

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. Transmitter

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

- A. 250-450kW (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

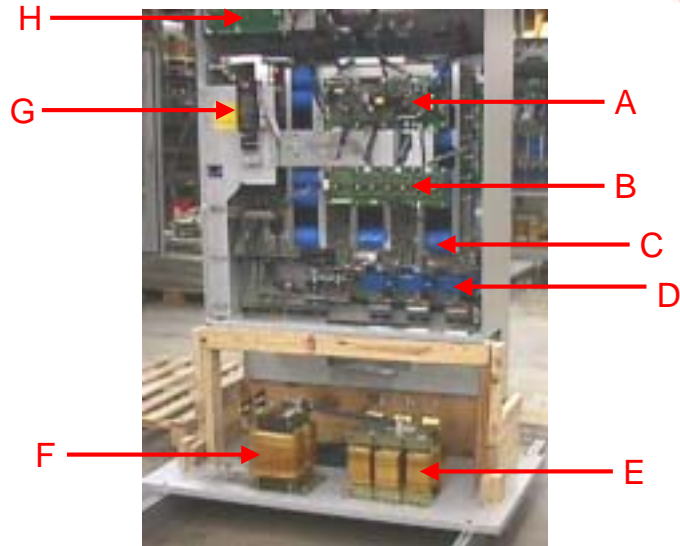
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6. The main function of which of the following parts of a VFD is to change a high DC voltage into a pulsed AC voltage.
- A. Inverter
 - B. DC Link
 - C. Rectifier
 - D. RFI Filter
 - E. Encoder
7. For Water applications when operating a centrifugal pump and blower, which of the following is essential for proper operation?
- A. Motor Tuning and Dynamic Braking are both required.
 - B. Neither Motor Tuning nor Dynamic Braking are required.
 - C. Motor Tuning is required but Dynamic Braking is not.
 - D. Motor Tuning is but Dynamic Braking is not required.
 - E. Motor Tuning and Dynamic Braking are required for pumps but are not required for blowers.
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. Encoder
9. A unique feature about the control section of the Danfoss VFDs is which of the following?
- A. The same control card is used on all sizes from 0.75-400kW (1-600Hp).
 - B. It tunes the motor spinning the motor shaft to 30Hz
 - C. There are always 2 separate cards, one for power and the other for the gate signals on all sizes of drives.
 - D. The carrier frequency is always operated between 25K – 35KHz, which means that it is not audible
 - E. System response to speed and load changes of 300ms updates.

Review

Danfoss



Match the letter with the name of the part for this test unit.
This is a Chassis version of the 400kW (600Hp) drive.

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) B. | 8) A. | 9) A. |

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 |

If you have any comments or questions, please contact:

Mark Peterson

Training Manager

Danfoss Drives

4401 N. Bell School Rd

Loves Park, Illinois 61111 USA

phone: (815) 639-8721 or (800) 432-6367

fax: (815) 639-8987 or (815) 639-8002

Email: MarkPeterson@Danfoss.com