



## 1. Mechanical installation

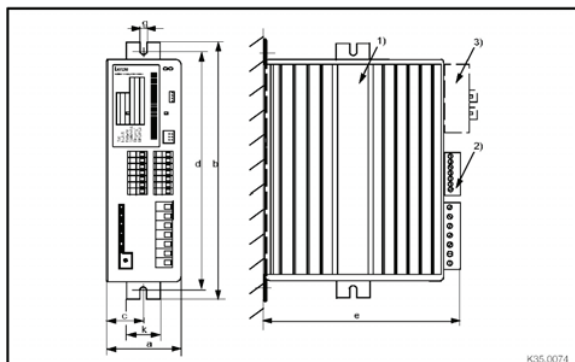
### 1.1. Mechanical exchange of frequency inverters $\leq 11\text{kW}$

Since the dimensions of the 82xx ( $\leq 11\text{kW}$ ) housings are not identical to the ones of the 8200vector ( $\leq 11\text{kW}$ ) series, modifications of the control cabinet are required when these devices are to be interchanged. The different dimensions and resulting necessary modifications are listed in the table below.

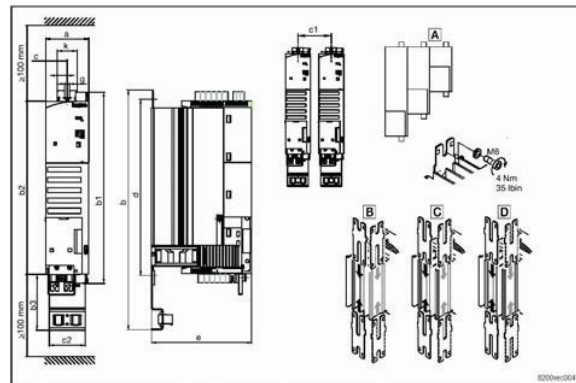
| Dimensions [mm]<br>Device | a   | b <sup>1) 2)</sup> | c    | d <sup>1)</sup> | e   | g   |
|---------------------------|-----|--------------------|------|-----------------|-----|-----|
| 8201 (0.37kW)             | 64  | 210                | 29   | 190             | 158 | 6.5 |
| E82EV371K2C               | 60  | 213...263          | 30   | 110...200       | 140 | 6.5 |
| 8202 (0.75 kW)            | 64  | 210                | 29   | 190             | 198 | 6.5 |
| 8211 (0.75 kW)            | 83  | 258                | 38   | 263             | 211 | 6.5 |
| E82EV751KxC               | 60  | 273...323          | 30   | 170...260       | 140 | 6.5 |
| 8203 (1.5 kW)             | 83  | 283                | 38   | 263             | 211 | 6.5 |
| 8212 (1.5 kW)             | 83  | 258                | 38   | 263             | 211 | 6.5 |
| E82EV152KxC               | 60  | 333...363          | 30   | 240...290       | 140 | 6.5 |
| 8204 (2.2 kW)             | 83  | 283                | 38   | 263             | 211 | 6.5 |
| 8213 (2.2 kW)             | 83  | 258                | 38   | 263             | 211 | 6.5 |
| E82EV222KxC               | 60  | 359...363          | 30   | 240...290       | 162 | 6.5 |
| 8214 (3 kW)               | 83  | 258                | 38   | 263             | 211 | 6.5 |
| E82EV302KxC               | 100 | 333                | 50   | 255             | 140 | 6.5 |
| 8215 (4 kW)               | 125 | 283                |      | 263             | 218 | 6.5 |
| E82EV402KxC               | 100 | 333                | 50   | 255             | 140 | 6.5 |
| 8216 (5.5 kW)             | 125 | 283                |      | 263             | 218 | 6.5 |
| E82EV552KxC               | 125 | 333                | 50   | 255             | 140 | 6.5 |
| 8217 (7.5 kW)             | 125 | 283                |      | 263             | 218 | 6.5 |
| E82EV752KxC               | 125 | 333                | 62.5 | 255             | 140 | 6.5 |
| 8218 (11 kW)              | 125 | 283                |      | 263             | 218 | 6.5 |
| E82EV113KxC               | 125 | 359                | 62.5 | 280...295       | 162 | 6.5 |

1) Dependent on the method how the fixing sheets B C D are mounted

2) Including EMC shield sheet with shield clips for the motor cable and the supply for the motor temperature monitoring



- 1) Fixing rail for side assembly
- 2) Observe the free space required for the connection cables
- 3) With attachable fieldbus or I/O module:  
Observe assembly depth and assembly space required for connection cables



- A) Different sizes can only be mounted side by side when the smaller units are mounted to the right-hand-side of the bigger units!



With regard to the width (column a) only the 3kW device causes problems since the 8200vector is wider than the previous model. Regarding the height, 8200vector devices are always bigger than the previous versions (column b). As a result, more space is to be reserved in the control cabinet. Thus the distance between the bore holes (column d) may be increased, too. All further dimensions of the 8200vector will not cause any problems when devices are to be exchanged.

The devices of the 824x series ( $\leq 11\text{kW}$ ) are dimensioned much bigger ( housings of the 9300 series). As a result, the dimensionsn will not cause any problems when the 8200vector ( $\leq 11\text{kW}$ ) is to be replaced by an 824x device.

### **1.2. Mechanical exchange of frequency inverter $\geq 15\text{kW}$**

The devices of the 82xx ( $\geq 15\text{kW}$ ) and 8200vector ( $\geq 15\text{kW}$ ) series are identical with regard to their dimensions. Thus they can be interchanged without having to make any modifications in the control cabinet.



## 2. Electrical installation

### 2.1. Mains and motor connection

The mains and motor connections of the 820x, 821x series are in a different location than the connections of the corresponding controllers of the 8200vector series (0.25 kW to 11 kW). The connection of the 820x and 821x controllers are located on the front of the controller.

Mains and motor connection



The mains connection of the 8200vector series is located on the top and the motor connection on the bottom of the controller.

Mains connection



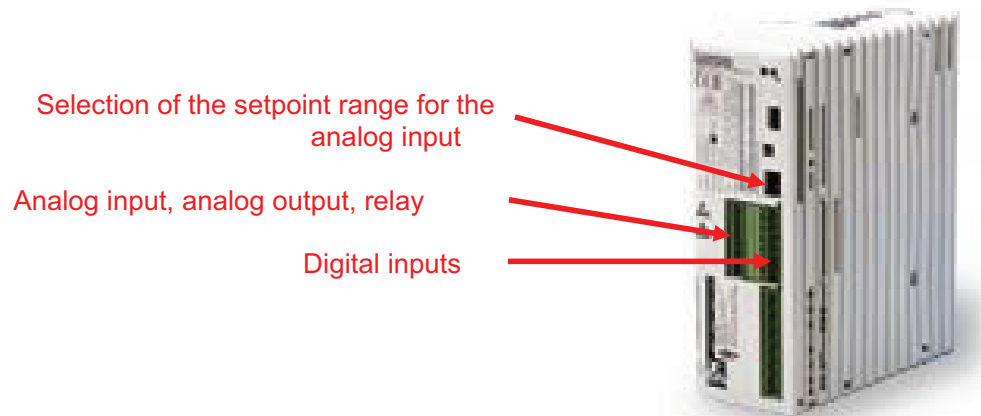
Motor connection

The mains and motor connections of the 822x and 824x series and the 8200vector series are in the same location.

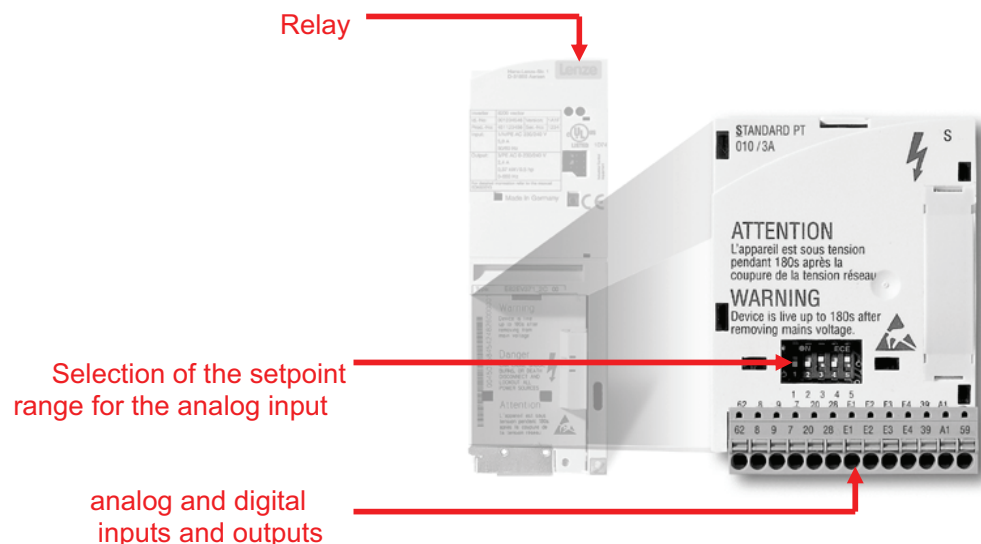


## 2.2. Control connections

The control connections for the analog input and output, the digital inputs and the relay of the drive controllers type 820x, 821x, 822x and 824x are directly integrated in the basic device, namely on the front. The setpoint range for the analog input is selected with a jumper on the basic device.



The only 8200vector control connection integrated in the basic device is the relay connection, namely on the top. The other control connections are located in the standard I/O for the FIF interface of the 8200vector. By using this standard I/O, the 8200vector becomes compatible with the 82xx regarding the control connections. The setpoint range of the 8200vector for the analog input is selected with the DIP switch of the standard I/O.





The following table compares the technical data of the control connections:

Explanation of the table:

Technical data of the drive controllers with:

black text → Lenze default setting

grey text → Optional value range, configurable via hardware or software

| Signal type                                                             | Terminal             | 820x, 821x,<br>822x, 824x                                                                                                                    | 8200vector with<br>standard I/O                                                                                                                                  |
|-------------------------------------------------------------------------|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Analog output                                                           | 62                   | 0...6 V / 2 mA                                                                                                                               | 0...6 V / 2mA<br><i>0...10 V / 2 mA</i>                                                                                                                          |
| Reference potential<br>for analog signals                               | 7                    | GND1                                                                                                                                         | GND1                                                                                                                                                             |
| Analog input                                                            | 8                    | 0...+10 V<br><i>0...+5 V</i><br><br>0...+20 mA<br><i>+4...+20 mA</i><br>Input resistance<br>voltage signal: >100 kΩ<br>Current signal: 250 Ω | 0...+10 V<br><i>0...+5 V</i><br><i>-10 V...+10 V</i><br>0...+20 mA<br><i>+4...+20 mA</i><br>Input resistance<br>voltage signal: >100 kΩ<br>Current signal: 250 Ω |
| DC voltage source<br>for setpoint<br>potentiometer                      | 9                    | 5.2 V / 6 mA                                                                                                                                 | 5.2 V / 10 mA                                                                                                                                                    |
| DC voltage source<br>for digital inputs and<br>outputs                  | 20                   | 12 V / 20 mA                                                                                                                                 | 20 V / 40 mA                                                                                                                                                     |
| Controller inhibit<br>(CINH)                                            | 28                   | HIGH: +12...+30 V<br>LOW: 0...+3 V                                                                                                           | HIGH: +12...+30 V<br>LOW: 0...+3 V                                                                                                                               |
| Digital inputs                                                          | I1<br>I2<br>I3<br>I4 | HIGH: +12...+30 V<br>LOW: 0...+3 V                                                                                                           | HIGH: +12...+30 V<br>LOW: 0...+3 V                                                                                                                               |
| Reference potential<br>for digital signals                              | 39                   | GND2 (isolated from<br>terminal 7 / GND1)                                                                                                    | GND2 (isolated from<br>terminal 7 / GND1)                                                                                                                        |
| Digital output                                                          | O1                   | -                                                                                                                                            | Internal supply:<br>0...+20 V / 10 mA<br>external supply:<br>0...+24 V / 50 mA                                                                                   |
| DC supply for<br>terminal A1                                            | 59                   | -                                                                                                                                            | Internal (bridge to terminal 20):<br>+20 V<br>external:<br>+24 V                                                                                                 |
| Relay output K1                                                         | K11<br>K12<br>K14    | AC 24 V / 3.0 A<br>DC 60 V / 0.5 A                                                                                                           | AC 250 V / 3.0 A<br>DC 24 V / 2 A...240 V /<br>0.22 A                                                                                                            |
| Relay output K2 *)<br>*) only with 822x, 824x and<br>8200vector ≥ 15 kW | K21<br>K22<br>K24    | AC 250 V / 3.0 A<br>DC 60 V / 0.5 A                                                                                                          | AC 250 V / 3.0 A<br>DC 24 V / 2 A...240 V /<br>0.22 A                                                                                                            |



## 2.3. Brake chopper / brake resistor

The 82XX requires an external brake chopper for braking a drive. This prevents an exceeding rise of the DC-bus voltage. The brake chopper is connected to the terminals for the DC-bus voltage (+UG / -UG) and has to be fitted with a brake resistor.

Only the 8200vector controllers with a power range from 0.55 kW to 90 kW have DC-bus terminals (+UG / -UG). Thus, the brake chopper in use with the brake resistor does not need to be replaced when replacing the 82XX by an 8200vector. The 8200vector controllers with 0.25 kW and 0.37 kW do not have these DC-bus terminals. Since the 8200vector (0.25 kW to 11 kW) is not fitted with an internal brake transistor the brake resistor in use can directly be connected to the controller (terminal BR1 / BR2). There is no need for an external brake chopper.

## 2.4. Wiring according to EMC requirements

In order to ensure a wiring according to EMC requirements when replacing the 82XX by the 8200vector, some aspects have to be especially considered when wiring the 8200vector series. The shielding of the motor and control cable has to be connected to the supplied shield sheets with a large surface. Additionally, the shield of the motor cable has to be connected to the PE terminal on the motor output of the frequency inverter. The controller itself has to be mounted directly on the electrically conductive mounting plate of the control cabinet in order to ensure an optimal EMC connection.

Compliance with the RFI levels A or B of the 82XX frequency inverter can only be guaranteed by using external mains filters. A 8200vector model is the 000 ("with integrated filter measures"). When using this model the RFI levels A and B are complied with (depending on the motor cable length). If a radio interference level in combination with motor cable lengths > 5...20m (depending on the controller) is required, external filter measures are available, which then have to be used in combination with the 8200vector model 200 ("without integrated filter measures"). When using long motor cables (> 50 m) it could be necessary to additionally install a motor filter on the 8200vector. Further information is provided in the documentation.



## 3. Parameter setting

### 3.1. Selection of the correct control mode

Since not all of the control modes available in the 82XX controllers are available in the 8200vector, the following table helps you to change from the one controller series to the other.

|                       |                                                                                     | 8200vector                               |                                                       |                              |                                         |
|-----------------------|-------------------------------------------------------------------------------------|------------------------------------------|-------------------------------------------------------|------------------------------|-----------------------------------------|
|                       |                                                                                     | V/f characteristic control<br>(C014 = 2) | V/f <sup>2</sup> characteristic control<br>(C014 = 3) | Vector control<br>(C014 = 4) | Sensorless torque control<br>(C014 = 5) |
| 820X                  | V/f characteristic control with automatic boost<br>(C014 = 1)                       |                                          |                                                       | X                            |                                         |
|                       | V/f <sup>2</sup> characteristic control with automatic boost<br>(C014 = 2)          |                                          |                                                       | X                            |                                         |
|                       | V/f characteristic control with constant $V_{min}$ boost<br>(C014 = 3)              | X                                        |                                                       |                              |                                         |
|                       | V/f <sup>2</sup> characteristic control with constant $V_{min}$ boost<br>(C014 = 4) |                                          | X                                                     |                              |                                         |
| 821X / 822X /<br>824X | V/f characteristic control with constant $V_{min}$ boost<br>(C014 = 3)              | X                                        |                                                       |                              |                                         |
|                       | V/f characteristic control with constant $V_{min}$ boost<br>(C014 = 4)              |                                          | X                                                     |                              |                                         |
|                       | Motor current control<br>(C014 = 5)                                                 |                                          |                                                       | X                            |                                         |



## 3.2. Parameter setting 820x / 821x / 822x / 824x

The following table shows the codes of the 82xx and the corresponding setting of the 8200vector codes. The 8200vector provides more code options than the 82xx. These options are not shown in this table.

Explanation of the table: Options of the drive controllers with:  
 black text → Lenze default setting  
 grey text → Further options  
 → Difference between 82xx and 8200vector

| Code | Designation       | 820x, 821x, 822x, 824x |                                                                                                 | 8200vector with standard I/O                                                                                                                                                                                                   |                                                                    |
|------|-------------------|------------------------|-------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|
| C001 | Operating mode    | 0                      | Setpoint selection via terminal 8<br>Control via terminals<br>Parameter setting via keypad      | 0                                                                                                                                                                                                                              | Other source than parameter channel / process data channel of AIF  |
|      |                   | 1                      | Setpoint selection via keypad or LECOM<br>Control via terminals<br>Parameter setting via keypad | 1                                                                                                                                                                                                                              | Parameter channel of an AIF bus module                             |
|      |                   | 2                      | Setpoint selection via terminal 8<br>Control via terminals<br>Parameter setting via LECOM       | 2                                                                                                                                                                                                                              | Other source than parameter channel / process data channel of AIF  |
|      |                   | 3                      | Setpoint selection via LECOM<br>Control via LECOM<br>Parameter setting via LECOM                | 3                                                                                                                                                                                                                              | Process data channel of an AIF bus module (AIF-IN.W1 or AIF-IN.W2) |
| C002 | Parameter set     | 0                      | Function executed                                                                               | 0                                                                                                                                                                                                                              | Function executed                                                  |
|      |                   | 1                      | Overwrite PAR1 with factory setting                                                             | 1                                                                                                                                                                                                                              | Lenze setting → PAR1                                               |
|      |                   | 2                      | Overwrite PAR2 with factory setting                                                             | 2                                                                                                                                                                                                                              | Lenze setting → PAR2                                               |
|      |                   | 3                      | Overwrite PAR1 and PAR2 with keypad data                                                        | 10                                                                                                                                                                                                                             | Keypad → PAR1 ... PAR4                                             |
|      |                   | 4                      | Overwrite PAR1 with keypad data                                                                 | 11                                                                                                                                                                                                                             | Keypad → PAR1                                                      |
|      |                   | 5                      | Overwrite PAR2 with keypad data                                                                 | 12                                                                                                                                                                                                                             | Keypad → PAR2                                                      |
|      |                   | 6                      | Transfer PAR1 and PAR2 to keypad                                                                | 20                                                                                                                                                                                                                             | PAR1 ... PAR4 → Keypad                                             |
| C004 | Switch-on display | 0                      | Field frequency $f_d$                                                                           | The bar graph display is parameterised in C004 (Lenze setting C004 = 56 → controller load). The switch-on display of the 8200vector is parameterised via the USER menu C0517/1 (Lenze setting C517/1 = 50 → output frequency). |                                                                    |
|      |                   | 1                      | Controller load                                                                                 |                                                                                                                                                                                                                                |                                                                    |
|      |                   | 2                      | Motor current                                                                                   |                                                                                                                                                                                                                                |                                                                    |



| Code | Designation                           | 820x, 821x, 822x, 824x |         |          |          | 8200vector with standard I/O |    |        |          |          |          |
|------|---------------------------------------|------------------------|---------|----------|----------|------------------------------|----|--------|----------|----------|----------|
| C007 | Terminal configuration digital inputs |                        | E4      | E3       | E2       | E1                           |    | E4     | E3       | E2       | E1       |
|      |                                       | 0                      | CW/CCW  | DCB      | JOG1/2/3 |                              | 0  | CW/CCW | DCB      | JOG1/2/3 |          |
|      |                                       | 1                      | CW/CCW  | PAR      | JOG1/2/3 |                              | 1  | CW/CCW | PAR      | JOG1/2/3 |          |
|      |                                       | 2                      | CW/CCW  | QSP      | JOG1/2/3 |                              | 2  | CW/CCW | QSP      | JOG1/2/3 |          |
|      |                                       | 3                      | CW/CCW  | PAR      | DCB      | JOG1                         | 3  | CW/CCW | PAR      | DCB      | JOG1/3   |
|      |                                       | 4                      | CW/CCW  | QSP      | PAR      | JOG1                         | 4  | CW/CCW | QSP      | PAR      | JOG1/3   |
|      |                                       | 5                      | CW/CCW  | DCB      | TRIP set | JOG1                         | 5  | CW/CCW | DCB      | TRIP set | JOG1/3   |
|      |                                       | 6                      | CW/CCW  | PAR      | TRIP set | JOG1                         | 6  | CW/CCW | PAR      | TRIP set | JOG1/3   |
|      |                                       | 7                      | CW/     | PAR      | DCB      | TRIP set                     | 7  | CW/CCW | PAR      | DCB      | TRIP set |
|      |                                       | 8                      | CW/CCW  | QSP      | PAR      | TRIP set                     | 8  | CW/CCW | QSP      | PAR      | TRIP set |
|      |                                       | 9                      | CW/CCW  | QSP      | TRIP set | JOG1                         | 9  | CW/CCW | QSP      | TRIP set | JOG1/3   |
|      |                                       | 10                     | CW/CCW  | TRIP set | UP       | DOWN                         | 10 | CW/CCW | TRIP set | UP       | DOWN     |
|      |                                       | 11                     | CW/CCW  | SB       | UP       | DOWN                         | 11 | CW/CCW | DCB      | UP       | DOWN     |
|      |                                       | 12                     | CW/CCW  | PAR      | UP       | DOWN                         | 12 | CW/CCW | PAR      | UP       | DOWN     |
|      |                                       | 13                     | CW/CCW  | QSP      | UP       | DOWN                         | 13 | CW/CCW | QSP      | UP       | DOWN     |
|      |                                       | 14                     | CCW/QSP | CW/QSP   | DCB      | JOG1                         | 14 | CW/QSP | CCW/QSP  | DCB      | JOG1/3   |
|      |                                       |                        |         |          |          |                              |    |        |          |          |          |



| Code | Designation                                           | 820x, 821x, 822x, 824x |                                                                                            | 8200vector with standard I/O |                                                                                                                             |
|------|-------------------------------------------------------|------------------------|--------------------------------------------------------------------------------------------|------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| C014 | Operating mode                                        | 0                      | Linear characteristic $V \sim f_d$ with automatic boost ( 820x only)                       | -                            | -                                                                                                                           |
|      |                                                       | 1                      | Square-law characteristic $V \sim f_d^2$ with automatic boost (820x only)                  | -                            | -                                                                                                                           |
|      |                                                       | 2                      | Linear characteristic $V \sim f_d$ with constant $V_{min}$ boost                           | 2                            | Linear characteristic $V \sim f_d$ with constant $V_{min}$ boost                                                            |
|      |                                                       | 3                      | Square-law characteristic $V \sim f_d^2$ with constant $V_{min}$ boost                     | 3                            | Square-law characteristic $V \sim f_d^2$ with constant $V_{min}$ boost                                                      |
|      |                                                       | 4                      | Motor current control (only 821x / 822x / 824x)                                            | 4                            | Vector control                                                                                                              |
| C015 | V/f rated frequency                                   | 50                     | 30.00 ... {0.05Hz} ...960.00 for 820x                                                      | 50                           | 7.50 ... {0.02Hz} ...960.00                                                                                                 |
|      |                                                       | 50                     | 7.50 ... {0.02Hz} ...960.00 for 821x / 822x / 824x                                         |                              |                                                                                                                             |
| C016 | $V_{min}$ boost                                       | 0 <sup>*)</sup>        | 0.00 ... {0.02%} ...40.00<br><sup>*)</sup> depending on the controller in case of the 820x | <sup>*)</sup>                | 0.00 ... {0.01%} ...40.00<br><sup>*)</sup> depending on the controller                                                      |
| C017 | Operating threshold $Q_{min}$                         | 0                      | 0.00 ... {0.02Hz} ...480.00                                                                | 0                            | 0.00 ... {0.02Hz} ...650.00                                                                                                 |
| C018 | Switching frequency (only 821x/ 822x/ 824x)           | 0                      | 4 kHz power-loss optimised                                                                 | 5                            | 4 kHz power-loss optimised (only 8200vector $\geq 15$ kW)                                                                   |
|      |                                                       | 1                      | 8 kHz power-loss optimised                                                                 | 6 <sup>*)</sup>              | 8 kHz power-loss optimised (only 8200vector $\geq 15$ kW)<br><sup>*)</sup> factory setting only for 8200vector $\geq 15$ kW |
|      |                                                       | 2                      | 12 kHz power-loss optimised                                                                | -                            | -                                                                                                                           |
|      |                                                       | 3                      | 16 kHz power-loss optimised                                                                | 7                            | 4 kHz power-loss optimised (only 8200vector $\geq 15$ kW)                                                                   |
|      |                                                       | 4                      | 12 kHz noise optimised                                                                     | -                            | -                                                                                                                           |
|      |                                                       | 5                      | 16 kHz noise optimised                                                                     | 3                            | 16 kHz sin, noise optimised                                                                                                 |
| C019 | Operating threshold Auto-DCB (only 821x/ 822x / 824x) | 0,1                    | 0.10 ... {0.02Hz} ...5.00                                                                  | 0,1                          | 0.10 ... {0.02Hz} ...650.00                                                                                                 |
| C021 | Slip compensation                                     | 0 <sup>*)</sup>        | 0.0 ... {0.1%} ...12.0<br><sup>*)</sup> depending on the controller if C014 = 2 or 3       | 0                            | -50.0 ... {0.1%} ...50.0                                                                                                    |
|      |                                                       | 0 <sup>*)</sup>        | 0.0 ... {0.1%} ...20.0<br><sup>*)</sup> depending on the controller if C014 = 2 or 3       |                              |                                                                                                                             |
| C022 | $I_{max}$ limit in motor mode                         | 150                    | 30 ... {1%} ...150                                                                         | 150                          | 30 ... {1%} ...150                                                                                                          |
| C023 | $I_{max}$ limit in generator mode                     | 80                     | 30 ... {1%} ...110                                                                         | 150                          | 30 ... {1%} ...150                                                                                                          |
|      |                                                       | 80                     | 30 ... {1%} ...150 (only 822x / 824x as of SW1.6)                                          |                              |                                                                                                                             |
| C034 | Master current                                        | 0                      | Voltage 0...+5 V / 0...+10 V<br>Current 0...20 mA                                          | 0                            | Unipolar voltage 0...+5 V / 0...+10 V<br>Current 0...20 mA                                                                  |
|      |                                                       | 1                      | 4...20 mA                                                                                  | 1                            | Current 4...20 mA                                                                                                           |
| C036 | Voltage/ current for DCB                              | <sup>*)</sup>          | 0.00 ... {0.02%} ...40.00<br><sup>*)</sup> depending on the controller                     | <sup>*)</sup>                | 0.00 ... {0.02%} ...150.00<br><sup>*)</sup> depending on the controller                                                     |
| C037 | JOG value 1                                           | 20                     | 0.00 ... {0.02Hz} ...480.00                                                                | 20                           | -650.00...{0.02Hz} ...650.00                                                                                                |
| C038 | JOG value 2                                           | 30                     | 0.00 ... {0.02Hz} ...480.00                                                                | 30                           | -650.00...{0.02Hz} ...650.00                                                                                                |
| C039 | JOG value 3                                           | 40                     | 0.00 ... {0.02Hz} ...480.00                                                                | 40                           | -650.00...{0.02Hz} ...650.00                                                                                                |



# Application Report No.: 300.1.14

**Lenze**

ACP

| Code | Designation                                          | 820x, 821x, 822x, 824x |                                                                 | 8200vector with standard I/O |                                                          |
|------|------------------------------------------------------|------------------------|-----------------------------------------------------------------|------------------------------|----------------------------------------------------------|
| C050 | Output frequency                                     |                        | - read only -                                                   |                              | - read only -                                            |
| C052 | Motor voltage                                        |                        | - read only -                                                   |                              | - read only -                                            |
| C054 | Motor current                                        |                        | - read only -                                                   |                              | - read only -                                            |
| C056 | Controller utilisation                               |                        | - read only -                                                   |                              | - read only -                                            |
| C061 | Temperature heatsink                                 |                        | - read only -                                                   |                              | - read only -                                            |
| C079 | Oscillation damping                                  | *)                     | *) depending on the controller                                  | 2                            | 0 ... {1} ...140                                         |
|      |                                                      | 5                      | 0 ... {1} ...80<br>(only 822x / 824x)                           |                              |                                                          |
| C088 | Rated motor current<br>(only 821x/<br>822x / 824x)   | *)                     | 0.0...1.2*rated output current<br>) depending on the controller | *)                           | 0.0 ... {0.1A} ...650.0<br>) depending on the controller |
| C091 | Motor cos $\varphi$<br>(only 821x/<br>822x / 824x)   | *)                     | 0.4 ... {0.1} ...1.0<br>) depending on the controller           | *)                           | 0.4 ... {0.1} ...1.0<br>) depending on the controller    |
| C093 | Device type                                          |                        | - read only -                                                   |                              | - read only -                                            |
| C099 | Software version                                     |                        | - read only -                                                   |                              | - read only -                                            |
| C105 | Deceleration time QSP<br>(only 821x/<br>822x / 824x) | 5                      | 0.00 ... {0.01s} ...999.00                                      | 5                            | 0.00 ... {0.02s} ...1300.00                              |
| C106 | Holding time for automatic DCB                       | 0,00                   | 0.00 ... {0.01s} ...50.00<br>for 820x                           | 0,5                          | 0.00 ... {0.01s} ...999.00                               |
|      |                                                      | 0,02                   | 0.00 ... {0.01s} ...999.00<br>for 821x / 822x / 824x            |                              |                                                          |
| C108 | Gain (C111)                                          | 220                    | 0 ... {1} ...255<br>for 820x                                    | 128                          | 0 ... {1} ... 255                                        |
|      |                                                      | 128                    | 0 ... {1} ... 255<br>for 821x / 822x / 824x                     |                              |                                                          |
| C111 | Monitor signal                                       | 0                      | Field frequency                                                 | 0                            | Output frequency with slip                               |
|      |                                                      | 1                      | Controller load                                                 | 1                            | Controller load                                          |
|      |                                                      | 2                      | Motor current                                                   | 2                            | Apparent motor current                                   |
|      |                                                      | 3                      | DC-bus voltage                                                  | 3                            | DC-bus voltage                                           |



| Code | Designation                                    | 820x, 821x, 822x, 824x |                                                           | 8200vector with standard I/O |                                                                                                            |
|------|------------------------------------------------|------------------------|-----------------------------------------------------------|------------------------------|------------------------------------------------------------------------------------------------------------|
| C117 | Function relay K2<br>(only 822x / 824x)        | 0                      | Ready for operation                                       | -                            | C409=16 ready for operation<br>(only 8200vector $\geq 15$ kW)                                              |
|      |                                                | 1                      | TRIP error message                                        | -                            | C409=25 TRIP error message<br>(only 8200vector $\geq 15$ kW)                                               |
|      |                                                | 2                      | Motor is running                                          | -                            | C409=26 motor is running<br>(only 8200vector $\geq 15$ kW)                                                 |
|      |                                                | 3                      | Motor is running / CW rotation                            | -                            | C409=27 motor is running /<br>CW rotation<br>(only 8200vector $\geq 15$ kW)                                |
|      |                                                | 4                      | Motor is running / CCW rotation                           | -                            | C409=28 motor is running<br>/CCW rotation<br>(only 8200vector $\geq 15$ kW)                                |
|      |                                                | 5                      | Field frequency $f_d = 0$                                 | -                            | C409=7 output frequency= 0<br>(only 8200vector $\geq 15$ kW)                                               |
|      |                                                | 6                      | $f_{dset}$ reached                                        | -                            | C409=4 frequency setpoint<br>reached<br>(only 8200vector $\geq 15$ kW)                                     |
|      |                                                | 7                      | $Q_{min}$ reached                                         | -                            | C409=6 lower than $Q_{min}$ (LOW<br>active)<br>(only 8200vector $\geq 15$ kW)                              |
|      |                                                | 8                      | $I_{max}$ reached                                         | -                            | C409=3 $I_{max}$ limit reached<br>(only 8200vector $\geq 15$ kW)                                           |
|      |                                                | 9                      | Overtemperature ( $\vartheta_{max}-10^\circ\text{C}$ )    | -                            | C409=13 warning<br>overtemperature ( $\vartheta_{max}-5^\circ\text{C}$ )<br>(only 8200vector $\geq 15$ kW) |
|      |                                                | 10                     | TRIP or $Q_{min}$ or IMP                                  | -                            | C409=18 TRIP or $Q_{min}$ or IMP<br>(only 8200vector $\geq 15$ kW)                                         |
|      |                                                | 11                     | PTC warning                                               | -                            | C409=19 PTC warning<br>(only 8200vector $\geq 15$ kW)                                                      |
| C119 | Function PTC<br>(only 822x / 824x)             | 0                      | PTC input not active                                      | 0                            | PTC input not active, earth<br>fault detection active                                                      |
|      |                                                | 1                      | PTC input active, TRIP and IMP (pulse<br>inhibit) are set | 1                            | PTC input active, TRIP and<br>IMP (pulse inhibit) are set,<br>earth fault detection active                 |
|      |                                                | 2                      | PTC input active, warning set                             | 2                            | PTC input active, warning set,<br>earth fault detection active                                             |
| C120 | $I^2t$ disconnectio<br>n<br>(only 822x / 824x) | 0                      | 0 ... {1%} ...100                                         | 0                            | 0 ... {1%} ...200                                                                                          |
| C125 | LECOM<br>baud rate                             | 0                      | 9600 baud                                                 | 0                            | 9600 baud                                                                                                  |
|      |                                                | 1                      | 4800 baud                                                 | 1                            | 4800 baud                                                                                                  |
|      |                                                | 2                      | 2400 baud                                                 | 2                            | 2400 baud                                                                                                  |
|      |                                                | 3                      | 1200 baud                                                 | 3                            | 1200 baud                                                                                                  |
|      |                                                | 4                      | 19200 baud                                                | 4                            | 19200 baud                                                                                                 |



| Code | Designation                                                              | 820x, 821x, 822x, 824x      |                                                                                                 | 8200vector with standard I/O |                                                                                                                                      |
|------|--------------------------------------------------------------------------|-----------------------------|-------------------------------------------------------------------------------------------------|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| C142 | Start condition                                                          | 0                           | Automatic start inhibited, flying-restart circuit not active                                    | 0                            | Automatic start inhibited after mains connection, flying-restart circuit not active                                                  |
|      |                                                                          | 1                           | Automatic start, if terminal 28 HIGH, flying-restart circuit not active                         | 1                            | Automatic start, if X3/28 = HIGH, flying-restart circuit not active                                                                  |
| C142 | Starting condition (configuration)                                       | 2                           | Automatic start inhibited, flying restart circuit active                                        | 2                            | Automatic start inhibited after mains connection, flying restart circuit active                                                      |
|      |                                                                          | 3                           | Automatic start, if terminal 28 = HIGH, flying restart circuit active                           | 3                            | Automatic start, if X3/28 = HIGH, flying restart circuit active                                                                      |
| C144 | Chopper-frequency reduction (only 821x/ 822x / 824x)                     | 0                           | No chopper-frequency reduction                                                                  | 0                            | No temperature-dependent chopper-frequency reduction                                                                                 |
|      |                                                                          | 1                           | Automatic chopper-frequency reduction when $\vartheta_{\max}-10^{\circ}\text{C}$                | 1                            | Automatic chopper-frequency reduction to 4 kHz when $\vartheta_{\max}-5^{\circ}\text{C}$ reached                                     |
| C161 | Current error                                                            | -                           | - read only -                                                                                   | -                            | - read only -                                                                                                                        |
| C162 | Last error                                                               | -                           | - read only -                                                                                   | -                            | - read only -                                                                                                                        |
| C163 | Last but one error                                                       | -                           | - read only -                                                                                   | -                            | - read only -                                                                                                                        |
| C164 | Last but two error                                                       | -                           | - read only -                                                                                   | -                            | - read only -                                                                                                                        |
| C170 | TRIP-reset selection                                                     | 0                           | TRIP-reset by pressing the STP key or LOW signal at ctrl. enable or fieldbus                    | 0                            | TRIP-reset by mains switching, <del>STOP</del> , LOW signal at X3/28, via function module or communication module                    |
|      |                                                                          | 1                           | Auto-TRIP-reset or TRIP-reset by pressing the STP key or LOW signal at ctrl. enable or fieldbus | 1                            | Auto-TRIP-reset or TRIP-reset by mains switching, <del>STOP</del> , LOW signal at X3/28, via function module or communication module |
| C171 | Delay for TRIP reset                                                     | 0                           | 0.00 ... {0.01s} 60.00                                                                          | 0                            | 0.00 ... {0.01s} ...60.00                                                                                                            |
| C178 | Operating hours                                                          | -                           | - read only -                                                                                   | -                            | - read only -                                                                                                                        |
| C179 | Mains switch-on time                                                     | -                           | - read only -                                                                                   | -                            | - read only -                                                                                                                        |
| C500 | Display factor for process variable numerator (only 821x/ 822x / 824x)   | <sup>20</sup> <sub>00</sub> | 1 ... {1} ...25000                                                                              | <sup>20</sup> <sub>00</sub>  | 1 ... {1} ...25000                                                                                                                   |
| C501 | Display factor for process variable denominator (only 821x/ 822x / 824x) | 1<br>0                      | 1 ... {1} ...25000                                                                              | 10                           | 1 ... {1} ...25000                                                                                                                   |