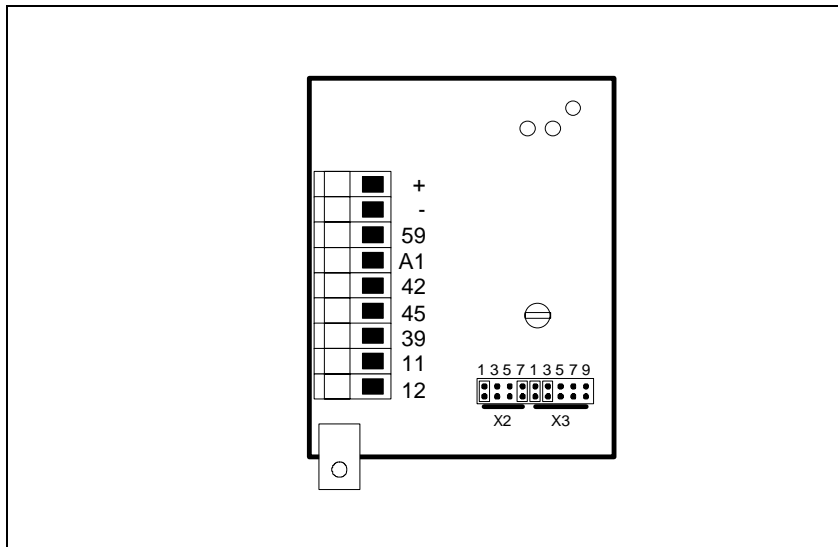


EDB8275UB  
00391882

# Lenze

## *Operating Instructions*



*I/O module*  
*Type 8275IB*

These Operating Instructions are valid for modules with the following nameplate data:

82751B .0x

combined with the units  
as from version

8200\_E .xx .xx

8210\_E .xx .21

8220\_E .xx .xx

8240\_E .xx .xx

Type

Enclosure

Hardware version + index

Software version + index

**Important:**

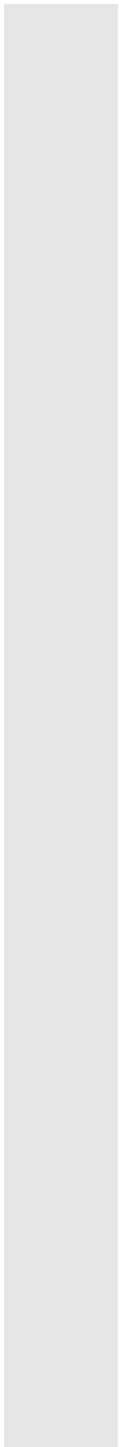
**These Operating Instructions are only valid in connection with the Operating Instructions for the basic units of the 8200, 8210, 8220 and 8240 series.**

Corresponds to the German edition of 20/08/1996

Edition of:: 22/08/1996

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## 1 Features of the I/O module

The I/O module extends the functionality of the inverters of the 8200, 8210, 8220 and 8240 series.

It is plugged onto the place for the operating keypad. The operating keypad or one of the other interface modules cannot be used in connection with this I/O module. The I/O module is programmed via jumpers.

These features result in the following programming and setting sequence:

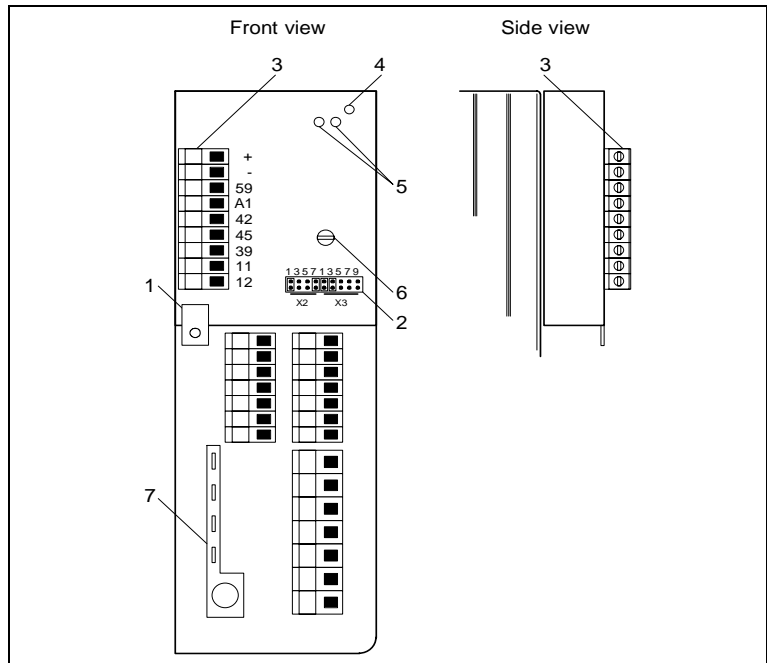
1. Separate the I/O module and the frequency inverter.
2. Set the frequency-inverter parameters using the operating keypad or the serial interface.
3. Program the I/O module via jumpers.
4. Remove the operating keypad or interface module from the frequency inverter.
5. Plug the I/O onto the place of the operating keypad and fix it with screws.

The following function features are implemented into this extension module:

- PTC input for resistors to DIN 44081 and DIN 44082.
- 3 digital output terminals, which are compatible with the PLC.

## 1.1 Attachment to frequency inverter

## 1.2 View



### Explanation:

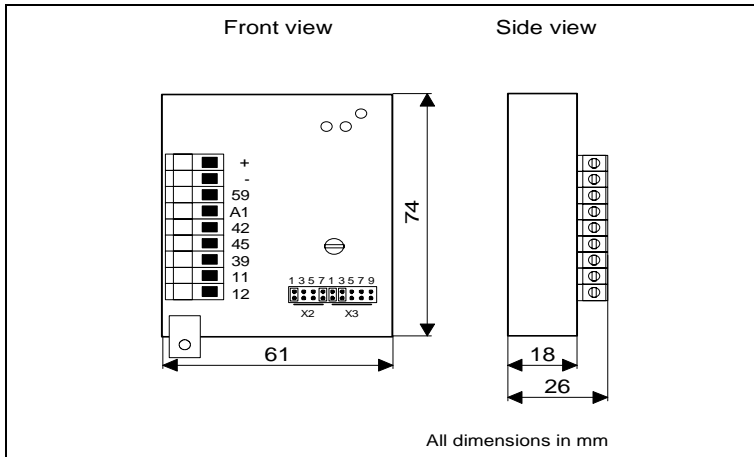
- 1 PE connection
- 2 Jumper X2 for the selection of the terminal signal for terminal A1  
Jumper X3 for the selection of the polarity for A1, 42 and 45
- 3 Terminal block for I/O signals and supply
- 4 Yellow LED to indicate the module function
- 5 Operating-state display of the basic unit
- 6 Fixing screw
- 7 PE-connection strip on the frequency inverter

## 2 Unit data

### 2.1 General data

|                                     |   |
|-------------------------------------|---|
| Temperature range:                  | 0 ... 50°C during operation<br>-25...50°C during storage<br>-25...70°C during transport   |
| External supply<br>(terminal +/-)   | $V_{\text{eff}} = 15 - 30\text{V DC } \pm 0\%$ ; $w = 5\%$<br>$V_{\text{eff}} = 20 - 25\text{V DC } \pm 0\%$ ; $w = 48\%$ ;<br>$V_{\text{SS}} < 35\text{V}$<br>For current load see Terminal Description                        |
| Noise immunity:                     | prEN 50082-2<br>IEC 801-2, severity 3<br>IEC 801-4, severity 4  |
| Radio interference<br>suppression:  | prEN50081-2   |
| Permissible moisture:               | relative humidity<br>80% no condensation  |
| Permissible pollution:              | Pollution level 2 to VDE 0110, part 2   |
| Permissible installation<br>height: | up to 4000 m amsl   |
| Immunity to vibration:              | Germanischer Lloyd, vibration test  |
| Insulation voltage                  | 270V AC for control electronics / power stage<br>With the 820x, the potential of the digital and<br>analog input and output terminals of the frequency<br>inverter is connected to the inputs and outputs of<br>the I/O module. |

### 2.2 Dimensions



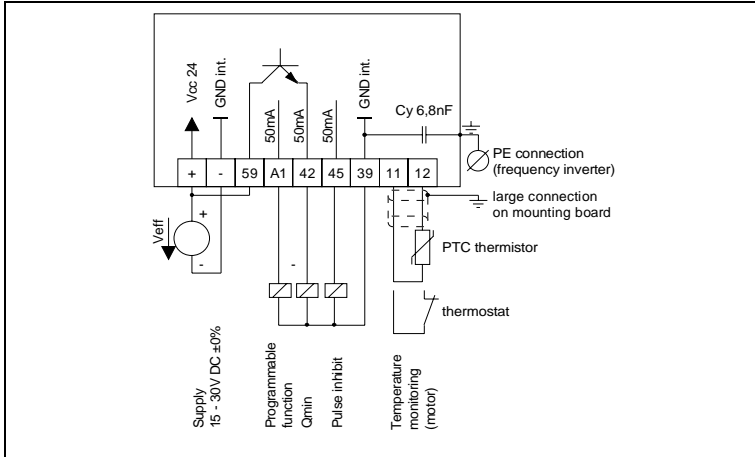
## 2.3 Assembly and installation

- Attach the I/O module to the inverter front. If an operating keypad is attached to the inverter, remove it first.
- Compared to the basic unit, the installation depth increases by max. 18 mm.
- Attach the I/O module to the inverter using fixing screws.
- In the event of EMC-related interference, use an addition PE cable between (1) and (7) - see fig. 1.1.
- Screen the PTC cable. As much screen surface as possible must be attached to the mounting plate. Please also observe the chapter „Installation according to CE/EMC“ in the Operating Instructions of the 8200, 8210 and 8220 units.
- The terminals + and - of the 820x units must be connected to an external voltage supply. With 821x and 822x units, only the digital outputs require an external supply (see next point). If you only use the PTC input of the 821x units, it is not necessary to provide an external supply for the I/O module. A polarity reversal at the terminals + and - may destroy the I/O module.
- The digital output terminals A1, 42 and 45 are supplied exclusively via an external voltage source connected to terminal 59.
- With 820x units, the potential of the terminals 39 and - is connected to the potential of terminal 7 of the inverter. With 821x and 822x units, the terminals 39 and - are not connected to terminal 7 of the frequency inverter. Terminal 39 of the frequency inverter (820x, 821x and 822x) is not connected to terminals 39 and - of the I/O module.

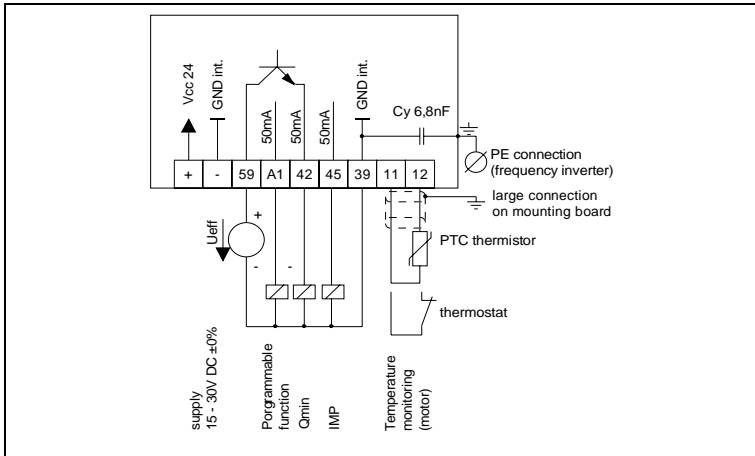


### 3 Connections

#### 3.1 Connection of 820x units



#### 3.2 Connection of 821x, 822x and 824x units












The digital outputs A1, 42 and 45 are not separated from the I/O-module control via optical couplers.

### 3.3 Digital outputs

Qmin is assigned to terminal 42, the signal IMP is assigned to terminal 45. Assign the function of terminal A1 via the jumpers on strip X2. Assign the polarity of all terminals via the jumpers on strip X3. Since there are two jumper strips, check for the correct combinations according to tables 3.3.1 and 3.3.2.

#### 3.3.1 Output assignment of terminal A1

| Terminal | Jumper X2   | Message            | Level | Your settings |
|----------|---|--------------------|-------|---------------|
| A1       |    | Inverter ready     | LOW   |               |
|          |    | Fault              | LOW   |               |
|          |    | CW or CCW rotation | LOW   |               |
|          |    | CW rotation        | LOW   |               |
|          |    | CCW rotation       | LOW   |               |
|          |    | Speed = 0          | LOW   |               |
|          |   | Set speed reached  | LOW   |               |
|          |  | Qmin reached       | HIGH  |               |
|          |  | Imax reached       | LOW   |               |







| Terminal | Jumper X2  | Message                                 | Level | Your settings |
|----------|--|---|-------|---------------|
|          | <ul style="list-style-type: none"> <li>•• 1</li> <li>■ 3</li> <li>■ 5</li> <li>•• 7</li> </ul> | Overtemperature                         | LOW   |               |
|          | <ul style="list-style-type: none"> <li>■ 1</li> <li>•• 3</li> <li>■ 5</li> <li>•• 7</li> </ul> | TRIP or Qmin or IMP (pulse inhibit)     | LOW   |               |
| 42       |  | Speed Qmin reached<br>Function inverted | HIGH  |               |
| 45       |  | IMP (pulse inhibit) active              | LOW   |               |

Jumper factory setting on strip X2:

- 1
- 3
- 5
- 7

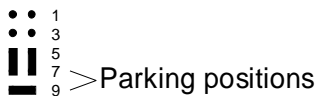
Imax reached

### 3.3.2 Output polarity

| Terminal | Jumper X3 (I/O module)   | Message   | Your settings |
|----------|--|---|---------------|
| A1       | <br>1<br>3<br>5<br>7<br>9 | Terminal A1 inverted<br>(referring to level in table 3.3.1)     |               |
|          | <br>1<br>3<br>5<br>7<br>9 | Terminal A1 not inverted<br>(referring to level in table 3.3.1) |               |
| 42       | <br>1<br>3<br>5<br>7<br>9 | Terminal 42 inverted<br>(referring to level in table 3.3.1)     |               |
|          | <br>1<br>3<br>5<br>7<br>9 | Terminal 42 not inverted<br>(referring to level in table 3.3.1) |               |
| 45       | <br>1<br>3<br>5<br>7<br>9 | Terminal 45 inverted<br>(referring to level in table 3.3.1)     |               |
|          | <br>1<br>3<br>5<br>7<br>9 | Terminal 45 not inverted<br>(referring to level in table 3.3.1) |               |

The shaded jumpers show the possible positions for this function, but does not take account of the polarity changeover of the other outputs.

If you do not want to invert any of the three terminals, sett the jumpers as follows:



With this method, it is not necessary to remove one of the three jumpers. The positions 7 and 9 are provided as „parking positions“ for jumpers which are not required.

### Supply for the digital outputs

| Terminal | Name     | Input/output | Explanation   |
|----------|----------|--------------|---|
| 59       | Vcc ext. | Input        | Supply for the digital inputs<br>12 - 30V DC $\pm 0\%$<br>Current load: max. 150 mA<br>(depending on the load of the digital outputs) |
| 39       | GND int. | -            | Reference potential for the digital outputs   |

### 3.4 Supply for the I/O modules

| Terminal | Name     | Inputs/output s | Explanation   |
|----------|----------|-----------------|---|
| -        | GND int. | -               | Reference for external supply   |
| +        | Vcc24    | Input           | External supply<br>$V_{\text{eff}} = 15 - 30\text{V DC } \pm 0\%$ ; $w = 5\%$<br>$V_{\text{eff}} = 20 - 25\text{V DC } \pm 0\%$ ; $w = 48\%$ ;<br>$V_{\text{ss}} < 35\text{V}$<br>Current load 20mA |

### 3.5 PTC input

| Terminal | Use   | Standard                     |
|----------|---|------------------------------|
| 11, 12   | Input for temperature monitoring of the connected motor (PTC thermistor / thermostat)<br>When not using a thermistor or thermostat:<br>- bridge terminals 11 and 12 | DIN<br>44081<br>DIN<br>44082 |

## **4 Adaptability to 8200 / 8210 / 8220 and 8240 frequency inverters**

### **4.1 Parameter setting of the frequency inverter**

Set the operating mode (C001) = -0-.

### **4.2 Application of other interface modules**

Since the I/O module is attached to the position of the operating keypad, other interface modules cannot be used together with this I/O module.

### **4.3 Usage / retrofitting**

All 8200, 8210 units as from version 2.1 and 8220, 8240 units can be retrofitted with this option.

### **4.4 Please note**

When the I/O module is removed, the state of the outputs cannot be saved even if the module is still connected to the power supply.

## 5 Troubleshooting

### Yellow LED continuously on

Meaning: communication with frequency inverter detected and no PTC fault

### Yellow LED flashing

Meaning: PTC monitoring has detected a fault

Check the following fault causes:

1. Terminals 11 and 12 are not connected

Remedy: Connect terminals 11 and 12 to the PTC resistor or thermostat of the motor.

If temperature monitoring is not requested, connect terminals 11 and 12 directly.

2. PTC line interrupted

Remedy: Check whether the PTC circuit is interrupted. If the PTC line is disconnected, the typical resistance of the cold motor-PTC is between  $0\Omega$  and  $1.4k\Omega$ , with thermostats it is approx.  $0\Omega$ .

3. Connected motor overheated

Remedy: Check drive selection.

Check motor cooling.

Check parameter setting (motor excitation or voltage characteristic) of inverter.

## **Yellow LED continuously off**

Meaning: No communication with the frequency inverter

Check the following fault causes:

1. Frequency inverter switched off

Remedy: Supply controller with voltage. See 8200, 8210, 8220, 8240 Operating Instructions

2. 8275 interface module not connected to mains

Remedy: With 8210, 8220, 8240 units, check the connection with the frequency inverter. If the module is supplied via terminals + and -, check them, too. These terminals (+ and -) must be supplied with 15V - 30V  $\pm 0\%$ .

Remedy: With 8200 units, check the external supply voltage of the module via the terminals + and -. These terminals (+ and -) must be supplied with 15V - 30V  $\pm 0\%$ .

3. Faulty connection between module and frequency inverter

Remedy: Check the connection. The I/O module is correctly attached to the frequency inverter, screws are properly tightened, etc.

## **Output signal at terminal A1 does not correspond to selected signal**

Check the following causes:

1. Faulty insertion of jumpers

Remedy: Check jumpers connected to terminal X2.

## **Incorrect output level at digital output terminals**

Check the following causes:

1. Faulty insertion of jumpers

Remedy: Check jumpers connected to terminal X3.



