

1. Title	Select water pump control panels and control circuits for plumbing design
2. Code	EMPDDE411A
3. Range	Apply the principles of remote control and control circuits in plumbing design and installation related to water pump control panels.
4. Level	4
5. Credits	4
6. Competency	<p style="text-align: center;"><u>Performance Requirements</u></p> <p>6.1 Understand single-phase / three-phase water pumps and their power requirement</p> <ul style="list-style-type: none"> <li>◆ Understand the relationship between single-phase and three-phase water pumps and motors</li> <li>◆ Select single-phase or three-phase pump motors according to the power and load of pumps</li> <li>◆ Select motor overload protection devices</li> <li>◆ Understand the starting methods of different types of motors, e.g. star-delta starter</li> <li>◆ Understand the electric current of motors and their protectors and starters</li> <li>◆ Understand the operation of control panels</li> </ul> <p>6.2 Select water pump control panels and control circuits for plumbing installations</p> <ul style="list-style-type: none"> <li>◆ Master the operating principles of water pumps and electric motors and perform associated wiring design</li> <li>◆ Provide overload protection devices and set line/phase current</li> <li>◆ Decide the size of conductors according to wiring length and the surrounding environment</li> <li>◆ Provide suitable wiring path</li> <li>◆ Decide the size of the panel according to the size of the water pump room</li> </ul> <p>6.3 Professionalism in designing water pump control panels</p> <ul style="list-style-type: none"> <li>◆ Provide the design of water pump control panels and accessories according to safety guidelines and the code of practice</li> </ul>
7. Assessment Criteria	<p>The integrated outcome requirements of this unit of competency are:</p> <p>(i) Capable to master the compatibility of single-phase and three-phase water motors and water pumps; and</p> <p>(ii) Capable to select water pump control panels and control circuits correctly for the design.</p>
8. Remarks	The credit value of this unit of competency is set on the presumption that the person already possesses basic knowledge of electricity.