



**ADDENDUM TO THE CFW-09  
FREQUENCY INVERTER  
MANUAL  
SHARK NEMA 4X**

07/2003

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**Series: CFW-09**

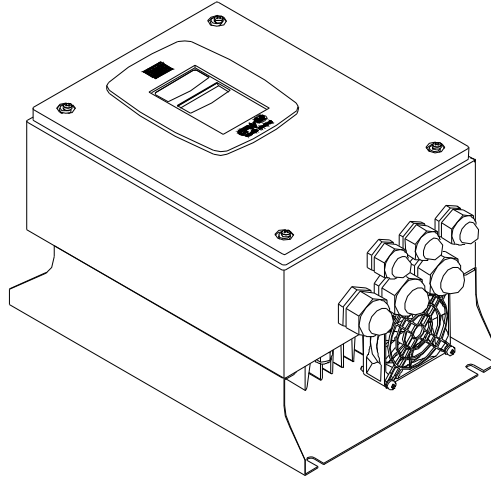
**Software Version: 2.4X**

**Manual Number/Revision:**

0899.4570 E/3

## 8.15 CFW-09 SHARK NEMA 4X

In applications that need a Drive with a higher protection enclosure, the CFW-09 SHARK NEMA 4X is indicated. The NEMA 4X provides protection against dust, dirt and splashing or hose-directed water.



The SHARK NEMA 4X is the CFW-09 standard with a stainless steel enclosure. The models are:

CFW 09 0006 T 2223	Size 1 *
CFW 09 0007 T 2223	
CFW 09 0010 T 2223	
CFW 09 0016 T 2223	Size 2 *
CFW 09 0003 T 3848	Size 1 *
CFW 09 0004 T 3848	
CFW 09 0005 T 3848	
CFW 09 0009 T 3848	Size 2 *
CFW 09 0013 T 3848	
CFW 09 0016 T 3848	

\* The Shark Drive dimensions are distinct from the standard CFW-09 Drive, so, the Sizes 1 and 2 from the Shark Drive are different from the Sizes 1 and 2 of the standard CFW-09.

### 8.15.1 Enclosure specifications

NEMA Type 4X indoors;  
NEMA Type 12 indoors;  
IP 56;  
Other specifications are same to the standard CFW-09 and are explained along this manual.

### 8.15.2 Mechanical installation

The Drive comes covered by a plastic film. Remove this sheet before starting the installation.  
Install the drive in an environment that does not exceed Type 4 / 4X / 12 limitations.  
Install the Drive on a flat surface, in the vertical position;  
External dimensions and mounting holes are according to figures 1 and 2.

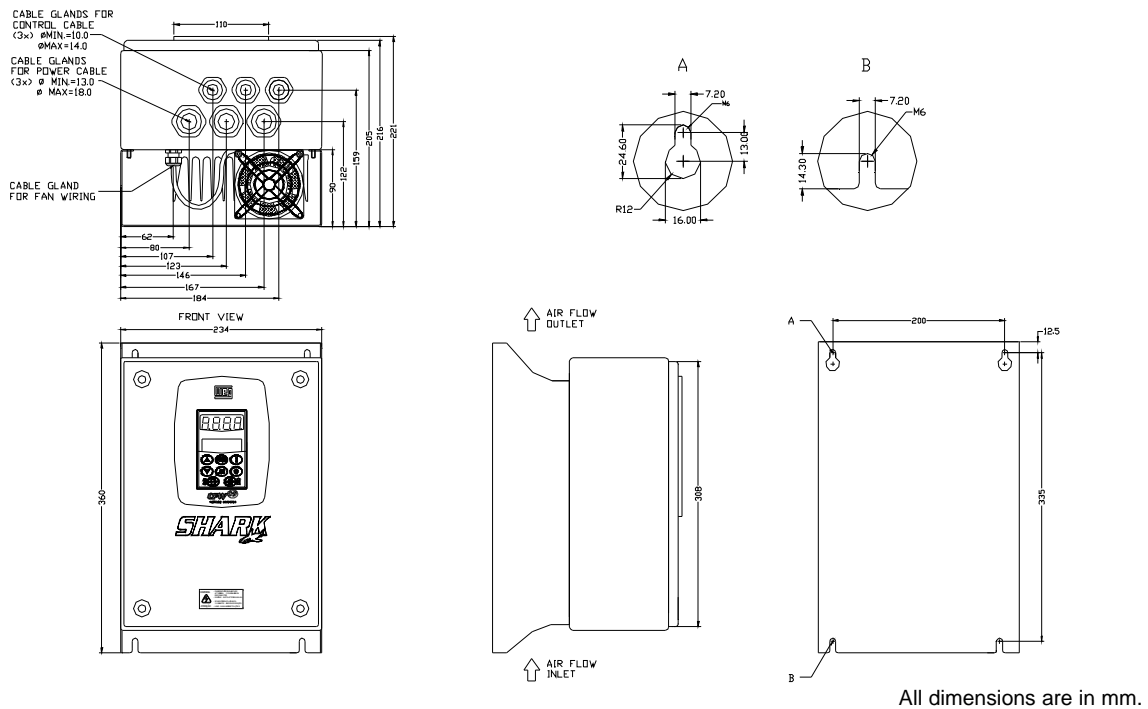


Figure 01 - Mechanical data – Size 1.

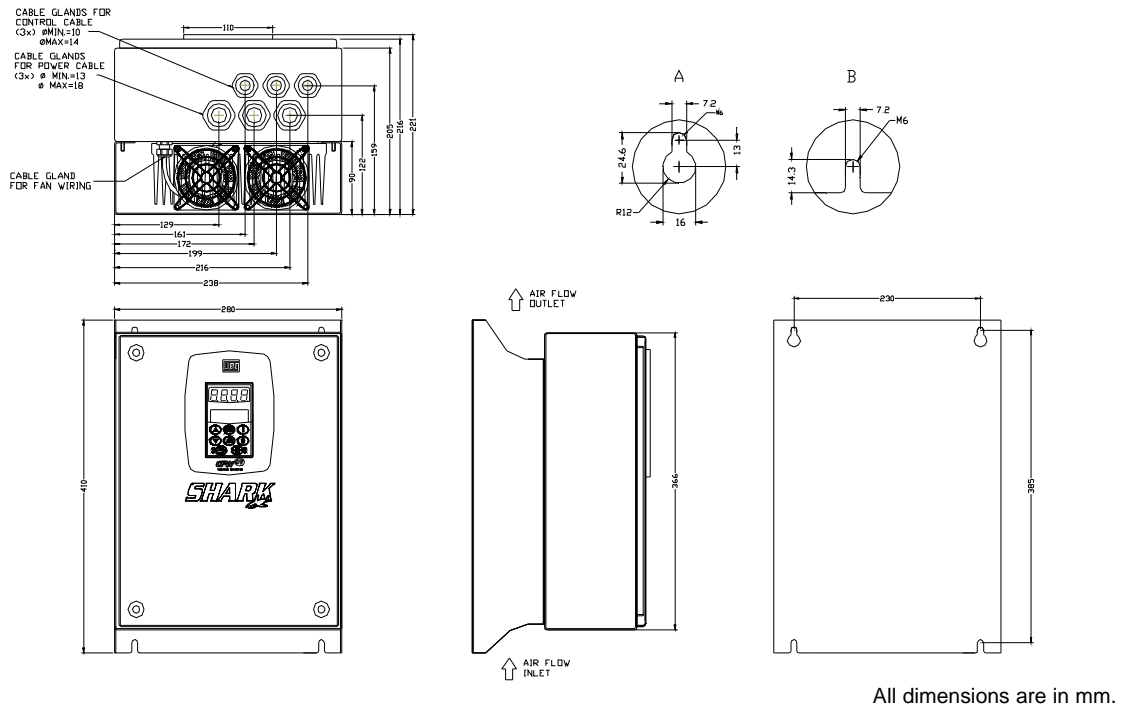


Figure 2 - Mechanical data – Size 2.

### 8.15.3 Electrical installation

The electrical installation is the same as CFW-09 standard. Refer to Chapter 3, item 3.2 to make a correct electrical installation.



#### **NOTE!**

To assure the NEMA 4X total protection, it is necessary to use correct cables. It is recommended to use armored multi-core cables. For example, one tetra-polar armored cable for Power supply (R,S,T) plus grounding, and another tetra-polar armored cable for output (motor) connection.

The wire sizing and fuses are presented in table 3.5, Chapter 3.



*Figure 3 - Tetra-polar armored cable.*

The control and power wiring access to the Drive is through the cable glands. All the cable glands come with a gasket inside. To make the electrical installation it is necessary to remove the gasket from the cable gland and then pass the armored multi-core cable in the cable gland.

After doing the electrical connection and arrange the cables properly, tight the cable glands to assure that the cable is very strongly fastened. The recommended torque is 2N.m (0.2kgf.m).

The control wiring has to be made by armored multi-core cables too. It is necessary to use this type of cables to guarantee total closing after cable glands tightening. Check the maximum and minimum diameter of the cables supported by the Cable Glands in figures 1 and 2.

### 8.15.4 Closing the Drive

To guarantee NEMA 4X degree of protection, it is very important to close correctly the Drive after doing the electrical installation. Please follow these instructions:

After the electrical installation is completed and the cable glands tightened, close the frontal cover (certify that the flat cable that interconnects the HMI to the control card is correctly connected) by tightening each screw a little at a time, until total tightening.

The gaskets provide the protection of the electronic parts of the SHARK drive. Any problem with them can cause problems with the protection degree. Opening and closing the drive many times reduces the gaskets lifetime. It is recommended to do this no more than 20 times. If problems are detected on the gaskets, we recommend changing the failed gasket immediately.

Certify that the door gasket is on its correct position at the moment you will close the Drive.

Certify that the door screw gaskets are perfect on the moment you are ready to close the drive.

All these recommendations are very important to become a successful installation.

**NOTE!**



Do not remove the gaskets inside the cable glands, which were not used. They are necessary to guarantee NEMA 4X protection.

8.15.5 How to specify

To specify a NEMA 4X Drive, it is necessary to include the term “N4” in the field “Enclosure Degree of Protection” according to the CFW-09 specification in Chapter 2, item 2.4 (CFW-09 Identification). Remember that the NEMA 4X line is only up to 10HP.