

1. Title	Apply single-phase/three-phase power supply and motors in plumbing installations						
2. Code	EMPDDE303A						
3. Range	Apply the knowledge of three-phase circuits and motors to assist in plumbing design and installation.						
4. Level	3						
5. Credits	4						
6. Competency	<p style="text-align: center;"><u>Performance Requirements</u></p> <table border="0"> <tr> <td style="vertical-align: top;">6.1</td> <td style="vertical-align: top;">Understand the operation and principles of motors</td> <td style="vertical-align: top;"> <ul style="list-style-type: none"> ◆ Understand single-phase and three-phase AC circuits and their relationship ◆ Know how to calculate three-phase electric current, voltage and electric power ◆ Understand the relationship between the rotational speed and torque of single-phase and three-phase motors ◆ Understand the star and delta connection of three-phase motors and difference in electric current ◆ Understand the starting method of three-phase motors </td> </tr> <tr> <td style="vertical-align: top;">6.2</td> <td style="vertical-align: top;">Know about AC motors and their applications</td> <td style="vertical-align: top;"> <ul style="list-style-type: none"> ◆ Select single-phase and three-phase motors suitable for use in plumbing ◆ Select a motor starting method to suit the system operation ◆ Provide suitable single-phase and three-phase motors for the design and installation work according to the Electricity Ordinance and the code of practice of the Electricity (Wiring) Regulations </td> </tr> </table>	6.1	Understand the operation and principles of motors	<ul style="list-style-type: none"> ◆ Understand single-phase and three-phase AC circuits and their relationship ◆ Know how to calculate three-phase electric current, voltage and electric power ◆ Understand the relationship between the rotational speed and torque of single-phase and three-phase motors ◆ Understand the star and delta connection of three-phase motors and difference in electric current ◆ Understand the starting method of three-phase motors 	6.2	Know about AC motors and their applications	<ul style="list-style-type: none"> ◆ Select single-phase and three-phase motors suitable for use in plumbing ◆ Select a motor starting method to suit the system operation ◆ Provide suitable single-phase and three-phase motors for the design and installation work according to the Electricity Ordinance and the code of practice of the Electricity (Wiring) Regulations
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7. Assessment Criteria	<p>The integrated outcome requirements of this unit of competency are:</p> <p>(i) Capable to understand correctly and systematically the difference of single-phase and three-phase circuits and their applications;</p> <p>(ii) Capable to understand correctly the operation and application of single-phase/three-phase motors; and</p> <p>(iii) Capable to select motor starting methods correctly.</p>						
8. Remarks	The credit value of this unit of competency is set on the presumption that the person already possesses basic mathematical knowledge.						