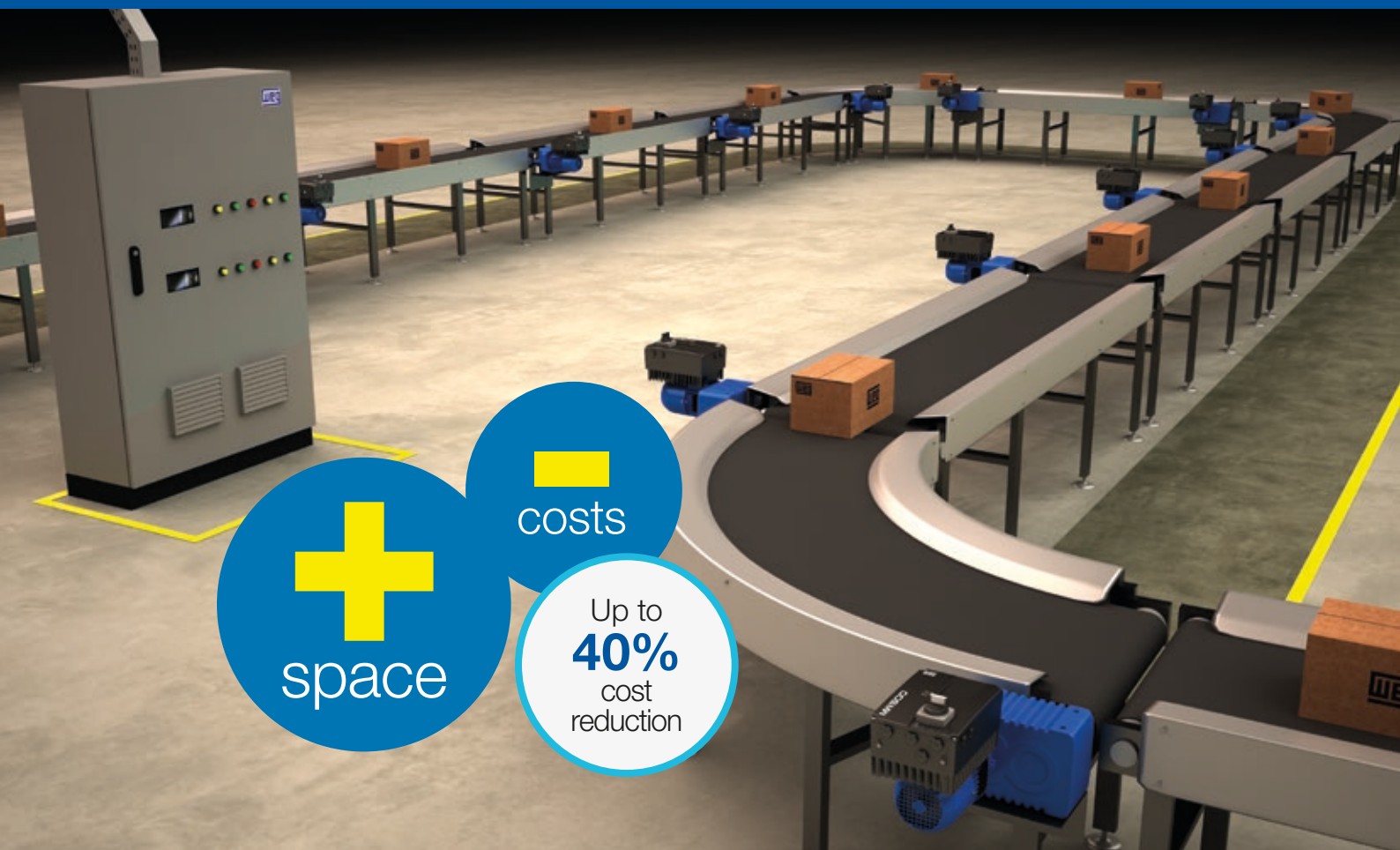
Reduced installation costs



Easy commissioning



No panel required



Connectivity



Remote operator interface (HMI) via HMI-01 accessory



The MW500 can be interconnected to the main industrial communication networks, with worldwide protocols, such as CANopen, Profibus-DP, DeviceNet, PROFINET IO and EtherNet/IP, through plug-in modules.

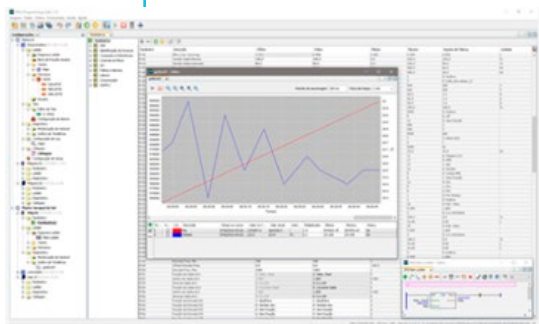
Additionally, any plug-in module comes with a built-in RS485 Modbus-RTU serial interface.

Easy operation and view



Free on the website www.weg.net

WPS software



USB connection (CFW500-CUSB accessory)

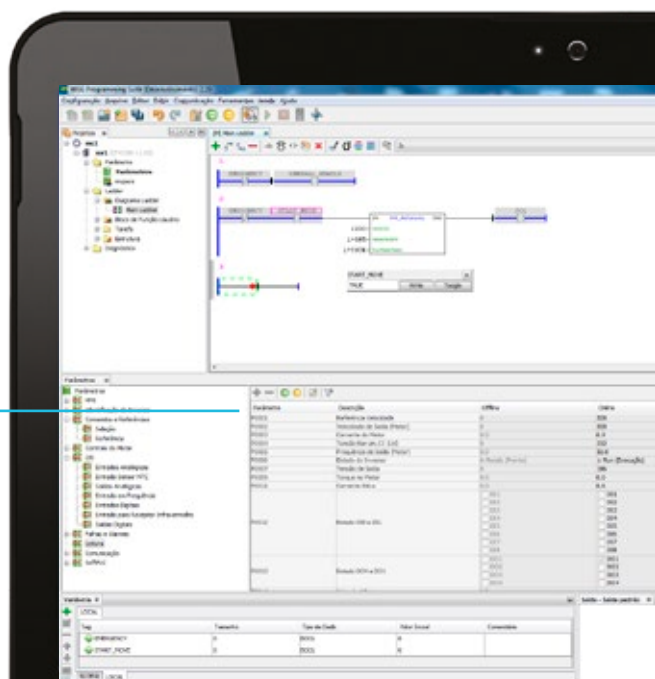


I/O expansion:
IOS (standard, included in the version with plug-in), IOD, IOAD, IOR

Expansion of functionalities:
Incremental encoder
USB

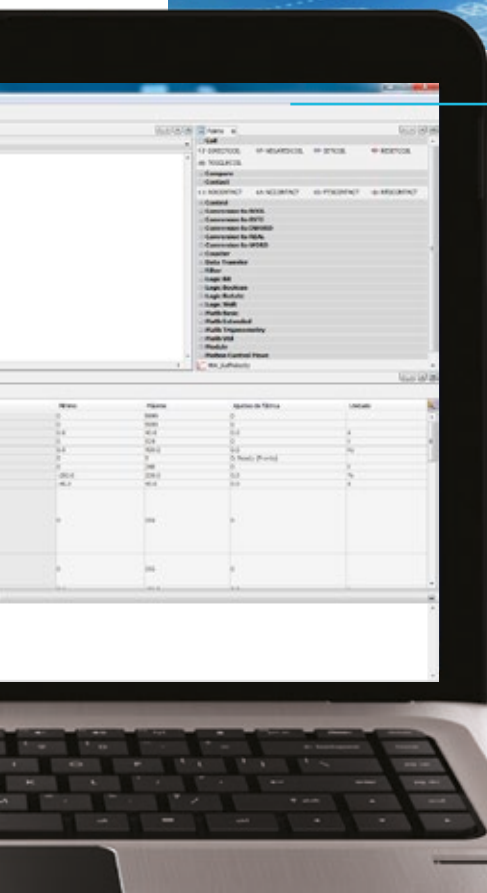
Communication protocols:
Fieldbus
CANopen
DeviceNet
RS232
RS485
Profibus-DP
EtherNet/IP
Modbus-TCP
PROFINET IO

Selectable accessories



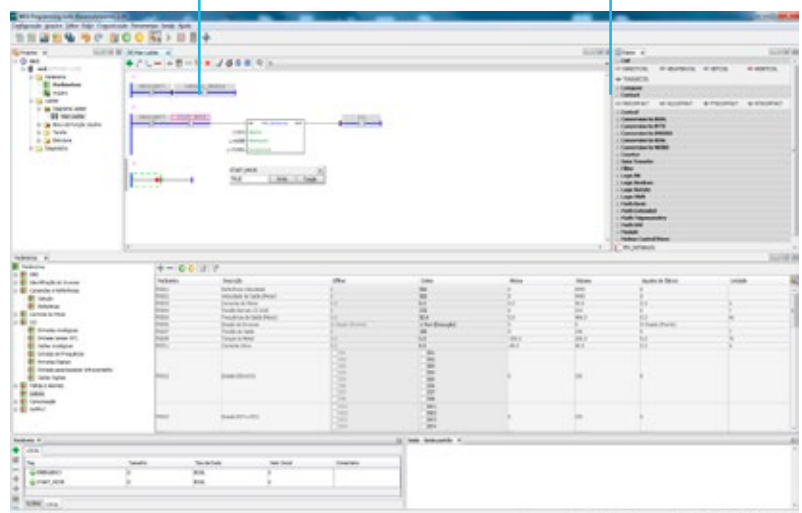
Features

- Special engineering units (RPM, °C, Nm, mA, %, kW, kWh, among others)
- Password to protect the setting
- Backup of all parameters
- Up to two different programs can be saved on the memory of the MW500
- Setting of the switching frequency according to the application requirements
- Speed reference via electronic potentiometer
- Multispeed with up to eight programmable speeds
- Slip compensation
- Manual or automatic torque boost (V/F scalar mode) and self-adjustment (vector modes and VVW)
- Acceleration/deceleration ramps
- Permanent magnet motor control: VVW PM
- “S” type ramp
- DC braking
- Built-in braking IGBT
- PID controller for process control with process variable feedback
- Flying start / Ride through
- Sleep mode
- Configurable avoided frequency or frequency ranges
- Overload and overtemperature protection
- Overcurrent protection
- DC link voltage supervision
- Fault log
- STO and SS1 safety functions (accessory)



Easy and user-friendly environment

Free at www.weg.net



Built-in safety functions¹⁾

Safety functions are features used to reduce risks and protect people and equipment in the event of potentially dangerous failures in machines in operation. The built-in **STO** and **SS1** functions provide machine builders with a cost-effective solution for designing features to make machines comply with safety standards, reducing risks of unexpected and hazardous motions in machinery and industrial processes.

Advantages

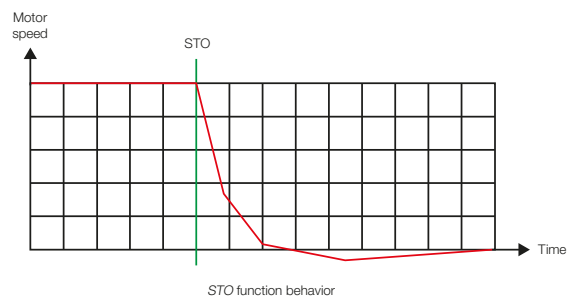
- The MW500 safety features make it easier to meet machine safety requirements.
- Fewer components, no additional cabling required, saving space and installation costs.
- Easy installation, commissioning and maintenance.
- The absence of electromechanical components enables faster responses and a higher level of productivity.
- Due to SIL 3 safety level, the MW500 with safety functions does not require external safety relays for monitoring cables and emergency-stop pushbuttons.



Safety functions

STO (Safe Torque Off)

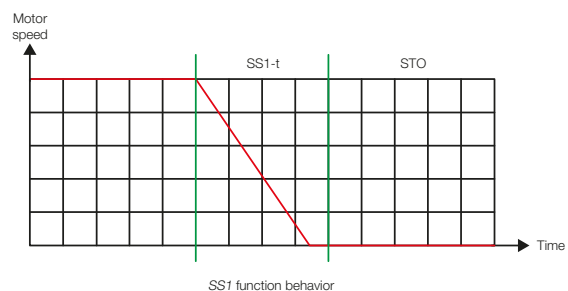
This function immediately switches off the inverter output to the motor, disconnecting the supply of torque generating power. The **STO** function is also used for preventing unexpected machine starts or for emergency stops, in compliance with stop category 0 (IEC 60204-1). It is applicable where the motor can be stopped soon enough by the load itself or when motor coasting is not safety-relevant.



SS1 (Safe Stop 1)

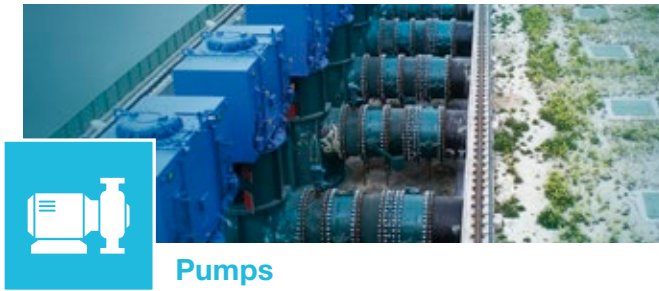
The **SS1** function enables the motor deceleration ramp and, after the time set, automatically activates the **STO** function. It can be used to implement a controlled stop and then block the power supply to the motor, in compliance with stop category 1 according to IEC 60204-1.

This function is used when, in the event of a safety-related fault, the VSD must first stop the motor and then enter the **STO** state. A VSD stop using the **SS1** function reduces the risk of accidents and eliminates the need for external safety timers, increasing machine productivity and allowing safety distances on machines to be reduced. The reason is the active stop of the drive compared to the exclusive use of the **STO** function.



Note: 1) The **STO** and **SS1** safety functions are available on MW500 VSDs that contain G2 in the smart code. The CFW500-SFY2 plug-in is used as an accessory and is purchased separately. In compliance with SIL 3/PL safety performance requirements and with IEC 61800-5-2, EN ISO 13849-1, EN 62061, IEC 61508 and IEC 60204-1.

Applications



Special characteristics



Remote HMI

Simple and user-friendly



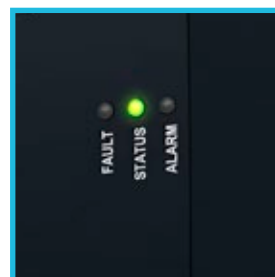
IP66/NEMA 4X connector

Special connector for remote HMI (M8) or external sensor



Cooling fins

No need for ventilation, reducing maintenance costs and noise



LED indicators

Programmable status indication



Internal analog potentiometer

No HMI required for operation



Built-in switch-disconnector (optional)

Easy and safe machine maintenance

Characteristics

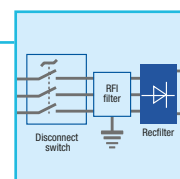
Conformal coating

Standard Class 3C2 coating on the internal circuits of all versions, according to IEC 60721-3-3, guarantees more protection in environments with corrosive chemical agents.



RFI filter

Category C2 or C3 to reduce the electromagnetic interference emission.



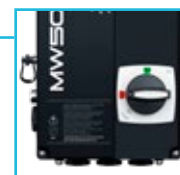
IP66/NEMA 4X protection rating

Essential for decentralized solutions, IP66 provides protection against contact with energized internal parts and ingress of dust or water.



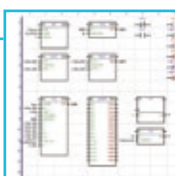
Black

The black color increases the dissipation capacity of the housing, helping the VSD withstand up to 50 °C when mounted on the motor without current derating.



SoftPLC

Functions to streamline operation and increase performance, in many cases, eliminating the need for an external PLC, optimizing and simplifying the system.



WPS

Free software for parameter configuration, and control and monitoring of the VSD, simulating an oscilloscope with the *Trend* function.



Coding¹⁾

1 MW500 2 A 3 02P6 4 T 5 4 6 DB 7 66 8 C2 9 DS 10 A56 11 H00 12 --- 13 G2

1 - MW500 variable speed drive

2 - MW500 size according to table 1 below

3 - Rated output current according to table 1 below

Supply line	Single-phase (S)	Three-phase (T)
	200-240 V _{ac}	380-480 V _{ac}
Voltage	02P1 = 2.1 A 02P9 = 2.9 A 03P4 = 3.4 A 04P3 = 4.3 A 06P0 = 6.0 A	01P3 = 1.3 A 01P6 = 1.6 A 02P0 = 2.0 A 02P6 = 2.6 A 04P3 = 4.3 A 05P2 = 5.2 A 06P5 = 6.5 A 10P0 = 10.0 A 14P0 = 14.0 A 16P0 = 16.0 A

4 - Number of phases

S	Single-phase power supply
T	Three-phase power supply

5 - Rated voltage

2	200-240 V
4	380-480 V

6 - Internal dynamic braking²⁾

DB	With internal dynamic braking IGBT
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7 - Protection rating

66	IP66 (NEMA 4X) protection rating
----	----------------------------------

8 - Conducted emission level³⁾

Blank	Without internal RFI filter
C2	With internal RFI filter - category 2

9 - Switch-disconnector

Blank	Without switch-disconnector
DS	With switch-disconnector

10 - Terminal box⁴⁾

Blank	Motor connection box sizes 70 x 70 mm and 110 x 110 mm; applicable to frame C
A56	Motor connection box sizes 56 x 56 mm; applicable to frames A and B
A70	Motor connection box sizes 70 x 70 mm; applicable to frames A and B

11 - Special hardware versions - H xx

H00	Without plug-in module
-----	------------------------

12 - Special software version - Sxx

Blank	Standard software
Sxx	Special software

13 - Generation

Blank	Generation 1
G2	Generation 2

Frames	Model	Output current	Input	Supply voltage
A	02P1	2.1 A	S = single-phase power supply	2 = 200...240 V
	02P9	2.9 A		
	03P4	3.4 A		
	04P3	4.3 A		
	06P0	6.0 A		
A	01P3	1.3 A	T = three-phase power supply	4 = 380...480 V
	01P6	1.6 A		
	02P0	2.0 A		
	02P6	2.6 A		
	04P3	4.3 A		
B	05P2	5.2 A		
	06P5	6.5 A		
	10P0	10.0 A		
C	14P0	14.0 A		
	16P0	16.0 A		

Notes: 1) Other configurations on request.

2) Braking resistor not included.

3) Conducted emission level (IEC 61800-3).

In order to minimize such problem, WEG variable speed drives contain common-mode capacitive filters, which are enough to avoid this type of interference in most cases.

If necessary, our VSDs also have radio frequency (RF) filters to reduce even more those high-frequency electromagnetic interference signals.

Definitions of IEC/EN 61800-3 standard.

Categories:

Category C1: variable speed drives with voltage rating below 1000 V and intended for application in the "First Environment".

Category C2: variable speed drives with voltage rating below 1000 V not provided with plugs or movable installations that, when applied in the "First Environment", must be installed and commissioned by a professional.

Category C3: variable speed drives with voltage ratings below 1000 V developed for application in the "Second Environment" and not designed for application in the "First Environment".

Environments: First Environment: environments that include domestic installations, such as establishments directly connected without intermediate transformers to the low voltage power line, which supplies buildings used for domestic purposes.

Second environment: environments that include all the buildings other than those directly connected to the low voltage power line, which supplies buildings used for domestic purposes.

4) Frame C can use 70 mm and 110 mm box for connection; therefore, no specific code is required on the order for the 70 or 110 mm option.

Specifications

Specifications and models

MW500 variable speed drive					Maximum applicable motor				
Reference	Supply voltage	Frame	Braking IGBT	Rated output current (A)	Power supply (V)	Power			
						cv	kW		
Models									
MW500 without disconnecting switch and without RFI filter									
MW500A02P1S2DB66XXXH00G2	200-240	Single-phase	A	Internal included	2.1	220	0.5	0.37	
MW500A02P9S2DB66XXXH00G2					2.9		0.75	0.55	
MW500A03P4S2DB66XXXH00G2					3.4		1.0	0.75	
MW500A04P3S2DB66XXXH00G2					4.3		1.5	1.1	
MW500A06POS2DB66XXXH00G2					6.0		2.0	1.5	
MW500A01P3T4DB66XXXH00G2	380-480	Three-phase	A		1.3	380	0.5	0.37	
MW500A01P6T4DB66XXXH00G2					1.6		0.75	0.55	
MW500A02POT4DB66XXXH00G2					2.0		1.0	0.75	
MW500A02P6T4DB66XXXH00G2					2.6		1.5	1.1	
MW500A04P3T4DB66XXXH00G2					4.3		2.0	1.5	
MW500B05P2T4DB66XXXH00G2			B		5.2		3.0	2.2	
MW500B06P5T4DB66XXXH00G2					6.5		4.0	3.0	
MW500B10POT4DB66XXXH00G2					10.0		5.0	4.0	
MW500C14POT4DB66H00G2					C		14.0	7.5	5.5
MW500C16POT4DB66H00G2							16.0	10.0	7.5
MW500 without disconnecting switch and with RFI filter									
MW500A02P1S2DB66C2XXXH00G2	200-240	Single-phase	A	Internal included	2.1	220	0.5	0.37	
MW500A02P9S2DB66C2XXXH00G2					2.9		0.75	0.55	
MW500A03P4S2DB66C2XXXH00G2					3.4		1.0	0.75	
MW500A04P3S2DB66C2XXXH00G2					4.3		1.5	1.1	
MW500A06POS2DB66C2XXXH00G2					6.0		2.0	1.5	
MW500A01P3T4DB66C2XXXH00G2	380-480	Three-phase	A		1.3	380	0.5	0.37	
MW500A01P6T4DB66C2XXXH00G2					1.6		0.75	0.55	
MW500A02POT4DB66C2XXXH00G2					2.0		1.0	0.75	
MW500A02P6T4DB66C2XXXH00G2					2.6		1.5	1.1	
MW500A04P3T4DB66C2XXXH00G2					4.3		2.0	1.5	
MW500B05P2T4DB66C2XXXH00G2			B		5.2		3.0	2.2	
MW500B06P5T4DB66C2XXXH00G2					6.5		4.0	3.0	
MW500B10POT4DB66C2XXXH00G2					10.0		5.0	4.0	
MW500C14POT4DB66C2H00G2					C		14.0	7.5	5.5
MW500C16POT4DB66C2H00G2							16.0	10.0	7.5

Notes: 1) The power ratings for the maximum applicable motor shown in the table above are reference values and valid for WEG motors. The powers indicated are based on WEG W22 High Efficiency, IE2, three-phase, four-pole induction motors with a 220 V or 380 V power supply.

Proper sizing must always be determined according to the motor rated current, which must be less than or equal to the VSD rated output current. For further information, refer to the User Manual.

2) The "XXX" in the smart code must be filled in with A56 or A70, with the MW500 terminal box matching the motor terminal box. For more details, check the "Motor and Inverter Mechanical Assembly" tables to select the code according to the specified motor.

3) The current values are valid for mounting the MW500 VSD on a surface with an ambient temperature of 40 °C or a self-ventilated motor with an ambient temperature of 50 °C. For more information about installation on a motor at an ambient temperature of 40 °C, see the user manual.

Specifications

Specifications and models

MW500 variable speed drive					Maximum applicable motor							
Reference	Supply voltage	Frame	Braking IGBT	Rated output current (A)	Power supply (V)	Power						
						cv	kW					
Models												
MW500 without disconnecting switch and without RFI filter												
MW500A02P1S2DB66DSXXXH00G2	200-240	Single-phase	A	Internal included	2.1	220	0.5	0.37				
MW500A02P9S2DB66DSXXXH00G2					2.9		0.75	0.55				
MW500A03P4S2DB66DSXXXH00G2					3.4		1.0	0.75				
MW500A04P3S2DB66DSXXXH00G2					4.3		1.5	1.1				
MW500A06P0S2DB66DSXXXH00G2					6.0		2.0	1.5				
MW500A01P3T4DB66DSXXXH00G2	380-480	Three-phase	A	Internal included	1.3	380	0.5	0.37				
MW500A01P6T4DB66DSXXXH00G2					1.6		0.75	0.55				
MW500A02P0T4DB66DSXXXH00G2					2.0		1.0	0.75				
MW500A02P6T4DB66DSXXXH00G2					2.6		1.5	1.1				
MW500A04P3T4DB66DSXXXH00G2					4.3		2.0	1.5				
MW500B05P2T4DB66DSXXXH00G2			B		5.2		3.0	2.2				
MW500B06P5T4DB66DSXXXH00G2					6.5		4.0	3.0				
MW500B10P0T4DB66DSXXXH00G2					10.0		5.0	4.0				
MW500C14P0T4DB66DSH00G2					C		14.0	7.5	5.5			
MW500C16P0T4DB66DSH00G2							16.0	10.0	7.5			
MW500 with disconnecting switch and with RFI filter												
MW500A02P1S2DB66C2DSXXXH00G2			200-240		Single-phase		A	Internal included	2.1	220	0.5	0.37
MW500A02P9S2DB66C2DSXXXH00G2	2.9	0.75		0.55								
MW500A03P4S2DB66C2DSXXXH00G2	3.4	1.0		0.75								
MW500A04P3S2DB66C2DSXXXH00G2	4.3	1.5		1.1								
MW500A06P0S2DB66C2DSXXXH00G2	6.0	2.0		1.5								
MW500A01P3T4DB66C2DSXXXH00G2	380-480	Three-phase	A	Internal included	1.3	380	0.5	0.37				
MW500A01P6T4DB66C2DSXXXH00G2					1.6		0.75	0.55				
MW500A02P0T4DB66C2DSXXXH00G2					2.0		1.0	0.75				
MW500A02P6T4DB66C2DSXXXH00G2					2.6		1.5	1.1				
MW500A04P3T4DB66C2DSXXXH00G2					4.3		2.0	1.5				
MW500B05P2T4DB66C2DSXXXH00G2			B		5.2		3.0	2.2				
MW500B06P5T4DB66C2DSXXXH00G2					6.5		4.0	3.0				
MW500B10P0T4DB66C2DSXXXH00G2					10.0		5.0	4.0				
MW500C14P0T4DB66C2DSH00G2					C		14.0	7.5	5.5			
MW500C16P0T4DB66C2DSH00G2							16.0	10.0	7.5			

Notes: 1) The power ratings for the maximum applicable motor shown in the table above are reference values and valid for WEG motors. The powers indicated are based on WEG W22 High Efficiency, IE2, three-phase, four-pole induction motors with a 220 V or 380 V power supply.

Proper sizing must always be determined according to the motor rated current, which must be less than or equal to the VSD rated output current. For further information, refer to the User Manual.

2) The "XXX" in the smart code must be filled in with A56 or A70, with the MW500 terminal box matching the motor terminal box. For more details, check the "Motor and Inverter Mechanical Assembly" tables to select the code according to the specified motor.

3) The current values are valid for mounting the MW500 VSD on a surface with an ambient temperature of 40 °C or a self-ventilated motor with an ambient temperature of 50 °C. For more information about installation on a motor at an ambient temperature of 40 °C, see the user manual.

Accessories

Plug-in modules

You can choose the plug-in module for the MW500 later. In this case, subsequent selection of a plug-in module according to the table below is necessary.

You must always use one plug-in module for the MW500.

Due to the different connections, when equipped with the plug-in module with the STO/SS1 safety functions, the VSD will still be able to connect another plug-in module.

Reference	Description	Illustrative figures
Input and output (I/O) expansion		
CFW500-IOS	Digital and analog input and output (I/O) plug-in module	
CFW500-IOD	Digital input and output (I/O) expansion plug-in module	
CFW500-IOAD	Digital and analog input and output (I/O) expansion plug-in module	
CFW500-IOR-B	Relay output expansion plug-in module	
Functionality expansion		
CFW500-ENC	Plug-in module with input for encoder	
CFW500-CUSB	Plug-in module with USB port	
CFW500-SFY2	Module with <i>STO</i> and <i>SS1</i> safety functions	
Communication on Fieldbus networks		
CFW500-CCAN	CAN communication plug-in module (CANopen/DeviceNet)	
CFW500-CRS232	RS232 communication plug-in module	
CFW500-CRS485-B	RS485 communication plug-in module	
CFW500-CPDP2	Profibus-DP communication plug-in module	
CFW500-CETH-IP	EtherNet/IP communication plug-in module	
CFW500-CEMB-TCP	Modbus-TCP communication plug-in module	
CFW500-CEPN-IO	PROFINET IO communication plug-in module	
Memory		
CFW500-MMF	Flash memory module	
Interfaces		
CFW500-HMIR	Remote operator interface (HMI)	
HMI-01	Alphanumeric HMI	
CFW500-RHMIF	Remote HMI frame	
MW500-CCHMIR1M	1-meter cable set for remote operator interface (HMI)	
MW500-CCHMIR2M	2-meter cable set for remote operator interface (HMI)	
MW500-CCHMIR3M	3-meter cable set for remote operator interface (HMI)	
MW500-CCHMIR5M	5-meter cable set for remote operator interface (HMI)	
MW500-CCHMIR75M	7,5-meter cable set for remote operator interface (HMI)	
MW500-CCHMIR10M	10-meter cable set for remote operator interface (HMI)	
Kits		
MW500-KCFA-CL56	Adapter plate for wall mounting - Frame A and terminal box 56 x 56 mm	
MW500-KCFA-CL70	Adapter plate for wall mounting - Frame A and terminal box 70 x 70 mm	
MW500-KCFB-CL56	Adapter plate for wall mounting - Frame A and terminal box 56 x 56 mm	
MW500-KCFB-CL70	Adapter plate for wall mounting - Frame A and terminal box 70 x 70 mm	
MW500-KCFC	Adapter plate for the VSD wall mounting - Frame C	
MW500-KAIM-A56	Adapter plate for the VSD motor mounting - Frame A and terminal box 56 x 56 mm	
MW500-KAIM-A70	Adapter plate for the VSD motor mounting - Frame A and terminal box 70 x 70 mm	
MW500-KAIM-B56	Adapter plate for the VSD motor mounting - Frame B and terminal box 56 x 56 mm	
MW500-KAIM-B70	Adapter plate for the VSD motor mounting - Frame B and terminal box 70 x 70 mm	
Optional items		
RFI filter	Filter to reduce the conducted disturbance of the MW500, in accordance with standards EMC EN 61800-3 and EN 55011	
Switch-disconnector	A built-in disconnector for easy and safe maintenance	

Note: 1) The plug-in modules are sold separately as an accessory item or spare part.

Accessories

Plug-in module configuration¹⁾

Plug-in module	Functions																
	Inputs		Outputs			STO/SS1	USB port	Input for encoder ³⁾	Fieldbus networks							Power supply	
	Digital	Analog	Analog	Digital relay	Digital transistor				CANopen DeviceNet	RS232	RS485	Profibus-DP	EtherNet/IP	Modbus-TCP	PROFINET IO	10 V	24 V
CFW500-IOS	4	1	1	1	1	-	-	-	-	-	1	-	-	-	-	1	1
CFW500-IOD	8	1	1	1	4	-	-	-	-	-	1	-	-	-	-	1	1
CFW500-IOAD	6	3	2	1	3	-	-	-	-	-	1	-	-	-	-	1	1
CFW500-IOR-B	5 ²⁾	1	1	4	1	-	-	-	-	-	1	-	-	-	-	1	1
CFW500-ENC	5 ²⁾	1	1	4	1	-	-	1	-	-	1	-	-	-	-	1	1
CFW500-CUSB	4	1	1	1	1	-	1	-	-	-	1	-	-	-	-	1	1
CFW500-SFY2 ⁴⁾	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-
CFW500-CCAN	2	1	1	1	1	-	-	-	1	-	1	-	-	-	-	1	-
CFW500-CRS232	2	1	1	1	1	-	-	-	-	1	1	-	-	-	-	-	1
CFW500-CRS485-B	4	2	1	2	1	-	-	-	-	-	2	-	-	-	-	1	1
CFW500-CPDP2	2	1	1	1	1	-	-	-	-	-	1	1	-	-	-	-	1
CFW500-CETH-IP	2	1	1	1	1	-	-	-	-	-	1	-	1	-	-	-	1
CFW500-CEMB-TCP	2	1	1	1	1	-	-	-	-	-	1	-	-	1	-	-	1
CFW500-CEPN-IO	2	1	1	1	1	-	-	-	-	-	1	-	-	-	1	-	1

Notes: 1) All plug-in module models have at least one RS485 port. The CFW500-CRS485 plug-in module has two RS485 ports.

The CFW500 allows the installation of one plug-in module per unit.

2) The DI5 input is always NPN, and it cannot be configured for PNP like the others.

3) Incremental Encoder (A/A - B/B).

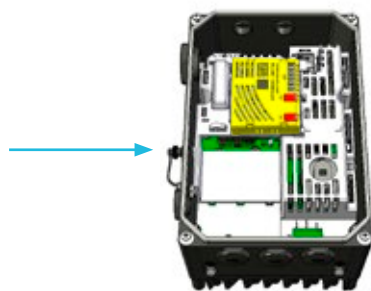
See the installation guides of the plug-in modules on the website www.weg.net.

4) It enables the use with one more accessory on the same drive, due to its installation being on top of the product.

Step by step



1 - Remove the cover



2 - Insert the accessory



3 - Close the cover

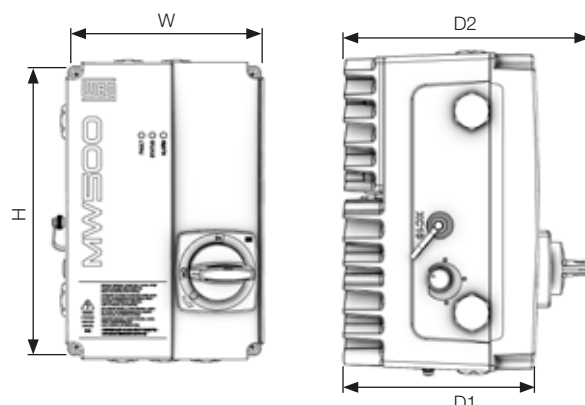
Simple!

Dimensions and weights

Version IP66/NEMA 4X

Frame	H	W	D1	D2	Weight
	mm [in]	mm [in]	mm [in]	mm [in]	kg [lb]
A	240 [9.45]	161.5 [6.36]	147.1 [5.79]	193.9 [7.63]	4.2 [9.3]
B	269 [10.61]	190 [7.48]	163.5 [6.44]	210.3 [8.28]	5.4 [11.9]
C	304.5 [12.0]	220.9 [8.7]	193.6 [7.62]	240.4 [9.46]	9.1 [20.1]

Note: VSD without wall mounting bracket.

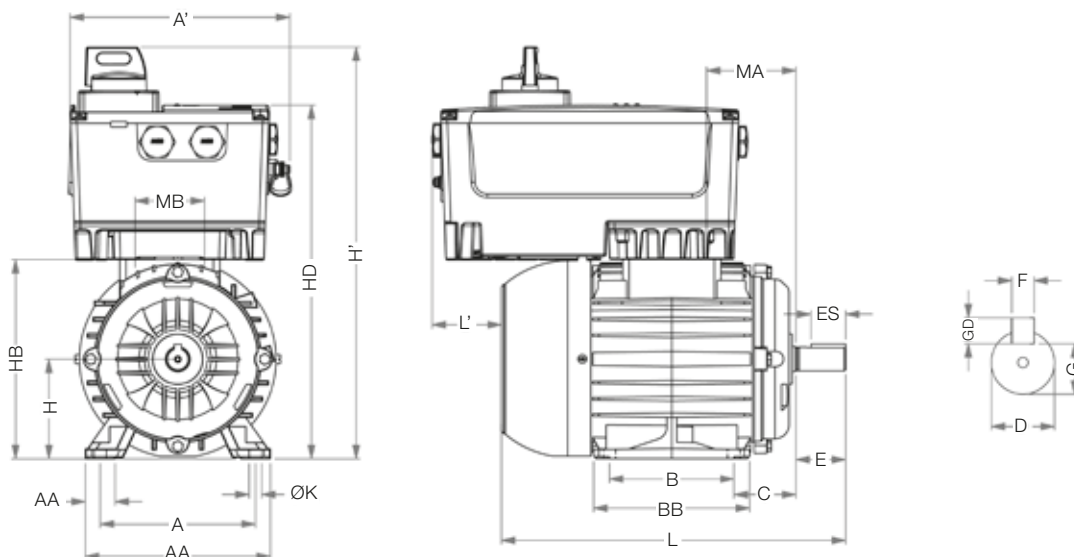


Motor and drive mechanical mounting combination¹⁾

Motor		MW500	NEMA dimensions																																																						
Motor frame size	Motor terminal box mounting points/ MW500 mounting points (mm)	VSD housing size	2E	J	A	2F	B	BA	U	N-W	ES	S	R	S	D	HI	C	MA	MB	ØH	A'	H'	HD	L'																																	
NEMA (in)	143T	56x56 M5	A	5.500	1.437	6.457	4.000	5.157	2.250	0.875	2.250	1.575	0.187	0.765	0.187	3.500	7.043	12.346	3.148	2.205	0.344	6.99	14.64	11.93	1.69																																
			B															8.1				15.32	12.62	2.83																																	
			A															6.99				14.64	11.93	0.47																																	
			B															8.1				15.32	12.62	1.61																																	
			A															6.99				14.64	11.93	1.69																																	
			B															8.1				15.32	12.62	2.2																																	
			L143T				A	6.99										14.64	11.93			0.47																																			
							B	8.1										15.32	12.62			2.2																																			
							A	6.99										14.64	11.93			0.47																																			
							B	8.1										15.32	12.62			0.98																																			
							145T	A										5.000	6.142			13.346	3.640	6.99	14.64	11.93	0.47																														
								B																8.1	15.32	12.62	2.2																														
	A	6.99	14.64	11.93	0.47																																																				
	B	8.1	15.32	12.62	0.98																																																				
	L145T	A	5.000	6.142	14.566	3.640		6.99	14.64	11.93	0.47																																														
		B						8.1	15.32	12.62	0.98																																														
		182T					56x56 M6	A	7.500	1.594	8.661	4.500	5.945	2.750	1.125	2.750	1.969	0.250	0.984	0.250	4.500	8.883	14.860	3.608	2.756	0.406	6.99	16.57	13.86	0.445																											
								B															8.1				17.23	14.5	1.545																												
								A															6.99				16.57	13.86	-0.736																												
								B															8.1				17.23	14.5	0.364																												
	L182T		A	6.969	7.362	3.50		1.375															3.375				2.480	0.313	1.203	0.313	5.250	10.762	15.860	4.093	6.99	16.57	13.86	-0.07																			
			B																																8.1	17.23	14.5	1.03																			
			A									6.99	16.57									13.86		-1.251																																	
			B									8.1	17.23									14.5		-0.151																																	
L184T			A									5.500	7.362									3.50		1.375											3.375	2.480	0.313	1.203	0.313	5.250	10.762	17.041	5.634	8.1	19.04	16.31	-0.09										
			B																																									9.50	20.09	17.42	1.53										
	A		8.1	19.04	16.31	-1.596																																																			
	B		9.50	20.09	17.42	0.024																																																			
	213T	70x70 M6	B	8.500	1.988	9.764	7.000	8.858	3.50	1.375	3.375			2.480	0.313	1.203	0.313	5.250	10.762	18.021	4.884		2.756		0.406	8.1	19.04	16.31	-0.09																												
			C																	9.50						20.09	17.42	1.53																													
B			8.1									19.04	16.31							-1.596																																					
C			9.50									20.09	17.42							0.024																																					
L213T			B									7.000	8.858							3.50		1.375		3.375		2.480	0.313	1.203	0.313	5.250	10.762	19.517	5.634	8.1	19.04	16.31	0.65																				
			C																															9.50	20.09	17.42	0.01																				
	B		8.1				19.04	16.31													-0.738																																				
	C		9.50				20.09	17.42													-1.378																																				
	215T		110x110 M8				B	10.000													2.539													12.126	8.252	10.000	4.250	1.625	4.000	2.456	0.375	1.406	0.375	6.250	12.746	23.213	6.076	4.331	0.531	9.50	22.07	19.41	-1.6				
							C																																							24.945				7.085	9.50	22.07	19.41	-2.6			
C							25.061					7.335	9.50							23.42		20.7		-3.2																																	
C							26.433					7.335	9.50							23.42		20.7		-3.2																																	
254T		110x110 M8		C	11.000	3.110	13.780		9.500	11.732	4.750	1.875	4.622	3.149	0.500	1.594	0.500	7.000	14.087	23.213		7.335	4.331	0.531	9.50	22.07	19.41	-1.6																													
				C																24.945					7.085	9.50	22.07	19.41	-2.6																												
	C			25.061																7.335					9.50	23.42	20.7	-3.2																													
	C			26.433																7.335					9.50	23.42	20.7	-3.2																													
256T	110x110 M8			C																11.000					3.110	13.780	9.500	11.732	4.750	1.875	4.622	3.149	0.500		1.594	0.500										7.000	14.087			23.213	7.335	4.331	0.531	9.50	22.07	19.41	-1.6
				C																																														24.945				7.085	9.50	22.07	19.41
				C					25.061	7.335								9.50	23.42			20.7																												-3.2							
				C					26.433	7.335								9.50	23.42			20.7																												-3.2							
284TS			110x110 M8	C				11.000	3.110	13.780								9.500	11.732		4.750	1.875												4.622			3.149	0.500	1.594	0.500	7.000	14.087	23.213	7.335	4.331			0.531	9.50	22.07				19.41	-1.6		
				C																																							24.945						7.085	9.50				22.07	19.41	-2.6	
				C																							25.061	7.335															9.50			23.42	20.7		-3.2								
				C																							26.433	7.335															9.50			23.42	20.7		-3.2								
284T		110x110 M8		C	11.000	3.110	13.780				9.500	11.732	4.750	1.875	4.622	3.149	0.500						1.594	0.500			7.000	14.087															23.213			7.335	4.331		0.531	9.50	22.07			19.41	-1.6		
				C																																							24.945							7.085	9.50			22.07	19.41	-2.6	
				C														25.061	7.335																						9.50	23.42	20.7	-3.2													
				C														26.433	7.335																						9.50	23.42	20.7	-3.2													

Motor and drive mechanical mounting combination

Motor		MW500	IEC dimensions																																																																																																																								
Motor frame size	Motor terminal box mounting points/ MW500 mounting points (mm)	VSD housing size	A	AA	AB	B	BB	C	D	E	ES	F	G	GD	H	HB	L	MA	MB	ØK	A'	H'	HD	L'																																																																																																			
70	56x56 M5x0.8	A	112	20	132	90	113.5	45	14	30	18	5	10	5	71	142	250	62	56	7	177.6	335	288	63																																																																																																			
80		A	125	30.5	149	100	125.5	50	19j6	40	28	6	15.5	6	80	160	276	72				10	353	306	55																																																																																																		
L80		A	140	36.5	164		131	56	24j6	50	36	20	90	180	325	78	206								391	344	6																																																																																																
90S		A													304			177.6									373	326	43																																																																																														
L90S		B																												335	206	391	344	72																																																																																									
		A																																	125	156	8	7	100	200	376	206	411	364	38																																																																														
90L		B				329																177.6	373	326						30																																																																																													
L90L		A					360									206															391	344	59																																																																																										
		B													177.6																			373												326	-1																																																																												
100L		A				160																																										40	188	173	63	24	112	224	393	105	177.6	393	346	9																																																															
L100L		B					173																																																						63	28j6	60	45	24	112	224	393	105	177.6	417	370	-2																																																		
		A	177.6	393	346			-35																																																																																																																			
112M	B	190							40.5	220	140	177	70	28j6			60	45	24	112	224				393	105	177.6	417	370																																													-2																																																	
	L112M																																																																										A	177.6	417	370	-32																																												
132S	B																																		216	45	248	178	225	89	38k6	80	63	10	33																														8					132	272	452	124.1	206	483	436	-3																																				
	L132S																					A	206	483						436																																																										-28																																			
132M	B															216						45									248	178	225																																																								89	38k6	80	63	10	33	8	132	272	477	206	483	436	-7																					
	L132M														A																			206												483	436																																																								-18																				
132M/L L132M/L	B					216									45																																	248	178/203	250	108	42k6	110	80	12	37	160	324	598	157.8																																												206	483	436	-30,6																
	L132M/L						A																																																						206	483	436	-54,6																																																											
160M	C		254	64	308		210	254																																																									108	42k6	110	80	12	37	160	324	598																																			157.8	206	483	436	-39,6											
	160L	C							254	64	308	210	254	108			42k6	110	80	12	37				160	324	598	157.8	206																																													483																																							436	-47									
160M	C	254																																																																										64	308	210	254																																				108	42k6	110	80	12	37	160	324	598
	160L																																		C	254	64	308	210	254	108	42k6	110	80	12																														37					160	324	598	157.8	206	483	436	-91																																				



Standards

Standards	Safety standards	UL 508C - Power conversion equipment
		UL 840 - Insulation coordination including clearances and creepage distances for electrical equipment
		EN 61800-5-1 - Safety requirements electrical, thermal and energy
		EN 50178 - Electronic equipment for use in power installations
		EN 60204-1 - Safety of machinery. Electrical equipment of machines. Part 1: general requirements Note: In order to have a machine in accordance with this standard, the manufacturer of the machine is responsible for installing an emergency stop device and a device for disconnecting the power line.
		EN 60146 (IEC 146) - Semiconductor converters
		EN 61800-2 - Adjustable speed electrical power drive systems - Part 2: general requirements - Rating specifications for low voltage adjustable frequency AC power drive systems
	Electromagnetic compatibility standards	EN 61800-3 - Adjustable speed electrical power drive systems - Part 3: EMC product standard including specific test methods
		EN 55011 - Limits and methods of measurement of radio disturbance characteristics of industrial, scientific and medical (ISM) radio-frequency equipment
		CISPR 11 - Industrial, scientific and medical (ISM) radio-frequency equipment - Electromagnetic disturbance characteristics - Limits and methods of measurement
		EN 61000-4-2 - Electromagnetic compatibility (EMC) - Part 4: testing and measurement techniques - Section 2: electrostatic discharge immunity test
		EN 61000-4-3 - Electromagnetic compatibility - Part 4: testing and measurement techniques - Section 3: radiated, radio-frequency, electromagnetic field immunity test
		EN 61000-4-4 - Electromagnetic compatibility - Part 4: testing and measurement techniques - Section 4: electrical fast transient/burst immunity test
		EN 61000-4-5 - Electromagnetic compatibility - Part 4: testing and measurement techniques - Section 5: surge immunity test
		EN 61000-4-6 - Electromagnetic compatibility - Part 4: testing and measurement techniques - Section 6: immunity to conducted disturbances, induced by radio-frequency fields
	Mechanical construction standards	EN 60529 - Degrees of protection provided by enclosures (IP code)
		UL 50 - Enclosures for electrical equipment



Technical data

Power	Power supply	Tolerance: -15 to +10% Frequency: 50/60 Hz (48 Hz to 62 Hz) Phase imbalance: ≤3% of the rated phase-phase input voltage Maximum of 10 (line) connections per hour (1 every 6 minutes) Typical efficiency: ≥97%
Control	Method	Control types: V/F (scalar) VWV: voltage vector control Vector without encoder (sensorless) and vector with encoder VWV PM: voltage vector control for permanent magnet motors
	Output frequency	0 to 500 Hz, resolution of 0.015 Hz
Performance	V/F control	Speed regulation: 1% of the rated speed (with sleep compensation) Speed variation range: 1:20
	Vector control (VWV)	Speed regulation: 1% of the rated speed Speed variation range: 1:30
	Vector without encoder (sensorless)	Regulation: 0.5% of the rated speed Speed variation range: 1:100
	Vector with encoder	Regulation: ±0.01% of the rated speed Speed variation range: 1:100
	VWV PM ⁴⁾ control	Regulation: 0.1% of the rated speed Speed variation range: 1:20
Braking methods	Dynamic braking	Available as standard for frames A, B and C An external resistor must be used for dynamic braking capability
Environmental conditions	Temperature around the CFW500	-10 °C to 40 °C - for wall mounting -10 °C to 50 °C - for mounting using self-ventilated motor at rated speed 2% current derating for each degree Celsius above the operating temperature, limited to an increase of 10 °C
	Air relative humidity	5% to 95% non-condensing
	Altitude	Up to 1,000 m (maximum altitude under normal conditions) 1,000 to 4,000 m: current derating of 1% for each 100 m above 1,000 m of altitude From 2,000 to 4,000 m maximum voltage derating (380-480 V models) of 1.1% for every 100 meters above 2,000 m altitude
	Protection rating	IP66/NEMA 4X
Inputs ¹⁾	Analog	1 isolated input Levels: (0 to 10) V or (0 to 20) mA or (4 to 20) mA Linearity error ≤0.25% Impedance: 100 kΩ for voltage input, 500 Ω for current input Programmable functions, including PTC input Maximum voltage accepted in the inputs: 30 V _{dc}
	Digital	4 isolated inputs Programmable functions: Active high (PNP): maximum low level 15 V _{dc} ; minimum high level 20 V _{dc} Active low (NPN): maximum low level 5 V _{dc} ; minimum high level 9 V _{dc} Maximum input voltage 30 V _{dc} Input current: 4.5 mA Max input current: 5.5 mA
Outputs ¹⁾	Analog	1 isolated output Levels (0 to 10) V or (0 to 20) mA or (4 to 20) mA Linearity error ≤0.25% Programmable functions R _L ≥10 kΩ (0 to 10 V) or R _L ≤500 Ω (0 to 20 mA / 4 to 20 mA)
	Relay	1 relays with NO/NC contact Maximum voltage: 240 V _{ac} Maximum current 0.5 A Programmable functions
	Transistor	1 open sink isolated digital output (uses the 24 V _{dc} source as reference) Maximum current 150 mA (maximum source capacity 24 V _{dc}) ²⁾ Programmable functions
	Power supply	Power supply 24 V _{dc} Maximum capacity: 150 mA ²⁾ Power supply 10 V _{dc} Maximum capacity: 2 mA
Communication	Plug-in modules	Fieldbus: Modbus-RTU, CANopen, DeviceNet, Profibus-DP, EtherNet/IP, Modbus-TCP, PROFINET IO Portas USB, RS485, RS232 and Bluetooth ³⁾
Safety	Protection	Overcurrent/phase-phase short circuit in the output Overcurrent/phase-ground short circuit in the output Under/overvoltage in the power Overtemperature on the heatsink Motor overload (1.5 x I _n (inverter) for 1 minute, every 10 minutes) ⁵⁾ Power module (IGBTs) overload External fault / alarm Setting error STO and SS1 safety functions (accessory)
Human machine interface (HMI)	CFW500-HMIR Accessory	9 keys: Run/Stop, Increment, Decrement, Direction of Rotation, Jog, Local/Remote, Back/Esc and Enter/Menu LCD display It allows accessing/changing all the parameters Precision of the indications: Current: 5% of the rated current Speed resolution: 0.1 Hz

Notes: 1) The number and/or types of analog/digital inputs/outputs may vary according to the plug-in module used. In the table above, the CFW500-IOS plug-in module was considered. For further information, refer to the module user manual.

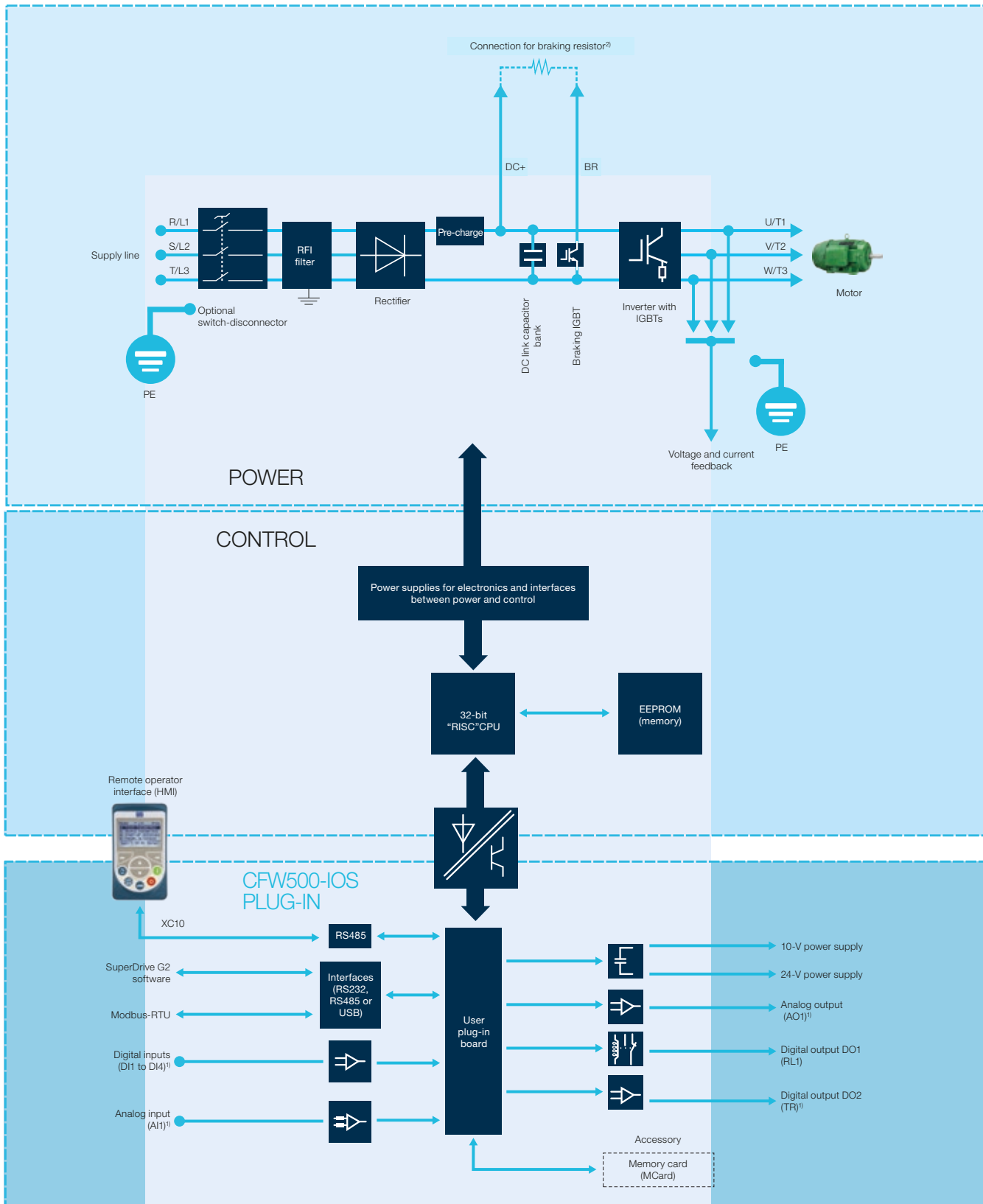
2) The maximum capacity of 150 mA considers the load of the 24-V power supply plus the transistor output, that is, the sum of the consumption of both must not exceed 150 mA.

3) Designed for exclusive industrial or professional use.

4) The VWV PM function is available for all VSDs with firmware version V3.XX or higher.

5) For the 0.37 kW and 0.55 kW models of the 380-480 V line, the overload capacity is 4 x I_n.

Block diagram



Notes: 1) The number of inputs and outputs (analog and digital), as well as other resources, may vary according to the plug-in module used. For further information, see the manual for the plug-in used.

2) Resistor not included. IGBT braking included across the entire MW500 line.

Global presence

is essential, as much
as understanding
your needs.

Global Presence

With more than 40,000 employees worldwide, WEG is one of the largest electric motors, electronic equipments and systems manufacturers. We are constantly expanding our portfolio of products and services with expertise and market knowledge. We create integrated and customized solutions ranging from innovative products to complete after-sales service.

WEG's know-how guarantees the **MW500 – Decentralized VSD – Motordrive** are the right choice for your application and business, assuring safety, efficiency and reliability.



Availability is to have a global support network



Partnership is to create solutions that suits your needs



Competitive edge is to unite technology and innovation

Know More

High performance and reliable products to improve your production process.

Excellence is to provide a whole solution in industrial automation that improves our customers productivity.

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The values shown are subject to change without prior notice.
The information contained is reference values.