

1. Title	Repair and maintain electrical control system of central air-conditioning systems										
2. Code	EMACOR311A										
3. Range	Perform repair and maintenance of electrical control system of central air-conditioning systems at machine rooms or air-conditioned areas.										
4. Level	3										
5. Credit	9										
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;">Knowledge of electrical control system of central air-conditioning systems</td> <td style="vertical-align: top;"> <ul style="list-style-type: none"> <li>◆ Understand the working principles of various types of electrical control system of central air-conditioning systems</li> <li>◆ Understand the wiring diagram of electrical control system of central air-conditioning systems</li> </ul> </td> </tr> <tr> <td style="vertical-align: top;">6.2</td> <td style="vertical-align: top;">Methods and procedures of repairing and maintaining electrical control system of central air-conditioning systems</td> <td style="vertical-align: top;"> <ul style="list-style-type: none"> <li>◆ Maintain electrical control system of central air-conditioning systems , including routine maintenance and preventive inspection</li> <li>◆ Locate and repair faults in electrical control system of central air-conditioning systems, including:               <ul style="list-style-type: none"> <li>• Troubleshoot and repair faults in the start-up and protection control circuits of the compressor</li> <li>• Troubleshoot and repair the faults in the temperature control circuits of the chilled water unit</li> <li>• Troubleshoot and repair the faults in the protection circuits (including chilled water low temperature protection switch, high pressure protection switch, oil heater, oil pressure safety switch, etc.) of the chilling water unit</li> <li>• Troubleshoot and repair the faults in the control circuits of the air-handling unit</li> <li>• Troubleshoot and repair the faults in the control circuits of the fan coil unit</li> </ul> </li> </ul> </td> </tr> <tr> <td style="vertical-align: top;">6.3</td> <td style="vertical-align: top;">Professionalism in repairing and maintaining electrical control system of central air-conditioning systems</td> <td style="vertical-align: top;"> <ul style="list-style-type: none"> <li>◆ Follow the code of practice under the Electricity (Wiring) Regulations to perform repair and maintenance independently for electrical control system of central air-conditioning systems</li> </ul> </td> </tr> </table>		6.1	Knowledge of electrical control system of central air-conditioning systems	<ul style="list-style-type: none"> <li>◆ Understand the working principles of various types of electrical control system of central air-conditioning systems</li> <li>◆ Understand the wiring diagram of electrical control system of central air-conditioning systems</li> </ul>	6.2	Methods and procedures of repairing and maintaining electrical control system of central air-conditioning systems	<ul style="list-style-type: none"> <li>◆ Maintain electrical control system of central air-conditioning systems , including routine maintenance and preventive inspection</li> <li>◆ Locate and repair faults in electrical control system of central air-conditioning systems, including:               <ul style="list-style-type: none"> <li>• Troubleshoot and repair faults in the start-up and protection control circuits of the compressor</li> <li>• Troubleshoot and repair the faults in the temperature control circuits of the chilled water unit</li> <li>• Troubleshoot and repair the faults in the protection circuits (including chilled water low temperature protection switch, high pressure protection switch, oil heater, oil pressure safety switch, etc.) of the chilling water unit</li> <li>• Troubleshoot and repair the faults in the control circuits of the air-handling unit</li> <li>• Troubleshoot and repair the faults in the control circuits of the fan coil unit</li> </ul> </li> </ul>	6.3	Professionalism in repairing and maintaining electrical control system of central air-conditioning systems	<ul style="list-style-type: none"> <li>◆ Follow the code of practice under the Electricity (Wiring) Regulations to perform repair and maintenance independently for electrical control system of central air-conditioning systems</li> </ul>
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7. Assessment Criteria	The integrated outcome requirements of this unit of competency are:  (i) Capable to identify, handle and eliminate the faults systematically and efficiently so as to complete all kinds of repair and maintenance of electrical control system of central air-conditioning systems ; and  (ii) Capable to follow relevant code of practice when carrying out electrical work.
8. Remarks	The credit value of this unit of competency is set on the presumption that the person already possesses elementary knowledge and skills of wiring up electrical control circuits for air-conditioning and refrigeration.