

## ■ Information on software version up

Following information is changed specification points by software version up (Ver. 614,620).

The software version can be checked by the "CPU1 version" of status monitor.

Please refer to "8.2 Monitoring the status".

The software version would be changed without preliminary announcement.

| Items                                            | Changed contents                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Page |
|--------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| The adjustment range of parameter <i>F 3 1 6</i> | <p><i>0</i> : Not decrease carrier frequency automatically<br/> <i>1</i> : Decrease carrier frequency automatically<br/> <i>2</i> : Not decrease carrier frequency automatically, 400V class supported<br/> <i>3</i> : Decrease carrier frequency automatically, 400V class supported</p> <p>↓</p> <p><i>0</i> : Not decrease carrier frequency automatically<br/> <i>1</i> : Decrease carrier frequency automatically<br/> <i>2</i> : Not decrease carrier frequency automatically, 400V class supported<br/> <i>3</i> : Decrease carrier frequency automatically, 400V class supported<br/> <del><i>4</i> : Not decrease carrier frequency automatically, with sinusoidal filter</del><br/> <del><i>5</i> : Decrease carrier frequency automatically, with sinusoidal filter</del></p> <p>(note) If <i>F 3 1 6</i> is set to 4 or 5, V/F control mode (Pt=0) will be set and the carrier frequency is restricted to 4kHz automatically.<br/> The setting value 4 and 5 are effective for the unit 55kW in 200V class and 90kW in 400V class or larger.</p> | E-31 |
| Added parameter <i>F 4 6 7</i>                   | <p>Motor oscillation control<br/> <i>0</i> : Disabled<br/> <i>1</i> : Enabled(Low gain)<br/> <i>2</i> : Enabled(Middle gain)<br/> <i>3</i> : Enabled(High gain)</p> <p>(note) When a motor is in unstable with light load, this parameter can adjust the motor join to make motor condition stable.<br/> First set <i>F 4 6 7</i>=1 and check the motor condition. Please set 2 to 3 in case motor needs more stable condition.<br/> This parameter is effective only in V / F control mode (Pt=0,1,5)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | —    |
| Added parameter <i>F 4 9 5</i>                   | <p>Max output voltage modulation rate<br/> <i>0</i> : Standard<br/> <i>1</i> : 100%<br/> <i>2</i> : 102.5%<br/> <i>3</i> : 105%</p> <p>(note) In the case that Inverter output voltage drops and output current exceeds motor rating current one at the frequency higher than base frequency, Change this parameter setting and check whether the output current is reduced.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | —    |

## ■ Trip information

Updated trip information on VF-PS1 Instruction Manual E6581386.

|                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |     |
|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| Specification of trip <i>E - 1 3</i> | <p>Possible causes : • Encoder error (inverter error)<br/> Remedies : • Check connection of encoder.<br/> Connect encoder correctly.</p> <p>↓</p> <p>Possible causes : • Speed error(Inverter error ,Encoder error)<br/> • Over speed by overvoltage limit operation<br/> Remedies : • Check the setting of <i>F 6 2 2</i>~<i>F 6 2 4</i><br/> • Check connection of encoder.<br/> • In the case of overvoltage limit operation, install a dynamic braking resistor.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | M-4 |
| Specification of trip <i>E - 2 0</i> | <p>Possible causes : • An internal control error occurs.<br/> Remedies : • Make a service call.</p> <p>↓</p> <p>Possible causes : • Output voltage / Output frequency ratio is too high compared to motor rating.<br/> • It was run in vector control mode (<i>P t</i>=<i>2, 3</i> or <i>7</i>) without setting parameters (Auto-tuning) concerning the motor.<br/> • Motor was in over-excitation state during deceleration.<br/> • Motor constant 1 (Torque boost) <i>F 4 1 0</i> is too large.<br/> • Motor was started under the brake closed.</p> <p>Remedies : • Set Base frequency voltage <i>1 u L u</i> and Base frequency <i>u L</i> in accordance with motor rating.<br/> • When operating a motor in V/f control mode selection <i>P t</i>=<i>2, 3</i> or <i>7</i>, follow section 6.19, and then set the parameters (Auto-tuning) concerning the motor.<br/> • If the inverter is tripped during deceleration because of V/f control error (<i>E - 2 0</i>) when <i>F 3 0 5</i> (Over voltage limit operation) is set to 2 or 3, decrease the value for <i>F 3 1 9</i> (Regenerative over-excitation upper limit).<br/> • If the inverter is tripped during low frequency, decrease the value for <i>F 4 1 0</i>.<br/> • If the inverter is tripped during braking, make the brake release timing early.</p> | M-4 |



\*E6581527REV1\*

Sensorless vector/vector with sensor (●:Effective, -:Ineffective)

| Title       | Communi-<br>cation<br>No. | Function                                    | Adjustment range                                                                                                                                                                                                                                                                                                                                                                                                 | Minimum<br>setting unit<br>(Panel/Communi-<br>cation) | Default<br>setting | Write<br>during<br>running | Vector control   |                   | PM<br>control | V/f | Reference |
|-------------|---------------------------|---------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|--------------------|----------------------------|------------------|-------------------|---------------|-----|-----------|
|             |                           |                                             |                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                       |                    |                            | Speed<br>control | Torque<br>control |               |     |           |
| <b>F316</b> | 0316                      | Carrier frequency control<br>mode selection | 0 : Not decrease carrier frequency automatically<br>1 : Decrease carrier frequency automatically<br>2 : Not decrease carrier frequency automatically,<br>400V class supported<br>3 : Decrease carrier frequency automatically,<br>400V class supported<br>4 : Not decrease carrier frequency automatically,<br>with sinusoidal filter<br>5 : Decrease carrier frequency automatically,<br>with sinusoidal filter | 1/1                                                   | 1                  | Disabled                   | ●/●              | ●/●               | ●             | ●   | 5. 17     |
| <b>F467</b> | 0467                      | Motor oscillation control                   | 0 : Disabled<br>1 : Enabled(Low gain)<br>2 : Enabled(Middle gain)<br>3 : Enabled(High gain)                                                                                                                                                                                                                                                                                                                      | 1/1                                                   | 0                  | Disabled                   | —/—              | —/—               | —             | ●   | —         |
| <b>F495</b> | 0495                      | Max voltage modulation                      | 0 : Standard<br>1 : 100%<br>2 : 102.5%<br>3 : 105%                                                                                                                                                                                                                                                                                                                                                               | 1/1                                                   | 0                  | Disabled                   | ●/●              | ●/●               | ●             | ●   | —         |
| <b>F622</b> | 0622                      | Abnormal speed detection<br>time            | 0.01~100.0 sec.                                                                                                                                                                                                                                                                                                                                                                                                  | 0.01/0.01                                             | 0.01               | Enabled                    | ●/●              | ●/●               | —             | ●   | 6. 33. 13 |
| <b>F623</b> | 0623                      | Overspeed detection                         | 0.0:Disabled, 0.1~30.0Hz                                                                                                                                                                                                                                                                                                                                                                                         | 0.01/0.01                                             | 0                  | Enabled                    | ●/●              | ●/●               | —             | ●   | 6. 33. 13 |
| <b>F624</b> | 0624                      | Overspeed detection<br>frequency lower band | 0.0:Disabled, 0.1~30.0Hz                                                                                                                                                                                                                                                                                                                                                                                         | 0.01/0.01                                             | 0                  | Enabled                    | ●/●              | ●/●               | —             | ●   | 6. 33. 13 |