Edition 06/2026

OPERATING INSTRUCTIONS

SINAMICS

G120 / G120X / G130 / S120

Line reactors / output reactors / motor reactors

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SINAMICS G120/G120X/G130/S120 - line reactors/output reactors/motor reactors

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Legal information

Warning notice system

This manual contains notices you have to observe in order to ensure your personal safety, as well as to prevent damage to property. The notices referring to your personal safety are highlighted in the manual by a safety alert symbol, notices referring only to property damage have no safety alert symbol. These notices shown below are graded according to the degree of danger.

⚠**DANGER**
indicates that death or severe personal injury **will** result if proper precautions are not taken.

⚠**WARNING**
indicates that death or severe personal injury **may** result if proper precautions are not taken.

⚠**CAUTION**
indicates that minor personal injury can result if proper precautions are not taken.

NOTICE
indicates that property damage can result if proper precautions are not taken.

If more than one degree of danger is present, the warning notice representing the highest degree of danger will be used. A notice warning of injury to persons with a safety alert symbol may also include a warning relating to property damage.

Qualified Personnel

The product/system described in this documentation may be operated only by **personnel qualified** for the specific task in accordance with the relevant documentation, in particular its warning notices and safety instructions. Qualified persons are those who, because of their training and experience, are familiar with the installation, assembly, commissioning, operation, decommissioning and disassembly of the product and can recognize risks and avoid possible hazards.

Proper use of Siemens products

Note the following:

⚠**WARNING**
Siemens products may only be used for the application described in the catalog and the associated usage information. If products and components from other manufacturers are used, these must be recommended or approved by Siemens. Proper transport, storage, installation, assembly, commissioning, operation and maintenance are required to ensure that the products operate safely and without any problems. The permissible ambient conditions must be complied with. The information in the relevant documentation must be observed.

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Disclaimer of Liability

We have reviewed the contents of this publication to ensure consistency with the hardware and software described. Since variance cannot be precluded entirely, we cannot guarantee full consistency. However, the information in this publication is reviewed regularly and any necessary corrections are included in subsequent editions.

Siemens Aktiengesellschaft
Digital Industries
Postfach 48 48
90026 NÜRNBERG
GERMANY

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Safety information

1

1.1 General safety instructions



⚠ WARNING

Electric shock and danger to life due to other energy sources

Touching live components can result in death or serious injury.

- Only work on electrical equipment if you are appropriately qualified.
- Always observe the country-specific safety rules for all work.

Generally, the following steps apply when establishing safety:

1. Prepare for disconnection. Notify all those who will be affected by the procedure.
2. Isolate the drive system from the power supply and take measures to prevent it being switched back on again.
3. Wait until the discharge time specified on the warning labels has elapsed.
4. Check that there is no voltage between any of the power connections, and between any of the power connections and the protective conductor connection.
5. Check that every auxiliary circuit is de-energized.
6. Ensure that the motors cannot move.
7. Identify all other dangerous energy sources, e.g. compressed air, hydraulic systems or water. Switch the energy sources to a safe state.
8. Check that the correct drive system is completely locked.

After you have completed the work, restore the operational readiness by following the above steps in the reverse order.



⚠ WARNING

Risk of electric shock and fire from supply systems with an excessively high impedance

Excessively low short-circuit currents can lead to the protective devices not tripping or tripping too late, and thus causing electric shock or a fire.

- In the case of a conductor-conductor or conductor-ground short-circuit, ensure that the short-circuit current at the line connection point of the converter at least meets the minimum requirements for the response of the protective device used.



⚠WARNING

Risk of electric shock and fire from supply systems with an excessively low impedance

Excessively high short-circuit currents can lead to the protective devices not being able to interrupt these short-circuit currents and being destroyed, and thus causing electric shock or a fire.

- Ensure that the prospective short-circuit current at the line connection point of the converter does not exceed the breaking capacity (SCCR or Icc) of the protective device used.



⚠WARNING

Electric shock if there is no ground connection

For missing or incorrectly implemented protective conductor connection for devices with protection class I, high voltages can be present at open, exposed parts, which when touched, can result in death or severe injury.

- Ground the device in compliance with the applicable regulations.



⚠WARNING

Electric shock due to connection to an unsuitable power supply

When equipment is connected to an unsuitable power supply, exposed components may carry a hazardous voltage that might result in serious injury or death.

- Only use power supplies that provide SELV (safety extra-low voltage) or PELV (protective extra low voltage) output voltages for all connections and terminals of the electronics modules.



⚠WARNING

Electric shock due to equipment damage

Improper handling may cause damage to equipment. For damaged devices, hazardous voltages can be present at the enclosure or at exposed components; if touched, this can result in death or severe injury.

- Ensure compliance with the limit values specified in the technical data during transport, storage and operation.
- Do not use any damaged devices.



⚠WARNING

Electric shock due to unconnected cable shield

Hazardous touch voltages can occur through capacitive cross-coupling due to unconnected cable shields.

- Connect cable shields and unused cores of power cables (e.g. brake cores) at least on one end at the grounded enclosure potential.



⚠WARNING

Arcing when a plug-in connection is opened during operation

Opening a plug-in connection when a system is in operation can result in arcing that may cause serious injury or death.

- Only open plug-in connections when the equipment is in a voltage-free state, unless it has been explicitly stated that they can be opened in operation.



⚠WARNING

Electric shock due to residual charges in power components

Because of the capacitors, a hazardous voltage is present for up to 5 minutes after the power supply has been switched off. Contact with live parts can result in death or serious injury.

- Wait for 5 minutes before you check that the unit really is in a no-voltage condition and start work.

NOTICE

Damage to equipment due to unsuitable tightening tools.

Unsuitable tightening tools or fastening methods can damage the screws of the equipment.

- Be sure to only use screwdrivers which exactly match the heads of the screws.
- Tighten the screws with the torque specified in the technical documentation.
- Use a torque wrench or a mechanical precision nut runner with a dynamic torque sensor and speed limiting.
- Calibrate the tools used on a regular basis.

NOTICE

Property damage due to loose power connections

Insufficient tightening torques or vibration can result in loose power connections. This can result in damage due to fire, device defects or malfunctions.

- Tighten all power connections to the specified torque.
- Check all power connections at regular intervals, particularly after equipment has been transported.

⚠WARNING

Electromagnetic interference due to inadequate shield support

A lack of adequate shield support for the power cables can cause malfunctions and impermissibly high levels of interference.

- Use the shield connection plates supplied or recommended.
- Use the shield connection clamps recommended.

⚠WARNING

Spread of fire from built-in devices

Built-in devices can cause a fire and a pressure wave in the event of a fault. The higher the power rating of a converter, the more dangerous the effects of an arc or pressure wave. Fire and smoke can escape from the control cabinet and cause serious personal injury and material damage.

- Install built-in appliances in a robust metal control cabinet that is suitable for protecting people from fire and smoke.
- Ensure that smoke can only escape via controlled and monitored paths.
- Only operate built-in devices with the control cabinet doors closed.
- When control cabinet doors are open, only qualified electrical personnel are allowed to carry out service and maintenance work.

⚠WARNING

Active implant malfunctions due to electromagnetic fields

Converters generate electromagnetic fields (EMF) during operation. Electromagnetic fields may interfere with active implants, e.g. pacemakers. People with active implants in the immediate vicinity of systems are at risk.

- As the operator of an EMF-emitting installation, assess the individual risks of persons with active implants.
- Observe the data on EMF emission provided in the product documentation.

⚠CAUTION

Symptomatic reactions of the respiratory tract and the skin to chemicals

A newly purchased product may contain traces of substances that were identified as sensitizers.

Sensitizers are substances that can cause pulmonary and skin sensitization after exposure.

Once sensitized, further exposure can result in severe reactions, even at low levels. In the most extreme cases, those involved can develop asthma and/or dermatitis.

- If the product has a strong smell associated with it, keep it in a well ventilated room for 14 days.

⚠WARNING

Unexpected movement of machines caused by radio devices or mobile phones

Using radio devices, cellphones, or mobile WLAN devices in the immediate vicinity of the components can result in equipment malfunction or faults and damage to the devices. Malfunctions may impair the functional safety of machines and can therefore put people in danger or lead to property damage.

- Avoid operating radio devices, cellphones and mobile WLAN devices in the direct vicinity of converters and operating units.
- Scan the machine readable code, e.g. a QR code, from the farthest distance possible or switch off the converter power supply before scanning.
- Only operate built-in devices with the control cabinet doors closed.
- When control cabinet doors are open, only qualified electrical personnel are allowed to carry out service and maintenance work.

⚠WARNING

Damage to motor insulation due to excessive voltages

When operated on line supplies with grounded line conductor or in the event of a ground fault in the IT supply system, the motor insulation can be damaged by the higher voltage to ground. If you use motors that have insulation that is not designed for operation with grounded line conductors, you must perform the following measures:

- IT supply system: Use a ground fault monitor and eliminate the fault as quickly as possible.
- TN or TT systems with grounded line conductor: Use an isolating transformer on the line side.

⚠WARNING

Fire due to inadequate ventilation clearances

Inadequate ventilation clearances can cause overheating of components with subsequent fire and smoke. This can cause severe injury or even death. This can also result in increased downtime and reduced service lives for devices/systems.

- Ensure compliance with the specified minimum clearance as ventilation clearance for the respective component.

⚠WARNING

Unrecognized dangers due to missing or illegible warning labels

Dangers might not be recognized if warning labels are missing or illegible. Unrecognized dangers may cause accidents resulting in serious injury or death.

- Check that the warning labels are complete based on the documentation.
- Attach any missing warning labels to the components, where necessary in the national language.
- Replace illegible warning labels.

NOTICE

Device damage caused by incorrect insulation resistance tests

High test voltages can damage the device.

- Measure the insulation resistance of low voltage circuits of machines or systems only with ≤ 500 V DC.
- Measure the insulation resistance of SELV circuits of machines or systems only with ≤ 250 V DC.

NOTICE

Device damage caused by incorrect voltage tests

High test voltages can damage the device. Capacitive leakage currents can falsify the test results.

- Disconnect the components before you carry out a voltage test on the machine. [1)]

[1)] The components are voltage tested in accordance with the IEC 61800-5-1 product standard and must be disconnected during testing in accordance with IEC 60204-1:2021 Section 18.4.

⚠ CAUTION

Injuries at places that are difficult to access

There is risk of injury when working at locations that are difficult to access. For example, sharp edges and splinters can cause injuries to the head and skin.

- Use suitable personal protective equipment, for example gloves.

⚠ CAUTION

Hot component surfaces

Certain components (e.g. the heat sink and reactor) can become very hot during operation. These components can remain hot for a long time after operation. Contact can result in serious injury, such as skin burns.

- Do not touch hot components, even after you have switched off the device.

⚠WARNING

Unexpected movement of machines caused by inactive safety functions

Inactive or non-adapted safety functions can trigger unexpected machine movements that may result in serious injury or death.

- Observe the information in the appropriate product documentation before commissioning.
- For safety-relevant functions, carry out a safety assessment of the entire system, including all safety-relevant components.
- Using the appropriate parameterization, ensure that the utilized safety functions are adapted to your drives and automation tasks and are activated.
- Perform a function test.
- Only put your plant into productive operation once you have absolutely guaranteed that the functions relevant to safety are operating correctly.

Note

Important safety instructions for Safety Integrated functions

If you want to use Safety Integrated functions, you must observe the safety instructions in the Safety Integrated documentation.

1.2 Handling electrostatic sensitive devices (ESD)

Electrostatic sensitive devices (ESD) are individual components, integrated circuits, modules or devices that may be damaged by either electric fields or electrostatic discharge.



NOTICE

Equipment damage due to electric fields or electrostatic discharge

Electric fields or electrostatic discharge can cause malfunctions through damaged individual components, integrated circuits, modules or devices.

- Only pack, store, transport and send electronic components, modules or devices in their original packaging or in other suitable materials, e.g. conductive foam rubber or aluminum foil.
- Only touch components, modules and devices when you are grounded by one of the following methods:
  - Wearing an ESD wrist strap
  - Wearing ESD shoes or ESD grounding straps in ESD areas with conductive flooring
- Only place electronic components, modules or devices on conductive surfaces (table with ESD surface, conductive ESD foam, ESD packaging, ESD transport container).

The necessary ESD protective measures are clearly illustrated in the following diagram:

- a = conductive floor surface
- b = ESD table
- c = ESD shoes
- d = ESD overall
- e = ESD wristband
- f = cabinet ground connection
- g = contact with conductive flooring

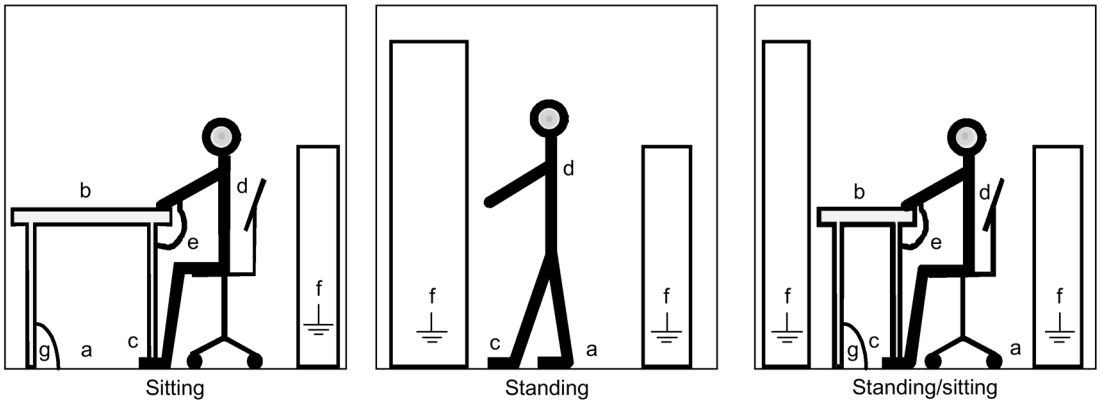


Figure 1-1 ESD protective measures

1.3 Warranty and liability for application examples

The application examples are not binding and do not claim to be complete regarding configuration, equipment or any eventuality which may arise. Application examples are not customer-specific solutions, but merely provide assistance with typical tasks.

As user, you are responsible for ensuring that the products described are operated correctly. Application examples do not relieve you of your responsibility for safe handling when using, installing, operating and maintaining the equipment.

1.4 Industrial cybersecurity

Siemens provides products and solutions with Industrial Security functions that support the secure operation of plants, systems, machines and networks.

In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art Industrial Security concept. Siemens products and solutions form part of such a concept.

Customers are responsible for preventing unauthorized access to their plants, systems, machines and networks. These systems, machines and components should only be connected to an enterprise network or the Internet if and to the extent such a connection is necessary and only when appropriate security measures (e.g. firewalls and/or network segmentation) are in place.

For additional information on industrial cybersecurity protective measures that can be implemented, please visit:
https://www.siemens.com/cybersecurity-industry (https://www.siemens.com/cybersecurity-industry).

Siemens' products and solutions undergo continuous development to make them more secure. Siemens expressly recommends that product updates be applied as soon as they become available, and that only the latest product versions be used. Use of product versions that are no longer supported, and failure to apply latest updates may increase customer's exposure to cyber threats.

To stay informed about product updates, subscribe to the Siemens industrial cybersecurity RSS feed at:
https://www.siemens.com/cert (https://www.siemens.com/cert).

Additional information is provided on the Internet:
Industrial security Configuration Manual
(https://support.industry.siemens.com/cs/ww/en/view/108862708)

⚠WARNING

Unsafe operating states resulting from software manipulation

Software manipulations, e.g. viruses, Trojans, or worms, can cause unsafe operating states in your system that may lead to death, serious injury, and property damage.

- Keep the software up to date.
- Incorporate the automation and drive components into a state-of-the-art, integrated industrial cybersecurity concept for the installation or machine.
- Make sure that you include all installed products in the integrated industrial cybersecurity concept.
- Protect files stored on exchangeable storage media from malicious software by applying suitable protective measures, e.g. virus scanners.
- Carefully check all cybersecurity-relevant settings once commissioning has been completed.

1.5 Residual risks of power drive systems

When assessing the machine or system-related risk in accordance with the respective local regulations (e.g. EC Machinery Directive), the machine manufacturer or system installer must take into account the following residual risks emanating from the control and drive components of a drive system:

1. Unintentional movements of the driven machine or system components during commissioning, operation, maintenance and repairs caused by, for example:
   - Hardware faults and/or software errors in the sensor technology, control system, actuator technology, and connection system
   - Response times of the controller and drive
   - Operation and/or environmental conditions outside the specifications
   - Condensation/conductive pollution
   - Parameterization, programming, cabling, and installation errors
   - Use of wireless devices/mobile phones in the immediate vicinity of electronic components
   - External influences/damage
   - X-rays, ionizing radiation and cosmic radiation
2. Unusually high temperatures, including open flames, as well as the emission of light, noise, particles, gases, etc., can occur inside and outside the components under fault conditions caused by, for example:
   - Component malfunctions
   - Software errors
   - Operation and/or environmental conditions outside the specifications
   - External influences/damage
   - Short circuits or ground faults in the DC link of the converter
3. Hazardous shock voltages caused by, for example:
   - Component malfunctions
   - Influence of electrostatic charging
   - Induction of voltages in moving motors
   - Operation and/or environmental conditions outside the specifications
   - Condensation/conductive pollution
   - External influences/damage
4. Electrical, magnetic and electromagnetic fields generated in operation that can pose a risk to people with a pacemaker, implants or metal replacement joints, etc., if they are too close
5. Release of environmental pollutants or emissions as a result of improper operation of the system and/or failure to dispose of components safely and correctly

6. Influence on communication systems via the line supply, e.g. ripple-control transmitters or data communication via the line supply
7. Motors for use in potentially explosive areas:

   When moving, components such as bearings are subject to wear, this can cause enclosure components to exhibit unexpectedly high temperatures during operation, creating a hazard in areas with a potentially explosive atmosphere.

For more information about residual risks of the components in a drive system, see the relevant sections in the technical user documentation.

SINAMICS G120

2

2.1 Output reactors for SINAMICS G120

2.1.1 Description

Description

Output reactors reduce the voltage load on the motor windings by reducing the rate of voltage rises that occur at the motor terminals during converter operation. At the same time, the capacitive charge/discharge currents that occur at the converter output when long motor cables are used are reduced.

The maximum output frequency when an output reactor is used is 150 Hz.

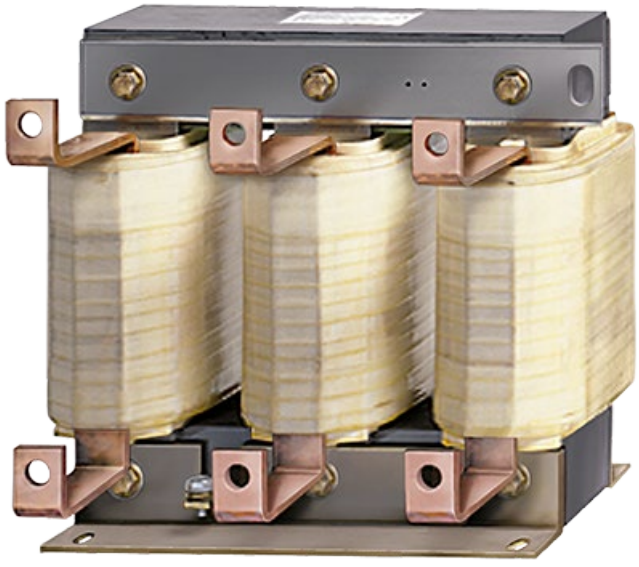


Figure 2-1 Output reactor

Assignment of output reactor and Power Module

Table 2- 1 Assignment of output reactor and Power Module

Power Module	Rated power of the Power Module	suitable output reactor
6SL3210-1PE32-1.L0	110 kW	**6SL3000-2BE32-1AT0**
6SL3210-1PE32-5.L0	132 kW	**6SL3000-2BE32-6AT0**
6SL3210-1PE33-0.L0	160 kW	**6SL3000-2BE33-2AT0**
6SL3210-1PE33-7.L0	200 kW	**6SL3000-2BE33-8AT0**
6SL3210-1PE34-8.L0	250 kW	**6SL3000-2BE35-0AT0**

2.1.2 Safety instructions

⚠ WARNING

Fire due to overheating due to insufficient ventilation clearances

Insufficient ventilation clearances can result in overheating with danger to persons as a result of smoke and fire. Furthermore, an increased number of failures and shorter service life of the components can occur.

- Maintain 100 mm ventilation clearances above and to the side of the component.



⚠ CAUTION

Burns resulting from high surface temperature

The surface temperature of the output reactors can exceed 80 °C. You can be severely burnt when touching the surface.

- Mount the output reactors so that they cannot be touched. If this is not possible, attach a clearly visible and understandable warning notice at hazardous positions.

NOTICE

Damage to the Power Module by using components that have not been released

When using components that have not been released, damage or malfunctions can occur at the devices or the system itself.

- Only use output reactors that SIEMENS has approved for operation with SINAMICS.

NOTICE

Damage to the output reactor if the maximum output frequency is exceeded

The maximum permissible output frequency when an output reactor is used is 150 Hz. The output reactor can be damaged if the output frequency is exceeded.

- Operate the output reactor with a maximum output frequency of 150 Hz.

NOTICE

Damage to the output reactor if the maximum pulse frequency is exceeded

The maximum permissible pulse frequency when output reactor are used is 4 kHz. The output reactors can be damaged if the pulse frequency is exceeded.

- When using the output reactor, operate the Power Module with a maximum pulse frequency of 4 kHz.

NOTICE

Damage to the output reactor if it is not activated during commissioning

The output reactor may be damaged if it is not activated during commissioning.

- Activate the output reactor during commissioning via parameter p0230 = 1.

Note

Cable lengths

Keep the connecting cables to the Power Module as short as possible (max. 5 m).

2.1.3 Dimension drawing

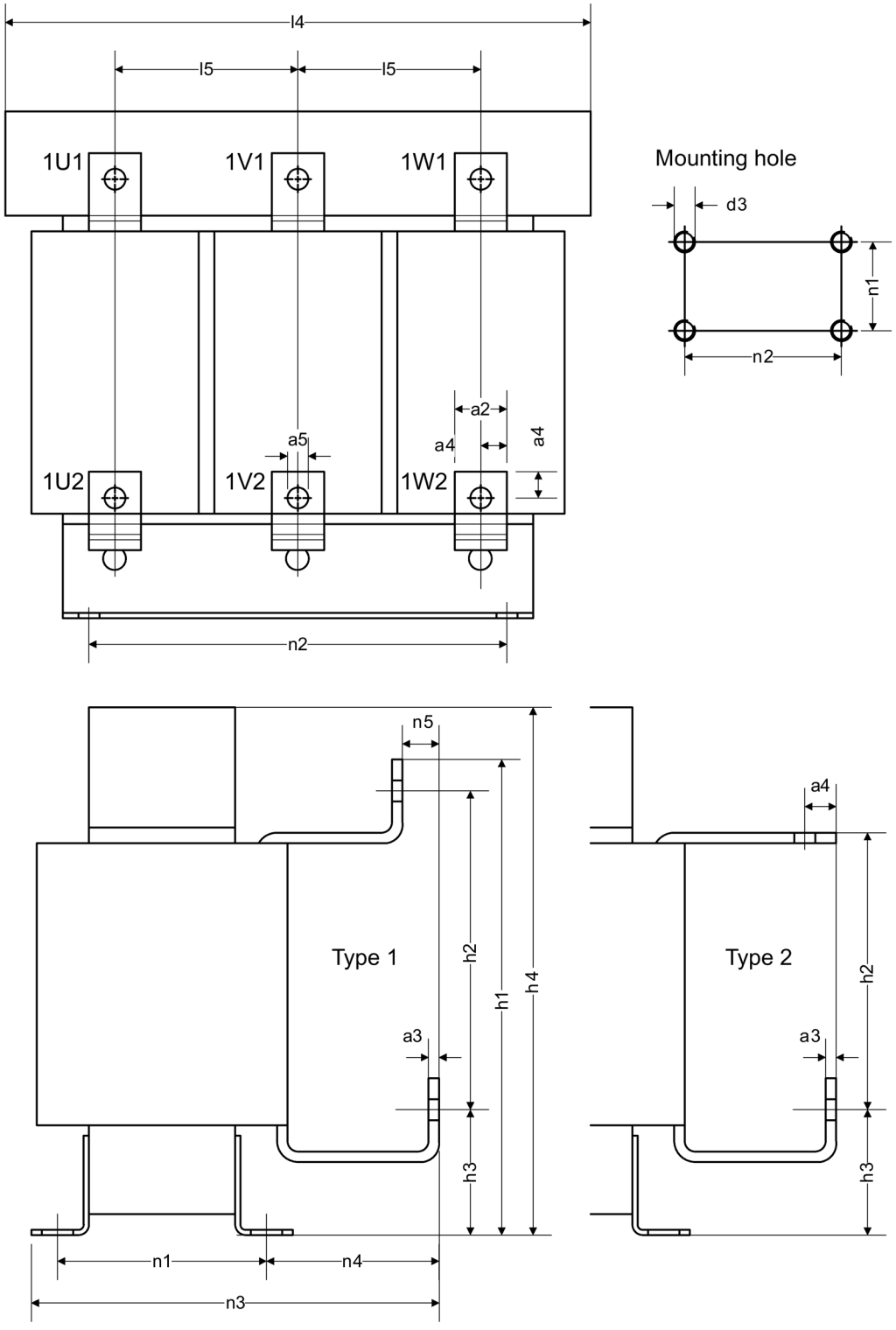


Figure 2-2 Dimension drawing, output reactor

Table 2- 2 Dimensions of output reactors, 3 AC 380 V ... 480 V, Part 1 (all specifications in mm)

6SL3000-	**2BE32-1AT0**	**2BE32-6AT0**	**2BE33-2AT0**	**2BE33-8AT0**	**2BE35-0AT0**
Connection type	Type 1	Type 1	Type 1	Type 1	Type 2
a2	25	25	25	25	30
a3	5	5	5	5	6
a4	12.5	12.5	12.5	12.5	15
a5	11	11	11	11	14
l4	300	300	300	300	300
l5	100	100	100	100	100
h1	-	-	-	-	-
h2	194	227	194	194	245
h3	60	60	60	60	60
h4	269.5	310	269	283.5	355
n1 [1)]	165	183	163	183	183
n2 [1)]	224	224	224	224	224
n3	257	276	257	277	277
n4	78	77.5	78	78	79
d3	M8	M8	M8	M8	M8

[1)] Lengths n1 and n2 correspond to the distance between holes

2.1.4 Electrical connection

Connection

When connecting the output reactor, you must take into account the following conditions to ensure that it functions correctly:

- With analog control cables, connecting the shield at both ends can result in coupled-in noise. To prevent this, the shield must only be connected at one end on the Power Module.
- Control cables must be routed separately from power cables. Power cables are motor cables or connecting cables from the DC link of the Power Module (terminals DCP/DCN) to other components (e.g. Braking Module). In particular, you must ensure that control cables and power cables are not routed in parallel in a joint cable raceway, even if all the cables are shielded.
- You must use shielded motor cables. The shield for the motor cable must be attached to the shield plate and motor housing.
- The ground wire for the motor must be fed directly back to the Power Module.

Connection overview

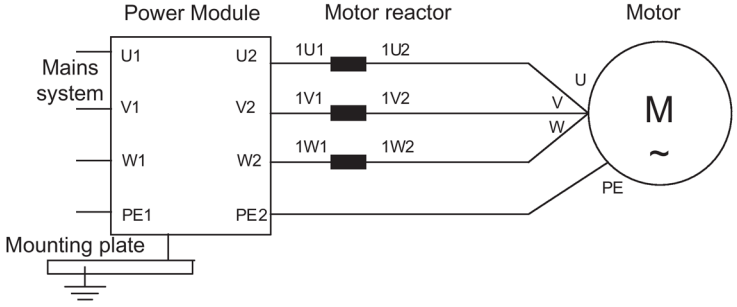


Figure 2-3 Connecting the output reactor and Power Module

2.1.5 Technical data

Table 2- 3 Technical specifications of output reactors, 380 V – 480 V 3 AC, part 1

Article number	6SL3000-	2BE32-1AT0	2BE32-6AT0	2BE33-2AT0	2BE33-8AT0
Suitable for Power Module	6SL3210-	1PE32-1.L0	1PE32-5.L0	1PE33-0.L0	1PE33-7.L0
Rated power of the Power Module	kW	110	132	160	200
Rated current	A	210	260	310	380
Inductance	µH	53	40	24	21
Connections - To the Power Module (1U1, 1V1, 1W1) - Load (1U2, 1V2, 1W2)		M10 connecting lugs	M10 connecting lugs	M10 connecting lugs	M10 connecting lugs
PE connection		M6	M6	M6	M8
Max. permissible cable length between output reactor and motor	m	300 (shielded) 450 (unshielded)			
Max. permissible cable length between output reactor and motor with two output reactors in series	m	525 (shielded) 800 (unshielded)			
Degree of protection		IP00	IP00	IP00	IP00
Dimensions Width Height Depth	 mm mm mm	 300 269.5 257	 300 310 276	 300 269 257	 300 283.5 277
Weight	kg	53	71	55	67

Table 2- 4 Technical specifications of output reactors, 380 V – 480 V 3 AC, part 2

Article number	6SL3000-	2BE35-0AT0			
Suitable for Power Module	6SL3210-	1PE34-8.L0			
Rated power of the Power Module	kW	250			
Rated current	A	490			
Inductance	µH	19			
Connections - To the Power Module (1U1, 1V1, 1W1) - Load (1U2, 1V2, 1W2)		M12 connecting lugs			
PE connection		M6			
Max. permissible cable length between output reactor and motor	m	300 (shielded) 450 (unshielded)			
Max. permissible cable length between output reactor and motor with two output reactors in series	m	525 (shielded) 800 (unshielded)			
Degree of protection		IP00			
Dimensions Width Height Depth	 mm mm mm	 300 355 277			
Weight	kg	78			

SINAMICS G120X

3

3.1 Line reactors for SINAMICS G120X

3.1.1 Description

Description

Line reactors limit low-frequency line-side harmonics to permissible values.

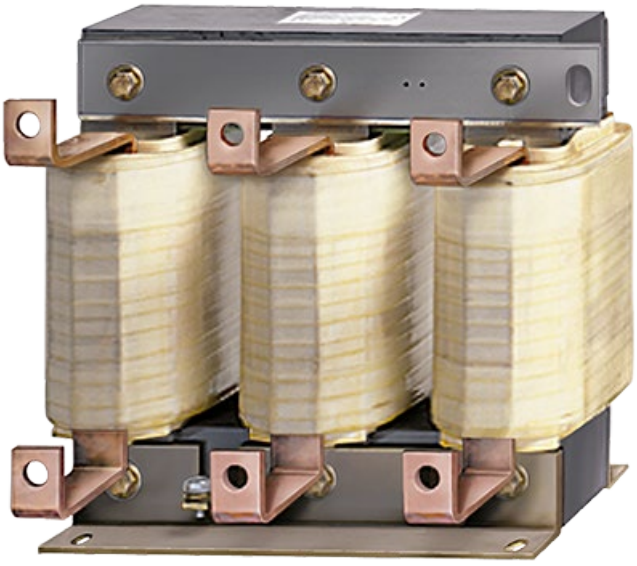


Figure 3-1 Line reactor

Assignment of line reactor and Power Module

Table 3- 1 Assignment of line reactor and Power Module

Power Module	Rated power of the Power Module	Suitable line reactor
Line voltage 3 AC 380 – 480 V		
6SL3220-xYE56-xCx0	315 kW	**6SL3000-0CE36-3AT0**
6SL3220-xYE58-xCx0 6SL3220-xYE60-xCx0	355 kW 400 kW	**6SL3000-0CE37-7AT0**
6SL3220-xYE62-xCx0	450 kW	**6SL3000-0CE38-7AT0**
6SL3220-xYE64-xCx0 6SL3220-xYE66-xCx0	500 kW 560 kW	**6SL3000-0CE41-0AT0**
Line voltage 500 – 690 V 3 AC		
6SL3220-xYH56-xCx0 6SL3220-xYH58-xCx0 6SL3220-xYH60-xCx0	315 kW 355 kW 400 kW	**6SL3000-0CH34-8AT0**
6SL3220-xYH62-xCx0 6SL3220-xYH64-xCx0	450 kW 500 kW	**6SL3000-0CH36-0AT0**
6SL3220-xYH66-xCx0 6SL3220-xYH68-xCx0	560 kW 630 kW	**6SL3000-0CH38-4AT0**

3.1.2 Safety instructions

⚠ WARNING

Fire due to overheating due to insufficient ventilation clearances

Insufficient ventilation clearances can result in overheating with danger to persons as a result of smoke and fire. Furthermore, an increased number of failures and shorter service life of the components can occur.

- Maintain 100 mm ventilation clearances above and to the side of the component.



⚠ CAUTION

Burns resulting from high surface temperature

The surface temperature of the line reactors can exceed 80 °C. You can be severely burnt when touching the surface.

- Mount the line reactors so that contact is not possible. If this is not possible, attach clearly visible and understandable warning notices at hazardous positions.

NOTICE

Damage to the Power Module by using components that have not been released

When using components that have not been released, damage or malfunctions can occur at the devices or the system itself.

- Only use line reactors that SIEMENS has released for SINAMICS.

Note

Malfunctions through magnetic fields

Reactors produce magnetic fields that can disturb or damage components and cables.

- Arrange the components and cables at a suitable distance (at least 200 mm) or shield the magnetic fields appropriately.

Note

Length of connection cables

The connection cables between line reactor and Power Module, as well as between line reactor and line filter, must be kept as short as possible (max. 5 m).

You must use shielded connection cables, whose cable shields are attached at both ends.

Shielding can only be omitted if the following conditions are met:

- The cables do not exceed 1 m in length.
- The cables are laid flush with the rear metal wall of the control cabinet.
- The cables are laid in a way that keeps them physically separate from signal cables.

Do not route any cables near the line reactor. If this cannot be avoided, observe a minimum distance of 200 mm.

3.1.3 Dimension drawing

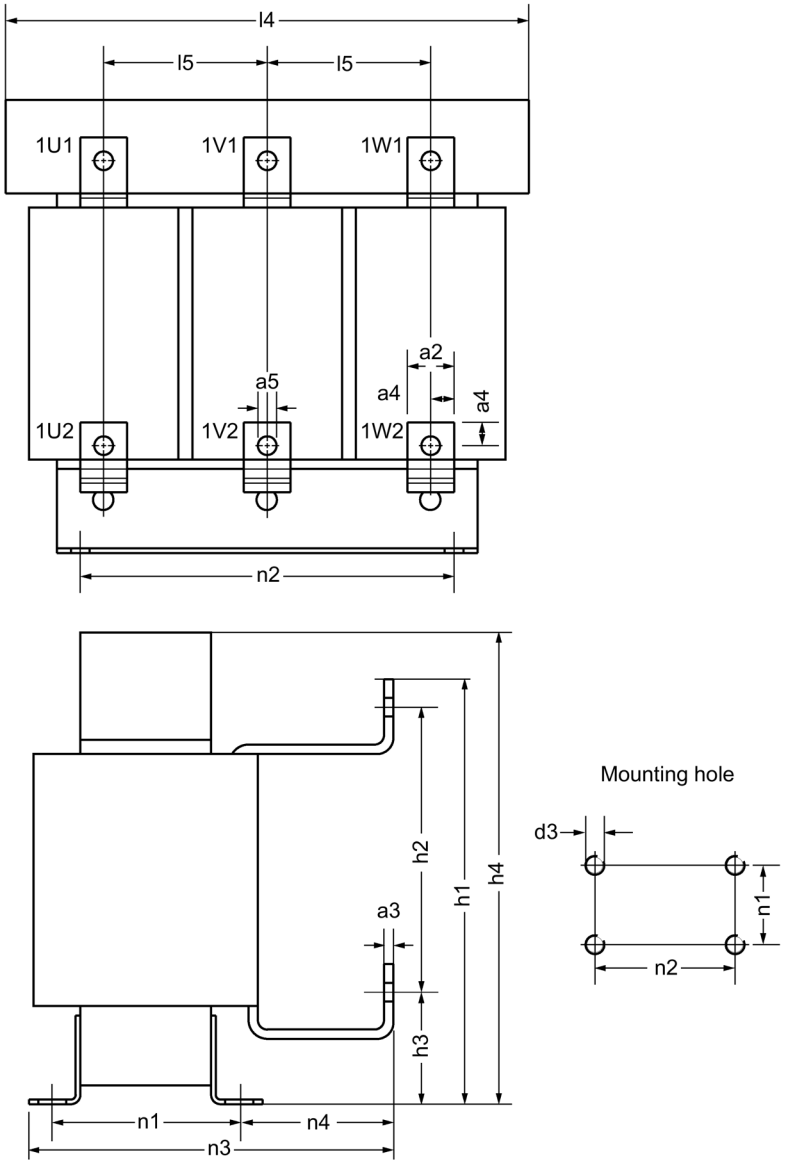


Figure 3-2 Dimension drawing of line reactor

Table 3- 2 Dimensions of line reactor, 380 V – 480 V 3 AC (all values in mm)

6SL3000-	0CE36-3AT0 0CE37-7AT0	0CE38-7AT0	0CE41-0AT0
a2	30	40	50
a3	6	8	8
a4	15	20	25
a5	14	14	14
l4	300	350	350
l5	100	120	120
h1	-	392	397
h2	180	252	252
h3	60	120	120
h4	320	320	321
n1 [1)]	118	138	138
n2 [1)]	224	264	264
n3	214	214	213
n4	81	60	60
d3	M8	M8	M8
[1)] Lengths n1 and n2 correspond to the distance between holes			

Table 3- 3 Dimensions of the line reactor, 500 V – 690 V 3 AC (all values in mm)

6SL3000-	0CH34-8AT0 0CH36-0AT0	0CH38-4AT0
a2	30	40
a3	6	8
a4	15	20
a5	14	14
l4	350	410
l5	120	135
h1	-	392
h2	198	252
h3	75	120
h4	315	385
n1 [1)]	138	141
n2 [1)]	264	316
n3	234	214
n4	81	56.5
d3	M8	M10
[1)] Lengths n1 and n2 correspond to the distance between holes		

3.1.4 Electrical connection

Connection

When connecting the line filter and line reactor, you must take into account the following conditions to ensure that they function correctly:

- Use shielded control cables. The shield must be connected at both ends.
- With analog control cables, connecting the shield at both ends can result in coupled-in noise. To prevent this, the shield must only be connected at one end on the Power Module.
- Control cables must be routed separately from power cables. Power cables are motor cables or connecting cables from the DC link of the Power Module (terminals DCP/DCN) to other components (e.g. Braking Module). In particular, you must ensure that control cables and power cables are not routed in parallel in a joint cable raceway, even if all the cables are shielded.
- You must use shielded motor cables. The shield for the motor cable must be attached to the shield plate and motor housing.
- The ground wire for the motor must be fed directly back to the Power Module.

Connection overview

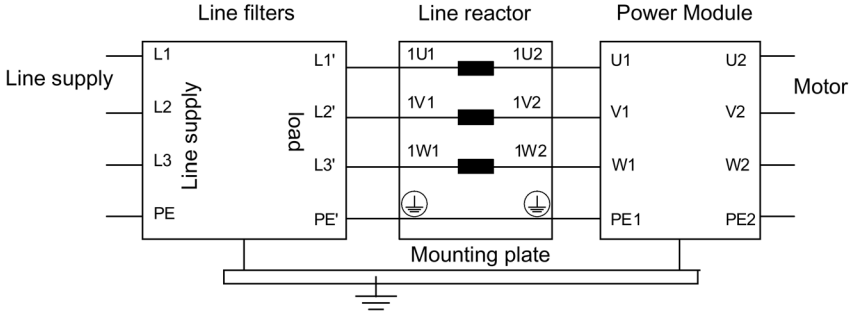


Figure 3-3 Connecting the line filter, line reactor, and Power Module

3.1.5 Technical data

Table 3- 4 Technical specifications of line reactors 380 V – 480 V 3 AC

Article number	**6SL3000-**	**0CE36-3AT0**	**0CE37-7AT0**	**0CE38-7AT0**	**0CE41-0AT0**
Suitable for Power Module	6SL3220-	xYE56-xCx0	xYE58-xCx0 xYE60-xCx0	xYE62-xCx0	xYE64-xCx0 xYE66-xCx0
Rated power of the Power Module	kW	315	355 400	450	500 560
Rated voltage	V	3 AC 380 -10% (-15% < 1 min) ... 3 AC 480 +10%			
Inductance	µH	27	22	19	16
I_{thmax}	A	628	773	871	1060
Line/load connection 1U1, 1V1, 1W1, 1U2, 1V2, 1W2		M12 connecting lugs	M12 connecting lugs	M12 connecting lugs	M12 connecting lugs
Degree of protection		IP00	IP00	IP00	IP00
Dimensions Width Height Depth	 mm mm mm	 300 269 214	 300 269 214	 350 320 214	 350 321 213
Weight	kg	40.1	50.5	78	81

Table 3- 5 Technical specifications of line reactors 500 V – 690 V 3 AC

Article number	**6SL3000** -	**0CH34-8AT0**	**0CH36-0AT0**	**0CH38-4AT0**	
Suitable for Power Module	6SL3220 -	xYH56-xCx0 xYH58-xCx0 xYH60-xCx0	xYH62-xCx0 xYH64-xCx0	xYH66-xCx0 xYH68-xCx0	
Rated power of the Power Module	kW	315 355 400	450 500	560 630	
Rated voltage	V	3 AC 500 -10% (-15% < 1 min) ... 3 AC 690 +10%			
Inductance	µH	65	46	40	
I_{thmax}	A	482	597	840	
Line/load connection 1U1, 1V1, 1W1, 1U2, 1V2, 1W2		M12 connecting lugs	M12 connecting lugs	M12 connecting lugs	
Degree of protection		IP00	IP00	IP00	
Dimensions Width Height Depth	 mm mm mm	 350 315 234	 350 315 234	 410 385 214	
Weight	kg	60	60.9	110.5	

3.2 Output reactors for SINAMICS G120X

3.2.1 Description

Description

Output reactors reduce the voltage load on the motor windings by reducing the voltage gradients at the motor terminals that occur during converter operation. At the same time, the capacitive charge/discharge currents that occur at the converter output when long motor cables are used are reduced.

The maximum output frequency when an output reactor is used is 150 Hz.

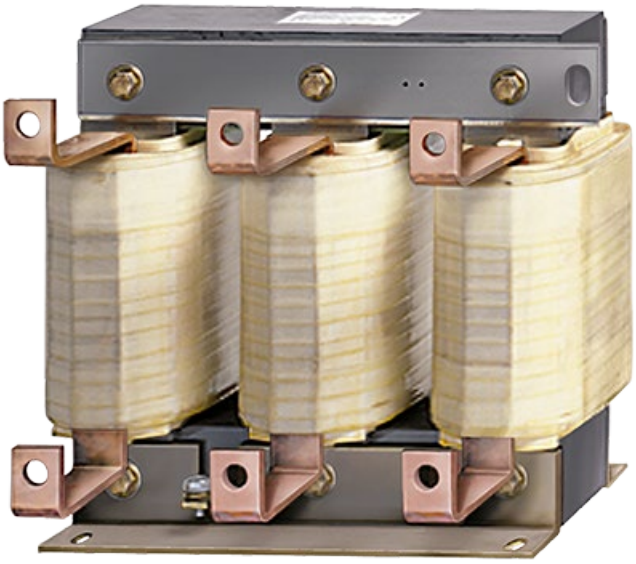


Figure 3-4 Output reactor

Assignment of output reactor and Power Module

Table 3- 6 Assignment of output reactor and Power Module

Power Module	Rated power of the Power Module	suitable output reactor
Line voltage 3 AC 380 – 480 V		
6SL32x0-xYE46-xxx0	110 kW	**6SL3000-2BE32-1AT0**
6SL32x0-xYE48-xxx0	132 kW	**6SL3000-2BE32-6AT0**
6SL32x0-xYE50-xxx0	160 kW	**6SL3000-2BE33-2AT0**
6SL32x0-xYE52-xxx0	200 kW	**6SL3000-2BE33-8AT0**
6SL32x0-xYE54-xxx0	250 kW	**6SL3000-2BE35-0AT0**
6SL32x0-xYE56-xCx0	315 kW	**6SL3000-2AE36-1AT0**
6SL32x0-xYE58-xCx0	355 kW	**6SL3000-2AE38-4AT0**
6SL32x0-xYE60-xCx0	400 kW	**6SL3000-2AE38-4AT0**
6SL32x0-xYE62-xCx0	450 kW	**6SL3000-2AE41-0AT0**
6SL32x0-xYE64-xCx0	500 kW	**6SL3000-2AE41-0AT0**
6SL32x0-xYE68-xCx0	560 kW	**6SL3000-2AE41-4AT0**
Line voltage 500 – 690 V 3 AC		
6SL32 . 0- . YH56- . C .0	315 kW	**6SL3000-2AH34-7AT0**
6SL32 . 0- . YH58- . C .0	355 kW	**6SL3000-2AH34-7AT0**

3.2.2 Safety instructions

⚠WARNING

Fire due to overheating due to insufficient ventilation clearances

Insufficient ventilation clearances can result in overheating with danger to persons as a result of smoke and fire. Furthermore, an increased number of failures and shorter service life of the components can occur.

- Maintain 100 mm ventilation clearances above and to the side of the component.



⚠CAUTION

Burns resulting from high surface temperature

The surface temperature of the output reactors can exceed 80 °C. You can be severely burnt when touching the surface.

- Mount the output reactors so that they cannot be touched. If this is not possible, attach a clearly visible and understandable warning notice at hazardous positions.

NOTICE

Damage to the Power Module by using components that have not been released

When using components that have not been released, damage or malfunctions can occur at the devices or the system itself.

- Only use output reactors that SIEMENS has approved for operation with SINAMICS.

NOTICE

Damage to the output reactor if the maximum output frequency is exceeded

The maximum permissible output frequency when an output reactor is used is 150 Hz. The output reactor can be damaged if the output frequency is exceeded.

- Operate the output reactor with a maximum output frequency of 150 Hz.

NOTICE

Damage to the output reactor if the maximum pulse frequency is exceeded

The maximum permissible pulse frequency when output reactor are used is 4 kHz. The output reactors can be damaged if the pulse frequency is exceeded.

- When using the output reactor, operate the Power Module with a maximum pulse frequency of 4 kHz.

NOTICE

Damage to the output reactor if it is not activated during commissioning

The output reactor may be damaged if it is not activated during commissioning.

- Activate the output reactor during commissioning via parameter p0230 = 1.

Note

Cable lengths

Keep the connecting cables to the Power Module as short as possible (max. 5 m).

3.2.3 Dimension drawing

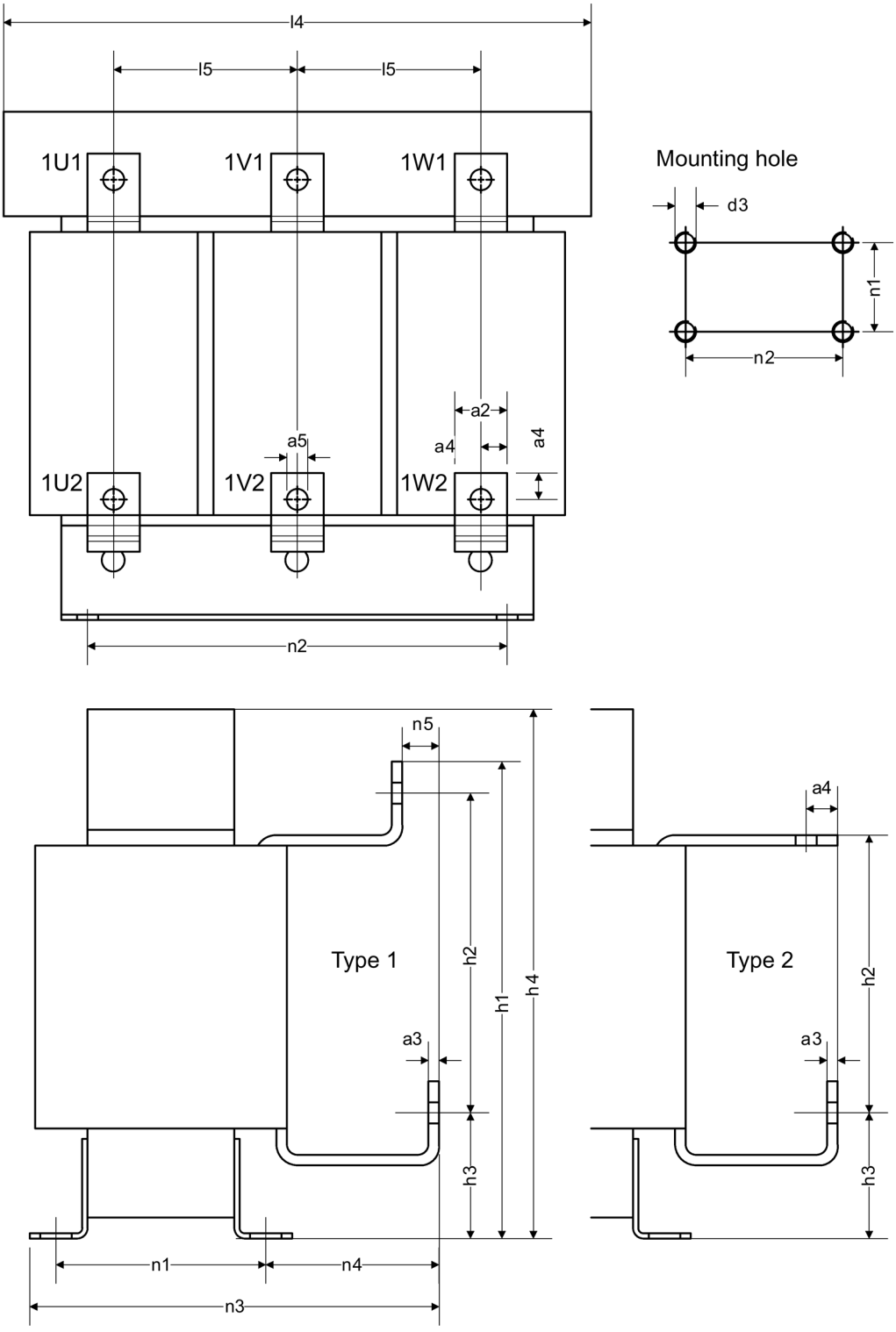


Figure 3-5 Dimension drawing, output reactor

Table 3- 7 Dimensions of output reactors, 3 AC 380 V ... 480 V, Part 1 (all specifications in mm)

6SL3000-	2BE32-1AT0	2BE32-6AT0	2BE33-2AT0	2BE33-8AT0	2BE35-0AT0
Connection type	Type 1	Type 1	Type 1	Type 1	Type 2
a2	25	25	25	25	30
a3	5	5	5	5	6
a4	12.5	12.5	12.5	12.5	15
a5	11	11	11	11	14
I4	300	300	300	300	300
I5	100	100	100	100	100
h1	-	-	-	-	-
h2	194	227	194	194	245
h3	60	60	60	60	60
h4	269.5	310	269	283.5	355
n1 [1)]	165	183	163	183	183
n2 [1)]	224	224	224	224	224
n3	257	276	257	277	277
n4	78	77.5	78	78	79
d3	M8	M8	M8	M8	M8

[1)] Lengths n1 and n2 correspond to the distance between holes

Table 3- 8 Dimensions of output reactors, 3 AC 380 V ... 480 V, Part 2 (all specifications in mm)

6SL3000-	2AE36-1AT0	2AE38-4AT0	2AE41-0AT0	2AE41-4AT0	
Connection type	Type 1	Type 1	Type 1	Type 1	
a2	40	40	60	50	
a3	8	12	8	12	
a4	20	20	30	14	
a5	14	14	14	14	
a6	-	-	-	22	
a7	-	-	-	14	
I4	410	410	410	460	
I5	140	140	140	160	
h1	392	392	392	392	
h2	252	252	252	-	
h3	120	120	120	.	
h4	367	364	372	390	
n1 [1)]	191	191	206	212	
n2 [1)]	316	316	316	356	
n3	293	292	302	326	
n4	84.5	84.5	79.5	94.5	
n5	30	30	-	-	
d3	M10	M10	M10	M10	

[1)] Lengths n1 and n2 correspond to the distance between holes

Table 3- 9 Dimensions of output reactors, 500 V – 690 V 3 AC (all data in mm)

6SL3000-	**2AH34-7AT0**
Connection type	Type 1
a2	40
a3	8
a4	20
a5	14
I4	410
I5	140
h1	392
h2	252
h3	120
h4	378
n1 [1)]	141
n2 [1)]	316
n3	295
n4	99.5
n5	30
d3	M10

[1)] Lengths n1 and n2 correspond to the distance between holes

3.2.4 Electrical connection

Connection

When connecting the output reactor, you must take into account the following conditions to ensure that it functions correctly:

- With analog control cables, connecting the shield at both ends can result in coupled-in noise. To prevent this, the shield must only be connected at one end on the Power Module.
- Control cables must be routed separately from power cables. Power cables are motor cables or connecting cables from the DC link of the Power Module (terminals DCP/DCN) to other components (e.g. Braking Module). In particular, you must ensure that control cables and power cables are not routed in parallel in a joint cable raceway, even if all the cables are shielded.
- You must use shielded motor cables. The shield for the motor cable must be attached to the shield plate and motor housing.
- The ground wire for the motor must be fed directly back to the Power Module.

Connection overview

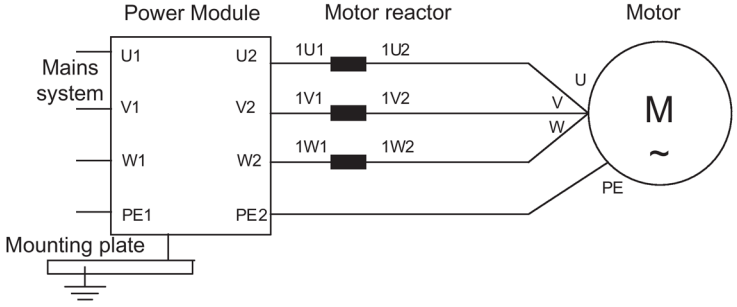


Figure 3-6 Connecting the output reactor and Power Module

3.2.5 Technical data

Table 3- 10 Technical specifications of output reactors, 380 V – 480 V 3 AC, part 1

Article number	6SL3000-	2BE32-1AT0	2BE32-6AT0	2BE33-2AT0	2BE33-8AT0
Suitable for Power Module	6SL32x0-	xYE46-xxx0	xYE48-xxx0	xYE50-xxx0	xYE52-xxx0
Rated power of the Power Module	kW	110	132	160	200
Inductance	µH	53	40	24	21
Rated current	A	210	260	310	380
Connections - To the Power Module (1U1, 1V1, 1W1) - Load (1U2, 1V2, 1W2)		M10 connecting lugs	M10 connecting lugs	M10 connecting lugs	M10 connecting lugs
PE connection		M6	M6	M6	M8
Max. permissible cable length between output reactor and motor	m	300 (shielded) 450 (unshielded)			
Degree of protection		IP00	IP00	IP00	IP00
Dimensions Width Height Depth	 mm mm mm	 300 269.5 257	 300 310 276	 300 269 257	 300 283.5 277
Weight	kg	53	71	55	67

Table 3- 11 Technical specifications of output reactors, 380 V – 480 V 3 AC, part 2

Article number	6SL3000-	2BE35-0AT0	2AE36-1AT0	2AE38-4AT0	2AE41-0AT0
Suitable for Power Module	6SL32x0-	xYE54-xxx0	xYE56-xxx0	xYE58-xxx0 xYE60-xxx0	xYE62-xxx0 xYE64-xxx0
Rated power of the Power Module	kW	250	315	355 400	450 500
Inductance	µH	19	18	13	10
Rated current	A	490	605	840	985
Connections - To the Power Module (1U1, 1V1, 1W1) - Load (1U2, 1V2, 1W2)		M12 connecting lugs	M12 connecting lugs	M12 connecting lugs	M12 connecting lugs
PE connection		M6	M8	M8	M8
Max. permissible cable length between output reactor and motor	m	300 (shielded) 450 (unshielded)			
Degree of protection		IP00	IP00	IP00	IP00
Dimensions Width Height Depth	 mm mm mm	 300 355 277	 410 392 293	 410 364 292	 410 372 302
Weight	kg	78	75	95	115

Table 3- 12 Technical specifications of output reactors, 380 V – 480 V 3 AC, part 3

Article number	**6SL3000-**	**2AE41-4AT0**			
Suitable for Power Module	6SL32x0-	xYE68-xxx0			
Rated power of the Power Module	kW	560			
Inductance	µH	5.1			
Rated current	A	1405			
Connections - To the Power Module (1U1, 1V1, 1W1) - Load (1U2, 1V2, 1W2)		M12 connect-ing lugs			
PE connection		M10			
Max. permissible cable length between output reactor and motor	m	300 (shielded) 450 (unshielded)			
Degree of protection		IP00			
Dimensions Width Height Depth	 mm mm mm	 460 390 326			
Weight	kg	160			

Table 3- 13 Technical specifications of output reactors, 3 AC 500 V – 690 V

Article number	**6SL3000-**	**2AH34-7AT0**			
Suitable for Power Module	6SL32 . 0-	. YH56- . C .0 . YH58- . C .0			
Rated power of the Power Module	kW	315 355			
Inductance	µH	19			
Rated current	A	465			
Connections - To the Power Module (1U1, 1V1, 1W1) - Load (1U2, 1V2, 1W2)		M12 connect-ing lugs			
PE connection		M8			
Max. permissible cable length between output reactor and motor	m	300 (shielded) 450 (unshielded)			
Degree of protection		IP00			
Dimensions Width Height Depth	 mm mm mm	 410 378 295			
Weight	kg	60			

SINAMICS G130

4

4.1 Line reactors for SINAMICS G130

4.1.1 Description

Description

Line reactors limit low-frequency line-side harmonics to permissible values.

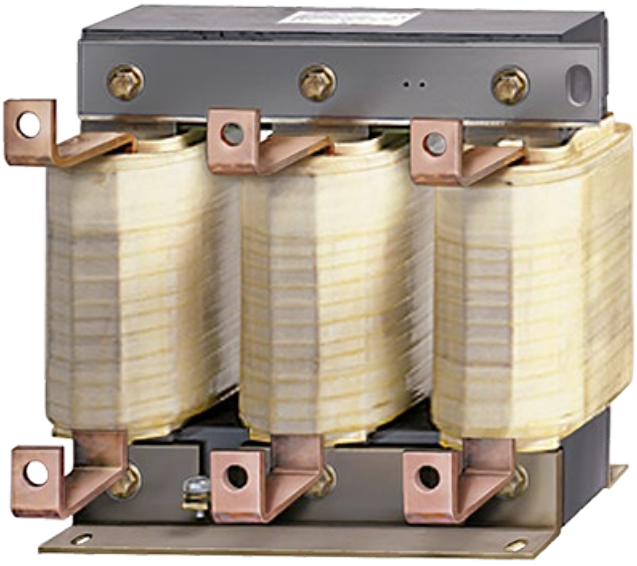


Figure 4-1 Line reactor

Assignment of line reactor and Power Module

Table 4- 1 Assignment of line reactor and Power Module

Power Module	Unit rating of the Power Module	Suitable line reactor
Line voltage 3 AC 380 – 480 V		
6SL3310-1GE32-1AA3	110 kW	**6SL3000-0CE32-3AT0**
6SL3310-1GE32-6AA3	132 kW	**6SL3000-0CE32-8AT0**
6SL3310-1GE33-1AA3	160 kW	**6SL3000-0CE33-3AT0**
6SL3310-1GE33-8AA3	200 kW	**6SL3000-0CE35-1AT0**
6SL3310-1GE35-0AA3	250 kW	**6SL3000-0CE35-1AT0**
6SL3310-1GE36-1AA3	315 kW	**6SL3000-0CE36-3AT0**
6SL3310-1GE37-5AA3	400 kW	**6SL3000-0CE37-7AT0**
6SL3310-1GE38-4AA3	450 kW	**6SL3000-0CE38-7AT0**
6SL3310-1GE41-0AA3	560 kW	**6SL3000-0CE41-0AT0**
Line voltage 3 AC 500 – 600 V		
6SL3310-1GF31-8AA3	110 kW	**6SL3000-0CH32-2AT0**
6SL3310-1GF32-2AA3	132 kW	**6SL3000-0CH32-2AT0**
6SL3310-1GF32-6AA3	160 kW	**6SL3000-0CH32-7AT0**
6SL3310-1GF33-3AA3	200 kW	**6SL3000-0CH33-4AT0**
6SL3310-1GF34-1AA3	250 kW	**6SL3000-0CH34-8AT0**
6SL3310-1GF34-7AA3	315 kW	**6SL3000-0CH34-8AT0**
6SL3310-1GF35-8AA3	400 kW	**6SL3000-0CH36-0AT0**
6SL3310-1GF37-4AA3	500 kW	**6SL3000-0CH38-4AT0**
6SL3310-1GF38-1AA3	560 kW	**6SL3000-0CH38-4AT0**
Line voltage 3 AC 660 – 690 V		
6SL3310-1GH28-5AA3	85 kW	**6SL3000-0CH31-1AT0**
6SL3310-1GH31-0AA3	90 kW	**6SL3000-0CH31-1AT0**
6SL3310-1GH31-2AA3	110 kW	**6SL3000-0CH31-6AT0**
6SL3310-1GH31-5AA3	132 kW	**6SL3000-0CH31-6AT0**
6SL3310-1GH31-8AA3	160 kW	**6SL3000-0CH32-2AT0**
6SL3310-1GH32-2AA3	200 kW	**6SL3000-0CH32-2AT0**
6SL3310-1GH32-6AA3	250 kW	**6SL3000-0CH32-7AT0**
6SL3310-1GH33-3AA3	315 kW	**6SL3000-0CH33-4AT0**
6SL3310-1GH34-1AA3	400 kW	**6SL3000-0CH34-8AT0**
6SL3310-1GH34-7AA3	450 kW	**6SL3000-0CH34-8AT0**
6SL3310-1GH35-8AA3	560 kW	**6SL3000-0CH36-0AT0**
6SL3310-1GH37-4AA3	710 kW	**6SL3000-0CH38-4AT0**
6SL3310-1GH38-1AA3	800 kW	**6SL3000-0CH38-4AT0**

4.1.2 Safety instructions

⚠ WARNING

Fire due to overheating due to insufficient ventilation clearances

Insufficient ventilation clearances can result in overheating with danger to persons as a result of smoke and fire. Furthermore, an increased number of failures and shorter service life of the components can occur.

- Maintain 100 mm ventilation clearances above and to the side of the component.



⚠ CAUTION

Burns resulting from high surface temperature

The surface temperature of the line reactors can exceed 80 °C. You can be severely burnt when touching the surface.

- Mount the line reactors so that contact is not possible. If this is not possible, attach clearly visible and understandable warning notices at hazardous positions.

NOTICE

Damage to the Power Module by using components that have not been released

When using components that have not been released, damage or malfunctions can occur at the devices or the system itself.

- Only use line reactors that SIEMENS has released for SINAMICS.

Note

Malfunctions through magnetic fields

Reactors produce magnetic fields that can disturb or damage components and cables.

- Arrange the components and cables at a suitable distance (at least 200 mm) or shield the magnetic fields appropriately.

Note

Length of connection cables

The connection cables between line reactor and Power Module, as well as between line reactor and line filter, must be kept as short as possible (max. 5 m).

You must use shielded connection cables, whose cable shields are attached at both ends.

Shielding can only be omitted if the following conditions are met:

- The cables do not exceed 1 m in length.
- The cables are laid flush with the rear metal wall of the control cabinet.
- The cables are laid in a way that keeps them physically separate from signal cables.

Do not route any cables near the line reactor. If this cannot be avoided, observe a minimum distance of 200 mm.

4.1.3 Dimension drawing

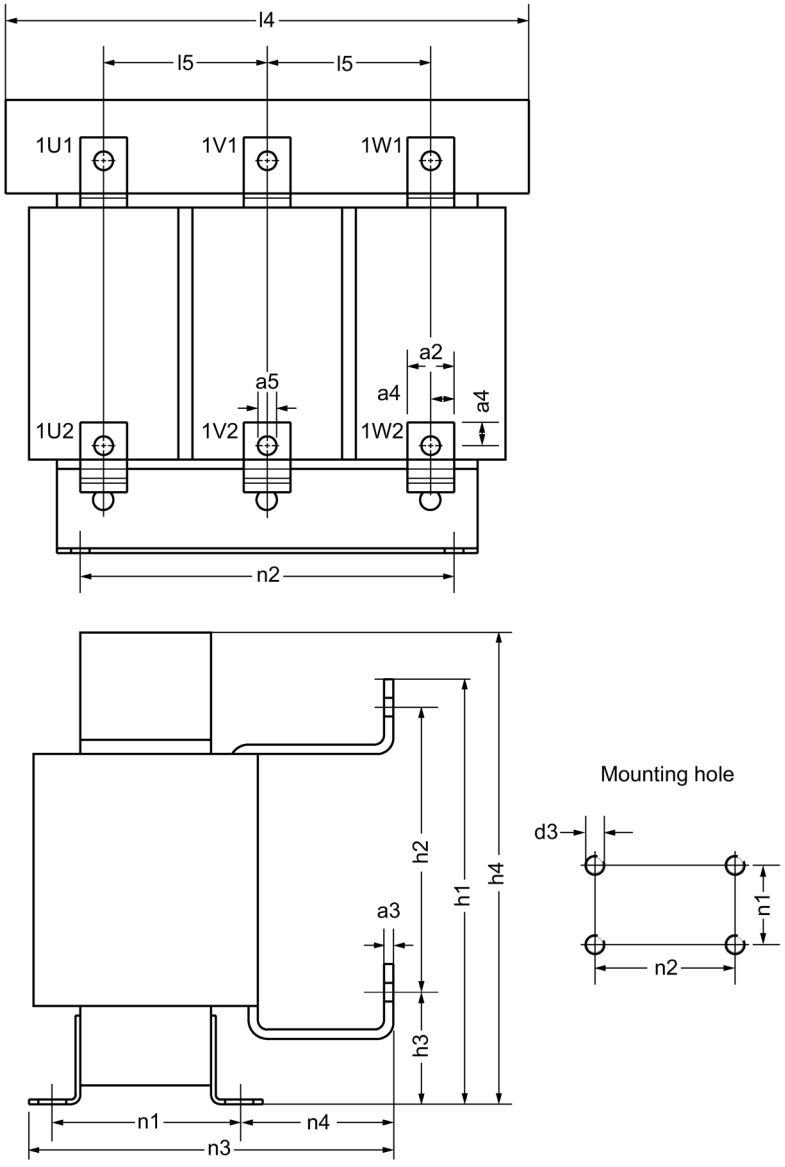


Figure 4-2 Dimension drawing of line reactor

Table 4- 2 Dimensions of line reactor, 380 V – 480 V 3 AC (all values in mm)

6SL3000-	0CE32-3AT0 0CE32-8AT0 0CE33-3AT0	0CE35-1AT0	0CE36-3AT0 0CE37-7AT0	0CE38-7AT0	0CE41-0AT0
a2	25	30	30	40	50
a3	5	6	6	8	8
a4	12.5	15	15	20	25
a5	11	14	14	14	14
l4	270	300	300	350	350
l5	88	100	100	120	120
h1	-	-	-	392	397
h2	150	180	180	252	252
h3	60	60	60	120	120
h4	248	269	269	320	321
n1 [1)]	101	118	118	138	138
n2 [1)]	200	224	224	264	264
n3	201.5	212	214	214	213
n4	84.5	81	81	60	60
d3	M8	M8	M8	M8	M8
[1)] Lengths n1 and n2 correspond to the distance between holes					

Table 4- 3 Dimensions of line reactor, 500 V – 600 V 3 AC (all values in mm)

6SL3000-	0CH32-2AT0 0CH32-7AT0	0CH33-4AT0	0CH34-8AT0 0CH36-0AT0	0CH38-4AT0
a2	25	25	30	40
a3	5	5	6	8
a4	12.5	12.5	15	20
a5	11	11	14	14
l4	270	285	350	410
l5	88	88	120	135
h1	-	-	-	392
h2	150	150	198	252
h3	60	60	75	120
h4	248	243	315	385
n1 [1)]	101	101	138	141
n2 [1)]	200	200	264	316
n3	201.5	201.5	234	214
n4	84.5	84.5	81	56.5
d3	M8	M8	M8	M10
[1)] Lengths n1 and n2 correspond to the distance between holes				

Table 4- 4 Dimensions of line reactor, 660 V – 690 V 3 AC (all values in mm)

6SL3000-	0CH31-1AT0	0CH31-6AT0	0CH32-2AT0 0CH32-7AT0	0CH33-4AT0	0CH34-8AT0 0CH36-0AT0	0CH38-4AT0
a2	25	25	25	25	30	40
a3	6	6	5	5	6	8
a4	12.5	12.5	12.5	12.5	15	20
a5	11	11	11	11	14	14
l4	270	270	270	285	350	410
l5	88	88	88	88	120	135
h1	-	-	-	-	-	392
h2	150	150	150	150	198	252
h3	60	60	60	60	75	120
h4	243	241	243	243	315	385
n1 [1)]	101	101	101	101	138	141
n2 [1)]	200	200	200	200	264	316
n3	201.5	201.5	200	200	234	214
n4	84.5	84.5	84.5	84.5	81	56.5
d3	M8	M8	M8	M8	M8	M10

[1)] Lengths n1 and n2 correspond to the distance between holes

4.1.4 Electrical connection

Connection

When connecting the line filter and line reactor, you must take into account the following conditions to ensure that they function correctly:

- Use shielded control cables. The shield must be connected at both ends.
- With analog control cables, connecting the shield at both ends can result in coupled-in noise. To prevent this, the shield must only be connected at one end on the Power Module.
- Control cables must be routed separately from power cables. Power cables are motor cables or connecting cables from the DC link of the Power Module (terminals DCPA/DCNA) to other components (e.g. Braking Module). In particular, you must ensure that control cables and power cables are not routed in parallel in a joint cable raceway, even if all the cables are shielded.
- You must use shielded motor cables. The shield for the motor cable must be attached to the shield plate and motor housing.
- The ground wire for the motor must be fed directly back to the Power Module.

Connection overview

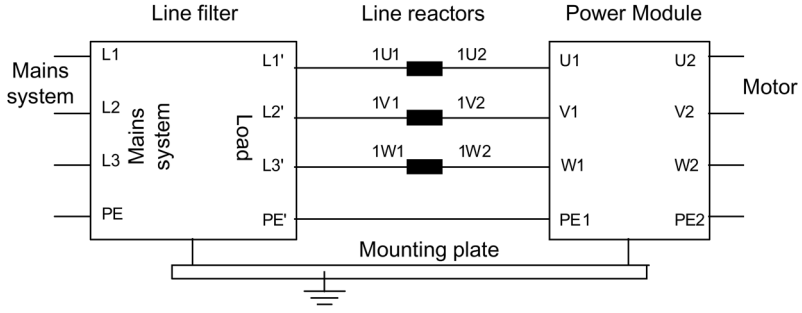


Figure 4-3 Connecting the line filter, line reactor, and Power Module

4.1.5 Technical data

Table 4- 5 Technical specifications of line reactors 3 AC 380 V ... 480 V, part 1

Article number	**6SL3000-**	**0CE32-3AT0**	**0CE32-8AT0**	**0CE33-3AT0**	**0CE35-1AT0**
Suitable for Power Module	6SL3310-	1GE32-1AA3	1GE32-6AA3	1GE33-1AA3	1GE33-8AA3
Type rating of the Power Module	kW	110	132	160	200
Rated voltage	V	3 AC 380 -10% (-15% < 1 min) ... 3 AC 480 +10%			
I_{thmax}	A	224	278	331	508
Power loss	kW	0.274	0.247	0.267	0.365
Line/load connection 1U1, 1V1, 1W1, 1U2, 1V2, 1W2		M10 connecting lugs	M10 connecting lugs	M10 connecting lugs	M12 connecting lugs
Degree of protection		IP00	IP00	IP00	IP00
Dimensions Width Height Depth	 mm mm mm	 270 248 201.5	 270 248 201.5	 270 248 201.5	 300 269 212
Weight	kg	26	27.5	27.6	39.9

Table 4- 6 Technical specifications of line reactors 3 AC 380 V ... 480 V, part 2

Article number	**6SL3000-**	**0CE35-1AT0**	**0CE36-3AT0**	**0CE37-7AT0**	**0CE38-7AT0**
Suitable for Power Module	6SL3310-	1GE35-0AA3	1GE36-1AA3	1GE37-5AA3	1GE38-4AA3
Type rating of the Power Module	kW	250	315	400	450
Rated voltage	V	3 AC 380 -10% (-15% < 1 min) ... 3 AC 480 +10%			
I_{thmax}	A	508	628	773	871
Power loss	kW	0.365	0.368	0.351	0.458
Line/load connection 1U1, 1V1, 1W1, 1U2, 1V2, 1W2		M12 connecting lugs	M12 connecting lugs	M12 connecting lugs	M12 connecting lugs
Degree of protection		IP00	IP00	IP00	IP00
Dimensions Width Height Depth	 mm mm mm	 300 269 212	 300 269 214	 300 269 214	 350 320 214
Weight	kg	39.9	40.1	50.5	78

Table 4- 7 Technical specifications of line reactors 3 AC 380 V ... 480 V, part 3

Article number	**6SL3000-**	**0CE41-0AT0**			
Suitable for Power Module	6SL3310-	1GE41-0AA3			
Type rating of the Power Module	kW	560			
Rated voltage	V	3 AC 380 -10% (-15% < 1 min) ... 3 AC 480 +10%			
I_{thmax}	A	1022			
Power loss	kW	0.498			
Line/load connection 1U1, 1V1, 1W1, 1U2, 1V2, 1W2		M12 connecting lugs			
Degree of protection		IP00			
Dimensions Width Height Depth	 mm mm mm	 350 321 213			
Weight	kg	81			

Table 4- 8 Technical specifications of line reactors 3 AC 500 V ... 600 V, part 1

Article number	**6SL3000-**	**0CH32-2AT0**	**0CH32-7AT0**	**0CH33-4AT0**	**0CH34-8AT0**
Suitable for Power Module	6SL3310-	1GF31-8AA3 1GF32-2AA3	1GF32-6AA3	1GF33-3AA3	1GF34-1AA3 1GF34-7AA3
Type rating of the Power Module	kW	110 132	160	200	250 315
Rated voltage	V	3 AC 500 -10% (-15% < 1 min) ... 3 AC 600 +10%			
I_{thmax}	A	230	270	342	482
Power loss	kW	0.275	0.277	0.340	0.478
Line/load connection 1U1, 1V1, 1W1, 1U2, 1V2, 1W2		M10 connecting lugs	M10 connecting lugs	M10 connecting lugs	M12 connecting lugs
Degree of protection		IP00	IP00	IP00	IP00
Dimensions Width Height Depth	 mm mm mm	 270 248 201.5	 270 241 201.5	 285 243 201.5	 350 315 234
Weight	kg	35	26.7	30	60

Table 4- 9 Technical specifications of line reactors 3 AC 500 V ... 600 V, part 2

Article number	**6SL3000-**	**0CH36-0AT0**	**0CH38-4AT0**		
Suitable for Power Module	6SL3310-	1GF35-8AA3	1GF37-4AA3 1GF38-1AA3		
Type rating of the Power Module	kW	400	500 560		
Rated voltage	V	3 AC 500 -10% (-15% < 1 min) ... 3 AC 600 +10%			
I_{thmax}	A	597	840		
Power loss	kW	0.485	0.618		
Line/load connection 1U1, 1V1, 1W1, 1U2, 1V2, 1W2		M12 connecting lugs	M12 connecting lugs		
Degree of protection		IP00	IP00		
Dimensions Width Height Depth	 mm mm mm	 350 315 234	 410 385 214		
Weight	kg	60.9	110.5		

Table 4- 10 Technical specifications of line reactors 3 AC 660 V ... 690 V, part 1

Article number	**6SL3000-**	**0CH31-1AT0**	**0CH31-6AT0**	**0CH32-2AT0**	**0CH32-7AT0**
Suitable for Power Module	6SL3310-	1GH28-5AA3 1GH31-0AA3	1GH31-2AA3 1GH31-5AA3	1GH31-8AA3 1GH32-2AA3	1GH32-6AA3
Type rating of the Power Module	kW	75 90	110 132	160 200	250
Rated voltage	V	3 AC 660 -10% (-15% < 1 min) ... 3 AC 690 +10%			
I_{thmax}	A	107	164	230	270
Power loss	kW	0.155	0.230	0.275	0.277
Line/load connection 1U1, 1V1, 1W1, 1U2, 1V2, 1W2		M10 connecting lugs	M10 connecting lugs	M10 connecting lugs	M10 connecting lugs
Degree of protection		IP00	IP00	IP00	IP00
Dimensions Width Height Depth	 mm mm mm	 270 248 201.5	 270 248 201.5	 270 248 201.5	 270 248 201.5
Weight	kg	27	27	35	26.7

Table 4- 11 Technical specifications of line reactors 3 AC 660 V ... 690 V, part 2

Article number	**6SL3000-**	**0CH33-4AT0**	**0CH34-8AT0**	**0CH36-0AT0**	**0CH38-4AT0**
Suitable for Power Module	6SL3310-	1GH33-3AA3	1GH34-1AA3 1GH34-7AA3	1GH35-8AA3	1GH37-4AA3 1GH38-1AA3
Type rating of the Power Module	kW	315	400 450	560	710 800
Rated voltage	V	3 AC 660 -10% (-15% < 1 min) ... 3 AC 690 +10%			
I_{thmax}	A	342	482	597	840
Power loss	kW	0.340	0.478	0.485	0.618
Line/load connection 1U1, 1V1, 1W1, 1U2, 1V2, 1W2		M10 connecting lugs	M12 connecting lugs	M12 connecting lugs	M12 connecting lugs
Degree of protection		IP00	IP00	IP00	IP00
Dimensions Width Height Depth	 mm mm mm	 285 243 201.5	 350 315 234	 350 315 234	 410 385 214
Weight	kg	30	60	60.9	110.5

4.2 Motor reactors for SINAMICS G130

4.2.1 Description

Description

Motor reactors reduce the voltage load on the motor windings by reducing the voltage rates of rise at the motor terminals that occur during converter operation. At the same time, the capacitive charge/discharge currents that occur at the converter output when long motor cables are used are reduced.

The maximum output frequency when a motor reactor is used is 150 Hz.

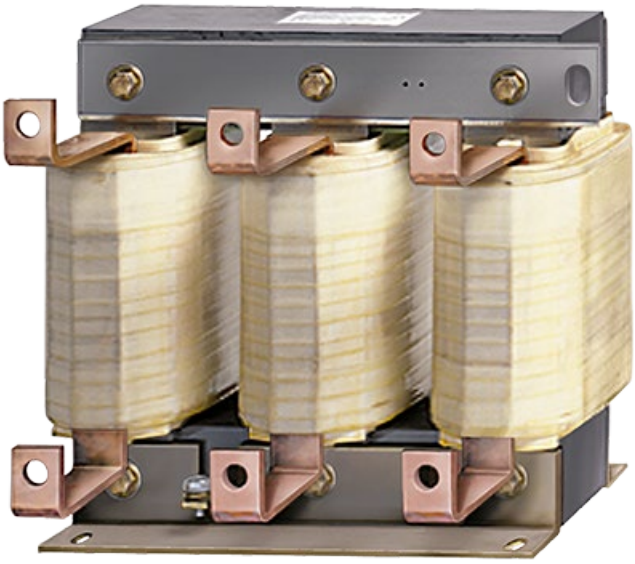


Figure 4-4 Motor reactor

Assignment of motor reactor and Power Module

Table 4- 12 Assignment of motor reactor and Power Module

Power Module	Unit rating of the Power Module	Suitable motor reactor
Line voltage 3 AC 380 – 480 V		
6SL3310-1GE32-1AA3	110 kW	**6SL3000-2BE32-1AT0**
6SL3310-1GE32-6AA3	132 kW	**6SL3000-2BE32-6AT0**
6SL3310-1GE33-1AA3	160 kW	**6SL3000-2BE33-2AT0**
6SL3310-1GE33-8AA3	200 kW	**6SL3000-2BE33-8AT0**
6SL3310-1GE35-0AA3	250 kW	**6SL3000-2BE35-0AT0**
6SL3310-1GE36-1AA3	315 kW	**6SL3000-2AE36-1AT0**
6SL3310-1GE37-5AA3	400 kW	**6SL3000-2AE38-4AT0**
6SL3310-1GE38-4AA3	450 kW	**6SL3000-2AE38-4AT0**
6SL3310-1GE41-0AA3	560 kW	**6SL3000-2AE41-0AT0**
Line voltage 3 AC 500 – 600 V		
6SL3310-1GF31-8AA3	110 kW	**6SL3000-2AH31-8AT0**
6SL3310-1GF32-2AA3	132 kW	**6SL3000-2AH32-4AT0**
6SL3310-1GF32-6AA3	160 kW	**6SL3000-2AH32-6AT0**
6SL3310-1GF34-1AA3	250 kW	**6SL3000-2AH34-5AT0**
6SL3310-1GF34-7AA3	315 kW	**6SL3000-2AH34-7AT0**
Line voltage 3 AC 660 – 690 V		
6SL3310-1GH31-8AA3	160 kW	**6SL3000-2AH31-8AT0**
6SL3310-1GH32-2AA3	200 kW	**6SL3000-2AH32-4AT0**
6SL3310-1GH32-6AA3	250 kW	**6SL3000-2AH32-6AT0**
6SL3310-1GH34-1AA3	400 kW	**6SL3000-2AH34-5AT0**
6SL3310-1GH34-7AA3	450 kW	**6SL3000-2AH34-7AT0**

Limitation of the voltage rate of rise and the voltage peak through reactors and filters

IGBT converter switching frequencies result in high voltage rises (dv/dt) at the converter output. If long motor cables are used, this leads to an additional current load on the converter due to capacitive charge/discharge currents. The high voltage rises, and the resulting transients at the motor terminals, cause the motors' electrical winding load to increase as compared with direct on-line operation.

In conjunction with the connected cable capacitances, the motor reactors with their adapted inductances reduce the capacitive charge/discharge currents in the motor cables and, as a function of these motor cables, limit the voltage rate of rise (dv/dt) and the voltage peak $\hat{U}_{LL}$ at the motor terminals.

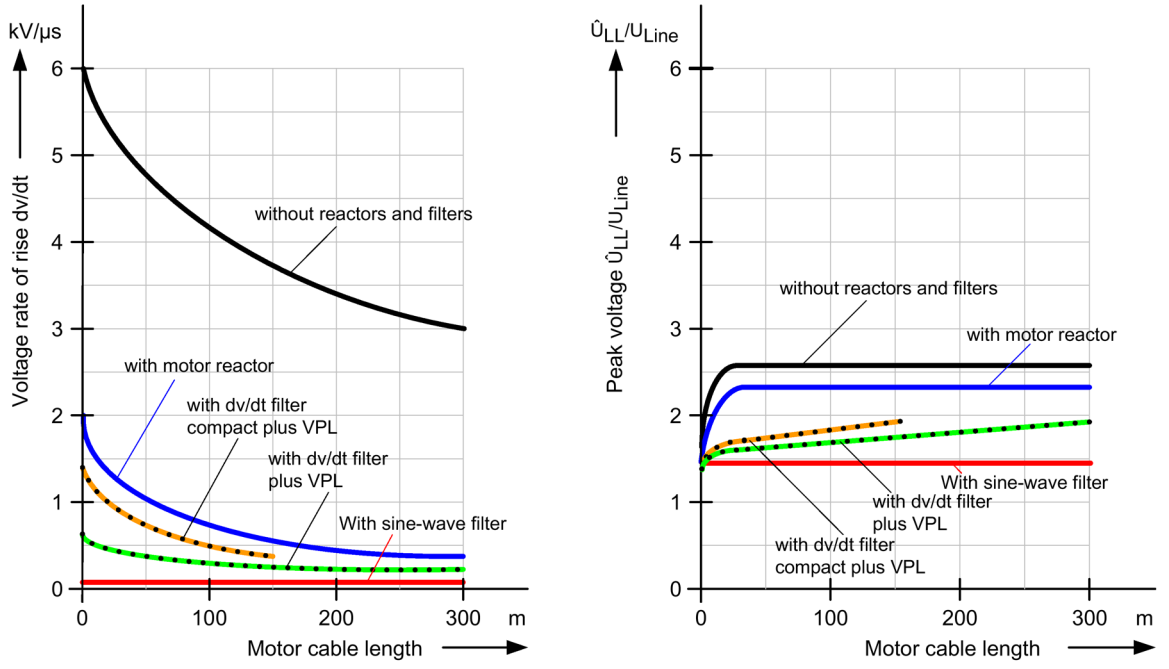


Figure 4-5 Limitation of the voltage rate of rise and the voltage peak through reactors and filters depending on the motor cable length

4.2.2 Safety instructions

WARNING

Fire due to overheating due to insufficient ventilation clearances

Insufficient ventilation clearances can result in overheating with danger to persons as a result of smoke and fire. Furthermore, an increased number of failures and shorter service life of the components can occur.

- Maintain 100 mm ventilation clearances above and to the side of the component.



⚠CAUTION

Burns resulting from high surface temperature

The surface temperature of the motor reactors can exceed 80 °C. You can be severely burnt when touching the surface.

- Mount the motor reactor so that it cannot be touched. If this is not possible, attach a clearly visible and understandable warning notice at hazardous positions.

NOTICE

Damage to the Power Module by using components that have not been released

When using components that have not been released, damage or malfunctions can occur at the devices or the system itself.

- Only use motor reactors that SIEMENS has released for SINAMICS.

NOTICE

Damage to the motor reactor if the maximum output frequency is exceeded

The maximum permissible output frequency when a motor reactor is used is 150 Hz. The motor reactor can be damaged if the output frequency is exceeded.

- Operate the motor reactor with a maximum output frequency of 150 Hz.

NOTICE

Damage to the motor reactor if the maximum pulse frequency is exceeded

The maximum permissible pulse frequency when a motor reactor is used is 2.5 kHz or 4 kHz. The motor reactor can be damaged if the pulse frequency is exceeded.

- When using the motor reactor, operate the Power Module with a maximum pulse frequency of 2.5 kHz or 4 kHz.

NOTICE

Damage to the motor reactor if it is not activated during commissioning

The motor reactor may be damaged if it is not activated during commissioning.

- Activate the motor reactor during commissioning via parameter p0230 = 1.

Note

Cable lengths

Keep the connecting cables to the Power Module as short as possible (max. 5 m).

4.2.3 Dimension drawing

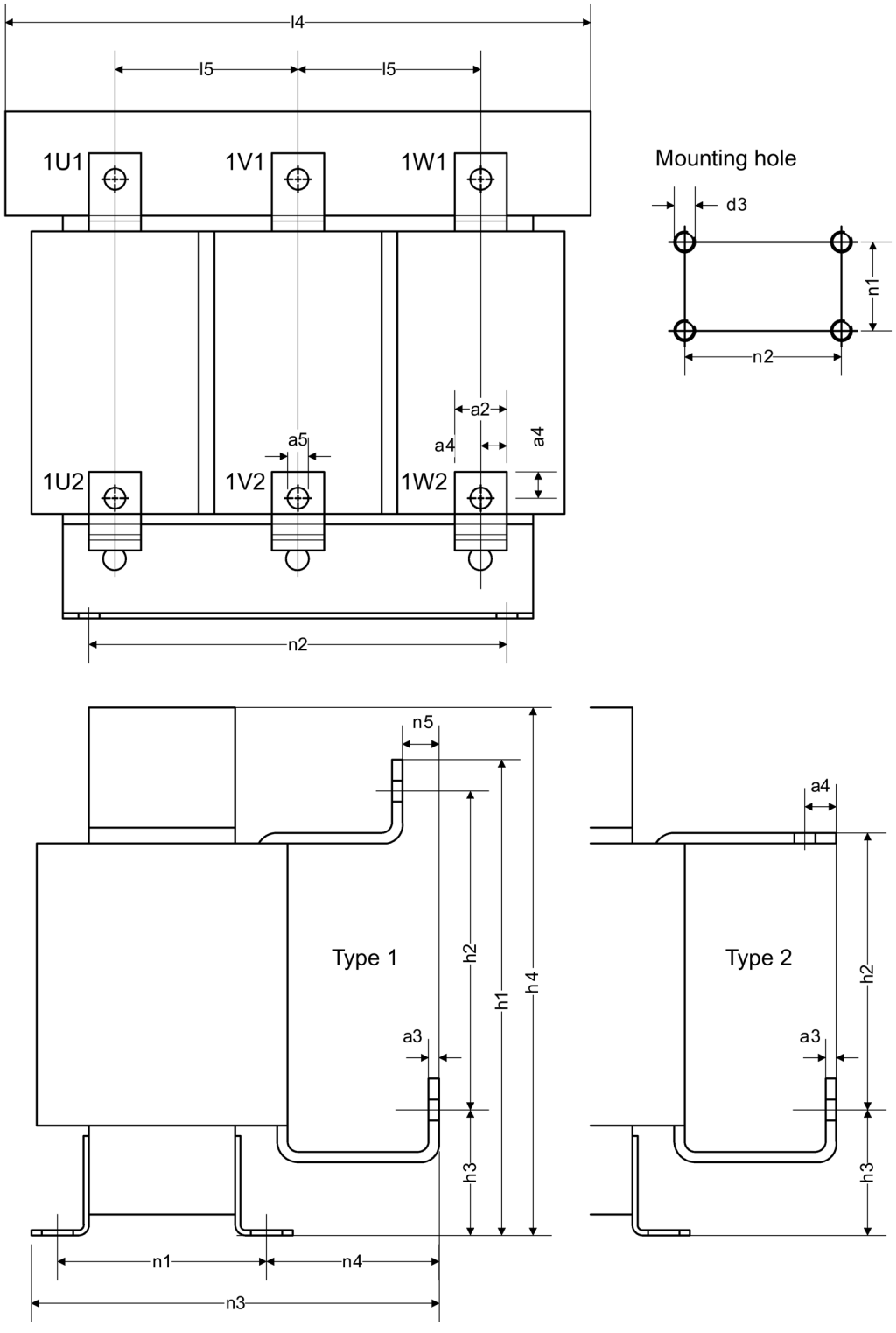


Figure 4-6 Dimension drawing, motor reactor

Table 4- 13 Dimensions of motor reactor, 380 V – 480 V 3 AC, part 1 (all specifications in mm)

6SL3000-	2BE32-1AT0	2BE32-6AT0	2BE33-2AT0	2BE33-8AT0
Connection type	Type 1	Type 1	Type 1	Type 1
a2	25	25	25	25
a3	5	5	5	5
a4	12.5	12.5	12.5	12.5
a5	11	11	11	11
l4	300	300	300	300
l5	100	100	100	100
h1	-	-	-	-
h2	194	227	194	194
h3	60	60	60	60
h4	269.5	310	269	283.5
n1 [1)]	165	183	163	183
n2 [1)]	224	224	224	224
n3	257	276	257	277
n4	78	77.5	78	78
n5	-	-	-	-
d3	M8	M8	M8	M8
[1)] Lengths n1 and n2 correspond to the distance between holes				

Table 4- 14 Dimensions of motor reactor, 380 V – 480 V 3 AC, part 2 (all specifications in mm)

6SL3000-	2BE35-0AT0	2AE36-1AT0	2AE38-4AT0	2AE41-0AT0
Connection type	Type 2	Type 1	Type 1	Type 1
a2	30	40	40	60
a3	6	8	12	8
a4	15	20	20	30
a5	14	14	14	14
l4	300	410	410	410
l5	100	140	140	140
h1	-	392	392	392
h2	245	252	252	252
h3	60	120	120	120
h4	355	367	364	372
n1 [1)]	183	191	191	206
n2 [1)]	224	316	316	316
n3	277	292	292	302
n4	79	84.5	84.5	79.5
n5	-	30	30	-
d3	M10	M10	M10	M10
[1)] Lengths n1 and n2 correspond to the distance between holes				

Table 4- 15 Dimensions of motor reactor, 500 V – 600 V 3 AC (all data in mm)

6SL3000-	2AH31-8AT0	2AH32-4AT0	2AH32-6AT0	2AH34-5AT0	2AH34-7AT0
Connection type	Type 1	Type 1	Type 1	Type 1	Type 1
a2	25	25	25	30	40
a3	5	5	6	6	8
a4	12.5	12.5	12.5	15	20
a5	11	11	11	14	14
I4	300	300	300	350	410
I5	100	100	100	120	140
h1	-	-	-	-	392
h2	194	194	194	235	252
h3	60	60	60	60	120
h4	266.5	270	270	320	378
n1 [1)]	118	118	118	140	141
n2 [1)]	224	224	224	264	316
n3	212	210.5	212	225	295
n4	78	78	79.5	62	99.5
n5	-	-	-	-	30
d3	M8	M8	M8	M8	M10
[1)] Lengths n1 and n2 correspond to the distance between holes					

Table 4- 16 Dimensions of motor reactor, 660 V – 690 V 3 AC (all data in mm)

6SL3000-	2AH31-8AT0	2AH32-4AT0	2AH32-6AT0	2AH34-5AT0	2AH34-7AT0
Connection type	Type 1	Type 1	Type 1	Type 1	Type 1
a2	25	25	25	30	40
a3	5	5	6	6	8
a4	12.5	12.5	12.5	15	20
a5	11	11	11	14	14
I4	300	300	300	350	410
I5	100	100	100	120	140
h1	-	-	-	-	392
h2	194	194	194	235	252
h3	60	60	60	60	120
h4	266.5	270	270	320	378
n1 [1)]	118	118	118	140	141
n2 [1)]	224	224	224	264	316
n3	212	210.5	212	225	295
n4	78	78	79.5	62	99.5
n5	-	-	-	-	30
d3	M8	M8	M10	M8	M10
[1)] Lengths n1 and n2 correspond to the distance between holes					

4.2.4 Electrical connection

Connection

When connecting the motor reactor, you must take into account the following conditions to ensure that it functions correctly:

- With analog control cables, connecting the shield at both ends can result in coupled-in noise. To prevent this, the shield must only be connected at one end on the Power Module.
- Control cables must be routed separately from power cables. Power cables are motor cables or connecting cables from the DC link of the Power Module (terminals DCPA/DCNA) to other components (e.g. Braking Module). In particular, you must ensure that control cables and power cables are not routed in parallel in a joint cable raceway, even if all the cables are shielded.
- You must use shielded motor cables. The shield for the motor cable must be attached to the shield plate and motor housing.
- The ground wire for the motor must be fed directly back to the Power Module.

Connection overview

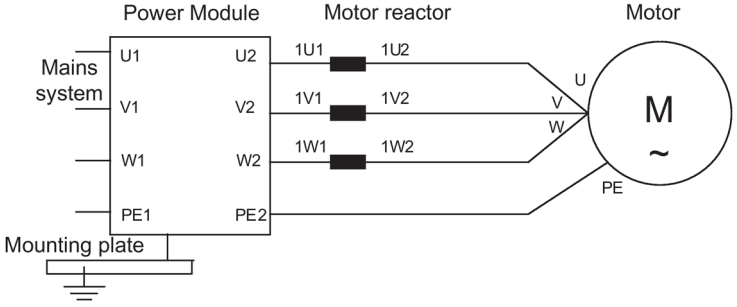


Figure 4-7 Connecting the motor reactor and Power Module

4.2.5 Technical data

Table 4- 17 Technical specifications of motor reactors, 3 AC 380 V ... 480 V, part 1

Article number	6SL3000-	2BE32-1AT0	2BE32-6AT0	2BE33-2AT0	2BE33-8AT0
Suitable for Power Module	6SL3310-	1GE32-1AA3	1GE32-6AA3	1GE33-1AA3	1GE33-8AA3
Rated current	A	210	260	310	380
Power loss - at 50 Hz - at 150 Hz	 kW kW	 0.285 0.296	 0.300 0.313	 0.290 0.298	 0.352 0.362
Connections - To the Power Module (1U1, 1V1, 1W1) - Load (1U2, 1V2, 1W2)		M10 connecting lugs	M10 connecting lugs	M10 connecting lugs	M10 connecting lugs
PE connection		M6	M6	M6	M8
Max. permissible cable length between motor reactor and motor	m	300 (shielded) 450 (unshielded)			
Degree of protection		IP00	IP00	IP00	IP00
Dimensions Width Height Depth	 mm mm mm	 300 269.5 257	 300 310 276	 300 269 257	 300 283.5 277
Weight	kg	53	71	55	67

Table 4- 18 Technical specifications of motor reactors, 3 AC 380 V ... 480 V, part 2

Article number	6SL3000-	2BE35-0AT0	2AE36-1AT0	2AE38-4AT0	2AE41-0AT0
Suitable for Power Module	6SL3310-	1GE35-0AA3	1GE36-1AA3	1GE37-5AA3 1GE38-4AA3	1GE41-0AA3
Rated current	A	490	605	840	985
Power loss - at 50 Hz - at 150 Hz	 kW kW	 0.440 0.453	 0.450 0.645	 0.290 0.395	 0.404 0.573
Connections - To the Power Module (1U1, 1V1, 1W1) - Load (1U2, 1V2, 1W2)		M12 connecting lugs	M12 connecting lugs	M12 connecting lugs	M12 connecting lugs
PE connection		M6	M8	M8	M8
Max. permissible cable length between motor reactor and motor	m	300 (shielded) 450 (unshielded)			
Degree of protection		IP00	IP00	IP00	IP00
Dimensions Width Height Depth	 mm mm mm	 300 355 277	 410 392 292	 410 364 292	 410 372 302
Weight	kg	78	75	95	115

Table 4- 19 Technical specifications of motor reactors, 3 AC 500 V ... 600 V, part 1

Article number	**6SL3000-**	**2AH31-8AT0**	**2AH32-4AT0**	**2AH32-6AT0**	**2AH34-5AT0**
Suitable for Power Module	6SL3310-	1GF31-8AA3	1GF32-2AA3	1GF32-6AA3	1GF34-1AA3
Rated current	A	175	215	260	410
Power loss - at 50 Hz - at 150 Hz	 kW kW	 0.174 0.233	 0.229 0.285	 0.371 0.382	 0.241 0.345
Connections - To the Power Module (1U1, 1V1, 1W1) - Load (1U2, 1V2, 1W2)		M10 connecting lugs	M10 connecting lugs	M10 connecting lugs	M12 connecting lugs
PE connection		M6	M6	M8	M8
Max. permissible cable length between motor reactor and motor	m	300 (shielded) 450 (unshielded)			
Degree of protection		IP00	IP00	IP00	IP00
Dimensions Width Height Depth	 mm mm mm	 300 266.5 212	 300 270 210.5	 300 270 212	 360 320 225
Weight	kg	33	32	46	47

Table 4- 20 Technical specifications of motor reactors, 3 AC 500 V ... 600 V, part 2

Article number	**6SL3000-**	**2AH34-7AT0**			
Suitable for Power Module	6SL3310-	1GF34-7AA3			
Rated current	A	465			
Power loss - at 50 Hz - at 150 Hz	 kW kW	 0.288 0.415			
Connections - To the Power Module (1U1, 1V1, 1W1) - Load (1U2, 1V2, 1W2)		M12 connecting lugs			
PE connection		M8			
Max. permissible cable length between motor reactor and motor	m	300 (shielded) 450 (unshielded)			
Degree of protection		IP00			
Dimensions Width Height Depth	 mm mm mm	 410 378 295			
Weight	kg	60			

Table 4- 21 Technical specifications of motor reactors, 3 AC 660 V ... 690 V, part 1

Article number	**6SL3000-**	**2AH31-8AT0**	**2AH32-4AT0**	**2AH32-6AT0**	**2AH34-5AT0**
Suitable for Power Module	6SL3310-	1GH31-8AA3	1GH32-2AA3	1GH32-6AA3	1GH34-1AA3
Rated current	A	175	215	260	410
Power loss - at 50 Hz - at 150 Hz	 kW kW	 0.147 0.233	 0.229 0.285	 0.371 0.382	 0.241 0.345
Connections - To the Power Module (1U1, 1V1, 1W1) - Load (1U2, 1V2, 1W2)		M10 connecting lugs	M10 connecting lugs	M10 connecting lugs	M12 connecting lugs
PE connection		M6	M6	M8	M8
Max. permissible cable length between motor reactor and motor	m	300 (shielded) 450 (unshielded)			
Degree of protection		IP00	IP00	IP00	IP00
Dimensions Width Height Depth	 mm mm mm	 300 266.5 212	 300 270 210.5	 300 270 212	 350 320 225
Weight	kg	33	32	46	47

Table 4- 22 Technical specifications of motor reactors, 3 AC 660 V ... 690 V, part 2

Article number	**6SL3000-**	**2AH34-7AT0**			
Suitable for Power Module	6SL3310-	1GH34-7AA3			
Rated current	A	465			
Power loss - at 50 Hz - at 150 Hz	 kW kW	 0.288 0.415			
Connections - To the Power Module (1U1, 1V1, 1W1) - Load (1U2, 1V2, 1W2)		M12 connecting lugs			
PE connection		M8			
Max. permissible cable length between motor reactor and motor	m	300 (shielded) 450 (unshielded)			
Degree of protection		IP00			
Dimensions Width Height Depth	 mm mm mm	 410 378 295			
Weight	kg	60			

Air-cooled SINAMICS S120

5

5.1 Line reactors for air-cooled Basic Line Modules

5.1.1 Description

Line reactors limit low-frequency line harmonics and reduce the load on the semiconductors in the Basic Line Modules. A line reactor must be used in connection with a line filter or if several Basic Line Modules are operated in parallel.

A line reactor is not required if a single Basic Line Module is used without a line filter and the effective line impedance is uk > 3%.

5.1.2 Safety information

⚠ WARNING

Fire due to overheating due to insufficient ventilation clearances

Insufficient ventilation clearances can result in overheating with danger to persons as a result of smoke and fire. Furthermore, an increased number of failures and shorter service life of the components can occur.

- Maintain 100 mm ventilation clearances above and to the side of the component.



⚠ CAUTION

Burns resulting from high surface temperature

The surface temperature of the line reactors can exceed 80 °C. You can be severely burnt when touching the surface.

- Mount the line reactors so that contact is not possible. If this is not possible, attach clearly visible and understandable warning notices at hazardous positions.

NOTICE

Damage to the Line Module by using components that have not been released

When using components that have not been released, damage or malfunctions can occur at the devices or the system itself.

- Only use line reactors that SIEMENS has released for SINAMICS.

Note

Malfunctions through magnetic fields

Reactors produce magnetic fields that can disturb or damage components and cables.

- Arrange the components and cables at a suitable distance (at least 200 mm) or shield the magnetic fields appropriately.

Note

Length of connection cables

The connection cables between line reactor and Line Module, as well as between line reactor and line filter, must be kept as short as possible (max. 5 m).

You must use shielded connection cables, whose cable shields are attached at both ends.

Shielding can only be omitted if the following conditions are met:

- The cables do not exceed 1 m in length.
- The cables are laid flush with the rear metal wall of the control cabinet.
- The cables are laid in a way that keeps them physically separate from signal cables.

Do not route any cables near the line reactor. If this cannot be avoided, observe a minimum distance of 200 mm.

5.1.3 Dimension drawing

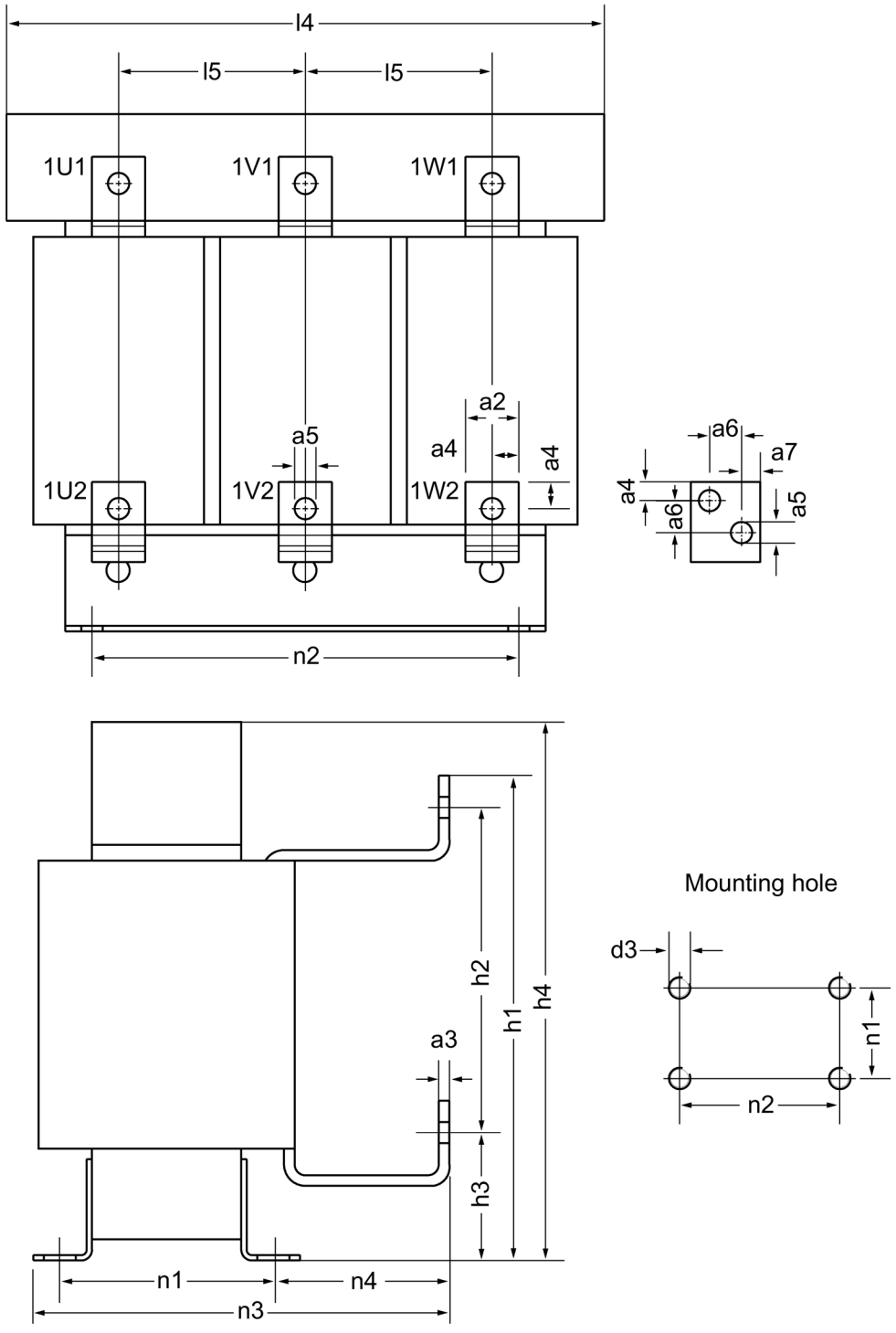


Figure 5-1 Dimension drawing of line reactors for Basic Line Modules

Table 5- 1 Dimensions of line reactors for Basic Line Modules, 3 AC 380 V ... 480 V (all values in mm)

6SL3000-	0CE35-1AT0	0CE37-7AT0	0CE41-0AT0	0CE41-5AT0	0CE41-6AT0
a2	30	30	50	60	60
a3	6	6	8	10	12
a4	15	15	25	25	25
a5	14	14	14	14	14
a6	-	-	-	26	26
a7	-	-	-	17	17
l4	300	300	350	425	432
l5	100	100	120	152.5	152.5
h1	-	-	397	-	-
h2	180	180	252	278	278
h3	60	60	120	120	120
h4	269	269	321	421	430
n1 [1)]	118	118	138	155	155
n2 [1)]	224	224	264	356	356
n3	212	214	213	235	235
n4	81	81	60	60	60.5
d3	M8	M8	M8	M12	M12

[1)] Lengths n1 and n2 correspond to the distance between holes

Table 5- 2 Dimensions of line reactors for Basic Line Modules, 3 AC 500 V ... 690 V (all values in mm)

6SL3000-	0CH32-7AT0	0CH34-8AT0	0CH36-0AT0	0CH41-2AT0	0CH41-6AT0
a2	25	30	30	60	60
a3	5	6	6	12	12
a4	12.5	15	15	25	25
a5	11	14	14	14	14
a6	-	-	-	26	26
a7	-	-	-	17	17
l4	270	350	350	445	444
l5	88	120	120	152.5	152.5
h1	-	-	-	-	-
h2	150	198	198	278	278
h3	60	75	75	120	120
h4	248	315	315	420	433
n1 [1)]	101	138	138	155	170
n2 [1)]	200	264	264	356	356
n3	201.5	234	234	235	247
n4	84.5	81	81	60.5	60.5
d3	M8	M8	M8	M12	M12

[1)] Lengths n1 and n2 correspond to the distance between holes

5.1.4 Technical data

Table 5- 3 Technical data of line reactors for Basic Line Modules, 3 AC 380 ... 480 V, Part 1

Article number	**6SL3000-**	**0CE35-1AT0**	**0CE37-7AT0**	**0CE41-0AT0**	**0CE41-5AT0**
Suitable for Basic Line Module	6SL3330-	1TE34-2AA3 1TE35-3AA3	1TE38-2AA3	1TE41-2AA3	1TE41-5AA3
Rated power of the Basic Line Module	kW	200 250	400	560	710
Rated voltage	V	3 AC 380 -10% (-15% < 1 min) ... 3 AC 480 +10%			
I_{thmax}	A	508	773	1022	1458
Power loss	kW	0.365	0.351	0.498	0.840
Line/load connection 1U1, 1V1, 1W1, 1U2, 1V2, 1W2		M12 connecting lugs	M12 connecting lugs	M12 connecting lugs	M12 connecting lugs
PE connection		M6 screw	M6 screw	M8 screw	M6 screw
Degree of protection		IP00	IP00	IP00	IP00
Dimensions Width Height Depth	 mm mm mm	 300 269 212	 300 269 214	 350 321 213	 425 421 235
Weight	kg	39.9	50.5	81	115

Table 5- 4 Technical data of line reactors for Basic Line Modules, 3 AC 380 ... 480 V, Part 2

Article number	**6SL3000-**	**0CE41-6AT0**			
Suitable for Basic Line Module	6SL3330-	1TE41-8AA3			
Rated power of the Basic Line Module	kW	900			
Rated voltage	V	3 AC 380 -10% (-15% < 1 min) ... 3 AC 480 +10%			
I_{thmax}	A	1600			
Power loss	kW	0.766			
Line/load connection 1U1, 1V1, 1W1, 1U2, 1V2, 1W2		M12 connecting lugs			
PE connection		M6 screw			
Degree of protection		IP00			
Dimensions Width Height Depth	 mm mm mm	 432 430 235			
Weight	kg	135			

Table 5- 5 Technical data of line reactors for Basic Line Modules, 3 AC 500 ... 690 V, Part 1

Article number	**6SL3000-**	**0CH32-7AT0**	**0CH34-8AT0**	**0CH36-0AT0**	**0CH41-2AT0**
Suitable for Basic Line Module	6SL3330-	1TG33-0AA3	1TG34-3AA3	1TG36-8AA3	1TG41-1AA3 1TG41-4AA3
Rated power of the Basic Line Module	kW	250	355	560	900 1100
Rated voltage	V	3 AC 500 -10% (-15% < 1 min) ... 3 AC 690 +10%			
I_{thmax}	A	270	482	597	1167
Power loss	kW	0.277	0.48	0.485	0.683
Line/load connection 1U1, 1V1, 1W1, 1U2, 1V2, 1W2		M10 connecting lugs	M12 connecting lugs	M12 connecting lugs	M12 connecting lugs
PE connection		M6 screw	M6 screw	M8 screw	M6 screw
Degree of protection		IP00	IP00	IP00	IP00
Dimensions Width Height Depth	 mm mm mm	 270 248 201.5	 350 315 234	 350 315 234	 445 420 235
Weight	kg	26.7	60	60.9	138

Table 5- 6 Technical data of line reactors for Basic Line Modules, 3 AC 500 ... 690 V, Part 2

Article number	**6SL3000-**	**0CH41-6AT0**			
Suitable for Basic Line Module	6SL3330-	1TG41-8AA3			
Rated power of the Basic Line Module	kW	1500			
Rated voltage	V	3 AC 500 -10% (-15% < 1 min) ... 3 AC 690 +10%			
I_{thmax}	A	1600			
Power loss	kW	0.977			
Line/load connection 1U1, 1V1, 1W1, 1U2, 1V2, 1W2		M12 connecting lugs			
PE connection		M6 screw			
Degree of protection		IP00			
Dimensions Width Height Depth	 mm mm mm	 444 433 247			
Weight	kg	150			

5.2 Line reactors for air-cooled Smart Line Modules

5.2.1 Description

Line reactors limit low-frequency line harmonics and reduce the load on the semiconductors in the Smart Line Modules. For this reason, line reactors must always be provided when Smart Line Modules are used.

5.2.2 Safety information

⚠WARNING

Fire due to overheating due to insufficient ventilation clearances

Insufficient ventilation clearances can result in overheating with danger to persons as a result of smoke and fire. Furthermore, an increased number of failures and shorter service life of the components can occur.

- Maintain 100 mm ventilation clearances above and to the side of the component.



⚠CAUTION

Burns resulting from high surface temperature

The surface temperature of the line reactors can exceed 80 °C. You can be severely burnt when touching the surface.

- Mount the line reactors so that contact is not possible. If this is not possible, attach clearly visible and understandable warning notices at hazardous positions.

NOTICE

Damage to the Line Module by using components that have not been released

When using components that have not been released, damage or malfunctions can occur at the devices or the system itself.

- Only use line reactors that SIEMENS has released for SINAMICS.

Note

Malfunctions through magnetic fields

Reactors produce magnetic fields that can disturb or damage components and cables.

- Arrange the components and cables at a suitable distance (at least 200 mm) or shield the magnetic fields appropriately.

Note

Length of connection cables

The connection cables between line reactor and Line Module, as well as between line reactor and line filter, must be kept as short as possible (max. 5 m).

You must use shielded connection cables, whose cable shields are attached at both ends.

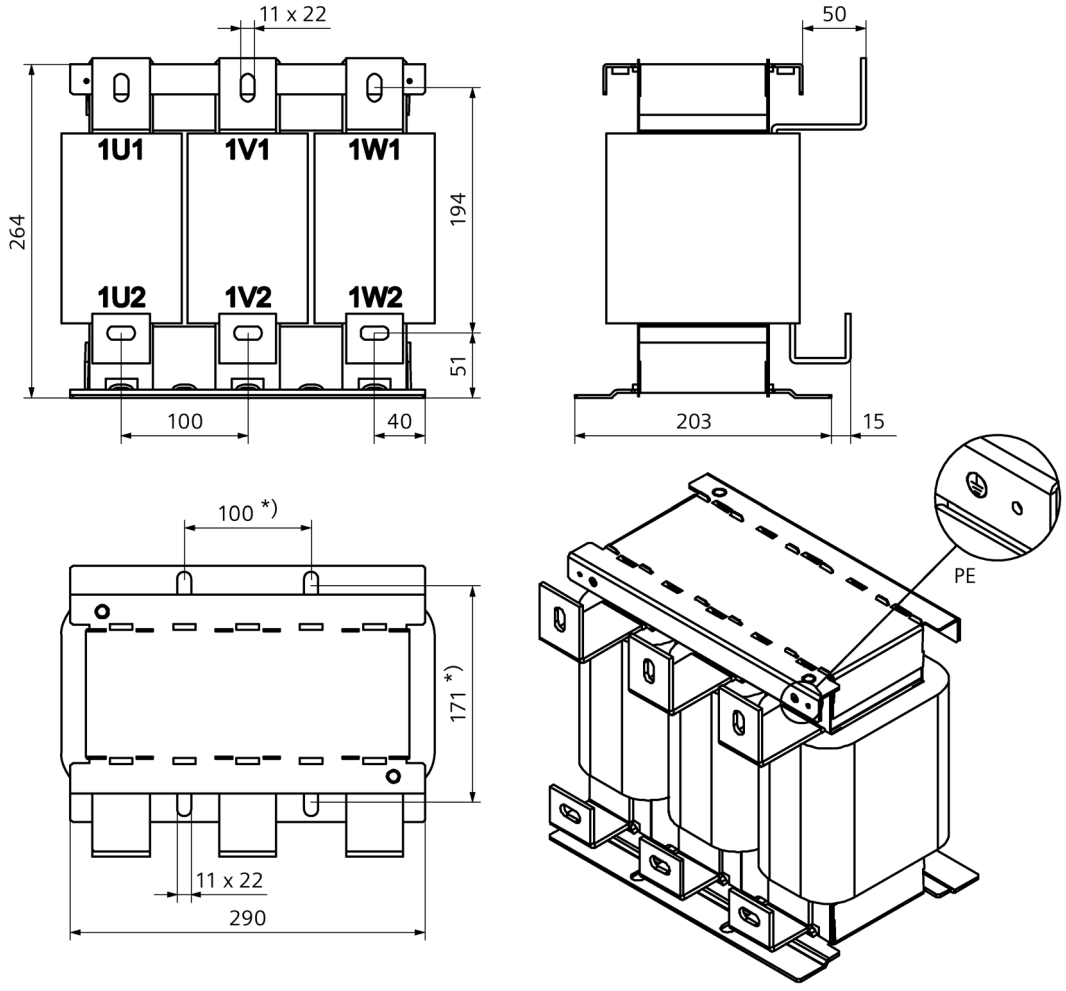
Shielding can only be omitted if the following conditions are met:

- The cables do not exceed 1 m in length.
- The cables are laid flush with the rear metal wall of the control cabinet.
- The cables are laid in a way that keeps them physically separate from signal cables.

Do not route any cables near the line reactor. If this cannot be avoided, observe a minimum distance of 200 mm.

5.2.3 Dimension drawing

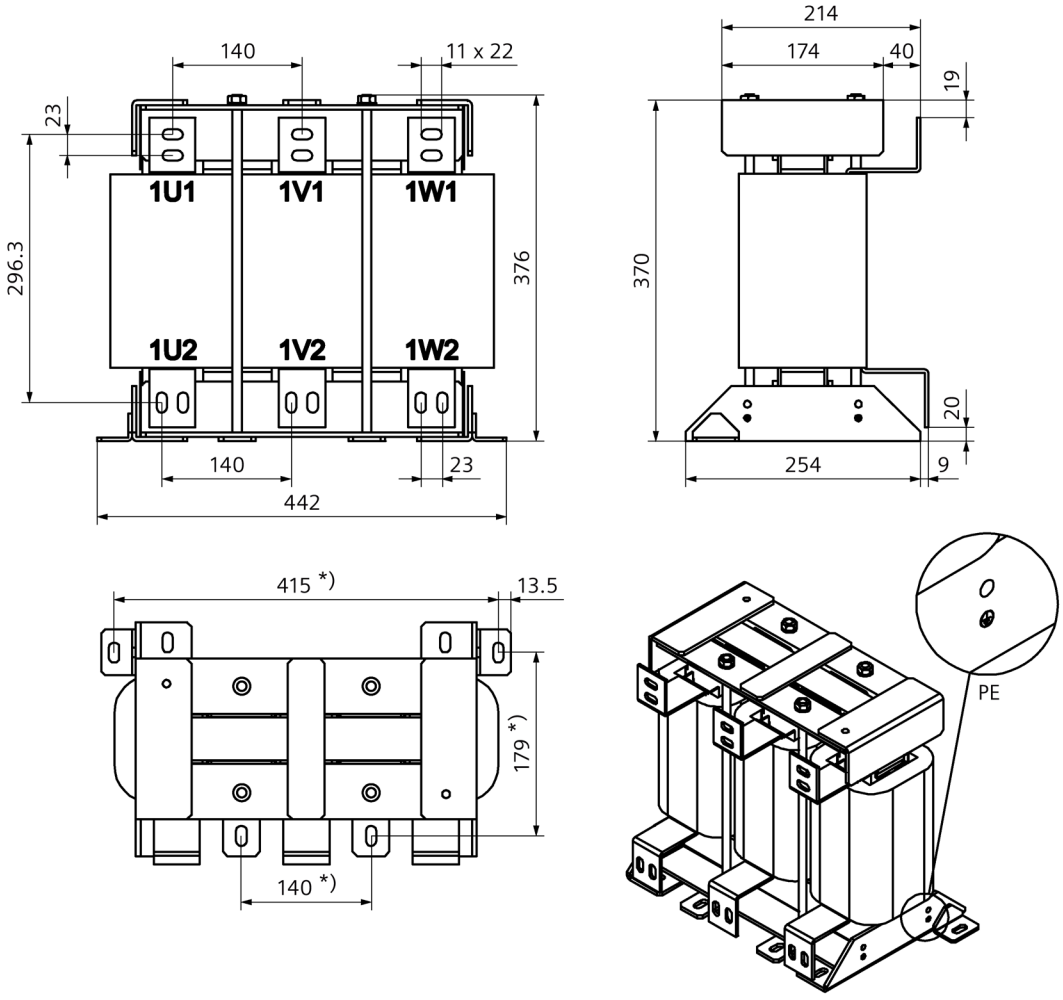
Line reactor 6SL3000-0EE36-2AT0



*) The dimensions correspond to the borehole spacing.

Figure 5-2 Dimension drawing, line reactor 6SL3000-0EE36-2AT0

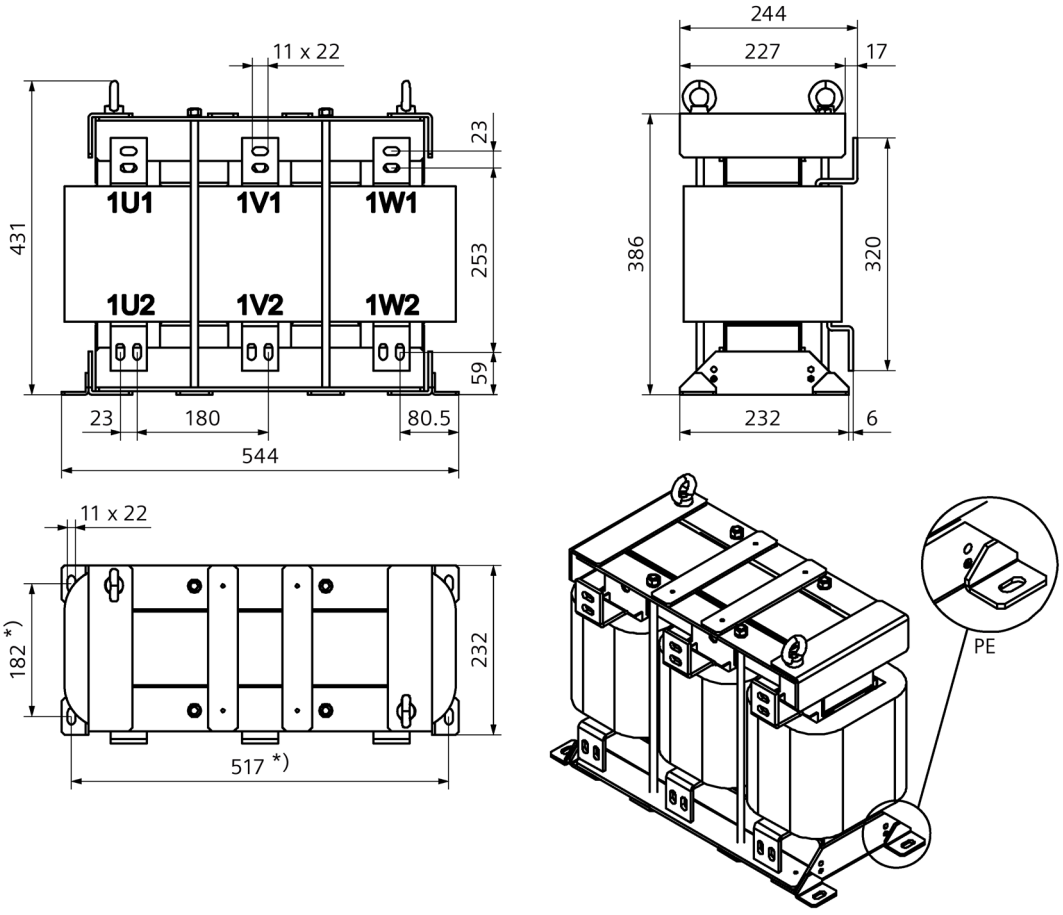
Line reactor 6SL3000-0EE38-8AT0



*) The dimensions correspond to the borehole spacing.

Figure 5-3 Dimension drawing, line reactor 6SL3000-0EE38-8AT0, all dimensions in mm

Line reactor 6SL3000-0EE41-4AT0



*) The dimensions correspond to the borehole spacing.

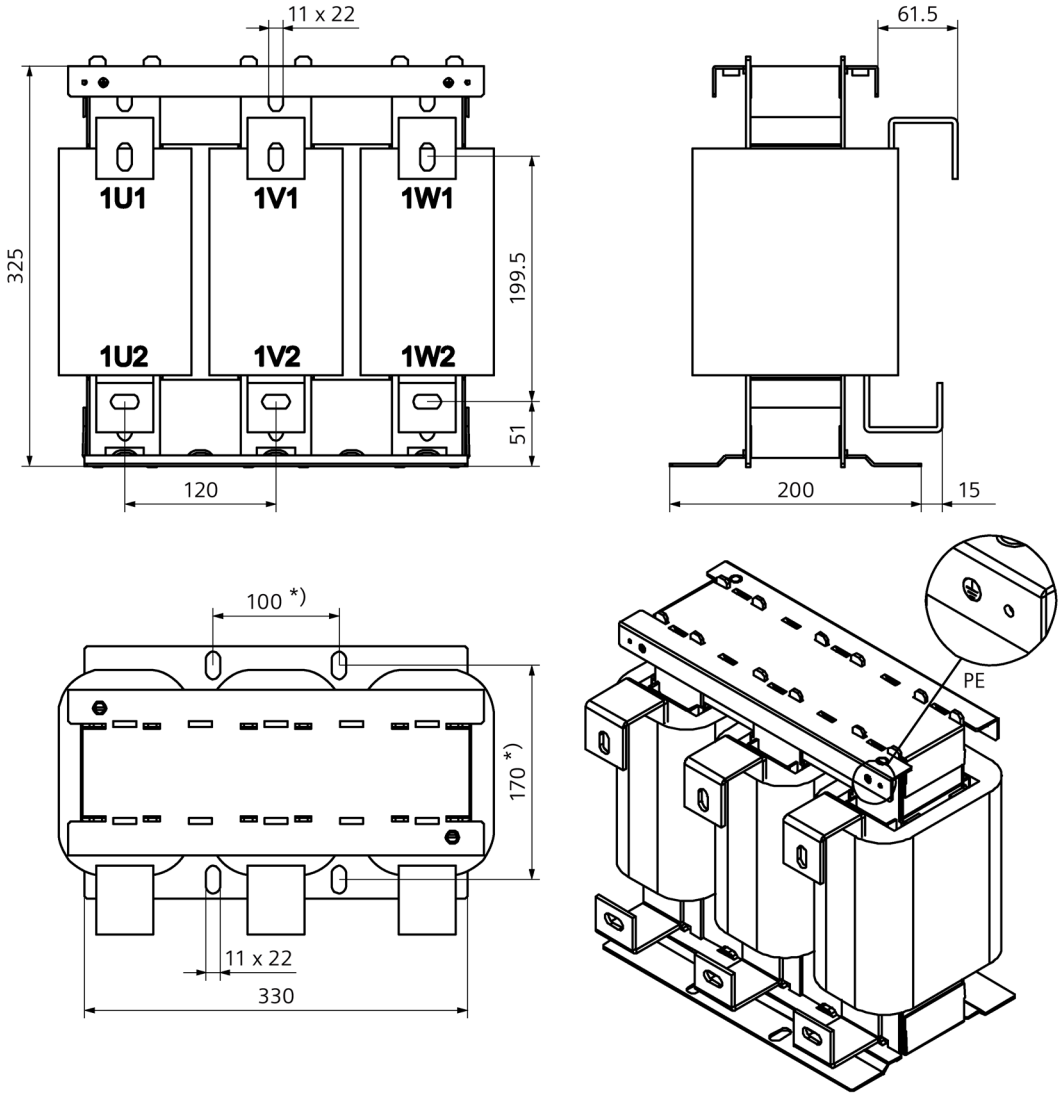
Figure 5-4 Dimension drawing, line reactor 6SL3000-0EE41-4AT0

Note

Remove the crane lifting eyes

The crane lifting eyes can be removed after installation.

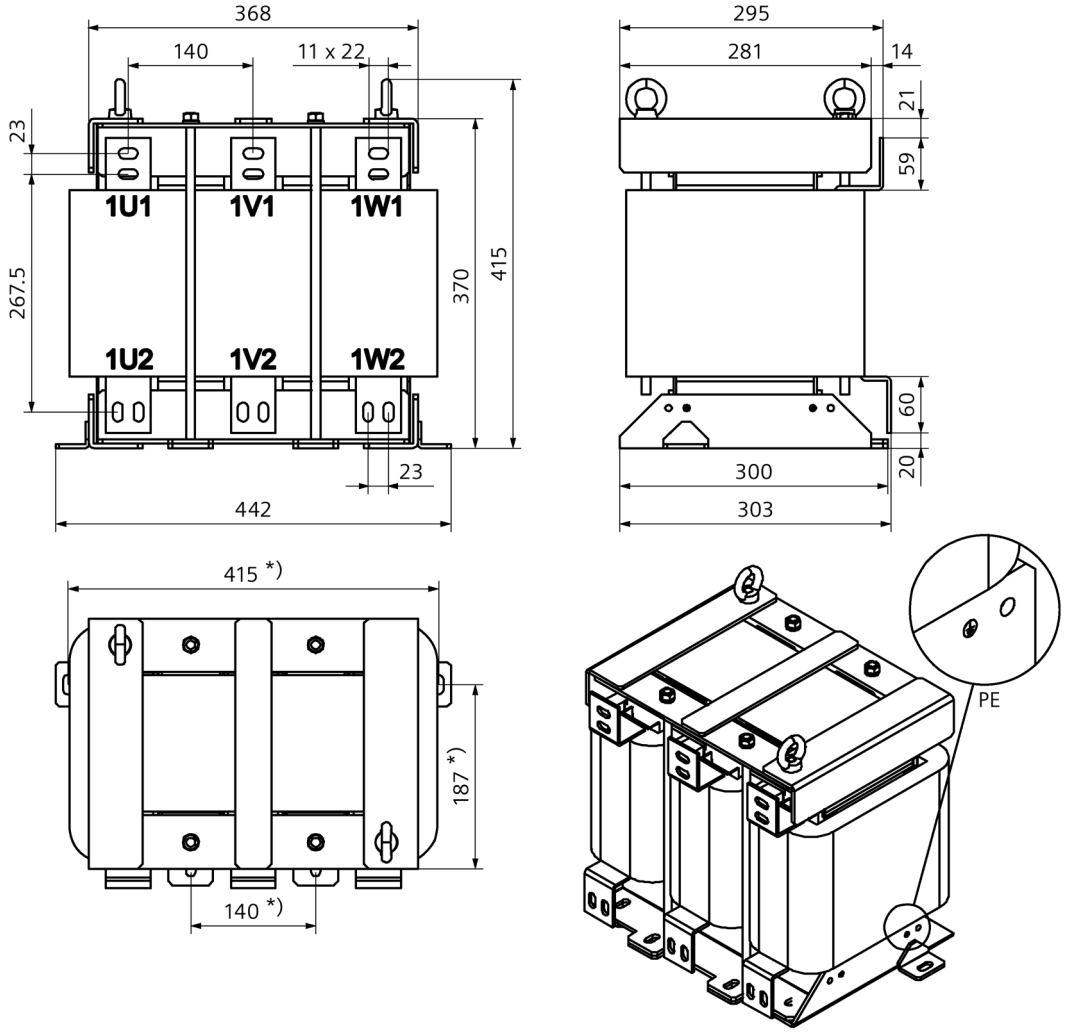
Line reactor 6SL3000-0EH34-7AT0



*) The dimensions correspond to the borehole spacing.

Figure 5-5 Dimension drawing, line reactor 6SL3000-0EH34-7AT0

Line reactor 6SL3000-0EH37-6AT0



*) The dimensions correspond to the borehole spacing.

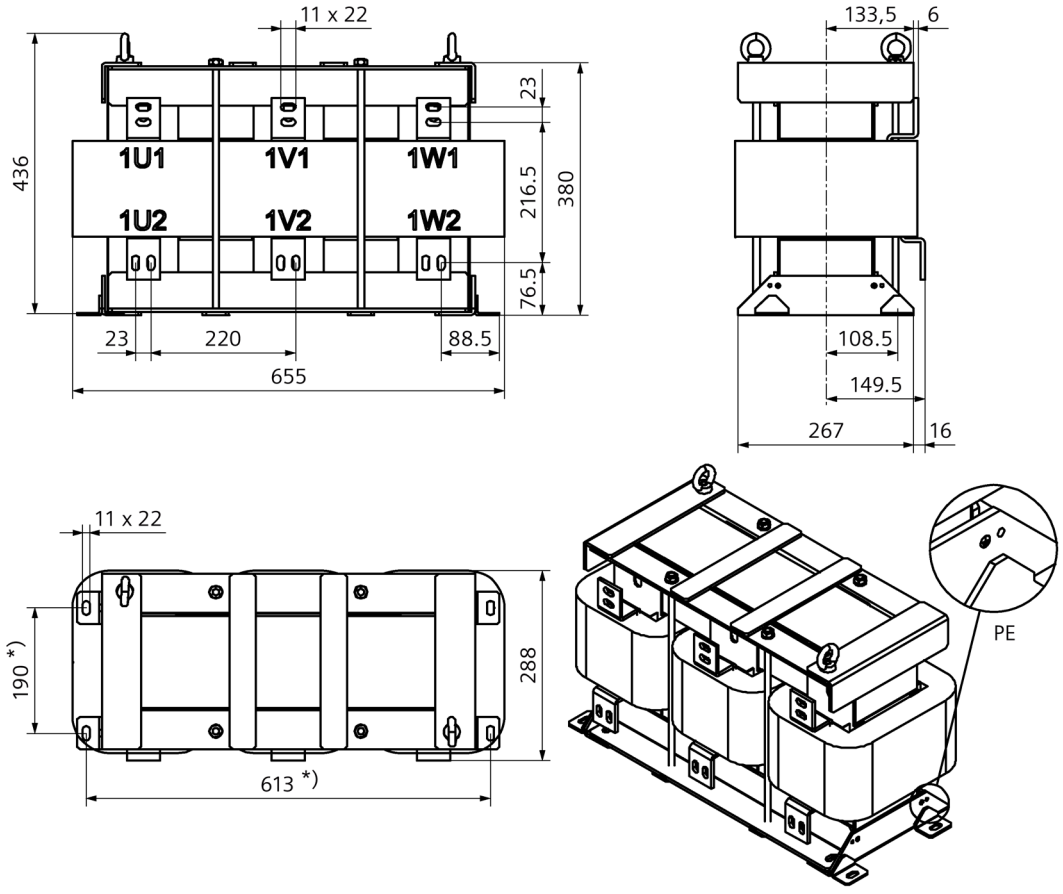
Figure 5-6 Dimension drawing, line reactor 6SL3000-0EH37-6AT0

Note

Remove the crane lifting eyes

The crane lifting eyes can be removed after installation.

Line reactor 6SL3000-0EH41-4AT0



*) The dimensions correspond to the borehole spacing.

Figure 5-7 Dimension drawing, line reactor 6SL3000-0EH41-4AT0

Note

Remove the crane lifting eyes

The crane lifting eyes can be removed after installation.

5.2.4 Technical data

Table 5- 7 Technical data, line reactors for Smart Line Modules, 3 AC 380 ... 480 V

Article number	**6SL3000-**	**0EE36-2AT0**	**0EE38-8AT0**	**0EE41-4AT0**	
Suitable for Smart Line Module	6SL3330-	6TE35-5AA3 6TE37-3AA3	6TE41-1AA3	6TE41-3AA3 6TE41-7AA3	
Rated power of the Smart Line Module	kW	250 355	500	630 800	
Rated voltage	V	3 AC 380 -10% (-15% < 1 min) ... 3 AC 480 +10%			
I_{thmax}	A	615	885	1573	
Power loss 50/60 Hz	kW	0.500/0.560	0.725/0.810	0.925/1.080	
Line/load connection 1U1, 1V1, 1W1, 1U2, 1V2, 1W2		M10 connecting lugs	M10 connecting lugs	M10 connecting lugs	
PE connection		M6	M6, 4x	M6, 4x	
Degree of protection		IP00	IP00	IP00	
Dimensions Width Height Depth	 mm mm mm	 300 264 203	 442 370 263	 544 386 244	
Weight	kg	66	100	160	

Table 5- 8 Technical data, line reactors for Smart Line Modules, 3 AC 500 ... 690 V

Article number	**6SL3000-**	**0EH34-7AT0**	**0EH37-6AT0**	**0EH41-4AT0**	
Suitable for Smart Line Module	6SL3330-	6TG35-5AA3	6TG38-8AA3	6TG41-7AA3 6TG41-2AA3	
Rated power of the Smart Line Module	kW	450	710	1000 1400	
Rated voltage	V	3 AC 500 -10% (-15% < 1 min) ... 3 AC 690 +10%			
I_{thmax}	A	465	760	1430	
Power loss 50/60 Hz	kW	0.720/0.820	0.840/0.950	1.680/1.850	
Line/load connection 1U1, 1V1, 1W1, 1U2, 1V2, 1W2		M10 connecting lugs	M10 connecting lugs	M10 connecting lugs	
PE connection		M6	M6, 4x	M8, 4x	
Degree of protection		IP00	IP00	IP00	
Dimensions Width Height Depth	 mm mm mm	 350 325 227	 442 370 303	 655 380 288	
Weight	kg	80	145	255	

5.3 Line reactors for air-cooled Power Modules

5.3.1 Description

The line reactors limit low-frequency line harmonics and reduce the load on the rectifiers in the Power Modules. They are used to smooth voltage spikes (line supply faults) or to bridge voltage dips/interruptions when commutating. This is why we recommend that line reactors are used in conjunction with Power Modules.

5.3.2 Safety information

⚠ WARNING

Fire due to overheating due to insufficient ventilation clearances

Insufficient ventilation clearances can result in overheating with danger to persons as a result of smoke and fire. Furthermore, an increased number of failures and shorter service life of the components can occur.

- Maintain 100 mm ventilation clearances above and to the side of the component.



⚠ CAUTION

Burns resulting from high surface temperature

The surface temperature of the line reactors can exceed 80 °C. You can be severely burnt when touching the surface.

- Mount the line reactors so that contact is not possible. If this is not possible, attach clearly visible and understandable warning notices at hazardous positions.

NOTICE

Damage to the Power Module by using components that have not been released

When using components that have not been released, damage or malfunctions can occur at the devices or the system itself.

- Only use line reactors that SIEMENS has released for SINAMICS.

Note

Malfunctions through magnetic fields

Reactors produce magnetic fields that can disturb or damage components and cables.

- Arrange the components and cables at a suitable distance (at least 200 mm) or shield the magnetic fields appropriately.

Note

Length of connection cables

The connection cables between line reactor and Power Module, as well as between line reactor and line filter, must be kept as short as possible (max. 5 m).

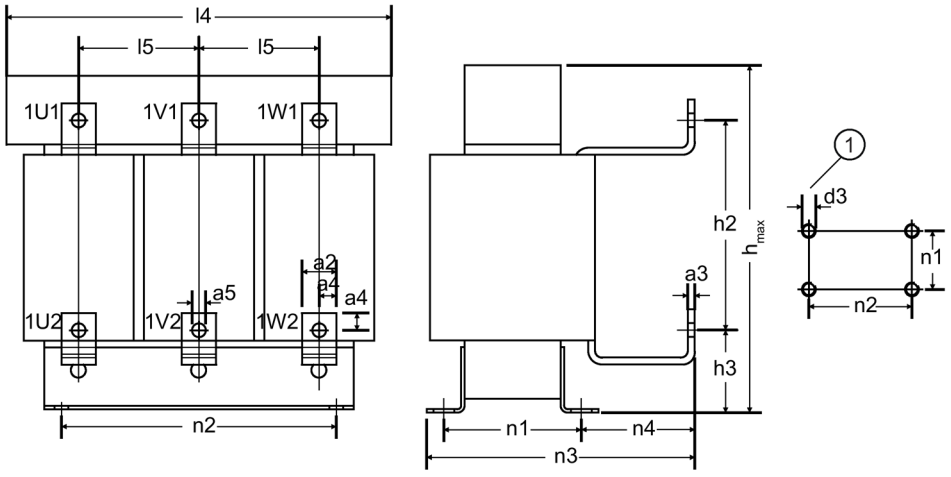
You must use shielded connection cables, whose cable shields are attached at both ends.

Shielding can only be omitted if the following conditions are met:

- The cables do not exceed 1 m in length.
- The cables are laid flush with the rear metal wall of the control cabinet.
- The cables are laid in a way that keeps them physically separate from signal cables.

Do not route any cables near the line reactor. If this cannot be avoided, observe a minimum distance of 200 mm.

5.3.3 Dimension drawing



① Mounting hole

Figure 5-8 Dimension drawing, line reactors

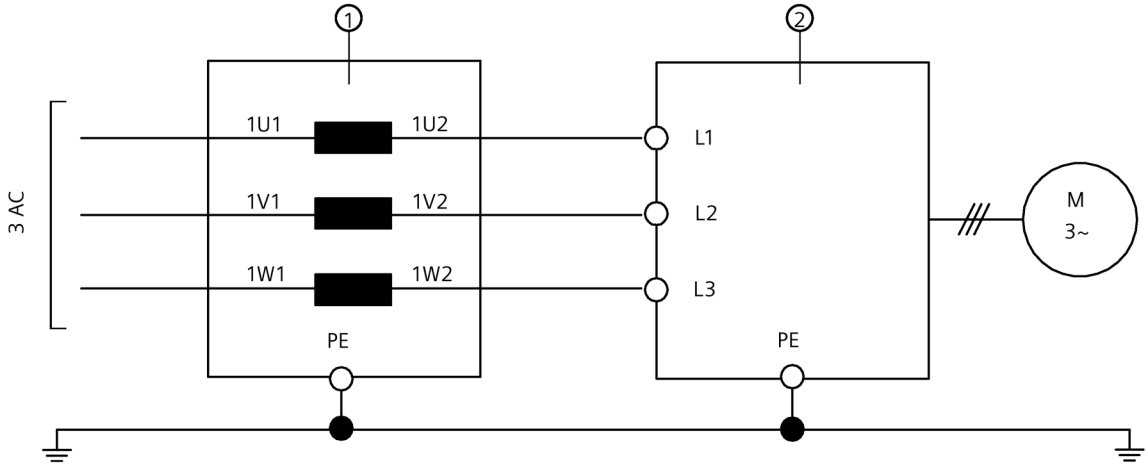
Table 5- 9 Dimensions of the line reactors, all data in mm

6SL3000-	0CE32-3AT0	0CE32-8AT0	0CE33-3AT0	0CE35-1AT0
a2	25	25	25	30
a3	5	5	5	6
a4	12.5	12.5	12.5	15
a5	11	11	11	14
l4	270	270	270	300
l5	88	88	88	100
hmax	248	248	248	269
h2	150	150	150	180
h3	60	60	60	60
n1 [1)]	101	101	101	118
n2[1)]	200	200	200	224
n3	201.5	201.5	201.5	212
n3	84.5	84.5	84.5	81
d3	M8	M8	M8	M8

[1)] Lengths n1 and n2 correspond to the distance between holes.

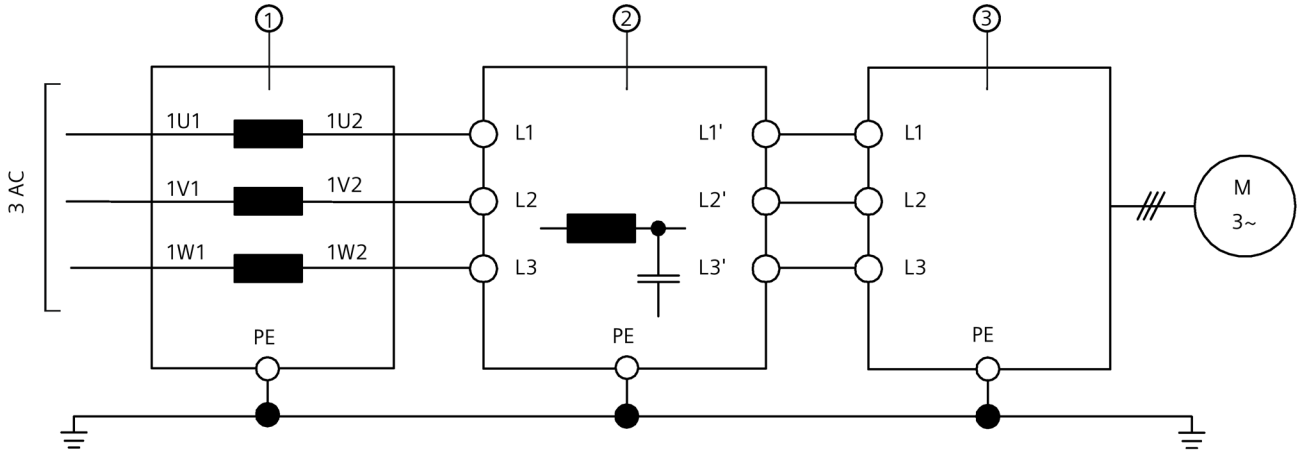
5.3.4 Electrical Connection

Line/load connection



① Line reactor
② Power Module

Figure 5-9 Power Module with line filter



① Line reactor
② Line filter
③ Power Module

Figure 5-10 Power Module with line reactor and line filter

5.3.5 Technical data

Table 5- 10 Technical data, Chassis line reactors

Article number	**6SL3000-**	**0CE32-3AT0**	**0CE32-8AT0**	**0CE33-3AT0**	**0CE35-1AT0**	**0CE35-1AT0**
Suitable for Power Module	6SL3310-	1TE32-1AA3	1TE32-6AA3	1TE33-1AA3	1TE33-8AA3	1TE35-0AA3
Rated current of the Power Module	A	210	260	310	380	490
Rated voltage	V	3 AC 380 -10% (-15% < 1 min) ... 3 AC 480 +10%				
I_{thmax}	A	224	278	331	508	508
Power loss	kW	0.274	0.247	0.267	0.365	0.365
Line/load connection 1U1, 1V1, 1W1, 1U2, 1V2, 1W2		M10 connecting lugs	M10 connecting lugs	M10 connecting lugs	M12 connecting lugs	M12 connecting lugs
PE connection		M6 screw	M6 screw	M6 screw	M6 screw	M6 screw
Degree of protection		IP00	IP00	IP00	IP00	IP00
Dimensions Width Height Depth	 mm mm mm	 270 248 201.5	 270 248 201.5	 270 248 201.5	 300 269 212	 300 269 212
Weight	kg	26	27.5	27.6	39.9	39.9

5.4 Motor reactors for air-cooled Power Modules

5.4.1 Description

Motor reactors reduce discharge currents which means that longer motor cables may be used.

At the same time, the stress on the motor windings caused by rates of voltage rise (dv/dt) is also diminished.

5.4.2 Safety information

⚠WARNING

Fire due to overheating due to insufficient ventilation clearances

Insufficient ventilation clearances can result in overheating with danger to persons as a result of smoke and fire. This can also result in increased downtime and reduced service lives for devices/systems.

- It is essential that you maintain 100 mm ventilation clearances above and below the component.



⚠CAUTION

Burns resulting from high surface temperature

The motor reactors can become very hot. You can be severely burnt when touching the surface.

- Mount the motor reactors so that they cannot be touched. If this is not possible, attach a clearly visible and understandable warning notice at hazardous positions.

NOTICE

Damage to the motor reactors due to use of non-approved components

If components are used that have not been approved, damage or malfunctions can occur in the devices or the system itself. There is a risk that the motor reactor will be thermally damaged.

- Use only motor reactors that have been approved for SINAMICS by Siemens.

NOTICE

Damage to the motor reactor if the maximum output frequency is exceeded

The maximum permissible output frequency when motor reactors are used is 150 Hz. At a higher output frequency, the motor reactor may be damaged.

- Do not operate the motor reactors above the maximum permissible output frequency of 150 Hz.

NOTICE

Damage to the motor reactor if the maximum pulse frequency is exceeded

The maximum permissible pulse frequency when using motor reactors is 4 kHz. At a higher pulse frequency, the motor reactor may be damaged.

- Do not operate the motor reactors on the Power Module above the maximum permissible pulse frequency of 4 kHz.

NOTICE

Damage to the motor reactor if it is not activated during commissioning

The motor reactor may be damaged if it is not activated during commissioning.

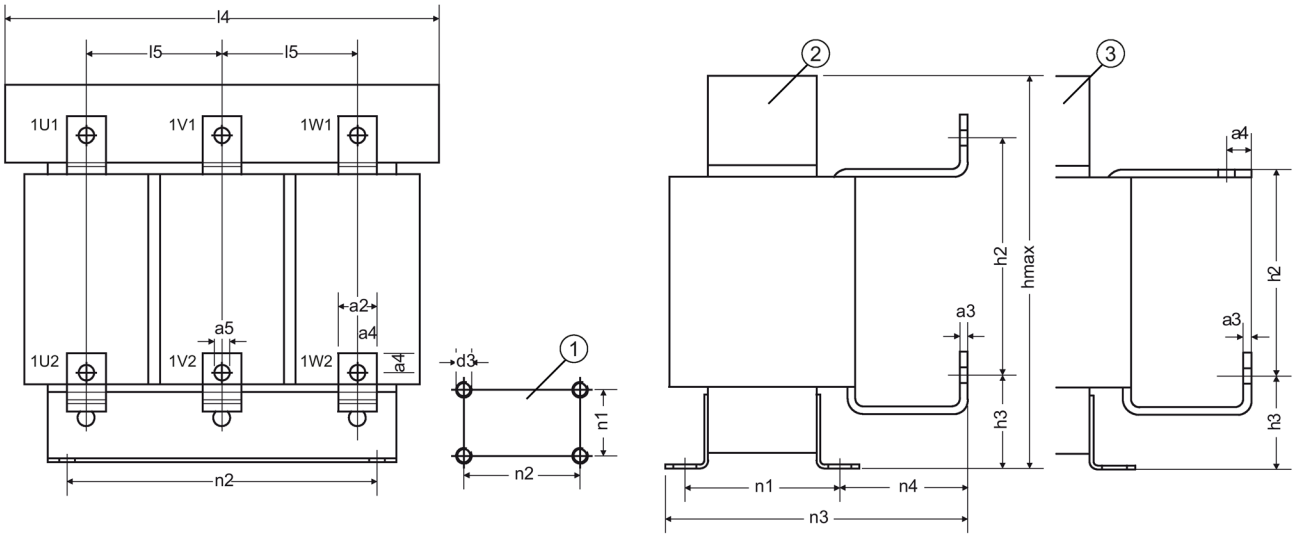
- Activate the motor reactor during commissioning via parameter p0230 = 1.

Note

Cable lengths

Keep the connecting cables to the Power Module as short as possible (max. 5 m).

5.4.3 Dimension drawing



① Mounting hole
② Connection type 1
③ Connection type 2

Figure 5-11 Dimension drawing, motor reactor

Table 5- 11 Dimensions motor reactors (all dimensions in mm)

6SL3000-	2BE32-1AT0	2BE32-6AT0	2BE33-2AT0	2BE33-8AT0	2BE35-0AT0
Connection type	1	1	1	1	2
a2	25	25	25	25	30
a3	5	5	5	5	6
a4	12.5	12.5	12.5	12.5	15
a5	11	11	11	11	14
l4	300	300	300	300	300
l5	100	100	100	100	100
hmax	269.5	310	269	283.5	355
h2	194	227	194	194	245
h3	60	60	60	60	60
n1 [1)]	165	183	163	183	183
n2 [1)]	224	224	224	224	224
n3	257	276	257	277	277
n4	78	77.5	78	78	79
d3	M8	M8	M8	M8	M8

[1)] Lengths n1 and n2 correspond to the distance between holes.

5.4.4 Technical data

Table 5- 12 Technical data, motor reactors

Article number	**6SL3000-**	**2BE32-1AT0**	**2BE32-6AT0**	**2BE33-2AT0**	**2BE33-8AT0**	**2BE35-0AT0**
Suitable for Power Module	6SL3310-	1TE32-1AA3	1TE32-6AA3	1TE33-1AA3	1TE33-8AA3	1TE35-0AA3
Type rating of the Power Module	kW	110	132	160	200	250
Rated current	A	210	260	310	380	490
Power loss - at 50 Hz - at 150 Hz	 kW kW	 0.285 0.296	 0.300 0.313	 0.290 0.298	 0.352 0.362	 0.440 0.453
Connections - To the Motor Module (1U1, 1V1, 1W1) - To the load (1U2, 1V2, 1W2)		M10 connecting lugs	M10 connecting lugs	M10 connecting lugs	M10 connecting lugs	M12 connecting lugs
PE connection		M6	M6	M6	M8	M6
Max. permissible cable length between motor reactor and motor - With one motor reactor - With two motor reactors in series	 m m	300 (shielded) / 450 (unshielded) 525 (shielded) / 787 (unshielded)				
Degree of protection		IP00	IP00	IP00	IP00	IP00
Dimensions Width Height Depth	 mm mm mm	 300 269.5 257	 300 310 276	 300 269 257	 300 283.5 277	 300 355 277
Weight	kg	53	71	55	67	78

5.5 Motor reactors for air-cooled Motor Modules Chassis

5.5.1 Description

Motor reactors reduce the voltage stress on the motor windings by reducing the voltage gradients at the motor terminals that occur when motors are fed from drive converters. At the same time, the capacitive charge/discharge currents that also occur on the output of the Motor Module when long motor cables are used are reduced.

Table 5- 13 Maximum pulse frequency when using a motor reactor with devices with a rated pulse frequency of 2 kHz

Article No. of the Motor Module 6SL3320-...	Type rating [kW]	Output current for a pulse frequency of 2 kHz [A]	Maximum pulse frequency when using a motor reactor
Line voltage 3 AC 380 ... 480 V			
1TE32-1AA3	110	210	4 kHz
1TE32-6AA3	132	260	4 kHz
1TE33-1AA3	160	310	4 kHz
1TE33-8AA3	200	380	4 kHz
1TE35-0AA3	250	490	4 kHz
1TE41-4AS3	800	1330	2.5 kHz

Table 5- 14 Maximum pulse frequency when using a motor reactor with devices with a rated pulse frequency of 1.25 kHz

Article No. of the Motor Module 6SL3320-...	Type rating [kW]	Output current for a pulse frequency of 1.25 kHz [A]	Maximum pulse frequency when using a motor reactor
Line voltage 3 AC 380 ... 480 V			
1TE36-1AA3	315	605	2.5 kHz
1TE37-5AA3	400	745	2.5 kHz
1TE38-4AA3	450	840	2.5 kHz
1TE41-0AA3	560	985	2.5 kHz
1TE41-2AA3	710	1260	2.5 kHz
1TE41-4AA3	800	1405	2.5 kHz

Article No. of the Motor Module 6SL3320-...	Type rating [kW]	Output current for a pulse frequency of 1.25 kHz [A]	Maximum pulse frequency when using a motor reactor
Line voltage 3 AC 500 ... 690 V			
1TG28-5AA3	75	85	2.5 kHz
1TG31-0AA3	90	100	2.5 kHz
1TG31-2AA3	110	120	2.5 kHz
1TG31-5AA3	132	150	2.5 kHz
1TG31-8AA3	160	175	2.5 kHz
1TG32-2AA3	200	215	2.5 kHz
1TG32-6AA3	250	260	2.5 kHz
1TG33-3AA3	315	330	2.5 kHz
1TG34-1AA3	400	410	2.5 kHz
1TG34-7AA3	450	465	2.5 kHz
1TG35-8AA3	560	575	2.5 kHz
1TG37-4AA3	710	735	2.5 kHz
1TG38-1AA3	800	810	2.5 kHz
1TG38-8AA3	900	910	2.5 kHz
1TG41-0AA3	1000	1025	2.5 kHz
1TG41-3AA3	1200	1270	2.5 kHz

Table 5- 15 Maximum pulse frequency when using a motor reactor with devices with a rated pulse frequency of 2.5 kHz

Article No. of the Motor Module Chassis-2 6SL3321-...	Type rating [kW]	Output current for a pulse frequency of 2.5 kHz [A]	Maximum pulse frequency when using a motor reactor
Line voltage 3 AC 380 ... 480 V			
1TE36-6AA0	315	655	2.5 kHz
1TE37-4AA0	355	740	2.5 kHz
1TE38-1AA0	400	810	2.5 kHz
1TE38-8AA0	450	910	2.5 kHz
1TE41-0AA0	500	975	2.5 kHz
1TE41-1AA0	560	1075	2.5 kHz
1TE41-2AA0	630	1200	2.5 kHz
1TE41-3AA0	710	1325	2.5 kHz
1TE41-5AA0	800	1495	2.5 kHz

5.5.2 Safety information

⚠WARNING

Fire due to overheating due to insufficient ventilation clearances

Insufficient ventilation clearances can result in overheating with danger to persons as a result of smoke and fire. Furthermore, an increased number of failures and shorter service life of the components can occur.

- Maintain 100 mm ventilation clearances above and to the side of the component.



⚠CAUTION

Burns resulting from high surface temperature

The surface temperature of the motor reactors can exceed 80 °C. You can be severely burnt when touching the surface.

- Mount the motor reactor so that it cannot be touched. If this is not possible, attach a clearly visible and understandable warning notice at hazardous positions.

NOTICE

Damage to the Motor Module by using components that have not been released

When using components that have not been released, damage or malfunctions can occur at the devices or the system itself.

- Only use motor reactors that SIEMENS has released for SINAMICS.

NOTICE

Damage to the motor reactor if the maximum output frequency is exceeded

The maximum permissible output frequency when a motor reactor is used is 150 Hz. The motor reactor can be damaged if the output frequency is exceeded.

- Operate the motor reactor with a maximum output frequency of 150 Hz.

NOTICE

Damage to the motor reactor if the maximum pulse frequency is exceeded

The maximum permissible pulse frequency when a motor reactor is used is 2.5 kHz or 4 kHz. The motor reactor can be damaged if the pulse frequency is exceeded.

- When using the motor reactor, operate the Motor Module with a maximum pulse frequency of 2.5 kHz or 4 kHz.

NOTICE

Damage to the motor reactor if it is not activated during commissioning

The motor reactor may be damaged if it is not activated during commissioning.

- Activate the motor reactor during commissioning via parameter p0230 = 1.

Note

Cable lengths

Keep the connecting cables to the Motor Module as short as possible (max. 5 m).

5.5.3 Dimension drawing

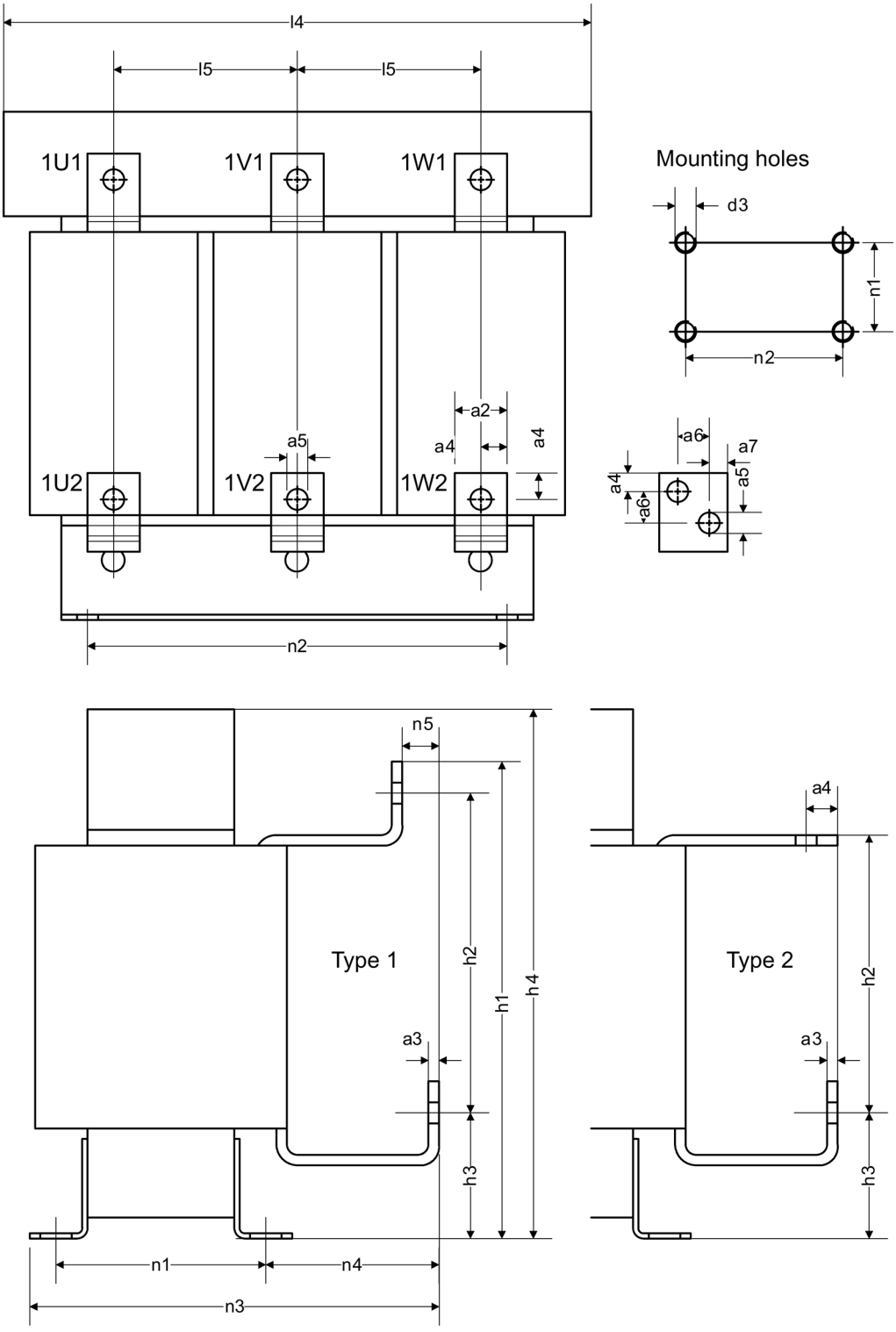


Figure 5-12 Dimension drawing, motor reactor

Table 5- 16 Dimensions of motor reactors, 3 AC 380 V ... 480 V, Part 1 (all specifications in mm)

6SL3000-	2BE32-1AT0	2BE32-6AT0	2BE33-2AT0	2BE33-8AT0	2BE35-0AT0
Connection type	Type 1	Type 1	Type 1	Type 1	Type 2
a2	25	25	25	25	30
a3	5	5	5	5	6
a4	12.5	12.5	12.5	12.5	15
a5	11	11	11	11	14
I4	300	300	300	300	300
I5	100	100	100	100	100
h1	-	-	-	-	-
h2	194	227	194	194	245
h3	60	60	60	60	60
h4	269.5	310	269	283.5	355
n1 [1)]	165	183	163	183	183
n2 [1)]	224	224	224	224	224
n3	257	276	257	277	277
n4	78	77.5	78	78	79
d3	M8	M8	M8	M8	M8

[1)] Lengths n1 and n2 correspond to the distance between holes

Table 5- 17 Dimensions of motor reactors, 3 AC 380 V ... 480 V, Part 2 (all specifications in mm)

6SL3000-	2AE36-1AT0	2AE38-4AT0	2AE41-0AT0	2AE41-4AT0	
Connection type	Type 1	Type 1	Type 1	Type 1	
a2	40	40	60	50	
a3	8	12	8	12	
a4	20	20	30	14	
a5	14	14	14	14	
a6	-	-	-	22	
a7	-	-	-	14	
I4	410	410	410	460	
I5	140	140	140	160	
h1	392	392	392	392	
h2	252	252	252	-	
h3	120	120	120	.	
h4	367	374	372	390	
n1 [1)]	191	191	206	212	
n2 [1)]	316	316	316	356	
n3	293	292	302	326	
n4	84.5	84.5	79.5	94.5	
n5	30	30	-	-	
d3	M10	M10	M10	M10	

[1)] Lengths n1 and n2 correspond to the distance between holes

Table 5- 18 Dimensions of motor reactors, 500 V – 690 V 3 AC (all data in mm)

6SL3000-	**2AH31-8AT0**	**2AH32-4AT0**	**2AH32-6AT0**	**2AH34-5AT0**	**2AH34-7AT0**	**2AH41-0AT0**
Connection type	Type 1	Type 1	Type 1	Type 1	Type 1	Type 1
a2	25	25	25	30	40	40
a3	5	5	5	6	8	8
a4	12.5	12.5	12.5	15	20	20
a5	11	11	11	14	14	14
l4	300	300	300	350	410	410
l5	100	100	100	120	140	140
h1	-	-	-	-	392	392
h2	194	194	194	235	252	252
h3	60	60	60	60	120	120
h4	266.5	270	270	320	378	392
n1 [1)]	118	118	118	140	141	183
n2 [1)]	224	224	224	264	316	316
n3	212	210.5	212	225	295	279
n4	78	78	79.5	62	99.5	79.5
n5	-	-	-	-	30	--
d3	M8	M8	M8	M8	M10	M10

[1)] Lengths n1 and n2 correspond to the distance between holes

5.5.4 Technical data

Table 5- 19 Technical specifications of motor reactors, 3 AC 380 ... 480 V, Part 1

Article number	**6SL3000-**	**2BE32-1AT0**	**2BE32-6AT0**	**2BE33-2AT0**	**2BE33-8AT0**
Suitable for Motor Module	6SL3320-	1TE32-1AA3	1TE32-6AA3	1TE33-1AA3	1TE33-8AA3
Type rating of the Motor Module	kW	110	132	160	200
Rated current	A	210	260	310	380
Power loss - at 50 Hz - at 150 Hz	 kW kW	 0.285 0.296	 0.300 0.313	 0.290 0.298	 0.352 0.362
Connections - To the Motor Module (1U1, 1V1, 1W1) - Load (1U2, 1V2, 1W2)		M10 connecting lugs	M10 connecting lugs	M10 connecting lugs	M10 connecting lugs
PE connection		M6	M6	M6	M8
Max. permissible cable length between motor reactor and motor - With one motor reactor - With two motor reactors in series	 m m	 300 (shielded) / 450 (unshielded) 525 (shielded) / 787 (unshielded)			
Degree of protection		IP00	IP00	IP00	IP00
Dimensions Width Height Depth	 mm mm mm	 300 269.5 257	 300 310 276	 300 269 257	 300 283.5 277
Weight, approx.	kg	53	71	55	67

Table 5- 20 Technical specifications of motor reactors, 3 AC 380 ... 480 V, Part 2

Article number	**6SL3000-**	**2BE35-0AT0**	**2AE36-1AT0**	**2AE38-4AT0**	**2AE38-4AT0**
Suitable for Motor Module	6SL3320-	1TE35-0AA3	1TE36-1AA3	1TE37-5AA3	1TE38-4AA3
Type rating of the Motor Module	kW	250	315	400	450
Rated current	A	490	605	840	840
Power loss - at 50 Hz - at 150 Hz	 kW kW	 0.440 0.453	 0.450 0.645	 0.258 0.352	 0.290 0.395
Connections - To the Motor Module (1U1, 1V1, 1W1) - Load (1U2, 1V2, 1W2)		M12 connecting lugs	M12 connecting lugs	M12 connecting lugs	M12 connecting lugs
PE connection		M6	M8	M8	M8
Max. permissible cable length between motor reactor and motor - With one motor reactor - With two motor reactors in series	 m m	 300 (shielded) / 450 (unshielded) 525 (shielded) / 787 (unshielded)			
Degree of protection		IP00	IP00	IP00	IP00
Dimensions Width Height Depth	 mm mm mm	 300 355 277	 410 392 293	 410 364 292	 410 364 292
Weight, approx.	kg	78	75	95	95

Table 5- 21 Technical specifications of motor reactors, 3 AC 380 ... 480 V, Part 3

Article number	**6SL3000-**	**2AE41-0AT0**	**2AE41-4AT0**	**2AE41-4AT0**	**2AE41-4AT0**
Suitable for Motor Module	6SL3320-	1TE41-0AA3	1TE41-2AA3	1TE41-4AA3	1TE41-4AS3
Type rating of the Motor Module	kW	560	710	800	800
Rated current	A	985	1405	1405	1405
Power loss - at 50 Hz - at 150 Hz	 kW kW	 0.404 0.573	 0.568 0.577	 0.640 0.650	 0.640 0.650
Connections - To the Motor Module (1U1, 1V1, 1W1) - Load (1U2, 1V2, 1W2)		M12 connecting lugs	M12 connecting lugs	M12 connecting lugs	M12 connecting lugs
PE connection		M8	M10	M10	M10
Max. permissible cable length between motor reactor and motor - With one motor reactor - With two motor reactors in series	 m m	 300 (shielded) / 450 (unshielded) 525 (shielded) / 787 (unshielded)			
Degree of protection		IP00	IP00	IP00	IP00
Dimensions Width Height Depth	 mm mm mm	 410 372 302	 460 390 326	 460 390 326	 460 390 326
Weight, approx.	kg	115	160	160	160

Table 5- 22 Technical specifications of motor reactors 380 V ... 480 V 3 AC, Part 4

Article number	**6SL3000-**	**2AE38-4AT0**	**2AE41-4AT0**		
Matching Motor Module Chassis-2	6SL3321-	1TE36-6AA0 1TE37-4AA0 1TE38-1AA0	1TE38-8AA0		
Type rating of the Motor Module	kW	315 / 355 / 400	450		
Rated current	A	840	1405		
Power loss - at 50 Hz - at 150 Hz	 kW kW	 0.290 0.395	 0.640 0.650		
Connections - To the Motor Module (1U1, 1V1, 1W1) - Load (1U2, 1V2, 1W2)		M12 connecting lugs	M12 connecting lugs		
PE connection		M8	M10		
Max. permissible cable length between motor reactor and motor - With one motor reactor - With two motor reactors in series	 m m	 300 (shielded) / 450 (unshielded) 450 (shielded) / 675 (unshielded)			
Degree of protection		IP00	IP00		
Dimensions Width Height Depth	 mm mm mm	 410 374 292	 460 390 326		
Weight, approx.	kg	95	160		

Table 5- 23 Technical specifications of motor reactors, 3 AC 500 ... 690 V, Part 1

Article number	**6SL3000-**	**2AH31-8AT0**	**2AH32-4AT0**	**2AH32-6AT0**	**2AH34-5AT0**
Suitable for Motor Module	6SL3320-	1TG31-8AA3	1TG32-2AA3	1TG32-6AA3	1TG34-1AA3
Type rating of the Motor Module	kW	160	200	250	400
Rated current	A	175	215	260	410
Power loss - at 50 Hz - at 150 Hz	 kW kW	 0.174 0.231	 0.229 0.285	 0.371 0.382	 0.241 0.345
Connections - To the Motor Module (1U1, 1V1, 1W1) - Load (1U2, 1V2, 1W2)		M10 connecting lugs	M10 connecting lugs	M10 connecting lugs	M12 connecting lugs
PE connection		M6	M6	M8	M8
Max. permissible cable length between motor reactor and motor - With one motor reactor - With two motor reactors in series	 m m	 300 (shielded) / 450 (unshielded) 525 (shielded) / 787 (unshielded)			
Degree of protection		IP00	IP00	IP00	IP00
Dimensions Width Height Depth	 mm mm mm	 350 266.5 212	 300 270 210.5	 300 270 212	 360 320 225
Weight, approx.	kg	33	32	46	47

Table 5- 24 Technical specifications of motor reactors, 3 AC 500 ... 690 V, Part 2

Article number	**6SL3000-**	**2AH34-7AT0**	**2AH41-0AT0**		
Suitable for Motor Module	6SL3320-	1TG34-7AA3	1TG38-8AA3		
Type rating of the Motor Module	kW	450	900		
Rated current	A	465	910		
Power loss - at 50 Hz - at 150 Hz	 kW kW	 0.288 0.415	 0.595 0.639		
Connections - To the Motor Module (1U1, 1V1, 1W1) - Load (1U2, 1V2, 1W2)		M12 connecting lugs	M12 connecting lugs		
PE connection		M8	M8		
Max. permissible cable length between motor reactor and motor - With one motor reactor - With two motor reactors in series	 m m	 300 (shielded) / 450 (unshielded) 525 (shielded) / 787 (unshielded)			
Degree of protection		IP00	IP00		
Dimensions Width Height Depth	 mm mm mm	 410 378 295	 410 392 279		
Weight, approx.	kg	60	133		

Liquid-cooled SINAMICS S120

6

6.1 Line reactors for liquid-cooled Basic Line Modules

6.1.1 Description

Line reactors limit low-frequency line harmonics and reduce the load on the semiconductors in the Basic Line Modules.

A line reactor must be used if several Basic Line Modules are operated in parallel.

A line reactor is not required if a single Basic Line Module is used and the effective line impedance is uk > 3%.

6.1.2 Safety information

⚠WARNING

Fire due to overheating due to insufficient ventilation clearances

Insufficient ventilation clearances can result in overheating with danger to persons as a result of smoke and fire. Furthermore, an increased number of failures and shorter service life of the components can occur.

- Maintain 100 mm ventilation clearances above and to the side of the component.



⚠CAUTION

Burns resulting from high surface temperature

The surface temperature of the line reactors can exceed 80 °C. You can be severely burnt when touching the surface.

- Mount the line reactors so that contact is not possible. If this is not possible, attach clearly visible and understandable warning notices at hazardous positions.

NOTICE

Damage to the Line Module by using components that have not been released

When using components that have not been released, damage or malfunctions can occur at the devices or the system itself.

- Only use line reactors that SIEMENS has released for SINAMICS.

Note

Malfunctions through magnetic fields

Reactors produce magnetic fields that can disturb or damage components and cables.

- Arrange the components and cables at a suitable distance (at least 200 mm) or shield the magnetic fields appropriately.

Note

Length of connection cables

The connection lines between line reactor and Line Module must be kept as short as possible (max. 5 m).

You must use shielded connection cables, whose cable shields are attached at both ends.

Shielding can only be omitted if the following conditions are met:

- The cables do not exceed 1 m in length.
- The cables are laid flush with the rear metal wall of the control cabinet.
- The cables are laid in a way that keeps them physically separate from signal cables.

Do not route any cables near the line reactor. If this cannot be avoided, observe a minimum distance of 200 mm.

6.1.3 Dimension drawing

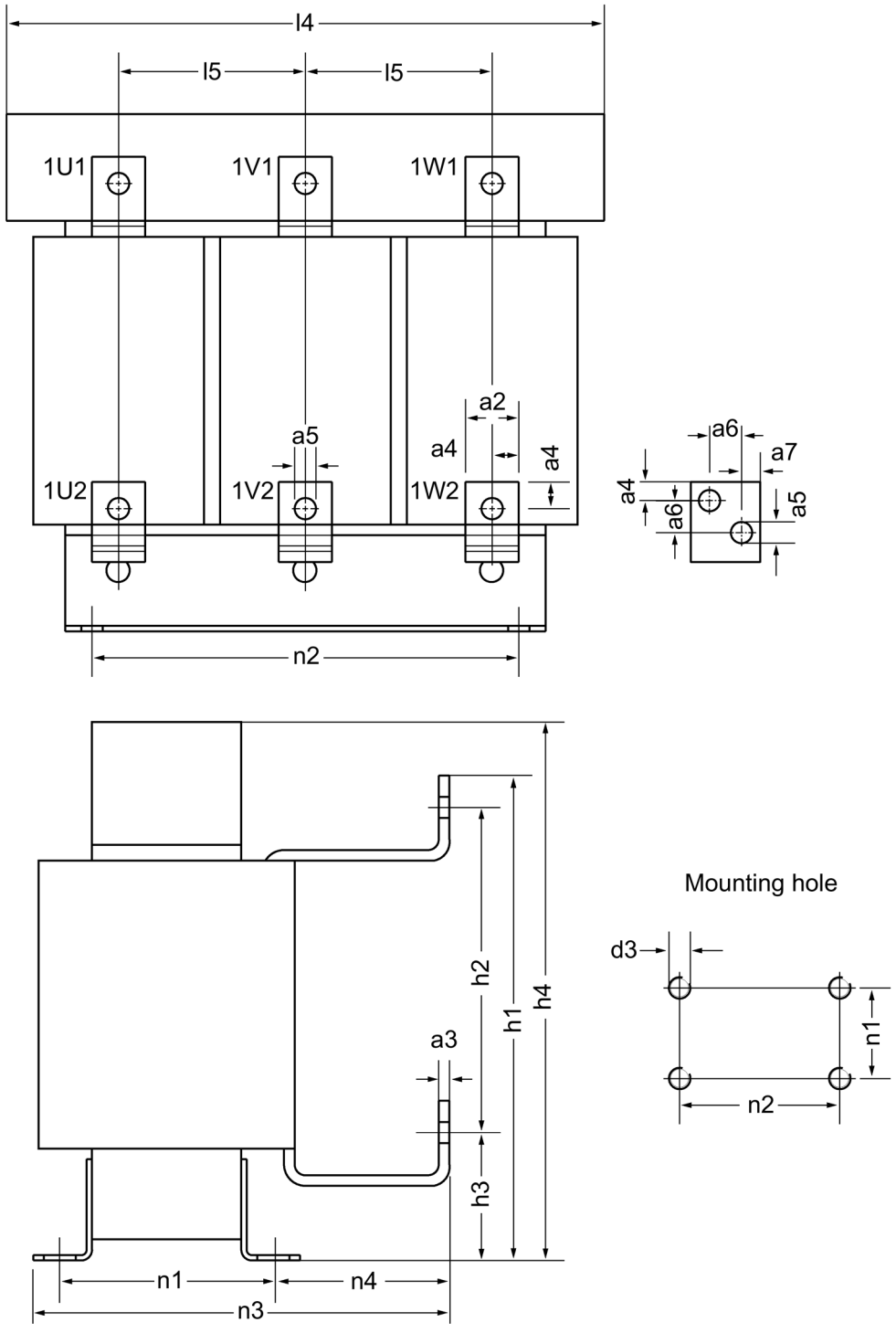


Figure 6-1 Dimension drawing of line reactors for Basic Line Modules

Table 6- 1 Dimensions of line reactors for Basic Line Modules, 3 AC 380 V ... 480 V (all values in mm)

6SL3000-	0CE36-3AT0	0CE41-0AT0	0CE41-5AT0	
a2	30	50	60	
a3	6	8	10	
a4	15	25	25	
a5	14	14	18 x 14	
a6	-	-	26	
a7	-	-	17	
l4	300	350	425	
l5	100	120	152.5	
h1	-	397	-	
h2	180	252	278	
h3	60	120	120	
h4	269	321	421	
n1 [1)]	118	138	155	
n2 [1)]	224	264	356	
n3	214	213	235	
n4	81	60	60	
d3	M8	M8	M12	

[1)] Lengths n1 and n2 correspond to the distance between holes

Table 6- 2 Dimensions of line reactors for Basic Line Modules, 3 AC 500 V ... 690 V (all values in mm)

6SL3000-	0CH33-4AT0	0CH36-0AT0	0CH41-2AT0	0CH41-6AT0
a2	25	30	60	60
a3	5	6	12	12
a4	12.5	15	25	25
a5	11	14	14	18 x 14
a6	-	-	26	26
a7	-	-	17	17
l4	285	350	445	444
l5	88	120	152.5	152.5
h1	-	-	-	-
h2	150	198	278	278
h3	60	75	120	120
h4	243	315	420	433
n1 [1)]	101	138	155	170
n2 [1)]	200	264	356	356
n3	201.5	234	235	247
n4	84.5	81	60.5	60.5
d3	M8	M8	M12	M12

[1)] Lengths n1 and n2 correspond to the distance between holes

6.1.4 Technical data

Table 6- 3 Technical data, line reactors for Basic Line Modules, 380 ... 480 V 3 AC

Article number	**6SL3000-**	**0CE36-3AT0**	**0CE41-0AT0**	**0CE41-5AT0**	
Suitable for Basic Line Module	6SL3335-	1TE37-4AAx	1TE41-2AAx	1TE41-7AAx	
Rated power of the Basic Line Module	kW	360	600	830	
Rated voltage	V	3 AC 380 –10% (-15 % < 1 min) to 3 AC 480 +10%			
I_{thmax}	A	628	1022	1458	
Power loss	kW	0.368	0.498	0.840	
Line/load connection 1U1, 1V1, 1W1, 1U2, 1V2, 1W2		M12 connecting lugs	M12 connecting lugs	M12 connecting lugs	
PE connection		M6 screw	M8 screw	M6 screw	
Degree of protection		IP00	IP00	IP00	
Dimensions Width Height Depth	 mm mm mm	 300 269 214	 350 321 214	 425 421 235	
Weight	kg	40.1	50.5	115	

Table 6- 4 Technical data, line reactors for Basic Line Modules, 500 ... 690 V 3 AC

Article number	**6SL3000-**	**0CH33-4AT0**	**0CH36-0AT0**	**0CH41-2AT0**	**0CH41-6AT0**
Suitable for Basic Line Module	6SL3335-	1TG34-2AAx	1TG37-3AAx	1TG41-3AAx	1TG41-7AAx
Rated power of the Basic Line Module	kW	355	630	1100	1370
Rated voltage	V	3 AC 500 –10 % (-15 % < 1 min) to 3 AC 690 +10 %			
I_{thmax}	A	342	597	1167	1600
Power loss	kW	0.340	0.485	0.683	0.977
Line/load connection 1U1, 1V1, 1W1, 1U2, 1V2, 1W2		M10 connecting lugs	M12 connecting lugs	M12 connecting lugs	M12 connecting lugs
PE connection		M6 screw	M8 screw	M6 screw	M6 screw
Degree of protection		IP00	IP00	IP00	IP00
Dimensions Width Height Depth	 mm mm mm	 285 243 201.5	 350 315 234	 445 420 235	 444 433 247
Weight	kg	38.9	60.9	138	150

6.2 Line reactors for liquid-cooled Power Modules

6.2.1 Description

The line reactors limit low-frequency line harmonics and reduce the load on the semiconductors in the Power Modules. A line reactor is not required where the effective line impedance is uk > 3%.

6.2.2 Safety information

⚠WARNING

Fire due to overheating due to insufficient ventilation clearances

Insufficient ventilation clearances can result in overheating with danger to persons as a result of smoke and fire. Furthermore, an increased number of failures and shorter service life of the components can occur.

- Maintain 100 mm ventilation clearances above and to the side of the component.



⚠CAUTION

Burns resulting from high surface temperature

The surface temperature of the line reactors can exceed 80 °C. You can be severely burnt when touching the surface.

- Mount the line reactors so that contact is not possible. If this is not possible, attach clearly visible and understandable warning notices at hazardous positions.

NOTICE

Damage to the Power Module by using components that have not been released

When using components that have not been released, damage or malfunctions can occur at the devices or the system itself.

- Only use line reactors that SIEMENS has released for SINAMICS.

Note

Malfunctions through magnetic fields

Reactors produce magnetic fields that can disturb or damage components and cables.

- Arrange the components and cables at a suitable distance (at least 200 mm) or shield the magnetic fields appropriately.

Note

Length of connection cables

The connection lines between line reactor and Power Module must be kept as short as possible (max. 5 m).

You must use shielded connection cables, whose cable shields are attached at both ends.

Shielding can only be omitted if the following conditions are met:

- The cables do not exceed 1 m in length.
- The cables are laid flush with the rear metal wall of the control cabinet.
- The cables are laid in a way that keeps them physically separate from signal cables.

Do not route any cables near the line reactor. If this cannot be avoided, observe a minimum distance of 200 mm.

6.2.3 Dimension drawing

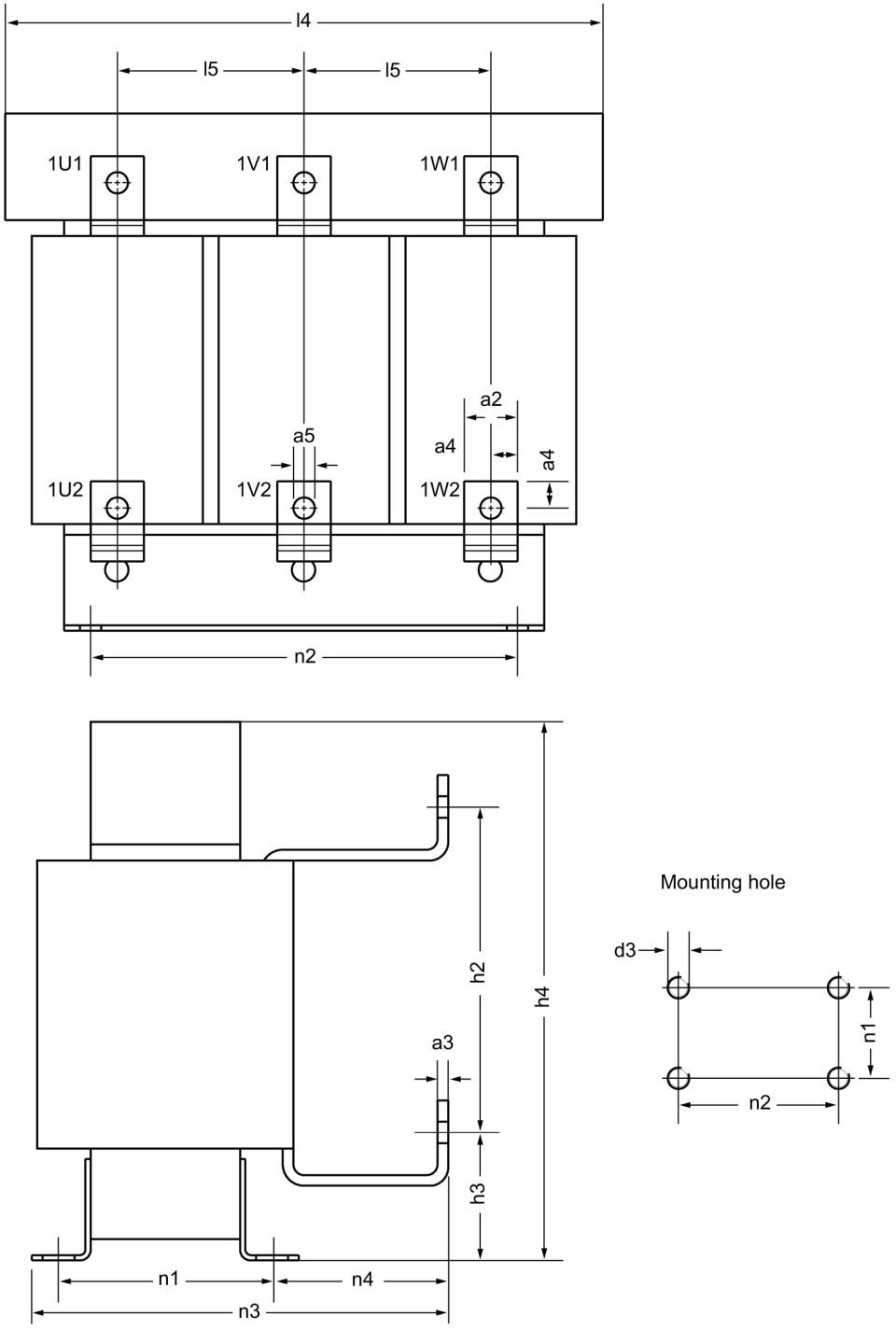


Figure 6-2 Dimension drawing, line reactor for Power Modules

Table 6- 5 Dimensions of line reactors for Power Modules (all data in mm)

6SL3000-	0CE32-3AT0	0CE32-8AT0	0CE33-3AT0	0CE35-1AT0
a2	25	25	25	30
a3	5	5	5	6
a4	12.5	12.5	12.5	15
a5	11	11	11	14
l4	270	270	270	300
l5	88	88	88	100
h2	150	150	150	180
h3	60	60	60	60
h4	248	248	248	269
n1 [1)]	101	101	101	118
n2 [1)]	200	200	200	224
n3	201.5	201.5	201.5	212
n4	84.5	84.5	84.5	81
d3	M8	M8	M8	M8

[1)] Lengths n1 and n2 correspond to the distance between holes

6.2.4 Technical data

Table 6- 6 Technical data, line reactors for Power Modules, 3 AC 380 ... 480 V

Article number	6SL3000-	0CE32-3AT0	0CE32-8AT0	0CE33-3AT0	0CE35-1AT0
Suitable for Power Module	6SL3315-	1TE32-1AA3	1TE32-6AA3	1TE33-1AA3	1TE35-0AA3
Type rating of the Power Module	kW	110	132	160	250
Rated voltage	V	3 AC 380 –10% (-15 % < 1 min) to 3 AC 480 +10%			
I_{thmax}	A	224	278	331	508
Power loss	kW	0.274	0.247	0.267	0.365
Line/load connection 1U1, 1V1, 1W1, 1U2, 1V2, 1W2		M10 connecting lugs	M10 connecting lugs	M10 connecting lugs	M12 connecting lugs
PE connection		M6 screw	M6 screw	M6 screw	M6 screw
Degree of protection		IP00	IP00	IP00	IP00
Dimensions Width Height Depth	 mm mm mm	 270 248 201.5	 270 248 201.5	 270 248 201.5	 300 269 212
Weight	kg	26	27.5	27.6	39.9

6.3 Motor reactors for liquid-cooled Power Modules

6.3.1 Description

Motor reactors reduce the voltage stress on the motor windings by reducing the voltage gradients at the motor terminals that occur when motors are fed from drive converters. At the same time, the capacitive re-charging currents that additionally load the output of the Power Module when longer motor cables are used are simultaneously reduced.

Table 6- 7 Maximum pulse frequency when using a motor reactor

Article No.	Type rating [kW]	Output current for a pulse frequency of 2 kHz [A]	Maximum pulse frequency when using a motor reactor
6SL3315-1TE32-1AA3	110	210	4 kHz
6SL3315-1TE32-6AA3	132	260	4 kHz
6SL3315-1TE33-1AA3	160	310	4 kHz
6SL3315-1TE35-0AA3	250	490	4 kHz

6.3.2 Safety information

⚠WARNING

Fire due to overheating due to insufficient ventilation clearances

Insufficient ventilation clearances can result in overheating with danger to persons as a result of smoke and fire. Furthermore, an increased number of failures and shorter service life of the components can occur.

- Maintain 100 mm ventilation clearances above and to the side of the component.



⚠CAUTION

Risk of burns resulting from high surface temperatures

The surface temperature of the motor reactors can exceed 80 °C. You can be severely burnt when touching the surface.

- Mount the motor reactor so that it cannot be touched. If this is not possible, attach a clearly visible and understandable warning notice at hazardous positions.

NOTICE

Damage to the Power Module by using components that have not been released

When using components that have not been released, damage or malfunctions can occur at the devices or the system itself.

- Only use motor reactors that SIEMENS has released for SINAMICS.

NOTICE

Damage to the motor reactor if the maximum output frequency is exceeded

The maximum permissible output frequency when a motor reactor is used is 150 Hz. The motor reactor can be damaged if the output frequency is exceeded.

- Operate the motor reactor with a maximum output frequency of 150 Hz.

NOTICE

Damage to the motor reactor if the maximum pulse frequency is exceeded

The maximum permissible pulse frequency when a motor reactor is used is 2.5 kHz or 4 kHz. The motor reactor can be damaged if the pulse frequency is exceeded.

- When using the motor reactor, operate the Power Module with a maximum pulse frequency of 2.5 kHz or 4 kHz.

NOTICE

Damage to the motor reactor if it is not activated during commissioning

The motor reactor may be damaged if it is not activated during commissioning.

- Activate the motor reactor during commissioning via parameter p0230 = 1.

Note

Cable lengths

Keep the connecting cables to the Power Module as short as possible (max. 5 m).

6.3.3 Dimension drawing

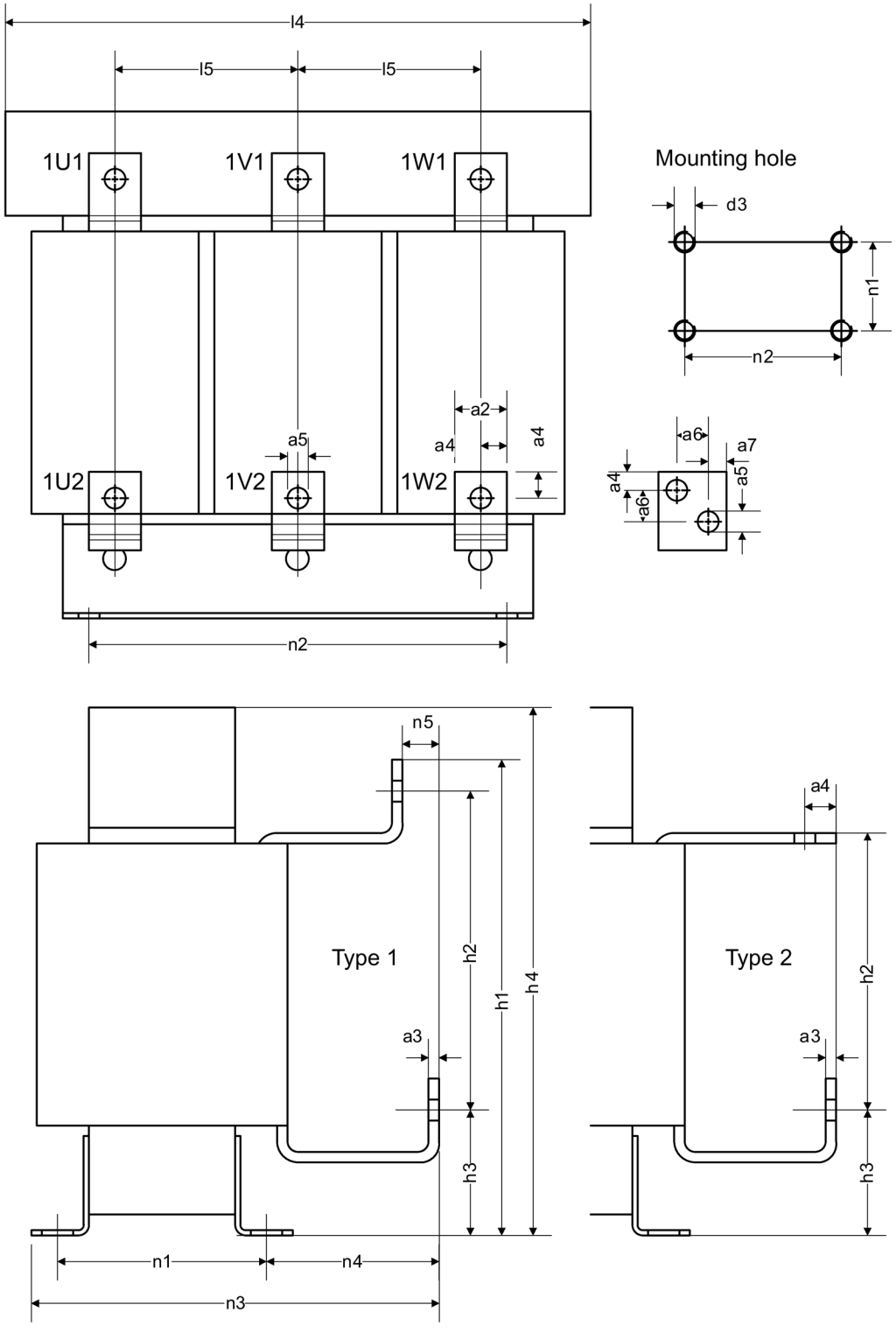


Figure 6-3 Dimension drawing, motor reactor

Table 6- 8 Dimensions motor reactors (all dimensions in mm)

6SL3000-	2BE32-1AT0	2BE32-6AT0	2BE33-2AT0	2BE35-0AT0
Connection type	Type 1	Type 1	Type 1	Type 2
a2	25	25	25	30
a3	5	5	5	6
a4	12.5	12.5	12.5	15
a5	11	11	11	14
l4	300	300	300	300
l5	100	100	100	100
h1	-	-	-	-
h2	194	227	194	245
h3	60	60	60	60
h4	269.5	310	269	355
n1 [1)]	165	183	163	183
n2 [1)]	224	224	224	224
n3	257	276	257	277
n4	78	77.5	78	79
d3	M8	M8	M8	M8

[1)] Lengths n1 and n2 correspond to the distance between holes

6.3.4 Technical data

Table 6- 9 Technical specifications of motor reactors

Article number	6SL3000-	2BE32-1AT0	2BE32-6AT0	2BE33-2AT0	2BE35-0AT0
Suitable for Power Module	6SL3315-	1TE32-1AA3	1TE32-6AA3	1TE33-1AA3	1TE35-0AA3
Type rating of the Power Module	kW	110	132	160	250
Rated current	A	210	260	310	490
Power loss - at 50 Hz - at 150 Hz	 kW kW	 0.285 0.296	 0.300 0.313	 0.290 0.298	 0.440 0.453
Connections - To the Power Module (1U1, 1V1, 1W1) - Load (1U2, 1V2, 1W2)		M10 connecting lugs	M10 connecting lugs	M10 connecting lugs	M10 connecting lugs
PE connection		M6	M6	M6	M6
Max. permissible cable length between the motor reactor and motor - without motor reactor - for 1 motor reactor - for 2 motor reactors in series	 m m m	 300 (shielded) / 450 (unshielded) 300 (shielded) / 450 (unshielded) 525 (shielded) / 787 (unshielded)			
Degree of protection		IP00	IP00	IP00	IP00
Dimensions Width Height Depth	 mm mm mm	 300 269.5 257	 300 310 276	 300 269 257	 300 355 277
Weight, approx.	kg	53	71	55	78

6.4 Motor reactors for liquid-cooled Motor Modules

6.4.1 Description

Motor reactors reduce the voltage stress on the motor windings by reducing the voltage gradients at the motor terminals that occur when motors are fed from drive converters. At the same time, the capacitive charge/discharge currents that also occur on the output of the Motor Module when long motor cables are used are reduced.

Table 6- 10 Maximum pulse frequency when using a motor reactor with Motor Modules with a rated pulse frequency of 2 kHz

Article No.	Type rating [kW]	Output current for a pulse frequency of 2 kHz [A]	Maximum pulse frequency when using a motor reactor
Line voltage 3 AC 380 ... 480 V			
6SL3325-1TE32-1AA3	110	210	4 kHz
6SL3325-1TE32-6AA3	132	260	4 kHz
6SL3325-1TE33-1AA3	160	310	4 kHz
6SL3325-1TE35-0AA3	250	490	4 kHz
6SL3325-1TE41-4AS3	800	1330	4 kHz

Table 6- 11 Maximum pulse frequency when using a motor reactor with Motor Modules with a rated pulse frequency of 1.25 kHz

Article No.	Type rating [kW]	Output current for a pulse frequency of 1.25 kHz [A]	Maximum pulse frequency when using a motor reactor
Line voltage 3 AC 380 ... 480 V			
6SL3325-1TE36-1AA3	315	605	2.5 kHz
6SL3325-1TE38-4AA3	450	840	2.5 kHz
6SL3325-1TE41-0AA3	560	985	2.5 kHz
6SL3325-1TE41-2AA3	710	1260	2.5 kHz
6SL3325-1TE41-4AA3	800	1405	2.5 kHz
Line voltage 3 AC 500 ... 690 V			
6SL3325-1TG31-0AA3	90	100	2.5 kHz
6SL3325-1TG31-5AA3	132	150	2.5 kHz
6SL3325-1TG32-2AA3	200	215	2.5 kHz
6SL3325-1TG33-3AA3	315	330	2.5 kHz
6SL3325-1TG34-7AA3	450	465	2.5 kHz
6SL3325-1TG35-8AA3	560	575	2.5 kHz
6SL3325-1TG37-4AA3	710	735	2.5 kHz
6SL3325-1TG38-0AA3	800	810	2.5 kHz
6SL3325-1TG38-1AA3	800	810	2.5 kHz
6SL3325-1TG41-0AA3	1000	1025	2.5 kHz
6SL3325-1TG41-3AA3	1200	1270	2.5 kHz

6.4.2 Safety information

⚠WARNING

Fire due to overheating due to insufficient ventilation clearances

Insufficient ventilation clearances can result in overheating with danger to persons as a result of smoke and fire. Furthermore, an increased number of failures and shorter service life of the components can occur.

- Maintain 100 mm ventilation clearances above and to the side of the component.



⚠CAUTION

Risk of burns resulting from high surface temperatures

The surface temperature of the motor reactors can exceed 80 °C. You can be severely burnt when touching the surface.

- Mount the motor reactor so that it cannot be touched. If this is not possible, attach a clearly visible and understandable warning notice at hazardous positions.

NOTICE

Damage to the Motor Module by using components that have not been released

When using components that have not been released, damage or malfunctions can occur at the devices or the system itself.

- Only use motor reactors that SIEMENS has released for SINAMICS.

NOTICE

Damage to the motor reactor if the maximum output frequency is exceeded

The maximum permissible output frequency when a motor reactor is used is 150 Hz. The motor reactor can be damaged if the output frequency is exceeded.

- Operate the motor reactor with a maximum output frequency of 150 Hz.

NOTICE

Damage to the motor reactor if the maximum pulse frequency is exceeded

The maximum permissible pulse frequency when a motor reactor is used is 2.5 kHz or 4 kHz. The motor reactor can be damaged if the pulse frequency is exceeded.

- When using the motor reactor, operate the Motor Module with a maximum pulse frequency of 2.5 kHz or 4 kHz.

NOTICE

Damage to the motor reactor if it is not activated during commissioning

The motor reactor may be damaged if it is not activated during commissioning.

- Activate the motor reactor during commissioning via parameter p0230 = 1.

Note

Cable lengths

Keep the connecting cables to the pMotor Module as short as possible (max. 5 m).

6.4.3 Dimension drawing

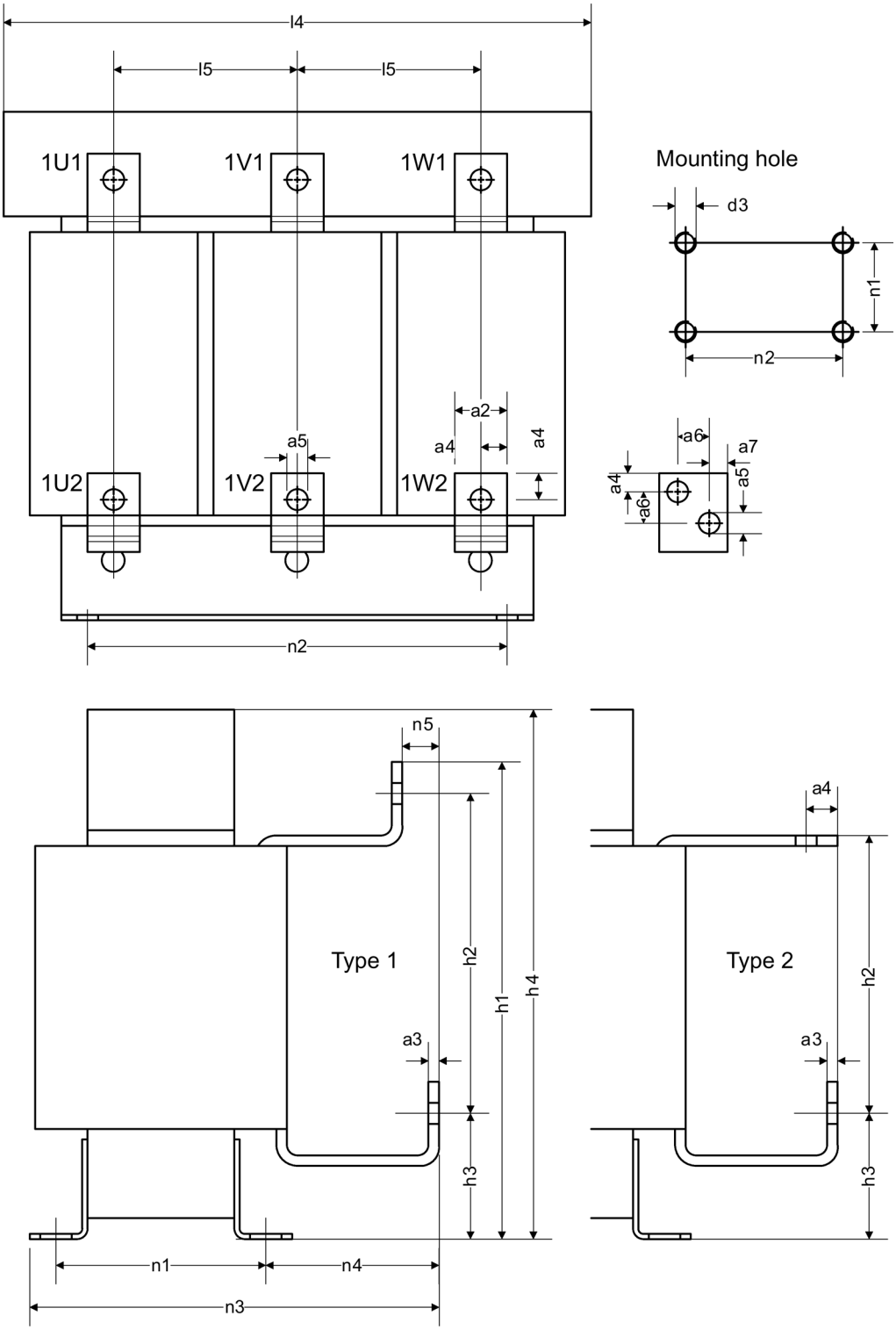


Figure 6-4 Dimension drawing, motor reactor

Table 6- 12 Dimensions of motor reactors, 3 AC 380 V ... 480 V, Part 1 (all specifications in mm)

6SL3000-	2BE32-1AT0	2BE32-6AT0	2BE33-2AT0	2BE35-0AT0
Connection type	Type 1	Type 1	Type 1	Type 2
a2	25	25	25	30
a3	5	5	5	6
a4	12.5	12.5	12.5	15
a5	11	11	11	14
l4	300	300	300	300
l5	100	100	100	100
h1	-	-	-	-
h2	194	227	194	245
h3	60	60	60	60
h4	269.5	310	269	355
n1 [1)]	165	183	163	183
n2 [1)]	224	224	224	224
n3	257	276	257	277
n4	78	77.5	78	79
d3	M8	M8	M8	M8

[1)] Lengths n1 and n2 correspond to the distance between holes

Table 6- 13 Dimensions of motor reactors, 3 AC 380 V ... 480 V, Part 2 (all specifications in mm)

6SL3000-	2AE36-1AT0	2AE38-4AT0	2AE41-0AT0	2AE41-4AT0
Connection type	Type 1	Type 1	Type 1	Type 1
a2	40	40	60	50
a3	8	12	8	11
a4	20	20	30	14
a5	14	14	14	14
a6	-	-	-	22
a7	-	-	-	14
l4	410	410	410	460
l5	140	140	140	160
h1	392	392	392	392
h2	252	252	252	-
h3	120	120	120	-
h4	367	364	372	390
n1 [1)]	191	191	206	212
n2 [1)]	316	316	316	356
n3	293	292	302	326
n4	84.5	84.5	79.5	94.5
n5	30	30	-	-
d3	M10	M10	M10	M10

[1)] Lengths n1 and n2 correspond to the distance between holes

Table 6- 14 Dimensions of motor reactors, 500 V – 690 V 3 AC (all data in mm)

6SL3000-	2AH32-4AT0	2AH34-7AT0		
Connection type	Type 1	Type 1		
a2	25	40		
a3	5	8		
a4	12.5	20		
a5	11	14		
I4	300	410		
I5	100	140		
h1	-	392		
h2	194	252		
h3	60	120		
h4	270	378		
n1 [1)]	118	141		
n2 [1)]	224	316		
n3	210.5	295		
n4	78	99.5		
n5	-	30		
d3	M8	M10		

[1)] Lengths n1 and n2 correspond to the distance between holes

6.4.4 Technical data

Table 6- 15 Technical specifications of motor reactors, 3 AC 380 ... 480 V, Part 1

Article number	6SL3000-	2BE32-1AT0	2BE32-6AT0	2BE33-2AT0	2BE35-0AT0
Suitable for Motor Module	6SL3325-	1TE32-1AA3	1TE32-6AA3	1TE33-1AA3	1TE35-0AA3
Type rating of the Motor Module	kW	110	132	160	250
Rated current	A	210	260	310	490
Power loss - at 50 Hz - at 150 Hz	 kW kW	 0.285 0.296	 0.300 0.313	 0.290 0.298	 0.440 0.453
Connections - To the Motor Module (1U1, 1V1, 1W1) - Load (1U2, 1V2, 1W2)		M10 connecting lugs	M10 connecting lugs	M10 connecting lugs	M12 connecting lugs
PE connection		M6	M6	M6	M6
Max. permissible cable length between the motor reactor and motor - without motor reactor - for 1 motor reactor - for 2 motor reactors in series	 m m m	 300 (shielded) / 450 (unshielded) 300 (shielded) / 450 (unshielded) 525 (shielded) / 787 (unshielded)			
Degree of protection		IP00	IP00	IP00	IP00
Dimensions Width Height Depth	 mm mm mm	 300 269.5 257	 300 310 276	 300 269 257	 300 355 277
Weight, approx.	kg	53	71	55	78

Table 6- 16 Technical specifications of motor reactors, 3 AC 380 ... 480 V, Part 2

Article number	**6SL3000-**	**2AE36-1AT0**	**2AE38-4AT0**	**2AE41-0AT0**	**2AE41-4AT0**
Suitable for Motor Module	6SL3325-	1TE36-1AA3	1TE37-5AA3 1TE38-4AA3	1TE41-0AA3	1TE41-2AA3 1TE41-4AA3 1TE41-4AS3
Type rating of the Motor Module	kW	315	400 / 450	560	710 / 800 / 800
Rated current	A	605	840	985	1405
Power loss - at 50 Hz - at 150 Hz	 kW kW	 0.450 0.645	 0.290 0.395	 0.404 0.573	 0.640 0.650
Connections - To the Motor Module (1U1, 1V1, 1W1) - Load (1U2, 1V2, 1W2)		M12 connecting lugs	M12 connecting lugs	M12 connecting lugs	M12 connecting lugs
PE connection		M8	M10	M8	M10
Max. permissible cable length between the motor reactor and motor - without motor reactor - for 1 motor reactor - for 2 motor reactors in series	 m m m	 	 300 (shielded) / 450 (unshielded) 300 (shielded) / 450 (unshielded) 525 (shielded) / 787 (unshielded)	 	
Degree of protection		IP00	IP00	IP00	IP00
Dimensions Width Height Depth	 mm mm mm	 410 392 293	 410 364 292	 410 372 302	 460 390 326
Weight, approx.	kg	75	95	115	160

Table 6- 17 Technical specifications of motor reactors 500 V ... 690 V 3 AC

Article number	**6SL3000-**	**2AH32-4AT0**	**2AH34-7AT0**		
Suitable for Motor Module	6SL3325-	1TG32-2AA3	1TG34-7AA3		
Type rating of the Motor Module	kW	200	450		
Rated current	A	215	465		
Power loss - at 50 Hz - at 150 Hz	 kW kW	 0.229 0.285	 0.288 0.415		
Connections - To the Motor Module (1U1, 1V1, 1W1) - Load (1U2, 1V2, 1W2)		M10 connecting lugs	M12 connecting lugs		
PE connection		M6	M8		
Max. permissible cable length between the motor reactor and motor - without motor reactor - for 1 motor reactor - for 2 motor reactors in series	 m m m	 	 300 (shielded) / 450 (unshielded) 300 (shielded) / 450 (unshielded) 525 (shielded) / 787 (unshielded)	 	
Degree of protection		IP00	IP00		
Dimensions Width Height Depth	 mm mm mm	 300 270 210.5	 410 378 295		
Weight, approx.	kg	32	60		

More information

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