

## Review – Multiple Choice




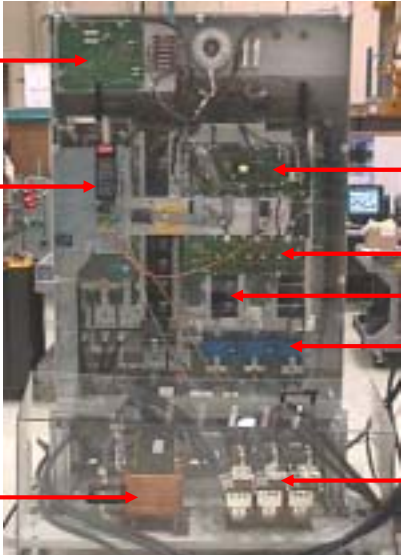
1. Which of the following is NOT a major section or part inside an Adjustable Frequency Drive (AFD)?
  - A. Rectifier
  - B. DC Link
  - C. Encoder
  - D. Inverter
  - E. Control and Regulation
2. If 480Vac is coming into the rectifier section of the AFD, what VDC is coming out?
  - A. 240 VDC
  - B. 324 VDC
  - C. 480 VDC
  - D. 648 VDC
  - E. 802 VDC
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 AFDs have a soft charge circuit
  - A. 225-400kW (300-500Hp)
  - B. 22-160kW (30-250Hp)
  - 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 an AFD 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 optional brake circuit is wired directly to which of the following parts of the AFD in order to remove excess power?
- A. Inverter
  - B. DC Link
  - C. Rectifier
  - D. RFI Filter
  - E. Encoder
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. 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 400kW (500Hp) 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) B. | 8) A. | 9) A. |

### Objectives

1. The student is able to identify the components that make up the 4 major parts of an Adjustable Frequency Drive (AFD).
2. The student can describe the operation of these 4 parts of an AFD.
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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