

Reefer Container Plugs and Sockets





About half a century competence and experience

Bals stands worldwide as a quality brand for innovation, reliability and service. For more than 60 years, we have been producing CEE plugs and connectors for the world markets. From day one we have focussed on the highest level of quality "Made in Germany". Our factories in Kirchhundem-Albaum, Würdinghausen and Freiwalde have highly skilled and motivated teams, the very latest manufac-

turing facilities and a highly efficient logistics system.

Our product portfolio ranges from plugs, phase inverters, connectors, sockets outlets and combinations units to charging plugs and sockets for electrical vehicles. Numerous certifications from German and foreign certification institutes, as well as registered designs and patents, document the high technical standard of our products.



Three modern factories a consistent quality standard

From the beginning the headquarters of our company is located in Kirchhundem-Albaum (North-Rhine-Westphalia). Product development, marketing and sales, as well as administration are located here. In addition, plug and socket systems and special products are manufactured in the Kirchhundem-Albaum factory. The factory in Freiwalde (Brandenburg), built in 1994 and expanded many times since, has state-of-the-art production facilities for fully-automatic manufacturing of unique CEE plugs and connectors as well as a highly-effective logistics centre. Our plant in Würdinghausen is brand new, this is where the components for Emobility are manufactured. Our training center is located in the adjoining building.



CEE plugs and connectors for the world market

As an independent, medium-sized, family-owned company, we produce standardised industrial plugs and sockets acc. to IEC 60309 1-2 as well as plug and socket systems, distributors and components for the infrastructure of electrical vehicles. We set new technical standards with innovations and ground-breaking, partially patented new developments such as MULTI-GRIP or QUICK-CONNECT. The export rate in excess of 50 percent shows: Our solutions are highly valued around the world. Our products are sold in more than 80 countries. Subsidiaries and exclusive partners in strategically important countries only sell our products.



Customer proximity: You can rely on us

Always close to the customers. For us, this is no empty phrase but reality. Flexibility, customer orientation and the ability to quickly respond to short-term requirements are a matter of course for us. For this reason, integrated production - from the product idea and design to tool making and production to the shipment of the products - is optimised for short processing paths and the fastest response times.



People make the difference

Over 300 employees, who are dedicated and tightly connected to the company, have only one goal: to satisfy you, our customers, one hundred percent. This applies to the highest of quality stan-

dards that we apply to our product and also for made-to-measure service and personal contact from person to person.



Our responsibility to the highest quality

Quality does not permit any compromise. This has always been the maxim at Bals. The ISO-9001-certified production process in all factories ensures the well-known high product quality. This proof of quality is reflected in patents, certificates from German and foreign testing institutes, as well as the specification of Bals products by highly renowned companies. Innovation is an important quality benchmark for us. This way, we are always setting new standards with intelligent solutions that bring the user sustainable advantages.



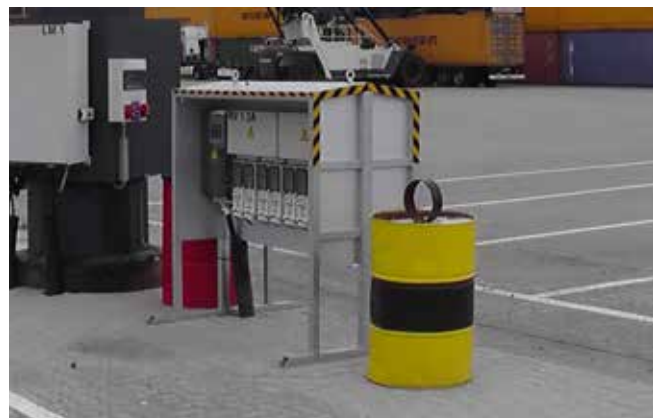
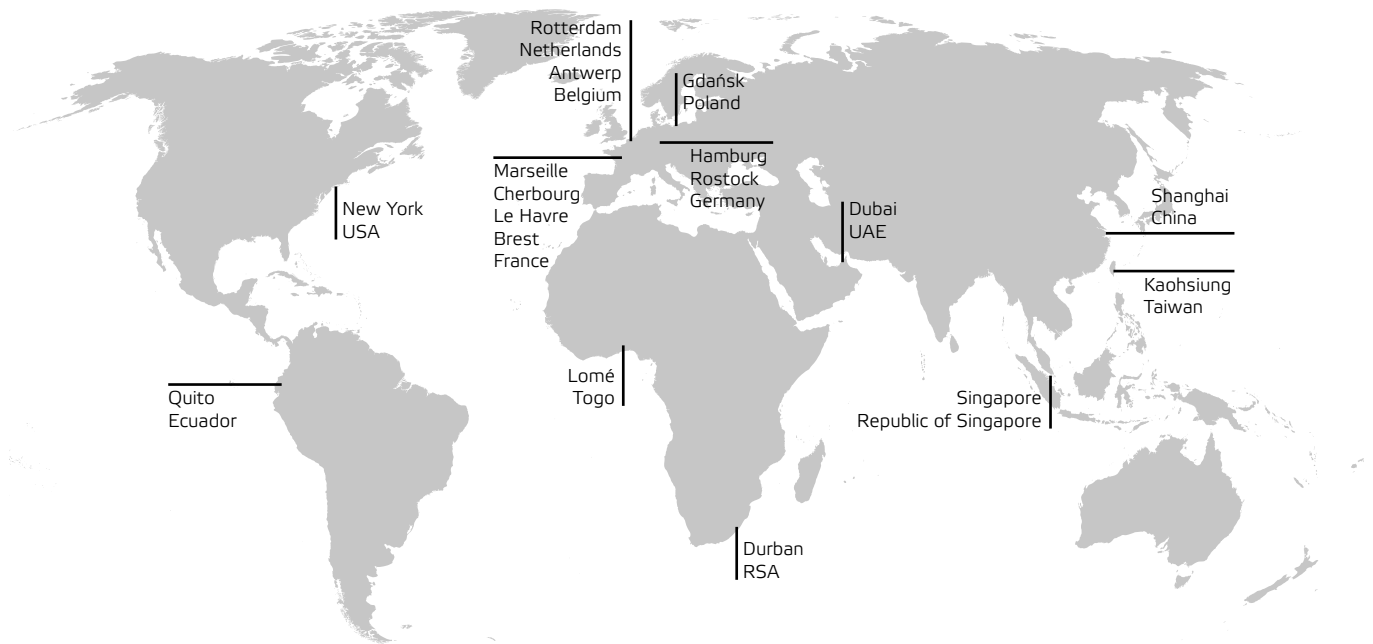
Our responsibility to the environment

We know and love our region. Maintaining and protecting this unique landscape for future generations is important to us. Production that saves as many resources as possible, the highest environmental standards and continual enhancement of our ecological efficiency at all levels are a matter of course for us. Every individual employee at Bals is aware of this responsibility to people and nature.



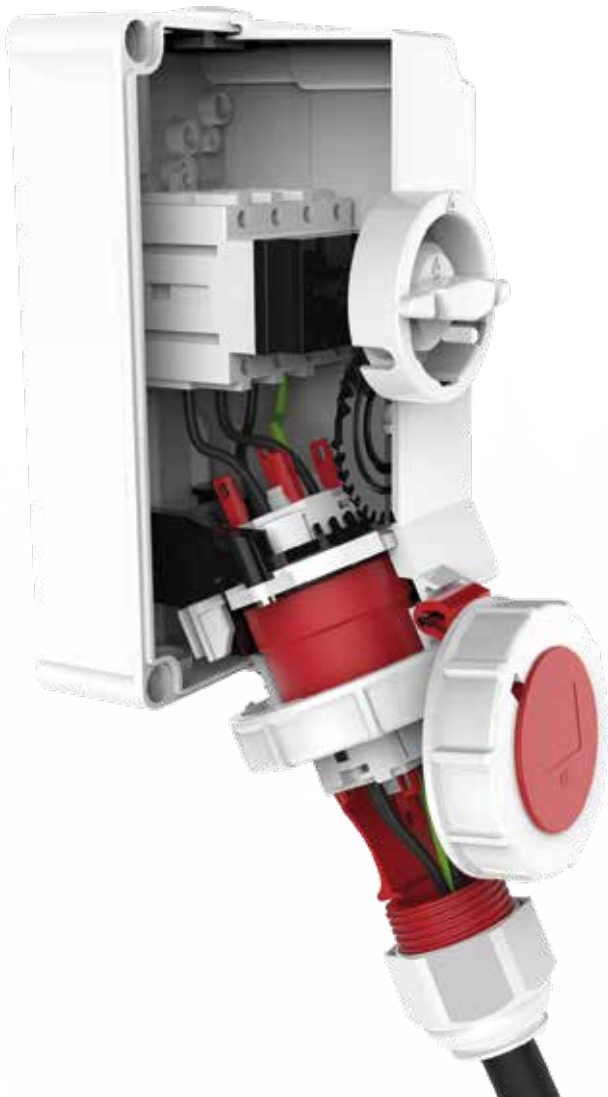
Our responsibility to people and the region

As a family-owned company, we are well aware of our special responsibility. We keep jobs safe, encourage the development of every individual and are loyal to our sites which we care for and permanently develop in the long term. Thinking about the future is also important to us: For this reason, we create qualified training positions in a wide variety of professional areas each year. We support numerous local meetings and events and employ an above average number of people with handicaps.



Bals Elektrotechnik is operating a fully equipped test laboratory. Experienced engineers using the VDE certified in-house test facilities confirm product parameters and features beyond IEC standard requirements. On customer request Bals simulates specific temperature

or humidity conditions, mechanical impact, electrodynamic circumstances and other worst case product application scenarios. The ongoing approach is to match highest quality standards, and make best products even better.



Bals Elektrotechnik reefer container devices 32A 4p 3h 380-440V IP67 are

- approved and certified by VDE, DNV GL
- validated according to IEC standards, CE and RoHS material restrictions
- suitable for nominal operating temperature -25° up to +50°C (environmental condition)
- engineered and Made in Germany

The TLQ series plugs & connectors

- Screwless connection technology patented by Bals
- Spring-clamp technology
- Safe, more reliable and maintenance-free
- Terminals delivered in open position
- Repeatable control of wiring, by fingertip
- All types of copper conductors accepted, solid or stranded, adaptation to all cross sections
- Wiring with or without cable lugs
- Constant contact force over lifetime of installation, adjusting to vibrations and temperature fluctuations
- one piece enclosure, mechanical crash resistance

Bals Elektrotechnik reefer container devices 32A 4p 3h 380-440V IP67 are

- 63A standard switches (suitable for temporary overload states and cross sections up to 16mm²)
- main switches optionally equipped with auxiliary contacts for signal or control purpose
- enclosures with optionally signalization multi-pin sockets for signal or control purpose
- enclosures with optionally preventing systems for humidity absorption
- operating window and sockets lid opening direction to the top, preventing moisture and dust ingress during manipulation
- enclosures with optionally no cable gland cut-outs or pre-punches on the top, prevents icing or water accumulation
- socket terminals are equipped with the maintenance free QUICK-CONNECT technology, resistant to temperature changes influence

DNV GL

Det Norske Veritas was established in Norway to head technical inspection and evaluation of Norwegian merchant vessels. Germanischer Lloyd was founded in Hamburg in 1867 by a group of 600 ship owners, ship builders and insurers. On December 20, 2012, the two companies announced the merger. DNV GL is one of the major companies in the classification business specialized for marina, container terminals and vessels leusiness area. Products from Bals Elektrotechnik are certified by DNV GL.

Technical information

- Container operating voltage 400 - 400V, clock face position 3h
- IEC 60309, EN60309, VDE 0623
- Protection degree IP67

Closure Cap

- For CEE plugs
- Protection degree IP67



832

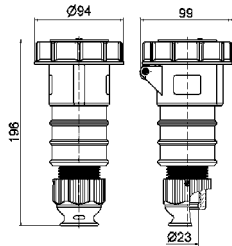
	Order no.
32A / 3p, 4p	837

Connector TE-Plus with MULTI-GRIP

- Screwless terminals
- High-temperature-resistant contact carrier
- Nickel plated contacts
- Special gland, simultaneous cable gland and seal
- Protection degree IP67



310426



Ampere	3P+E Poles	380V (50Hz) and 440V (60Hz) 3h	Qty	9 each
32	4	310426	10	390

QUICK CONNECT
MULTI GRIP

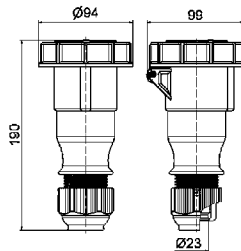
3 MB 72

Connector with MULTI-GRIP

- One-piece enclosure
- Nickel plated contacts
- Special gland, simultaneous cable gland and seal
- Protection degree IP67



310567



Ampere	3P+E Poles	380V (50Hz) and 440V (60Hz) 3h	Qty	9 each
32	4	31186-TLQ	10	314

QUICK CONNECT
MULTI GRIP

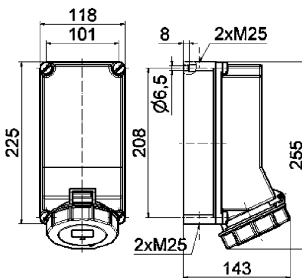
3 MB 80

Surface Mounting Socket Outlet QUICK-CONNECT TE

- Screwless terminals
- High-temperature-resistant contact carrier
- Nickel plated contacts
- Protection degree IP67



11556



Ampere	3P+E Poles	380V (50Hz) and 440V (60Hz) 3h	Qty	9 each
32	4	11556	1	805

QUICK CONNECT

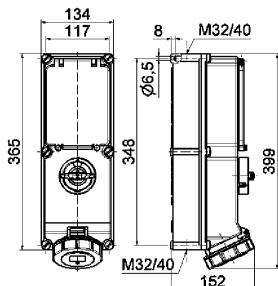
1 MB 30

Surface Mounting Socket Outlet TE

- screwless terminals
- Switched
- With mechanical double interlocking
- Hinged window
- Lockable in 0-position
- High-temperature-resistant contact carrier
- Nickel plated contacts
- Protection degree IP67



17026



Ampere	3P+E Poles	380V (50Hz) and 440V (60Hz) 3h	Qty	9 each
32	4	17026	1	1910

QUICK CONNECT

12 MB 26

Technical information

- Container operating voltage 400 - 400V, clock face position 3h
- IEC 60309, EN60309, VDE 0623
- Protection degree IP67

Test Plug

- Screw terminals
- For testing switch panel
- Nickel plated contacts
- Protection degree IP44



2298

Ampere	3P+E Poles	380V (50Hz) and 440V (60Hz) 3h	Qty	9 each
32	4	2298	1	225

Cable Gland MULTI-GRIP with Additional Strain Relief

- For plugs and connectors with MULTI-GRIP cable gland



29132

	Order no.
for 16A / 3p, 4p TE + TE Plus	
16A / 3p, 4p, 5p QC + TLS	29148
for 16A / 5p TE + TE Plus	29149
for 32A / 5p TE + TE Plus	29150
32A / 5p, TE + TE Plus	29132
for 125A / 3p, 4p, 5p TE	29133

Variabox extension – switching bar:

- Perfect optical integration in the existing system
- User-friendly arrangement in the case of multiple units
- Mechanical double-interlocking
- Can be locked in the 0-position
- Nickel plated contacts
- High-temperature-resistant contact carriers
- Greater flexibility in the Variabox system landscape

- Suitable for harsh environmental conditions
- Versions in all voltages and frequencies from 16A 3-pole to 32A 5-pole
- Protection degrees IP44, IP54 and IP67

Order no. **896459**

Components:

1 CEE socket 32A, 400V, 4p, 3h, IP67 nickel plated contacts, with mechanical interlocking, lockable in 0-position

Fuse:

1 C-type MCB 32A, 3p
1 RCCB 40/0.03A, 4p

Cable entry at top and bottom:

each with 1x M12, 1x M20, 2x M40

Connection option:

2 cables up to 5 x 25 mm²

VARIABOX-M

260 x 230 mm



Order no. **896462**

Components:

2 CEE socket 32A, 400V, 4p, 3h, IP67 nickel plated contacts, with mechanical interlocking, lockable in 0-position

Fuse:

2 C-type MCB 32A, 3p
1 RCCB 63/0.03A, 4p

Cable entry at top and bottom:

each with 1x M12, 1x M20, 2x M40

Connection option:

2 cables up to 5 x 25 mm²

VARIABOX-L

390 x 230 mm



Order no. **896437**

Components:

3 CEE socket 32A, 400V, 4p, 3h, IP67 nickel plated contacts, with mechanical interlocking, lockable in 0-position

Fuse:

3 C-type MCB 32A, 3p

Cable entry at top and bottom:

each with 1x M12, 1x M20, 2x M40

Connection option:

2 cables up to 5 x 25 mm²

VARIABOX-XL

520 x 230 mm



Order no. **896463**

Components:

4 CEE socket 32A, 400V, 4p, 3h, IP67 nickel plated contacts, with mechanical interlocking, lockable in 0-position

Fuse:

4 C-type MCB 32A, 3p
1 RCCB 63/0.03A, 4p

Cable entry at top and bottom:

each with 1x M12, 1x M20, 2x M40

Connection option:

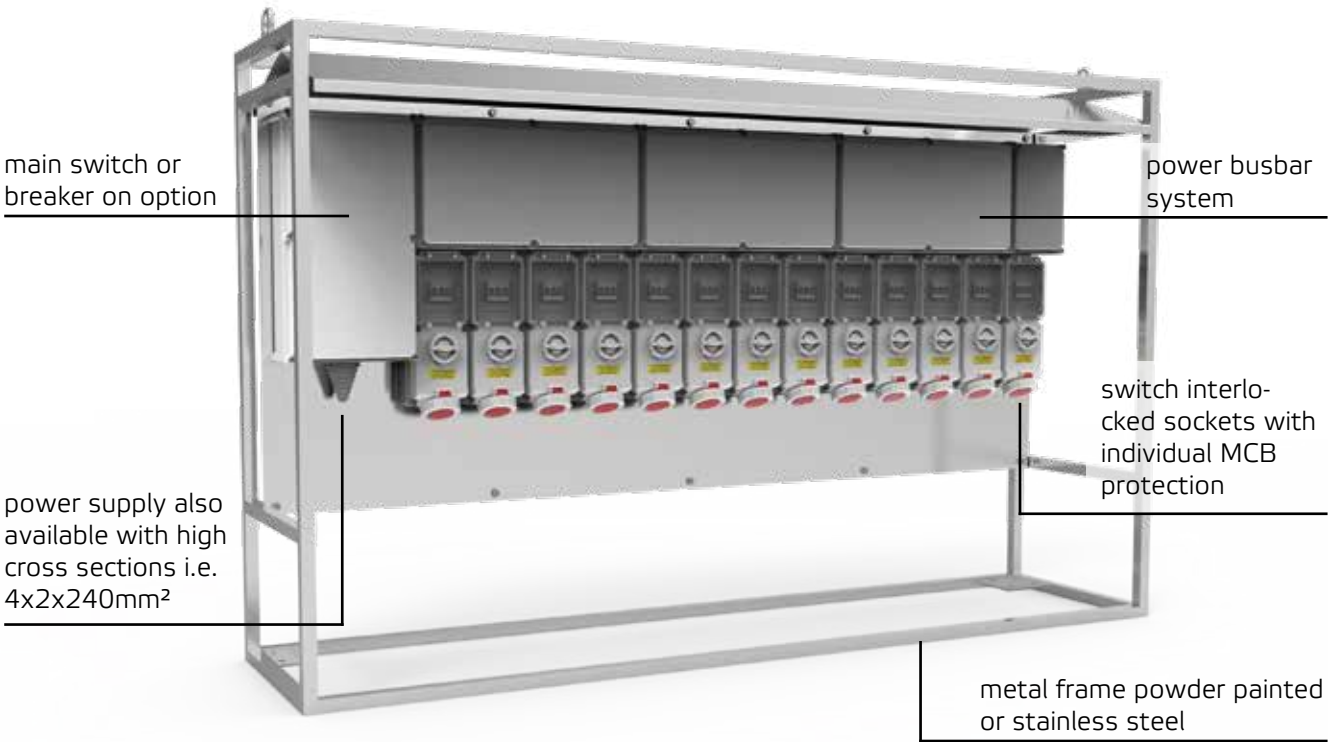
2 cables up to 5 x 25 mm²

VARIABOX-L DUO

390 x 460 mm



Portable multi-gang reefer container distribution board



Additional product features

- enclosures with optionally preventing systems for humidity absorption
- double side mounting possible
- full customisable and extendable starting from 2-gang
- optionally available with energy management and monitoring features
- socket terminals are equipped with the maintenance free QUICK-CONNECT technology, resistant to temperature changes influence
- individual 63A rated current switches in each socket
- available in customized sizes and voltage ratings



made
in
Germany



Simply. Well. Connected.

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Subject to technical modifications and typographical errors