WISKA
make power smile

OPERATING INSTRUCTIONS

SOCKET SYSTEM FOR COOLING CONTAINERS
VARITAIN PushIn

Contents

1. About these instructions

1.1 Symbols and guidance signs in these instructions

Danger! There is a risk to life and limb if the warning is not followed.

Risk of electric shock! There is a risk to life and limb from electricity if the warning is not followed.

Use disposable gloves! Use disposable gloves for the following work to protect the material or your health.

Attention! There is a risk to the environment and the device if the warning is not followed.

1, 2, 3, … **Operating steps**, that should take place in a certain order, are numbered sequentially.

- **Operating steps**, that only consist of one step or that don't have to be followed in a certain sequence, are marked with a point.

➔ **Feedback** from executed actions begins with an arrow.

– **Enumerations** begin with an enumeration line.

1.2 Who are these instructions for?

These instructions are intended for the personnel, that are assigned with the assembly, operation and maintenance of the reefer container sockets.

Risk of electric shock! All electrical installation and repair work may only be carried out by a qualified electrician!

2. System description

The VARITAIN PushIn Socket System is used for the electrical supply of cooling containers on board seagoing vessels and riverboats, as well as in harbour systems. It is suitable for 440V±10% 3-phase, but can also be adapted for other voltages in the factory. The current loading is suitable for cooling containers up to a maximum of 32 A. Each socket is protected against short circuits and overloads by an in-built circuit-breaker. The circuit-breaker trips automatically and must be manually returned to the 0- or 1-Position.
VARITAIN PushIn is an internationally standardized CEE socket device compliant with IEC 60309-1 (DIN EN 60309-1; VDE 0623-1), IEC 60309-2 (DIN EN 60309-2; VDE 0623-2) and ISO 1496-2.

3.1 The system components

- The system consists of system components:
- Casing with cable gland(s)
- Cover
- CEE socket insert (A) with plug contact sleeves (B), circuit-breaker (C), LED circuit board (D), bayonet cap (E) and mechanical functional elements (F)
- Internal wiring
- Terminals

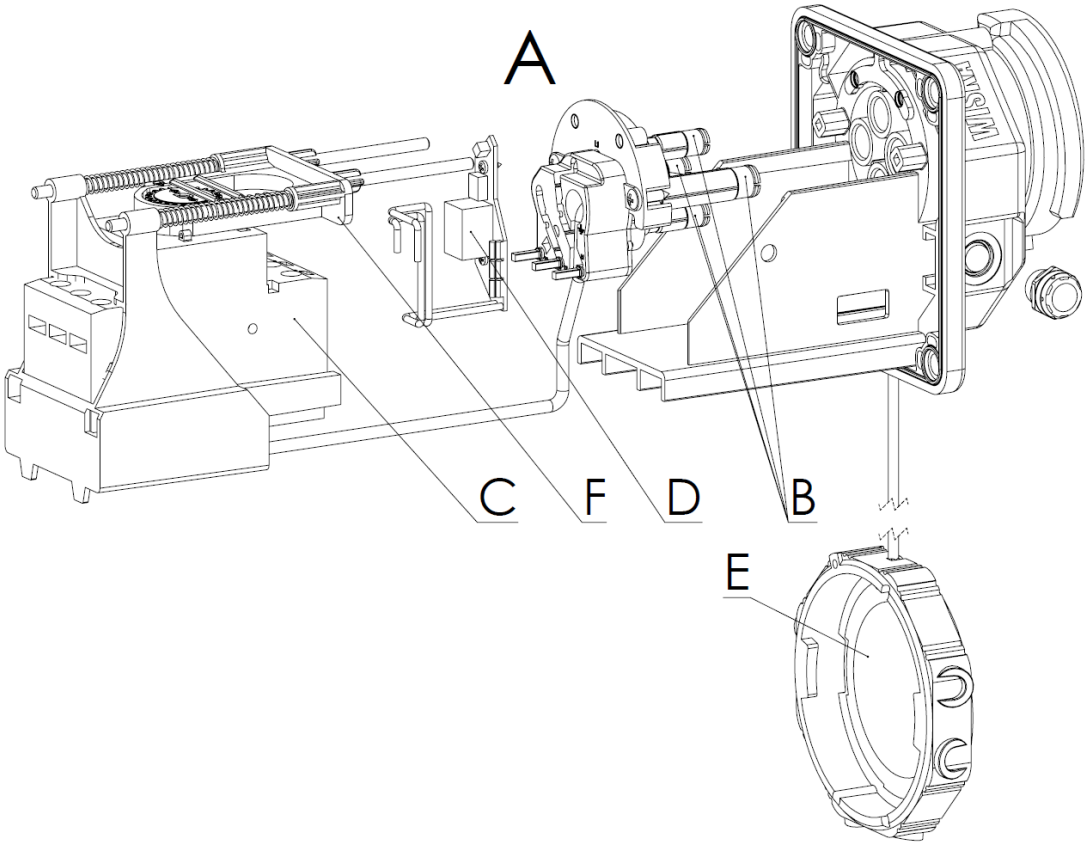


Figure 1: Depiction of a CEE socket insert

3. Description

4.1 Casing

The casing consists of powder coated (color as requested by customer) welded stainless steel sheet with welded bolts for fixing the components. In order to ensure the degree of protection IP 67 according to EN 60529, a high quality rubber seal is pressed onto the upper bent section of the housing.
Fixing lugs on the housing floor are used to fix the equipment.

4.2 CEE socket insert

The CEE socket insert consists of a CEE socket with the contact sleeves (3-phase sleeves with an earth sleeve), the circuit-breaker (see 1.2.4), the bayonet cap, the cables and the mechanical actuating elements. Furthermore, the LED unit and, as an alternative, a pressure compensating element, are installed inside.
The groove for preventing incorrect connection of the CEE socket in respect of the protective conductor contact defines the voltage and frequency. VARITAIN PushIn is offered and delivered in its 3-hour setting as standard.

4.3 LED unit

The LED unit is installed in the CEE socket insert and serves as a status signaling element, indicating that the circuit-breaker has switched. When the LED unit lights up green, the circuit-breaker is switched on and power is supplied to the CEE socket. The LED unit does not check whether power is supplied to all three phases.
If the LED unit does not light up, there is no power at the CEE socket.

4.4 Locking system

According to the international regulations the plug can only be plugged in and withdrawn in the switched off state of the circuit-breaker.
Operation mode:

Power On

Turn the bayonet cap anticlockwise and remove it.

Insert the plug into the socket as far as it will go.
→The socket is switched on!

Push the bayonet ring over the socket and tighten it firmly in a clockwise direction.

Power Off

Release the bayonet ring of the plug by turning it anticlockwise.

Pull the plug out of the socket.
→ The socket is switched off!

Tighten the bayonet cap by turning it clockwise.

Attention:

Please ensure that you only use plugs that conform with international standards [IEC 60309-1 (DIN EN 60309-1; VDE 0623-1), IEC 60309-2 (DIN EN 60309-2; VDE 0623-2)] are used, as only in this way is the safe operation of the plug device is ensured. Please particularly ensure that:
- the plug housing is undamaged
- the bayonet ring is present with undamaged seal
- the plug is clean and dry
- the auxiliary protrusion of the plug is present
- the plug is connected in accordance with the valid standards

4.5 Circuit-breaker

Number of poles: 3
Short circuit switch-off capability: Standard 10 kA, 25 kA or 100kA (with current limiter)
Rated insulation voltage:630 VAC
Rated current: max. 32 A
The circuit-breaker is fitted with a trip knob that mechanically simulates tripping, as for e.g. a short circuit or overload.

4.6 Connection terminals

Two types of connection terminal are fitted in the factory for the power supply, depending on the type and the number of outputs.

- Feed-through terminal for 2.5 mm² to 50 mm², tightening torque 4-5 Nm
- Bolt terminal for 6 mm² to 150 mm², clamped cable lugs acc. to DIN 46234, tightening torque 20Nm

4. Repair and maintenance

5.1 Maintenance

No maintenance is provided in addition to the regular checking of the contact sleeves (unavoidable wear caused by high numbers of plugging cycles and by dirty or faulty plugs).

5.2 Repair

Attention:
The housing may not be opened when under voltage and only by trained staff. Safety measure to DIN VDE 0105

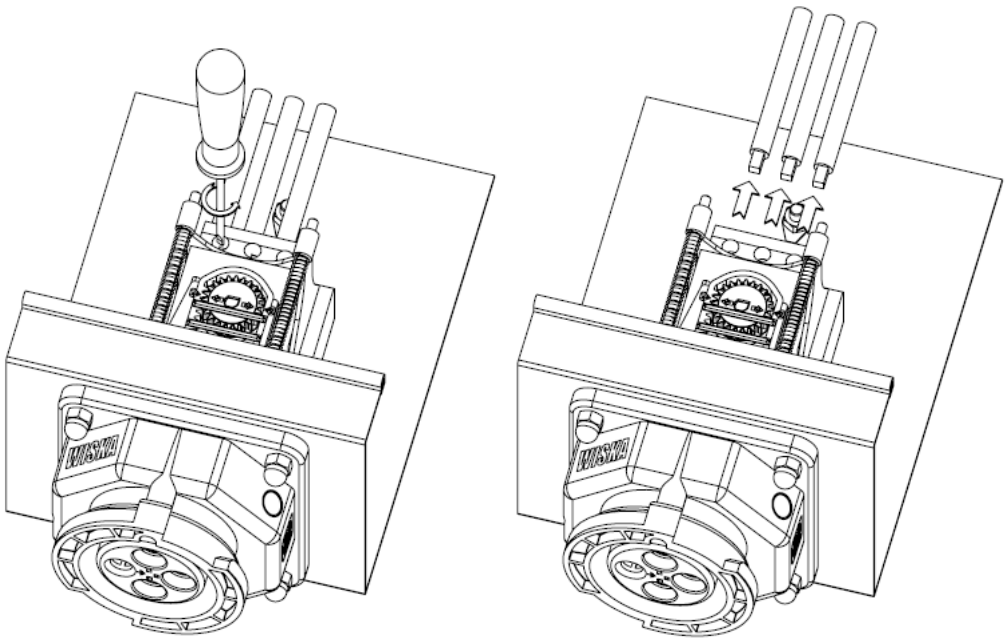
- **Disconnect**
- **Shield unit from restart**
- **Verify disconnected parts are free of voltage**
- **Ground an by-pass**
- **Protect and separate the energised components near by.**

Repair / reconditioning work may only be undertaken using WISKA original spare parts. Changes or alterations to the equipment are not permitted.

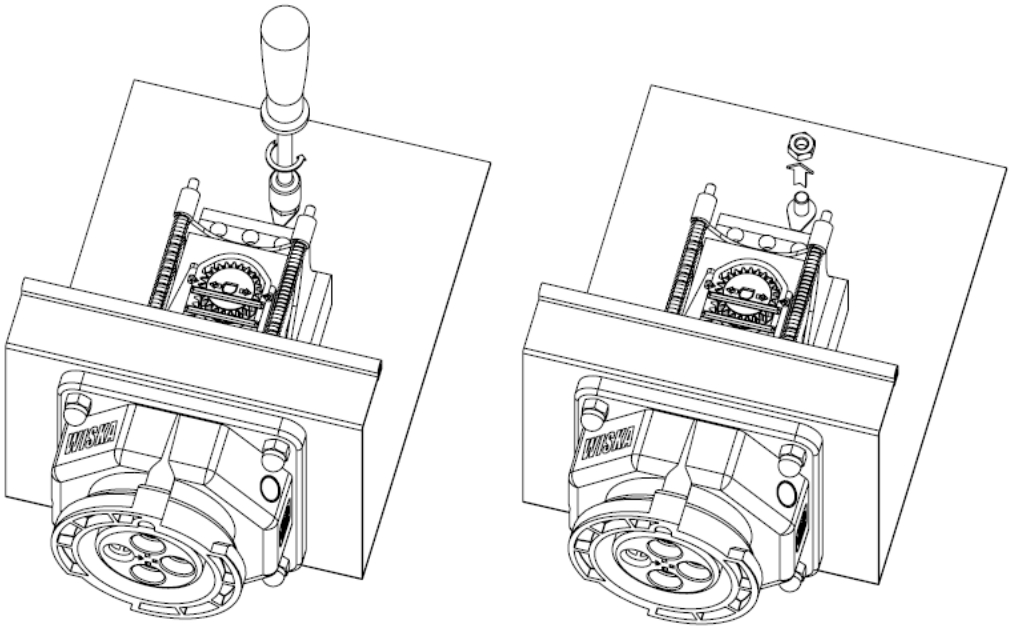
5.3 Replacement of the CEE-socket plug-in unit

Precautionary measures
Switch the entire equipment to the no-voltage state. Remove the cover and check whether the equipment has been switched to the no-voltage state with a voltmeter. Ensure that the equipment is not re-activated while working

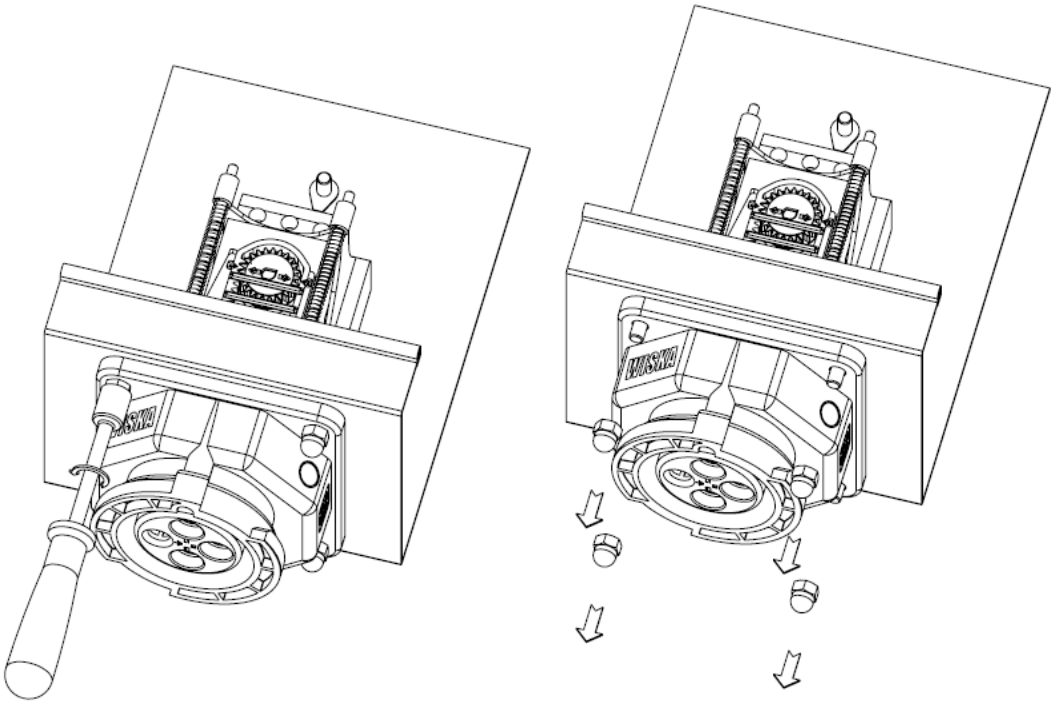
- Release the three upper screw terminals of the circuit-breaker and pull the three cables out of the screw terminals



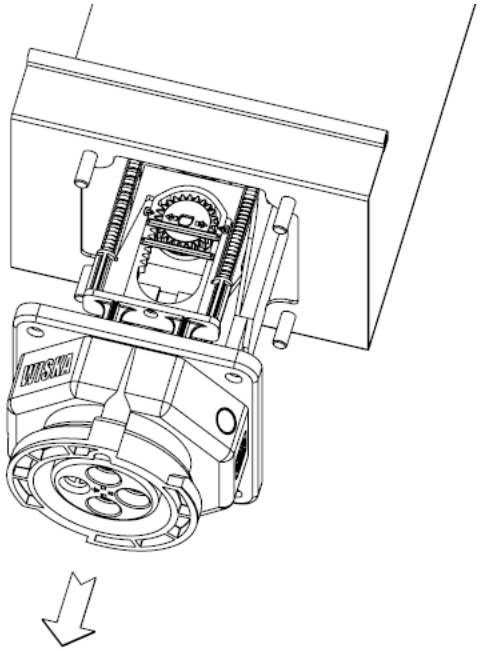
- Release the earth connection



- Remove the four cap nuts with a hexagonal spanner of spanner width 10



- remove the CEE-socket plug-in unit by pulling it forward



Installing the socket interior

- in the reverse order.

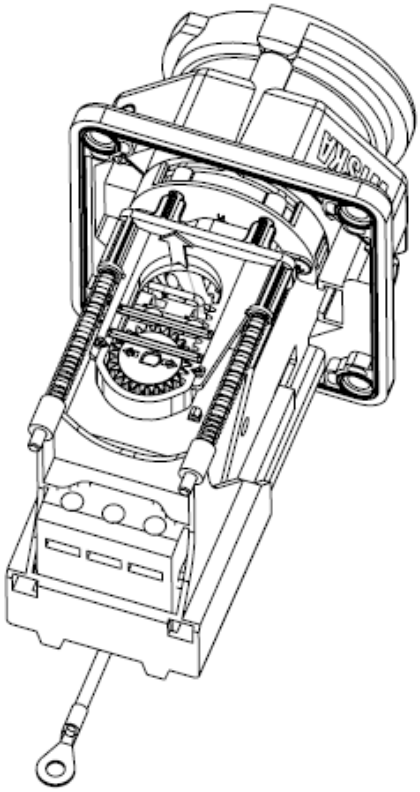
Please make sure that the seal is properly emplaced.
The cap nuts should be tightened with a torque of 3,5 Nm.
The earth connection should be fitted first for safety reasons.
Consider the polarity of the connections when re-fitting The following torques apply for the terminal points on the circuit-breaker:

- **1,7 Nm**

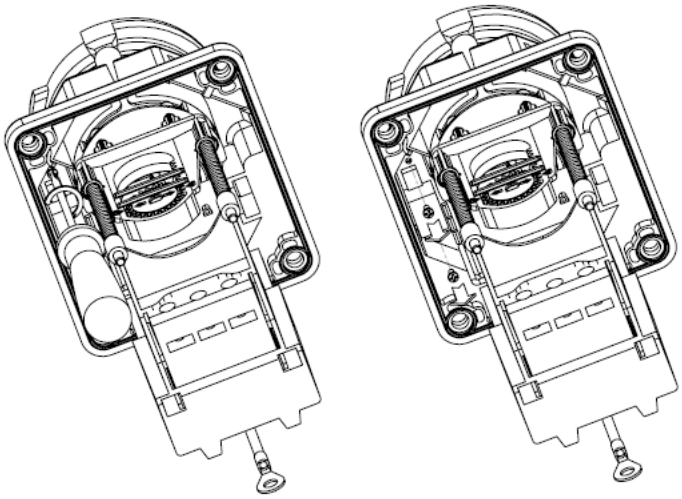
5.4 Replace of the LED-module

Precautionary measures Switch the entire equipment to the no-voltage state. Remove the cover and check whether the equipment has been switched to the no-voltage state with a voltmeter. Ensure that the equipment is not re-activated while working.

- Perform step 1 to step 7 as for the replacement of the CEE socket insert
- Disconnect the two cables of the LED unit from the circuit-breaker



- Unscrew the two screws of the LED unit



- Remove the LED unit from the CEE-socket insert

Installing the LED-module

- In the reverse order. The following torques apply for the screws of the LED-module: 0,5Nm.

Please make sure that the seal is properly emplaced.
The cap nuts should be tightened with a torque of 3,5 Nm.
The earth connection should be fitted first for safety reasons.
Consider the polarity of the connections when re-fitting.
The following torques apply for the terminal points on the circuit-breaker:

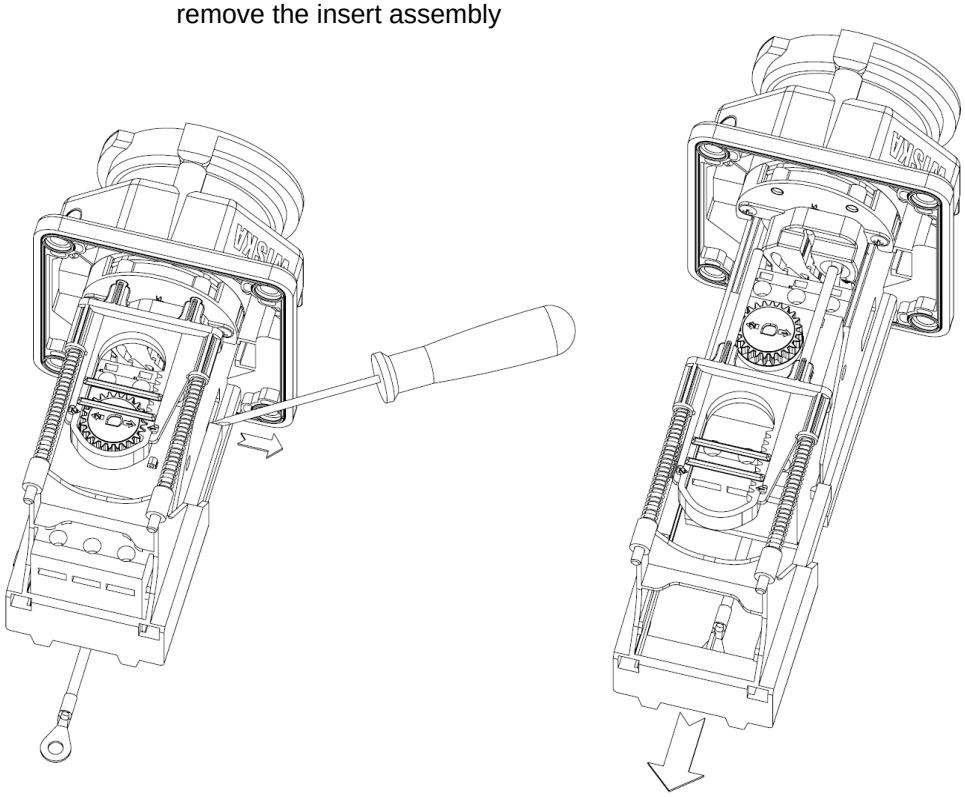
- **1,7 Nm**

5.6 Replacement of the MCCB

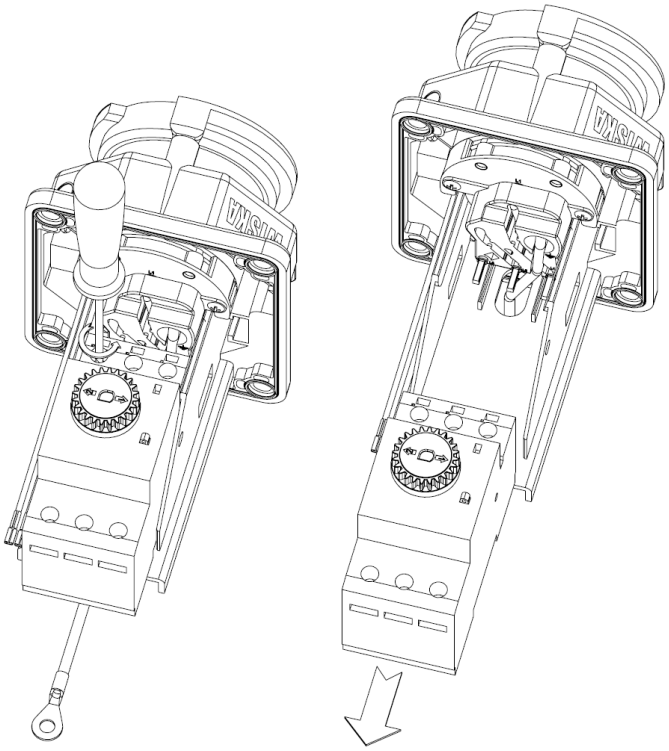
Precautionary measures
Switch the entire equipment to the no-voltage state. Remove the cover and check whether the equipment has been switched to the no-voltage state with a voltmeter. Ensure that the equipment is not re-activated while working.

- Perform step 1 to step 7 as for the replacement of the CEE socket insert
- Disconnect the two cables of the LED unit from the circuit-breaker (see 2.2.2)
- Loosen the lateral guide of the clamp block, pull the clamp block back and

remove the insert assembly



- Release the three upper screw terminals of the circuit-breaker and remove the MCCB



Installing the MCCB

- in the reverse order

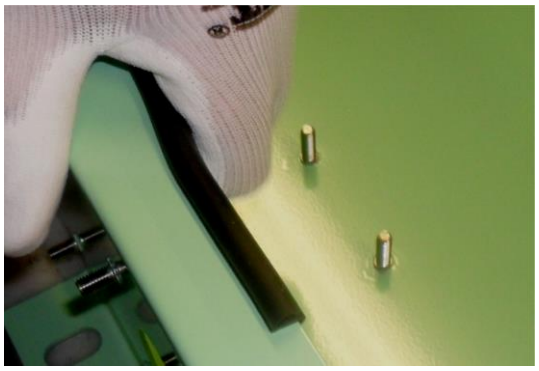
Please make sure that the seal is properly emplaced.
The cap nuts should be tightened with a torque of 4,5 Nm.
The earth connection should be fitted first for safety reasons.
Consider the polarity of the connections when re-fitting.
Make sure all components are correctly positioned.
The following torques apply for the terminal points on the circuit-breaker:

- **1,7 Nm**

5.7 Replacing the housing seal (seal between housing and cover)

- Remove the old seal (L).
- Cut the seal to size at least 100 mm longer than required.
- Apply adhesive WeiconContact VA 2500HT over the entire length to the inner side of the seal

- Firmly press the seal on to the inner edge of the opening aperture of the housing.

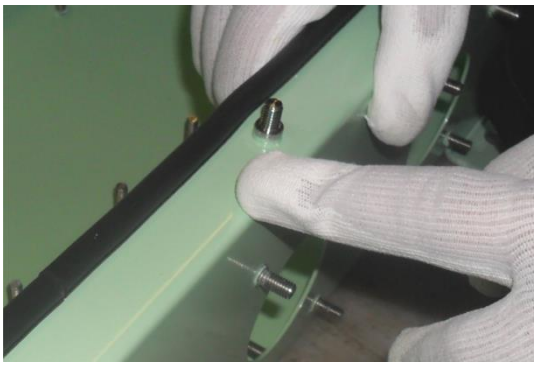


- Press the seal into the curves of the inner edge.

- Cut off the seal leaving an overhang of 3-5 mm.

- Apply the adhesive WeiconContact VA 8312 to the profile of the seal.

- Press the ends of the seal together and press the seal firmly onto the inner edge of the housing.

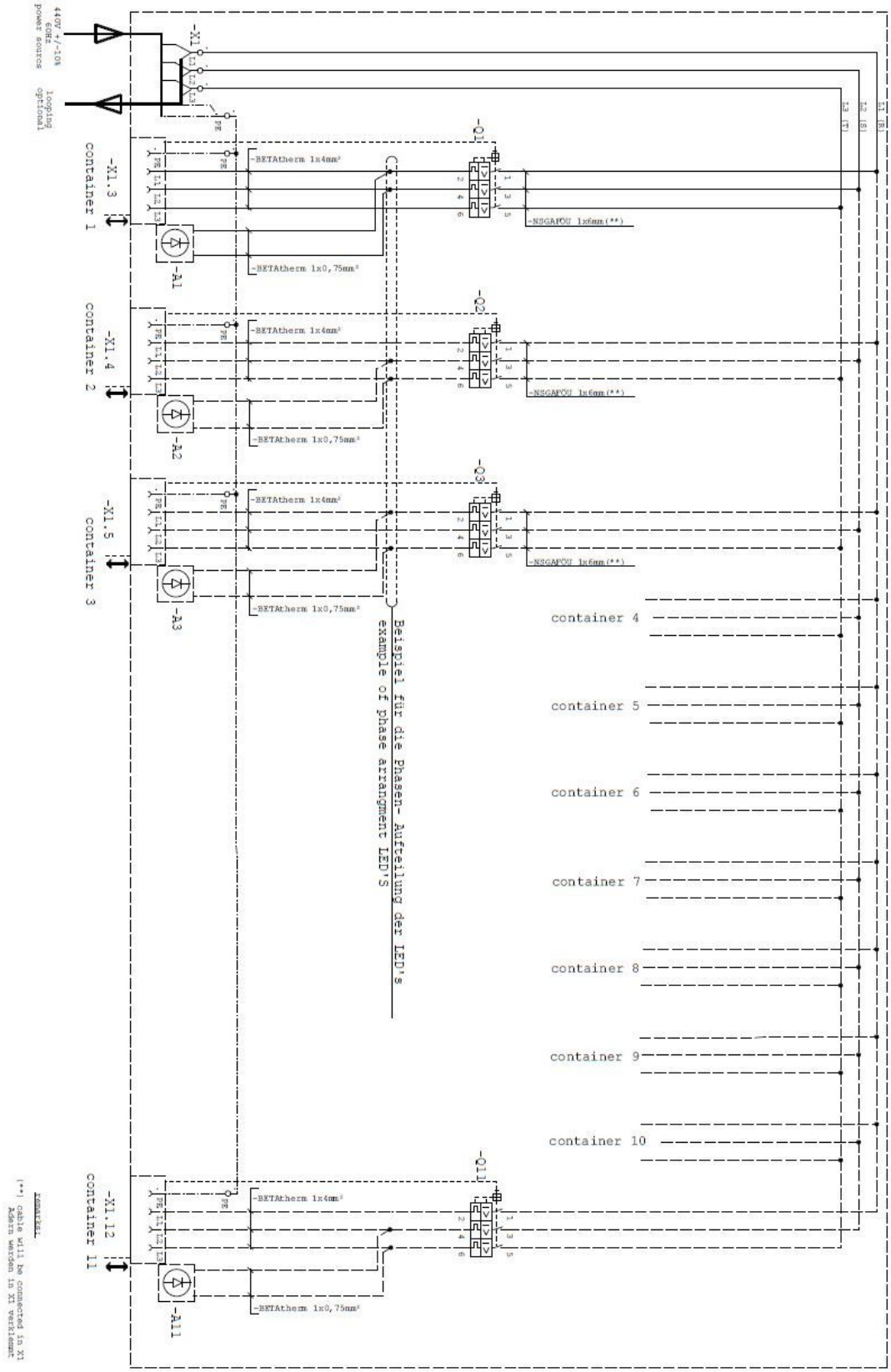


Only careful joining and sticking of the two seal ends guarantees a functional seal.

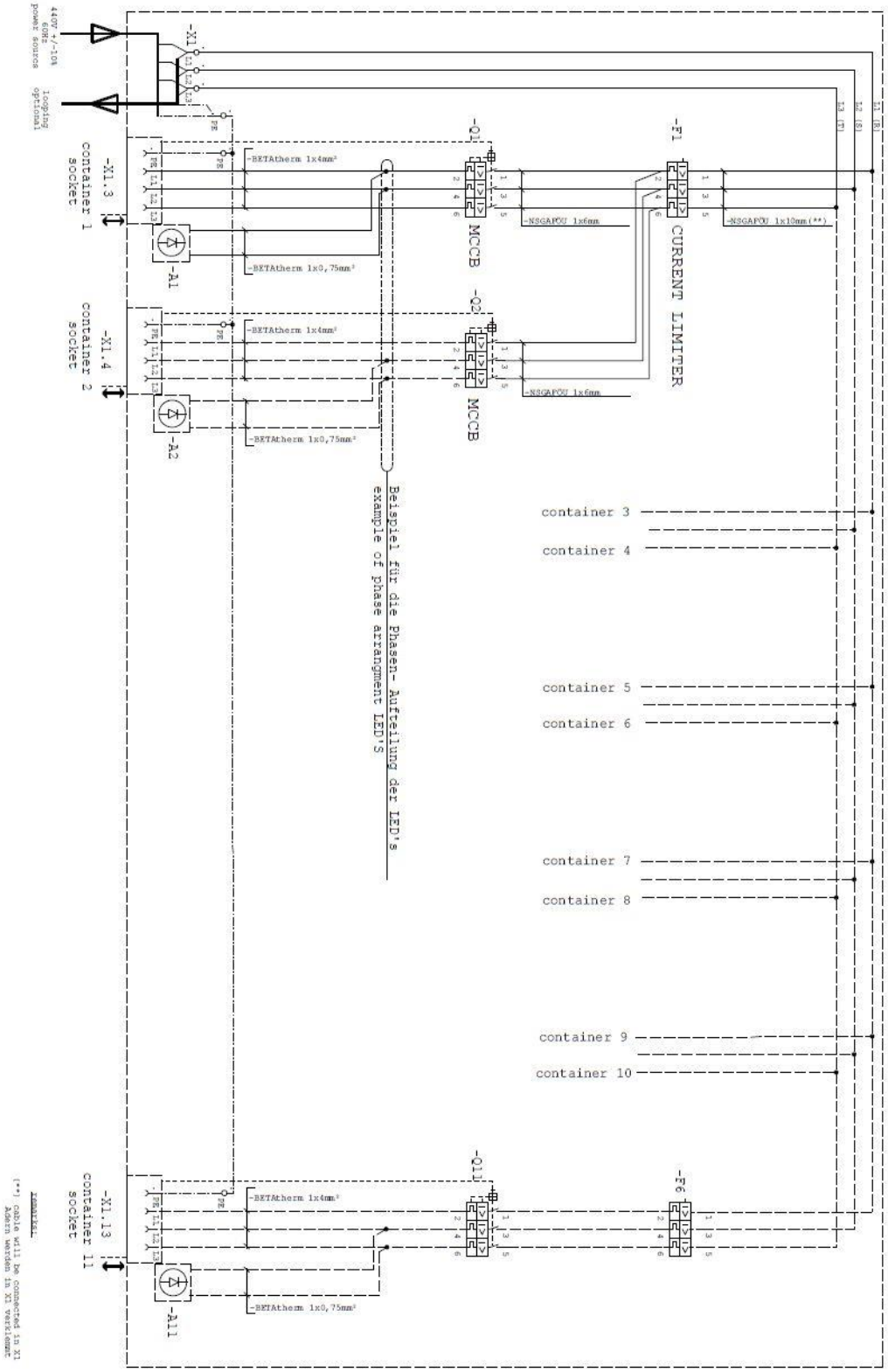
Please obtain the article and order numbers of the individual components from the separate, order-specific spare parts list.

5. Electrical circuit diagrams

6.1 Circuit diagram without current limiter



6.2 Circuit diagram with current limiter



6. DNV Type Approval

DNV

TYPE APPROVAL CERTIFICATE

Certificate No:
TAE00002T8
Revision No:
2

This is to certify:

That the Socket Outlet

with type designation(s)
VARITAIN PushIn, PushIn Advance and PushIn Rack

Issued to
WISKA Hoppmann GmbH
Kaltenkirchen, Germany

is found to comply with
DNV rules for classification – Ships, offshore units, and high speed and light craft

Application :

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV.

Rated voltage (V)	500 V
Rated current (A)	32 A
Degree of protection	IP 56 /IP 67

Issued at Høvik on 2023-05-02

This Certificate is valid until 2028-05-01.
DNV local unit: Hamburg – CMC North/East

Approval Engineer: Uwe Supke

for DNV
Digitally Signed By: Alonso Pontes, Marta
Location: DNV Høvik

Marta Alonso Pontes
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.

Form code: TA 251 Revision: 2022-12 www.dnv.com Page 1 of 2

DNV

Job Id: 262.1-027780-3
Certificate No: TAE00002T8
Revision No: 2

Product description

Socket-Outlet-System for reefer containers with power on LED light

Type	"VARITAIN PushIn" with max. 11 outlets for fixed installation
Rated voltage:	max. 500V AC
Frequency:	40-60Hz
Degree of protection:	IP56 / IP67
Ambient temperature:	-25°C up to +45°C
Suitable for open deck:	Yes
Each CEE socket outlet:	3 pole + E, max. 500V AC, 32 A with circuit breaker WISKA- MCCB-.... and mechanical interlocking.

Rated short circuit making and breaking capacity:

- WISKA- MCCB-10kA Icm/Icu: 400V/105/50kA, 440V/17/10kA, 500V/17/10kA
- WISKA- MCCB-25kA Icm/Icu: 400V/105/50kA, 440V/52,2/25kA, 500V/17/10kA
- WISKA- MCCB-10kA, -25kA + CL-PKZ0 Icm/Icu: 400V/220/100kA, 440V/220/100kA

Material of casing: stainless steel W.N. 1.4301(SUS 304) coated or 1.4571 (SUS 316) or higher grade

Application/Remark

Installation and operating instruction of the manufacturer to be followed.
The TA was carried out according to DNV Class Guideline DNV-CG-0339.
MSC.1/Circ.1352 should be considered when installing on a vessel if mandatory by the Administration.

Type Approval documentation

Paconsult report 13-5015:2013-04-09
Paconsult Test report No. 21DE-00301, dated 2022-04-27
Wiska report PP20130403-02:2013-04-10; ECOPP06: 2007-06-19
Description VaritainPI_dt-rev 2013-04-11

Tests carried out

Applicable tests according DNV GL Class Guideline DNV-CG-0339.
IEC 60529:2001, IEC 60309:2012, ISO 1496-2: 2008

Marking of product

The products to be marked with:

- Manufacturer name
- Model name
- Serial number
- Power supply ratings
- Degree of protection

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the Type approval are complied with and that no alterations are made to the product design or choice of materials.
The main elements of the assessment are:

- Inspection on factory samples, selected at random from the production line (where practicable)
- Results from Routine Tests (RT) checked (if not available tests according to RT to be carried out)
- Review of type approval documentation
- Review of possible change in design, materials and performance
- Ensuring traceability between manufacturer's product type marking and Type Approval Certificate.

Periodical assessment is to be performed after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.
END OF CERTIFICATE

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