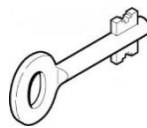


PowerXL™

DC1...E1 Variable Frequency Drives

Access to Parameter Level 2 + 3 – Parameter Lock – Load Default



Level 2	<p>1 – Fundamental – No previous experience necessary</p> <p>2 – Basic – Basic knowledge recommended</p> <p>3 – Advanced – Reasonable knowledge required</p> <p>4 – Expert – Good experience recommended</p>
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Danger! - Dangerous electrical voltage!

- Disconnect the power supply of the device.
- Ensure that devices cannot be accidentally restarted.
- Verify isolation from the supply.
- Cover or enclose any adjacent live components.
- Follow the engineering instructions (AWA/IL) for the device concerned.
- Only suitably qualified personnel in accordance with EN 50110-1/-2 (VDE 0105 Part 100) may work on this device/system.
- Before installation and before touching the device ensure that you are free of electrostatic charge.
- The functional earth (FE, PES) must be connected to the protective earth (PE) or the potential equalization. The system installer is responsible for implementing this connection.
- Connecting cables and signal lines should be installed so that inductive or capacitive interference does not impair the automatic control functions.
- Suitable safety hardware and software measures should be implemented for the I/O interface so that an open circuit on the signal side does not result in undefined states.
- Deviations of the mains voltage from the rated value must not exceed the tolerance limits given in the specification, otherwise this may cause malfunction and/or dangerous operation.
- Emergency stop devices complying with IEC/EN 60204-1 must be effective in all operating modes. Unlatching of the emergency-stop devices must not cause a restart.
- Devices that are designed for mounting in housings or control cabinets must only be operated and controlled after they have been properly installed and with the housing closed.
- Wherever faults may cause injury or material damage, external measures must be implemented to ensure a safe operating state in the event of a fault or malfunction (e.g. by means of separate limit switches, mechanical interlocks etc.).
- Frequency inverters may have hot surfaces during and immediately after operation.
- Removal of the required covers, improper installation or incorrect operation of motor or frequency inverter may destroy the device and may lead to serious injury or damage.
- The applicable national safety regulations and accident prevention recommendations must be applied to all work carried on live frequency inverters.
- The electrical installation must be carried out in accordance with the relevant electrical regulations (e. g. with regard to cable cross sections, fuses, PE).
- Transport, installation, commissioning and maintenance work must be carried out only by qualified personnel (IEC 60364, HD 384 and national occupational safety regulations).
- Installations containing frequency inverters must be provided with additional monitoring and protective devices in accordance with the applicable safety regulations. Modifications to the frequency inverters using the operating software are permitted.
- All covers and doors must be kept closed during operation.
- To reduce the hazards for people or equipment, the user must include in the machine design measures that restrict the consequences of a malfunction or failure of the frequency inverter (increased motor speed or sudden standstill of motor). These measures include:
 - Other independent devices for monitoring safety related variables (speed, travel, end positions etc.).
 - Electrical or non-electrical system-wide measures (electrical or mechanical interlocks).
 - Never touch live parts or cable connections of the frequency inverter after it has been disconnected from the power supply. Due to the charge in the capacitors, these parts may still be alive after disconnection. Consider appropriate warning signs.

Disclaimer

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1 General

By default, variable frequency drives of the series **PowerXL™ DC1...E1** are configured in a way, that they are applicable for a plurality of applications without any change. In addition it is possible to carry out application dependent settings by changing parameter values.

The parameters are divided into three groups:

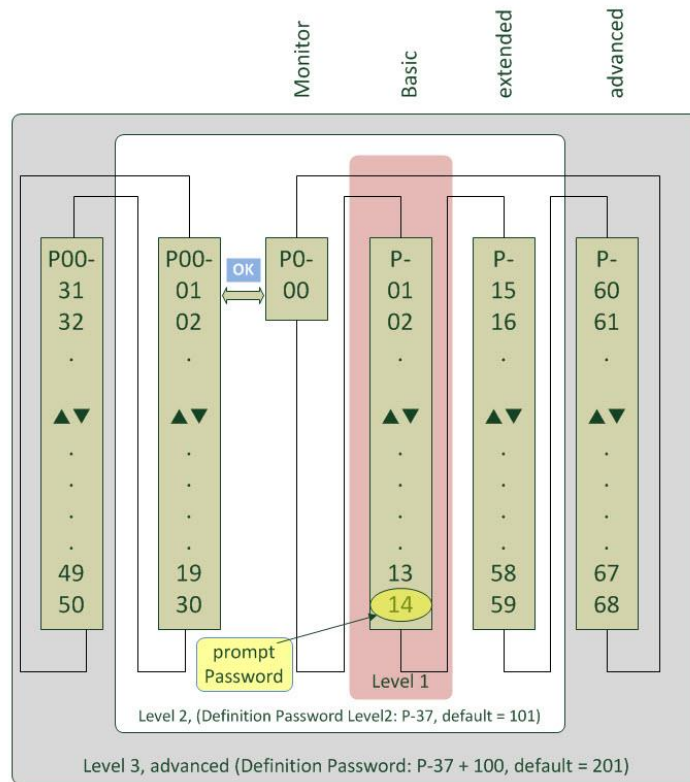
- “Basic” for the most common parameters (= Level 1)
- “extended” for further parameters and “Monitor” for display values (= Level 2)
- “advanced” for all parameters and display values (= Level 3)

This Application Note describes:

- the access to levels 2 and 3
- the possibility, to prevent a change of parameter values
- how to restore the factory settings (default)

2 Level 2 and 3 (Extended Menu + Monitor)

By default only the Basic-Menu (Level 1) is accessible. It contains those parameters, which are used most. Levels 2 and 3 are not visible at a first glance. Access is possible via parameter „Password“ (P-14).



2.1 Password (P-14)

Entering the password enables the access to the parameters and display values of “Level 2” and “Level 3”. The prompted value must be equal to

- the value of parameter P-37 to get access to level 2
- the value of (P-37 + 100) to get access to level 3.

PNU	Parameter	Name	Range	Default
320.0	P-14	Password	0...9999	101

2.2 Level 2

2.2.1 Password Level2 (P-37)

This parameter defines the password to get access to level 2. The value of P-37 has to be prompted in P-14 (see below).

PNU	Parameter	Name	Range	Default
320.1	P-37	Password Level2	0...9999	101

2.2.2 Access to level 2

- Press button **OK** for 2 s, to access the parameter level
- The display shows the parameter, which was used at last.
- Select parameter P-14 with ▲ and ▼
- Press **OK** to change value with ▲ and ▼ to the „Password Level 2“ set with P-37. (Default: 101)
- Press **OK** to acknowledge

Now the extended parameter set (all parameters up to P-59 and display values P00-01 ... P00-30) are available.

2.2.3 Quit level 2

- Set P-14 to a value, which is different from the „Password Level2“ set with P37 or (P-37 + 100).
- Press **OK** to acknowledge
- Only the parameters P-01 ... P-14 are accessible now.

2.2.4 Change „Password Level2“

- Select P-37 (Level 2 has to be accessible, see above)
- Press **OK** to change value with ▲ and ▼
- Press **OK** to acknowledge
- When accessing level 2 next time, the new „Password Level2“ has to be prompted at P-14.

2.3 Level 3

2.3.1 Password Level 3

One gets the password to “Level 3” by adding 100 to “Password Level2” (P-37).

Example: Password Level 2 (P-37) = 500
Password Level 3 = P-37 + 100 = 500 + 100 = 600

2.3.2 Access to level 3

- Press button **OK** for 2 s, to access the parameter level
- The display shows the parameter, which was used at last.
- Select parameter P-14 with ▲ and ▼
- Press **OK** to change value with ▲ and ▼ to the „Password Level 2“ set with P-37 + 100. (Default: 201)
- Press **OK** to acknowledge

Now “Level 3” (all parameters and display values P00-...) is available.

2.3.3 Quit level 3

- Set P-14 to a value, which is different from the „Password Level2“ set with P37 or (P-37 + 100).
- Press **OK** to acknowledge
- Only the parameters P-01 ... P-14 are accessible now.

3 Parameter Lock

Variable frequency drives of the series DC1...E1 offer the possibility to protect parameters from being changed.

3.1 Parameter Lock (P-38)

To protect parameters from being changed, P-38 has to be set to „1“. To prevent, that any user can unlock the parameters, the access to level 2 should also be locked (see above: “Quit level 2”).

The parameter lock causes:

- that all parameters, except P-14 (Password) and P-38 (Parameter Lock), are protected against changes.
- that all parameters can be selected and their actual values are visible.
- that during an attempt of a change, this will not be accepted. In this case „L“ is shown on the left hand side of the display (= locked).

PNU	Parameter	Name	Range	Default
625.0	P-38	Parameter Lock	0 = parameters not locked 1 = parameters locked	0 = parameters not locked

3.2 Lock parameters

- Release extended menu with P-14 (see above: „Access to level 2“).
- Select P-38 and set it to „1“.
- Possibly change P-37 (Password Level 2), that access to level 2 cannot be achieved by using the default (known) password (see above: “Change Password Level 2”).
- Quit level 2 and lock access (see above: „Quit level 2“).

3.3 Unlock parameters

- Release extended menu with P-14 (see above: „Access to level 2“).
- Select P-38 and set it to „0“.
- The parameters are now unlocked.

4 Restore Default Settings

In some situations it can make sense to restore the factory settings. This is done via keypad and can only be achieved when the drive is disabled (no START signal).

- Press ▲ and ▼ on the keypad at the same time and hold them.
- Press STOP for about 2 s in addition.
- The display shows „P-DEF“ (Parameter default).
- Release buttons.
- Acknowledge by pressing STOP.