

**CFW-09HD LINE
DC LINK
POWER SUPPLY**



CFW-09HD Line
Addendum to the
CFW-09 Manual

CFW-09HD Line

I. GENERAL INFORMATION

This addendum has information about the CFW-09HD line variable frequency drive with DC link power supply.

1. CFW-09 DC LINK POWER SUPPLY – HD LINE

- The CFW-09HD line of variable frequency drives with DC link power supply has the same characteristics in terms of mechanical installation, functions, programming and performance as the standard CFW-09 line.
- Up to size 5, it is not necessary to use an HD for a DC link power supply. Just supply a standard drive by the DC link with an external pre-charge circuit.
- Models sizes 6 and up, have a pre-charge circuit and internal modifications.

2. SIMPLIFIED CFW-09HD BLOCK DIAGRAM

Figure 1 presents the simplified CFW-09HD block diagram, for sizes 6 and up.

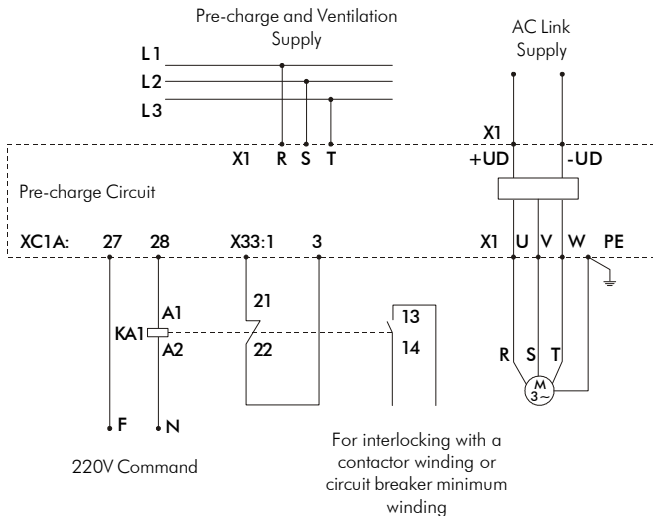


Figure 1 – Simplified CFW-09HD block diagram

- The XC1A connector is located in the control card and the X33 terminal is near the X1 power connection terminal.
- KA1 is an external auxiliary contactor.
- For sizes 1 to 5, it is necessary to design the pre-charge circuit correctly. The contactor is commanded via CC9 card (see figure 2). For further information contact WEG.

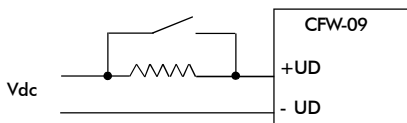


Figure 2 – External pre-charge circuit (sizes 1 to 5)

3. ELECTRICAL INSTALLATION

All the information related to power connection/grounding, wire cross sections and voltage selection that appears in the CFW-09 manual is valid for the CFW-09HD.

CFW-09HD terminal connections are mechanically similar to those of the CFW-09 line, however, the identifications and uses are different (figure 3).

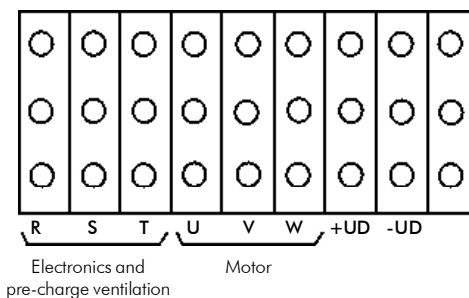


Figure 3 - Typical CFW-09HD terminal

- X1 Power connection terminals: R and S are used for the supply of the pre-charge and ventilation;
- Preferably, also supply the T phase, for a faster pre-charge;
- Power supplies R, S and T must be in: 380V, 440V or 480V in 50/60Hz;
- For the 500V - 600V and 660V - 690V models, the supply voltage for the pre-charge/ventilation/electronics must always be compatible with the motor voltage, except for the drives bigger than 500HP, and supplied by the DC link. In that case the supply voltage is always biphasic 380V. Refer to the specific manual.
- Supply the motor in the X1 terminals: U, V and W;
- Supply the DC link in the X1 terminals: + UD and -UD;
- For sizes 1 to 7, X1 terminal: BR is used for rheostatic braking.

NOTE!

In the 200V and 400V lines it is indispensable to select the internal command transformer tap of the drive. This is set in the LVS1 card for currents up to 142A. Above this current the tap must be set in the CIP2 card.



The pre-charge relay connections are shown in greater detail in figure 4.

The internal pre-charge auxiliary contactor of the CFW-09HD is started by the external auxiliary contactor and supplied internally in 220V. This 220V supply is galvanically isolated and also serves to supply the fans. As the internal transformer is not dimensioned to supply another load, it is necessary to use another external isolated 220V power supply to command the main contactor and the external auxiliary contactor.

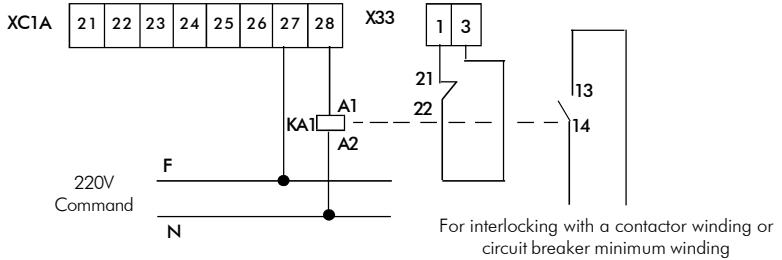


Figure 4 – Pre-charge command connections (XC1A Connector of the CC9)

NOTE!

If the internal pre-charge is used, and consequently the connection described in figure 4, parameter P277 must be programmed as pre-charge (P277=24).

3.1 POWER WIRING AND FUSES

Rated Current of the Drive [A]		Power Wiring [mm ²]		Ultra-fast fuse for semiconductor protection [A]	I ² t of the fuse [A ² s] @25°C
CT/VT	VT	CT/VT	VT		
3.6	-	1.5	-	15	18
4.0	-	1.5	-	15	18
5.5	-	1.5	-	25	125
6.0	-	2.5	-	25	70
7.0	-	2.5	-	35	130
9.0	-	2.5	-	35	125
10	-	2.5	-	35	130
13	-	2.5	-	50	240
16	-	4	-	50	240
24	-	6	-	63	760
28	-	2X2.5	-	80	920
30	36	10	16	80	1190
38	45	16	16	80	1710
45	-	16	-	100	2300
220-230V	-	16	-	100	2300

CT – Constant Torque

VT – Variable Torque

Table 1 - Recommended Wiring/Fuses

Rated Current of the Drive [A]		Power Wiring [mm ²]		Ultra-fast fuse for semiconductor protection [A]	I ² t of the fuse [A ² s] @25°C
CT/VT	VT	CT/VT	VT		
45 380-480V	54 380-480V	16	2X6	100	1710
54	68	2X16	2X10	125	4800
60	70	25	35	125	860
70	86	35	2X16	200	8450
86 220-230V	105 220-230V	2X16	70	250	16900
86 380-480V	105 380-480V	50	70	250	3570
105	130	70	95	350	9600
130	150	95	120	350	9600
142	174	95	2X50	350	5130
180	-	2X50	-	350	13800
240	-	2X70	-	450	38000
361	-	2X150	-	700	38000
450	-	2X240	-	900	57000
600	-	3X185	-	1250	76000
211/380-480V	-	120	-	450	38000
312/380-480V	-	240	-	700	3800
515/380-480V	-	2X185	-	1250	76000
107/500-690	147/500-690	50	70	350	9600
147/500-690	196/500-690	70	120	350	13800
211/500-690	-	120	-	450	38000
247/500-690	315/500-690	150	240	450	38000
315/500-690	343/500-690	240	2X70	700	38000
343/500-690	418/500-690	2X70	2X120	900	57000
418/500-690	472/500-690	2X120	2X150	900	57000
472/500-690	555/500-690	2X150	2X240	1250	76000
100/660-690	127/660-690	35	50	350	9600
127/660-690	179/660-690	50	95	350	5130
179/660-690	-	95	-	350	13800
225/660-690	259/660-690	120	2X50	450	38000
259/660-690	350/660-690	2X50	2X70	700	38000
305/660-690	340/660-690	2X70	2X95	700	38000
340/660-690	428/660-690	2X95	2X120	900	57000
428/660-690	-	2X120	-	900	57000

CT – Constant Torque

VT – Variable Torque

Table 1 (cont.) - Recommended Wiring/Fuses



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