

Mid Term Test

ELAP 1550

10-9-2018

You Name:

Please show your work! No work and a wrong answer will earn a zero. A wrong answer and a strong indication that you understand the question or the calculation will earn partial credit.

1. What's the voltage drop on a 300 foot run of #8 AWG, on a three phase circuit, with copper conductors, and a 29A load?
2. What's the voltage drop a 3250 foot run of 4/O, on a single phase circuit, with aluminum conductors, and a 62A load?
3. What's the minimum wire size, assuming copper conductors, on a 230VAC, 15HP, 3 Phase Motor?
4. What's the maximum temperature rating for the conductors feeding the 15HP motor in the previous question? For extra credit, find code reference that tells you why.
5. What's the minimum ampacity for the circuit feeding two, 7.2 kW, 3 phase, 460 VAC, immersion heaters?

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SIEMENS									
PE•21 PLUS™					PREMIUM EFFICIENCY				
ORD.NO.	1LA02864SE41				E. NO.				
TYPE	RGZESD				FRAME	286T			
H.P.	30.00				SERVICE FACTOR	1.15		3 PH	
AMPS	34.9				VOLTS	460			
R.P.M.	1765				HERTZ	60			
DUTY	CONT 40°C AMB.				DATE CODE				
CLASS INSUL	F	NEMA DESIGN	B	K.V.A. CODE	G	NEMA NOM. EFF.	93,6		
SH. END BRG.	50BC03JPP3				OPP. END BRG.	50BC03JPP3			
MILL AND CHEMICAL DUTY QUALITY INDUCTION MOTOR									
Siemens Energy & Automation, Inc, Little Rock, AR							MADE IN U.S.A.		

- Using the information off the motor nameplate above, what's the maximum overload protection allowed for this motor? Please give you answer in amperes.
- The motor won't start! It goes down on overload immediately when you try to start it. What's the maximum overload protection setting allowed for this motor? Please give your answer in amperes.
- If you have a 3 phase circuit running 12 amps at 480 VAC, what's the kVA?
- Where do you find standard fuses sizes in the NEC?
- What's the circular mil area of a 0.25" x 1.50" buss bar? What's the nearest wire size that could be used to replace that bussbar?

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11. Define “lumens” and “foot-candles”, and the relationship between them. Don’t go overboard, this isn’t an essay question.

12. Where do you find the NEC definition of closet storage space, in regard to luminaires? What’s the code reference?

13. What are the NEC requirements for the installation of luminaires in clothes closets?

14. What is the NEC definition of a metal wireway? What’s the code reference?

15. What does the NEC require when Type NM cable is installed in accessible attics or roof spaces?

16. How is the conductor ampacity for Type MC cable determined according to the NEC?

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17. Does the NEC allow service equipment to be mounted on trees or other vegetation?

18. What conductor types does the NEC permit to be used in dry and damp locations? Two or more conductor types are sufficient for an answer.

19. What does the NEC require of conductors in order to use them in corrosive locations?