Frequency Inverter

CFW-09

Addendum to the CFW-09 Frequency Inverter Manual

Software Version: V4.40
Language: English
The version V4.40 was developed based on the standard version V4.09.

SAFETY NOTICES

Only qualified personnel should plan or implement the installation, start-up, operation and maintenance of this equipment. Personnel must review the entire Manual before attempting to install, operate or troubleshoot the CFW-09.

These personnel must follow all safety instruction included in the Manual and/or defined by local regulations.

Failure to comply with these instructions may result in personnel injury and/or equipment damage.

Information about the new functions on the V4.40 version:

- Special function for mechanical brake logic in parameter P203.
- Fieldbus and Forward Run/Reverse Run operation with mechanical brake logic.
- New incompatibilities for E24.
1 SPECIAL FUNCTION DESCRIPTION FOR THE MECHANICAL BRAKE LOGIC

### Parameter | Range [Factory Setting] | Description / Notes
---|---|---
P203 (1) Special Function Selection | 0 to 2 [0] - | It defines the selection type of special functions: Table 6.16: Special function selection

<table>
<thead>
<tr>
<th>P203</th>
<th>Functions</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Not Used</td>
</tr>
<tr>
<td>1</td>
<td>PID Regulator</td>
</tr>
<tr>
<td>2</td>
<td>Mechanical Brake Logic</td>
</tr>
</tbody>
</table>

P203 = 1:

* For the special function of PID regulator, refer to detailed description of related parameters (P520 to P535);
* When P203 is changed to 1, P265 is changed automatically to 15 (Manual/Auto).

P203 = 2:

* When P203 is changed to 2, parameters P220, P222, P224, P225, P227, P228, P264, P265, P266, P279 and P313 are automatically changed to functions compatible with the brake logic.
* To obtain details on the “Brake Logic” function, refer to the detailed description of parameter P275 to P280 and figure 6.39q;

**Note:** parameters that are automatically changed when P203=2 is programmed serve only to help with parametrization of the brake logic function.

<table>
<thead>
<tr>
<th>Parameter that affect others when set</th>
<th>Parameter that is affected and modified automatically</th>
<th>Condition where it occurs</th>
</tr>
</thead>
<tbody>
<tr>
<td>P203</td>
<td>P220, P222, P223, P224, P225, P226, P227, P228, P237, P263, P265, P279, P313</td>
<td>During the oriented start-up During normal operation</td>
</tr>
</tbody>
</table>

| | No | Yes |
2  LOGIC FOR THE BRAKE ACTIVATION WHEN DOx/RELAY = 30 OR 31

2.1 DETAILS ABOUT THE OPERATION

![Diagram](image)

**Figure 6.39 q) (cont.): Details about the operation of the digital and relay output functions**

**NOTE!**

1) To release the brake (transition from NO to NC), it is performed the comparison in series Is > Ix, Is > Imr, the check of start command (*), be in Run and Without Error;

2) To engage the brake (transition NC to NO), it is performed the comparison by N > Nx ou N*t > Nx;

3) When P202 = 4 (Vector with Encoder) the brake will not engage when the speed pass by zero in the reversal of the rotation direction;

4) The hysteresis used in the comparison N > Nx or N*t > Nx can be adjusted in parameter P287;

5) Programming P203 = 2, some parameters that are used in the brake logic function will be automatically programmed. See details in parameter P203.

(*) The following start parameters are available:

- Start/Stop (via DI1);
- Forward Run/Reverse Run (via DI3 and DI2 or DI4);
- Fieldbus (**).

If another kind of start command – which was not mentioned above – is used together with the brake logic function, E24 will be generated and an incompatibility message will be displayed. See detailed description in table 4.2.

(**) When the start command used is via “Fieldbus”, WEG recommends to program P313=5 (Cause Fatal Error).
2.2 ADDITIONAL NOTES ABOUT THE DIGITAL OUTPUTS FUNCTION

**Brake (Speed)** – Real Speed
Uses the Real Speed in the comparison of N > Nx to activate the brake.

**Brake (Ref.)** – Total Speed Reference
Uses the Total Speed Reference in the comparison of N*t > Nx to activate the brake.

Note: Nx programmable in P288.

**NOTE!**

i. For further details, refer to figures 6.39 q), r) and s).
ii. Programming P203=2 some parameters that are used in the brake logic function will be automatically changed. See description of parameter P203.
iii. Only one of the options: Brake (Speed) or Brake (Ref.) must be programmed in the digital or relay outputs. For further details, contact WEG.
3 NEW INCOMPATIBILITIES BETWEEN PARAMETERS - E24

Incompatibilities have been added in the table 4.2. See below:

33) P225 or P228 ≠ 0 and P275 or P276 or P277 or P279 or P280 = 30 or 31 (JOG Function with the Mechanical Brake Logic).

34) P265 or P266 or P268 or P269 or P270 = 10 and P275 or P276 or P277 or P279 or P280 = 30 or 31 (JOG+ Function with the Mechanical Brake Logic).

35) P265 or P266 or P268 or P269 or P270 = 11 and P275 or P276 or P277 or P279 or P280 = 30 or 31 (JOG- Function with the Mechanical Brake Logic).

36) P224 or P227 = 0 and P275 or P276 or P277 or P279 or P280 = 30 or 31 (Start/Stop via keypad (HMI) with the Mechanical Brake Logic).

37) P265 or P266 or P267 or P268 or P269 or P270 = 14 and P275 or P276 or P277 or P279 or P280 = 30 or 31 (3 Wire Start/Stop Function with the Mechanical Brake Logic).

38) P265 or P266 or P267 or P268 or P269 or P270 = 8 and P275 or P276 or P277 or P279 or P280 = 30 or 31 (Fast Stop Mode with the Mechanical Brake Logic).

39) P232 = 1 or 2 and P275 or P276 or P277 or P279 or P280 = 30 or 31 (Coast to Stop or Fast Mode with the Mechanical Brake Logic).