

# VIP

## Motor Armatures

Spec Sheet

### Specifications

Click on any of the following wire categories for a complete description:

<b>Class</b>	<b>Round</b>	<b>Shaped</b>
<a href="#"><u>MW 31-C</u></a>	AWG 2-30	
<a href="#"><u>MW 33-C</u></a>		ALL
<a href="#"><u>MW 41-C</u></a>	AWG 9-30	
<a href="#"><u>MW 44-C</u></a>	AWG 9-30	
<a href="#"><u>MW 45-C</u></a>	AWG 9-30	
<a href="#"><u>MW 47-C</u></a>	AWG 9-30	
<a href="#"><u>MW 50-C</u></a>	AWG 9-30	
<a href="#"><u>MW 51-C</u></a>	AWG 9-30	
<a href="#"><u>MW 61-AIC</u></a>	AWG 2-18	
<a href="#"><u>MW 60-C</u></a>		ALL
<a href="#"><u>MW 60-A</u></a>		ALL
<a href="#"><u>MW 62-C</u></a>		ALL
<a href="#"><u>MW 63-C</u></a>	AWG 2-28	

**Bare Copper Wire Diameters (in.)**

<b>AWG</b>	<b>Minimum</b>	<b>Nominal</b>	<b>Maximum</b>
<b>12</b>	<b>0.0800</b>	<b>0.0808</b>	<b>0.0812</b>
<b>13</b>	<b>0.0713</b>	<b>0.0720</b>	<b>0.0724</b>
<b>14</b>	<b>0.0635</b>	<b>0.0641</b>	<b>0.0644</b>
<b>15</b>	<b>0.0565</b>	<b>0.0571</b>	<b>0.0574</b>
<b>16</b>	<b>0.0503</b>	<b>0.0508</b>	<b>0.0511</b>
<b>17</b>	<b>0.0448</b>	<b>0.0453</b>	<b>0.0455</b>
<b>18</b>	<b>0.0399</b>	<b>0.0403</b>	<b>0.0405</b>
<b>19</b>	<b>0.0355</b>	<b>0.0359</b>	<b>0.0361</b>
<b>20</b>	<b>0.0317</b>	<b>0.0320</b>	<b>0.0322</b>
<b>21</b>	<b>0.0282</b>	<b>0.0285</b>	<b>0.0286</b>
<b>22</b>	<b>0.0250</b>	<b>0.0253</b>	<b>0.0254</b>
<b>23</b>	<b>0.0224</b>	<b>0.0226</b>	<b>0.0227</b>
<b>24</b>	<b>0.0199</b>	<b>0.0201</b>	<b>0.0202</b>
<b>25</b>	<b>0.0177</b>	<b>0.0179</b>	<b>0.0180</b>
<b>26</b>	<b>0.0157</b>	<b>0.0159</b>	<b>0.0160</b>
<b>27</b>	<b>0.0141</b>	<b>0.0142</b>	<b>0.0143</b>
<b>28</b>	<b>0.0125</b>	<b>0.0126</b>	<b>0.0127</b>
<b>29</b>	<b>0.0112</b>	<b>0.0113</b>	<b>0.0114</b>
<b>30</b>	<b>0.0099</b>	<b>0.0100</b>	<b>0.0101</b>

The table above is an average of six readings measured at three locations approximately one foot apart. At each location, the conductor shall be measured twice, each 90 degrees apart.

## Descriptions

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### **MW 31-C (Paper): Paper Covered Bare or Film Insulated Round Copper Magnet Wire Thermal Class 90 or 105**

Insulating material of rope paper or kraft paper, or both. The paper covering has one or more tapes wrapped firmly, closely, evenly, and continuously around the wire. AWG 2-30.

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### **MW 33-C (Paper): Paper Covered Bare Rectangular and Square Magnet Wire Thermal Class 90 or 105**

Insulating material of rope paper or kraft paper, or both. The paper covering has one or more tapes wrapped firmly, closely, evenly, and continuously around the wire. AWG 2-30.

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### **MW 41-C (Single & Double): Glass Fiber Covered, Bare or Film Insulated Round Copper Magnet Wire Thermal Class 155**

Glass fiber of electrical grade continuous filament glass yarn. If an underlying film coating is used, it has at least a Class 130 rating. The glass fiber covering is wrapped firmly, closely, evenly, and continuously around the wire. Adjacent layers are wound in opposite direction on the double wire. The glass fiber covering is treated with an insulating varnish to provide a tough outer finish. AWG 9-30.

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### **MW 44-C (Single & Double): Glass Fiber Covered Silicone Treated, Bare or Film Insulated Round Copper Magnet Wire Thermal Class 200**

Glass fiber of electrical grade continuous filament glass yarn. If an underlying film coating is used, it has at least a Class 180 rating. The glass fiber covering is wrapped firmly, closely, evenly, and continuously around the wire. The glass fiber covering is treated with a modified silicone insulating varnish or silicone compound to provide a tough outer finish. If a tracer is used, one or more ends of glass yarn in the outer layer are black or green, and the dye or pigment used for this purpose is sufficiently stable so as to retain its color identity after the silicone treatment and subsequent baking.

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**MW 45-C (Single & Double): Polyester Glass Fiber Covered, Bare or Film Insulated Round Copper Magnet Wire Thermal Class 155**

The fiber covering consists of a combination of polyester and glass fibers. The glass fibers shall be electrical grade continuous filament glass yarn. The polyester fiber is a high grade yarn resulting from the linear polymerization of ethylene glycol and terephthalic acid. The maximum content by weight of polyester fiber in the yarn does not exceed 50 percent. If an underlying film insulation is used, it has at least a Class 130 rating. The polyester glass fiber cover wraps firmly, closely, evenly, and continuously around the wire. Adjacent layers are wound in opposite directions on the double wire. The polyester glass fiber covering is fused; when required it may be treated with an insulating varnish compound to provide a tough outer finish.

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**MW 47-C (Single & Double): Polyester Glass Fiber Covered Silicone Treated, Bare or Film Insulated Round Copper Magnet Wire Thermal Class 200**

The fiber covering is a combination of polyester and glass fibers. The glass fibers are electrical grade continuous filament glass yarn. The polyester fiber is a high grade yarn resulting from the linear polymerization of ethylene glycol and terephthalic acid. The maximum content by weight of polyester fiber in the yarn does not exceed 50 percent. If an underlying film insulation is used, it has at least a Class 180 rating. The polyester glass fiber cover wraps firmly, closely, evenly, and continuously around the wire. The polyester glass fiber covering is fused; when required it may be treated with an insulating varnish compound to provide a tough outer finish. If a tracer is used, one or more ends of glass yarn in the outer layer are black or green, and the dye or pigment used for this purpose is sufficiently stable so as to retain its color identity after the silicone treatment and subsequent baking.

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**MW 50-C (Single & Double): Glass Fiber Covered High Temperature Organic Varnish Treated, Bare or Film Insulated Round Copper Magnet Wire Thermal Class 180**

The glass fiber is electrical grade continuous filament glass yarn. If an underlying film insulation is used, it has at least a Class 155 rating. The glass fiber covering is wrapped firmly, closely, evenly, and continuously around the wire. Adjacent layers are wound in opposite directions on the double wire. The glass fiber covering is treated with a high temperature non-silicone organic insulating varnish.

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**MW 51-C (Single & Double): Polyester Glass Fiber Covered High Temperature Organic Varnish Treated, Bare or Film Insulated Round Copper Magnet Wire Thermal Class 180**

The fiber consist of a combination of polyester and glass fibers. The glass fibers are electrical grade continuous filament glass yarn. The polyester fiber is a high grade yarn resulting from the

linear polymerization or ethylene glycol and terephthalic acid. The maximum content by weight of polyester fiber in the yarn does not exceed 50 percent. If an underlying film insulation is used, it has at least a Class 155 rating. The polyester glass fiber cover wraps firmly, closely, evenly, and continuously around the wire. Adjacent layers are wound in opposite directions on the double wire. The polyester glass fiber covering is fused and treated with a high temperature non-silicone organic insulating varnish.

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**MW 60-C (Paper): Aromatic Polyimide Paper Covered Rectangular and Square Copper Magnet Wire Thermal Class 220**

The insulating material is an aromatic polyamide paper. The paper covering consists of one or more tapes, each wrapped firmly, closely, evenly, and continuously around the wire in a configuration necessary to provide the specified number of tape layers (thicknesses of paper). The paper covering consists of at least two thicknesses of paper with not less than 40 percent overlap. An adhesive may be used.

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**MW 60-A (Paper): Aromatic Polyimide Paper Covered Rectangular and Square Aluminum Magnet Wire Thermal Class 220**

The insulating material is an aromatic polyamide paper. The paper covering consists of one or more tapes, each wrapped firmly, closely, evenly, and continuously around the wire in a configuration necessary to provide the specified number of tape layers (thicknesses of paper). The paper covering consists of at least two thicknesses of paper with not less than 40 percent overlap. An adhesive may be used.

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**MW 61-C (Paper): Aromatic Polyamide Paper Covered Round Copper Magnet Wire Thermal Class 220**

The insulating material is an aromatic polyamide paper. The paper covering consists of one or more tapes, each wrapped firmly, closely, evenly, and continuously around the wire in a configuration necessary to provide the specified number of tape layers (thicknesses of paper). The paper covering consists of at least two thicknesses of paper with not less than 40 percent overlap. An adhesive may be used.

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**MW 61-A (Paper): Aromatic Polyamide Paper Covered Round Aluminum Magnet Wire Thermal Class 220**

The insulating material is an aromatic polyamide paper. The paper covering consists of one or more tapes, each wrapped firmly, closely, evenly, and continuously around the wire in a configuration necessary to provide the specified number of tape layers (thicknesses of paper). The paper covering consists of at least two thicknesses of paper with not less than 40 percent overlap. An adhesive may be used.

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**MW 62-C: Aromatic Polyimide Tape Covered Rectangular and Square Copper Magnet Wire Thermal Class 220**

The insulating material is an aromatic polyimide tape coated one or both sides with an adhesive layer of fluorinated ethylene propylene (FEP). The covering is one or two tapes wrapped spirally around the wire. After wrapping, the tape is heat sealed.

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**MW 63-C: Aromatic Polyimide Tape Covered Bare Round Copper Magnet Wire Thermal Class 220**

The insulating material is aromatic polyimide tape coated one or both sides with an adhesive layer of fluorinated ethylene propylene (FEP). The covering is one or two tapes wrapped spirally around the wire. After wrapping, the tape is heat sealed.