

9.3.2 Dynamic Braking

NOTE!

The dynamic braking is available from frame size B for the CFW500. For installation information, refer to Item 3.2.3.4 Dynamic Braking of the user's manual, available for download on the website: www.weg.net.

9.3.3 Output Connections

ATTENTION!

The inverter has an electronic motor overload protection that must be adjusted according to the driven motor. When several motors are connected to the same inverter, install individual overload relays for each motor.

The motor overload protection available in the CFW500 is in accordance with the UL508C standard. Note the following information:

1. Trip current equal to 1.2 times the motor rated current (P0401).
2. When parameters P0156, P0157 and P0158 (Overload current at 100 %, 50 % and 5 % of the rated speed, respectively) are manually set, the maximum value to meet the condition 1 is 1.1 x P0401.

ATTENTION!

If a disconnect switch or a contactor is installed at the power supply between the inverter and the motor, never operate it with the motor turning or with voltage at the inverter output.

The characteristics of the cable used to connect the motor to the inverter, as well as its interconnection and routing, are extremely important to avoid electromagnetic interference in other equipment and not to affect the life cycle of windings and bearings of the controlled motors.

Keep motor cables away from other cables (signal cables, sensor cables, control cables, etc.), according to Item 9.3.6 Cable Separation Distance.

Connect a fourth cable between the motor ground and the inverter ground.

9.3.4 Grounding Connections

DANGER!

- The inverter must be connected to a protection grounding (PE).
- Use grounding wiring with a gauge at least equal to that indicated in Table 5.
- The maximum tightening torque of the grounding connections is of 1.7 N.m (15 lbf.in).
- Connect the grounding points of the inverter to a specific grounding rod, or specific grounding point or to the general grounding point (resistance ≤ 10 Ω).
- The neuter conductor that powers up the inverter must be solidly grounded; however, this conductor must not be used to ground the inverter.
- Do not share the grounding wiring with other equipment that operate with high currents (e.g. high power motors, soldering machines, etc.).

9.3.5 Control Connections

The control connections (analog input/output, digital input/output and interface RS485) must be performed according to the specification of the connector of the plug-in module connected to the CFW500. Refer to the guide of the plug-in module in the package of the product. The typical functions and connections for the CFW500-IOS standard plug-in module are shown in Figure 5.

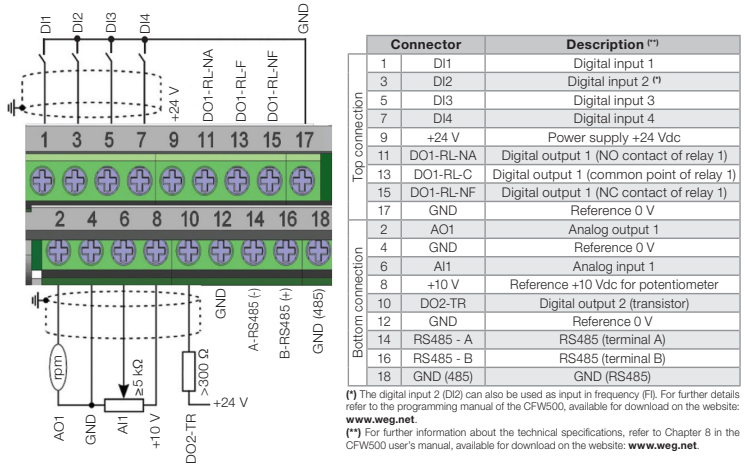


Figure 5: Signals of the connector of the CFW500-IOS plug-in module

For the correct connection of the control, use:

1. Gauge of the cables: 0.5 mm² (20 AWG) to 1.5 mm² (14 AWG).
2. Maximum torque: 0.5 N.m (4.50 lbf.in).
3. Wiring of the plug-in module connector with shielded cable and separated from the other wiring (power, command in 110 V / 220 Vac, etc), according to Item 9.3.6 Cable Separation Distance.
4. Relays, contactors, solenoids or coils of electromechanical brake installed close to the inverters may occasionally generate interference in the control circuitry. To eliminate this effect, RC suppressors (with AC power supply) or freewheel diodes (with DC power supply) must be connected in parallel to the coils of these devices.
5. When using the external HMI, the cable that connects to the inverter must be separated from the other cables in the installation, keeping a minimum distance of 10 cm.
6. When using analog reference (AI1) and the frequency oscilates (problem of electromagnetic interference), interconnect the GND of the connector of the plug-in module to the inverter grounding connection.

9.3.6 Cable Separation Distance

Table 3: Cable separation distance		
Inverter Output Rated Current	Length of the Cable(s)	Minimum Separation Distance
≤ 24 A	≤ 100 m (330 ft)	≥ 10 cm (3.94 in)
	> 100 m (330 ft)	≥ 25 cm (9.84 in)
≥ 28 A	≤ 30 m (100 ft)	≥ 10 cm (3.94 in)
	> 30 m (100 ft)	≥ 25 cm (9.84 in)

10 PREPARATION AND POWERING UP

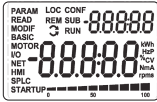
DANGER!

Always disconnect the general power supply before making any connection.

1. Check if the power, grounding and control connections are correct and firm.
2. Remove all materials left from the inside of the inverter or drive.
3. Check if the motor connections and if the motor current and voltage match the inverter.
4. Mechanically uncouple the motor from the load. If the motor cannot be uncoupled, be sure that the turning in any direction (clockwise or counterclockwise) will not cause damages to the machine or risk of accidents.
5. Close the covers of the inverters or drive.
6. Measure the voltage of the input power supply and check if it is within the permitted range, as presented in Chapter 11 TECHNICAL SPECIFICATIONS.

7. Power up the input: close the disconnecting switch.
8. Check the success of the powering up:

The display of the HMI indicates:



9.3.2 Frenado Reostático



¡NOTA!
El frenado reostático está disponible en los modelos a partir del tamaño B del CFW500. Por informaciones de instalación consulte el ítem 3.2.3.4 Frenado Reostático del manual del usuario, disponible para download en el sitio: **www.weg.net**.

9.3.3 Conexiones de Salida



¡ATENCIÓN!

- El convertidor posee protección electrónica de sobrecarga del motor, que debe ser ajustada de acuerdo con el motor usado. Cuando diversos motores sean conectados al mismo convertidor utilice relés de sobrecarga individuales para cada motor.
- La protección de sobrecarga del motor disponible en el CFW500 está de acuerdo con la norma UL508C, observe las informaciones a seguir:
 - Corriente de "trip" igual a 1,2 veces la corriente nominal del motor (P0401).
 - Cuando los parámetros P0156, P0157 y P0158 (Corriente de Sobrecarga a 100 %, 50 % y 5 % de la velocidad nominal, respectivamente) son ajustados manualmente, el valor máximo para respetar la condición 1 y 1,1 x P0401.



¡ATENCIÓN!
Si una llave aislante o un contactor es insertado en la alimentación del motor, nunca los opere con el motor girando o con tensión en la salida del convertidor.

Las características del cable utilizado para conexión del convertidor al motor, así como su interconexión y ubicación física, son de extrema importancia para evitar interferencia electromagnética en otros dispositivos, además de afectar la vida útil del aislamiento de las bobinas y de los rodamientos de los motores accionados por los inversores.

Mantenga los cables del motor separados de los demás cables (cables de señal, cables de comando, etc.) según ítem 9.3.7 Distancia para Separación de Cables.

Conecte un cuarto cable entre la tierra del motor y la tierra del convertidor.

9.3.4 Conexiones de Aterramiento



¡PELIGRO!

- El convertidor debe ser obligatoriamente conectado a una tierra de protección (PE).
- Utilizar cableado de aterramiento con dimensión, como mínimo, igual a la indicada en la Tabla 5.
- El torque máximo de apriete de las conexiones de aterramiento es de 1,7 N.m (15 lbf.in).
- Conecte los puntos de aterramiento del convertidor a una asta de aterramiento específica, o al punto de aterramiento específico o incluso al punto de aterramiento general (resistencia ≤ 10 Ω).
- El conductor neutro de la red que alimenta al convertidor debe ser solidamente aterrado, sin embargo el mismo no debe ser utilizado para aterramiento del convertidor.
- No comparta el cableado de aterramiento con otros equipamientos que operen con altas corrientes (e)l...: motores de alta potencia, máquinas de soldadura, etc.).

9.3.5 Conexiones de Control

Las conexiones de control (entrada/salida analógica, entradas/salidas digitales y interfaz RS485) deben ser hechas de acuerdo con la especificación del conector del módulo plug-in conectado al CFW500, consulte la guía del módulo plug-in en el embalaje del módulo del producto. Las funciones y conexiones típicas para el módulo plug-in estándar CFW500-IOS son presentadas en la Figura 5.

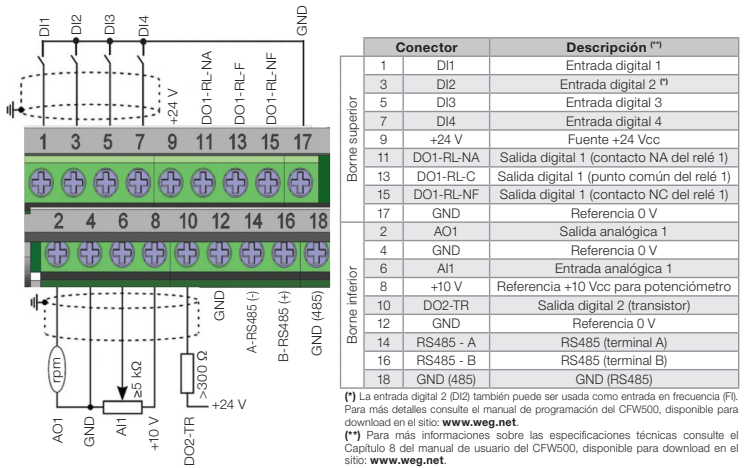


Figura 5: Señales del conector del módulo plug-in CFW500-IOS

Para una correcta instalación del cableado de control, utilice:

- Dimensionamiento de los cables: 0,5 mm² (20 AWG) a 1,5 mm² (14 AWG).
- Torque máximo: 0,5 N.m (4,50 lbf.in).
- Cableados en el conector del módulo plug-in con cable blindado y separados de los demás cableados (potencia, comando en 110 V / 220 Vca, etc, según el Ítem 9.3.6 Distancia para Separación de Cables.
- Relés, contactores, solenoides o bobinas de frenos electromecánicos instalados próximos a los inversores pueden eventualmente generar interferencias en el circuito de control. Para eliminar este efecto, deben ser conectados supresores RC en paralelo con las bobinas de estos dispositivos, en el caso de alimentación CA, y dudos de rueda libre en el caso de alimentación CC.
- En la utilización de la HMI externa, se debe tener el cuidado de separar el cable que la conecta al convertidor de los demás cables existentes en la instalación manteniendo una distancia mínima de 10 cm.
- Cuando es utilizada una referencia analógica (AI1) y la frecuencia oscila (problema de interferencia electromagnética), interconectar GND del conector del módulo plug-in a la conexión de aterramiento del convertidor.

9.3.6 Distancia para Separación de Cables

Tabla 3: Distancia de separación entre cables

Corriente Nominal de Salida del Convertidor	Longitud de Cable	Distancia Mínima de Separación
≤ 24 A	≤ 100 m (330 ft) > 100 m (330 ft)	≥ 10 cm (3,94 in) ≥ 25 cm (9,84 in)
≥ 28 A	≤ 30 m (100 ft) > 30 m (100 ft)	≥ 10 cm (3,94 in) ≥ 25 cm (9,84 in)

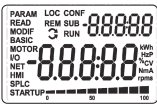
10 PREPARACIÓN Y ENERGIZACIÓN



¡PELIGRO!
Siempre desconecte la alimentación general antes de efectuar cualquier conexión.

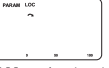
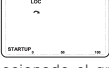
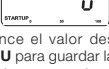
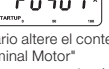
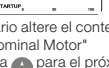
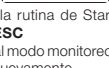
- Verifique si las conexiones de potencia, aterramiento y de control están correctas y firmes.
- Retire todos los restos de materiales del interior del convertidor o accionamiento.
- Verifique las conexiones del motor y si la corriente y tensión del motor están de acuerdo con el convertidor.
- Desacople mecánicamente el motor de la carga. Si el motor no puede ser desacoplado, tenga la certeza de que el giro en cualquier dirección (horario o antihorario) no causará daños a la máquina o riesgo de accidentes.
- Cierre las tapas del convertidor o accionamiento.
- Haga la medición de la tensión de la red y verifique si está dentro del rango permitido, según lo presentado en el Capítulo 11 ESPECIFICACIONES TÉCNICAS.

- Energice la entrada: cierre la llave seccionadora de entrada.
- Verifique si la energización fue efectivamente realizada: El display de la HMI indica:



10.1 PUESTA EN FUNCIONAMIENTO

10.2 TIPO DE CONTROL V/F (P0202 = 0)

Seq	Indicación en el Display/Acción	Seq	Indicación en el Display/Acción
1	 - Modo monitoreo - Presione la tecla ENTER/MENU para entrar en el primer nivel del modo programación	2	 El grupo PARAM está seleccionado, presione las teclas  o  hasta seleccionar el grupo STARTUP
3	 Cuando seleccionado el grupo STARTUP presione la tecla ENTER/MENU	4	 El parámetro "P0317 – Start-up Orientado" está seleccionado, presione ENTER/MENU para acceder al contenido del parámetro)
5	 Modifique el contenido del parámetro P0317 para "1 - Si", usando la tecla 	6	 Si fuera necesario, presione ENTER/MENU para para alterar el contenido de "P0202 - Tipo de Control" para P0202 = 0 (V/f)
7	 - Cuando alcance el valor deseado, presione ENTER/MENU para guardar la alteración - Presione la tecla  para el próximo parámetro	8	 - Si fuera necesario altere el contenido de "P0401 - Corriente Nominal Motor" - Presione la tecla  para el próximo parámetro
9	 - Si fuera necesario altere el contenido de "P0402 - Rotación Nominal Motor" - Presione la tecla  para el próximo parámetro	10	 - Si fuera necesario altere el contenido de "P0403 - Frecuencia Nominal Motor" - Presione la tecla  para el próximo parámetro
11	 - Para finalizar la rutina de Start-up, presione la tecla BACK/ESC - Para retornar al modo monitoreo, presione la tecla BACK/ESC nuevamente		

11 ESPECIFICACIONES TÉCNICAS

11.1 DATOS DE POTENCIA

Fuente de alimentación:

- Tolerancia de tensión: -15 % a +10 % de la tensión nominal.
- Frecuencia: 50/60 Hz (48 Hz a 62 Hz).
- Desbalanceo de fase: 3 % de la tensión de entrada fase-fase nominal.
- Sobretensiones de acuerdo con Categoría III (IEC/EN 61010/UL 508C).
- Tensiones transientes de acuerdo con la Categoría III.
- Máxima de 10 interrupciones en la energización por hora (1 a cada 6 minutos - lado red eléctrica).
- Rendimiento típico: ≥ 97 %.

12 NORMAS CONSIDERADAS

Tabla 4: Normas consideradas

Normas de seguridad	- UL 508C - power conversion equipment Nota: Suitable for installation in a compartment handling conditioned air - UL 840 - insulation coordination including clearances and creepage distances for electrical equipment - IEC/EN 61800-5-1 - safety requirements electrical, thermal and energy - EN 50178 - electronic equipment for use in power installations - IEC/EN 60204-1 - safety of machinery. Electrical equipment of machines. Part 1: general requirements Nota: para tener una máquina en conformidad co esa norma, el fabricante de la máquina es responsable por la instalación de un dispositivo de parada de emergencia y un equipamiento para seccionamiento de la red - IEC/EN 60146 (IEC 146) - semiconductor converters - IEC/EN 61800-2 - adjustable speed electrical power drive systems - part 2: general requirements - rating specifications for low voltage adjustable frequency AC power drive systems
Normas de compatibilidad electromagnética	- IEC/EN 61800-3 - adjustable speed electrical power drive systems - part 3: EMC product standard including specific test methods - CISPR 11 - industrial, scientific and medical (ISM) radio-frequency equipment - electromagnetic disturbance characteristics - limits and methods of measurement - IEC/EN 61000-4-2 - electromagnetic compatibility (EMC) - part 4: testing and measurement techniques - section 2: electrostatic discharge immunity test - IEC/EN 61000-4-3 - electromagnetic compatibility (EMC) - part 4: testing and measurement techniques - section 3: radiated, radio-frequency, electromagnetic field immunity test - IEC/EN 61000-4-4 - electromagnetic compatibility (EMC) - part 4: testing and measurement techniques - section 4: electrical fast transient/burst immunity test - IEC/EN 61000-4-5 - electromagnetic compatibility (EMC) - part 4: testing and measurement techniques - section 5: surge immunity test - IEC/EN 61000-4-6 - electromagnetic compatability (EMC) - part 4: testing and measurement techniques - section 6: immunity to conducted disturbances, induced by radio-frequency fields
Normas de construcción mecánica	- IEC/EN 60529 - degrees of protection provided by enclosures (IP code) - UL 50 - enclosures for electrical equipment - IEC/EN 60721-3-3 – classification of environmental conditions - part 3: classification of groups of environmental parameters and their severities - section 3: stationary use at weather protected locations level 3m4

13 CERTIFICACIONES

Certificaciones (*)	Observaciones
UL e cUL	E184430
CE	
IRAM	
C-Tick	
EAC	

(*) Para información actualizada sobre certificaciones consultar a WEG.

14 RELACIÓN DE MODELOS DE LÍNEA CFW500

Tabla 5: Relación de modelos de línea CFW500, especificaciones eléctricas principales

Convertidor	N° de Fases de Alimentación	Tensión Nominal de Alimentación	Tamaño	Corriente Salida Nominal	Motor Máximo	Fusible Recomendado				Disyuntor	Calibre de los Cables de Potencia	Calibre del Cable de Aterramiento	Frenado Reostático											
						I²t [A².s]	Corriente [A]	Fusible aR WEG Recomendado	Corriente Máxima				Resistor Recomendado	Corriente Eficaz de Frenado	Calibre de los Cables +UD y BR									
																HD	HD	WEG	mm² (AWG)	mm² (AWG)	(I _{max}) [A]	[Ω]	[A]	mm² (AWG)
																[Arms]	[HP/ kW]	[A]						
[Vrms]																								
CFW500A01P6S2	1	220...240	A	1,6	0,25/0,18	373	20 ⁽²⁾	FNH00-20K-A	5,5	MPW18-3-D063	1,5 (16)	2,5 (14)	Frenado reostático no disponible											
CFW500A02P6S2				2,6	0,5/0,37	373	20 ⁽²⁾	FNH00-20K-A	9,0	MPW18-3-U010	1,5 (16)	2,5 (14)												
CFW500A04P3S2				4,3	1/0,75	373	25 ⁽²⁾	FNH00-25K-A	13,5	MPW18-3-U016	1,5 (16)	2,5 (14)												
CFW500A07P0S2				7,0	2/1,5	800	40 ⁽²⁾	FNH00-40K-A	25	MPW40-3-U025	4,0 (12)	4,0 (12)												
CFW500B07P3S2	B		7,3	2/1,5	450	40 ⁽²⁾	FNH00-40K-A	25	MPW40-3-U025	2,5 (14)	4,0 (12)	10	39	7	2,5 (14)									
CFW500B10P0S2			10	3/2,2	450	63 ⁽²⁾	FNH1-63K-A	32	MPW40-3-U032	4,0 (12)	4,0 (12)	15	27	11	2,5 (14)									
CFW500A01P6B2	A		1,6	0,25/0,18	680	20 ⁽²⁾	FNH00-20K-A	5,5/2,5 ⁽¹⁾	MPW18-3-D063/MPW18-3-D025 ⁽¹⁾	1,5 (16)	2,5 (14)	Frenado reostático no disponible												
CFW500A02P6B2			2,6	0,5/0,37	680	20 ⁽²⁾	FNH00-20K-A	9,0/4,0 ⁽¹⁾	MPW18-3-U010/MPW18-3-U004 ⁽¹⁾	1,5 (16)	2,5 (14)													
CFW500A04P3B2			4,3	1/0,75	680	25/20 ^{(1) (2)}	FNH00-25K-A/FNH00-20K-A ⁽¹⁾	14/6,3 ⁽¹⁾	MPW18-3-U016/MPW18-3-D063 ⁽¹⁾	1,5 (16)	2,5 (14)													
CFW500B07P3B2			B	7,3	2/1,5	450	40/20 ^{(1) (2)}	FNH00-40K-A/FNH00-20K-A ⁽¹⁾	25/12 ⁽¹⁾	MPW40-3-U025/MPW18-3-U016 ⁽¹⁾	2,5/1,5 (14/16) ⁽¹⁾						4,0 (12)	10	39	7	2,5 (14)			
CFW500B10P0B2	10			3/2,2	450	63/25 ^{(1) (2)}	FNH1-63K-A/FNH00-25K-A ⁽¹⁾	32/16 ⁽¹⁾	MPW40-3-U032/MPW18-3-U016 ⁽¹⁾	4,0/2,5 (12/14) ⁽¹⁾	4,0 (12)	15	27	11	2,5 (14)									
CFW500A07P0T2	3	380...480	A	7,0	2/1,5	680	20 ⁽²⁾	FNH00-20K-A	10	MPW18-3-U010	1,5 (16)	2,5 (14)	Frenado reostático no disponible											
CFW500A09P6T2				9,6	3/2,2	1250	25 ⁽²⁾	FNH00-25K-A	16	MPW18-3-U016	2,5 (14)	2,5 (14)												
CFW500B16P0T2			B	16	5/3,7	1000	40 ⁽²⁾	FNH00-40K-A	25	MPW40-3-U025	4,0 (12)	4,0 (12)	20	20	14	4,0 (12)								
CFW500C24P0T2				24	7,5/5,5	1000	63 ⁽²⁾	FNH00-63K-A	40	MPW40-3-U040	6,0 (10)	4,0 (12)	26	15	13	6,0 (10)								
CFW500D28P0T2	500...600	500...600	D	28	10/7,5	2750	63 ⁽²⁾	FNH00-63K-A	40	MPW40-3-U040	10 (8)	10 (8)	38	10	18	10 (8)								
CFW500D33P0T2				33	12,5/9,2	2750	80 ⁽²⁾	FNH00-80K-A	50	MPW65-3-U050	10 (8)	10 (8)	45	8,6	22	10 (8)								
CFW500D47P0T2			E	47	15/11	2750	100 ⁽²⁾	FNH00-100K-A	65	MPW65-3-U065	10 (8)	10 (8)	45	8,6	22	10 (8)								
CFW500E56P0T2				56	20/15	6600	125 ⁽²⁾	FNH00-125K-A	80	MPW80-3-U080	16 (6)	16 (6)	95	4,7	48	16 (6)								
CFW500A01P0T4	3	380...480	A	1,0	0,25/0,18	450	20 ⁽²⁾	FNH00-20K-A	1,6	MPW18-3-D016	1,5 (16)	2,5 (14)	Frenado reostático no disponible											
CFW500A01P6T4				1,6	0,5/0,37	450	20 ⁽²⁾	FNH00-20K-A	2,5	MPW18-3-D025	1,5 (16)	2,5 (14)												
CFW500A02P6T4				2,6	1,5/1,1	450	20 ⁽²⁾	FNH00-20K-A	4,0	MPW18-3-U004	1,5 (16)	2,5 (14)												
CFW500A04P3T4			B	4,3	2/1,5	450	20 ⁽²⁾	FNH00-20K-A	6,3	MPW18-3-D063	1,5 (16)	2,5 (14)	6	127	4,5	1,5 (16)								
CFW500A06P1T4	3	380...480		6,1	3/2,2	450	20 ⁽²⁾	FNH00-20K-A	10	MPW18-3-U010	1,5 (16)	2,5 (14)	6	127	4,5	1,5 (16)								
CFW500B02P6T4		C	2,6	1,5/1,1	450	20 ⁽²⁾	FNH00-20K-A	4,0	MPW18-3-U004	1,5 (16)	2,5 (14)	8	100	5,7	2,5 (14)									
CFW500B04P3T4			4,3	2/1,5	450	20 ⁽²⁾	FNH00-20K-A	6,3	MPW18-3-U010	1,5 (16)	2,5 (14)	8	100	5,7	2,5 (14)									
CFW500B06P5T4		D	6,5	3/2,2	450	20 ⁽²⁾	FNH00-20K-A	10	MPW18-3-U016	2,5 (14)	2,5 (14)	16	47	11,5	2,5 (14)									
CFW500B10P0T4			10	5/3,7	1000	25 ⁽²⁾	FNH00-25K-A	16																

9.3.2 直流环节电感/电源电抗

注意！

机座号为B的CFW500逆变器可提供动态制动。有关安装信息，请参阅《用户手册》〈下载网址: [www. weg.net](http://www.weg.net) 〉第3.2.3.4章节“动态制动”。

9.3.3 输出连接

警告！

此变频器具有一个电子式电机过载保护装置，该保护装置可根据其所驱动的电机进行调节。如果有多台电机同一台变频器连接 则需为每一台电机安装独立的过载继电器。

CFW500 可用电机过载保护是根据 UL508C 标准执行的。请注意以下信息：

1. 跳闸电流等于电机额定电流（P0401）的 1.2 倍。

2. 手动设置 P0156、P0157 和 P0158（分别为额定转速 100％、50％ 和 5％的过载电流）参数时，满足条件 1 的最大值是 1.1×P0401。

警告！

如果执行电源断开动作的开关或接触器安装在变频器和电机之间，禁止在电机运行或变频器有输出 电压时进行操作。

电缆（用于将电动机连接至变频器）的特性，以及它的互连和布线，在避免在其它设备的电磁干扰和不影响受控电机绕组和轴承寿命周期方面是极其重要的。

根据电缆间隔距离项 9.3.6，将电机电缆与其它电缆（信号电缆、传感器电缆、控制电缆等）保持间隔。

使用第四根电缆连接电机接地和变频器接地。

9.3.4 接地连接

危险！

变频器必须连接到一个保护接地（PE）。

- 接地线的选择使用规格需至少同等于表5所示数据。
- 接地连接的最大拧紧扭矩为 1.7 牛·米（15 磅力·英寸）。
- 将变频器的接地点连接到特定的接地棒，或特定的接地点，或一般的接地点（电阻≤10 Ω）。
- 为变频器上电的中性导体必须直接接地；但是，该导体不能用于接地变频器。
- 不要与其他大电流运行的设备共用接地线（例如：高功率电机、焊接机等）。

9.3.5 控制连接

控制连接（模拟输入/输出、数字输入/输出和 RS485 接口）必须根据连接至 CFW500 的插件模块连接器的规格来执行。

参考产品包中插件模块的指南。CFW500-10S 标准插件模块的特色功能和连接如图 5 所示。

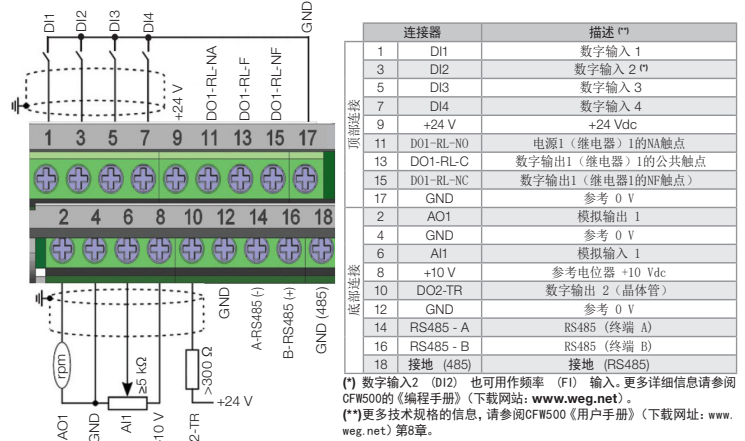


图 5: CFW500-10S 插件模块连接器的信号

对于控制的正确连接，使用：

1. 电缆计：0.5 mm² (20 AWG) 到 1.5 mm² (14 AWG)。
2. 最大扭矩：0.5 牛·米 (4.50 磅力·英寸)。
3. 根据电缆分离距离项 9.3.6，配备屏蔽电缆插件模块连接器及从其他接线分离（电源，110 V/220 Vac 控制 等）的接线。
4. 控制电路中的继电器、接触器、螺旋线或安装在接近变频器的机电制动力器线圈可偶尔产生干扰。为了消除这种影响，RC 抑制器（交流电源）或续流二极管（直流电源）必须并列连接到这些装置的线圈。
5. 当使用外部 HMI 时，连接至变频器的电缆必须与安装的其他电缆分离，保持 10 厘米的最小距离。
6. 当使用模拟参考（AI1）和频率振荡（电磁干扰的问题）时，将插件模块连接器的接地互连至变频器接地连接。

9.3.6 电缆间隔距离

表 3: 电缆间隔距离

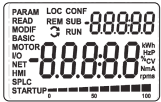
变频器输出 额定电流	电缆 长度	最小间隔 距离
≤ 24 A	≤ 100 m (330 ft)	≥ 10 cm (3.94 in)
	> 100 m (330 ft)	≥ 25 cm (9.84 in)
≥ 28 A	≤ 30 m (100 ft)	≥ 10 cm (3.94 in)
	> 30 m (100 ft)	≥ 25 cm (9.84 in)

10 通电准备

危险！

进行任何接线工作前，请始终断开总电源。

1. 检查电源、接地和控制连接是否正确牢固。
 2. 清除变频器内遗留的所有安装材料。
 3. 检查电机连接，以及电机电流和电压是否与变频器匹配。
 4. 断开负载与电机的机械连接。如果电机无法脱开，确保在任何方向（顺时针或逆时针）的旋转不会造成机器损坏或意外事故的风险。
 5. 安装变频器或驱动保护盖。
 6. 测量输入电源的电压，参照第 11 章技术规范，检查电压是否在允许的范围内。
 7. 变频器输入端通电，闭合断路器开关。
 8. 检查变频器成功通电：
- HMI 显示屏显示：



10.1 启动

10.1.1 V/f 控制类型（P0202 = 0）

顺序号	显示/操作指示	顺序号	显示/操作指示
1	■ 监控模式 ■ 按下 ENTER/MENU（输入/菜单）键，进入第一层主菜单编程模式选择	2	■ 选择 PARAM（参数）组，按下 或 键直至选择 STARTUP（启动）组
3	■ 选择STARTUP模式 ■ 按下 ENTER/MENU（输入/菜单）键	4	■ 然后选择参数“P0317 - 定向启动”，按下ENTER/MENU（输入/菜单）键查看参数内容
5	■ 使用 键将参数P0317更改为“1 - 是”	6	■ 必要时，按下 ENTER/MENU（输入/菜单）键，将“P0202 - 控制类型”的内容修改为 P0202 = 0（V/f）
7	■ 当目标值修改完成，按下 ENTER/MENU（输入/菜单），保存修改 ■ 按下 键，设置其他参数	8	■ 必要时，修改“P0401 - 电机额定电流”的内容 ■ 按下 键，设置其他参数
9	■ 必要时，修改“P0402 - 电机额定转速”的内容 ■ 按下 键，设置其他参数	10	■ 必要时，修改“P0403 - 电机额定频率”的内容 ■ 按下 键，设置其他参数
11	■ 结束STARTUP模式，按 BACK/ESC（返回/退出）键 ■ 返回监控模式，再次按 BACK/ESC（返回/退出）键		

11 技术规范

11.1 功率数据

电源：

- 公差：-15 % to +10 %。
- 频率：50/60 赫兹（48 赫兹至 62 赫兹）。
- 不平衡：≤ 3 % 的额定相与相输入电压。
- 根据类别 III（EN 61010/UL 508C）的超电压。
- 根据类别 III 的瞬时电压。
- 每小时（每 6 分钟 1 次）最多 10 次连接（加电循环 - ON/OFF）。
- 典型效率：≥ 97 %。

12 考虑标准

表 4: 考虑后的标准

安全标准	■ UL 508C - 电源转换设备。 - 注：适合安装在装有空调的隔间内。 ■ UL 840 - 绝缘配合包括电气设备的电气间隙和爬电距离。 ■ EN 61800-5-1 - 电、热和能量的安全要求。 ■ EN 50178 - 用于电力安装的设备。 ■ EN 60204-1 - 机械安全性：机器的电气设备。第 1 部分：一般要求。 ■ 注：对于符合此标准的机器，该机器制造商负责安装用断开输入电源的紧急停止装置和设备。 ■ EN 60146（IEC 146）- 半导体转换器。 ■ EN 61800-2 - 可调速电驱动系统 - 第 2 部分：一般要求 - 低压变频交流电源驱动系统等级规范。
电磁兼容性（EMC）标准	■ EN 61800-3 - 可调速电源驱动系统 - 第 3 部分：包括具体测试方法的 EMC 产品标准。 ■ 工业、科学和医疗（ISM）用射频设备 - 无线电干扰特性 - 极限值和测量方法。 ■ EN 61000-4-2 - 电磁兼容性（EMC）- 第 4 部分：试验和测量技术 - 第 2 节：静电放电抗扰度试验。 ■ EN 61000-4-3 - 电磁兼容性（EMC）- 第 4 部分：试验和测量技术 - 第 3 节：辐射、射频、电磁场抗扰度试验。 ■ EN 61000-4-4 - 电磁兼容性（EMC）- 第 4 部分：试验和测量技术 - 第 4 节：电快速瞬变/脉冲群抗扰度试验。 ■ EN 61000-4-5 - 电磁兼容性（EMC）- 第 4 部分：试验和测量技术 - 第 5 节：振落抗扰度试验。 ■ EN 61000-4-6 - 电磁兼容性（EMC）- 第 4 部分：试验和测量技术 - 第 6 节：传导骚扰抗干扰性，射频场感应。
机械施工标准	■ EN 60529 - 由附件提供的防护等级（IP代码）。 ■ UL 50 - 电气设备附件。 ■ IEC / EN 60721-3-3 - 环境条件的分类 - 第3部分：环境参数组及其严重程度的分类 -第3节：在3m4的受天气保护的位置固定使用。

13 认证

认证 (*)	备注
UL和cUL	E184430
CE	
IRAM	
C-Tick	
EAC	

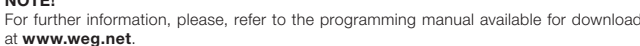
(*) 有关认证的更新信息，请联系WEG。

14 型号 CFW500 系列列表

表 5: CFW500系列型号列表及其主要电气参数

逆变器	输入相数	电源的额定电压	机座号	输出 电 流	定 额 电 机 功 率	推荐保险丝				断路器	电源线规格	接地线规格	动态制动			
						I²t [A²s]	电流 [A]	推荐的WEG aR保险丝	最大电流 (I _{sc}) [A]				推荐电阻器 [Ω]	制动电流 [A]	续流 DC+和BR电涌 峰值 mm² AWG	
[Vrms]	HD [Arms]	HD [HP/ kW]	[A]	WEG	mm² (AWG)	mm² (AWG)										
CFW500A01P6S2	1	[Vrms]	A	1.6	0.25/0.18	373	20 [Ⓐ]	FNH00-20K-A	5.5	MPW18-3-D063	1.5 (16)	2.5 (14)	动态制动不可用			
CFW500A02P6S2				2.6	0.5/0.37	373	20 [Ⓐ]	FNH00-20K-A	9.0	MPW18-3-U010	1.5 (16)	2.5 (14)				
CFW500A04P3S2				4.3	1/0.75	373	25 [Ⓐ]	FNH00-25K-A	13.5	MPW18-3-U016	1.5 (16)	2.5 (14)				
CFW500A07P0S2				7.0	2/1.5	800	40 [Ⓐ]	FNH00-40K-A	25	MPW40-3-U025	4.0 (12)	4.0 (12)	10	39	7	2.5 (14)
CFW500B07P3S2				7.3	2/1.5	450	40 [Ⓐ]	FNH00-40K-A	25	MPW40-3-U025	2.5 (14)	4.0 (12)				
CFW500B10P0S2	10			3/2.2	450	63 [Ⓐ]	FNH1-63K-A	32	MPW40-3-U032	4.0 (12)	4.0 (12)					
CFW500A01P6B2	1.6			0.25/0.18	680	20 [Ⓐ]	FNH00-20K-A	5.5/2.5 [Ⓐ]	MPW18-3-D063 / MPW18-3-D025 [Ⓐ]	1.5 (16)	2.5 (14)	动态制动不可用				
CFW500A02P6B2	2.6			0.5/0.37	680	20 [Ⓐ]	FNH00-20K-A	9.0/4.0 [Ⓐ]	MPW18-3-U010 / MPW18-3-U004 [Ⓐ]	1.5 (16)	2.5 (14)					
CFW500A04P3B2	4.3			1/0.75	680	25/20 [Ⓐ] Ⓐ	FNH00-25K-A / FNH00-20K-A [Ⓐ]	14/6.3 [Ⓐ]	MPW18-3-U016 / MPW18-3-D063 [Ⓐ]	1.5 (16)	2.5 (14)					
CFW500B07P3B2	7.3			2/1.5	450	40/20 [Ⓐ] Ⓐ	FNH00-40K-A / FNH00-20K-A [Ⓐ]	25/12 [Ⓐ]	MPW40-3-U025 / MPW18-3-U016 [Ⓐ]	2.5/1.5 (14/16) [Ⓐ]	4.0 (12)	10	39	7	2.5 (14)	
CFW500B10P0B2	10			3/2.2	450	63/25 [Ⓐ] Ⓐ	FNH1-63K-A / FNH00-25K-A [Ⓐ]	32/16 [Ⓐ]	MPW40-3-U032 / MPW18-3-U016 [Ⓐ]	4.0/2.5 (12/14) [Ⓐ]	4.0 (12)	15	27	11	2.5 (14)	
CFW500A07P0T2	7.0			2/1.5	680	20 [Ⓐ]	FNH00-20K-A	10	MPW18-3-U010	1.5 (16)	2.5 (14)	动态制动不可用				
CFW500A09P6T2	9.6			3/2.2	1250	25 [Ⓐ]	FNH00-25K-A	16	MPW18-3-U016	2.5 (14)	2.5 (14)					
CFW500B16P0T2	16			5/3.7	1000	40 [Ⓐ]	FNH00-40K-A	25	MPW40-3-U025	4.0 (12)	4.0 (12)	20	20	14	4.0 (12)	
CFW500C24P0T2	24			7.5/5.5	1000	63 [Ⓐ]	FNH00-63K-A	40	MPW40-3-U040	6.0 (10)	4.0 (12)	26	15	13	6.0 (10)	
CFW500D28P0T2	28		10/7.5	2750	63 [Ⓐ]	FNH00-63K-A	40	MPW40-3-U040	10 (8)	10 (8)	38	10	18	10 (8)		
CFW500D33P0T2	33		12.5/9.2	2750	80 [Ⓐ]	FNH00-80K-A	50	MPW65-3-U050	10 (8)	10 (8)	45	8.6	22	10 (8)		
CFW500D47P0T2	47		15/11	2750	100 [Ⓐ]	FNH00-100K-A	65	MPW65-3-U065	10 (8)	10 (8)	45	8.6	22	10 (8)		
CFW500E56P0T2	56		20/15	6600	125 [Ⓐ]	FNH00-125K-A	80	MPW80-3-U080	16 (6)	16 (6)	95	4.7	48	16 (6)		
CFW500A01P0T4	1.0		0.25/0.18	450	20 [Ⓐ]	FNH00-20K-A	1.6	MPW18-3-D016	1.5 (16)	2.5 (14)	动态制动不可用					
CFW500A01P6T4	1.6		0.5/0.37	450	20 [Ⓐ]	FNH00-20K-A	2.5	MPW18-3-D025	1.5 (16)	2.5 (14)						
CFW500A02P6T4	2.6		1.5/1.1	450	20 [Ⓐ]	FNH00-20K-A	4.0	MPW18-3-U004	1.5 (16)	2.5 (14)						
CFW500A04P3T4	4.3		2/1.5	450	20 [Ⓐ]	FNH00-20K-A	6.3	MPW18-3-D063	1.5 (16)	2.5 (14)	6	127	4.5	1.5 (16)		
CFW500A06P1T4	6.1		3/2.2	450	20 [Ⓐ]	FNH00-20K-A	10	MPW18-3-U010	1.5 (16)	2.5 (14)						
CFW500B02P6T4	2.6		1.5/1.1	450	20 [Ⓐ]	FNH00-20K-A	4.0	MPW18-3-U004	1.5 (16)	2.5 (14)						
CFW500B04P3T4	4.3		2/1.5	450	20 [Ⓐ]	FNH00-20K-A	6.3	MPW18-3-D063	1.5 (16)	2.5 (14)	6	127	4.5	1.5 (16)		
CFW500B06P5T4	6.5		3/2.2	450	20 [Ⓐ]	FNH00-20K-A	10	MPW18-3-U010	1.5 (16)	2.5 (14)	8	100	5.7	2.5 (14)		
CFW500B10P0T4	10		5/3.7	1000	25 [Ⓐ]	FNH00-25K-A	16	MPW18-3-U016	2.5 (14)	2.5 (14)	16	47	11.5	2.5 (14)		
CFW500C14P0T4	14		7.5/5.5	1000	35 [Ⓐ]	FNH00-35K-A	20	MPW40-3-U020	4.0 (12)	4.0 (12)	24	33	14	6.0 (10)		
CFW500C16P0T4	16		10/7.5	1000	35 [Ⓐ]	FNH00-35K-A	25	MPW40-3-U025	4.0 (12)	4.0 (12)	24	33	14	6.0 (10)		
CFW500D24P0T4	24		15/11	1800	60 [Ⓐ]	FNH00-63K-A	40	MPW65-3-U040	6.0 (10)	6.0 (10)	34	22	21	10 (8)		
CFW500D31P0T4	31		20/15	1800	60 [Ⓐ]	FNH00-63K-A	50	MPW65-3-U050	10 (8)	10 (8)	48	18	27	10 (8)		
CFW500E39P0T4	39		25/18.5	2100	80 [Ⓐ]	FNH00-80K-A	50	MPW65-3-U050	10 (8)	10 (8)	78	8.6	39	10 (8)		
CFW500E49P0T4	49		30/22	13000	100 [Ⓐ]	FNH00-100K-A	65	MPW65-3-U065	10 (8)	10 (8)	78	8.6	39	10 (8)		
CFW500C01P7T5	1.7		1/0.75	495	20 [Ⓐ]	FNH00-20K-A	2.5	MPW18-3-D025	1.5 (16)	2.5 (14)	1.2	825	0.6	1.5 (16)		
CFW500C03P0T5	3.0		2/1.5	495	20 [Ⓐ]	FNH00-20K-A	4	MPW18-3-U004	1.5 (16)	2.5 (14)	2.6	392	1.3	1.5 (16)		
CFW500C04P3T5	4.3		3/2.2	495	20 [Ⓐ]	FNH00-20K-A	6.3	MPW18-3-D063	1.5 (16)	2.5 (14)	4	249	2	1.5 (16)		
CFW500C07P0T5	7.0	5/3.7	495	20 [Ⓐ]	FNH00-20K-A	10	MPW18-3-U010	2.5 (14)	2.5 (14)	6	165	3	1.5 (16)			
CFW500C10P0T5	10	7.5/5.5	495	25 [Ⓐ]	FNH00-20K-A	16	MPW18-3-U016	2.5 (14)	2.5 (14)	9	110	4.5	1.5 (16)			
CFW500C12P0T5	12	10/7.5	495	25 [Ⓐ]	FNH00-20K-A	16	MPW18-3-U016	2.5 (14)	2.5 (14)	12.2	82	6.1	1.5 (16)			

 NOTE!
For further information, please, refer to the programming manual available for download at **www.weg.net**.



The diagram shows a blue Luer keypad with a monochrome display at the top. The keypad features several buttons: a 'BACK' button, a central 'ENTER' button with a four-way arrow, a 'LOCAL REMOTE' button with a blue 'C' icon, a 'JOG' button with a green 'G' icon, a 'STOP' button with a red 'O' icon, and a 'DECEL' button with a green 'I' icon. Arrows point from each button to a text box describing its function.

Buttons and their functions:

- BACK:**
 - When in the setting mode, **level 1:** press this key to return to the monitoring mode.
 - When in the setting mode, **level 2:** press this key to return to **level 1** of the setting mode.
 - When in the setting mode, **level 3:** press this key to cancel the new value (new value is not saved) and return to **level 2** of the setting mode.
- ENTER:**
 - When in the monitoring mode: press this key to increase the speed.
 - When in the setting mode, **level 1:** press this key to go to the previous group.
 - When in the setting mode, **level 2:** press this key to go to the next parameter.
 - When in the setting mode, **level 3:** press this key to increase the content of the parameter.
- LOCAL REMOTE:**
 - Press this key to define the motor rotation direction.
 - Active when: P0223 = 2 or 3 in LOC and/or P0226 = 2 or 3 in REM.
- JOG:**
 - Press this key to commute between LOCAL and REMOTE mode.
 - Active when: P0220 = 2 or 3.
- STOP:**
 - Press this key to accelerate the motor up to the speed set in P0122 within the time determined by the acceleration ramp. The motor speed is kept while the key is pressed. When the key is released, the motor decelerates within the time determined by the deceleration ramp, until it stops. This function is active when all the conditions below are met:
 1. Turn/Stop = Stop.
 2. Enable general = Active.
 3. P0225 = 1 in LOC and/or P0228 = 1 in REM.
- DECEL:**
 - When in the monitoring mode: press this key to enter the setting mode.
 - When in the setting mode, **level 1:** press this key to select the desired parameter group – it shows the parameter group selected.
 - When in the setting mode, **level 2:** press this key to show the parameter – it shows the content of the parameter in order to change the content.
 - When in the setting mode, **level 3:** press this key to save the new content of the parameter – it returns to **level 2** of the setting mode.
 - When in the monitoring mode: press this key to decrease the speed.
 - When in the setting mode, **level 1:** press this key to go to the next group.
 - When in the setting mode, **level 2:** press this key to go to the previous parameter.
 - When in the setting mode, **level 3:** press this key to decrease the content of the parameter.

Additional functions:

- Press this key to accelerate the motor within the time determined by the acceleration ramp. Active when: P0224 = 0 in LOC or P0227 = 0 in REM.**
- Press this key to decelerate the motor within the time determined by the deceleration ramp. Active when: P0224 = 0 in LOC or P0227 = 0 in REM.**

The diagram shows a rectangular LCD display with a black background and white text. The display is divided into several sections. At the top, there are two rows of text: "PARAM READ MODIF BASIC" and "LOC CONF REM SUB RUN". Below these, there are two large digital displays showing "8888:88". To the right of these displays, there are two rows of text: "VHV" and "HCP", and "TGP" and "TSP". Below these, there is a row of text: "VHV" and "HCP". At the bottom, there is a row of text: "STARTUP" and a bar graph. The bar graph has a scale from 0 to 50, with a red needle pointing to approximately 45. The needle is labeled "SP".

Labels and arrows pointing to the display:

- Menu (to select the parameter groups) - only one parameter group is shown at a time
- Main display
- Secondary indication
- Measurement unit (it refers to the value of the main indication)
- Bar graph

Monitoring Mode

- It is the initial status of the HMI after the powering, up and of the initialization screen, with default values
- The field Menu is not active in this mode
- The main display, secondary display and bar graph indicate the values of three parameters predefined by P0205, P0206 and P0207
- From the monitoring mode, when you press the key **ENTER/MENU** you commute to the setting mode

Setting Mode

Level 1:

- This is the first level of the setting mode. It is possible to choose the parameter group using the keys **▲** and **▼**
- The main display, secondary display, bar graph and measurement units are not shown
- Press the key **ENTER/MENU** to go to level 2 of the setting mode - parameter selection
- Press the key **BACK/ESC** to return to the monitoring mode

Level 2:

- The number of the parameter is shown on the main display and its content on the secondary display
- Use the keys **▲** and **▼** to find the desired parameter
- Press the key **ENTER/MENU** to go to level 3 of the setting mode - modification of the parameter content
- Press the key **BACK/ESC** to return to level 1 of the setting mode

Level 3:

- The content of the parameter is shown on the main display and the number of the parameter is shown on the secondary display
- Use the keys **▲** and **▼** to configure the new value for the selected parameter
- Press the key **ENTER/MENU** to confirm the modification (save the new value) or **BACK/ESC** to cancel the modification (not save the new value). In both cases, the HMI returns to level 2 of the setting mode

```

graph TD
    Monitoring[Monitoring] -- "Enter Menu" --> Level1[Setting Level 1]
    Level1 -- "Enter Menu" --> Level2[Setting Level 2]
    Level1 -- "Back Esc" --> Monitoring
    Level2 -- "Enter Menu" --> Level3[Setting Level 3]
    Level2 -- "Back Esc" --> Monitoring
    Level3 -- "Enter Menu" --> Level2
    Level3 -- "Back Esc" --> Monitoring
  
```

NOTE!
ro = read only parameter.
V/f = parameter available in V/f mode.
cfg = configuration parameter, value can only be changed with the motor stopped.
VWV = parameter available in VWV mode.
VWV PM = parameter available in VWV PM mode.
Vector = parameter available in vector mode.
Sless = parameter available only in sensorless mode.
Enc = parameter available only in vector mode with encoder.

Param.	Description	Adjustable Range	Factory Setting	Propor.	Groups
P0000	Access to Parameters	0 to 9999	0		
P0001	Speed Reference	0 to 65535		ro	READ
P0002	Output Speed (Motor)	0 to 65535		ro	READ
P0003	Motor Current	0.0 to 200.0 A		ro	READ
P0004	DC Link Voltage (Ud)	0 to 2000 V		ro	READ
P0005	Output Frequency (Motor)	0.0 to 500.0 Hz		ro	READ
P0006	Inverter Status	0 = Ready 1 = Run 2 = Undervoltage 3 = Fault	4 = Self-Tuning 5 = Configuration 6 = DC-Braking 7 = Sleep Mode	ro	READ
P0007	Output Voltage	0 to 2000 V		ro	READ
P0010	Output Power	0.0 to 6553.5 kW		ro	READ
P0011	Power Factor	-1.00 to 1.00		ro	READ
P0012	Dl8 to Dl1 Status	Bit 0 = Dl1 Bit 1 = Dl2 Bit 2 = Dl3 Bit 3 = Dl4	Bit 4 = Dl5 Bit 5 = Dl6 Bit 6 = Dl7 Bit 7 = Dl8	ro	READ, I/O
P0013	D05 to D01 Status	Bit 0 = D01 Bit 1 = D02 Bit 2 = D03	Bit 3 = D04 Bit 4 = D05	ro	READ, I/O
P0022	Fl Hz Value	0 to 20000 Hz		ro	READ, I/O
P0023	Main SW Version	0.00 to 655.35		ro	READ
P0030	Heating Temperature	-20 to 150 °C		ro	READ
P0037	Motor Overload lxt	0 to 100 %		ro	READ
P0047	CONF Status	0 to 999		ro	READ
P0048	Present Alarm	0 to 999		ro	READ
P0049	Present Fault	0 to 999		ro	READ
P0050	Last Fault	0 to 999		ro	READ
P0100	Acceleration Time	0.1 to 999.0 s	10.0 s		BASIC
P0101	Deceleration Time	0.1 to 999.0 s	10.0 s		BASIC
P0120	Speed Ref. Backup	0 = Inactive 1 = Active 2 = Backup por P0121	1		
P0121	Keypad Reference	0.0 to 500.0 Hz	3.0 Hz		
P0131	Minimum Speed	0.0 to 500.0 Hz	3.0 Hz		BASIC
P0134	Maximum Speed	0.0 to 500.0 Hz	66.0 (55.0) Hz		BASIC
P0135	Max. Output Current	0.0 to 200.0 A	1.5 x I _{nom}	V/f, VVW, VVW PM	BASIC, MOTOR
P0136	Manual Torque Boost	0.0 to 30.0 %	According to inverter model	V/f, VVW PM	BASIC, MOTOR
P0156	Overload Current 100 %	0.0 to 200.0 A	1.1 x I _{nom}		
P0157	Overload Current 50 %	0.0 to 200.0 A	1.0 x I _{nom}		
P0158	Overload Current 5 %	0.0 to 200.0 A	0.8 x I _{nom}		
P0202	Type of Control	0 = V/f 1 and 2 = Not Used 3 = Sensorless 4 = Encoder	5 = VVW 6 and 7 = Not Used 8 = VVW PM	0	cfg
P0204	Load/Save Parameters	0 to 4 = Not Used 5 = Load WEG 60 Hz 6 = Load WEG 50 Hz 7 = Load User 1 8 = Load User 2	9 = Save User 1 10 = Save User 2 11 = Load Default SoftPLC 12 to 15 = Reserved	0	cfg
P0220	LOC/REM Selection Src	0 = Always Local 1 = Always Remote 2 = HMI Key (LOC) 3 = HMI Key (REM) 4 = Dlx 5 = Serial/USB (LOC)	6 = Serial/USB (REM) 7 and 8 = Not Used 9 = CO/DN/PB/Eth (LOC) 10 = CO/DN/PB/Eth (REM) 11 = SoftPLC	2	cfg
P0221	LOC Reference Sel.	0 = HMI Keys 1 = A1 2 = A2 3 = A3 4 = Fl 5 = A1 + A2 > 0 6 = A1 + A2 7 = E.P. 8 = Multispeed	9 = Serial/USB 10 = Not Used 11 = CO/DN/PB/Eth 12 = SoftPLC 13 = Not Used 14 = A1 > 0 15 = A2 > 0 16 = A3 > 0 17 = Fl > 0	0	cfg
P0222	REM Reference Sel.	See options in P0221		1	cfg
P0223	LOC FWD/REV Selection	0 = Clockwise 1 = Counterclockwise 2 = HMI Key (H) 3 = HMI Keys (AH) 4 = Dlx 5 = Serial/USB (H)	6 = Serial/USB (AH) 7 and 8 = Not Used 9 = CO/DN/PB/Eth (H) 10 = CO/DN/PB/Eth (AH) 11 = Not Used 12 = SoftPLC	2	cfg
P0224	LOC Run/Stop Selection	0 = HMI Keys 1 = Dlx 2 = Serial/USB	3 = Not Used 4 = CO/DN/PB/Eth 5 = SoftPLC	0	cfg
P0225	LOC JOG Selection	0 = Disable 1 = HMI Keys 2 = Dlx 3 = Serial/USB	4 = Not Used 5 = CO/DN/PB/Eth 6 = SoftPLC	1	cfg
P0226	REM Rotation Selection	See options in P0223		4	cfg
P0227	REM Run/Stop Selection	0 = Tecla HMI 1 = Dlx 2 = Serial/USB	3 = Not Used 4 = CO/DN/PB/Eth 5 = SoftPLC	1	cfg
P0228	REM JOG Selection	See options in P0225		2	cfg
P0263	Dl1 Function	0 = Not Used 1 = Run/Stop 2 = General Enable 3 = Quick Stop 4 = Forward Run 5 = Reverse Run 6 = Start 7 = Stop 8 = Clockwise Rotation Dr. 9 = LOC/REM 10 = JOG 11 = Accelerate E.P. 12 = Decelerate E.P. 13 = Multispeed 14 = 2 nd Ramp 15 to 17 = Not Used 18 = No Ext. Alarm 19 = No Ext. Fault 20 = Reset 21 = SoftPLC 22 = PID Man/Auto 23 = Not Used	24 = Disab.Flying Start 25 = DC Link Regulator 26 = Lock Prog. 27 = Load User 1 28 = Load User 2 29 = PTC 30 and 31 = Not Used 32 = 2 nd Ramp Multispeed 33 = 2 nd Ramp E.P. Ac. 34 = 2 nd Ramp E.P. De. 35 = 2 nd Ramp FWD Run 36 = 2 nd Ramp Rev Run 37 = Turn ON / Ac. E.P. 38 = De. E.P. / Turn OFF 39 = Function 1 Application 40 = Function 2 Application 41 = Function 3 Application 42 = Function 4 Application 43 = Function 5 Application 44 = Function 6 Application 45 = Function 7 Application 46 = Function 8 Application	1	cfg
P0264	Dl2 Function	See Options in P0263		8	cfg
P0265	Dl3 Function	See Options in P0263		20	cfg
P0266	Dl4 Function	See Options in P0263		10	cfg
P0267	Dl5 Function	See Options in P0263		0	cfg
P0268	Dl6 Function	See Options in P0263		0	cfg
P0269	Dl7 Function	See Options in P0263		0	cfg
P0270	Dl8 Function	See Options in P0263		0	cfg
P0295	Inverter Rated Current	0.0 to 200.0 A	According to inverter model	ro	READ
P0296	Line Rated Voltage	0 = 200 - 240 V 1 = 380 V 2 = 400 - 415 V 3 = 440 - 460 V	4 = 480 V 5 = 500 - 525 V 6 = 550 - 575 V 7 = 600 V	According to inverter model	ro, cfg
P0297	Switching Frequency	2500 to 15000 Hz	5000 Hz	cfg	
P0401	Motor Rated Current	0.0 to 200.0 A	1.0 x I _{nom}	cfg	MOTOR, STARTUP
P0402	Motor Rated Speed	0 to 30000 rpm	1710 (1425) rpm	cfg	MOTOR, STARTUP
P0403	Motor Rated Frequency	0 to 500 Hz	60 (50) Hz	cfg	MOTOR, STARTUP

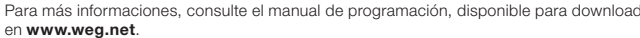
Fault / Alarm	Description	Possible Causes
A0046 Motor Overload	Motor overload alarm	■ Settings of P0156, P0157, and P0158 are too low for the used motor ■ Overload on the motor shaft
A0050 Power Module Overtemperature	Overtemperature alarm from the power module temperature sensor (NTC)	■ High ambient temperature around the inverter (> 50 °C (> 122 °F)) and high DC-link current ■ Blocked or defective fan ■ Heatsink is too dirty, preventing the air flow ■ Wiring on DI1 to DI8 inputs are open or have poor contact
A0090 External Alarm	External alarm via DIx (option "No External Alarm" in P0208x)	■ Check if the communication interface with the HMI is properly configured in parameter P0312 ■ HMI cable disconnected
F0021 Communication Fault with Remote HMI	No communication with remote HMI, but there is no speed command or reference for this source	■ Check if the communication interface with the HMI is properly configured in parameter P0312 ■ HMI cable disconnected
F0021 Undervoltage on the DC Link	Undervoltage fault on the intermediate circuit	■ Wrong voltage supply; check if the data on the inverter label comply with the power supply and parameter P0296 ■ Supply voltage is too low, producing voltage on the DC link below the minimum value (in P0034): Ud < 200 Vdc in 200-240 Vac (P0296 = 0) Ud < 360 Vdc in 380-480 Vac (P0296 = 1) Ud < 500 Vdc in 500-600 Vac (P0296 = 2) ■ Phase fault in the input ■ Fault in the pre-charge circuit
F0022 Overvoltage on the DC Link	Overvoltage fault on the intermediate circuit	■ Wrong voltage supply; check if the data on the inverter label comply with the power supply and parameter P0296 ■ Supply voltage is too high, producing voltage on the DC link above the maximum value (in P0034): Ud > 410 Vdc in 200-240 Vac (P0296 = 0) Ud > 610 Vdc in 380-480 Vac (P0296 = 1) Ud > 1000 Vdc in 500-600 Vac (P0296 = 2) ■ Load inertia is too high or deceleration ramp is too fast ■ P0151, P0153 or P0185 setting is too high
F0031 Communication Fault with Plug-In Module	Main control cannot set a communication link with the Plug-In module	■ Plug-In module is damaged ■ Plug-In module is not properly connected ■ Problem in the identification of the Plug-In module; refer to P0027 for further information
F0051 IGBTs Overtemperature	Overtemperature fault measured on the temperature sensor of the power pack	■ High ambient temperature around the inverter (>50 °C (>122 °F)) and high output current ■ Blocked or defective fan ■ Heatsink is too dirty, preventing the air flow ■ Short- circuit between two motor phases ■ Short- circuit of the rheostatic braking resistor connecting cables ■ IGBTs module in short- circuit or damaged ■ Start with too short acceleration ramp ■ Start with motor spinning without the flying-start function
F0070 Overcurrent/Short-Circuit	Overcurrent or short-circuit on the output, DC link or braking resistor	■ Short- circuit between two motor phases ■ Short- circuit of the rheostatic braking resistor connecting cables ■ IGBTs module in short- circuit or damaged ■ Start with too short acceleration ramp ■ Start with motor spinning without the flying-start function
F0072 Motor Overload	Motor overload fault (60 s in 1.5xI _{nom})	■ P0156, P0157 and P0158 setting is too low in relation to the motor operating current ■ Overload on the motor shaft
F0080 CPU Fault (Watchdog)	Fault related to the supervision algorithm of the inverter main CPU	■ Electric noise ■ Inverter firmware fault
F0084 Auto-Diagnosis Fault	Fault related to the automatic identification algorithm of the inverter hardware and Plug-In module	■ Poor contact in the connection between the main control and the power pack ■ Hardware not compatible with the firmware version ■ Defect on the internal circuits of the inverter ■ Wiring on DI1 to DI8 inputs are open or have poor contact
F0091 External Alarm	External fault via DIx ("No External Alarm" in P0208x)	■ Check if the communication interface with the HMI is properly configured in parameter P0312 ■ HMI cable disconnected
F0700 Remote HMI Communication Fault	No communication with remote HMI, but there is speed command or reference for this source	■ Check if the communication interface with the HMI is properly configured in parameter P0312 ■ HMI cable disconnected

The CFW500 is configured at the factory by setting its parameters so as to define the logical command and the speed reference in both LOCAL and REMOTE operating modes. This default setting can be restored by means of P0204 for both motors 60Hz and 50Hz (P0204 = 5 or 6).

In the LOCAL mode, the command and reference are directed to the HMI of the CFW500, allowing the commands Run/Stop, JOG and Direction of Rotation of the motor. In addition to these commands, the HMI keypad can also be used to select the LOCAL or REMOTE mode. The speed reference can be set in P0121 or by means of the  and  keys of the HMI in the monitoring mode.

In the REMOTE mode, the speed reference and command are directed to the product terminals; DI1 executes Run/Stop and DI2 the Direction of Rotation. The reference is executed by analog input AI1 in this mode.

15219001



Presione esta tecla para acelerar el motor hasta la velocidad ajustada en P0122 por el tiempo determinado por la rampa de aceleración. La velocidad del motor es mantenida mientras la tecla es presionada. Cuando la tecla es liberada, el motor es desacelerado durante el tiempo determinado por la rampa de desaceleración, hasta su parada. Esta función esta activa cuando todas las condiciones abajo sean cumplidas:

1. Gira/Para = Para.
2. Habilita General = Activo.
3. P0225 = 1 en LOC y/o P0228 = 1 en REM.

V/f = parámetro disponible en modo V/f.
 cfg = parámetro de configuración, solamente puede ser alterado con el motor parado.
 VVW = parámetro disponible en modo VVW.
 VVW PM = parámetro disponible en modo VVW PM.
 Vectorial = parámetro disponible en el modo vectorial.
 Sless = parámetro disponible solo en modo sensorless.
 Enc = parámetro disponible solo en modo vectorial con encoder.

Falla / Alarma	Descripción	Causas Probables
A0046 Carga Alta en el Motor	Alarma de sobrecarga en el motor	■ Ajuste de P0156, P0157 y P0158 con valor bajo para el motor utilizado ■ Carga alta en el eje del motor
A0050 Temperatura Elevada en el Módulo de Potencia	Alarma de temperatura elevada medida en el sensor de temperatura (NTC) del módulo de potencia	■ Temperatura ambiente al rededor del convertidor alta (> 50 °C) y corriente de salida elevada ■ Ventilador bloqueado o defectuoso ■ Disipador muy sucio, impidiendo el flujo de aire ■ Cableado en las entradas D11 a D18 abierta o con mal contacto
A0090 Alarma Externa	Alarma externa vía Dlx (opción "Sin Alarma Externa" en P026x)	
A0700 Falla en la Comunicación con HMI Remota	Sin comunicación con HMI remota, no obstante, no hay comando o referencia de velocidad para esta fuente	■ Verifique que la interfaz de comunicación con HMI esté configurada correctamente en el parámetro P0312 ■ Cable de la HMI desconectado
F0021 Subtensión en el Link DC	Falla de subtensión en el circuito intermedio	■ Tensión de alimentación incorrecta, verifique que los datos en la etiqueta del convertidor estén de acuerdo con la red de alimentación y el parámetro P0296 ■ Tensión de alimentación muy baja, ocasionando tensión en el Link DC menor que el valor mínimo (en P0004): Ud < 200 Vcc en 200-240 Vca (P0296 = 0) Ud < 360 Vcc en 380-480 Vca (P0296 = 0) Ud < 500 Vcc en 500-600 Vca (P0296 = 2) ■ Falta de fase en la entrada ■ Falta en el circuito de precarga
F0022 Sobretensión Link DC	Falla de sobretensión en el circuito intermedio	■ Tensión de alimentación incorrecta, verifique que los datos en la etiqueta del convertidor estén de acuerdo con la red de alimentación y el parámetro P0296 ■ Tensión de alimentación muy alta, resultando en una tensión en el Link DC mayor que el valor máximo (en P0004): Ud > 410 Vcc en 200-240 Vca (P0296 = 0) Ud > 810 Vcc en 380-480 Vca (P0296 = 1) Ud > 1000 Vcc en 500-600 Vca (P0296 = 2) ■ Inercia de carga muy alta o rampa de desaceleración muy rápida ■ Ajuste de P0151, P0153 o P0185 muy alto
F0031 Falla de Comunicación con Módulo Plug-in	Control principal no logra establecer el Link de comunicación con el módulo plug-in	■ Módulo plug-in dañado ■ Módulo plug-in mal conectado ■ Problema de identificación del módulo plug-in, consulte P0027
F0051 Sobretemperatura en los IGBTs	Falla de sobretemperatura medida en el sensor de temperatura (NTC) del módulo de potencia	■ Temperatura ambiente alrededor del convertidor alta (> 50 °C) y corriente de salida elevada ■ Ventilador bloqueado o defectuoso ■ Disipador muy sucio, impidiendo el flujo de aire
F0070 Sobrecorriente/ Cortocircuito	Sobrecorriente o cortocircuito en la salida, Link DC o resistor de frenado	■ Cortocircuito entre dos fases del motor ■ Cortocircuito de los cables de conexión del resistor de frenado reóstático ■ Módulo de IGBTs en corto o dañado ■ Arranque con rampa de aceleración muy corta ■ Arranque con motor girando sin la función Flying Start
F0072 Sobrecarga en el Motor	Falla de Sobrecarga en el motor (60 s en 1,5 x Inom)	■ Ajuste de P0156, P0157 y P0158 muy bajo en relación a la corriente de operación del motor ■ Carga en el eje del motor muy alta
F0080 Falla en la CPU (Watchdog)	Falla relativa al algoritmo de supervisión de la CPU principal del convertidor	■ Ruido eléctrico ■ Falta en el firmware del convertidor
F0084 Falla de Autodiagnosis	Falla relativa al algoritmo de identificación automática del hardware del convertidor y módulo plug-in	■ Mal contacto en las conexiones entre el control principal y el módulo de potencia ■ Hardware no compatible con la versión de firmware ■ Defecto en los circuitos internos del convertidor
F0091 Falla Externa	Falla externa vía Dlx (opción "Sin Falla Externa" en P026x)	■ Cableado en las entradas D11 a D18 abierta o con mal contacto
F0700 Falla en la Comunicación con HMI Remota	Sin comunicación con HMI remota, no obstante, hay comando o referencia de velocidad para esta fuente	■ Verifique si la interfaz de comunicación con HMI está configurada correctamente en el parámetro P0312 ■ Cable de la HMI desconectado

Pressione esta tecla para acelerar o motor até a velocidade ajustada em P0122 pelo tempo determinado pela rampa de aceleração. A velocidade do motor é mantida enquanto a tecla é pressionada. Quando a tecla é liberada, o motor é desacelerado durante o tempo determinado pela rampa de desaceleração, até a sua parada. Esta função está ativa quando todas as condições abaixo forem satisfeitas:

1. Gira/Para = Para.
2. Habilita Geral = Ativo.
3. P0225 = 1 em LOC e/ou P0228 = 1 em REM.

NOTA!
 ro = parâmetro somente leitura.
 V/f = parâmetro disponível em modo V/f.
 cfg = parâmetro de configuração, somente pode ser alterado com o motor parado.
 VVW = parâmetro disponível em modo VVW.
 VVW PM = parâmetro disponível em modo VVW PM.
 Vetorial = parâmetro disponível em modo vetorial.
 Sless = parâmetro disponível apenas em modo sensorless.
 Enc = parâmetro disponível apenas em modo vetorial com encoder.

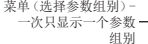


語

15219001

按下此键,将电机速度在加速转速决定的时间内加速至P0122中设置的速度值。按下该键时,电机速度保持不变。放松该键时,电机在减速转速决定的时间内减速,直至停止。当以下所有条件都满足时,该功能被启动。

1. 转/停止 = 停止。
2. 常规启用 = 启动
3. P0225 =LOC 和/或P0228中的1= REM的1。



監視器

注意!

ro = 只读参数。

V/f = V/f 模式下可用参数。

cfg = 配置参数, 数值只能在电机停止后更改。

VVV = VVV模式中的可用参数。

矢量 = 矢量模式中的可用参数。

Sless = 仅是无传感器模式中的可用参数。

Enc = 含编码器矢量模式中的可用参数。

读取

在本地模式中，指令和参考指向CFW5000的IMI，允许指令 运行/停止、JOG和电机旋转方向。除了这些指令，IMI键盘还可以用于选择本地或远程模式。可在P0121或通过监控模式下的IMI 和 两个键设置速度参考值。

在远程模式中，速度参考值和指令指向产品终端：DI1执行 运行/停止，DI2执行 旋转方向。参考值由该模式中的模拟输入AI1执行。

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