

# Frequenzumrichter SMVector IP31/IP65

## Allgemeine Sicherheitshinweise

### ⚠️ GEFAHR!

Wenn Sie die folgenden grundlegenden Sicherheitshinweise missachten, kann dies zu schweren Personenschäden und Sachschäden führen!

- Das Produkt ausschließlich bestimmungsgemäß verwenden.
- Das Produkt niemals trotz erkennbarer Schäden in Betrieb nehmen.
- Das Produkt niemals technisch verändern.
- Das Produkt niemals unvollständig montiert in Betrieb nehmen.
- Das Produkt niemals ohne erforderliche Abdeckungen betreiben.
- Alle steckbaren Anschlüsse nur im spannungslosen Zustand aufstecken oder abziehen.
- Das Produkt nur im spannungslosen Zustand aus der Installation entfernen.
- Die Produkte können während und nach dem Betrieb – ihrer Schutzart entsprechend – spannungsführende, auch bewegliche oder rotierende Teile haben. Oberflächen können heiß sein.
- Um Personenschäden und Sachschäden vorzubeugen, müssen übergeordnete Sicherheits- und Schutzsysteme eingesetzt werden!
- Die in der zugehörigen Dokumentation dargestellten verfahrenstechnischen Hinweise und Schaltungsausschnitte sind Vorschläge, deren Übertragbarkeit auf die jeweilige Anwendung überprüft werden muss. Für die Eignung der angegebenen Verfahren und Schaltungsvorschläge übernimmt der Hersteller des Produkts keine Gewähr.
- Alle Arbeiten mit und an dem Produkt darf nur qualifiziertes Fachpersonal ausführen. IEC 60364 bzw. CENELEC HD 384 definieren die Qualifikation dieser Personen:
  - Sie sind mit Aufstellung, Montage, Inbetriebnahme und Betrieb des Produkts vertraut.
  - Sie verfügen über die entsprechenden Qualifikationen für ihre Tätigkeit.
  - Sie kennen alle am Einsatzort geltenden Unfallverhütungsvorschriften, Richtlinien und Gesetze und können diese anwenden.

### ⚠️ WARNUNG!

#### Funktionale Sicherheit

Bestimmte Softwarefunktionen oder Bauteile unterstützen Sicherheitsfunktionen nach den Anforderungen der 2006/42/EG: Maschinenrichtlinie [UKCA: 2008 No. 1597 – The Supply of Machinery (Safety) Regulations 2008]. Beachten Sie unbedingt die Hinweise in der Dokumentation zur integrierten Sicherheitstechnik.

Die Reparatur oder der Austausch dieser Bauteile ist nur durch den Lenze-Service oder seine bevollmächtigten Personen zulässig.

## Restgefahren

### ⚠️ GEFAHR!

#### Gefährliche elektrische Spannung

Fehler an Produkt können zu Überspannungen in der Anlage führen.

Für Produkte entsprechend der EN 61800-5-1:

- Während des Betriebs und bis zu 20 Minuten nach dem Netzabschalten können an den Anschlüssen des Produkts gefährliche elektrische Spannungen anliegen.
- Der Ableitstrom gegen Erde (PE) ist > 3.5 mA AC bzw. > 10 mA DC.

#### Mögliche Folgen

- Tod oder schwere Verletzungen durch Stromschlag.

#### Schutzmaßnahmen

- Alle Arbeiten am Produkt nur im spannungslosen Zustand durchführen.
- Spannungsfreiheit prüfen!
- Nach dem Abschalten der Netzspannung die Hinweisschilder auf dem Produkt beachten.
- Nach dem Abschalten warten, bis der Antrieb stillsteht.
- Die in der EN 61800-5-1 oder EN 60204-1 geforderten Maßnahmen umsetzen, d. h. Festinstallation und normgerechten PE-Anschluss.

#### Bedeutung der Hinweisschilder auf dem Produkt



#### Gefährliche elektrische Spannung



#### Elektrostatische gefährdete Bauelemente

Vor Arbeiten am Produkt muss sich das Personal von elektrostatischer Aufladung befreien.



#### Hoher Ableitstrom



#### Heiße Oberfläche

## Bestimmungsgemäße Verwendung

- Das Produkt ist ein professionelles Betriebsmittel, das für den Gebrauch durch Gewerbe, bestimmte Berufe oder Industrie und nicht zum Verkauf an die Allgemeinheit vorgesehen ist. IEC 60050 [IEV 161-05-05]
- Das Produkt ist ein Bauteil oder eine Komponente zur Weiterverarbeitung/Integration in komplexen industriellen Fertigungsanlagen.
- Das Produkt darf nur unter den vorgeschriebenen Einsatzbedingungen sowie in den vorgeschriebenen Montage- und Einbaulagen betrieben werden.
- Das Produkt darf nicht in privaten Bereichen, in explosionsgefährdeten Bereichen und in Bereichen mit schädlichen Gasen, Ölen, Säuren und Strahlung betrieben werden.
- Alle Transportsicherungen müssen entfernt sein.
- Montierte Ringschrauben am Motor sind nicht für den Transport von Getriebemotoren geeignet.

#### Elektro- und Elektronik-Altgeräte (WEEE)



Dieses Symbol einer durchgestrichenen Mülltonne weist darauf hin, dass Elektro- und Elektronikgeräte nicht über den Hausmüll entsorgt werden dürfen. Bitte geben Sie Altgeräte bei einem zertifizierten Entsorgungsbetrieb ab.

## Support

### ⚠️ VORSICHT!

#### Zugehörige Dokumentation

Die Vorgaben der zugehörigen Dokumentation beachten. Dies ist Voraussetzung für einen sicheren und störungsfreien Betrieb sowie für das Erreichen der angegebenen Produkteigenschaften.



Die zugehörige Dokumentation und weitere Informationen finden Sie auf unserer Webseite: <http://support.lenze.com>

Die Materialnummer des Produkts befindet sich auf dem Typenschild.



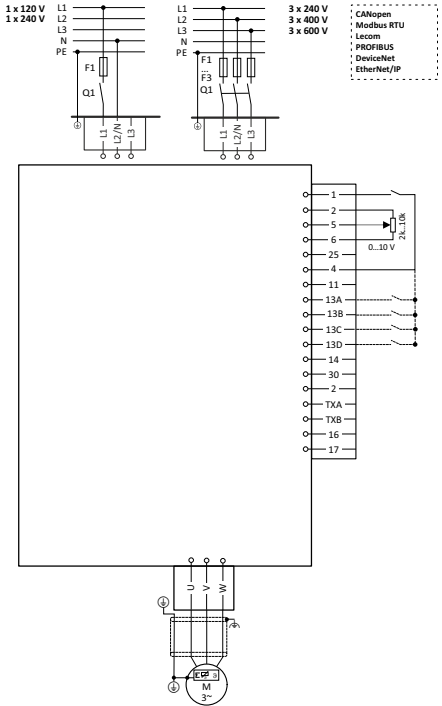
# Frequenzumrichter SMVector IP31

## Anschlussplan

### HINWEIS

Der Anwender muss nachweisen, dass die Konformität zur EN IEC 61800-3 erfüllt wird.

Um die EMV-Anforderungen nach EN IEC 61800-3 zu erfüllen, muss bei einigen Produkten ein externes Filter eingesetzt werden – bitte die entsprechende Dokumentation beachten.



## Wichtige UL/CSA-Hinweise

Beachten Sie, dass alle Aussagen zur UL-Zertifizierung nur in der englischen Version verbindlich sind. Die Übersetzung in andere Sprachen ist rein informativ.

Original – English

### ⚠ WARNING!

- Integral solid state protection does not provide branch circuit protection. Branch circuit protection must be provided in accordance with the National Electrical Code and any additional local codes. The use of fuses or circuit breakers is the only approved means for branch circuit protection.
- When protected by CC and T Class Fuses, suitable for use on a circuit capable of delivering not more than 200,000 rms symmetrical amperes, at the maximum voltage rating marked on the drive.
- Additionally suitable when protected by a circuit breaker having an interrupting rating not less than 200,000 rms symmetrical amperes, at the maximum voltage rating marked on the drive. (Excludes ESV113xx2T, ESV153xx2T, ESV113xx4T, ESV153xx4T, ESV183xx4T, ESV223xx4T, ESV303xx4T, ESV113xx6T, ESV153xx6T, ESV183xx6T, ESV223xx6T, and ESV303xx6T).
- Use minimum 75°C copper wire only, except for control circuits.
- For control circuits, use wiring suitable for NEC Class 1 circuits only.
- Torque Requirements (in accordance with UL) are listed in the corresponding Manual.
- Shall be installed in a pollution degree 2 macro-environment.
- All models are suitable for installation in a compartment handling Conditioned Air (i.e., plenum rated).
- The opening of branch-circuit protective device may be an indication that a fault has been interrupted. To reduce the risk of fire or electric shock, current carrying parts and other components of the controller should be examined and replaced if damaged.

|                                                                                        | L1, L2, L3, PE, U, V, W |        |        |           |
|----------------------------------------------------------------------------------------|-------------------------|--------|--------|-----------|
|                                                                                        | H [mm]                  | M [Nm] | F [in] | T [lb-in] |
| < 4 kW                                                                                 | 8                       | 1.3    | 5/16   | 12        |
| ESV552xx2Txx, ESV752xx2Txx, ESV113xx4/6xxx, ESV153xx4/6xxx, ESV183xx6xxx, ESV223xx6xxx | 8                       | 1.8    | 5/16   | 16        |
| ESV552xx4Txx, ESV752xx4Txx, ESV552xx6Txx, ESV752xx6Txx                                 | 6                       | 1.3    | 0.25   | 12        |
| ESV113xx2xxx, ESV153xx2xxx, ESV183xx4xxx, ESV223xx4xxx, ESV303xx4xxx                   | 10                      | 2.7    | 7/16   | 24        |
| ESV373xx4xxx, ESV453xx4xxx                                                             | 19                      | 3.05   | 0.75   | 27        |

|              | P <sub>n</sub> [kW] | m [kg] | H [mm] | B [mm] | T [mm] |
|--------------|---------------------|--------|--------|--------|--------|
| ESV251xxxxxB | 0.25                | 0.9    | 190    | 99     | 111    |
| ESV371xxxxxB | 0.37                |        |        |        |        |
| ESV751xxxxxB | 0.75                |        |        |        |        |
| ESV112xxxxxB | 1.1                 | 1.3    | 191    | 99     | 138    |
| ESV152xxxxxB | 1.5                 |        |        |        |        |
| ESV222xxxxxB | 2.2                 |        |        |        |        |
| ESV402xxxxxB | 4                   | 1.5    | 191    | 99     | 147    |
| ESV552xxxxxB | 5.5                 | 2      | 250    | 130    | 160    |
| ESV752xxxxxB | 7.5                 |        |        |        |        |

|              | P <sub>n</sub> [kW] | m [kg] | H [mm] | B [mm] | T [mm] |
|--------------|---------------------|--------|--------|--------|--------|
| ESV113xxxxxB | 11                  | 6.15   | 318    | 176    | 205    |
| ESV153xxxxxB | 15                  |        |        |        |        |
| ESV183xxxxxB | 18.5                |        |        |        |        |
| ESV223xxxxxB | 22                  |        |        |        |        |
| ESV303xxxxxB | 30                  | 10.9   | 360    | 221    | 256    |
| ESV373xxxxxB | 37.5                | 14.1   | 436    | 221    | 256    |
| ESV453xxxxxB | 45                  | 15.9   | 513    | 221    | 256    |



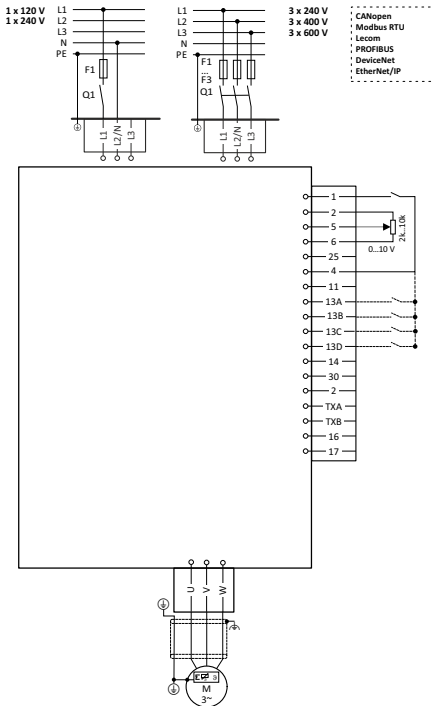
## Frequenzumrichter SMVector IP65

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Beachten Sie, dass alle Aussagen zur UL-Zertifizierung nur in der englischen Version verbindlich sind. Die Übersetzung in andere Sprachen ist rein informativ.

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- Additionally suitable when protected by a circuit breaker having an interrupting rating not less than 200,000 rms symmetrical amperes, at the maximum voltage rating marked on the drive. (Excludes ESV113xx2T, ESV153xx2T, ESV113xx4T, ESV153xx4T, ESV183xx4T, ESV223xx4T, ESV303xx4T, ESV113xx6T, ESV153xx6T, ESV183xx6T, ESV223xx6T, and ESV303xx6T).
- Use minimum 75°C copper wire only, except for control circuits.
- For control circuits, use wiring suitable for NEC Class 1 circuits only.
- Torque Requirements (in accordance with UL) are listed in the corresponding Manual.
- Shall be installed in a pollution degree 2 macro-environment.
- All models are suitable for installation in a compartment handling Conditioned Air (i.e., plenum rated).
- The opening of branch-circuit protective device may be an indication that a fault has been interrupted. To reduce the risk of fire or electric shock, current carrying parts and other components of the controller should be examined and replaced if damaged.

|                                                                                        | L1, L2, L3, PE, U, V, W |      |      |         |
|----------------------------------------------------------------------------------------|-------------------------|------|------|---------|
|                                                                                        | (mm)                    | [Nm] | [in] | [lb-in] |
| < 4 kW                                                                                 | 8                       | 1.3  | 5/16 | 12      |
| ESV552xx2Txx, ESV752xx2Txx, ESV113xx4/6xxx, ESV153xx4/6xxx, ESV183xx6xxx, ESV223xx6xxx | 8                       | 1.8  | 5/16 | 16      |
| ESV552xx4Txx, ESV752xx4Txx, ESV552xx6Txx, ESV752xx6Txx                                 | 6                       | 1.3  | 0.25 | 12      |
| ESV113xx2xxx, ESV153xx2xxx, ESV183xx4xxx, ESV223xx4xxx                                 | 10                      | 2.7  | 7/16 | 24      |

| ESV    | F <sub>ESV</sub> | P <sub>N</sub> | m    | H    | B    | T    |
|--------|------------------|----------------|------|------|------|------|
|        | X                | [kW]           | [kg] | [mm] | [mm] | [mm] |
| 371N01 | 371N02           | 371N04         | 0.37 | 1.63 | 203  | 114  |
| 751N01 | 751N02           | 751N04         | 0.75 |      |      |      |
| 112N01 | 112N02           | 112N04         | 1.1  |      |      |      |
|        | 152N02           | 152N04         | 1.5  | 2.68 | 203  | 160  |
|        | 222N02           | 222N04         | 2.2  |      |      |      |
|        |                  | 302N04         | 3    |      |      |      |
|        | 222N02           |                | 2.2  | 3.24 | 203  | 172  |
|        | 552N02           |                | 5.5  |      |      |      |
|        | 752N02           | 752N04         | 7.5  | 4.98 | 254  | 203  |
|        | 402N02           | 402N04         | 4    | 5.25 | 254  | 203  |
|        |                  | 552N04         | 5.5  |      |      |      |
|        | 113N02           | 113N04         | 11   |      |      |      |
|        | 153N02           | 153N04         | 15   | 10   | 368  | 241  |
|        |                  | 183N04         | 18.5 |      |      |      |
|        |                  | 223N04         | 22   | 11.6 | 420  | 241  |

| ESV    | F <sub>ESV</sub> | P <sub>N</sub> | m    | H    | B    | T    |
|--------|------------------|----------------|------|------|------|------|
|        | L <sub>M</sub>   | [kW]           | [kg] | [mm] | [mm] | [mm] |
| 371N01 | 371N02           | 371N04         | 0.37 | 2.13 | 279  | 114  |
| 751N01 | 751N02           | 751N04         | 0.75 |      |      |      |
| 112N01 | 112N02           | 112N04         | 1.1  |      |      |      |
|        | 152N02           | 152N04         | 1.5  | 3.58 | 279  | 160  |
|        | 222N02           | 222N04         | 2.2  |      |      |      |
|        |                  | 302N04         | 3    |      |      |      |
|        | 222N02           |                | 2.2  | 4.08 | 279  | 172  |
|        | 552N02           |                | 5.5  |      |      |      |
|        | 752N02           | 752N04         | 7.5  | 6.32 | 330  | 203  |
|        | 402N02           | 402N04         | 4    | 6.66 | 330  | 204  |
|        |                  | 552N04         | 5.5  |      |      |      |
|        | 113N04TM         | 113N06         | 11   | 10.4 | 368  | 241  |
| 113N02 | 113N04TL         | 153N06         | 15   |      |      |      |
| 153N02 | 153N04TL         |                | 15   |      |      |      |
|        | 183N04           | 183N06         | 18.5 | 12.9 | 470  | 241  |
|        | 223N04           | 223N06         | 22   |      |      |      |



# SMVector IP31/IP65 frequency inverter

## General safety instructions

### DANGER!

Disregarding the following basic safety instructions and safety information may lead to severe personal injury and damage to property!

- Only use the product as directed.
- Never commission the product in the event of visible damage.
- Never modify the product technically.
- Never commission the product before assembly has been completed.
- Never operate the product without the required covers.
- Connect/disconnect all pluggable connections only in deenergized condition!
- Only remove the product from the installation in the deenergized state.
- The product can – depending on their degree of protection – have live, movable or rotating parts during or after operation. Surfaces can be hot.
- To prevent personal injury and damage to property, higher-level safety and protection systems must be used!
- The procedural notes and circuit details given in the associated documentation are suggestions and their transferability to the respective application has to be checked. The manufacturer of the product does not take responsibility for the suitability of the process and circuit proposals.
- All work with and on the product may only be carried out by qualified personnel. IEC 60364 and CENELEC HD 384 define the qualifications of these persons:
  - They are familiar with installing, mounting, commissioning, and operating the product.
  - They have the corresponding qualifications for their work.
  - They know and can apply all regulations for the prevention of accidents, directives, and laws applicable at the place of use.

### WARNING!

#### Functional safety

Certain software functions or components support safety functions according to the requirements of the 2006/42/EC: Machinery Directive [UKCA: S.I. 2008/1597 - The Supply of Machinery (Safety) Regulations 2008]. Be sure to observe the notes in the documentation on the integrated safety technology.

These components may only be repaired or replaced by Lenze Service or its authorized personnel.

## Residual hazards

### DANGER!

#### Dangerous electrical voltage

Defects in the product can lead to overvoltages in the system.

For products according to EN 61800-5-1:

- During operation and up to 20 minutes after poweroff, hazardous electrical voltages may be present at the connections of the product.
- The leakage current against earth (PE) is > 3.5 mA AC or > 10 mA DC.

#### Possible consequences

- Death or serious injury from electric shock.

#### Protective measures

- Any work on the product must only be carried out in a deenergized state.
- Check that no voltage is present!
- After switching off the mains voltage, observe the signs on the product.
- After switching off, wait until the drive comes to a standstill.
- Implement the measures required by EN IEC 61800-5-1 or EN IEC 60204-1, i.e. fixed installation and standard-compliant.

#### Meaning of the signs on the product



#### Dangerous electrical voltage



#### Electrostatic sensitive devices

Before working on the product, the staff must ensure to be free of electrostatic charge.



#### High leakage current



#### Hot surface

## Application as directed

- The product is a professional equipment intended for use by trades, specific professions or industry and not for sale to the general public. IEC 60050 [IEV 161-05-05]
- The product is a part or component for further processing/integration in complex industrial production systems.
- The product may only be operated under the specified mounting and operating conditions and in the specified mounting positions.
- The product must not be operated in private areas, in potentially explosive atmospheres and in areas with harmful gases, oils, acids and radiation.
- All transport locks must be removed.
- Mounted eye bolts on the motor are not suitable for transporting geared motors.

#### Waste Electrical and Electronic Equipment (WEEE)



This symbol of a crossed-out wheeled bin indicates that electrical and electronic equipment must not be disposed of with household waste. Please dispose of waste equipment at a certified waste disposal company.

## Support

### CAUTION!

#### Corresponding documentation

Observe the specifications of the corresponding documentation. This is the condition for safe and trouble-free operation and the achievement of the specified product features.



The corresponding documentation and further information can be found on our website:  
<http://support.lenze.com>

The material number of the product can be found on the nameplate.



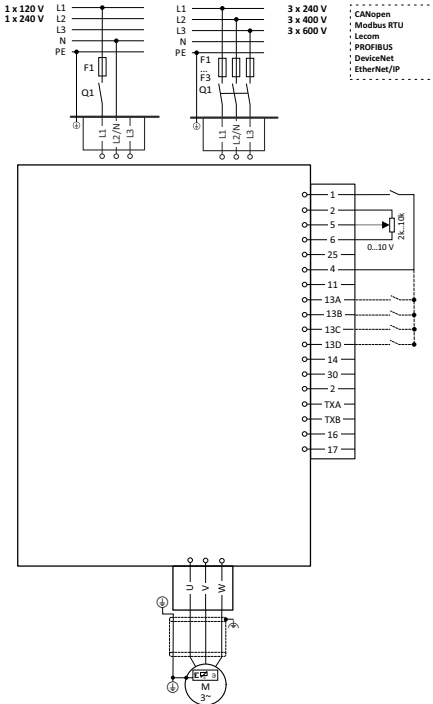
# SMVector IP31 frequency inverter

## Wiring diagram

### NOTICE

The user must prove that the conformity to EN IEC 61800-3 is fulfilled.

To meet the EMC requirements according to EN IEC 61800-3, an external filter must be used for some products – please refer to the corresponding documentation.



## UL/CSA markings

Note that all statements regarding UL certification are binding only in the English version. The translation into other languages is purely informative.

Original – English

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- Shall be installed in a pollution degree 2 macro-environment.
- All models are suitable for installation in a compartment handling Conditioned Air (i.e., plenum rated).
- The opening of branch-circuit protective device may be an indication that a fault has been interrupted. To reduce the risk of fire or electric shock, current carrying parts and other components of the controller should be examined and replaced if damaged.

|                                                                                        | L1, L2, L3, PE, U, V, W |      |      |         |
|----------------------------------------------------------------------------------------|-------------------------|------|------|---------|
|                                                                                        | [mm]                    | [Nm] | [in] | [lb-in] |
| < 5 hp                                                                                 | 8                       | 1.3  | 5/16 | 12      |
| ESV552xx2Txx, ESV752xx2Txx, ESV113xx4/6xxx, ESV153xx4/6xxx, ESV183xx6xxx, ESV223xx6xxx | 8                       | 1.8  | 5/16 | 16      |
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| ESV373xx4xxx, ESV453xx4xxx                                                             | 19                      | 3.05 | 0.75 | 27      |

|              | P <sub>rated</sub> [hp] | m [lb] | H [in] | W [in] | D [in] |
|--------------|-------------------------|--------|--------|--------|--------|
| ESV251xxxxxB | 0.33                    | 2      | 7.48   | 3.9    | 4.35   |
| ESV371xxxxxB | 0.5                     |        |        |        |        |
| ESV751xxxxxB | 1                       |        |        |        |        |
| ESV112xxxxxB | 1.5                     |        |        |        |        |
| ESV152xxxxxB | 2                       | 2.8    | 7.52   | 3.9    | 5.45   |
| ESV222xxxxxB | 3                       |        |        |        |        |
| ESV402xxxxxB | 5                       | 3.2    | 7.52   | 3.9    | 5.8    |
| ESV552xxxxxB | 7.5                     | 6      | 9.83   | 5.12   | 6.3    |
| ESV752xxxxxB | 10                      |        |        |        |        |

|              | P <sub>rated</sub> [hp] | m [lb] | H [in] | W [in] | D [in] |
|--------------|-------------------------|--------|--------|--------|--------|
| ESV113xxxxxB | 15                      | 13.55  | 12.5   | 6.92   | 8.09   |
| ESV153xxxxxB | 20                      |        |        |        |        |
| ESV183xxxxxB | 25                      |        |        |        |        |
| ESV223xxxxxB | 30                      |        |        |        |        |
| ESV303xxxxxB | 40                      | 24     | 14.19  | 8.72   | 10.07  |
| ESV373xxxxxB | 50                      | 31     | 17.19  | 8.72   | 10.07  |
| ESV453xxxxxB | 60                      | 35     | 20.19  | 8.72   | 10.07  |



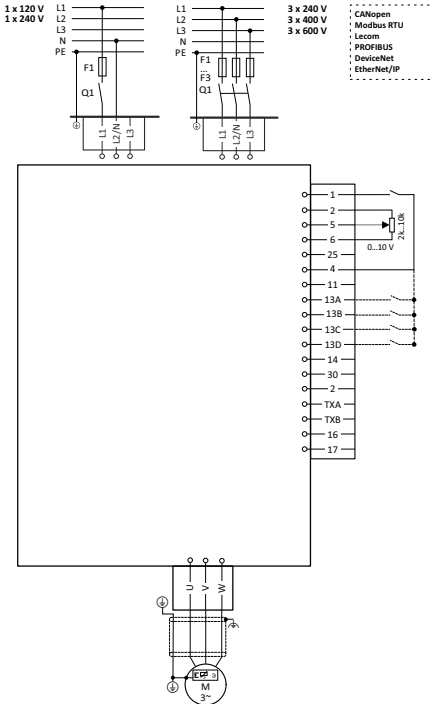
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|----------------------------------------------------------------------------------------|-------------------------|------|------|---------|
|                                                                                        | (mm)                    | [Nm] | [in] | [lb-in] |
| < 5 hp                                                                                 | 8                       | 1.3  | 5/16 | 12      |
| ESV552xx2Txx, ESV752xx2Txx, ESV113xx4/6xxx, ESV153xx4/6xxx, ESV183xx6xxx, ESV223xx6xxx | 8                       | 1.8  | 5/16 | 16      |
| ESV552xx4Txx, ESV752xx4Txx, ESV552xx6Txx, ESV752xx6Txx                                 | 6                       | 1.3  | 0.25 | 12      |
| ESV113xx2xxx, ESV153xx2xxx, ESV183xx4xxx, ESV223xx4xxx                                 | 10                      | 2.7  | 7/16 | 24      |

| ESV    | F <sub>ESV</sub> | X      | P <sub>rated</sub> [hp] | m [lb] | H [in] | W [in] | D [in] |
|--------|------------------|--------|-------------------------|--------|--------|--------|--------|
| 371N01 | 371N02           | 371N04 | 0.5                     | 3.6    | 8      | 6.28   | 4.47   |
| 751N01 | 751N02           | 751N04 | 1                       | 7.2    | 8      | 6.28   | 4.47   |
| 112N01 | 112N02           | 112N04 | 1.5                     | 10.8   | 8      | 6.28   | 4.47   |
|        | 152N02           | 152N04 | 2                       | 14.4   | 8      | 6.28   | 4.47   |
|        | 222N02           | 222N04 | 3                       | 21.6   | 8      | 6.28   | 4.47   |
|        | 302N02           | 302N04 | 4                       | 28.8   | 8      | 6.28   | 4.47   |
|        | 222N02           | 222N04 | 3                       | 7.1    | 8      | 7.12   | 6.77   |
|        | 552N02           | 552N04 | 7.5                     | 10.98  | 10     | 8.04   | 8      |
|        | 752N02           | 752N04 | 10                      | 14.64  | 10     | 8.04   | 8      |
|        | 402N02           | 402N04 | 5                       | 11.58  | 10     | 8.96   | 8      |
|        | 552N04           | 552N06 | 7.5                     | 15.48  | 13     | 8.96   | 8.04   |
|        | 113N02           | 113N04 | 15                      | 20     | 14.5   | 9.42   | 9.45   |
|        | 153N02           | 153N04 | 20                      | 27.1   | 14.5   | 9.42   | 9.45   |
|        | 183N02           | 183N04 | 25                      | 34.4   | 14.5   | 9.42   | 9.45   |
|        | 223N02           | 223N04 | 30                      | 41.8   | 14.5   | 9.42   | 9.45   |

| ESV    | F <sub>ESV</sub> | X      | P <sub>rated</sub> [hp] | m [lb] | H [in] | W [in] | D [in] |
|--------|------------------|--------|-------------------------|--------|--------|--------|--------|
| 371N01 | 371N02           | 371N04 | 0.5                     | 3.6    | 8      | 6.28   | 4.47   |
| 751N01 | 751N02           | 751N04 | 1                       | 7.2    | 8      | 6.28   | 4.47   |
| 112N01 | 112N02           | 112N04 | 1.5                     | 10.8   | 8      | 6.28   | 4.47   |
|        | 152N02           | 152N04 | 2                       | 14.4   | 8      | 6.28   | 4.47   |
|        | 222N02           | 222N04 | 3                       | 21.6   | 8      | 6.28   | 4.47   |
|        | 302N02           | 302N04 | 4                       | 28.8   | 8      | 6.28   | 4.47   |
|        | 222N02           | 222N04 | 3                       | 7.1    | 8      | 7.12   | 6.77   |
|        | 552N02           | 552N04 | 7.5                     | 10.98  | 10     | 8.04   | 8      |
|        | 752N02           | 752N04 | 10                      | 14.64  | 10     | 8.04   | 8      |
|        | 402N02           | 402N04 | 5                       | 11.58  | 10     | 8.96   | 8      |
|        | 552N04           | 552N06 | 7.5                     | 15.48  | 13     | 8.96   | 8.04   |
|        | 113N04TM         | 113N06 | 15                      | 20     | 14.5   | 9.42   | 9.45   |
|        | 153N04TM         | 153N06 | 20                      | 27.1   | 14.5   | 9.42   | 9.45   |
| 113N02 | 113N04TL         | 113N06 | 15                      | 20     | 14.5   | 9.42   | 9.45   |
| 153N02 | 153N04TL         | 153N06 | 20                      | 27.1   | 14.5   | 9.42   | 9.45   |
|        | 183N04           | 183N06 | 25                      | 34.4   | 14.5   | 9.42   | 9.45   |
|        | 223N04           | 223N06 | 30                      | 41.8   | 14.5   | 9.42   | 9.45   |



# Variateur de vitesse SMVector IP31/IP65

## Consignes de sécurité générales

### **DANGER !**

Le non-respect des consignes de sécurité essentielles suivantes peut entraîner des blessures et des dommages matériels graves!

- L'utilisation du produit doit être absolument conforme à la fonction.
- Ne jamais mettre le produit en service si celui-ci présente des dommages.
- Ne jamais modifier le produit d'un point de vue technique.
- Ne jamais mettre le produit en service si celui-ci n'est pas entièrement monté.
- Ne jamais mettre le produit en service sans le capot obligatoire.
- Ne retirer ou enficher les raccordements que lorsque le produit est hors tension.
- Ne retirer le produit de l'installation que lorsqu'il est hors tension.
- Selon l'indice de protection, les produits peuvent contenir des pièces sous tension, en mouvement ou en rotation, pendant et après leur fonctionnement. Les surfaces peuvent être brûlantes.
- Pour éviter les dommages corporels et matériels, des systèmes de sécurité et de protection de niveau supérieur doivent être utilisés!
- Les procédures à suivre et les schémas de câblage fournis dans la documentation associée constituent des recommandations dont l'adéquation avec l'application concernée doit être vérifiée. Le fabricant du produit n'assumera aucune responsabilité pour les dommages liés à un problème d'adéquation des procédures et plans de raccordements indiqués.
- Tous les travaux réalisés avec et sur les produits doivent exclusivement être exécutés par un personnel qualifié. CEI 60364 ou CENELEC HD 384 définir la qualification de ces personnes :
  - Ces personnes connaissent parfaitement l'installation, le montage, la mise en service et le fonctionnement du produit.
  - Elles possèdent les qualifications appropriées pour l'exercice de leur activité.
  - Elles connaissent toutes les réglementations, directives et lois relatives à la prévention d'accidents applicables sur le lieu d'utilisation et elles sont en mesure de les appliquer.

### **AVERTISSEMENT !**

#### Sécurité fonctionnelle

Certaines fonctions de sécurité sont assurées par des éléments logiciels ou matériels, conformément aux exigences de la directive 2006/42/CE : Directive Machines [marquage UKCA : 2008 N° 1597 - The Supply of Machinery (Safety) Regulations 2008]. Respectez impérativement les consignes figurant dans la documentation relative à la technologie de sécurité intégrée.

La réparation ou le remplacement de ces composants doivent être réalisés exclusivement par le service technique Lenze ou ses représentants agréés.

## Dangers résiduels

### **DANGER !**

#### Tension électrique dangereuse

Des défauts sur le produit peuvent être à l'origine de surtensions dans l'installation.

Pour les produits conformes à la norme EN 61800-5-1 :

- Pendant le fonctionnement de l'appareil et jusqu'à 20 minutes après la coupure réseau, une tension électrique dangereuse peut rester présente aux raccordements du produit.
- Le courant de fuite à la terre (PE) est > 3,5 mA CA ou > 10 mA CC.

#### Risques encourus

- Mort ou blessures graves dues à un choc électrique.

#### Mesures de protection

- Exécuter les travaux sur le produit uniquement lorsqu'il est hors tension.
- S'assurer que la machine n'est pas sous tension!
- Après avoir coupé la tension du réseau, tenir compte des panneaux de signalisation sur le produit.
- Après la mise hors tension, veuillez attendre que l'entraînement s'immobilise.
- Mettre en oeuvre les mesures de la norme EN IEC 61800-5-1 ou EN IEC 60204-1, c'est-à-dire une installation fixe et un raccord PE conforme aux normes.

## Description des panneaux de signalisation sur le produit



#### Tension électrique dangereuse



#### Composants sensibles aux décharges électrostatiques

Toute personne effectuant des interventions sur le produit doit se libérer des charges électrostatiques avant l'intervention.



#### Courant de fuite élevé



#### Surface brûlante

## Utilisation conforme à la fonction

- Ce produit est un équipement professionnel à usage des entreprises, de certains professionnels ou des industriels, non destiné à être vendu au grand public. CEI 60050 : [IEV 161-05-05]
- Le produit est un élément ou un composant destiné à être transformé/intégré à des installations de production industrielle complexes.
- Le produit ne doit être utilisé que dans les conditions de montage et d'utilisation prescrites et dans les positions de montage prescrites.
- Le produit ne doit pas être utilisé dans des zones privées, dans des zones à risque d'explosion et dans des zones où se trouvent des gaz, des huiles, des acides et des rayonnements dangereux.
- Tous les dispositifs de sécurité pour le transport doivent être retirés.
- Les anneaux de levage à tige filetée montés sur le moteur ne conviennent pas au transport des motoréducteurs.

## Déchets d'équipements électriques et électroniques (DEEE)



Ce symbole représentant une poubelle barrée indique que les appareils électriques et électroniques ne doivent pas être jetés avec les ordures ménagères. Veuillez remettre vos anciens appareils à une entreprise de collecte certifiée.

## Assistance

### **ATTENTION !**

#### Documentation associée

Veuillez respecter les indications contenues dans la documentation associée. Il s'agit de la condition préalable pour garantir un fonctionnement sûr et fiable et obtenir les caractéristiques du produit indiquées.



La documentation associée et d'autres informations sont disponibles sur notre site web : <http://support.lenze.com>

Le numéro de matériel du produit se trouve sur la plaque signalétique.



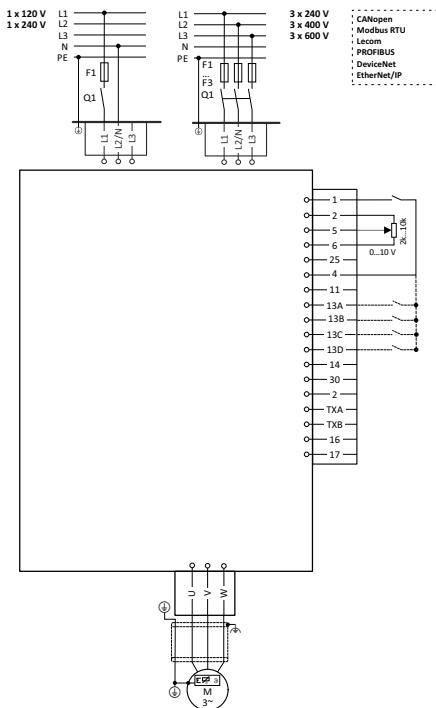
# Variateur de vitesse SMVector IP31

## Schéma électrique

### AVIS

Il incombe à l'utilisateur d'attester de la conformité à la norme IEC 61800-3.

Pour répondre aux exigences de la norme EN IEC 61800-3 en matière de compatibilité électromagnétique, un filtre externe doit être utilisé avec certains produits, veuillez vous référer à la documentation correspondante.



## Remarques importantes UL/CSA

Veuillez noter que toutes les déclarations de la certification UL sont contraignantes uniquement dans leur version anglaise. Les traductions dans d'autres langues sont purement informatives.

### Original – Anglais

### ⚠ WARNING!

- Integral solid state protection does not provide branch circuit protection. Branch circuit protection must be provided in accordance with the National Electrical Code and any additional local codes. The use of fuses or circuit breakers is the only approved means for branch circuit protection.
- When protected by CC and T Class Fuses, suitable for use on a circuit capable of delivering not more than 200,000 rms symmetrical amperes, at the maximum voltage rating marked on the drive.
- Additionally suitable when protected by a circuit breaker having an interrupting rating not less than 200,000 rms symmetrical amperes, at the maximum voltage rating marked on the drive. (Excludes ESV113xx2T, ESV153xx2T, ESV113xx4T, ESV153xx4T, ESV183xx4T, ESV223xx4T, ESV303xx4T, ESV113xx6T, ESV153xx6T, ESV183xx6T, ESV223xx6T, and ESV303xx6T).
- Use minimum 75°C copper wire only, except for control circuits.
- For control circuits, use wiring suitable for NEC Class 1 circuits only.
- Torque Requirements (in accordance with UL) are listed in the corresponding Manual.
- Shall be installed in a pollution degree 2 macro-environment.
- All models are suitable for installation in a compartment handling Conditioned Air (i.e., plenum rated).

### Original – Français

### ⚠ AVERTISSEMENT !

- Le déclenchement du dispositif de protection du circuit de dérivation peut être dû à une coupure qui résulte d'un courant de défaut. Pour limiter le risque d'incendie ou de choc électrique, examiner les pièces porteuses de courant et les autres éléments du contrôleur et les remplacer s'ils sont endommagés. En cas de grillage de l'élément traverse par le courant dans un relais de surcharge, le relais tout entier doit être remplacé.

|                                                                                        | L1, L2, L3, PE, U, V, W |      |      |         |
|----------------------------------------------------------------------------------------|-------------------------|------|------|---------|
|                                                                                        | [mm]                    | [Nm] | [in] | [lb-in] |
| < 4 kW                                                                                 | 8                       | 1.3  | 5/16 | 12      |
| ESV552xx2Txx, ESV752xx2Txx, ESV113xx4/6xxx, ESV153xx4/6xxx, ESV183xx6xxx, ESV223xx6xxx | 8                       | 1.8  | 5/16 | 16      |
| ESV552xx4Txx, ESV752xx4Txx, ESV552xx6Txx, ESV752xx6Txx                                 | 6                       | 1.3  | 0.25 | 12      |
| ESV113xx2xxx, ESV153xx2xxx, ESV183xx4xxx, ESV223xx4xxx, ESV303xx4xxx                   | 10                      | 2.7  | 7/16 | 24      |
| ESV373xx4xxx, ESV453xx4xxx                                                             | 19                      | 3.05 | 0.75 | 27      |

|              | P <sub>nominal</sub> [kW] | m [kg] | H [mm] | L [mm] | P [mm] |
|--------------|---------------------------|--------|--------|--------|--------|
| ESV251xxxxxB | 0.25                      | 0.9    | 190    | 99     | 111    |
| ESV371xxxxxB | 0.37                      |        |        |        |        |
| ESV751xxxxxB | 0.75                      |        |        |        |        |
| ESV112xxxxxB | 1.1                       |        |        |        |        |
| ESV152xxxxxB | 1.5                       | 1.3    | 191    | 99     | 138    |
| ESV222xxxxxB | 2.2                       |        |        |        |        |
| ESV402xxxxxB | 4                         | 1.5    | 191    | 99     | 147    |
| ESV552xxxxxB | 5.5                       | 2      | 250    | 130    | 160    |
| ESV752xxxxxB | 7.5                       |        |        |        |        |

|              | P <sub>nominal</sub> [kW] | m [kg] | H [mm] | L [mm] | P [mm] |
|--------------|---------------------------|--------|--------|--------|--------|
| ESV113xxxxxB | 11                        | 6.15   | 318    | 176    | 205    |
| ESV153xxxxxB | 15                        |        |        |        |        |
| ESV183xxxxxB | 18.5                      |        |        |        |        |
| ESV223xxxxxB | 22                        | 10.9   | 360    | 221    | 256    |
| ESV303xxxxxB | 30                        |        |        |        |        |
| ESV373xxxxxB | 37.5                      | 14.1   | 436    | 221    | 256    |
| ESV453xxxxxB | 45                        | 15.9   | 513    | 221    | 256    |



## Variateur de vitesse SMVector IP65

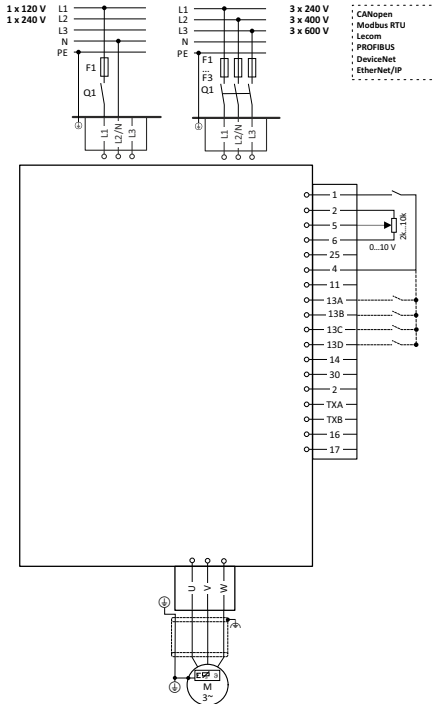
Lenze

## Schéma électrique

## AVIS

Il incombe à l'utilisateur d'attester de la conformité à la norme IEC 61800-3.

Pour répondre aux exigences de la norme IEC 61800-3 en matière de compatibilité électromagnétique, un filtre externe doit être utilisé avec certains produits, veuillez vous référer à la documentation correspondante.



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- Additionally suitable when protected by a circuit breaker having an interrupting rating not less than 200,000 rms symmetrical amperes, at the maximum voltage rating marked on the drive. (Excludes ESV113xx2T, ESV153xx2T, ESV113xx4T, ESV153xx4T, ESV183xx4T, ESV223xx4T, ESV303xx4T, ESV113xx6T, ESV153xx6T, ESV183xx6T, ESV223xx6T, and ESV303xx6T).
- Use minimum 75°C copper wire only, except for control circuits.
- For control circuits, use wiring suitable for NEC Class 1 circuits only.
- Torque Requirements (in accordance with UL) are listed in the corresponding Manual.
- Shall be installed in a pollution degree 2 macro-environment.
- All models are suitable for installation in a compartment handling Conditioned Air (i.e., plenum rated).

## Original – Français

**AVERTISSEMENT !**

- Le déclenchement du dispositif de protection du circuit de dérivation peut être dû à une coupure qui résulte d'un courant de défaut. Pour limiter le risque d'incendie ou de choc électrique, examiner les pièces porteuses de courant et les autres éléments du contrôleur et les remplacer s'ils sont endommagés. En cas de grillage de l'élément traverse par le courant dans un relais de surcharge, le relais tout entier doit être remplacé.

|                                                                                        | L1, L2, L3, PE, U, V, W |      |      |         |
|----------------------------------------------------------------------------------------|-------------------------|------|------|---------|
|                                                                                        | [mm]                    | [mm] | [in] | [lb-in] |
| < 4 kW                                                                                 | 8                       | 1.3  | 5/16 | 12      |
| ESV552xx2Txx, ESV752xx2Txx, ESV113xx4/6xxx, ESV153xx4/6xxx, ESV183xx6xxx, ESV223xx6xxx | 8                       | 1.8  | 5/16 | 16      |
| ESV552xx4Txx, ESV752xx4Txx, ESV552xx6Txx, ESV752xx6Txx                                 | 6                       | 1.3  | 0.25 | 12      |
| ESV113xx2xxx, ESV153xx2xxx, ESV183xx4xxx, ESV223xx4xxx                                 | 10                      | 2.7  | 7/16 | 24      |

| ESV    | F <sub>s</sub> | P <sub>nom</sub> | m    | H    | L    | P    |
|--------|----------------|------------------|------|------|------|------|
| ESV    | X              | [kW]             | [kg] | [mm] | [mm] | [mm] |
| 371N01 | 371N04         | 0.37             | 1.63 | 203  | 160  | 114  |
| 751N01 | 751N04         | 0.75             |      |      |      |      |
| 112N01 | 112N04         | 1.1              |      |      |      |      |
|        | 152N02         | 1.5              | 2.68 | 203  | 160  | 160  |
|        | 222N04         | 2.2              |      |      |      |      |
|        | 302N04         | 3                |      |      |      |      |
|        | 222N02         | 2.2              | 3.24 | 203  | 181  | 172  |
|        | 552N02         | 5.5              | 4.98 | 254  | 204  | 203  |
|        | 752N02         | 7.5              |      |      |      |      |
|        | 402N02         | 4                | 5.25 | 254  | 228  | 203  |
|        | 552N04         | 5.5              |      |      |      |      |
|        | 113N02         | 11               |      |      |      |      |
|        | 153N02         | 15               | 10   | 368  | 240  | 241  |
|        | 183N04         | 18.5             |      |      |      |      |
|        | 223N04         | 22               | 11.6 | 420  | 240  | 241  |

| ESV    | F <sub>s</sub> | P <sub>nom</sub> | m    | H    | L    | P    |
|--------|----------------|------------------|------|------|------|------|
| ESV    | M              | [kW]             | [kg] | [mm] | [mm] | [mm] |
| 371N01 | 371N02         | 0.37             | 2.13 | 279  | 160  | 114  |
| 751N01 | 751N02         | 0.75             |      |      |      |      |
| 112N01 | 112N04         | 1.1              |      |      |      |      |
|        | 152N02         | 1.5              | 3.58 | 279  | 160  | 160  |
|        | 222N04         | 2.2              |      |      |      |      |
|        | 302N04         | 3                |      |      |      |      |
|        | 222N02         | 2.2              | 4.08 | 279  | 181  | 172  |
|        | 552N02         | 5.5              | 6.32 | 330  | 204  | 203  |
|        | 752N02         | 7.5              |      |      |      |      |
|        | 402N02         | 4                | 6.66 | 330  | 228  | 204  |
|        | 552N04         | 5.5              |      |      |      |      |
|        | 113N04TM       | 11               | 10.4 | 368  | 240  | 241  |
|        | 153N04TM       | 15               |      |      |      |      |
| 113N02 | 113N04TL       | 11               |      |      |      |      |
| 153N02 | 153N04TL       | 15               | 12.9 | 470  | 240  | 241  |
|        | 183N04         | 18.5             |      |      |      |      |
|        | 223N04         | 22               |      |      |      |      |



# Convertidor de frecuencia SMVector IP31/IP65

**Lenze**

## Instrucciones de seguridad generales

### ⚠ ¡PELIGRO!

La inobservancia de estas indicaciones básicas de seguridad puede ocasionar daños personales y materiales graves!

- Utilice el producto solamente conforme a los fines previstos.
- Nunca ponga en marcha el producto si presenta daños visibles.
- Nunca someta el producto a modificaciones técnicas.
- Nunca ponga en marcha el producto si no está completamente montado.
- Nunca maneje el producto sin las cubiertas necesarias.
- Enchufe o desenchufe las conexiones enchufables solo cuando estén libres de tensión.
- Extraiga el producto de la instalación solo cuando esté libre de tensión.
- En función del grado de protección, los productos pueden tener piezas energizadas, móviles o giratorias durante el funcionamiento y después. Las superficies pueden estar calientes.
- Para prevenir daños personales y materiales, es necesario emplear sistemas de seguridad y protección de orden superior.
- Las indicaciones técnicas de procedimiento y vistas de circuitos expuestas en la documentación correspondiente son propuestas cuya extrapolación a otra aplicación debe comprobarse. El fabricante del producto no se hace responsable de la idoneidad de los procedimientos y sugerencias de conexionado indicados.
- Todos los trabajos con y en el producto deben ser realizados exclusivamente por personal especializado y cualificado. IEC 60364 o CENELEC HD 384 definen la cualificación de estas personas:
  - Conoce la instalación, el montaje, la puesta en marcha y el funcionamiento del producto.
  - Disponen de la formación necesaria para llevar a cabo su actividad.
  - Conocen todas las normas de prevención de accidentes, directivas y leyes aplicables en el lugar de uso y pueden aplicarlas.

### ⚠ ¡ADVERTENCIA!

#### Seguridad funcional

Determinadas funciones del software o componentes dan soporte a funciones de seguridad de conformidad con los requisitos de la directiva 2006/42/CE: Directiva relativa a las máquinas [UKCA: 2008 No. 1597 – The Supply of Machinery (Safety) Regulations 2008]. Es esencial que tenga en cuenta las indicaciones expuestas en la documentación sobre la técnica de seguridad integrada.

La reparación o sustitución de estos componentes solo debe efectuarlas el Servicio Lenze o personas autorizadas por él.

## Peligros residuales

### ⚠ ¡PELIGRO!

#### Tensión eléctrica peligrosa

Los errores en el producto pueden provocar sobretensiones en la instalación.

Para productos según la norma EN 61800-5-1:

- Durante el funcionamiento y hasta 20 minutos después de la desconexión de la red, puede haber tensiones eléctricas peligrosas en las conexiones del producto.
- La corriente de fuga a tierra (PE) es > 3.5 mA AC o > 10 mA DC.

#### Posibles consecuencias

- Muerte o lesiones graves por descarga eléctrica.

#### Medidas de protección

- Todas las tareas que se realicen en el producto se deben llevar a cabo únicamente sin tensión.
- Asegúrese de que el producto esté sin tensión.
- Tras desconectar la tensión de red se deben observar las etiquetas de advertencia del producto.
- Después de la desconexión, espere a que el accionamiento se detenga.
- Se deben implementar las medidas exigidas por las normas EN IEC 61800-5-1 o EN IEC 60204-1, es decir, la instalación fija y la conexión PE normativa.

#### Significado de las etiquetas de advertencia del producto



#### Tensión eléctrica peligrosa



#### Componentes sensibles a las descargas electrostáticas



Antes de realizar trabajos en el producto, el personal debe liberarse de toda carga electrostática.



#### Alta corriente de fuga



#### Superficie caliente

## Uso previsto

- El producto es un equipo profesional destinado a un uso comercial, para determinadas profesiones o la industria y no está previsto para su venta al público general. IEC 60050 [IEV 161-05-05]
- El producto es una parte o un componente para su procesamiento posterior/integración en instalaciones de fabricación industrial complejas.
- El producto solo se debe utilizar con las condiciones de montaje y uso prescritas y en las posiciones de montaje previstas.
- El producto no debe utilizarse en entornos privados, en zonas con peligro de explosión y en zonas con gases, aceites, ácidos y radiaciones nocivas.
- Es imprescindible retirar todos los seguros de transporte.
- Los cáncamos montados en el motor no son aptos para el transporte de los motorreductores.

#### Residuos de aparatos eléctricos y electrónicos (RAEE)



Este símbolo de un contenedor de basura tachado indica que los aparatos eléctricos y electrónicos no deben desecharse con la basura doméstica. Entregue los aparatos usados a una empresa de eliminación de residuos certificada.

## Asistencia

### ⚠ ¡ATENCIÓN!

#### Documentación relacionada

Observe las indicaciones de la documentación correspondiente. Esta es una condición previa para un funcionamiento seguro y sin fallos, así como para obtener las características indicadas del producto.



Puede consultar la documentación relacionada y más información en nuestro sitio web:  
<http://support.lenze.com>

El número de material del producto se encuentra en la placa de características.



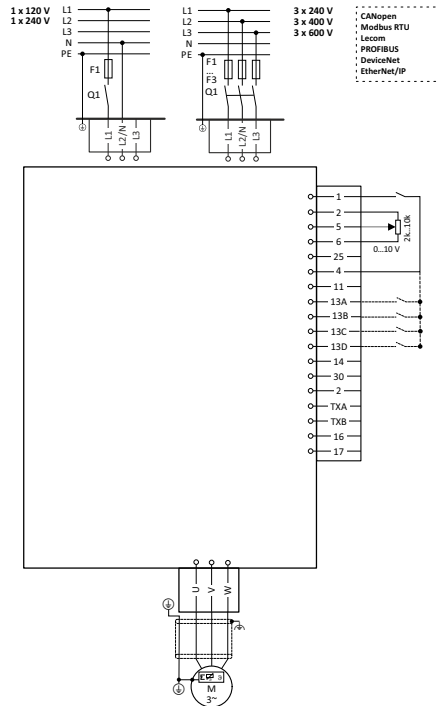
# Convertidor de frecuencia SMVector IP31

## Esquema de conexiones

### AVISO

El usuario debe demostrar que se cumple la conformidad con la norma EN IEC 61800-3.

Para cumplir los requisitos CEM de la norma EN IEC 61800-3, en algunos productos se debe emplear un filtro externo. Lea la documentación correspondiente.



## Notas importantes sobre UL/CSA

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Original - Inglés

### ⚠ WARNING!

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- Additionally suitable when protected by a circuit breaker having an interrupting rating not less than 200,000 rms symmetrical amperes, at the maximum voltage rating marked on the drive. (Excludes ESV113xx2T, ESV153xx2T, ESV113xx4T, ESV153xx4T, ESV183xx4T, ESV223xx4T, ESV303xx4T, ESV113xx6T, ESV153xx6T, ESV183xx6T, ESV223xx6T, and ESV303xx6T).
- Use minimum 75°C copper wire only, except for control circuits.
- For control circuits, use wiring suitable for NEC Class 1 circuits only.
- Torque Requirements (in accordance with UL) are listed in the corresponding Manual.
- Shall be installed in a pollution degree 2 macro-environment.
- All models are suitable for installation in a compartment handling Conditioned Air (i.e., plenum rated).
- The opening of branch-circuit protective device may be an indication that a fault has been interrupted. To reduce the risk of fire or electric shock, current carrying parts and other components of the controller should be examined and replaced if damaged.

|                                                                                        | L1, L2, L3, PE, U, V, W |      |      |         |
|----------------------------------------------------------------------------------------|-------------------------|------|------|---------|
|                                                                                        | [mm]                    | [Nm] | [in] | [lb-in] |
| < 4 kW                                                                                 | 8                       | 1.3  | 5/16 | 12      |
| ESV552xx2Txx, ESV752xx2Txx, ESV113xx4/6xxx, ESV153xx4/6xxx, ESV183xx6xxx, ESV223xx6xxx | 8                       | 1.8  | 5/16 | 16      |
| ESV552xx4Txx, ESV752xx4Txx, ESV552xx6Txx, ESV752xx6Txx                                 | 6                       | 1.3  | 0.25 | 12      |
| ESV113xx2xxx, ESV153xx2xxx, ESV183xx4xxx, ESV223xx4xxx, ESV303xx4xxx                   | 10                      | 2.7  | 7/16 | 24      |
| ESV373xx4xxx, ESV453xx4xxx                                                             | 19                      | 3.05 | 0.75 | 27      |

|              | P <sub>n</sub> [kW] | m [kg] | Al [mm] | An [mm] | P [mm] |
|--------------|---------------------|--------|---------|---------|--------|
| ESV251xxxxxB | 0.25                | 0.9    | 190     | 99      | 111    |
| ESV371xxxxxB | 0.37                |        |         |         |        |
| ESV751xxxxxB | 0.75                |        |         |         |        |
| ESV112xxxxxB | 1.1                 | 1.3    | 191     | 99      | 138    |
| ESV152xxxxxB | 1.5                 |        |         |         |        |
| ESV222xxxxxB | 2.2                 |        |         |         |        |
| ESV402xxxxxB | 4                   | 1.5    | 191     | 99      | 147    |
| ESV552xxxxxB | 5.5                 | 2      | 250     | 130     | 160    |
| ESV752xxxxxB | 7.5                 |        |         |         |        |

|              | P <sub>n</sub> [kW] | m [kg] | Al [mm] | An [mm] | P [mm] |
|--------------|---------------------|--------|---------|---------|--------|
| ESV113xxxxxB | 11                  | 6.15   | 318     | 176     | 205    |
| ESV153xxxxxB | 15                  |        |         |         |        |
| ESV183xxxxxB | 18.5                |        |         |         |        |
| ESV223xxxxxB | 22                  | 10.9   | 360     | 221     | 256    |
| ESV303xxxxxB | 30                  |        |         |         |        |
| ESV373xxxxxB | 37.5                |        |         |         |        |
| ESV453xxxxxB | 45                  | 15.9   | 513     | 221     | 256    |



# Convertidor de frecuencia SMVector IP65

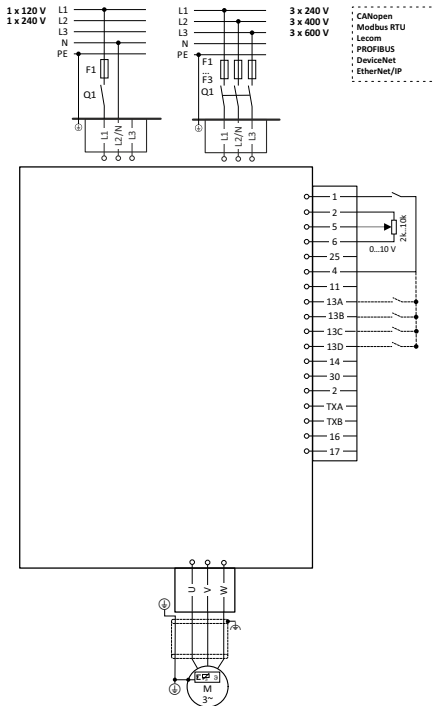
**Lenze**

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- Use minimum 75°C copper wire only, except for control circuits.
- For control circuits, use wiring suitable for NEC Class 1 circuits only.
- Torque Requirements (in accordance with UL) are listed in the corresponding Manual.
- Shall be installed in a pollution degree 2 macro-environment.
- All models are suitable for installation in a compartment handling Conditioned Air (i.e., plenum rated).
- The opening of branch-circuit protective device may be an indication that a fault has been interrupted. To reduce the risk of fire or electric shock, current carrying parts and other components of the controller should be examined and replaced if damaged.

|                                                                                        | L1, L2, L3, PE, U, V, W |      |      |         |
|----------------------------------------------------------------------------------------|-------------------------|------|------|---------|
|                                                                                        | [mm]                    | [Nm] | [in] | [lb-in] |
| < 4 kW                                                                                 | 8                       | 1.3  | 5/16 | 12      |
| ESV552xx2Txx, ESV752xx2Txx, ESV113xx4/6xxx, ESV153xx4/6xxx, ESV183xx6xxx, ESV223xx6xxx | 8                       | 1.8  | 5/16 | 16      |
| ESV552xx4Txx, ESV752xx4Txx, ESV552xx6Txx, ESV752xx6Txx                                 | 6                       | 1.3  | 0.25 | 12      |
| ESV113xx2xxx, ESV153xx2xxx, ESV183xx4xxx, ESV223xx4xxx                                 | 10                      | 2.7  | 7/16 | 24      |

| ESV    | F <sub>N</sub> | P <sub>N</sub> | m    | Al   | An   | P    |
|--------|----------------|----------------|------|------|------|------|
| ESV    | X              | [kW]           | [kg] | [mm] | [mm] | [mm] |
| 371N01 | 371N02         | 371N04         | 0.37 | 1.63 | 203  | 114  |
| 751N01 | 751N02         | 751N04         | 0.75 |      |      |      |
| 112N01 | 112N02         | 112N04         | 1.1  |      |      |      |
|        | 152N02         | 152N04         | 1.5  | 2.68 | 203  | 160  |
|        | 222N02         | 222N04         | 2.2  |      |      |      |
|        |                | 302N04         | 3    |      |      |      |
|        | 222N02         |                | 2.2  | 3.24 | 203  | 181  |
|        | 552N02         |                | 5.5  |      |      |      |
|        |                | 752N04         | 7.5  | 4.98 | 254  | 203  |
|        | 402N02         | 402N04         | 4    | 5.25 | 254  | 228  |
|        |                | 552N04         | 5.5  |      |      |      |
|        | 113N02         | 113N04         | 11   |      |      |      |
|        | 153N02         | 153N04         | 15   | 10   | 368  | 240  |
|        |                | 183N04         | 18.5 |      |      |      |
|        |                | 223N04         | 22   | 11.6 | 420  | 240  |

| ESV    | F <sub>N</sub> | P <sub>N</sub> | m    | Al   | An   | P    |
|--------|----------------|----------------|------|------|------|------|
| ESV    | X              | [kW]           | [kg] | [mm] | [mm] | [mm] |
| 371N01 | 371N02         | 371N04         | 0.37 | 2.13 | 279  | 114  |
| 751N01 | 751N02         | 751N04         | 0.75 |      |      |      |
| 112N01 | 112N02         | 112N04         | 1.1  |      |      |      |
|        | 152N02         | 152N04         | 1.5  | 3.58 | 279  | 160  |
|        | 222N02         | 222N04         | 2.2  |      |      |      |
|        |                | 302N04         | 3    |      |      |      |
|        | 222N02         |                | 2.2  | 4.08 | 279  | 181  |
|        | 552N02         |                | 5.5  |      |      |      |
|        |                | 752N04         | 7.5  | 6.32 | 330  | 203  |
|        | 402N02         | 402N04         | 4    | 6.66 | 330  | 228  |
|        |                | 552N04         | 5.5  |      |      |      |
|        | 113N04TM       | 113N06         | 11   | 10.4 | 368  | 240  |
| 113N02 | 113N04TL       | 153N06         | 15   |      |      |      |
| 153N02 | 153N04TL       |                | 11   |      |      |      |
|        |                | 183N04         | 18.5 | 12.9 | 470  | 240  |
|        |                | 223N04         | 22   |      |      |      |



## Inverter SMVector IP31/IP65

### Note generali di sicurezza

#### **PERICOLO!**

Attenzione: la mancata osservanza delle note di sicurezza generali sotto riportate può comportare gravi danni a persone o cose!

- Utilizzare il prodotto solo per la destinazione d'uso prevista.
- Evitare di mettere in funzione il prodotto in presenza di evidenti danni.
- Non è consentito apportare modifiche tecniche al prodotto.
- Evitare di mettere in funzione il prodotto se non completamente montato.
- Non è consentito azionare il prodotto in mancanza delle calotte di protezione necessarie.
- Inserire o estrarre i collegamenti a innesto solo in assenza di tensione.
- Il prodotto può essere rimosso dall'impianto in cui è installato solo in assenza di tensione.
- Durante e dopo il funzionamento, i prodotti – in funzione del rispettivo grado di protezione – potrebbero presentare parti sotto tensione oppure mobili o rotanti. Le superfici potrebbero surriscaldarsi.
- Al fine di evitare danni materiali e a persone è necessario prevedere sistemi di sicurezza e protezione da installare a monte!
- Le indicazioni relative a processi e specifiche, le procedure e gli schemi di collegamento riportati nella rispettiva documentazione sono suggerimenti di cui è necessario verificare l'applicabilità al singolo caso. Lenze in quanto produttore dell'apparecchio non garantisce l'idoneità delle procedure e dei suggerimenti di collegamento illustrati.
- Tutti gli interventi con/sull'apparecchio possono essere effettuati unicamente da personale tecnico qualificato. IEC 60364 o CENELEC HD 384 definire la qualifica di tale personale:
  - Hanno acquisito familiarità con l'installazione, il montaggio, la messa in servizio e il funzionamento del prodotto.
  - Detto personale dispone di adeguate qualifiche relative al lavoro svolto.
  - Conosce le norme antinfortunistiche vigenti nel luogo di installazione, le direttive e le leggi ed è in grado di applicarle.

#### **AVVERTENZA!**

##### **Sicurezza funzionale**

Determinate funzioni software o componenti supportano funzioni di sicurezza conformi ai requisiti della norma 2006/42/CE: Direttiva Macchine [UKCA: 2008 no. 1597 – The Supply of Machinery (Safety) Regulations 2008]. Osservare tassativamente le avvertenze riportate nella documentazione relativa alla tecnologia di sicurezza integrata.

La riparazione o sostituzione di tali componenti è a esclusiva cura dell'Assistenza Lenze o dei soggetti autorizzati dalla stessa.

### Assistenza

#### **ATTENZIONE!**

##### **Relativa documentazione**

Attenersi alle indicazioni riportate nella rispettiva documentazione. Le misure di sicurezza sono il presupposto per garantire un funzionamento sicuro e privo di anomalie e per ottenere le caratteristiche di prodotto specificate.

### Rischi residui

#### **PERICOLO!**

##### **Tensione elettrica pericolosa**

Eventuali difetti del prodotto possono comportare sovratensione all'interno dell'impianto.

Per i prodotti conformi alla norma EN 61800-5-1:

- Durante il funzionamento e fino a 20 minuti dopo la disinserzione dalla rete i collegamenti dell'apparecchio potrebbero essere ancora sotto tensione elettrica.
- La corrente di dispersione verso terra (PE) è rispettivamente  $>3,5$  mA AC o  $>10$  mA DC.

##### **Possibili conseguenze**

- Morte o lesioni gravi dovute a scossa elettrica.

##### **Misure di protezione**

- Tutti gli interventi sull'apparecchio vanno effettuati in assenza di tensione.
- Importante: verificare sempre l'assenza di tensione!
- Una volta disattivata la tensione di rete attenersi alle istruzioni riportate sulle targhe dell'apparecchio.
- Dopo lo spegnimento attendere l'arresto dell'azionamento.
- Implementare le misure contemplate dalla norma EN IEC 61800-5-1 o EN IEC 60204-1, ossia installazione fissa e collegamento PE a norma.

##### **Significato delle istruzioni riportate sulle targhe dell'apparecchio**



##### **Tensione elettrica pericolosa**



##### **Componenti sensibili alle scariche elettrostatiche**

Prima di effettuare interventi sul prodotto, il personale deve eliminare le cariche elettrostatiche accumulate.



##### **Alta corrente di dispersione**



##### **Superficie surriscaldata**

### Utilizzo conforme

- Il prodotto è un mezzo d'esercizio a uso professionale destinato all'impiego per attività commerciali, determinate professioni o nell'industria. Non è prevista la vendita al pubblico. IEC 60050 [IEV 161-05-05]
- Il prodotto è un componente soggetto a ulteriore lavorazione/integrazione in impianti produttivi industriali complessi.
- È consentito mettere in funzione il prodotto unicamente alle condizioni di montaggio e utilizzo prescritte, nonché nelle posizioni di montaggio previste.
- Non è consentito utilizzare il prodotto in ambito privato, in aree a rischio di esplosione o in presenza di gas, oli, acidi dannosi e radiazioni.
- È necessario rimuovere i dispositivi di fissaggio per il trasporto.
- Le viti ad anello montate sul motore non sono idonee per il trasporto di motoriduttori.

##### **Rifiuti da apparecchiature elettriche ed elettroniche (RAEE)**



Questo simbolo raffigurante un bidone della spazzatura barrato indica che le apparecchiature elettriche ed elettroniche non devono essere smaltite insieme ai rifiuti domestici. Si prega di consegnare i vecchi apparecchi a un'azienda di smaltimento certificata.



La relativa documentazione e altre informazioni sono disponibili alla pagina del nostro sito:  
<http://support.lenze.com>

Il codice articolo del rispettivo prodotto è riportato sulla targhetta.



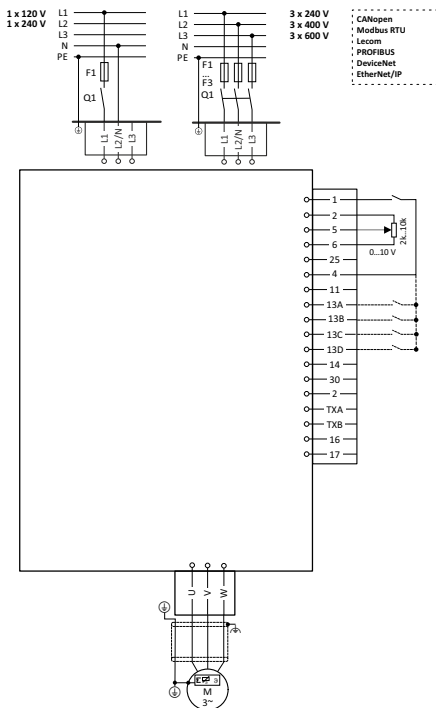
# Inverter SMVector IP31

## Schema di collegamento

### AVVISO

L'utilizzatore è tenuto a documentare la conformità alla norma EN IEC 61800-3.

Per soddisfare i requisiti EMC secondo la norma EN IEC 61800-3, alcuni dei prodotti richiedono l'uso di un filtro esterno. Invitiamo a consultare la documentazione in merito.



## Importanti avvertenze su UL/CSA

Segnaliamo che le dichiarazioni relative alla certificazione UL sono vincolanti unicamente in lingua inglese. La traduzione in altre lingue ha unicamente scopo informativo.

Originale - Inglese

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|                                                                                        | L1, L2, L3, PE, U, V, W |      |      |         |
|----------------------------------------------------------------------------------------|-------------------------|------|------|---------|
|                                                                                        | [mm]                    | [Nm] | [in] | [lb-in] |
| < 4 kW                                                                                 | 8                       | 1.3  | 5/16 | 12      |
| ESV552xx2Txx, ESV752xx2Txx, ESV113xx4/6xxx, ESV153xx4/6xxx, ESV183xx6xxx, ESV223xx6xxx | 8                       | 1.8  | 5/16 | 16      |
| ESV552xx4Txx, ESV752xx4Txx, ESV552xx6Txx, ESV752xx6Txx                                 | 6                       | 1.3  | 0.25 | 12      |
| ESV113xx2xxx, ESV153xx2xxx, ESV183xx4xxx, ESV223xx4xxx, ESV303xx4xxx                   | 10                      | 2.7  | 7/16 | 24      |
| ESV373xx4xxx, ESV453xx4xxx                                                             | 19                      | 3.05 | 0.75 | 27      |

|              | P <sub>n</sub> [kW] | m [kg] | A [mm] | L [mm] | P [mm] |
|--------------|---------------------|--------|--------|--------|--------|
| ESV251xxxxxB | 0.25                | 0.9    | 190    | 99     | 111    |
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| ESV751xxxxxB | 0.75                |        |        |        |        |
| ESV112xxxxxB | 1.1                 |        |        |        |        |
| ESV152xxxxxB | 1.5                 | 1.3    | 191    | 99     | 138    |
| ESV222xxxxxB | 2.2                 |        |        |        |        |
| ESV402xxxxxB | 4                   | 1.5    | 191    | 99     | 147    |
| ESV552xxxxxB | 5.5                 | 2      | 250    | 130    | 160    |
| ESV752xxxxxB | 7.5                 |        |        |        |        |

|              | P <sub>n</sub> [kW] | m [kg] | A [mm] | L [mm] | P [mm] |
|--------------|---------------------|--------|--------|--------|--------|
| ESV113xxxxxB | 11                  | 6.15   | 318    | 176    | 205    |
| ESV153xxxxxB | 15                  |        |        |        |        |
| ESV183xxxxxB | 18.5                |        |        |        |        |
| ESV223xxxxxB | 22                  |        |        |        |        |
| ESV303xxxxxB | 30                  | 10.9   | 360    | 221    | 256    |
| ESV373xxxxxB | 37.5                | 14.1   | 436    | 221    | 256    |
| ESV453xxxxxB | 45                  | 15.9   | 513    | 221    | 256    |



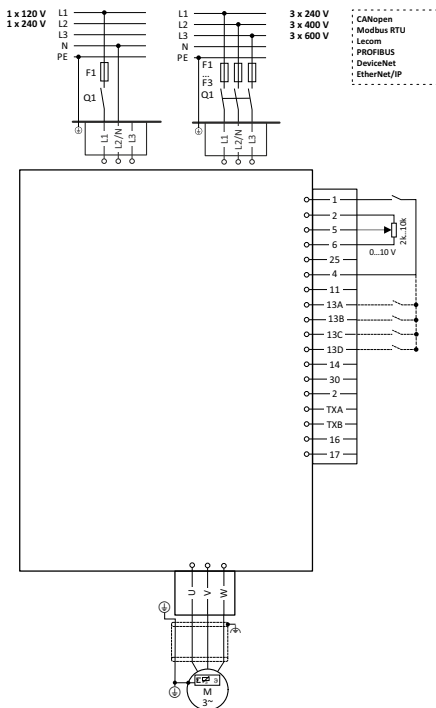
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|                                                                                        | L1, L2, L3, PE, U, V, W |      |      |         |
|----------------------------------------------------------------------------------------|-------------------------|------|------|---------|
|                                                                                        | (mm)                    | [Nm] | [in] | [lb-in] |
| < 4 kW                                                                                 | 8                       | 1.3  | 5/16 | 12      |
| ESV552xx2Txx, ESV752xx2Txx, ESV113xx4/6xxx, ESV153xx4/6xxx, ESV183xx6xxx, ESV223xx6xxx | 8                       | 1.8  | 5/16 | 16      |
| ESV552xx4Txx, ESV752xx4Txx, ESV552xx6Txx, ESV752xx6Txx                                 | 6                       | 1.3  | 0.25 | 12      |
| ESV113xx2xxx, ESV153xx2xxx, ESV183xx4xxx, ESV223xx4xxx                                 | 10                      | 2.7  | 7/16 | 24      |

| ESV    | F <sub>ESV</sub> | P <sub>N</sub> [kW] | m [kg] | A [mm] | L [mm] | P [mm] |
|--------|------------------|---------------------|--------|--------|--------|--------|
| 371N01 | 371N02           | 371N04              | 0.37   | 1.63   | 203    | 160    |
| 751N01 | 751N02           | 751N04              | 0.75   |        |        |        |
| 112N01 | 112N02           | 112N04              | 1.1    |        |        |        |
|        | 152N02           | 152N04              | 1.5    | 2.68   | 203    | 160    |
|        | 222N02           | 222N04              | 2.2    |        |        |        |
|        |                  | 302N04              | 3      |        |        |        |
|        | 222N02           |                     | 2.2    | 3.24   | 203    | 181    |
|        | 552N02           |                     | 5.5    |        |        |        |
|        |                  | 752N04              | 7.5    | 4.98   | 254    | 204    |
|        | 402N02           | 402N04              | 4      | 5.25   | 254    | 228    |
|        |                  | 552N04              | 5.5    |        |        |        |
|        | 113N02           | 113N04              | 11     |        |        |        |
|        | 153N02           | 153N04              | 15     | 10     | 368    | 240    |
|        |                  | 183N04              | 18.5   |        |        |        |
|        |                  | 223N04              | 22     | 11.6   | 420    | 240    |

| ESV    | F <sub>ESV</sub> | P <sub>N</sub> [kW] | m [kg] | A [mm] | L [mm] | P [mm] |
|--------|------------------|---------------------|--------|--------|--------|--------|
| 371N01 | 371N02           | 371N04              | 0.37   | 2.13   | 279    | 160    |
| 751N01 | 751N02           | 751N04              | 0.75   |        |        |        |
| 112N01 | 112N02           | 112N04              | 1.1    |        |        |        |
|        | 152N02           | 152N04              | 1.5    | 3.58   | 279    | 160    |
|        | 222N02           | 222N04              | 2.2    |        |        |        |
|        |                  | 302N04              | 3      |        |        |        |
|        | 222N02           |                     | 2.2    | 4.08   | 279    | 181    |
|        | 552N02           |                     | 5.5    |        |        |        |
|        |                  | 752N04              | 7.5    | 6.32   | 330    | 204    |
|        | 402N02           | 402N04              | 4      | 6.66   | 330    | 228    |
|        |                  | 552N04              | 5.5    |        |        |        |
|        | 113N04TM         | 113N06              | 11     | 10.4   | 368    | 240    |
| 113N02 | 113N04TL         | 153N06              | 15     |        |        |        |
| 153N02 | 153N04TL         |                     | 15     |        |        |        |
|        | 183N04           | 183N06              | 18.5   | 12.9   | 470    | 240    |
|        | 223N04           | 223N06              | 22     |        |        |        |



# Inversor de frequência SMVector IP31/IP65

## Instruções gerais de segurança

### **PERIGO!**

Desrespeitar as seguintes instruções básicas de segurança, bem como as informações de segurança, pode causar graves lesões pessoais e danos materiais!

- Use o produto somente como previsto.
- Nunca comissione o produto caso haja danos visíveis.
- Nunca modifique tecnicamente o produto.
- Nunca comissione o produto antes do término da montagem.
- Nunca opere o produto sem as coberturas necessárias.
- Conecte/desconecte todas as conexões plugáveis apenas quando não houver corrente!
- Remova o produto da instalação apenas quando não houver corrente.
- Dependendo do grau de proteção, o produto pode conter partes "vivas", em movimento ou rotativas durante ou após a operação. As superfícies podem estar quentes.
- Para evitar lesões físicas e danos materiais, devem ser utilizados sistemas de segurança e proteção de alto nível!
- As notas de procedimento e detalhes de circuito apresentados na documentação associada são sugestões, e sua utilização para a respectiva aplicação deve ser verificada. O fabricante do produto não assume qualquer responsabilidade pela adequação das propostas de processo e circuito.
- Todos os trabalhos realizados com e no produto somente podem ser executados por pessoal qualificado. IEC 60364 e CENELEC HD 384 definem as qualificações para essas pessoas:
  - Estar familiarizadas com a instalação, montagem, comissionamento e operação do produto.
  - Ter as qualificações correspondentes para seu trabalho.
  - Conhecer e saber aplicar todas as regulamentações, diretrizes e leis aplicáveis no local de uso para a prevenção de acidentes.

### **ATENÇÃO!**

#### Segurança funcional

Determinadas funções ou componentes de software são compatíveis com funções de segurança em conformidade com os requisitos da norma 2006/42/CE: Diretiva de Máquinas [UKCA: I.E. 2008/1597 - Regulamentos sobre o Fornecimento de Máquinas (Segurança) 2008]. Certifique-se de seguir os avisos na documentação sobre a engenharia de segurança integrada.

Esses componentes podem ser reparados ou substituídos somente pela Assistência Técnica Lenze ou pessoal autorizado.

## Riscos residuais

### **PERIGO!**

#### Tensão elétrica perigosa

Defeitos no produto podem levar a sobretensões no sistema. Para produtos de acordo com a norma EN 61800-5-1:

- Durante a operação e em até 20 minutos após o desligamento, pode haver tensão elétrica perigosa nas conexões do produto.
- A corrente de fuga em relação à terra (PE) é > 3,5 mA CA ou > 10 mA CC.

#### Possíveis consequências

- Morte ou ferimento grave por choque elétrico.

#### Medidas de proteção

- Qualquer trabalho realizado no produto só deve ser executado em estado desenergizado.
- Certifique-se de que não haja tensão!
- Após desligar a tensão da rede, observe os sinais no produto.
- Após desligar, espere até que o inversor pare.
- Implemente as medidas requeridas pela EN IEC 61800-5-1 ou EN IEC 60204-1, ou seja, instalação fixa e conexão PE de acordo com a norma.

#### Significado das etiquetas no produto



#### Tensão elétrica perigosa



#### Dispositivos sensíveis a cargas eletrostáticas

Antes de realizar trabalhos no produto, a equipe deve certificar-se de que está livre de carga eletrostática.



#### Alta corrente de fuga



#### Superfície quente

## Uso conforme indicado

- O produto é um equipamento profissional destinado ao uso comercial, profissões ou indústrias específicas e não está à venda para o público em geral. IEC 60050 (IEV 161-05-05)
- O produto é uma peça ou componente para processamento/integração posterior em sistemas complexos de produção industrial.
- O produto somente pode ser operado conforme as condições de montagem e operação especificadas e nas posições de montagem indicadas.
- O produto não deve ser operado em áreas privadas, em atmosferas potencialmente explosivas e em ambientes com gases, óleos e ácidos nocivos e radiação.
- Todos os bloqueios de transporte devem ser removidos.
- Os parafusos olhal montados no motor não são adequados para o transporte de motoredutores.

#### Resíduos de Equipamentos Elétricos e Eletrônicos (REEE)



Este símbolo de uma lata de lixo riscada indica que os aparelhos elétricos e eletrônicos não devem ser descartados junto com o lixo doméstico. Entregue os aparelhos usados a uma empresa de descarte certificada.

## Suporte

### **CUIDADO!**

#### Documentação relacionada

Observe todas as especificações da documentação correspondente. Estes são os pré-requisitos para a operação segura e sem falhas, e para a obtenção das características especificadas do produto.



A documentação relacionada e informações adicionais podem ser encontradas em nosso site: <http://support.lenze.com>

O número do material pode ser encontrado na placa de identificação do seu produto.



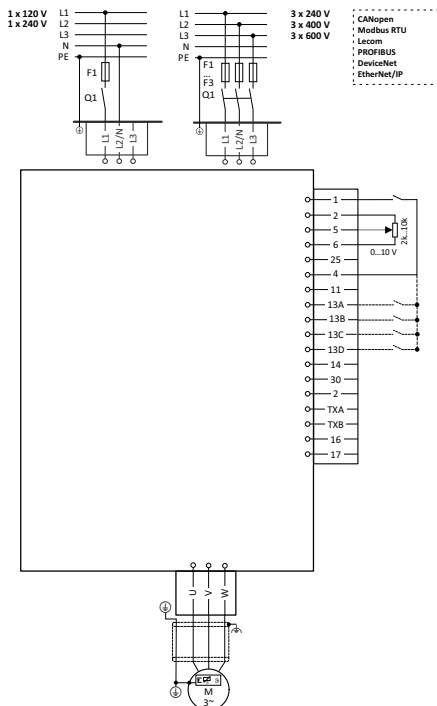
# Inversor de frequência SMVector IP31

## Esquema de ligação

### AVISO

O usuário deve demonstrar que a norma EN IEC 61800-3 está sendo cumprida.

Para atender aos requisitos de CEM de acordo com a EN IEC 61800-3, um filtro externo deve ser usado para alguns produtos. Consulte a documentação correspondente.



## Marcações UL/CSA

Observe que todas as afirmações relacionadas à certificação UL são vinculativas apenas na versão inglesa. A tradução em outros idiomas é apenas informativa.

Original - inglês

### ⚠ WARNING!

- Integral solid state protection does not provide branch circuit protection. Branch circuit protection must be provided in accordance with the National Electrical Code and any additional local codes. The use of fuses or circuit breakers is the only approved means for branch circuit protection.
- When protected by CC and T Class Fuses, suitable for use on a circuit capable of delivering not more than 200,000 rms symmetrical amperes, at the maximum voltage rating marked on the drive.
- Additionally suitable when protected by a circuit breaker having an interrupting rating not less than 200,000 rms symmetrical amperes, at the maximum voltage rating marked on the drive. (Excludes ESV113xx2T, ESV153xx2T, ESV113xx4T, ESV153xx4T, ESV183xx4T, ESV223xx4T, ESV303xx4T, ESV113xx6T, ESV153xx6T, ESV183xx6T, ESV223xx6T, and ESV303xx6T).
- Use minimum 75°C copper wire only, except for control circuits.
- For control circuits, use wiring suitable for NEC Class 1 circuits only.
- Torque Requirements (in accordance with UL) are listed in the corresponding Manual.
- Shall be installed in a pollution degree 2 macro-environment.
- All models are suitable for installation in a compartment handling Conditioned Air (i.e., plenum rated).
- The opening of branch-circuit protective device may be an indication that a fault has been interrupted. To reduce the risk of fire or electric shock, current carrying parts and other components of the controller should be examined and replaced if damaged.

|                                                                                        | L1, L2, L3, PE, U, V, W |      |      |         |
|----------------------------------------------------------------------------------------|-------------------------|------|------|---------|
|                                                                                        | [mm]                    | [Nm] | [in] | [lb-in] |
| < 4 kW                                                                                 | 8                       | 1.3  | 5/16 | 12      |
| ESV552xx2Txx, ESV752xx2Txx, ESV113xx4/6xxx, ESV153xx4/6xxx, ESV183xx6xxx, ESV223xx6xxx | 8                       | 1.8  | 5/16 | 16      |
| ESV552xx4Txx, ESV752xx4Txx, ESV552xx6Txx, ESV752xx6Txx                                 | 6                       | 1.3  | 0.25 | 12      |
| ESV113xx2xxx, ESV153xx2xxx, ESV183xx4xxx, ESV223xx4xxx, ESV303xx4xxx                   | 10                      | 2.7  | 7/16 | 24      |
| ESV373xx4xxx, ESV453xx4xxx                                                             | 19                      | 3.05 | 0.75 | 27      |

|              | P <sub>nominal</sub> [kW] | m [kg] | A [mm] | L [mm] | P [mm] |
|--------------|---------------------------|--------|--------|--------|--------|
| ESV251xxxxxB | 0.25                      | 0.9    | 190    | 99     | 111    |
| ESV371xxxxxB | 0.37                      |        |        |        |        |
| ESV751xxxxxB | 0.75                      |        |        |        |        |
| ESV112xxxxxB | 1.1                       |        |        |        |        |
| ESV152xxxxxB | 1.5                       | 1.3    | 191    | 99     | 138    |
| ESV222xxxxxB | 2.2                       |        |        |        |        |
| ESV402xxxxxB | 4                         | 1.5    | 191    | 99     | 147    |
| ESV552xxxxxB | 5.5                       | 2      | 250    | 130    | 160    |
| ESV752xxxxxB | 7.5                       |        |        |        |        |

|              | P <sub>nominal</sub> [kW] | m [kg] | A [mm] | L [mm] | P [mm] |
|--------------|---------------------------|--------|--------|--------|--------|
| ESV113xxxxxB | 11                        | 6.15   | 318    | 176    | 205    |
| ESV153xxxxxB | 15                        |        |        |        |        |
| ESV183xxxxxB | 18.5                      |        |        |        |        |
| ESV223xxxxxB | 22                        |        |        |        |        |
| ESV303xxxxxB | 30                        | 10.9   | 360    | 221    | 256    |
| ESV373xxxxxB | 37.5                      | 14.1   | 436    | 221    | 256    |
| ESV453xxxxxB | 45                        | 15.9   | 513    | 221    | 256    |



# Inversor de frequência SMVector IP65

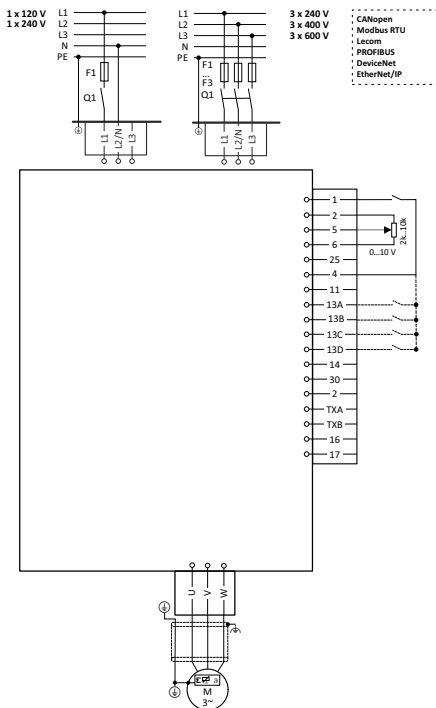
Lenze

## Esquema de ligação

### AVISO

O usuário deve demonstrar que a norma EN IEC 61800-3 está sendo cumprida.

Para atender aos requisitos de CEM de acordo com a EN IEC 61800-3, um filtro externo deve ser usado para alguns produtos. Consulte a documentação correspondente.



## Marcações UL/CSA

Observe que todas as afirmações relacionadas à certificação UL são vinculativas apenas na versão inglesa. A tradução em outros idiomas é apenas informativa.

Original - inglês

### ⚠ WARNING!

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- Additionally suitable when protected by a circuit breaker having an interrupting rating not less than 200,000 rms symmetrical amperes, at the maximum voltage rating marked on the drive. (Excludes ESV113xx2T, ESV153xx2T, ESV113xx4T, ESV153xx4T, ESV183xx4T, ESV223xx4T, ESV303xx4T, ESV113xx6T, ESV153xx6T, ESV183xx6T, ESV223xx6T, and ESV303xx6T).
- Use minimum 75°C copper wire only, except for control circuits.
- For control circuits, use wiring suitable for NEC Class 1 circuits only.
- Torque Requirements (in accordance with UL) are listed in the corresponding Manual.
- Shall be installed in a pollution degree 2 macro-environment.
- All models are suitable for installation in a compartment handling Conditioned Air (i.e., plenum rated).
- The opening of branch-circuit protective device may be an indication that a fault has been interrupted. To reduce the risk of fire or electric shock, current carrying parts and other components of the controller should be examined and replaced if damaged.

|                                                                                        | L1, L2, L3, PE, U, V, W |      |      |         |
|----------------------------------------------------------------------------------------|-------------------------|------|------|---------|
|                                                                                        | [mm]                    | [Nm] | [in] | [lb-in] |
| < 4 kW                                                                                 | 8                       | 1.3  | 5/16 | 12      |
| ESV552xx2Txx, ESV752xx2Txx, ESV113xx4/6xxx, ESV153xx4/6xxx, ESV183xx6xxx, ESV223xx6xxx | 8                       | 1.8  | 5/16 | 16      |
| ESV552xx4Txx, ESV752xx4Txx, ESV552xx6Txx, ESV752xx6Txx                                 | 6                       | 1.3  | 0.25 | 12      |
| ESV113xx2xxx, ESV153xx2xxx, ESV183xx4xxx, ESV223xx4xxx                                 | 10                      | 2.7  | 7/16 | 24      |

| ESV    | F <sub>ESV</sub> | X      | P <sub>nominal</sub> [kW] | m [kg] | A [mm] | L [mm] | P [mm] |
|--------|------------------|--------|---------------------------|--------|--------|--------|--------|
| 371N01 | 371N02           | 371N04 | 0.37                      | 1.63   | 203    | 160    | 114    |
| 751N01 | 751N02           | 751N04 | 0.75                      |        |        |        |        |
| 112N01 | 112N02           | 112N04 | 1.1                       |        |        |        |        |
|        | 152N02           | 152N04 | 1.5                       | 2.68   | 203    | 160    | 160    |
|        | 222N02           | 222N04 | 2.2                       |        |        |        |        |
|        |                  | 302N04 | 3                         |        |        |        |        |
|        | 222N02           |        | 2.2                       | 3.24   | 203    | 181    | 172    |
|        | 552N02           |        | 5.5                       |        |        |        |        |
|        |                  | 752N04 | 7.5                       | 4.98   | 254    | 204    | 203    |
|        | 402N02           | 402N04 | 4                         | 5.25   | 254    | 228    | 203    |
|        |                  | 552N04 | 5.5                       |        |        |        |        |
|        | 113N02           | 113N04 | 11                        |        |        |        |        |
|        | 153N02           | 153N04 | 15                        | 10     | 368    | 240    | 241    |
|        |                  | 183N04 | 18.5                      |        |        |        |        |
|        |                  | 223N04 | 22                        | 11.6   | 420    | 240    | 241    |

| ESV    | F <sub>ESV</sub> | L <sub>M</sub> | P <sub>nominal</sub> [kW] | m [kg] | A [mm] | L [mm] | P [mm] |
|--------|------------------|----------------|---------------------------|--------|--------|--------|--------|
| 371N01 | 371N02           | 371N04         | 0.37                      | 2.13   | 279    | 160    | 114    |
| 751N01 | 751N02           | 751N04         | 0.75                      |        |        |        |        |
| 112N01 | 112N02           | 112N04         | 1.1                       |        |        |        |        |
|        | 152N02           | 152N04         | 1.5                       | 3.58   | 279    | 160    | 160    |
|        |                  | 222N04         | 2.2                       |        |        |        |        |
|        |                  | 302N04         | 3                         |        |        |        |        |
|        | 222N02           |                | 2.2                       | 4.08   | 279    | 181    | 172    |
|        | 552N02           |                | 5.5                       |        |        |        |        |
|        |                  | 752N04         | 7.5                       | 6.32   | 330    | 204    | 203    |
|        | 402N02           | 402N04         | 4                         | 6.66   | 330    | 228    | 204    |
|        |                  | 552N04         | 5.5                       |        |        |        |        |
|        |                  | 113N04TM       | 11                        | 10.4   | 368    | 240    | 241    |
| 113N02 |                  | 153N04TM       | 15                        |        |        |        |        |
|        |                  | 113N04TL       | 11                        |        |        |        |        |
| 153N02 |                  | 153N04TL       | 15                        | 12.9   | 470    | 240    | 241    |
|        |                  | 183N04         | 18.5                      |        |        |        |        |
|        |                  | 223N04         | 22                        |        |        |        |        |



# Měniče frekvence SMVector IP31/IP65

## Všeobecné bezpečnostní pokyny

### ⚠ NEBEZPEČÍ!

Nebudete-li dodržovat následující základní bezpečnostní pokyny, může to vést k těžkému poranění osob a materiálním škodám!

- Výrobek používejte výhradně ke stanovenému účelu.
- Nikdy neuvádějte výrobek do provozu, pokud jsou na něm viditelné škody.
- Výrobek nikdy technicky neupravujte.
- Nikdy neuvádějte do provozu neúplně smontovaný výrobek.
- Výrobek nikdy neprovozujte bez potřebných krytů.
- Všechny zásuvné přípojovací svorky připojujte a odpojíte pouze ve stavu bez napětí.
- Výrobek vyjměte ze zařízení, pouze pokud zařízení není pod napětím.
- V závislosti na stupni krytí mohou mít výrobky během provozu i po jeho ukončení některé díly vodivé, pohyblivé či rotující. Povrchy mohou být horké.
- Aby se zabránilo zranění osob a škodám na majetku, musí být použity nadřazené bezpečnostní a ochranné systémy!
- Provozní technické pokyny a části zapojení, které jsou uvedeny v související dokumentaci, představují pouze návrhy, jejichž přenositelnost pro konkrétní aplikaci musí být prověřena. Za vhodnost uvedených postupů a doporučených zapojení nepřebírá výrobce žádné záruky.
- Všechny práce s výrobkem a na výrobku smí provádět pouze kvalifikovaní odborníci. IEC 60364 příp. CENELEC HD 384 definují kvalifikaci těchto osob:
  - Jsou seznámené s instalací, montáží, uváděním do provozu a provozem výrobku.
  - Mají odpovídající kvalifikaci pro svou činnost.
  - Znájí všechny předpisy bezpečnosti a ochrany zdraví při práci, směrnice a zákony platné na místě používání a dokážou je aplikovat.

### ⚠ VAROVÁNÍ!

#### Funkční bezpečnost

Určité softwarové funkce nebo komponenty podporují bezpečnostní funkce podle požadavků směrnice 2006/42/ES: Směrnice pro strojní zařízení [UKCA: 2008 No. 1597 - The Supply of Machinery (Safety) Regulations 2008]. Bezpodmínečně dodržujte pokyny uvedené v dokumentaci integrované bezpečnostní techniky.

Opravy nebo výměnu těchto komponentů smí provádět pouze servisní oddělení firmy Lenze nebo jím autorizované osoby.

## Zbytková nebezpečí

### ⚠ NEBEZPEČÍ!

#### Nebezpečné elektrické napětí

Závady výrobku mohou způsobit přepětí v zařízení. Pro výrobky podle EN 61800-5-1:

- Během provozu a až 20 minut po odpojení napájení se může na připojovacích svorkách výrobku vyskytovat nebezpečné elektrické napětí.
- Svodový proud proti zemi (PE) je > 3.5 mA AC, nebo > 10 mA DC.

#### Možné následky

- Smrt nebo těžká poranění elektrickým proudem.

#### Ochranná opatření

- Veškeré práce na výrobku provádějte pouze při vypnutém napájení.
- Kontrolujte nepřítomnost napětí!
- Po vypnutí síťového napájení dodržujte pokyny uvedené na informačních štítcích výrobku.
- Po vypnutí počkejte, dokud se pohon nezastaví.
- Implementujte opatření požadovaná normami EN IEC 61800-5-1 nebo EN IEC 60204-1, tj. pevná instalace a normám odpovídající připojení PE.

#### Význam informací na štítcích s informacemi o výrobku.



#### Nebezpečné elektrické napětí



#### Elektrostaticky ohrožené součástky

Před zahájením prací na výrobku se personál musí zbavit elektrostatických nábojů.



#### Vysoký svodový proud



#### Horké povrchy

## Používání ke stanovenému účelu

- Výrobek je profesionální provozní prostředek, který je určen k použití při podnikání, v určitých profesích nebo průmyslu a ne k prodeji široké veřejnosti. IEC 60050 [IEV 161-05-05]
- Výrobek je konstrukční díl nebo komponent určený pro další zpracování/integraci do komplexních průmyslových výrobních zařízení.
- Výrobek smí být provozován pouze při splnění předepsaných podmínek pro montáž a použití a v předepsaných montážních polohách.
- Výrobek nesmí být provozován v soukromých prostorách, v oblastech s nebezpečím výbuchu a v oblastech se škodlivými plyny, oleji, kyselinami a zářením.
- Všechny přepravní pojistky musí být odstraněny.
- Šrouby s okem na motorech nejsou vhodné pro transport kompletních elektropřevodovek.

#### Odpadní elektrická a elektronická zařízení (OEEZ)



Tento symbol přeškrtnuté popelnice upozorňuje, že elektrická a elektronická zařízení nesmí být likvidována spolu s běžným domovým odpadem. Odložené zařízení prosím odevzdejte v certifikovaném sběrném dvoře.

## Podpora

### ⚠ UPOZORNĚNÍ!

#### Příslušná dokumentace

Dodržujte pokyny obsažené v příslušné dokumentaci. Je to předpokladem pro bezpečný a bezporuchový provoz a pro dosažení uvedených vlastností výrobku.



Příslušnou dokumentaci a další informace naleznete na naší webové stránce: <http://support.lenze.com>

Materiálové číslo výrobku je uvedeno na typovém štítku.



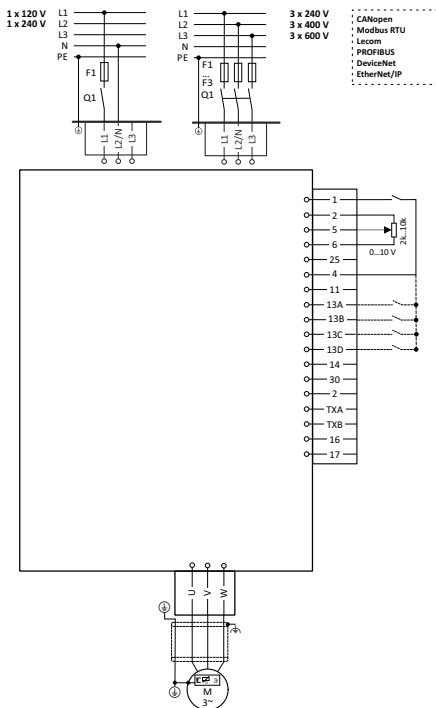
## Měniče frekvence SMVector IP31

## Schéma připojení

## OZNÁMENÍ

Uživatel musí prokázat, že je splněna shoda s normou EN IEC 61800-3.

Pro splnění požadavků na EMK podle normy EN IEC 61800-3 musí být u některých výrobků použit externí filtr – viz příslušná dokumentace.



## Důležitá upozornění UL/CSA

Vezměte na vědomí, že všechna vyjádření o UL certifikaci jsou závazná pouze v anglické verzi. Překlad do jiných jazyků je čistě informativní.

Originál - anglicky

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- Integral solid state protection does not provide branch circuit protection. Branch circuit protection must be provided in accordance with the National Electrical Code and any additional local codes. The use of fuses or circuit breakers is the only approved means for branch circuit protection.
- When protected by CC and T Class Fuses, suitable for use on a circuit capable of delivering not more than 200,000 rms symmetrical amperes, at the maximum voltage rating marked on the drive.
- Additionally suitable when protected by a circuit breaker having an interrupting rating not less than 200,000 rms symmetrical amperes, at the maximum voltage rating marked on the drive. (Excludes ESV113xx2T, ESV153xx2T, ESV113xx4T, ESV153xx4T, ESV183xx4T, ESV223xx4T, ESV303xx4T, ESV113xx6T, ESV153xx6T, ESV183xx6T, ESV223xx6T, and ESV303xx6T).
- Use minimum 75°C copper wire only, except for control circuits.
- For control circuits, use wiring suitable for NEC Class 1 circuits only.
- Torque Requirements (in accordance with UL) are listed in the corresponding Manual.
- Shall be installed in a pollution degree 2 macro-environment.
- All models are suitable for installation in a compartment handling Conditioned Air (i.e., plenum rated).
- The opening of branch-circuit protective device may be an indication that a fault has been interrupted. To reduce the risk of fire or electric shock, current carrying parts and other components of the controller should be examined and replaced if damaged.

|                                                                                        | L1, L2, L3, PE, U, V, W |      |      |         |
|----------------------------------------------------------------------------------------|-------------------------|------|------|---------|
|                                                                                        | [mm]                    | [Nm] | [in] | [lb-in] |
| < 4 kW                                                                                 | 8                       | 1.3  | 5/16 | 12      |
| ESV552xx2Txx, ESV752xx2Txx, ESV113xx4/6xxx, ESV153xx4/6xxx, ESV183xx6xxx, ESV223xx6xxx | 8                       | 1.8  | 5/16 | 16      |
| ESV552xx4Txx, ESV752xx4Txx, ESV552xx6Txx, ESV752xx6Txx                                 | 6                       | 1.3  | 0.25 | 12      |
| ESV113xx2xxx, ESV153xx2xxx, ESV183xx4xxx, ESV223xx4xxx, ESV303xx4xxx                   | 10                      | 2.7  | 7/16 | 24      |
| ESV373xx4xxx, ESV453xx4xxx                                                             | 19                      | 3.05 | 0.75 | 27      |

|              | P <sub>n</sub><br>[kW] | m<br>[kg] | V<br>[mm] | Š<br>[mm] | H<br>[mm] |
|--------------|------------------------|-----------|-----------|-----------|-----------|
| ESV251xxxxxB | 0.25                   | 0.9       | 190       | 99        | 111       |
| ESV371xxxxxB | 0.37                   |           |           |           |           |
| ESV751xxxxxB | 0.75                   |           |           |           |           |
| ESV112xxxxxB | 1.1                    | 1.3       | 191       | 99        | 138       |
| ESV152xxxxxB | 1.5                    |           |           |           |           |
| ESV222xxxxxB | 2.2                    |           |           |           |           |
| ESV402xxxxxB | 4                      | 1.5       | 191       | 99        | 147       |
| ESV552xxxxxB | 5.5                    | 2         | 250       | 130       | 160       |
| ESV752xxxxxB | 7.5                    |           |           |           |           |

|              | P <sub>n</sub><br>[kW] | m<br>[kg] | V<br>[mm] | Š<br>[mm] | H<br>[mm] |
|--------------|------------------------|-----------|-----------|-----------|-----------|
| ESV113xxxxxB | 11                     | 6.15      | 318       | 176       | 205       |
| ESV153xxxxxB | 15                     |           |           |           |           |
| ESV183xxxxxB | 18.5                   |           |           |           |           |
| ESV223xxxxxB | 22                     | 10.9      | 360       | 221       | 256       |
| ESV303xxxxxB | 30                     |           |           |           |           |
| ESV373xxxxxB | 37.5                   | 14.1      | 436       | 221       | 256       |
| ESV453xxxxxB | 45                     | 15.9      | 513       | 221       | 256       |



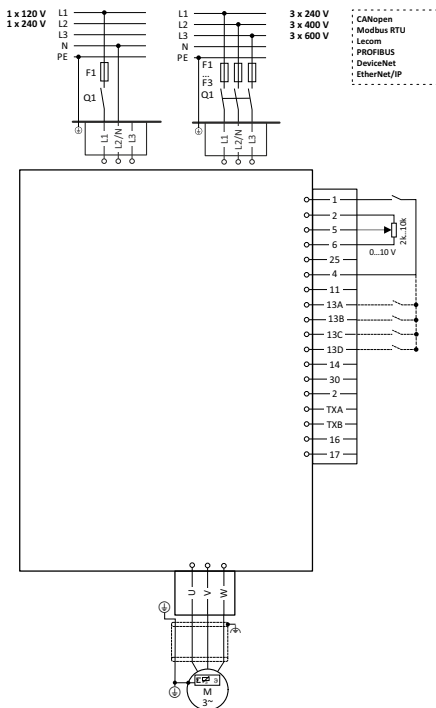
# Měniče frekvence SMVector IP65

## Schéma připojení

### OZNÁMENÍ

Uživatel musí prokázat, že je splněna shoda s normou EN IEC 61800-3.

Pro splnění požadavků na EMK podle normy EN IEC 61800-3 musí být u některých výrobků použit externí filtr – viz příslušná dokumentace.



## Důležitá upozornění UL/CSA

Vezměte na vědomí, že všechna vyjádření o UL certifikaci jsou závazná pouze v anglické verzi. Překlad do jiných jazyků je čistě informativní.

Originál - anglicky

### ⚠ WARNING!

- Integral solid state protection does not provide branch circuit protection. Branch circuit protection must be provided in accordance with the National Electrical Code and any additional local codes. The use of fuses or circuit breakers is the only approved means for branch circuit protection.
- When protected by CC and T Class Fuses, suitable for use on a circuit capable of delivering not more than 200,000 rms symmetrical amperes, at the maximum voltage rating marked on the drive.
- Additionally suitable when protected by a circuit breaker having an interrupting rating not less than 200,000 rms symmetrical amperes, at the maximum voltage rating marked on the drive. (Excludes ESV113xx2T, ESV153xx2T, ESV113xx4T, ESV153xx4T, ESV183xx4T, ESV223xx4T, ESV303xx4T, ESV113xx6T, ESV153xx6T, ESV183xx6T, ESV223xx6T, and ESV303xx6T).
- Use minimum 75°C copper wire only, except for control circuits.
- For control circuits, use wiring suitable for NEC Class 1 circuits only.
- Torque Requirements (in accordance with UL) are listed in the corresponding Manual.
- Shall be installed in a pollution degree 2 macro-environment.
- All models are suitable for installation in a compartment handling Conditioned Air (i.e., plenum rated).
- The opening of branch-circuit protective device may be an indication that a fault has been interrupted. To reduce the risk of fire or electric shock, current carrying parts and other components of the controller should be examined and replaced if damaged.

|                                                                                        | L1, L2, L3, PE, U, V, W |      |      |         |
|----------------------------------------------------------------------------------------|-------------------------|------|------|---------|
|                                                                                        | (mm)                    | [Nm] | (in) | [lb-in] |
| < 4 kW                                                                                 | 8                       | 1.3  | 5/16 | 12      |
| ESV552xx2Txx, ESV752xx2Txx, ESV113xx4/6xxx, ESV153xx4/6xxx, ESV183xx6xxx, ESV223xx6xxx | 8                       | 1.8  | 5/16 | 16      |
| ESV552xx4Txx, ESV752xx4Txx, ESV552xx6Txx, ESV752xx6Txx                                 | 6                       | 1.3  | 0.25 | 12      |
| ESV113xx2xxx, ESV153xx2xxx, ESV183xx4xxx, ESV223xx4xxx                                 | 10                      | 2.7  | 7/16 | 24      |

| ESV_F<br>ESV_X |        |        | P <sub>N</sub><br>[kW] | m<br>[kg] | V<br>[mm] | Š<br>[mm] | H<br>[mm] |
|----------------|--------|--------|------------------------|-----------|-----------|-----------|-----------|
| 371N01         | 371N02 | 371N04 | 0.37                   | 1.63      | 203       | 160       | 114       |
| 751N01         | 751N02 | 751N06 | 0.75                   |           |           |           |           |
| 112N01         | 112N02 | 112N04 | 1.1                    |           |           |           |           |
|                | 152N02 | 152N04 | 1.5                    | 2.68      | 203       | 160       | 160       |
|                |        | 222N04 | 2.2                    |           |           |           |           |
|                |        | 302N04 | 3                      |           |           |           |           |
|                | 222N02 |        | 2.2                    | 3.24      | 203       | 181       | 172       |
|                | 552N02 |        | 5.5                    | 4.98      | 254       | 204       | 203       |
|                | 752N02 | 752N04 | 7.5                    | 5.25      | 254       | 228       | 203       |
|                | 402N02 | 402N04 | 4                      |           |           |           |           |
|                |        | 552N04 | 5.5                    |           |           |           |           |
|                | 113N02 | 113N04 | 11                     | 10        | 368       | 240       | 241       |
|                | 153N02 | 153N06 | 15                     |           |           |           |           |
|                |        | 183N04 | 18.5                   |           |           |           |           |
|                |        | 223N04 | 22                     | 11.6      | 420       | 240       | 241       |

| ESV<br>ESV<br>L<br>M |        |          |        | P <sub>N</sub><br>[kW] | m<br>[kg] | V<br>[mm] | Š<br>[mm] | H<br>[mm] |
|----------------------|--------|----------|--------|------------------------|-----------|-----------|-----------|-----------|
| 371N01               | 371N02 | 371N04   | 371N06 | 0.37                   | 2.13      | 279       | 160       | 114       |
| 751N01               | 751N02 | 751N04   | 751N06 | 0.75                   |           |           |           |           |
| 112N01               | 112N02 | 112N04   |        | 1.1                    | 3.58      | 279       | 160       | 160       |
|                      | 152N02 | 152N04   | 152N06 | 1.5                    |           |           |           |           |
|                      |        | 222N04   | 222N06 | 2.2                    |           |           |           |           |
|                      |        | 302N04   |        | 3                      |           |           |           |           |
|                      | 222N02 |          |        | 2.2                    | 4.08      | 279       | 181       | 172       |
|                      | 552N02 |          |        | 5.5                    | 6.32      | 330       | 204       | 203       |
|                      | 752N02 | 752N04   | 752N06 | 7.5                    |           |           |           |           |
|                      | 402N02 | 402N04   | 402N06 | 4                      | 6.66      | 330       | 228       | 204       |
|                      |        | 552N04   | 552N06 | 5.5                    |           |           |           |           |
|                      |        | 113N04TM | 113N06 | 11                     | 10.4      | 368       | 240       | 241       |
|                      |        | 153N04TM | 153N06 | 15                     |           |           |           |           |
| 113N02               |        | 113N04TL |        | 11                     | 12.9      | 470       | 240       | 241       |
| 153N02               |        | 153N04TL |        | 15                     |           |           |           |           |
|                      |        | 183N04   | 183N06 | 18.5                   |           |           |           |           |
|                      |        | 223N04   | 223N06 | 22                     |           |           |           |           |



## Ogólne wskazówki dotyczące bezpieczeństwa

### **⚠ NIEBEZPIECZEŃSTWO!**

W razie nieprzestrzegania poniższych podstawowych zasad bezpieczeństwa może dojść do poważnych obrażeń ciała i szkód materialnych!

- Produktu należy używać wyłącznie zgodnie z jego przeznaczeniem.
- W przypadku stwierdzenia uszkodzenia produktu nie wolno go uruchamiać.
- Nie wolno dokonywać samowolnych modyfikacji technicznych.
- Nie wolno używać produktu, który nie jest kompletnie zamontowany.
- Nie wolno używać produktu bez wymaganych osłon.
- Wszelkie złącza wtykowe można wkładać i wyjmować tylko wtedy, gdy nie jest podłączone napięcie.
- Produkt ten można wymontować tylko w stanie odizolowanym od zasilania.
- Podczas pracy i po jej zakończeniu w produktach – w zależności od stopnia ochrony – mogą występować elementy pod napięciem, a także ruchome lub obracające się elementy.
- Aby zapobiec zagrożeniom dla zdrowia osób oraz szkodom materialnym, wymagane jest używanie centralnych systemów bezpieczeństwa i ochrony!
- Przedstawione w niniejszym dokumencie zalecenia technologiczne i fragmenty schematów połączeń są jedynie propozycjami, których możliwość wykorzystania w danym zastosowaniu należy każdorazowo sprawdzić. Producent nie ponosi odpowiedzialności za przydatność podanych procedur i propozycji połączeń.
- Wszelkie prace z użyciem produktu i przy produkcji mogą być wykonywane wyłącznie przez wykwalifikowany personel. IEC 60364 lub CENELEC HD 384 definiują odpowiednie wymagania:
  - Zapoznali się z ustawianiem, montażem, uruchamianiem i eksploatacją produktu.
  - Posiadają kwalifikacje niezbędne do wykonywania swoich czynności.
  - Znąją i potrafią przestrzegać wszystkich obowiązujących w miejscu pracy przepisów bhp, wytycznych oraz prawa.

### **⚠ OSTRZEŻENIE!**

#### **Bezpieczeństwo funkcjonalne**

Określone funkcje oprogramowania lub podzespoły spełniają funkcję bezpieczeństwa zgodnie z 2006/42/WE: Dyrektywa maszynowa [UKCA: 2008 No. 1597 – The Supply of Machinery (Safety) Regulations 2008]. Koniecznie przestrzegaj wskazówek w dokumentacji dotyczącej zintegrowanej technologii bezpieczeństwa.

Naprawa lub wymiana tych podzespołów jest dozwolona tylko przez serwis Lenze lub upoważnione przez niego osoby.

## Pozostałe zagrożenia

### **⚠ NIEBEZPIECZEŃSTWO!**

#### **Niebezpieczne napięcie elektryczne**

Usterki produktu mogą prowadzić do nadmiaru napięcia w instalacji.

Dla wyrobów zgodnych z normą EN 61800-5-1:

- Podczas pracy i do 20 minut po odłączeniu zasilania na wszystkich złączach produktu może występować niebezpieczne napięcie elektryczne.
- Prąd upływowy do ziemi (PE) wynosi > 3.5 mA AC lub > 10 mA DC.

#### **Możliwe skutki**

- Śmierć lub najcięższe obrażenia wskutek porażenia prądem.

#### **Środki zabezpieczające**

- Wszelkie prace przy produkcie muszą być wykonywane po.
- odłączeniu od źródła napięcia.
- Sprawdzić brak napięcia!
- Po odłączeniu napięcia sieciowego należy przestrzegać zaleceń podanych na tabliczkach informacyjnych umieszczonych na produkcie.
- Po odłączeniu poczekać, aż napęd się zatrzyma.

#### **Znaczenie etykiet umieszczonych na produkcie**



**Niebezpieczne napięcie elektryczne**



**Elementy konstrukcyjne zagrożone elektrostatycznie**

Przed podjęciem prac przy produkcie każda osoba powinna usunąć wszelkie ładunki elektrostatyczne.



**Wysoki prąd upływowy**



**Gorąca powierzchnia**

## Zastosowanie zgodne z przeznaczeniem

- Produkt jest profesjonalnym urządzeniem przeznaczonym do używania w zakładach rzemieślniczych, przez przedstawicieli określonych zawodów oraz w przemyśle, a nie do powszechnej sprzedaży. IEC 60050 [IEV 161-05-05]
- Produkt jest podzespołem lub komponentem do dalszego przetwarzania / integracji w złożonych przemysłowych instalacjach produkcyjnych.
- Produkt można eksploatować wyłącznie w określonych warunkach montażu i stosowania i w określonych pozycjach montażowych.
- Produktu nie wolno używać w obszarach prywatnych, strefach zagrożonych wybuchem ani w obszarach, w których występują szkodliwe gazy, oleje, kwasy czy promieniowanie.
- Należy usunąć wszystkie zabezpieczenia transportowe.
- Zamontowane śruby oczkowe przy silniku nie są przeznaczone do transportu motoreduktora.

#### **Zużyty sprzęt elektryczny i elektroniczny (WEEE)**

Ten symbol przekreślonego kosza na śmieci oznacza, że sprzęt elektryczny i elektroniczny nie może być wyrzucany wraz z odpadami komunalnymi. Prosimy o oddawanie zużytego sprzętu do certyfikowanego przedsiębiorstwa zajmującego się utylizacją odpadów.

## Wsparcie techniczne

### **⚠ PRZESTROGA!**

#### **Przynależna dokumentacja**

Przestrzegać informacji zawartych w jednostronnej dokumentacji. Jest to warunkiem bezpiecznej i bezawaryjnej eksploatacji oraz występowania podanych właściwości produktu.



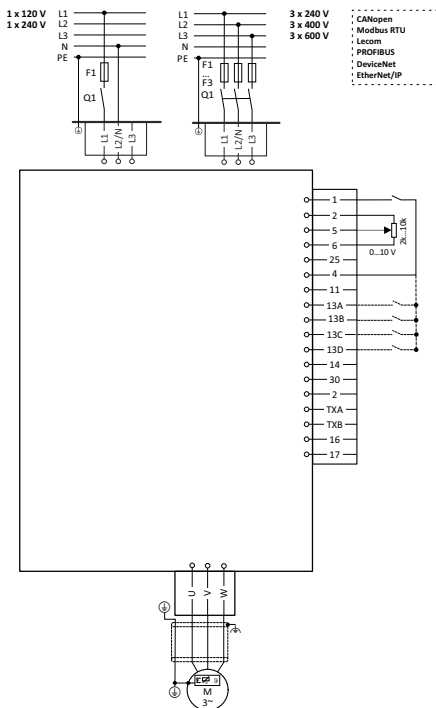
Przynależną dokumentację i dalsze informacje można znaleźć na naszej stronie internetowej: <http://support.lenze.com>

Numer materiałowy produktu znajduje się na tabliczce znamionowej.



# NOTYFIKACJA

W celu spełnienia wymagań w zakresie kompatybilności elektromagnetycznej wg EN IEC 61800-3 niektóre produkty wymagają zastosowania filtra zewnętrznego. Należy stosować się do wymagań odpowiedniej dokumentacji.



## Ważne uwagi dotyczące UL/CSA

Wszystkie informacje dotyczące certyfikatów UL są wiążące wyłącznie w angielskiej wersji językowej. Tłumaczenie na inne języki ma charakter wyłącznie informacyjny.

Oryginał - język angielski

**⚠ WARNING!**

- Integral solid state protection does not provide branch circuit protection. Branch circuit protection must be provided in accordance with the National Electrical Code and any additional local codes. The use of fuses or circuit breakers is the only approved means for branch circuit protection.
- When protected by CC and T Class Fuses, suitable for use on a circuit capable of delivering not more than 200,000 rms symmetrical amperes, at the maximum voltage rating marked on the drive.
- Additionally suitable when protected by a circuit breaker having an interrupting rating not less than 200,000 rms symmetrical amperes, at the maximum voltage rating marked on the drive. (Excludes ESV113xx2T, ESV153xx2T, ESV113xx4T, ESV153xx4T, ESV183xx4T, ESV223xx4T, ESV303xx4T, ESV113xx6T, ESV153xx6T, ESV183xx6T, ESV223xx6T, and ESV303xx6T).
- Use minimum 75°C copper wire only, except for control circuits.
- For control circuits, use wiring suitable for NEC Class 1 circuits only.
- Torque Requirements (in accordance with UL) are listed in the corresponding Manual.
- Shall be installed in a pollution degree 2 macro-environment.
- All models are suitable for installation in a compartment handling Conditioned Air (i.e., plenum rated).
- The opening of branch-circuit protective device may be an indication that a fault has been interrupted. To reduce the risk of fire or electric shock, current carrying parts and other components of the controller should be examined and replaced if damaged.

|                                                                                | L1, L2, L3, PE, U, V, W                                                                  |                                                                                          |                                                                                          |                                                                                             |
|--------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
|                                                                                |  [mm] |  [Nm] |  [in] |  [lb-in] |
| < 4 kW                                                                         | 8                                                                                        | 1.3                                                                                      | 5/16                                                                                     | 12                                                                                          |
| ESV552x2Txx, ESV752x2Txx, ESV113x4/6xx, ESV153x4/6xx, ESV183xx4xx, ESV223xx4xx | 8                                                                                        | 1.8                                                                                      | 5/16                                                                                     | 16                                                                                          |
| ESV552x4Txx, ESV752x4Txx, ESV552x6Txx, ESV752x6Txx                             | 6                                                                                        | 1.3                                                                                      | 0.25                                                                                     | 12                                                                                          |
| ESV113xx2xxx, ESV153xx2xxx, ESV183xx4xxx, ESV223xx4xxx, ESV303xx4xxx           | 10                                                                                       | 2.7                                                                                      | 7/16                                                                                     | 24                                                                                          |
| ESV373xx4xxx, ESV453xx4xxx                                                     | 19                                                                                       | 3.05                                                                                     | 0.75                                                                                     | 27                                                                                          |

|              | P <sub>i</sub><br>[kW] | m<br>[kg] | wys.<br>[mm] | szer.<br>[mm] | gł.<br>[mm] |
|--------------|------------------------|-----------|--------------|---------------|-------------|
| ESV251xxxxxB | 0.25                   |           |              |               |             |
| ESV371xxxxxB | 0.37                   | 0.9       | 190          | 99            | 111         |
| ESV175xxxxxB | 0.75                   |           |              |               |             |
| ESV112xxxxxB | 1.1                    |           |              |               |             |
| ESV152xxxxxB | 1.5                    | 1.3       | 191          | 99            | 138         |
| ESV222xxxxxB | 2.2                    |           |              |               |             |
| ESV402xxxxxB | 4                      | 1.5       | 191          | 99            | 147         |
| ESV552xxxxxB | 5.5                    | 2         | 250          | 130           | 160         |
| ESV752xxxxxB | 7.5                    |           |              |               |             |

|               | $P_N$<br>[kW] | m<br>[kg] | wys.<br>[mm] | szer.<br>[mm] | gł.<br>[mm] |
|---------------|---------------|-----------|--------------|---------------|-------------|
| ESV1130xxxxxB | 11            | 6,15      | 318          | 176           | 205         |
| ESV1530xxxxxB | 15            |           |              |               |             |
| ESV1830xxxxxB | 18,5          |           |              |               |             |
| ESV2230xxxxxB | 22            |           |              |               |             |
| ESV3030xxxxxB | 30            | 10,9      | 360          | 221           | 256         |
| ESV3730xxxxxB | 37,5          | 14,1      | 436          | 221           | 256         |
| ESV4530xxxxxB | 45            | 15,9      | 513          | 221           | 256         |

# Przemiennika częstotliwości SMVector IP65

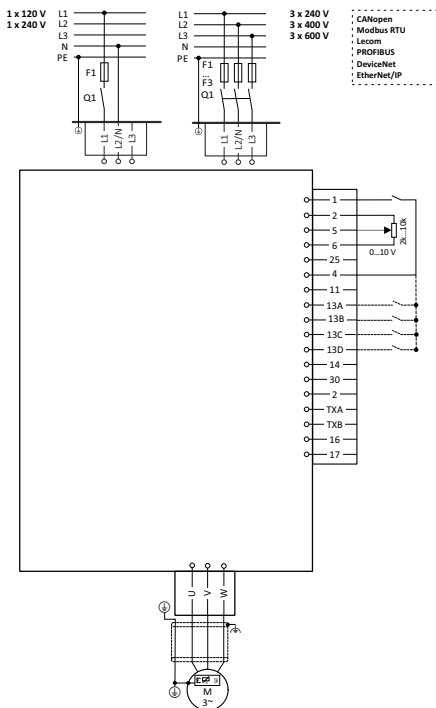
Lenze

## Schemat połączeń

### NOTYFIKACJA

Użytkownik musi udowodnić zgodność z normą EN IEC 61800-3.

W celu spełnienia wymagań w zakresie kompatybilności elektromagnetycznej wg EN IEC 61800-3 niektóre produkty wymagają zastosowania filtra zewnętrznego. Należy stosować się do wymagań odpowiedniej dokumentacji.



## Ważne uwagi dotyczące UL/CSA

Wszystkie informacje dotyczące certyfikatów UL są wiążące wyłącznie w angielskiej wersji językowej. Tłumaczenie na inne języki ma charakter wyłącznie informacyjny.

### Oryginał - język angielski

### ⚠ WARNING!

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- When protected by CC and T Class Fuses, suitable for use on a circuit capable of delivering not more than 200,000 rms symmetrical amperes, at the maximum voltage rating marked on the drive.
- Additionally suitable when protected by a circuit breaker having an interrupting rating not less than 200,000 rms symmetrical amperes, at the maximum voltage rating marked on the drive. (Excludes ESV113xx2T, ESV153xx2T, ESV113xx4T, ESV153xx4T, ESV183xx4T, ESV223xx4T, ESV303xx4T, ESV113xx6T, ESV153xx6T, ESV183xx6T, ESV223xx6T, and ESV303xx6T).
- Use minimum 75°C copper wire only, except for control circuits.
- For control circuits, use wiring suitable for NEC Class 1 circuits only.
- Torque Requirements (in accordance with UL) are listed in the corresponding Manual.
- Shall be installed in a pollution degree 2 macro-environment.
- All models are suitable for installation in a compartment handling Conditioned Air (i.e., plenum rated).
- The opening of branch-circuit protective device may be an indication that a fault has been interrupted. To reduce the risk of fire or electric shock, current carrying parts and other components of the controller should be examined and replaced if damaged.

|                                                                                        | L1, L2, L3, PE, U, V, W |      |      |      |
|----------------------------------------------------------------------------------------|-------------------------|------|------|------|
|                                                                                        | [mm]                    | [in] | [mm] | [in] |
| < 4 kW                                                                                 | 8                       | 1.3  | 5/16 | 12   |
| ESV552xx2Txx, ESV752xx2Txx, ESV113xx4/6xxx, ESV153xx4/6xxx, ESV183xx6xxx, ESV223xx6xxx | 8                       | 1.8  | 5/16 | 16   |
| ESV552xx4Txx, ESV752xx4Txx, ESV552xx6Txx, ESV752xx6Txx                                 | 6                       | 1.3  | 0.25 | 12   |
| ESV113xx2xxx, ESV153xx2xxx, ESV183xx4xxx, ESV223xx4xxx                                 | 10                      | 2.7  | 7/16 | 24   |

| ESV    | F <sub>N</sub> | P <sub>N</sub> | m    | wys. | szer. | gl.  |
|--------|----------------|----------------|------|------|-------|------|
| ESV    | X              | [kW]           | [kg] | [mm] | [mm]  | [mm] |
| 371N01 | 371N02         | 371N04         | 0.37 | 1.63 | 203   | 114  |
| 751N01 | 751N02         | 751N04         | 0.75 |      |       |      |
| 112N01 | 112N02         | 112N04         | 1.1  |      |       |      |
|        | 152N02         | 152N04         | 1.5  | 2.68 | 203   | 160  |
|        |                | 222N04         | 2.2  |      |       |      |
|        |                | 302N04         | 3    |      |       |      |
|        | 222N02         |                | 2.2  | 3.24 | 203   | 181  |
|        | 552N02         |                | 5.5  | 4.98 | 254   | 203  |
|        | 752N02         | 752N04         | 7.5  |      |       |      |
|        | 402N02         | 402N04         | 4    | 5.25 | 254   | 228  |
|        |                | 552N04         | 5.5  |      |       |      |
|        | 113N02         | 113N04         | 11   |      |       |      |
|        | 153N02         | 153N04         | 15   | 10   | 368   | 241  |
|        |                | 183N04         | 18.5 |      |       |      |
|        |                | 223N04         | 22   | 11.6 | 420   | 241  |

| ESV    | L        | M      | P <sub>N</sub> | m    | wys. | szer. | gl.  |
|--------|----------|--------|----------------|------|------|-------|------|
| ESV    | L        | M      | [kW]           | [kg] | [mm] | [mm]  | [mm] |
| 371N01 | 371N02   | 371N04 | 0.37           | 2.13 | 279  | 160   | 114  |
| 751N01 | 751N02   | 751N04 | 0.75           |      |      |       |      |
| 112N01 | 112N02   | 112N04 | 1.1            |      |      |       |      |
|        | 152N02   | 152N04 | 1.5            | 3.58 | 279  | 160   | 160  |
|        |          | 222N04 | 2.2            |      |      |       |      |
|        |          | 302N04 | 3              |      |      |       |      |
|        | 222N02   |        | 2.2            | 4.08 | 279  | 181   | 172  |
|        | 552N02   |        | 5.5            | 6.32 | 330  | 204   | 203  |
|        | 752N02   | 752N04 | 7.5            |      |      |       |      |
|        | 402N02   | 402N04 | 4              | 6.66 | 330  | 228   | 204  |
|        |          | 552N04 | 5.5            |      |      |       |      |
|        | 113N04TM | 113N06 | 11             | 10.4 | 368  | 240   | 241  |
| 113N02 | 113N04TL |        | 11             |      |      |       |      |
| 153N02 | 153N04TL |        | 15             |      |      |       |      |
|        | 183N04   | 183N06 | 18.5           | 12.9 | 470  | 240   | 241  |
|        | 223N04   | 223N06 | 22             |      |      |       |      |



# Преобразователь частоты SMVector IP31/IP65

**Lenze**

## Основные указания по технике безопасности

### **ОПАСНО!**

Невыполнение перечисленных ниже основных мер безопасности и инструкций по технике безопасности может привести к серьезным травмам персонала и нанесению материального ущерба!

- Использовать изделия по прямому назначению.
- Не эксплуатировать оборудование при наличии видимых повреждений.
- Не вносите изменения в технические характеристики изделия.
- Никогда не используйте оборудование до полного окончания сборки.
- Не эксплуатируйте изделие без предусмотренных конструкцией защитных крышек или панелей.
- Подсоединение и отсоединение всех разъёмных соединений должно осуществляться только в обесточенном состоянии!
- Перемещать данное изделие с места установки разрешается только в обесточенном состоянии.
- В зависимости от степени защиты в изделии могут иметься детали, которые находятся под напряжением, а также части, которые перемещаются или вращаются как во время его работы, так и после ее завершения. Поверхности могут сильно нагреваться.
- С целью предотвращения травм персонала и материального ущерба необходимо использовать системы, обеспечивающие дополнительный уровень безопасности и защиты!
- Приведенные в сопроводительной документации описания технологических процедур и схемы носят рекомендательный характер и должны проходить проверку на пригодность в каждом конкретном случае применения. Компания-изготовитель данного изделия не несет никакой ответственности за пригодность того или иного предложенного технологического процесса или схемы.
- Все работы, связанные с данным изделием, должны выполнять только квалифицированные специалисты. IEC 60364 и CENELEC HD 384 определяют квалификацию таких лиц:
  - Они знакомы с установкой, монтажом, вводом в эксплуатацию и работой с продуктом.
  - У них есть соответствующая квалификация для работы.
  - Это лица, которые ознакомлены со всеми применимыми на месте производства работ предписаниями по предотвращению несчастных случаев, а также требованиями директив и законодательных нормы, и умеют их применять.

### **ОСТОРОЖНО!**

#### Функциональная безопасность

Некоторые программные функции или компоненты поддерживают функции безопасности в соответствии с требованиями стандарта 60601-1:2008/42/IEC: Директива на машины и механизмы [UKCA: S.I. 2008/1597 — Правила поставки оборудования (требования безопасности), 2008 г.]. Обязательно соблюдайте указания, приведенные в документации и относящиеся к встроенным средствам обеспечения безопасности.

Ремонт или замена этих компонентов может производиться только техническими специалистами отдела обслуживания компании Lenze или уполномоченным ею персоналом.

## факторы риска

### **ОПАСНО!**

#### Опасное электрическое напряжение

Возникновение неисправностей в данном изделии может приводить к перенапряжениям в системе.

Для изделий в соответствии с EN 61800-5-1:

- Во время работы и до 20 минут после выключения питания на разъемах изделия могут присутствовать опасные электрические напряжения.
- Ток утечки на землю (по РЕ-проводнику) > 3,5 мА перем. тока или > 10 мА пост. тока.

#### Возможные последствия:

- Серьезные травмы от поражения электрическим током вплоть до летального исхода.

#### Защитные меры

- Все работы на изделии должны выполняться только после отключения от сети электропитания.
- Необходимо проверить отсутствие напряжения.
- После отключения сетевого напряжения выполнить требования приведенных на изделии знаков.
- После выключения дождитесь, пока привод полностью остановится.
- Выполнить требования стандарта EN IEC 61800-5-1 или EN IEC 60204-1, т.е. обеспечить стационарную установку, а также подсоединение РЕ-проводника в соответствии с действующими стандартами.

#### Значение этикеток на изделии



#### Опасное электрическое напряжение



#### Устройства, чувствительные к электростатическому разряду

Перед выполнением работ с инвертором необходимо принять меры по снятию электростатического заряда.



#### Высокий ток утечки



#### Горячие поверхности

## Применение по назначению

- Данное изделие является профессиональным оборудованием для использования в торговле, профессиональной деятельности или промышленности и не предназначено для свободной реализации. IEC 60050 [IEV 161-05-05]
- Данное изделие представляет собой деталь или компонент, предназначенные для последующей доработки/интеграции в сложные промышленные производственные системы.
- Данное изделие допускается эксплуатировать только при соблюдении указанных условий монтажа и эксплуатации и в указанных монтажных положениях.
- Не допускается эксплуатация изделия в помещениях бытового назначения, в потенциально взрывоопасной атмосфере и в зонах, в которых имеются опасные для здоровья газы, масла, кислоты и радиационное излучение.
- Все транспортировочные фиксаторы должны быть сняты.
- Установленные на двигателе рым-болты не рассчитаны на транспортировку двигателя с установленным на нем редуктором.

#### Отходы электрического и электронного оборудования (WEEE)



Этот символ в виде перечеркнутого мусорного бака указывает на то, что электротехническое и электронное оборудование не следует выбрасывать вместе с бытовыми отходами. Пожалуйста, сдавайте устаревшее оборудование в сертифицированную компанию по утилизации отходов.

## Техническая поддержка

### **ВНИМАНИЕ!**

#### Сопутствующая документация

Соблюдайте требования соответствующей документации. Это является условием безопасной и бесперебойной работы и достижения желаемых свойств продукта.



Соответствующую документацию и другую дополнительную информацию вы можете найти на нашем сайте: <http://support.lenze.com>

Номер материала, относящийся к данному изделию, указан на заводской табличке.



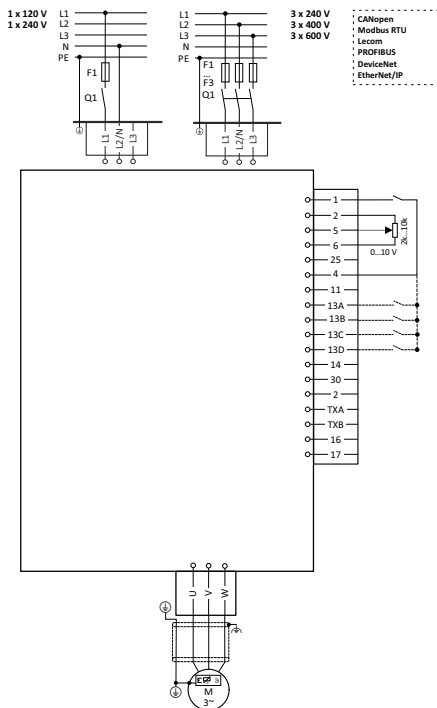
# Преобразователь частоты SMVector IP31

## Схема соединений

### УВЕДОМЛЕНИЕ

Пользователь должен проверить и обеспечить соответствие стандарту EN IEC 61800-3.

Для соблюдения требований по электромагнитной совместимости согласно EN IEC 61800-3 необходимо использовать внешний фильтр с некоторыми изделиями (см. соответствующую документацию).



## Маркировка UL/CSA

Все утверждения, связанные с сертификацией UL, являются обязательными только в английской версии документа. На всех остальных языках эта информация приводится исключительно с целью ознакомления.

### Оригинал - английский

### WARNING!

- Integral solid state protection does not provide branch circuit protection. Branch circuit protection must be provided in accordance with the National Electrical Code and any additional local codes. The use of fuses or circuit breakers is the only approved means for branch circuit protection.
- When protected by CC and T Class Fuses, suitable for use on a circuit capable of delivering not more than 200,000 rms symmetrical amperes, at the maximum voltage rating marked on the drive.
- Additionally suitable when protected by a circuit breaker having an interrupting rating not less than 200,000 rms symmetrical amperes, at the maximum voltage rating marked on the drive. (Excludes ESV113xx2T, ESV153xx2T, ESV113xx4T, ESV153xx4T, ESV183xx4T, ESV223xx4T, ESV303xx4T, ESV113xx6T, ESV153xx6T, ESV183xx6T, ESV223xx6T, and ESV303xx6T).
- Use minimum 75°C copper wire only, except for control circuits.
- For control circuits, use wiring suitable for NEC Class 1 circuits only.
- Torque Requirements (in accordance with UL) are listed in the corresponding Manual.
- Shall be installed in a pollution degree 2 macro-environment.
- All models are suitable for installation in a compartment handling Conditioned Air (i.e., plenum rated).
- The opening of branch-circuit protective device may be an indication that a fault has been interrupted. To reduce the risk of fire or electric shock, current carrying parts and other components of the controller should be examined and replaced if damaged.

|                                                                                        | L1, L2, L3, PE, U, V, W |      |      |         |
|----------------------------------------------------------------------------------------|-------------------------|------|------|---------|
|                                                                                        | [mm]                    | [in] | [in] | [lb-in] |
| < 4 kW                                                                                 | 8                       | 1.3  | 5/16 | 12      |
| ESV552xx2Txx, ESV752xx2Txx, ESV113xx4/6xxx, ESV153xx4/6xxx, ESV183xx6xxx, ESV223xx6xxx | 8                       | 1.8  | 5/16 | 16      |
| ESV552xx4Txx, ESV752xx4Txx, ESV552xx6Txx, ESV752xx6Txx                                 | 6                       | 1.3  | 0.25 | 12      |
| ESV113xx2xxx, ESV153xx2xxx, ESV183xx4xxx, ESV223xx4xxx, ESV303xx4xxx                   | 10                      | 2.7  | 7/16 | 24      |
| ESV373xx4xxx, ESV453xx4xxx                                                             | 19                      | 3.05 | 0.75 | 27      |

|              | P <sub>max</sub><br>[кВт] | m<br>[кг] | B<br>[мм] | Ш<br>[мм] | Г<br>[мм] |
|--------------|---------------------------|-----------|-----------|-----------|-----------|
| ESV251xxxxxB | 0.25                      | 0.9       | 190       | 99        | 111       |
| ESV371xxxxxB | 0.37                      |           |           |           |           |
| ESV751xxxxxB | 0.75                      |           |           |           |           |
| ESV112xxxxxB | 1.1                       | 1.3       | 191       | 99        | 138       |
| ESV152xxxxxB | 1.5                       |           |           |           |           |
| ESV222xxxxxB | 2.2                       |           |           |           |           |
| ESV402xxxxxB | 4                         | 1.5       | 191       | 99        | 147       |
| ESV552xxxxxB | 5.5                       | 2         | 250       | 130       | 160       |
| ESV752xxxxxB | 7.5                       |           |           |           |           |

|              | P <sub>max</sub><br>[кВт] | m<br>[кг] | B<br>[мм] | Ш<br>[мм] | Г<br>[мм] |
|--------------|---------------------------|-----------|-----------|-----------|-----------|
| ESV113xxxxxB | 11                        | 6.15      | 318       | 176       | 205       |
| ESV153xxxxxB | 15                        |           |           |           |           |
| ESV183xxxxxB | 18.5                      |           |           |           |           |
| ESV223xxxxxB | 22                        | 10.9      | 360       | 221       | 256       |
| ESV303xxxxxB | 30                        |           |           |           |           |
| ESV373xxxxxB | 37.5                      | 14.1      | 436       | 221       | 256       |
| ESV453xxxxxB | 45                        | 15.9      | 513       | 221       | 256       |



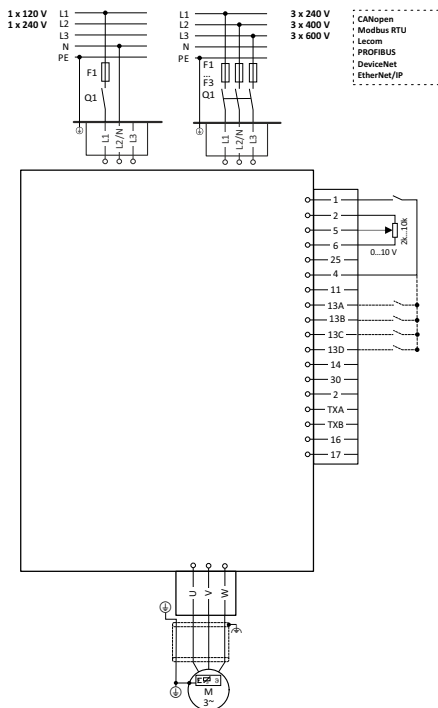
# Преобразователь частоты SMVector IP65

## Схема соединений

### УВЕДОМЛЕНИЕ

Пользователь должен проверить и обеспечить соответствие стандарту EN IEC 61800-3.

Для соблюдения требований по электромагнитной совместимости согласно EN IEC 61800-3 необходимо использовать внешний фильтр с некоторыми изделиями (см. соответствующую документацию).



## Маркировка UL/CSA

Все утверждения, связанные с сертификацией UL, являются обязательными только в английской версии документа. На всех остальных языках эта информация приводится исключительно с целью ознакомления.

### Оригинал - английский

### ⚠ WARNING!

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- When protected by CC and T Class Fuses, suitable for use on a circuit capable of delivering not more than 200,000 rms symmetrical amperes, at the maximum voltage rating marked on the drive.
- Additionally suitable when protected by a circuit breaker having an interrupting rating not less than 200,000 rms symmetrical amperes, at the maximum voltage rating marked on the drive. (Excludes ESV113xx2T, ESV153xx2T, ESV113xx4T, ESV153xx4T, ESV183xx4T, ESV223xx4T, ESV303xx4T, ESV113xx6T, ESV153xx6T, ESV183xx6T, ESV223xx6T, and ESV303xx6T).
- Use minimum 75°C copper wire only, except for control circuits.
- For control circuits, use wiring suitable for NEC Class 1 circuits only.
- Torque Requirements (in accordance with UL) are listed in the corresponding Manual.
- Shall be installed in a pollution degree 2 macro-environment.
- All models are suitable for installation in a compartment handling Conditioned Air (i.e., plenum rated).
- The opening of branch-circuit protective device may be an indication that a fault has been interrupted. To reduce the risk of fire or electric shock, current carrying parts and other components of the controller should be examined and replaced if damaged.

| < 4 kW                                                                                 | L1, L2, L3, PE, U, V, W |      |      |      |
|----------------------------------------------------------------------------------------|-------------------------|------|------|------|
|                                                                                        | [mm]                    | [in] | [mm] | [in] |
| ESV552xx2Txx, ESV752xx2Txx, ESV113xx4/6xxx, ESV153xx4/6xxx, ESV183xx6xxx, ESV223xx6xxx | 8                       | 1.3  | 5/16 | 12   |
| ESV552xx4Txx, ESV752xx4Txx, ESV552xx6Txx, ESV752xx6Txx                                 | 8                       | 1.8  | 5/16 | 16   |
| ESV113xx2xxx, ESV153xx2xxx, ESV183xx4xxx, ESV223xx4xxx                                 | 6                       | 1.3  | 0.25 | 12   |
|                                                                                        | 10                      | 2.7  | 7/16 | 24   |

| ESV    | F <sub>max</sub> | P <sub>nom</sub> | m    | B    | Ш    | Г    |
|--------|------------------|------------------|------|------|------|------|
| ESV    | [kBT]            | [kW]             | [mm] | [mm] | [mm] | [mm] |
| 371N01 | 371N04           | 0.37             | 1.63 | 203  | 160  | 114  |
| 751N02 | 751N06           | 0.75             |      |      |      |      |
| 112N01 | 112N04           | 1.1              |      |      |      |      |
|        | 152N04           | 1.5              | 2.68 | 203  | 160  | 160  |
|        | 222N04           | 2.2              |      |      |      |      |
|        | 302N04           | 3                |      |      |      |      |
|        | 222N02           | 2.2              | 3.24 | 203  | 181  | 172  |
|        | 552N02           | 5.5              | 4.98 | 254  | 204  | 203  |
|        | 752N04           | 7.5              |      |      |      |      |
|        | 402N02           | 4                | 5.25 | 254  | 228  | 203  |
|        | 552N04           | 5.5              |      |      |      |      |
|        | 113N02           | 11               |      |      |      |      |
|        | 153N02           | 15               | 10   | 368  | 240  | 241  |
|        | 183N04           | 18.5             |      |      |      |      |
|        | 223N04           | 22               | 11.6 | 420  | 240  | 241  |

| ESV    | F <sub>max</sub> | P <sub>nom</sub> | m    | B    | Ш    | Г    |
|--------|------------------|------------------|------|------|------|------|
| ESV    | [kBT]            | [kW]             | [mm] | [mm] | [mm] | [mm] |
| 371N01 | 371N04           | 0.37             | 2.13 | 279  | 160  | 114  |
| 751N01 | 751N04           | 0.75             |      |      |      |      |
| 112N01 | 112N04           | 1.1              |      |      |      |      |
|        | 152N02           | 1.5              | 3.58 | 279  | 160  | 160  |
|        | 222N04           | 2.2              |      |      |      |      |
|        | 302N04           | 3                |      |      |      |      |
|        | 222N02           | 2.2              | 4.08 | 279  | 181  | 172  |
|        | 552N02           | 5.5              | 6.32 | 330  | 204  | 203  |
|        | 752N04           | 7.5              |      |      |      |      |
|        | 402N02           | 4                | 6.66 | 330  | 228  | 204  |
|        | 552N04           | 5.5              |      |      |      |      |
|        | 113N04TLM        | 11               | 10.4 | 368  | 240  | 241  |
|        | 153N04TLM        | 15               |      |      |      |      |
| 113N02 | 113N04TL         | 11               |      |      |      |      |
| 153N02 | 153N04TL         | 15               | 12.9 | 470  | 240  | 241  |
|        | 183N04           | 18.5             |      |      |      |      |
|        | 223N04           | 22               |      |      |      |      |



# SMVector IP31/IP65 frekvenciaváltó

**Lenze**

## Általános biztonsági tudnivalók

### ⚠ VESZÉLY!

A következő alapvető biztonsági tudnivalók figyelmen kívül hagyása súlyos személyi sérüléseket és anyagi károkat okozhat!

- A termék kizárólag előírászerűen használja.
- Soha ne helyezze üzembe a terméket, ha azon károsodás látható.
- Soha ne végezzen műszaki változtatásokat a terméken.
- Soha ne helyezze üzembe a terméket, ha az nincs teljes mértékben összeszerelve.
- Soha ne üzemeltesse a terméket a szükséges burkolatok nélkül.
- Minden dugaszolható csatlakozó csak feszültségmentes állapotban csatlakoztatható vagy húzható ki.
- Csak feszültségmentes állapotban távolítsa el a terméket a szereléstől.
- A termékeknek üzem közben és után – védetség fokozatuknak megfelelően – feszültséget vezet, mozgó és forgómozgást végző részei is lehetnek. A felületek forróak lehetnek.
- A személyi sérülések és az anyagi károk megelőzése érdekében alkalmazni kell a fölérendelt biztonsági és védelmi rendszereket!
- A kapcsolódó dokumentációban bemutatott eljárás technikai tudnivalók és kapcsolási rajzok javaslatul szolgálnak, és ezek mindenkor alkalmazását ellenőrizni kell. A termék megadott eljárásra való alkalmasságáért és a kapcsolási javaslatokért a gyártó nem vállal garanciát.
- A terméken és a termékkel csak képzett szakszemélyzet végezhet bármilyen munkát. IEC 60364, ill. CENELEC HD 384 szabványok határozzák meg ezen személyek végzettségét:
  - Jártasak a termék telepítésében, összeszerelésében, üzembe helyezésében és üzemeltetésében.
  - Megfelelő képzettséggel rendelkeznek tevékenységük számára.
  - Ismerik az alkalmazási helyen érvényes baleset-megelőzési előírásokat, irányelveket és törvényeket, és képesek alkalmazni azokat.

### ⚠ FIGYELMEZTETÉS!

#### Funkcionális biztonság

Bizonyos szoftverfunkciók vagy gépelemek támogatják a 2006/42/EK sz. gépekről szóló irányelv követelményei szerinti biztonsági funkciókat [UKCA: 2008 No. 1597 – The Supply of Machinery (Safety) Regulations 2008]. Feltétlenül vegye figyelembe az integrált biztonságtechnikára vonatkozó tudnivalókat a dokumentációban.

Az ilyen gépelemek javítása vagy cseréje csak a Lenze szerviz vagy az által felhatalmazott személyek számára megengedett.

## További veszélyek

### ⚠ VESZÉLY!

#### Veszélyes elektromos feszültség

A termék hibái túlfeszültségekhez vezethetnek a berendezésben. Az EN 61800-5-1 szerinti termékek esetében:

- Az üzemeltetés közben és a hálózatról való lekapcsolását követően 20 percig a termék csatlakozóján veszélyes elektromos feszültségek lehetnek.
- A szivárgási áram a védőföldhöz (PE) képest > 3.5 mA AC ill. > 10 mA DC.

#### Lehetséges következmények

- Halál vagy súlyos sérülések áramütés következtében.

#### Biztonsági intézkedések

- A terméken minden munkálatot csak annak áramtalanítását követően szabad elvégezni.
- Ellenőrizze a feszültségmentességet!
- A hálózati feszültség lekapcsolása után vegye figyelembe a terméken található tájékoztató táblákat.
- Lepakcsolás után várjon, amíg a hajtás leáll.
- Az EN IEC 61800-5-1 ill. EN IEC 60204-1 szabványokban előírt intézkedéseket végre kell hajtani, azaz állandó telepítés és szabványos védőföld-bekötés szükséges.

#### A terméken található címkék jelentése



**Veszélyes elektromos feszültség**



**Elektrosztatikusan veszélyeztetett alkatrész**

A terméken végzett munkálatok előtt a személyzetnek mentesítenie kell magát az elektrosztatikus feltöltődésektől.



**Magas szivárgási áram**



**Forró felület**

## Rendeltetészerű használat

- A termék kereskedelmi, bizonyos feladatra történő vagy adott iparági használatra készült professzionális berendezés, amelyet nem lakossági személyek számára történő értékesítésre szántak. IEC 60050 [IEV 161-05-05]
- A termék komplex ipari gyártóberendezésekben való további feldolgozásra / integrációra készült gépelem vagy összetevő.
- A termék csak az előírt szerelési és alkalmazási feltételek mellett és csak az előírt beépítési helyzetekben üzemeltethető.
- A termék nem alkalmazható magánhasználatra és robbanásveszélyes területeken, továbbá nem üzemeltethető olyan területeken, ahol káros gázok, olajok, savak és sugárzás van jelen.
- Valamennyi, a szállítás során használt biztosítást el kell távolítani.
- A motorra szerelt gyűrűs fejű csavarok nem alkalmasak a hajtóműves motorok szállítására.

#### Elektromos és elektronikus berendezések hulladéka (WEEE)

Ez a szimbólum egy áthúzott szemetesládát ábrázol, és arra utal, hogy az elektromos és elektronikus berendezéseket nem szabad a háztartási hulladékkal együtt ártalmatlanítani. Kérjük, a hulladék berendezéseket egy tanúsított hulladékkezelő vállalkozásnál adja le.

## Terméktámogatás

### ⚠ VIGYÁZAT!

#### Kapcsolódó dokumentáció

Vegye figyelembe a vonatkozó dokumentáció előírásait. Ezek a biztonságos és zavarmentes üzem, valamint a megadott termékjellemzők elérésének előfeltételét képezik.



A kapcsolódó dokumentáció, illetve további információk a weboldalunkon találhatóak: <http://support.lenze.com>

A termék modellszámát a típustáblán találja.



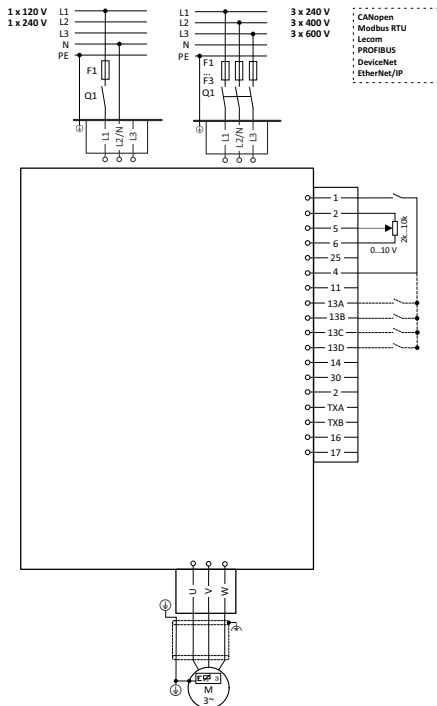
## SMVector IP31 frekvenciaváltó

## Kapcsolási rajz

## ÉRTESÍTÉS

A felhasználónak igazolnia kell az EN IEC 61800-3 szabványnak való megfelelést.

Az EN IEC 61800-3 szabvány szerinti elektromágneses összeférhetőséggel szembeni követelmények teljesítése érdekében egyes termékeknél külső szűrőt kell alkalmazni - kérjük vegye figyelembe a megfelelő dokumentációt.



## Fontos UL/CSA tudnivalók

Vegye figyelembe, hogy az UL-tanúsítvánnyal kapcsolatos kijelentések csak az angol nyelvű változatban kötelező érvényűek. A más nyelvekre történő fordítás pusztán tájékoztató jellegű.

## Eredeti - angol

**WARNING!**

- Integral solid state protection does not provide branch circuit protection. Branch circuit protection must be provided in accordance with the National Electrical Code and any additional local codes. The use of fuses or circuit breakers is the only approved means for branch circuit protection.
- When protected by CC and T Class Fuses, suitable for use on a circuit capable of delivering not more than 200,000 rms symmetrical amperes, at the maximum voltage rating marked on the drive.
- Additionally suitable when protected by a circuit breaker having an interrupting rating not less than 200,000 rms symmetrical amperes, at the maximum voltage rating marked on the drive. (Excludes ESV113xx2T, ESV153xx2T, ESV113xx4T, ESV153xx4T, ESV183xx4T, ESV223xx4T, ESV303xx4T, ESV113xx6T, ESV153xx6T, ESV183xx6T, ESV223xx6T, and ESV303xx6T).
- Use minimum 75°C copper wire only, except for control circuits.
- For control circuits, use wiring suitable for NEC Class 1 circuits only.
- Torque Requirements (in accordance with UL) are listed in the corresponding Manual.
- Shall be installed in a pollution degree 2 macro-environment.
- All models are suitable for installation in a compartment handling Conditioned Air (i.e., plenum rated).
- The opening of branch-circuit protective device may be an indication that a fault has been interrupted. To reduce the risk of fire or electric shock, current carrying parts and other components of the controller should be examined and replaced if damaged.

|                                                                                        | L1, L2, L3, PE, U, V, W |      |      |         |
|----------------------------------------------------------------------------------------|-------------------------|------|------|---------|
|                                                                                        | [mm]                    | [Nm] | [in] | [lb-in] |
| < 4 kW                                                                                 | 8                       | 1.3  | 5/16 | 12      |
| ESV552xx2Txx, ESV752xx2Txx, ESV113xx4/6xxx, ESV153xx4/6xxx, ESV183xx6xxx, ESV223xx6xxx | 8                       | 1.8  | 5/16 | 16      |
| ESV552xx4Txx, ESV752xx4Txx, ESV552xx6Txx, ESV752xx6Txx                                 | 6                       | 1.3  | 0.25 | 12      |
| ESV113xx2xxx, ESV153xx2xxx, ESV183xx4xxx, ESV223xx4xxx, ESV303xx4xxx                   | 10                      | 2.7  | 7/16 | 24      |
| ESV373xx4xxx, ESV453xx4xxx                                                             | 19                      | 3.05 | 0.75 | 27      |

|              | P <sub>n</sub><br>[kW] | m<br>[kg] | Ma<br>[mm] | Szé<br>[mm] | Mé<br>[mm] |
|--------------|------------------------|-----------|------------|-------------|------------|
| ESV251xxxxxB | 0.25                   | 0.9       | 190        | 99          | 111        |
| ESV371xxxxxB | 0.37                   |           |            |             |            |
| ESV751xxxxxB | 0.75                   |           |            |             |            |
| ESV112xxxxxB | 1.1                    | 1.3       | 191        | 99          | 138        |
| ESV152xxxxxB | 1.5                    |           |            |             |            |
| ESV222xxxxxB | 2.2                    |           |            |             |            |
| ESV402xxxxxB | 4                      | 1.5       | 191        | 99          | 147        |
| ESV552xxxxxB | 5.5                    | 2         | 250        | 130         | 160        |
| ESV752xxxxxB | 7.5                    |           |            |             |            |

|              | P <sub>n</sub><br>[kW] | m<br>[kg] | Ma<br>[mm] | Szé<br>[mm] | Mé<br>[mm] |
|--------------|------------------------|-----------|------------|-------------|------------|
| ESV113xxxxxB | 11                     | 6.15      | 318        | 176         | 205        |
| ESV153xxxxxB | 15                     |           |            |             |            |
| ESV183xxxxxB | 18.5                   |           |            |             |            |
| ESV223xxxxxB | 22                     | 10.9      | 360        | 221         | 256        |
| ESV303xxxxxB | 30                     |           |            |             |            |
| ESV373xxxxxB | 37.5                   | 14.1      | 436        | 221         | 256        |
| ESV453xxxxxB | 45                     | 15.9      | 513        | 221         | 256        |



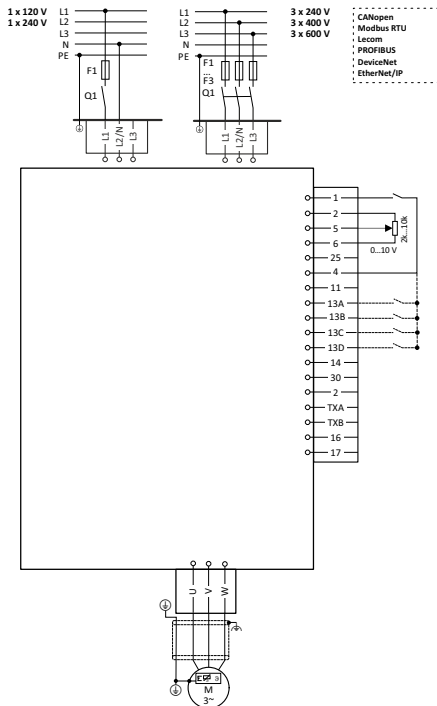
## SMVector IP65 frekvenciaváltó

## Kapcsolási rajz

## ÉRTESÍTÉS

A felhasználónak igazolnia kell az EN IEC 61800-3 szabványnak való megfeleléseget.

Az EN IEC 61800-3 szabvány szerinti elektromágneses összeférhetőséggel szembeni követelmények teljesítése érdekében egyes termékeknél külső szűrőt kell alkalmazni - kérjük vegye figyelembe a megfelelő dokumentációt.



## Fontos UL/CSA tudnivalók

Vegye figyelembe, hogy az UL-tanúítvánnyal kapcsolatos kijelentések csak az angol nyelvű változatban kötelező érvényűek. A más nyelvekre történő fordítás pusztán tájékoztató jellegű.

## Eredeti - angol

## ⚠ WARNING!

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- When protected by CC and T Class Fuses, suitable for use on a circuit capable of delivering not more than 200,000 rms symmetrical amperes, at the maximum voltage rating marked on the drive.
- Additionally suitable when protected by a circuit breaker having an interrupting rating not less than 200,000 rms symmetrical amperes, at the maximum voltage rating marked on the drive. (Excludes ESV113xx2T, ESV153xx2T, ESV113xx4T, ESV153xx4T, ESV183xx4T, ESV223xx4T, ESV303xx4T, ESV113xx6T, ESV153xx6T, ESV183xx6T, ESV223xx6T, and ESV303xx6T).
- Use minimum 75°C copper wire only, except for control circuits.
- For control circuits, use wiring suitable for NEC Class 1 circuits only.
- Torque Requirements (in accordance with UL) are listed in the corresponding Manual.
- Shall be installed in a pollution degree 2 macro-environment.
- All models are suitable for installation in a compartment handling Conditioned Air (i.e., plenum rated).
- The opening of branch-circuit protective device may be an indication that a fault has been interrupted. To reduce the risk of fire or electric shock, current carrying parts and other components of the controller should be examined and replaced if damaged.

|                                                                                        | L1, L2, L3, PE, U, V, W |      |      |      |
|----------------------------------------------------------------------------------------|-------------------------|------|------|------|
|                                                                                        | [mm]                    | [in] | [mm] | [in] |
| < 4 kW                                                                                 | 8                       | 1.3  | 5/16 | 12   |
| ESV552xx2Txx, ESV752xx2Txx, ESV113xx4/6xxx, ESV153xx4/6xxx, ESV183xx6xxx, ESV223xx6xxx | 8                       | 1.8  | 5/16 | 16   |
| ESV552xx4Txx, ESV752xx4Txx, ESV552xx6Txx, ESV752xx6Txx                                 | 6                       | 1.3  | 0.25 | 12   |
| ESV113xx2xxx, ESV153xx2xxx, ESV183xx4xxx, ESV223xx4xxx                                 | 10                      | 2.7  | 7/16 | 24   |

| ESV    | F <sub>x</sub> | P <sub>N</sub> [kW] | m [kg] | Ma [mm] | Szé [mm] | Mé [mm] |
|--------|----------------|---------------------|--------|---------|----------|---------|
| 371N01 | 371N04         | 0.37                | 1.63   | 203     | 160      | 114     |
| 751N01 | 751N04         | 0.75                |        |         |          |         |
| 112N01 | 112N04         | 1.1                 |        |         |          |         |
|        | 152N04         | 1.5                 | 2.68   | 203     | 160      | 160     |
|        | 222N04         | 2.2                 |        |         |          |         |
|        | 302N04         | 3                   |        |         |          |         |
|        | 222N02         | 2.2                 | 3.24   | 203     | 181      | 172     |
|        | 552N02         | 5.5                 |        |         |          |         |
|        | 752N04         | 7.5                 | 4.98   | 254     | 204      | 203     |
|        | 402N02         | 4                   |        |         |          |         |
|        | 552N04         | 5.5                 | 5.25   | 254     | 228      | 203     |
|        | 113N02         | 11                  |        |         |          |         |
|        | 153N04         | 15                  | 10     | 368     | 240      | 241     |
|        | 183N04         | 18.5                |        |         |          |         |
|        | 223N04         | 22                  | 11.6   | 420     | 240      | 241     |

|        | ESV      | L        | M      | P <sub>N</sub><br>[kW] | m<br>[kg] | Ma<br>[mm] | Szé<br>[mm] | Mé<br>[mm] |
|--------|----------|----------|--------|------------------------|-----------|------------|-------------|------------|
| 371N01 | 371N02   | 371N04   | 371N06 | 0.37                   | 2.13      | 279        | 160         | 114        |
| 751N01 | 751N02   | 751N04   | 751N06 | 0.75                   |           |            |             |            |
| 112N01 |          | 112N02   | 112N04 | 1.1                    | 3.58      | 279        | 160         | 160        |
|        | 152N02   | 152N04   | 152N06 | 1.5                    |           |            |             |            |
|        |          | 222N04   | 222N06 | 2.2                    |           |            |             |            |
|        |          | 302N04   |        | 3                      |           |            |             |            |
|        | 222N02   |          |        | 2.2                    | 4.08      | 279        | 181         | 172        |
|        | 552N02   |          |        | 5.5                    | 6.32      | 330        | 204         | 203        |
|        | 752N02   | 752N04   | 752N06 | 7.5                    |           |            |             |            |
|        | 402N02   | 402N04   | 402N06 | 4                      | 6.66      | 330        | 228         | 204        |
|        |          | 552N04   | 552N06 | 5.5                    |           |            |             |            |
|        |          | 113N04TM | 113N06 | 11                     | 10.4      | 368        | 240         | 241        |
|        |          | 153N04TM | 153N06 | 15                     |           |            |             |            |
| 113N02 | 113N04TL |          |        | 11                     | 12.9      | 470        | 240         | 241        |
| 153N02 | 153N04TL |          |        | 15                     |           |            |             |            |
|        |          | 183N04   | 183N06 | 18.5                   |           |            |             |            |
|        |          | 223N04   | 223N06 | 22                     |           |            |             |            |



## 变频器SMV IP31/IP65

## 一般安全说明

**⚠ 危险!**

忽略以下基本安全说明和安全信息可能会导致严重的人身伤害及财产损失!

- 仅可按指示使用产品。
- 切勿在产品出现明显损坏的情况下对其进行调试。
- 切勿对产品进行技术性修改。
- 未完成安装前,切勿调试产品。
- 切勿在没有所需防护罩的情况下操作产品。
- 仅可在断电条件下连接或断开所有可插拔连接!
- 仅可在断电条件下将产品从安装中拆除。
- 根据防护等级,本产品在运行期间或运行后均可能存在带电、移动或旋转部件。表面温度可能很高。
- 为防止人身伤害和财产损失,请务必采用更高等级的安全和防护系统!
- 相关文档中给出的程序性说明和电路详细信息仅供参考,必须检查它们在相关应用中的适用性。产品制造商对此过程和电路方案的适用性不承担责任。
- 所有与产品有关的工作仅能由具有资质的专业人员执行。IEC 60364 和 CENELEC HD 384 对这些人员的资质定义如下:
  - 他们熟悉产品的安装、装配、调试和操作。
  - 他们具有相应的工作资质。
  - 他们了解并能在使用地点应用所适用的所有事故防范法规、指令和法律。

**⚠ 警告!**

## 功能性安全

某些软件功能或部件支持符合 2006/42/EC:机械指令 [UKCA:S.I. 2008/1597 - The Supply of Machinery (Safety) Regulations 2008] 要求的安全功能。务必遵守文档中关于集成式安全技术

提示。

仅可由 LKS 或其授权人员维修和更换这些部件。

## 残余危险

**⚠ 危险!**

## 危险电压

本产品的缺陷可能导致系统中出现过电压。

对于符合 EN 61800-5-1 的产品:

- 在运行过程中以及关闭电源后 20 分钟内,产品接口处仍可能会存在危险电压。
- 对地泄漏电流 (PE) > 3.5mA AC 或 > 10mA DC。

## 可能的后果

- 触电致死或重伤。

## 保护措施

- 在产品上的所有作业仅可在断电状态下进行。
- 检查确保无电压!
- 切断电源后,请注意产品上的说明标牌。
- 断电后,请等待直至驱动器静止。
- 采取 EN IEC 61800-5-1 或 EN IEC 60204-1 要求的措施,即固定安装和符合标准。

## 产品标签的含义



## 危险电压



## 静电敏感器件

在对产品进行操作之前,必须先消除人员身上的静电电荷。



## 漏电流高



## 表面温度高

## 按规定使用

- 本产品是一种供行业、特定专业或工业使用的专业装置,不向公众出售。IEC 60050 [IEV 161-05-05]
- 本产品是供复杂工业生产系统进一步加工/整合的零件或部件。
- 本产品只能在指定的安装和运行条件下、在指定的安装位置上运行。
- 切勿在私人区域、潜在爆炸性环境以及存在有害气体、油、酸和辐射的区域中操作本产品。
- 请务必移除所有运输锁。
- 安装在电机上的带孔螺栓不适用于运输减速电机。

## 废弃电子电气设备 (WEEE)



这个带划线的垃圾桶符号表示电气电子设备不能作为生活垃圾处理。请将废旧设备送到经认证的废弃物处理公司。

## 支持

**⚠ 注意!**

## 相关文档

遵守相关文档的规格要求。这是安全和无故障运行以及实现特定产品功能的前提条件。



相如获取需关文件和更多信息,请访问我们的网站:  
<http://support.lenze.com>

您可在铭牌上查看产品物料号。



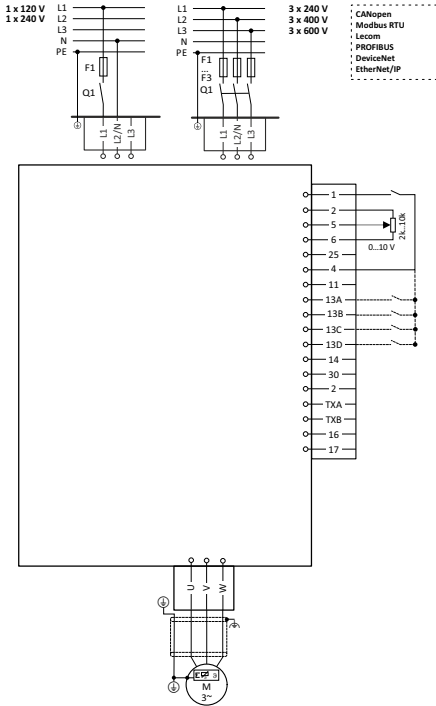
# 变频器SMV IP31

## 接线图

### 注意

用户必须证明符合EN IEC 61800-3规范。

为了满足EN IEC 61800-3的EMC要求, 某些产品必须使用外部滤波器, 请参阅相关文档。



## UL/CSA标记

请注意, 所有关于UL认证的声明仅在英文版本中具有约束力。其他语言的译本仅供参考。

原文- 英语

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|                                                                                       | L1, L2, L3, PE, U, V, W |      |      |         |
|---------------------------------------------------------------------------------------|-------------------------|------|------|---------|
|                                                                                       | [mm]                    | [Nm] | [in] | [lb-in] |
| < 4 kW                                                                                | 8                       | 1.3  | 5/16 | 12      |
| ESV552xx2Txx, ESV52xx2Txx, ESV113xx4/6xxx, ESV153xx4/6xxx, ESV183xx6xxx, ESV223xx6xxx | 8                       | 1.8  | 5/16 | 16      |
| ESV552xx4Txx, ESV752xx4Txx, ESV552xx6Txx, ESV752xx6Txx                                | 6                       | 1.3  | 0.25 | 12      |
| ESV113xx2xxx, ESV153xx2xxx, ESV183xx4xxx, ESV223xx4xxx, ESV303xx4xxx                  | 10                      | 2.7  | 7/16 | 24      |
| ESV373xx4xxx, ESV453xx4xxx                                                            | 19                      | 3.05 | 0.75 | 27      |

|              | P <sub>max</sub> [kW] | m [kg] | H [mm] | W [mm] | D [mm] |
|--------------|-----------------------|--------|--------|--------|--------|
| ESV251xxxxxB | 0.25                  | 0.9    | 190    | 99     | 111    |
| ESV371xxxxxB | 0.37                  |        |        |        |        |
| ESV751xxxxxB | 0.75                  |        |        |        |        |
| ESV112xxxxxB | 1.1                   | 1.3    | 191    | 99     | 138    |
| ESV152xxxxxB | 1.5                   |        |        |        |        |
| ESV222xxxxxB | 2.2                   |        |        |        |        |
| ESV402xxxxxB | 4                     | 1.5    | 191    | 99     | 147    |
| ESV552xxxxxB | 5.5                   | 2      | 250    | 130    | 160    |
| ESV752xxxxxB | 7.5                   |        |        |        |        |

|              | P <sub>max</sub> [kW] | m [kg] | H [mm] | W [mm] | D [mm] |
|--------------|-----------------------|--------|--------|--------|--------|
| ESV113xxxxxB | 11                    | 6.15   | 318    | 176    | 205    |
| ESV153xxxxxB | 15                    |        |        |        |        |
| ESV183xxxxxB | 18.5                  |        |        |        |        |
| ESV223xxxxxB | 22                    | 10.9   | 360    | 221    | 256    |
| ESV303xxxxxB | 30                    |        |        |        |        |
| ESV373xxxxxB | 37.5                  |        |        |        |        |
| ESV453xxxxxB | 45                    | 15.9   | 513    | 221    | 256    |



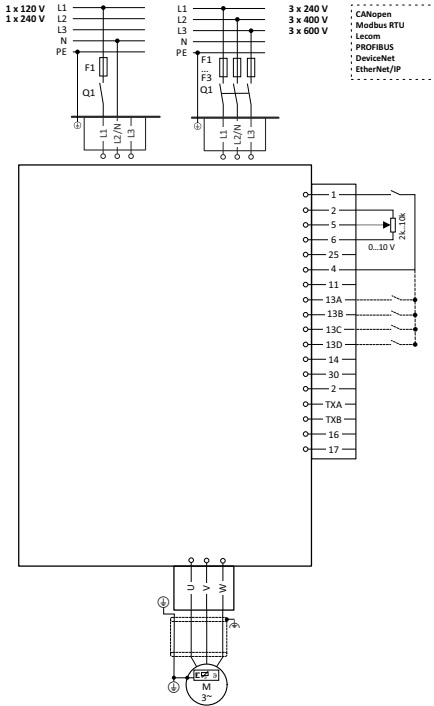
## 变频器SMV IP65

## 接线图

## 注意

用户必须证明符合EN IEC 61800-3规范。

为了满足EN IEC 61800-3的EMC要求, 某些产品必须使用外部滤波器, 请参阅相关文档。



## UL/CSA标记

请注意, 所有关于UL认证的声明仅在英文版本中具有约束力。其他语言的译本仅供参考。

原文- 英语

## ⚠ WARNING!

- Integral solid state protection does not provide branch circuit protection. Branch circuit protection must be provided in accordance with the National Electrical Code and any additional local codes. The use of fuses or circuit breakers is the only approved means for branch circuit protection.
- When protected by CC and T Class Fuses, suitable for use on a circuit capable of delivering not more than 200,000 rms symmetrical amperes, at the maximum voltage rating marked on the drive.
- Additionally suitable when protected by a circuit breaker having an interrupting rating not less than 200,000 rms symmetrical amperes, at the maximum voltage rating marked on the drive. (Excludes ESV113xx2T, ESV153xx2T, ESV113xx4T, ESV153xx4T, ESV183xx4T, ESV223xx4T, ESV303xx4T, ESV113xx6T, ESV153xx6T, ESV183xx6T, ESV223xx6T, and ESV303xx6T).
- Use minimum 75°C copper wire only, except for control circuits.
- For control circuits, use wiring suitable for NEC Class 1 circuits only.
- Torque Requirements (in accordance with UL) are listed in the corresponding Manual.
- Shall be installed in a pollution degree 2 macro-environment.
- All models are suitable for installation in a compartment handling Conditioned Air (i.e., plenum rated).
- The opening of branch-circuit protective device may be an indication that a fault has been interrupted. To reduce the risk of fire or electric shock, current carrying parts and other components of the controller should be examined and replaced if damaged.

|                                                                                        | L1, L2, L3, PE, U, V, W |     |      |         |
|----------------------------------------------------------------------------------------|-------------------------|-----|------|---------|
|                                                                                        | [mm]                    | [N] | [in] | [lb-in] |
| < 4 kW                                                                                 | 8                       | 1.3 | 5/16 | 12      |
| ESV552xx2Txx, ESV752xx2Txx, ESV113xx4/6xxx, ESV153xx4/6xxx, ESV183xx6xxx, ESV223xx6xxx | 8                       | 1.8 | 5/16 | 16      |
| ESV552xx4Txx, ESV752xx4Txx, ESV552xx6Txx, ESV752xx6Txx                                 | 6                       | 1.3 | 0.25 | 12      |
| ESV113xx2xxx, ESV153xx2xxx, ESV183xx4xxx, ESV223xx4xxx                                 | 10                      | 2.7 | 7/16 | 24      |

| ESV    | F <sub>ESV</sub> | P <sub>ESV</sub> | m    | H    | W    | D    |
|--------|------------------|------------------|------|------|------|------|
|        | X                | [kW]             | [kg] | [mm] | [mm] | [mm] |
| 371N01 | 371N02           | 371N04           | 0.37 | 1.63 | 203  | 160  |
| 751N01 | 751N02           | 751N04           | 0.75 |      |      |      |
| 112N01 | 112N02           | 112N04           | 1.1  |      |      |      |
|        | 152N02           | 152N04           | 1.5  | 2.68 | 203  | 160  |
|        | 222N02           | 222N04           | 2.2  |      |      |      |
|        |                  | 302N04           | 3    |      |      |      |
|        | 222N02           |                  | 2.2  | 3.24 | 203  | 181  |
|        | 552N02           |                  | 5.5  |      |      |      |
|        | 752N02           | 752N04           | 7.5  | 4.98 | 254  | 204  |
|        | 402N02           | 402N04           | 4    | 5.25 | 254  | 228  |
|        |                  | 552N04           | 5.5  |      |      |      |
|        | 113N02           | 113N04           | 11   |      |      |      |
|        | 153N02           | 153N04           | 15   | 10   | 368  | 240  |
|        |                  | 183N04           | 18.5 |      |      |      |
|        |                  | 223N04           | 22   | 11.6 | 420  | 240  |

| ESV    | L        | P <sub>ESV</sub> | m    | H    | W    | D    |
|--------|----------|------------------|------|------|------|------|
|        | M        | [kW]             | [kg] | [mm] | [mm] | [mm] |
| 371N01 | 371N02   | 371N04           | 0.37 |      |      |      |
| 751N01 | 751N02   | 751N04           | 0.75 | 2.13 | 279  | 160  |
| 112N01 | 112N02   | 112N04           | 1.1  |      |      |      |
|        | 152N02   | 152N04           | 1.5  |      |      |      |
|        |          | 222N04           | 2.2  | 3.58 | 279  | 160  |
|        |          | 302N04           | 3    |      |      |      |
|        | 222N02   |                  | 2.2  | 4.08 | 279  | 181  |
|        | 552N02   |                  | 5.5  |      |      |      |
|        | 752N02   | 752N04           | 7.5  | 6.32 | 330  | 204  |
|        | 402N02   | 402N04           | 4    | 6.66 | 330  | 228  |
|        |          | 552N04           | 5.5  |      |      |      |
|        | 113N04TM | 113N06           | 11   | 10.4 | 368  | 240  |
|        | 153N04TM | 153N06           | 15   |      |      |      |
| 113N02 | 113N04TL |                  | 11   |      |      |      |
| 153N02 | 153N04TL |                  | 15   |      |      |      |
|        | 183N04   | 183N06           | 18.5 | 12.9 | 470  | 240  |
|        | 223N04   | 223N06           | 22   |      |      |      |



# Frekvenčný menič SMVector IP31/IP65

**Lenze**

## Všeobecné bezpečnostné pokyny

### ⚠ NEBEZPEČENSTVO!

Nerešpektovanie nasledujúcich základných bezpečnostných pokynov a bezpečnostných pokynov môže viesť k ťažkým zraneniam osôb a vecným škodám!

- Výrobok používajte iba podľa pokynov.
- Nikdy výrobok neuvádzajte do prevádzky v prípade viditeľného poškodenia.
- Nikdy výrobok technicky neupravujte.
- Nikdy neuvádzajte výrobok do prevádzky pred dokončením montáže.
- Nikdy neprevádzkujte výrobok bez požadovaných krytov.
- Všetky zásuvné spoje pripájajte/odpájajte len v bezprúdovom stave!
- Výrobok vytahujte z inštalácie iba v stave bez napätia.
- Výrobok môže mať – podľa stupňa ochrany – počas prevádzky alebo po nej diely pod napätím, pohyblivé alebo rotačné diely. Povrchy môžu byť horúce.
- Na zabránenie zraneniam osôb a škodám na majetku sa musia použiť systémy s vyššou úrovňou bezpečnosti a ochrany!
- Procesné poznámky a podrobnosti o obvode uvedené v súvisiacej dokumentácii sú návrhy a ich prenosnosť do príslušnej aplikácie je potrebné skontrolovať. Výrobca výrobku nezodpovedá za vhodnosť procesu a návrhy obvodov.
- Všetky práce s výrobkom a na výrobku môžu vykonávať iba kvalifikovaní pracovníci. Kvalifikáciu týchto osôb definujú EC 60364 a CENELEC HD 384:
  - Sú oboznámené s inštaláciou, montážou, uvedením do prevádzky a prevádzkou výrobku.
  - Majú zodpovedajúcu kvalifikáciu pre svoju prácu.
  - Poznajú a vedia aplikovať všetky predpisy na prevenciu nehôd, smernice a zákony platné v mieste použitia.

### ⚠ VAROVANIE!

#### Funkčná bezpečnosť

Určité softvérové funkcie alebo komponenty podporujú bezpečnostné funkcie podľa požiadaviek smernice 2006/42/ES: Smernica pre stroje [UKCA: S.I. 2008/1597 – Predpisy o dodávkach strojov (bezpečnosť) 2008]. Dbajte na dodržiavanie poznámok v dokumentácii k integrovanej bezpečnostnej technológii.

Tieto komponenty môže opravovať alebo vymieňať iba Lenze servis alebo jeho autorizovaný personál.

## Zvyškové nebezpečenstvá

### ⚠ NEBEZPEČENSTVO!

#### Nebezpečné elektrické napätie

Vady vo výrobku môžu viesť k nadmernému napätiu v systéme.

Pre výrobky podľa normy EN 61800-5-1:

- Počas prevádzky a do 20 minút po vypnutí môže byť na pripojkách výrobku prítomné nebezpečné elektrické napätie.
- Zvodový prúd proti zemi (PE) je > 3.5 mA AC alebo > 10 mA DC.

#### Možné následky

– Smrť alebo vážne zranenie v dôsledku zásahu elektrickým prúdom.

#### Ochranné opatrenia

- Akékoľvek práce na výrobku sa smú vykonávať iba v stave bez napätia.
- Skontrolujte, či nie je prítomné žiadne napätie!
- Po vypnutí sieťového napätia sledujte príznaky na výrobku.
- Po vypnutí počkajte, kým sa pohon nezastaví.
- Implementujte opatrenia požadované podľa EN IEC 61800-5-1 alebo EN IEC 60204-1, t.j. pevnú inštaláciu a v súlade s normami.

#### Význam štítkov na výrobku

#### ⚠ Nebezpečné elektrické napätie

##### Elektrostaticky citlivé prístroje

- Pred prácou na výrobku sa personál musí ubezpečiť, že je zbavený elektrostatického náboja.

#### ⚠ Vysoký zvodový prúd

#### ⚠ Horúci povrch

## Aplikácia podľa pokynov

- Výrobok je profesionálne zariadenie určené na použitie v remeslách, špecifických profesiách alebo priemysle, a nie na predaj širokej verejnosti. IEC 60050 [IEV 161-05-05]
- Výrobok je súčasťou alebo komponentom na ďalšie spracovanie/integráciu do komplexných systémov priemyselnej výroby.
- Výrobok sa môže prevádzkovať len za stanovených montážnych a prevádzkových podmienok a v stanovených montážnych polohách.
- Výrobok sa nesmie prevádzkovať v súkromných priestoroch, v potenciálne výbušnom prostredí a v oblastiach so škodlivými plynmi, olejmi, kyselinami a žiarením.
- Všetky prepravné poistky musia byť odstránené.
- Mounted eye bolts on the motor are not suitable for transporting geared motors.

#### Elektroodpad a elektronický odpad (OEEZ)



Tento symbol preškrtnutého kontajnera na odpad poukazuje na to, že elektrické a elektronické zariadenia sa nesmú likvidovať spolu s bežným domovým odpadom. Staré zariadenia odovzdajte certifikovanej spoločnosti zaoberajúcej sa likvidáciou odpadu.

## Podpora

### ⚠ UPOZORNENIE!

#### Súvisiaca dokumentácia

Dodržiavajte špecifikácie príslušnej dokumentácie. To je podmienka pre bezpečnú a bezporuchovú prevádzku a dosiahnutie špecifikovaných funkcií výrobku.



Súvisiacu dokumentáciu a ďalšie informácie nájdete na našej webovej stránke:  
<http://support.lenze.com>

Materiálové číslo výrobku nájdete na typovom štítku.



# Frekvenčný menič SMVector IP31

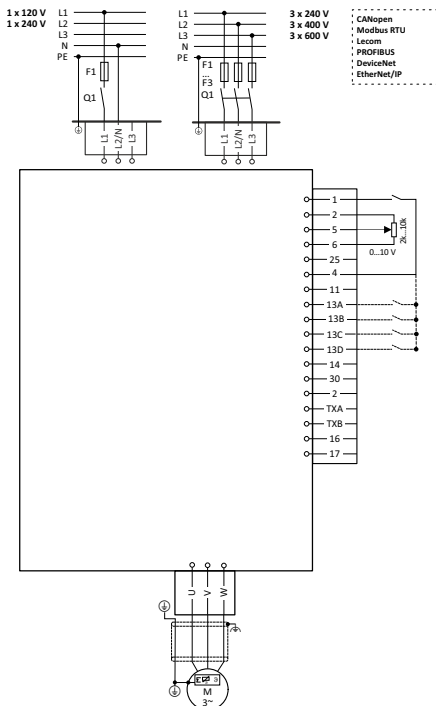
Lenze

## Schéma zapojenia

### OZNÁMENIE

Používateľ musí preukázať splnenie zhody s EN IEC 61800-3.

Na splnenie požiadaviek EMC podľa normy EN IEC 61800-3 sa musí pri niektorých výrobkoch použiť externý filter – pozrite si príslušnú dokumentáciu.



## Značky UL/CSA

Upozorňujeme, že všetky vyhlásenia týkajúce sa certifikácie UL sú záväzné len v anglickej verzii. Preklad do iných jazykov je čisto informatívny.

Originál – angličtina

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- Use minimum 75°C copper wire only, except for control circuits.
- For control circuits, use wiring suitable for NEC Class 1 circuits only.
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- Shall be installed in a pollution degree 2 macro-environment.
- All models are suitable for installation in a compartment handling Conditioned Air (i.e., plenum rated).
- The opening of branch-circuit protective device may be an indication that a fault has been interrupted. To reduce the risk of fire or electric shock, current carrying parts and other components of the controller should be examined and replaced if damaged.

|                                                                                        | L1, L2, L3, PE, U, V, W |      |      |         |
|----------------------------------------------------------------------------------------|-------------------------|------|------|---------|
|                                                                                        | [mm]                    | [Nm] | [in] | [lb-in] |
| < 5 hp                                                                                 | 8                       | 1.3  | 5/16 | 12      |
| ESV552xx2Txx, ESV522xx2Txx, ESV113xx4/6xxx, ESV153xx4/6xxx, ESV183xx6xxx, ESV223xx6xxx | 8                       | 1.8  | 5/16 | 16      |
| ESV552xx4Txx, ESV752xx4Txx, ESV552xx6Txx, ESV752xx6Txx                                 | 6                       | 1.3  | 0.25 | 12      |
| ESV113xx2xxx, ESV153xx2xxx, ESV183xx4xxx, ESV223xx4xxx, ESV303xx4xxx                   | 10                      | 2.7  | 7/16 | 24      |
| ESV373xx4xxx, ESV453xx4xxx                                                             | 19                      | 3.05 | 0.75 | 27      |

|              | P <sub>nominal</sub> [kW] | m [kg] | v [mm] | š [mm] | h [mm] |
|--------------|---------------------------|--------|--------|--------|--------|
| ESV251xxxxxB | 0.25                      | 0.9    | 190    | 99     | 111    |
| ESV371xxxxxB | 0.37                      |        |        |        |        |
| ESV751xxxxxB | 0.75                      |        |        |        |        |
| ESV112xxxxxB | 1.1                       |        |        |        |        |
| ESV152xxxxxB | 1.5                       | 1.3    | 191    | 99     | 138    |
| ESV222xxxxxB | 2.2                       |        |        |        |        |
| ESV402xxxxxB | 4                         | 1.5    | 191    | 99     | 147    |
| ESV552xxxxxB | 5.5                       | 2      | 250    | 130    | 160    |
| ESV752xxxxxB | 7.5                       |        |        |        |        |

|              | P <sub>nominal</sub> [kW] | m [kg] | v [mm] | š [mm] | h [mm] |
|--------------|---------------------------|--------|--------|--------|--------|
| ESV113xxxxxB | 11                        | 6.15   | 318    | 176    | 205    |
| ESV153xxxxxB | 15                        |        |        |        |        |
| ESV183xxxxxB | 18.5                      |        |        |        |        |
| ESV223xxxxxB | 22                        |        |        |        |        |
| ESV303xxxxxB | 30                        | 10.9   | 360    | 221    | 256    |
| ESV373xxxxxB | 37.5                      | 14.1   | 436    | 221    | 256    |
| ESV453xxxxxB | 45                        | 15.9   | 513    | 221    | 256    |



# Frekvenčný menič SMVector IP65

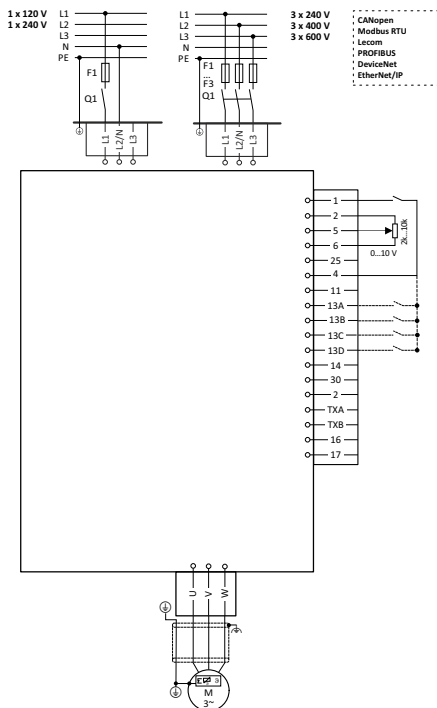
Lenze

## Schéma zapojenia

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Na splnenie požiadaviek EMC podľa normy EN IEC 61800-3 sa musí pri niektorých výrobkoch použiť externý filter – pozrite si príslušnú dokumentáciu.



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Originál – angličtina

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- Additionally suitable when protected by a circuit breaker having an interrupting rating not less than 200,000 rms symmetrical amperes, at the maximum voltage rating marked on the drive. (Excludes ESV113xx2T, ESV153xx2T, ESV113xx4T, ESV153xx4T, ESV183xx4T, ESV223xx4T, ESV303xx4T, ESV113xx6T, ESV153xx6T, ESV183xx6T, ESV223xx6T, and ESV303xx6T).
- Use minimum 75°C copper wire only, except for control circuits.
- For control circuits, use wiring suitable for NEC Class 1 circuits only.
- Torque Requirements (in accordance with UL) are listed in the corresponding Manual.
- Shall be installed in a pollution degree 2 macro-environment.
- All models are suitable for installation in a compartment handling Conditioned Air (i.e., plenum rated).
- The opening of branch-circuit protective device may be an indication that a fault has been interrupted. To reduce the risk of fire or electric shock, current carrying parts and other components of the controller should be examined and replaced if damaged.

|                                                                                        | L1, L2, L3, PE, U, V, W |      |      |         |
|----------------------------------------------------------------------------------------|-------------------------|------|------|---------|
|                                                                                        | (mm)                    | [Nm] | (in) | [lb-in] |
| < 4 kW                                                                                 | 8                       | 1.3  | 5/16 | 12      |
| ESV552xx2Txx, ESV752xx2Txx, ESV113xx4/6xxx, ESV153xx4/6xxx, ESV183xx6xxx, ESV223xx6xxx | 8                       | 1.8  | 5/16 | 16      |
| ESV552xx4Txx, ESV752xx4Txx, ESV552xx6Txx, ESV752xx6Txx                                 | 6                       | 1.3  | 0.25 | 12      |
| ESV113xx2xxx, ESV153xx2xxx, ESV183xx4xxx, ESV223xx4xxx                                 | 10                      | 2.7  | 7/16 | 24      |

| ESV    | ESV    | F <sub>x</sub> | P <sub>nom</sub> [kW] | m [kg] | v [mm] | š [mm] | h [mm] |
|--------|--------|----------------|-----------------------|--------|--------|--------|--------|
| 371N01 | 371N02 | 371N04         | 0.37                  | 1.63   | 203    | 160    | 114    |
| 751N01 | 751N02 | 751N04         | 0.75                  |        |        |        |        |
| 112N01 | 112N02 | 112N04         | 1.1                   |        |        |        |        |
|        | 152N02 | 152N04         | 1.5                   | 2.68   | 203    | 160    | 160    |
|        |        | 222N04         | 2.2                   |        |        |        |        |
|        |        | 302N04         | 3                     |        |        |        |        |
|        | 222N02 |                | 2.2                   | 3.24   | 203    | 181    | 172    |
|        | 552N02 |                | 5.5                   |        |        |        |        |
|        |        | 752N04         | 7.5                   | 4.98   | 254    | 204    | 203    |
|        | 752N02 | 402N04         | 4                     |        |        |        |        |
|        |        | 552N04         | 5.5                   | 5.25   | 254    | 228    | 203    |
|        |        |                |                       |        |        |        |        |
|        | 113N02 | 113N04         | 11                    |        |        |        |        |
|        | 153N02 | 153N04         | 15                    | 10     | 368    | 240    | 241    |
|        |        | 183N04         | 18.5                  |        |        |        |        |
|        |        | 223N04         | 22                    | 11.6   | 420    | 240    | 241    |

| ESV    | ESV      | L        | M      | P <sub>nom</sub> [kW] | m [kg] | v [mm] | š [mm] | h [mm] |
|--------|----------|----------|--------|-----------------------|--------|--------|--------|--------|
| 371N01 | 371N02   | 371N04   | 371N06 | 0.37                  | 2.13   | 279    | 160    | 114    |
| 751N01 | 751N02   | 751N04   | 751N06 | 0.75                  |        |        |        |        |
| 112N01 | 112N02   | 112N04   |        | 1.1                   |        |        |        |        |
|        | 152N02   | 152N04   | 152N06 | 1.5                   | 3.58   | 279    | 160    | 160    |
|        |          | 222N04   | 222N06 | 2.2                   |        |        |        |        |
|        |          | 302N04   |        | 3                     |        |        |        |        |
|        | 222N02   |          |        | 2.2                   | 4.08   | 279    | 181    | 172    |
|        | 552N02   |          |        | 5.5                   |        |        |        |        |
|        |          | 752N04   | 752N06 | 7.5                   | 6.32   | 330    | 204    | 203    |
|        | 402N02   | 402N04   | 402N06 | 4                     | 6.66   | 330    | 228    | 204    |
|        |          | 552N04   | 552N06 | 5.5                   |        |        |        |        |
|        |          | 113N04TM | 113N06 | 11                    | 10.4   | 368    | 240    | 241    |
|        |          | 153N04TM | 153N06 | 15                    |        |        |        |        |
| 113N02 | 113N04TL |          |        | 11                    |        |        |        |        |
| 153N02 | 153N04TL |          |        | 15                    |        |        |        |        |
|        |          | 183N04   | 183N06 | 18.5                  | 12.9   | 470    | 240    | 241    |
|        |          | 223N04   | 223N06 | 22                    |        |        |        |        |



## Appendix – UL fusing data and Line reactor

## NOTICE

Observe local regulations. Local codes may supersede these recommendations.

**⚠ WARNING!**

Use a FUSE \*

- for 240 V drives requiring > 40 A protection and
- for 400/480/600 V drives requiring > 32 A protection.

## NOTICE

Observe the following when using Ground Fault Circuit Interrupters (GFCIs):

- Installation of GFCI only between supplying mains and controller.
- The GFCI can be activated by:
  - capacitive leakage currents between the cable screens during operation (especially with long, screened motor cables)
  - connecting several controllers to the mains at the same time
  - RFI filters

| Type                              |                                                                                                                              | Recommendations |                                        |                                                              |                                     |
|-----------------------------------|------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------------------------------|--------------------------------------------------------------|-------------------------------------|
|                                   |                                                                                                                              | Fuse            | Miniature circuit breaker <sup>1</sup> | Fuse ** <sup>2</sup> or Breaker <sup>3</sup> (North America) | Input Power Wiring (L1, L2, L3, PE) |
|                                   |                                                                                                                              |                 |                                        |                                                              | (mm <sup>2</sup> ) [AWG]            |
| 120 V<br>1~<br>(1/N/PE)           | ESV251N01SXB                                                                                                                 | M10 A           | C10 A                                  | 10 A                                                         | 1.5 14                              |
|                                   | ESV371N01SXB, ESV371N01SX*                                                                                                   | M16 A           | C16 A                                  | 15 A                                                         | 2.5 14                              |
|                                   | ESV751N01SXB, ESV751N01SX*                                                                                                   | M25 A           | C25 A                                  | 25 A                                                         | 4 10                                |
|                                   | ESV112N01SXB, ESV112N01SX*                                                                                                   | M32 A           | C32 A                                  | 30 A                                                         | 4 10                                |
|                                   | ESV251N01SXB, ESV251N02SXB, ESV371N01SXB, ESV371N02YXB, ESV371N02SF*                                                         | M10 A           | C10 A                                  | 10 A                                                         | 1.5 14                              |
| 240 V<br>1~<br>(2/PE)             | ESV751N01SXB, ESV751N02YXB, ESV751N02SF*                                                                                     | M16 A           | C16 A                                  | 15 A                                                         | 2.5 14                              |
|                                   | ESV112N02YXB, ESV112N02SF*, ESV112N01SXB, ESV112N01SX*                                                                       | M20 A           | C20 A                                  | 20 A                                                         | 2.5 12                              |
|                                   | ESV152N02YXB, ESV152N02SF*                                                                                                   | M25 A           | C25 A                                  | 25 A                                                         | 2.5 12                              |
|                                   | ESV222N02YXB, ESV222N02SF*                                                                                                   | M32 A           | C32 A                                  | 30 A                                                         | 4 10                                |
|                                   | ESV371N02YXB, ESV751N02YXB, ESV371N02Y*, ESV751N02Y*                                                                         | M10 A           | C10 A                                  | 10 A                                                         | 1.5 14                              |
| 240 V<br>3~<br>(3/PE)             | ESV112N02YXB, ESV152N02YXB, ESV112N02TXB, ESV152N02TXB, ESV112N02Y*, ESV152N02Y*                                             | M16 A           | C16 A                                  | 12 A                                                         | 1.5 14                              |
|                                   | ESV222N02YXB, ESV222N02TXB, ESV222N02YX*                                                                                     | M20 A           | C20 A                                  | 20 A                                                         | 2.5 12                              |
|                                   | ESV402N02TXB, ESV402N02T*, ESV552N02TXB, ESV552N02T*                                                                         | M32 A           | C32 A                                  | 30 A                                                         | 4.0 10                              |
|                                   | ESV552N02TXB, ESV552N02T*                                                                                                    | M40 A           | C40 A                                  | 35 A                                                         | 6.0 8                               |
|                                   | ESV752N02TXB, ESV752N02T*                                                                                                    | M50 A           | * use Fuse only                        | 45 A *                                                       | 10 8                                |
|                                   | ESV113N02TXB, ESV113N02TX~, ESV113N02TM~, ESV153N02TXB, ESV153N02TX~, ESV153N02TM~                                           | M80 A           | * use Fuse only                        | 80 A *                                                       | 16 6                                |
|                                   | ESV371N04TXB ... ESV222N04TXB, ESV371N04T*, ... ESV222N04T*, ESV371N04TF* ... ESV222N04TF*                                   | M100 A          | * use Fuse only                        | 90 A *                                                       | 16 4                                |
|                                   | ESV302N04T*                                                                                                                  | M10 A           | C10 A                                  | 10 A                                                         | 1.5 14                              |
|                                   | ESV402N04TXB, ESV402N04T*                                                                                                    | M16 A           | C16 A                                  | 15 A                                                         | 2.5 14                              |
|                                   | ESV552N04TXB, ESV552N04T*                                                                                                    | M20 A           | C20 A                                  | 20 A                                                         | 2.5 14                              |
| 400 V<br>or 480 V<br>3~<br>(3/PE) | ESV752N04TXB, ESV752N04T*                                                                                                    | M25 A           | C25 A                                  | 25 A                                                         | 4.0 10                              |
|                                   | ESV113N04TXB, ESV113N04T*                                                                                                    | M40 A           | * use Fuse only                        | 40 A *                                                       | 4 8                                 |
|                                   | ESV153N04TXB, ESV153N04T*                                                                                                    | M50 A           | * use Fuse only                        | 50 A *                                                       | 10 8                                |
|                                   | ESV183N04TXB, ESV183N04T*                                                                                                    | M63 A           | * use Fuse only                        | 70 A *                                                       | 10 6                                |
|                                   | ESV223N04TXB, ESV223N04T*                                                                                                    | M80 A           | * use Fuse only                        | 80 A *                                                       | 16 6                                |
|                                   | ESV303N04TXB                                                                                                                 | M100 A          | * use Fuse only                        | 100 A *                                                      | 25 4                                |
|                                   | ESV373N04TXB                                                                                                                 | M125 A          | * use Fuse only                        | 125 A *                                                      | 35 2                                |
|                                   | ESV453N04TXB                                                                                                                 | M160 A          | * use Fuse only                        | 150 A *                                                      | 35 1                                |
|                                   | ESV751N06TXB ... ESV222N06TXB, ESV751N06T* ... ESV222N06T*                                                                   | M10 A           | C10 A                                  | 10 A                                                         | 1.5 14                              |
|                                   | ESV402N06TXB, ESV402N06T*                                                                                                    | M16 A           | C16 A                                  | 12 A                                                         | 1.5 14                              |
| 600 V<br>3~<br>(3/PE)             | ESV552N06TXB, ESV552N06T*                                                                                                    | M16 A           | C16 A                                  | 15 A                                                         | 2.5 14                              |
|                                   | ESV752N06TXB, ESV752N06T*                                                                                                    | M20 A           | C20 A                                  | 20 A                                                         | 2.5 12                              |
|                                   | ESV113N06TXB, ESV113N06TX~, ESV113N06TM~, ESV153N06TXB, ESV153N06TX~, ESV153N06TM~, ESV183N06TXB, ESV183N06TX~, ESV183N06TM~ | M32 A           | C32 A                                  | 30 A                                                         | 4 10                                |
|                                   | ESV223N06TXB, ESV223N06TX~, ESV223N06TM~                                                                                     | M40 A           | * use Fuse only                        | 40 A *                                                       | 4 8                                 |
|                                   | ESV303N06TXB                                                                                                                 | M50 A           | * use Fuse only                        | 50 A *                                                       | 6 8                                 |
|                                   | ESV373N06TXB                                                                                                                 | M63 A           | * use Fuse only                        | 60 A *                                                       | 10 8                                |
|                                   | ESV453N06TXB                                                                                                                 | M80 A           | * use Fuse only                        | 70 A *                                                       | 16 6                                |
|                                   | ESV751N06TXB ... ESV222N06TXB, ESV751N06T* ... ESV222N06T*                                                                   | M100 A          | * use Fuse only                        | 90 A *                                                       | 16 4                                |
|                                   | ESV402N06TXB, ESV402N06T*                                                                                                    | M125 A          | * use Fuse only                        | 110 A *                                                      | 25 2                                |
|                                   | ESV552N06TXB, ESV552N06T*                                                                                                    | M16 A           | C16 A                                  | 15 A                                                         | 2.5 14                              |

**Notes for Fuse and Cable Table:**

<sup>1</sup> Installations with high fault current due to large supply mains may require a type D circuit breaker.

<sup>2</sup> UL Class CC or T fast-acting current-limiting type fuses, 200,000 AIC, preferred. Bussman KTK-R, JIN or JIS or equivalent.

<sup>3</sup> Thermomagnetic type breakers preferred.

- 11th digit of part number: F = Integral EMC Filter  
L = Integral EMC Filter and Integrated Disconnect Switch (NEMA 4X/IP65 Models only)  
M = Integrated Disconnect Switch (NEMA 4X/IP65 Models only)  
X = No EMC Filter/ No Disconnect Switch
- \* = Last digit of part number: C = N4X Indoor only (convection cooled)  
E = N4X Indoor/Outdoor (convection cooled)
- ~ = Last digit of part number: D = N4X Indoor only (fan cooled)  
F = N4X Indoor/Outdoor (fan cooled)



## SMVector IP31 frequency inverter

Product information for documentation acc. to the EU directive

|                                |      |     |                                                                |        |        |        |        |        |        |        |        |        |        |
|--------------------------------|------|-----|----------------------------------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Power losses                   | f, l | %   | 3.0                                                            | 3.0    | 1.6    | 1.4    | 2.9    | 2.9    | 1.6    | 1.4    | 1.2    | 1.2    | 1.1    |
| 0: 25                          | f, l | %   | 3.0                                                            | 3.1    | 1.8    | 1.6    | 2.9    | 2.9    | 1.8    | 1.5    | 1.4    | 1.4    | 1.3    |
| 0: 50                          | f, l | %   | 3.3                                                            | 3.4    | 2.3    | 2.0    | 3.1    | 3.3    | 2.2    | 2.0    | 1.8    | 1.8    | 1.8    |
| 0: 100                         | f, l | %   | 3.0                                                            | 3.1    | 1.7    | 1.4    | 2.9    | 2.9    | 1.6    | 1.4    | 1.2    | 1.2    | 1.2    |
| 50: 25                         | f, l | %   | 3.0                                                            | 3.1    | 1.9    | 1.6    | 2.9    | 3.0    | 1.8    | 1.6    | 1.5    | 1.4    | 1.4    |
| 50: 50                         | f, l | %   | 3.4                                                            | 3.5    | 2.4    | 2.2    | 3.3    | 3.3    | 2.3    | 2.1    | 2.0    | 1.9    | 2.0    |
| 50: 100                        | f, l | %   | 3.1                                                            | 3.1    | 1.9    | 1.7    | 3.0    | 3.0    | 1.9    | 1.7    | 1.5    | 1.5    | 1.5    |
| 90: 50                         | f, l | %   | 3.4                                                            | 3.4    | 2.4    | 2.2    | 3.3    | 3.5    | 2.5    | 2.3    | 2.1    | 2.1    | 2.2    |
| 90: 100                        | f, l | %   | 0.60                                                           | 0.40   | 0.30   | 0.20   | 0.60   | 0.40   | 0.30   | 0.20   | 0.10   | 0.10   | 0.10   |
| Standby losses                 |      | %   | IE2                                                            | IE2    | IE2    | IE2    | IE2    | IE2    | IE2    | IE2    | IE2    | IE2    | IE2    |
| Efficiency level               |      |     | Lenze Americas • 630 Douglas Street • Uxbridge, MA 01569 • USA |        |        |        |        |        |        |        |        |        |        |
| Manufacturer                   |      |     |                                                                |        |        |        |        |        |        |        |        |        |        |
| Commercial registration number |      |     |                                                                |        |        |        |        |        |        |        |        |        |        |
| Product's model identifier     |      |     | ESV251                                                         | ESV371 | ESV751 | ESV112 | ESV251 | ESV371 | ESV751 | ESV112 | ESV152 | ESV222 | ESV402 |
|                                |      |     | N015XB                                                         | N015XB | N015XB | N015XB | N021XB | N021XB | N021XB | N021XB | N021XB | N021XB | N021XB |
| Apparent output power          |      | kVA | 0.816                                                          | 1.104  | 1.992  | 2.4    | 0.816  | 1.206  | 2.078  | 2.868  | 3.367  | 4.489  | 7.732  |
| Indicative motor rated power   |      | kW  | 0.25                                                           | 0.37   | 0.75   | 1.1    | 0.25   | 0.37   | 0.75   | 1.1    | 1.5    | 2.2    | 4      |
| Rated output current           |      | A   | 1.7                                                            | 2.4    | 4.2    | 6.0    | 1.7    | 2.4    | 4.2    | 6.0    | 7.0    | 9.6    | 16.5   |
| Maximum operating temperature  |      | °C  | 40                                                             |        |        |        |        |        |        |        |        |        |        |
| Rated supply frequency         |      | Hz  | 50                                                             |        |        |        |        |        |        |        |        |        |        |
| Rated supply voltage           |      | V   | 120                                                            |        |        |        |        |        |        |        |        |        |        |
| Switching frequency            |      | kHz | 6                                                              |        |        |        |        |        |        |        |        |        |        |
| Rated apparent output power    |      | kVA | 0.697                                                          | 0.977  | 1.71   | 2.29   | 0.697  | 0.977  | 1.71   | 2.29   | 3.3    | 4.44   | 7.38   |

|                                |      |     |                                                                |        |        |        |        |        |        |        |        |        |        |
|--------------------------------|------|-----|----------------------------------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Power losses                   | f, l | %   | 1.1                                                            | 0.8    | 0.5    | 0.5    | 3.9    | 2.7    | 1.8    | 1.1    | 1.1    | 1.0    | 1.0    |
| 0: 25                          | f, l | %   | 1.4                                                            | 1.0    | 0.7    | 0.7    | 3.9    | 2.7    | 1.9    | 1.2    | 1.2    | 1.2    | 1.2    |
| 0: 50                          | f, l | %   | 2.1                                                            | 1.6    | 1.2    | 1.3    | 4.1    | 2.5    | 2.3    | 1.5    | 1.5    | 1.5    | 1.7    |
| 0: 100                         | f, l | %   | 1.2                                                            | 0.9    | 0.6    | 0.6    | 3.9    | 2.7    | 1.8    | 1.1    | 1.1    | 1.1    | 1.1    |
| 50: 25                         | f, l | %   | 1.4                                                            | 1.1    | 0.8    | 0.8    | 3.9    | 2.7    | 2.0    | 1.3    | 1.2    | 1.2    | 1.3    |
| 50: 50                         | f, l | %   | 2.2                                                            | 1.8    | 1.4    | 1.5    | 4.2    | 2.7    | 2.4    | 1.6    | 1.6    | 1.7    | 1.9    |
| 50: 100                        | f, l | %   | 1.5                                                            | 1.2    | 0.9    | 0.9    | 4.0    | 2.8    | 2.0    | 1.3    | 1.3    | 1.3    | 1.4    |
| 90: 50                         | f, l | %   | 2.5                                                            | 2.1    | 1.8    | 1.8    | 4.4    | 2.9    | 2.5    | 1.7    | 1.8    | 1.8    | 2.1    |
| 90: 100                        | f, l | %   | 0.00                                                           | 0.00   | 0.00   | 0.00   | 0.20   | 0.20   | 0.10   | 0.10   | 0.10   | 0.00   | 0.00   |
| Standby losses                 |      | %   | IE2                                                            | IE2    | IE2    | IE2    | IE2    | IE2    | IE2    | IE2    | IE2    | IE2    | IE2    |
| Efficiency level               |      |     | Lenze Americas • 630 Douglas Street • Uxbridge, MA 01569 • USA |        |        |        |        |        |        |        |        |        |        |
| Manufacturer                   |      |     |                                                                |        |        |        |        |        |        |        |        |        |        |
| Commercial registration number |      |     |                                                                |        |        |        |        |        |        |        |        |        |        |
| Product's model identifier     |      |     | ESV552                                                         | ESV752 | ESV113 | ESV153 | ESV371 | ESV751 | ESV112 | ESV152 | ESV222 | ESV402 | ESV552 |
|                                |      |     | N021XB                                                         | N021XB | N021XB | N021XB | N041XB | N041XB | N041XB | N041XB | N041XB | N041XB | N041XB |
| Apparent output power          |      | kVA | 10.808                                                         | 13.718 | 19.953 | 24.526 | 1.178  | 2.009  | 2.91   | 3.256  | 4.226  | 7.344  | 9.838  |
| Indicative motor rated power   |      | kW  | 5.5                                                            | 7.5    | 11     | 15     | 0.37   | 0.75   | 1.1    | 1.5    | 2.2    | 4      | 5.5    |
| Rated output current           |      | A   | 23.0                                                           | 29.0   | 42.0   | 54.0   | 1.3    | 2.4    | 3.5    | 4.0    | 5.5    | 9.4    | 12.6   |
| Maximum operating temperature  |      | °C  | 40                                                             |        |        |        |        |        |        |        |        |        |        |
| Rated supply frequency         |      | Hz  | 50                                                             |        |        |        |        |        |        |        |        |        |        |
| Rated supply voltage           |      | V   | 230                                                            |        |        |        |        |        |        |        |        |        |        |
| Switching frequency            |      | kHz | 6                                                              |        |        |        |        |        |        |        |        |        |        |
| Rated apparent output power    |      | kVA | 9.95                                                           | 14.4   | 19.5   | 23.9   | 0.977  | 1.71   | 2.29   | 3.3    | 4.44   | 7.38   | 9.95   |

|                                |      |     |                                                                |        |        |        |        |        |        |        |        |        |        |
|--------------------------------|------|-----|----------------------------------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Power losses                   | f, l | %   | 0.8                                                            | 0.7    | 0.7    | 0.7    | 0.6    | 0.6    | 0.5    | 0.5    | 2.1    | 1.0    | 0.8    |
| 0: 25                          | f, l | %   | 1.0                                                            | 0.9    | 0.9    | 0.9    | 0.7    | 0.8    | 0.8    | 0.7    | 2.2    | 1.1    | 0.9    |
| 0: 50                          | f, l | %   | 1.4                                                            | 1.4    | 1.4    | 1.5    | 1.2    | 1.4    | 1.3    | 1.2    | 2.4    | 1.3    | 1.1    |
| 0: 100                         | f, l | %   | 0.8                                                            | 0.8    | 0.7    | 0.7    | 0.6    | 0.7    | 0.7    | 0.6    | 2.1    | 1.0    | 0.9    |
| 50: 25                         | f, l | %   | 1.0                                                            | 1.0    | 1.0    | 1.0    | 0.8    | 0.9    | 0.9    | 0.8    | 2.2    | 1.1    | 1.0    |
| 50: 50                         | f, l | %   | 1.6                                                            | 1.6    | 1.6    | 1.7    | 1.4    | 1.6    | 1.5    | 1.4    | 2.5    | 1.3    | 1.2    |
| 50: 100                        | f, l | %   | 1.1                                                            | 1.1    | 1.0    | 1.1    | 0.9    | 1.0    | 0.9    | 0.9    | 2.3    | 1.2    | 1.0    |
| 90: 50                         | f, l | %   | 1.9                                                            | 1.8    | 1.8    | 2.1    | 1.7    | 1.9    | 1.7    | 1.7    | 2.6    | 1.4    | 1.3    |
| 90: 100                        | f, l | %   | 0.00                                                           | 0.00   | 0.00   | 0.00   | 0.20   | 0.20   | 0.10   | 0.10   | 0.10   | 0.00   | 0.00   |
| Standby losses                 |      | %   | IE2                                                            | IE2    | IE2    | IE2    | IE2    | IE2    | IE2    | IE2    | IE2    | IE2    | IE2    |
| Efficiency level               |      |     | Lenze Americas • 630 Douglas Street • Uxbridge, MA 01569 • USA |        |        |        |        |        |        |        |        |        |        |
| Manufacturer                   |      |     |                                                                |        |        |        |        |        |        |        |        |        |        |
| Commercial registration number |      |     |                                                                |        |        |        |        |        |        |        |        |        |        |
| Product's model identifier     |      |     | ESV752                                                         | ESV113 | ESV153 | ESV183 | ESV223 | ESV303 | ESV737 | ESV453 | ESV751 | ESV152 | ESV222 |
|                                |      |     | N041XB                                                         | N041XB | N041XB | N041XB | N041XB | N041XB | N041XB | N061XB | N061XB | N061XB | N061XB |
| Apparent output power          |      | kVA | 12.54                                                          | 18.706 | 24.249 | 30.484 | 36.027 | 47.112 | 58.89  | 69.282 | 2.078  | 3.326  | 4.573  |
| Indicative motor rated power   |      | kW  | 7.5                                                            | 11     | 15     | 18.5   | 22     | 30     | 37     | 45     | 0.75   | 1.5    | 2.2    |
| Rated output current           |      | A   | 16.1                                                           | 24.0   | 31.0   | 39.0   | 46.0   | 60.0   | 75.0   | 88.0   | 1.7    | 2.7    | 3.9    |
| Maximum operating temperature  |      | °C  | 40                                                             |        |        |        |        |        |        |        |        |        |        |
| Rated supply frequency         |      | Hz  | 50                                                             |        |        |        |        |        |        |        |        |        |        |
| Rated supply voltage           |      | V   | 400                                                            |        |        |        |        |        |        |        |        |        |        |
| Switching frequency            |      | kHz | 6                                                              |        |        |        |        |        |        |        |        |        |        |
| Rated apparent output power    |      | kVA | 14.4                                                           | 19.5   | 23.9   | 28.3   | 38.2   | 47     | 56.2   | 68.4   | 1.71   | 3.3    | 4.44   |

|                                |      |     |                                                                |        |        |        |        |        |        |        |        |        |        |
|--------------------------------|------|-----|----------------------------------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Power losses                   | f, l | %   | 0.7                                                            | 0.8    | 0.8    | 0.6    | 0.6    | 0.5    | 0.5    | 0.5    | 0.4    | 0.4    | 0.4    |
| 0: 25                          | f, l | %   | 0.8                                                            | 0.9    | 0.9    | 0.8    | 0.7    | 0.6    | 0.6    | 0.6    | 0.6    | 0.6    | 0.6    |
| 0: 50                          | f, l | %   | 1.1                                                            | 1.2    | 1.2    | 1.1    | 1.1    | 1.1    | 0.9    | 1.0    | 1.0    | 0.9    | 0.9    |
| 0: 100                         | f, l | %   | 0.8                                                            | 0.8    | 0.8    | 0.7    | 0.7    | 0.6    | 0.5    | 0.5    | 0.5    | 0.5    | 0.5    |
| 50: 25                         | f, l | %   | 0.9                                                            | 0.9    | 0.9    | 0.8    | 0.8    | 0.6    | 0.7    | 0.7    | 0.7    | 0.6    | 0.6    |
| 50: 50                         | f, l | %   | 1.3                                                            | 1.3    | 1.3    | 1.2    | 1.2    | 1.2    | 1.0    | 1.1    | 1.1    | 1.0    | 1.0    |
| 50: 100                        | f, l | %   | 0.9                                                            | 1.0    | 1.0    | 0.8    | 0.8    | 0.8    | 0.7    | 0.7    | 0.7    | 0.7    | 0.7    |
| 90: 50                         | f, l | %   | 1.2                                                            | 1.4    | 1.4    | 1.4    | 1.3    | 1.4    | 1.2    | 1.3    | 1.2    | 1.2    | 1.2    |
| 90: 100                        | f, l | %   | 0.10                                                           | 0.10   | 0.10   | 0.10   | 0.10   | 0.10   | 0.10   | 0.10   | 0.10   | 0.10   | 0.10   |
| Standby losses                 |      | %   | IE2                                                            | IE2    | IE2    | IE2    | IE2    | IE2    | IE2    | IE2    | IE2    | IE2    | IE2    |
| Efficiency level               |      |     | Lenze Americas • 630 Douglas Street • Uxbridge, MA 01569 • USA |        |        |        |        |        |        |        |        |        |        |
| Manufacturer                   |      |     |                                                                |        |        |        |        |        |        |        |        |        |        |
| Commercial registration number |      |     |                                                                |        |        |        |        |        |        |        |        |        |        |
| Product's model identifier     |      |     | ESV402                                                         | ESV552 | ESV752 | ESV113 | ESV153 | ESV183 | ESV223 | ESV303 | ESV373 | ESV453 | ESV453 |
|                                |      |     | N061XB                                                         | N061XB | N061XB | N061XB | N061XB | N061XB | N061XB | N061XB | N061XB | N061XB | N061XB |
| Apparent output power          |      | kVA | 7.067                                                          | 10.6   | 12.886 | 20.473 | 25.981 | 32.216 | 37.412 | 48.844 | 61.315 | 73.785 | 73.785 |
| Indicative motor rated power   |      | kW  | 4                                                              | 5.5    | 7.5    | 11     | 15     | 18.5   | 22     | 30     | 37     | 45     | 45     |
| Rated output current           |      | A   | 6.1                                                            | 9.0    | 11.0   | 17.0   | 22.0   | 27.0   | 32.0   | 41.0   | 52.0   | 62.0   | 62.0   |
| Maximum operating temperature  |      | °C  | 40                                                             |        |        |        |        |        |        |        |        |        |        |
| Rated supply frequency         |      | Hz  | 50                                                             |        |        |        |        |        |        |        |        |        |        |
| Rated supply voltage           |      | V   | 600                                                            |        |        |        |        |        |        |        |        |        |        |
| Switching frequency            |      | kHz | 6                                                              |        |        |        |        |        |        |        |        |        |        |
| Rated apparent output power    |      | kVA | 7.38                                                           | 9.95   | 14.4   | 19.5   | 23.9   | 28.3   | 38.2   | 47     | 56.2   | 68.4   | 68.4   |

□ Placeholder for product variants

f = relative motor stator frequency; l = relative torque-producing current

The power losses at the operating points (f, l) and in the standby state refer to the rated apparent output power.

The power losses for options (e.g. for diagnostics) and for accessories (e.g. mains chokes)

can be found in the additional product documentation on the Internet.



## SMVector IP65 frequency inverter

Product information for documentation acc. to the EU directive

|                                     |     |   |                                                                |        |        |        |        |        |        |        |        |        |        |        |        |        |
|-------------------------------------|-----|---|----------------------------------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Power losses                        | f   | % | 2.4                                                            | 1.3    | 1.1    | 2.3    | 1.3    | 1.1    | 1.0    | 0.9    | 2.3    | 1.3    | 1.1    | 1.0    | 0.9    | 0.7    |
| 0: 25                               | f   | % | 2.5                                                            | 1.5    | 1.3    | 2.3    | 1.5    | 1.3    |        | 1.1    | 2.3    | 1.5    | 1.3    |        | 1.1    | 0.8    |
| 0: 50                               | f   | % | 2.7                                                            | 1.9    | 1.7    | 2.6    | 1.8    | 1.7    |        | 1.5    | 2.6    | 1.8    | 1.7    |        | 1.5    | 1.2    |
| 0: 100                              | f   | % | 2.5                                                            | 1.4    | 1.2    | 2.3    | 1.3    | 1.1    |        | 1.0    | 2.3    | 1.3    | 1.1    |        | 1.0    | 0.8    |
| 50: 25                              | f   | % | 2.5                                                            | 1.5    | 1.4    | 2.4    | 1.5    | 1.3    | 1.2    | 1.1    | 2.4    | 1.5    | 1.3    |        | 1.2    | 1.0    |
| 50: 50                              | f   | % | 2.8                                                            | 2.0    | 1.8    | 2.7    | 2.0    | 1.8    |        | 1.6    | 2.7    | 2.0    | 1.8    |        | 1.6    | 1.5    |
| 50: 100                             | f   | % | 2.5                                                            | 1.6    | 1.4    | 2.4    | 1.6    | 1.4    |        | 1.3    | 2.4    | 1.6    | 1.4    | 1.3    | 1.2    | 1.1    |
| 90: 25                              | f   | % | 2.8                                                            | 2.1    | 1.8    | 2.7    | 2.0    | 1.8    | 1.7    | 1.6    | 2.8    | 2.1    | 2.0    | 1.7    |        | 1.8    |
| 90: 50                              | f   | % | 0.40                                                           | 0.30   | 0.20   | 0.40   | 0.30   | 0.20   | 0.10   | 0.10   | 0.40   | 0.30   | 0.20   |        | 0.10   |        |
| 90: 100                             | f   | % |                                                                |        |        |        |        |        |        |        |        |        |        |        |        |        |
| Standby losses                      |     | % | IE2                                                            | IE2    | IE2    | IE2    | IE2    | IE2    | IE2    | IE2    | IE2    | IE2    | IE2    | IE2    | IE2    | IE2    |
| Efficiency level                    |     |   |                                                                |        |        |        |        |        |        |        |        |        |        |        |        |        |
| Manufacturer                        |     |   | Lenze Americas - 630 Douglas Street - Uxbridge, MA 01569 - USA |        |        |        |        |        |        |        |        |        |        |        |        |        |
| Commercial registration number      |     |   |                                                                |        |        |        |        |        |        |        |        |        |        |        |        |        |
| Product's model identifier          |     |   | ESV371                                                         | ESV751 | ESV112 | ESV371 | ESV751 | ESV112 | ESV371 | ESV751 | ESV112 | ESV371 | ESV751 | ESV112 | ESV371 | ESV751 |
| Apparent output power               | kVA |   | 1                                                              | 1.992  | 2.4    | 1.224  | 2.112  | 2.88   | 3.192  | 4.104  | 1.205  | 2.078  | 2.868  | 3.367  | 4.489  | 7.732  |
| Indicative motor rated power output | kW  |   | 0.37                                                           | 0.75   | 1.1    | 0.37   | 0.75   | 1.1    | 1.5    | 2.2    | 0.37   | 0.75   | 1.1    | 1.5    | 2.2    | 4      |
| Rated output current                | A   |   | 2.4                                                            | 4.2    | 6.0    | 2.4    | 4.2    | 6.0    | 7.0    | 9.6    | 2.4    | 4.2    | 6.0    | 7.0    | 9.6    | 16.5   |
| Maximum operating temperature       | °C  |   |                                                                |        |        |        |        |        |        | 40     |        |        |        |        |        |        |
| Rated supply frequency              | Hz  |   |                                                                |        |        |        |        |        |        | 50     |        |        |        |        |        |        |
| Rated supply voltage                | V   |   |                                                                | 120    |        |        |        |        |        | 230    |        |        |        |        |        |        |
| Switching frequency                 | kHz |   |                                                                |        |        |        |        |        |        | 4      |        |        |        |        |        |        |
| Rated apparent output power         | kVA |   | 0.977                                                          | 1.71   | 2.29   | 0.977  | 1.71   | 2.29   | 3.3    | 4.44   | 0.977  | 1.71   | 2.29   | 3.3    | 4.44   | 7.38   |

|                                     |     |   |                                                                |        |        |        |        |        |        |        |        |        |        |        |        |        |
|-------------------------------------|-----|---|----------------------------------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Power losses                        | f   | % | 0.5                                                            | 0.8    | 0.4    | 0.5    | 2.9    |        |        | 1.7    |        | 1.4    |        | 0.9    | 0.8    |        |
| 0: 25                               | f   | % | 0.6                                                            | 1.0    | 0.6    | 0.6    | 2.9    |        |        | 1.8    |        | 1.5    |        | 1.0    | 0.9    |        |
| 0: 50                               | f   | % | 1.1                                                            | 1.7    | 1.0    | 1.2    | 3.1    |        |        | 2.1    |        | 1.8    |        | 1.2    | 1.3    |        |
| 0: 100                              | f   | % | 0.5                                                            | 0.9    | 0.5    | 1.2    | 3.9    |        |        | 1.7    |        | 1.4    |        | 1.0    | 0.8    |        |
| 50: 25                              | f   | % | 0.7                                                            | 1.1    | 0.7    | 0.7    | 3.0    |        |        | 1.9    |        | 1.5    |        |        |        |        |
| 50: 50                              | f   | % | 1.3                                                            | 1.9    | 1.3    | 1.4    | 3.2    |        |        | 2.2    |        | 1.9    |        | 1.3    | 1.4    |        |
| 50: 100                             | f   | % | 0.8                                                            | 1.2    | 0.8    | 0.8    | 3.0    |        |        | 1.9    |        | 1.6    |        | 1.1    | 1.0    |        |
| 90: 25                              | f   | % | 1.6                                                            | 2.2    | 1.6    | 1.7    | 3.4    |        |        | 2.4    |        | 2.0    |        | 1.4    | 1.5    |        |
| 90: 50                              | f   | % |                                                                |        |        |        | 0.40   |        |        | 0.20   |        |        |        | 0.10   |        |        |
| 90: 100                             | f   | % |                                                                |        |        |        |        |        |        |        |        |        |        |        |        |        |
| Standby losses                      |     | % | IE2                                                            | IE2    | IE2    | IE2    | IE2    | IE2    | IE2    | IE2    | IE2    | IE2    | IE2    | IE2    | IE2    | IE2    |
| Efficiency level                    |     |   |                                                                |        |        |        |        |        |        |        |        |        |        |        |        |        |
| Manufacturer                        |     |   | Lenze Americas - 630 Douglas Street - Uxbridge, MA 01569 - USA |        |        |        |        |        |        |        |        |        |        |        |        |        |
| Commercial registration number      |     |   |                                                                |        |        |        |        |        |        |        |        |        |        |        |        |        |
| Product's model identifier          |     |   | ESV552                                                         | ESV752 | ESV113 | ESV153 | ESV371 | ESV371 | ESV751 | ESV751 | ESV112 | ESV112 | ESV112 | ESV152 | ESV152 | ESV222 |
| Apparent output power               | kVA |   | 10.808                                                         | 13.718 | 19.953 | 24.526 | N04Tcb | N04Tab | 2.009  | 2.009  | 2.91   | 2.91   | 2.91   | 3.256  | 3.256  | 4.226  |
| Indicative motor rated power output | kW  |   | 5.5                                                            | 7.5    | 11     | 15     | 0.37   | 0.37   | 0.75   | 0.75   | 1.1    | 1.1    | 1.1    | 1.5    | 1.5    | 2.2    |
| Rated output current                | A   |   | 23.0                                                           | 29.0   | 42.0   | 54.0   | 1.3    | 1.3    | 2.4    | 2.4    | 3.5    | 3.5    | 3.5    | 4.0    | 4.0    | 5.5    |
| Maximum operating temperature       | °C  |   |                                                                |        |        |        |        |        | 40     |        |        |        |        |        |        |        |
| Rated supply frequency              | Hz  |   |                                                                |        |        |        |        |        | 50     |        |        |        |        |        |        |        |
| Rated supply voltage                | V   |   |                                                                | 230    |        |        |        |        | 400    |        |        |        |        |        |        |        |
| Switching frequency                 | kHz |   |                                                                |        |        |        |        |        | 4      |        |        |        |        |        |        |        |
| Rated apparent output power         | kVA |   | 9.95                                                           | 14.4   | 19.5   | 23.9   | 0.977  | 0.977  | 1.71   | 1.71   | 2.29   | 2.29   | 2.29   | 3.3    | 3.3    | 4.44   |

|                                     |     |   |                                                                |        |        |        |        |        |        |        |        |        |        |        |        |        |
|-------------------------------------|-----|---|----------------------------------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Power losses                        | f   | % | 0.8                                                            | 0.7    |        | 0.8    |        |        |        | 0.6    |        |        |        | 0.5    |        | 0.5    |
| 0: 25                               | f   | % | 0.9                                                            | 0.8    |        | 0.9    |        |        |        |        |        |        |        | 0.6    |        | 0.5    |
| 0: 50                               | f   | % | 1.3                                                            | 1.1    |        | 1.3    |        |        |        | 1.1    |        |        | 0.7    | 1.2    |        |        |
| 0: 100                              | f   | % | 0.8                                                            | 0.7    |        | 0.8    |        |        |        |        |        |        | 0.6    |        |        |        |
| 50: 25                              | f   | % | 1.0                                                            | 0.9    |        | 1.0    |        |        |        |        |        |        | 0.8    |        |        |        |
| 50: 50                              | f   | % | 1.4                                                            | 1.2    |        | 1.4    |        |        | 1.3    | 1.4    |        | 1.3    |        | 1.4    |        | 1.5    |
| 50: 100                             | f   | % | 1.1                                                            | 0.9    |        | 1.0    |        |        | 1.3    | 1.4    |        | 1.3    |        | 1.4    |        | 1.5    |
| 90: 25                              | f   | % | 1.5                                                            | 1.4    |        | 1.5    |        |        | 1.6    | 1.5    |        | 1.6    |        | 1.6    |        | 1.9    |
| 90: 50                              | f   | % | 1.5                                                            | 1.4    | 0.10   | 1.5    |        |        | 1.7    | 1.6    |        | 1.6    |        | 1.6    |        | 1.9    |
| 90: 100                             | f   | % |                                                                |        |        |        |        |        | 1.6    | 1.5    |        | 1.6    |        | 1.6    |        | 1.9    |
| Standby losses                      |     | % | IE2                                                            | IE2    | IE2    | IE2    | IE2    | IE2    | IE2    | IE2    | IE2    | IE2    | IE2    | IE2    | IE2    | IE2    |
| Efficiency level                    |     |   |                                                                |        |        |        |        |        |        |        |        |        |        |        |        |        |
| Manufacturer                        |     |   | Lenze Americas - 630 Douglas Street - Uxbridge, MA 01569 - USA |        |        |        |        |        |        |        |        |        |        |        |        |        |
| Commercial registration number      |     |   |                                                                |        |        |        |        |        |        |        |        |        |        |        |        |        |
| Product's model identifier          |     |   | ESV222                                                         | ESV302 | ESV402 | ESV402 | ESV552 | ESV552 | ESV752 | ESV752 | ESV113 | ESV113 | ESV113 | ESV153 | ESV153 | ESV183 |
| Apparent output power               | kVA |   | 4.226                                                          | 5.82   | 7.344  | 7.344  | 9.838  | 9.838  | 12.54  | 12.54  | 18.706 | 18.706 | 18.706 | 24.249 | 24.249 | 30.484 |
| Indicative motor rated power output | kW  |   | 2.2                                                            | 3      | 4      | 4      | 5.5    | 5.5    | 7.5    | 7.5    | 11     | 11     | 11     | 15     | 15     | 18.5   |
| Rated output current                | A   |   | 5.5                                                            | 7.6    | 9.4    | 9.4    | 12.6   | 12.6   | 16.1   | 16.1   | 24.0   | 24.0   | 24.0   | 31.0   | 31.0   | 39.0   |
| Maximum operating temperature       | °C  |   |                                                                |        |        |        |        |        | 40     |        |        |        |        |        |        |        |
| Rated supply frequency              | Hz  |   |                                                                |        |        |        |        |        | 50     |        |        |        |        |        |        |        |
| Rated supply voltage                | V   |   |                                                                |        |        |        |        |        | 400    |        |        |        |        |        |        |        |
| Switching frequency                 | kHz |   |                                                                |        |        |        |        |        | 4      |        |        |        |        |        |        |        |
| Rated apparent output power         | kVA |   | 4.44                                                           | 5.85   | 7.38   | 7.38   | 9.95   | 9.95   | 14.4   | 14.4   | 19.5   | 19.5   | 19.5   | 23.9   | 23.9   | 28.3   |

|                                     |     |   |                                                                |        |        |        |        |        |        |        |        |        |        |        |        |        |
|-------------------------------------|-----|---|----------------------------------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Power losses                        | f   | % | 0.5                                                            |        | 1.5    |        | 0.8    |        | 0.7    | 0.6    |        |        | 0.5    |        | 0.4    |        |
| 0: 25                               | f   | % | 0.6                                                            |        | 1.6    |        | 0.9    |        | 0.7    | 0.6    |        |        | 0.6    |        | 0.5    |        |
| 0: 50                               | f   | % | 1.2                                                            |        | 1.8    |        | 1.1    |        | 0.9    | 0.9    |        |        | 0.8    |        | 0.7    |        |
| 0: 100                              | f   | % | 0.6                                                            |        | 1.5    |        | 0.8    |        | 0.9    | 0.9    |        |        | 0.6    |        | 0.5    |        |
| 50: 25                              | f   | % | 0.8                                                            |        | 1.6    |        | 0.9    |        | 1.0    | 1.0    |        |        | 0.8    |        | 0.7    |        |
| 50: 50                              | f   | % | 1.5                                                            |        | 1.8    |        | 1.1    |        | 1.2    | 1.2    |        |        | 1.0    |        | 0.9    |        |
| 50: 100                             | f   | % | 0.9                                                            |        | 1.6    |        | 0.9    |        | 1.0    | 1.0    |        |        | 0.9    |        | 0.8    |        |
| 90: 25                              | f   | % | 1.9                                                            |        | 1.9    |        | 1.2    |        | 1.3    | 1.0    |        | 1.2    | 1.1    |        | 1.2    | 1.0    |
| 90: 50                              | f   | % |                                                                |        |        |        |        |        |        |        |        |        |        |        |        |        |
| 90: 100                             | f   | % |                                                                |        |        |        |        |        |        |        |        |        |        |        |        |        |
| Standby losses                      |     | % | IE2                                                            | IE2    | IE2    | IE2    | IE2    | IE2    | IE2    | IE2    | IE2    | IE2    | IE2    | IE2    | IE2    | IE2    |
| Efficiency level                    |     |   |                                                                |        |        |        |        |        |        |        |        |        |        |        |        |        |
| Manufacturer                        |     |   | Lenze Americas - 630 Douglas Street - Uxbridge, MA 01569 - USA |        |        |        |        |        |        |        |        |        |        |        |        |        |
| Commercial registration number      |     |   |                                                                |        |        |        |        |        |        |        |        |        |        |        |        |        |
| Product's model identifier          |     |   | ESV183                                                         | ESV223 | ESV223 | ESV223 | ESV751 | ESV751 | ESV752 | ESV752 | ESV113 | ESV113 | ESV113 | ESV153 | ESV183 | ESV223 |
| Apparent output power               | kVA |   | 30.484                                                         | N04Tcb | N04Tcb | N04Tcb | N06Tcb | N06Tcb | N06Tcb | N06Tcb | N06Tcb | N06Tcb | N06Tcb | N06Tcb | N06Tcb | N06Tcb |
| Indicative motor rated power output | kW  |   | 18.5                                                           | 22     | 22     | 22     | 0.75   | 1.5    | 2.2    | 4      | 5.5    | 7.5    | 11     | 15     | 18.5   | 22     |
| Rated output current                | A   |   | 39.0                                                           | 46.0   | 46.0   | 46.0   | 1.7    | 2.7    | 3.9    | 6.1    | 9.0    | 11.0   | 17.0   | 22.0   | 27.0   | 32.0   |
| Maximum operating temperature       | °C  |   |                                                                |        |        |        |        |        |        | 40     |        |        |        |        |        |        |
| Rated supply frequency              | Hz  |   |                                                                |        |        |        |        |        |        | 50     |        |        |        |        |        |        |
| Rated supply voltage                | V   |   |                                                                | 400    |        |        |        |        |        | 600    |        |        |        |        |        |        |
| Switching frequency                 | kHz |   |                                                                |        |        |        |        |        |        | 4      |        |        |        |        |        |        |
| Rated apparent output power         | kVA |   | 28.3                                                           | 38.2   | 38.2   | 38.2   | 1.71   | 3.3    | 4.44   | 7.38   | 9.95   | 14.4   | 19.5   | 23.9   | 28.3   | 38.2   |

□ Placeholder for product variants

f = relative motor rated frequency; I = relative torque-producing current

The power losses at the operating points (f; I) and in the standby state refer to the rated apparent output power.

The power losses for options (e.g. for diagnostics) and for accessories (e.g. mains chokes)

can be found in the additional product documentation on the Internet.

Product's model identifier

a = F or L b = C or E

c = X or M d = D or F



