 Terminal Connections

Connections to Drive terminals are shown in Fig 2.8.
**Main Circuit Terminal Functions**

Main circuit terminal functions are summarized according to terminal symbols in Table 2.3. Wire the terminals correctly for the desired purpose.

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Terminal Designation</th>
<th>Model: CIMR-E7U_ _ _ _</th>
<th>208-240Vac</th>
<th>480Vac</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main circuit power input</td>
<td>R/L1, S/L2, T/L3</td>
<td>20P4 to 2110</td>
<td>20P4 to 2110</td>
<td>40P4 to 4300</td>
</tr>
<tr>
<td></td>
<td>R1/L11, S1/L21, T1/L31</td>
<td>2022 to 2110</td>
<td>4030 to 4300</td>
<td></td>
</tr>
<tr>
<td>Drive outputs</td>
<td>U/T1, V/T2, W/T3</td>
<td>20P4 to 2110</td>
<td>40P4 to 4300</td>
<td></td>
</tr>
<tr>
<td>DC power input</td>
<td>①, ②</td>
<td>20P4 to 2110</td>
<td>40P4 to 4300</td>
<td></td>
</tr>
<tr>
<td>DC reactor connection</td>
<td>①, ②</td>
<td>20P4 to 2018</td>
<td>40P4 to 4018</td>
<td></td>
</tr>
<tr>
<td>Ground</td>
<td>③</td>
<td>20P4 to 2110</td>
<td>40P4 to 4300</td>
<td></td>
</tr>
</tbody>
</table>
The factory default functions of the control circuit terminals for 2-wire control are shown in Table 2.8.

<table>
<thead>
<tr>
<th>Type</th>
<th>No.</th>
<th>Signal Name</th>
<th>Description</th>
<th>Signal Level</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Digital input signals</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S1</td>
<td></td>
<td>Forward run/stop command</td>
<td>Forward run when CLOSED; stopped when OPEN.</td>
<td></td>
</tr>
<tr>
<td>S2</td>
<td></td>
<td>Reverse run/stop command</td>
<td>Reverse run when CLOSED; stopped when OPEN.</td>
<td></td>
</tr>
<tr>
<td>S3</td>
<td></td>
<td>External fault input</td>
<td>Fault when CLOSED.</td>
<td></td>
</tr>
<tr>
<td>S4</td>
<td></td>
<td>Fault reset</td>
<td>Reset when CLOSED.</td>
<td></td>
</tr>
<tr>
<td>S5</td>
<td></td>
<td>Multi-step speed reference 1</td>
<td>Auxiliary frequency reference when CLOSED.</td>
<td>Multi-function digital inputs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Master/auxiliary switch)</td>
<td></td>
<td>Functions set by H1-01 to H1-05.</td>
</tr>
<tr>
<td>S6</td>
<td></td>
<td>Multi-step speed reference 2</td>
<td>Multi-step setting 2 when CLOSED.</td>
<td></td>
</tr>
<tr>
<td>S7</td>
<td></td>
<td>Jog frequency reference</td>
<td>Jog frequency when CLOSED.</td>
<td></td>
</tr>
<tr>
<td>SN</td>
<td></td>
<td>Digital input common</td>
<td>Refer to Table 2.10 for connection details.</td>
<td></td>
</tr>
<tr>
<td>SC</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SP</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Analog input signals</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>+V</td>
<td></td>
<td>+15Vdc power supply</td>
<td>+15Vdc power supply for analog inputs or transmitters</td>
<td>+15Vdc (Max. current: 20 mA)</td>
</tr>
<tr>
<td>A1</td>
<td></td>
<td>Analog input or Speed Command</td>
<td>0 to +10Vdc/100%</td>
<td>0 to +10 V (20 kΩ)</td>
</tr>
<tr>
<td>A2</td>
<td></td>
<td>Multi-function analog input</td>
<td>4 to 20 mA/100%</td>
<td>Function set by H3-09.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0 to +10Vdc/100%</td>
<td>4 to 20 mA (250Ω)</td>
</tr>
<tr>
<td>AC</td>
<td></td>
<td>Analog common</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>E(G)</td>
<td></td>
<td>Shield wire, optional ground line connection point</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td><strong>Digital output signals</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M1</td>
<td></td>
<td>During Run (N.O. contact)</td>
<td>CLOSED during operation</td>
<td>Dry contacts</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Contact capacity:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1 A max. at 250Vac</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1 A max. at 30Vdc</td>
</tr>
<tr>
<td>M2</td>
<td></td>
<td>Remote/Auto Operation (N.O. contact)</td>
<td>CLOSED when local control</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M3</td>
<td></td>
<td>Fault output signal (SPDT)</td>
<td>MA/MC: CLOSED during fault condition</td>
<td>Dry contacts</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Contact capacity:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1 A max. at 250Vac</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1 A max. at 30Vdc</td>
</tr>
<tr>
<td>M4</td>
<td></td>
<td></td>
<td>MB/MC: OPEN during fault condition</td>
<td></td>
</tr>
<tr>
<td><strong>Analog output signals</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FM</td>
<td></td>
<td>Multi-function analog output</td>
<td>(output frequency)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0 to +10Vdc/100% frequency</td>
<td>Multi-function analog monitor 1</td>
</tr>
<tr>
<td>AC</td>
<td></td>
<td>Analog common</td>
<td>–</td>
<td>Function set by H4-01</td>
</tr>
<tr>
<td>AM</td>
<td></td>
<td>Multi-function analog output</td>
<td>(output current)</td>
<td>Multi-function analog monitor 2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0 to +10Vdc/100% Drive’s rated output current</td>
<td>Function set by H4-04</td>
</tr>
<tr>
<td><strong>RS-485/422</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R+</td>
<td></td>
<td>Modbus communication input</td>
<td>For 2-wire RS-485, jumper R+ and S+ and jumper R- and S-.</td>
<td>Differential input, PHC isolation</td>
</tr>
<tr>
<td>R-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S+</td>
<td></td>
<td>Modbus communication output</td>
<td></td>
<td>Differential input, PHC isolation</td>
</tr>
<tr>
<td>S-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IG</td>
<td></td>
<td>Signal common</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
**Sinking/Sourcing Mode**

The input terminal logic can be switched between sinking mode (0V common) and sourcing mode (+24V common) by using the terminals SN, SC, and SP. An external power supply can also be connected, providing more freedom in signal input methods.

<table>
<thead>
<tr>
<th>Internal Power Supply – Sinking Mode</th>
<th>External Power Supply – Sinking Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>S1</td>
<td>S1</td>
</tr>
<tr>
<td>S2</td>
<td>S2</td>
</tr>
<tr>
<td>SN</td>
<td>SN</td>
</tr>
<tr>
<td>SC</td>
<td>SC</td>
</tr>
<tr>
<td>SP</td>
<td>SP</td>
</tr>
<tr>
<td>(Factory Default)</td>
<td>External +24V</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Internal Power Supply – Sourcing Mode</th>
<th>External Power Supply – Sourcing Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>S1</td>
<td>S1</td>
</tr>
<tr>
<td>S2</td>
<td>S2</td>
</tr>
<tr>
<td>SN</td>
<td>SN</td>
</tr>
<tr>
<td>SC</td>
<td>SC</td>
</tr>
<tr>
<td>SP</td>
<td>SP</td>
</tr>
<tr>
<td>External +24V</td>
<td>External +24V</td>
</tr>
</tbody>
</table>