

Review – Multiple Choice



1. Which of the following is NOT a major section or part inside a Variable Frequency Drive (VFD)?

- A. Rectifier
- B. DC Link
- C. Transmitter
- D. Inverter
- E. Control and Regulation

2. If 480Vac is the incoming power to the VFD, which of the following is the expected voltage at the DC Link?

- A. 240Vdc
- B. 312Vdc
- C. 480Vdc
- D. 648Vdc
- E. 800Vdc

3. When discussing if a drive is 6,12 or 18 Pulse, which part of the drive is being discussed?

- A. Control Circuit
- B. DC Link
- C. Rectifier
- D. Filter
- E. Encoder

4. Which of the following size VFDs have a soft charge circuit

- A. 315-450kW (350-600Hp)
- B. 22-200kW (30-300Hp)
- C. 0.75-18.5kW (1-25Hp)
- D. A and B but not C
- E. All drive shave a soft charge circuit

5. Banks of large capacitors are the most prominent in which of the following parts of a drive?

- A. Inverter
- B. DC Link
- C. Rectifier
- D. RFI Filter
- E. Brake Circuit

Review – Multiple Choice



6. The main function of which of the following parts of a VFD is to change a high DC voltage into a pulsed AC voltage.

- A. Inverter
- B. DC Link
- C. Rectifier
- D. RFI Filter
- E. Encoder

7. The Dynamic Braking Option is used mainly with which of the following HVAC applications?

- A. Centrifugal Fans such as Supply and Return Fans
- B. Centrifugal Pumps
- C. Cooling Tower Fans
- D. Both A and B, but not C
- E. None of the above, A, B or C

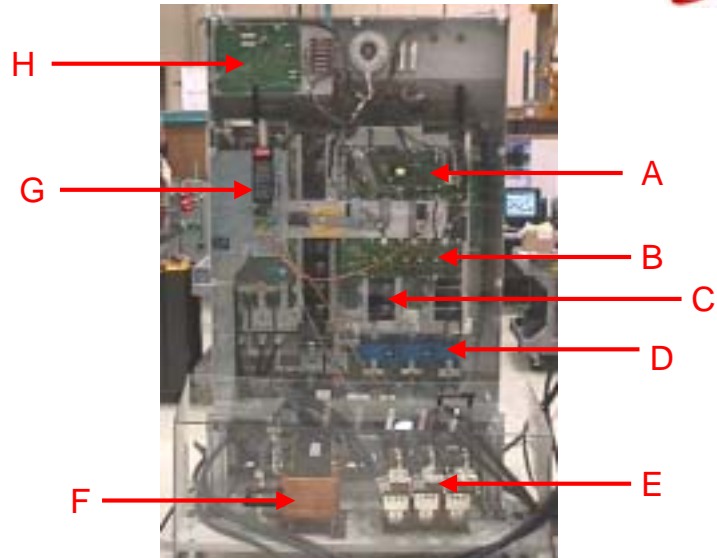
8. IGBTs are found in which part of a standard drive, without dynamic braking?

- A. Inverter
- B. DC Link
- C. Rectifier
- D. RFI Filter
- E. Transmitter

9. The Carrier Frequency is best described by which of the following?

- A. This is the main voltage coming into the drive, usually 460Vac.
- B. This the switching frequency of the IGBTs, usually 4.5kHz.
- C. This is the frequencies of the RFI Filters, usually 450kHz
- D. This is the ripple on the DC link, usually at 60Hz.
- E. This is the frequency of the control processor, usually update speeds are at 3ms.

Match the letter with the name of the part.



This is a chassis version of the 450kW (600Hp) drive going through its testing at our test station.

10. Matching

1. Current Sensor is _____
2. Control Card is _____
3. Capacitor Bank is _____
4. Gate Card is _____
5. DC Link Coils are _____
6. Power Card is _____
7. Soft Charge Circuit Card is _____
8. Motor Coils are _____

End of Lesson 3



Answers

- | | | |
|-------|-------|-------|
| 1) C. | 2) D. | 3) C. |
| 4) D. | 5) B. | 6) A. |
| 7) E. | 8) A. | 9) B. |

Objectives

1. The student is able to identify the components that make up the 4 major parts of an Variable Frequency Drive (VFD).
2. The student can describe the operation of these 4 parts of an VFD.
3. The student can physically locate these parts on a drive.

Answers to the Matching

- | | |
|----------------------------------|----------------------|
| 1. Current Sensor is D | 2. Control Card is G |
| 3. Cap Bank is C | 4. Gate Card is B |
| 5. DC Link Coils are F | 6. Power Card is A |
| 7. Soft Charge Circuit Card is H | 8. Motor Coils are E |

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