Table of Specifications

Midi-Contactors

<table>
<thead>
<tr>
<th>Type size</th>
<th>Terminal type</th>
<th>AC-1, Thermal current A</th>
<th>AC-3 200/240V kW</th>
<th>380/440V kW</th>
<th>500/550V kW</th>
<th>690V kW</th>
<th>Continuous current A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of poles</td>
<td>Rate</td>
<td>Rated operational voltage, Ue</td>
<td>Rated insulation voltage, Ul</td>
<td>Rated frequency</td>
<td>Rated impulse withstand voltage, Uimp</td>
<td>Maximum operating rate in operating cycles per hour (AC3)</td>
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</tr>
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<td>Specifications are subject to change without notice.</td>
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**GT Type Thermal Overload Relays**

<table>
<thead>
<tr>
<th>Type</th>
<th>Screws clamp terminals</th>
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<tbody>
<tr>
<td>Rated operational voltage, Ue</td>
<td>Rated insulation voltage, Ul</td>
</tr>
<tr>
<td>Rated impulse withstand voltage, Uimp</td>
<td>Trip class</td>
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<tr>
<td>Setting range</td>
<td>Size and weight</td>
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Note: Minimum conduct current of Auxiliary contactor is DC 17V 5mA.
## Table of Specifications

### 65AF

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</tr>
<tr>
<td>Pole</td>
<td>Pole</td>
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<tr>
<td>3</td>
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</tr>
<tr>
<td>690V</td>
<td>690V</td>
</tr>
<tr>
<td>1000V</td>
<td>1000V</td>
</tr>
<tr>
<td>50/60Hz</td>
<td>50/60Hz</td>
</tr>
<tr>
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<td>8kV</td>
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# Table of Specifications

**400AF**

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9.2
163 x 243 x 198

**800AF**

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<td>CC630*</td>
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<td>CC800*</td>
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**GT400**

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<td>6KV</td>
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</tr>
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**GT800**

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<td>6KV</td>
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Specifications are subject to change without notice.
## Type Numbering System

### Midi-Contactor

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<tr>
<th>CC</th>
<th>Magnetic 3-pole</th>
<th>Ampereage Size</th>
<th>Terminals Type</th>
<th>Type</th>
<th>Terminal Type</th>
<th>Coil Type</th>
<th>Coil Voltage</th>
<th>AC Coil Frequency</th>
<th>Auxiliary Contacts</th>
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<tbody>
<tr>
<td>9</td>
<td>9 - 16A</td>
<td>12 - 16A</td>
<td>20 - 50A</td>
<td>24 - 24V</td>
<td>120 - 250V &amp; 600 - 600V</td>
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<td>BLANK</td>
<td>50Hz - 50Hz (only)</td>
<td>NO AUX (no aux. contact &gt; 32A)</td>
</tr>
<tr>
<td>10</td>
<td>18 - 22A</td>
<td>22 - 22A</td>
<td>24 - 24V</td>
<td>120 - 250V</td>
<td>600 - 600V</td>
<td>BLANK</td>
<td>BLANK</td>
<td>50Hz - 50Hz (only)</td>
<td>NO AUX (no aux. contact &gt; 32A)</td>
</tr>
<tr>
<td>11</td>
<td>22 - 24A</td>
<td>24 - 24V</td>
<td>120 - 250V &amp; 600 - 600V</td>
<td>120 - 250V</td>
<td>600 - 600V</td>
<td>BLANK</td>
<td>BLANK</td>
<td>50Hz - 50Hz (only)</td>
<td>NO AUX (no aux. contact &gt; 32A)</td>
</tr>
<tr>
<td>12</td>
<td>24 - 32A</td>
<td>32 - 32V</td>
<td>24 - 24V</td>
<td>120 - 250V</td>
<td>600 - 600V</td>
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<td>50Hz - 50Hz (only)</td>
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### Overload

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### Auxiliary contact unit

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### Surge absorber

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### Interlock unit

<table>
<thead>
<tr>
<th>Contact size</th>
</tr>
</thead>
<tbody>
<tr>
<td>GUR02</td>
</tr>
<tr>
<td>GUA4</td>
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<table>
<thead>
<tr>
<th>Contact composition</th>
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<tbody>
<tr>
<td>02</td>
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</table>

<table>
<thead>
<tr>
<th>Frame size</th>
</tr>
</thead>
<tbody>
<tr>
<td>22</td>
</tr>
<tr>
<td>32</td>
</tr>
<tr>
<td>63</td>
</tr>
<tr>
<td>95</td>
</tr>
</tbody>
</table>

### Wire kit for Interlocking

<table>
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</tr>
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<tbody>
<tr>
<td>32</td>
</tr>
<tr>
<td>63</td>
</tr>
<tr>
<td>95</td>
</tr>
<tr>
<td>150</td>
</tr>
</tbody>
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### Separate mounting unit (For relay)

<table>
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</thead>
<tbody>
<tr>
<td>32</td>
</tr>
<tr>
<td>63</td>
</tr>
<tr>
<td>95</td>
</tr>
</tbody>
</table>

### Remote reset unit (For relay)

<table>
<thead>
<tr>
<th>Cable length</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
</tr>
<tr>
<td>20</td>
</tr>
<tr>
<td>24</td>
</tr>
</tbody>
</table>

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Environment / Connections

### Environment

<table>
<thead>
<tr>
<th>Standards</th>
<th>IEC/EN 60947-1, IEC/EN 60947-4-1, UL508, K60947</th>
</tr>
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<tbody>
<tr>
<td>Certifications</td>
<td>CE, UL</td>
</tr>
<tr>
<td>Rated insulation voltage (U1)</td>
<td>1000V</td>
</tr>
<tr>
<td>Rated impulse withstand voltage (Uimp)</td>
<td>8kV</td>
</tr>
<tr>
<td>Degree of protection</td>
<td>IP20 (Conforming to IEC60529)</td>
</tr>
<tr>
<td>Ambient air temperature</td>
<td>Storage: -50°C – +80°C</td>
</tr>
<tr>
<td></td>
<td>Operation: -5°C – +60°C</td>
</tr>
<tr>
<td>Operating altitude</td>
<td>3000m (9800ft)</td>
</tr>
</tbody>
</table>

#### Shock resistance

(1/2 sine wave =11ms)

- Opened: 8G
- Closed: 10G

#### Vibration resistance (Conforming to IEC68-2-6)

(5...300 Hz)

- Opened: 2G
- Closed: 4G

#### Flame resistance

- Conforming to UL 94; Vo
- Conforming to IEC 695-2-1; 960°C

### Connections

#### Wire type & Terminal Size

<table>
<thead>
<tr>
<th>Wire type</th>
<th>Main Terminal Size</th>
<th>(AWG / mm²)</th>
<th>Torque</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>mm(max)</td>
<td>[ft-lb]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CC9</td>
<td>M4</td>
<td>18-10 / 1-6</td>
<td>9.6</td>
</tr>
<tr>
<td>CC12</td>
<td>M6</td>
<td>18-10 / 1-6</td>
<td>9.6</td>
</tr>
<tr>
<td>CC18</td>
<td>M8</td>
<td>18-10 / 1-6</td>
<td>9.6</td>
</tr>
<tr>
<td>CC22</td>
<td>M10</td>
<td>18-10 / 1-6</td>
<td>9.6</td>
</tr>
<tr>
<td>CC32</td>
<td>M12</td>
<td>18-10 / 1-6</td>
<td>9.6</td>
</tr>
<tr>
<td>CC40</td>
<td>M16</td>
<td>18-10 / 1-6</td>
<td>9.6</td>
</tr>
<tr>
<td>CC50</td>
<td>M18</td>
<td>18-10 / 1-6</td>
<td>9.6</td>
</tr>
<tr>
<td>CC65</td>
<td>M20</td>
<td>18-10 / 1-6</td>
<td>9.6</td>
</tr>
<tr>
<td>CC75</td>
<td>M22</td>
<td>18-10 / 1-6</td>
<td>9.6</td>
</tr>
<tr>
<td>CC85</td>
<td>M24</td>
<td>18-10 / 1-6</td>
<td>9.6</td>
</tr>
<tr>
<td>CC100</td>
<td>M26</td>
<td>18-10 / 1-6</td>
<td>9.6</td>
</tr>
<tr>
<td>CC130</td>
<td>M28</td>
<td>18-10 / 1-6</td>
<td>9.6</td>
</tr>
<tr>
<td>CC150</td>
<td>M30</td>
<td>18-10 / 1-6</td>
<td>9.6</td>
</tr>
<tr>
<td>CC9–150</td>
<td>M32</td>
<td>18-10 / 1-6</td>
<td>9.6</td>
</tr>
<tr>
<td>CC185</td>
<td>M34</td>
<td>18-10 / 1-6</td>
<td>9.6</td>
</tr>
<tr>
<td>CC225</td>
<td>M36</td>
<td>18-10 / 1-6</td>
<td>9.6</td>
</tr>
<tr>
<td>CC265</td>
<td>M38</td>
<td>18-10 / 1-6</td>
<td>9.6</td>
</tr>
<tr>
<td>CC330</td>
<td>M40</td>
<td>18-10 / 1-6</td>
<td>9.6</td>
</tr>
<tr>
<td>CC400</td>
<td>M42</td>
<td>18-10 / 1-6</td>
<td>9.6</td>
</tr>
<tr>
<td>CC500</td>
<td>M44</td>
<td>18-10 / 1-6</td>
<td>9.6</td>
</tr>
<tr>
<td>CC630</td>
<td>M46</td>
<td>18-10 / 1-6</td>
<td>9.6</td>
</tr>
<tr>
<td>CC800</td>
<td>M48</td>
<td>18-10 / 1-6</td>
<td>9.6</td>
</tr>
</tbody>
</table>

#### Torque Conversion

- [ft-lb] to [Nm]: 1 ft-lb = 0.13826 Nm
- [Nm] to [ft-lb]: 1 Nm = 7.19392 ft-lb
## Control Coil Characteristics

<table>
<thead>
<tr>
<th>Frame size</th>
<th>22AF</th>
<th>40AF</th>
<th>65AF</th>
<th>100AF</th>
<th>150AF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>CC9</td>
<td>CC32</td>
<td>CC50</td>
<td>CC75</td>
<td>CC130</td>
</tr>
<tr>
<td></td>
<td>CC12</td>
<td>CC40</td>
<td>CC65</td>
<td>CC85</td>
<td>CC150</td>
</tr>
<tr>
<td>AC coil</td>
<td>CC12</td>
<td>CC22</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control voltage [Vc]</td>
<td>50Hz</td>
<td>60Hz</td>
<td>50/60Hz</td>
<td>50Hz</td>
<td>60Hz</td>
</tr>
<tr>
<td>Voltage limit [Vc]</td>
<td>Pick-up</td>
<td>85 ~110% (50Hz)</td>
<td>85 ~110% (60Hz)</td>
<td>30 ~ 60%</td>
<td>30 ~ 60%</td>
</tr>
<tr>
<td>50/60Hz</td>
<td>[V]</td>
<td>[V]</td>
<td>[V]</td>
<td>[V]</td>
<td>[V]</td>
</tr>
<tr>
<td>58/56</td>
<td>53/50</td>
<td>110/104</td>
<td>229/216</td>
<td>108/104</td>
<td>58/56</td>
</tr>
<tr>
<td>9.0/6.0</td>
<td>12.0/9.0</td>
<td>13.0/10.0</td>
<td>17.0/13.0</td>
<td>18.0/21.0</td>
<td>9.0/6.0</td>
</tr>
<tr>
<td>2.1/1.5</td>
<td>2.7/2.2</td>
<td>2.8/2.4</td>
<td>5.4/4.7</td>
<td>2.7/3.6</td>
<td>2.1/1.5</td>
</tr>
<tr>
<td>Operating time</td>
<td>Closing [ms]</td>
<td>12 ... 22</td>
<td>12 ... 22</td>
<td>12 ... 22</td>
<td>15 ... 30</td>
</tr>
<tr>
<td>DC coil</td>
<td>4 ... 19</td>
<td>4 ... 19</td>
<td>4 ... 19</td>
<td>10 ... 30</td>
<td>60 ... 70</td>
</tr>
<tr>
<td>Control voltage [Vc]</td>
<td>50Hz</td>
<td>60Hz</td>
<td>50/60Hz</td>
<td>50Hz</td>
<td>60Hz</td>
</tr>
<tr>
<td>12, 20, 24, 48, 60, 80, 100, 110, 125, 200, 220, 250</td>
<td>24, 48, 110, 220</td>
<td>70 ~ 110%</td>
<td>10 ~ 30%</td>
<td>24, 48, 110, 220</td>
<td></td>
</tr>
<tr>
<td>Voltage limit [Vc]</td>
<td>Pick-up</td>
<td>70 ~ 110%</td>
<td>10 ~ 30%</td>
<td>24, 48, 110, 220</td>
<td></td>
</tr>
<tr>
<td>50/60Hz</td>
<td>[V]</td>
<td>[V]</td>
<td>[V]</td>
<td>[V]</td>
<td>[V]</td>
</tr>
<tr>
<td>9</td>
<td>7</td>
<td>9</td>
<td>18</td>
<td>213</td>
<td>9</td>
</tr>
<tr>
<td>28</td>
<td>28</td>
<td>65</td>
<td>75</td>
<td>28</td>
<td>28</td>
</tr>
<tr>
<td>Time constant (L/R) [ms]</td>
<td>Closing [ms]</td>
<td>35 ... 50</td>
<td>50 ... 65</td>
<td>50 ... 65</td>
<td>100 ... 120</td>
</tr>
<tr>
<td>Operating time</td>
<td>Opening [ms]</td>
<td>4 ... 19</td>
<td>4 ... 19</td>
<td>4 ... 19</td>
<td>10 ... 25</td>
</tr>
</tbody>
</table>

Note: A1(A2) in line is internally connected to A1(A2) in load side.

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# Control Coil Characteristics

<table>
<thead>
<tr>
<th>Frame size</th>
<th>225AF</th>
<th>400AF</th>
<th>800AF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>CC185</td>
<td>CC265</td>
<td>CC500</td>
</tr>
<tr>
<td></td>
<td>CC225</td>
<td>CC330</td>
<td>CC630</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CC400</td>
<td>CC800</td>
</tr>
</tbody>
</table>

## AC/DC common coil

<table>
<thead>
<tr>
<th></th>
<th>225AF</th>
<th>400AF</th>
<th>800AF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control voltage</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AC/DC</td>
<td>24/24</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>AC/DC</td>
<td>48/48</td>
<td>-</td>
<td>100/100</td>
</tr>
<tr>
<td>AC/DC</td>
<td>100–240/100–220</td>
<td>100–240/100–220</td>
<td>200/200</td>
</tr>
<tr>
<td>AC</td>
<td>300</td>
<td>300</td>
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<tr>
<td>AC</td>
<td>400</td>
<td>400</td>
<td>400</td>
</tr>
<tr>
<td>AC</td>
<td>500</td>
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## Voltage limit

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<th>86–110%</th>
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<tbody>
<tr>
<td>Pick-up</td>
<td></td>
<td></td>
<td>30–60%</td>
</tr>
<tr>
<td>Drop-out</td>
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</table>

## Coil consumption at 20°C

<p>| | | | |</p>
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<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>AC 220V</td>
<td>380</td>
<td>571</td>
<td>1000</td>
</tr>
<tr>
<td>50/60Hz Holding</td>
<td>11.6</td>
<td>14</td>
<td>29</td>
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<tr>
<td>Heat dissipation</td>
<td>4.7</td>
<td>5</td>
<td>7.8</td>
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## Operating time

<table>
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<tr>
<th></th>
<th>70</th>
<th>55</th>
<th>75</th>
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</thead>
<tbody>
<tr>
<td>Closing [ms]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Opening [ms]</td>
<td>70</td>
<td>55</td>
<td>75</td>
</tr>
</tbody>
</table>

Specifications are subject to change without notice.
Internal Structure

Specifications are subject to change without notice.
Contactors (40AF)

Description

- 3-pole(NO) main contact
- Finger proof design
- DIN rail or screw mountable
- AC or DC control in different physical size
- Front/side mountable accessories available
- Direct mountable overload relay available Rating
- 2NO2NC Auxiliary contacts built-in as standard

Rating

<table>
<thead>
<tr>
<th>Contactor type</th>
<th>CC32 (kW)</th>
<th>CC40 (kW)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
<td>A</td>
</tr>
<tr>
<td>AC duty</td>
<td>200/240V</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>32</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>15</td>
<td>18.5</td>
</tr>
<tr>
<td></td>
<td>32</td>
<td>40</td>
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<td>28</td>
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<td></td>
<td>690V</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>23</td>
</tr>
<tr>
<td>AC4</td>
<td>200/240V</td>
<td>4.5</td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>5.5</td>
</tr>
<tr>
<td></td>
<td>5.5</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>380/440V</td>
<td>7.5</td>
</tr>
<tr>
<td></td>
<td>17</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>11</td>
<td>24</td>
</tr>
<tr>
<td>AC1</td>
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<td>50</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>60</td>
</tr>
<tr>
<td>DC1 (L/R=1ms)</td>
<td>24V</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>32</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>55</td>
</tr>
<tr>
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<td>48V</td>
<td>-</td>
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<tr>
<td></td>
<td>30</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>55</td>
</tr>
<tr>
<td></td>
<td>110V</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>25</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>40</td>
</tr>
<tr>
<td>3-pole in series</td>
<td>24V</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>32</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>55</td>
</tr>
<tr>
<td></td>
<td>48V</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>32</td>
<td>-</td>
</tr>
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<td></td>
<td>-</td>
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<tr>
<td></td>
<td>110V</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>27</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>45</td>
</tr>
<tr>
<td>DC2,4 (L/R=15ms)</td>
<td>24V</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>25</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>48V</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>110V</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>15</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>20</td>
</tr>
<tr>
<td>3-pole in series</td>
<td>24V</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>30</td>
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<tr>
<td></td>
<td>-</td>
<td>45</td>
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<tr>
<td></td>
<td>48V</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>30</td>
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</tr>
<tr>
<td></td>
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<td>40</td>
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<tr>
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<td>110V</td>
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<tr>
<td></td>
<td>20</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>30</td>
</tr>
</tbody>
</table>

Directly mountable Overload relay: GT32

Conductor size (solid, stranded)

<table>
<thead>
<tr>
<th>AWG</th>
<th>12–8</th>
<th>10–6</th>
</tr>
</thead>
<tbody>
<tr>
<td>mm²</td>
<td>2.5–10</td>
<td>4–16</td>
</tr>
</tbody>
</table>

Conductor type

65/75°C Cu-wire only

Coil Voltage

<table>
<thead>
<tr>
<th>Frequency</th>
<th>50Hz</th>
<th>60Hz</th>
<th>50/60Hz</th>
</tr>
</thead>
<tbody>
<tr>
<td>DC</td>
<td>12, 20, 24, 48, 60, 80, 100, 110, 125, 200, 220, 250V</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Certification
- CE(IEC)
- UL508

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Accessories

Specifications are subject to change without notice.
## Rated Short Breaking Capacity of Installation

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>32AF Rotary operation, standard interruption</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GMS-32H-0.16</td>
<td>0.1–0.16</td>
<td>100</td>
<td>65</td>
<td>25</td>
</tr>
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Specifications are subject to change without notice.
Contactors (40AF)

Specifications are subject to change without notice.
Motor Starters (18AF ~ 40AF)

Specifications are subject to change without notice.
Reversing Contactors and Starters (40AF)

CC32 – CC40
AC coil
reversing combination shown with 2NC aux contacts

CC32 – CC40
DC coil
reversing combination shown with 2NC aux contacts

CC32 – CC40
AC coil
reversing combination shown with GT32 and with 2NC aux contacts

CC50 – CC65
AC coil
reversing combination shown with 2NC aux contacts

CC50 – CC65
DC coil
reversing combination shown with 2NC aux contacts

CC50 – CC65
AC coil
reversing combination shown with GT63 and with 2NC aux contacts