Mitsubishi Electric Corporation Nagoya Works is a factory certified for ISO14001 (standards for environmental management systems) and ISO9001 (standards for quality assurance management systems).

Model
FR-CV
Features

1. Large braking ability
   - A 100% torque continuous regeneration is possible, so continuous regeneration operation for elevating purposes or line control can be handled. (Max. 150% torque 60s regeneration is possible)

2. Reasonable with common converter method
   - Total space and total costs can be reduced as a brake unit is not required for each inverter.
   - Energy saving as the regenerated energy can be used by other inverters, and excessive energy can be returned to the power source.

3. Easy panel design
   - The slim body allows devices to be laid out easily in the panel.
   - By extruding the heat dissipating fin section of the power regeneration common converter outside the panel, the rise of the temperature in the panel can be suppressed, and the panel can be downsized.
   - (When using external cooling fin type (FR-CV-K). The inner-panel installed type (FR-CV-K-AT) is also available.)
The RES terminal and this terminal are short-circuited when reset is input. Connect the 24VDC common.

Permissible input voltage fluctuation: 22VDC to 26VDC 30mA

Reset terminal
When the reset signal is input to the power regeneration common converter, the reset signal is also input to the inverter.

Connect to the inverter’s RES terminal. The permissible load is 24VDC 0.1A.

Error output
This is output when a power regeneration common converter error occurs. 230VAC 0.3A, 30VDC 0.3A

When error occurs: No-continuity between B-C (continuity between A-C), when normal: Continuity between B-C (no-continuity between A-C)

Converter reset
The reset signal is output to the inverter when the reset signal is input to the power regeneration common converter. Connect to the inverter’s RES terminal. The permissible load is 24VDC 0.1A.

PDYA
22K
15K
11K
11K
S1
R1
W
T
V
S
(Note 1) The capacity of the applicable inverter for the power regeneration common converter is the total (maximum six unit) capacity. (Example) Applicable inverter capacity when using FR-CV-15K --- FR-A520-15K, FR-A520-11K + FR-A520-3.7K

The percentage given for the overload current rating indicates the percentage with respect to the applicable inverter rated current for the power regeneration common converter.

2. The percentage for the overload current rating includes the percentage with respect to the applicable inverter rated current for the power regeneration common converter.

3. The power capacity will differ according to the power side impedance (including the dedicated standalone reactor and wires).

4. Always use this as a set with the main unit.

5. With the 7K and 55K, either the external cooling fan or inner-panel installation type can be used by changing the position of the installation leg members. Thus, the -AT type does not apply.
Peripherals devices and options

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Power regeneration common converter</th>
<th>Dedicated standalone reactor</th>
<th>No-fuse breaker</th>
<th>Earth leakage breaker</th>
<th>Magnetic contactor</th>
<th>Wire(mm²)</th>
<th>R2,S2,T2,P,N</th>
</tr>
</thead>
<tbody>
<tr>
<td>200V</td>
<td>FR-CV-7.5K(-AT)</td>
<td>FR-CVL-7.5K</td>
<td>100AF/90A</td>
<td>S-N35</td>
<td>14</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>200V</td>
<td>FR-CV-11K(-AT)</td>
<td>FR-CVL-11K</td>
<td>100AF/75A</td>
<td>S-N50</td>
<td>14</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>200V</td>
<td>FR-CV-22K(-AT)</td>
<td>FR-CVL-22K</td>
<td>225AF/175A</td>
<td>S-N95</td>
<td>38</td>
<td>38</td>
<td></td>
</tr>
<tr>
<td>200V</td>
<td>FR-CV-30K(-AT)</td>
<td>FR-CVL-30K</td>
<td>225AF/225A</td>
<td>S-N125</td>
<td>60</td>
<td>60</td>
<td></td>
</tr>
<tr>
<td>200V</td>
<td>FR-CV-37K</td>
<td>FR-CVL-37K</td>
<td>400AF/250A</td>
<td>S-N150</td>
<td>100</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>200V</td>
<td>FR-CV-55K</td>
<td>FR-CVL-55K</td>
<td>400AF/400A</td>
<td>S-N220</td>
<td>150</td>
<td>150</td>
<td></td>
</tr>
<tr>
<td>400V</td>
<td>FR-CV-H7.5K(-AT)</td>
<td>FR-CVL-H7.5K</td>
<td>30AF/30A</td>
<td>S-N20</td>
<td>3.5</td>
<td>3.5</td>
<td></td>
</tr>
<tr>
<td>400V</td>
<td>FR-CV-H11K(-AT)</td>
<td>FR-CVL-H11K</td>
<td>50AF/50A</td>
<td>S-N20</td>
<td>5.5</td>
<td>5.5</td>
<td></td>
</tr>
<tr>
<td>400V</td>
<td>FR-CV-H15K(-AT)</td>
<td>FR-CVL-H15K</td>
<td>100AF/95A</td>
<td>S-N25</td>
<td>14</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>400V</td>
<td>FR-CV-H22K(-AT)</td>
<td>FR-CVL-H22K</td>
<td>100AF/100A</td>
<td>S-N50</td>
<td>22</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>400V</td>
<td>FR-CV-H30K(-AT)</td>
<td>FR-CVL-H30K</td>
<td>225AF/125A</td>
<td>S-N65</td>
<td>22</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>400V</td>
<td>FR-CV-H37K</td>
<td>FR-CVL-H37K</td>
<td>225AF/175A</td>
<td>S-N80</td>
<td>38</td>
<td>38</td>
<td></td>
</tr>
<tr>
<td>400V</td>
<td>FR-CV-H55K</td>
<td>FR-CVL-H55K</td>
<td>225AF/200A</td>
<td>S-N125</td>
<td>60</td>
<td>60</td>
<td></td>
</tr>
</tbody>
</table>

Inverter options

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Application, specifications, etc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio noise filter</td>
<td>FR-BIF/H</td>
<td>For reduction of radio noise</td>
</tr>
<tr>
<td>Line noise filter</td>
<td>FR-BLF</td>
<td>For reduction of line noise</td>
</tr>
</tbody>
</table>

Safety Precautions

For Maximum Safety

- Always read the instruction manual before use to use the equipment properly and safely.
- This product is not designed or manufactured to be used in equipment or systems in situations that can affect or endanger human lives.
- When considering this product for operation in special applications such as machinery or systems used in passenger transportation, medical, aerospace, nuclear energy, electric power, or submarine relay applications, please contact your nearest Mitsubishi sales representative.
- Although this product was manufactured under strict quality control conditions, it is strongly advised to install safety devices to forestall serious accidents when used in facilities where a breakdown of the product is likely to cause a serious accident or loss.
- Do not use for loads other than dedicated inverter.

Precautions for installation

- Wiring distance
  The total wiring distance between the power regeneration common inverter (FREQROL-CV) and inverter must be within 5m, and the wiring distance between the power regeneration common converter (FREQROL-CVL) and dedicated standalone reactor (FREQROL-CVL) must be within 10m.
  The wiring between the power regeneration common converter (FREQROL-CV) and power phase detection terminal (R/L11, S/L21, T/MC1) must be within 10m.
  Installation of reactor on power supply side
  The power regeneration common converter (FREQROL-CV) power phase detection terminals (R/L11, S/L21, T/MC1) are used to detect the power phase, so wire from the primary side of the dedicated standalone reactor (FREQROL-CVL). Power will not be regenerated if wired from the secondary side of the dedicated standalone reactor (FREQROL-CVL).

Precautions for selection

- Dedicated inverter
  A DC input type inverter must be used for the combination. Designate the FREQROL-A500/F500/E500*/S500* Series.
  *Only 3-phase 200V power input specification products.
- Dedicated standalone reactor
  Always use the power regeneration common converter (FREQROL-CV) as a set with the dedicated standalone reactor (FREQROL-CVL). Refer to page 1 for details on the combinations.
To ensure proper use of the products listed in this catalog, please be sure to read the instruction manual prior to use.