

# Reefer Container Plugs and Sockets



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# **Bals GEE Norm**

**For more than 60 years  
we define standards for the industry**



Simply. Well. Connected.

**Simply. Well. Connected.**  
**Yesterday, today and in the future**



Factory in Kirchhundem-Albaum

## 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 and Freiwalde have highly skilled and motivated teams, the very latest manufacturing 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.

## Two 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 for the manufacturing of unique CEE plugs and connectors as well as a highly-effective logistics centre.



## 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.

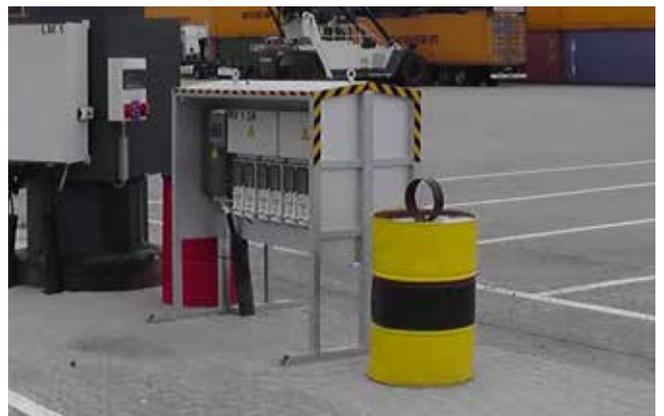
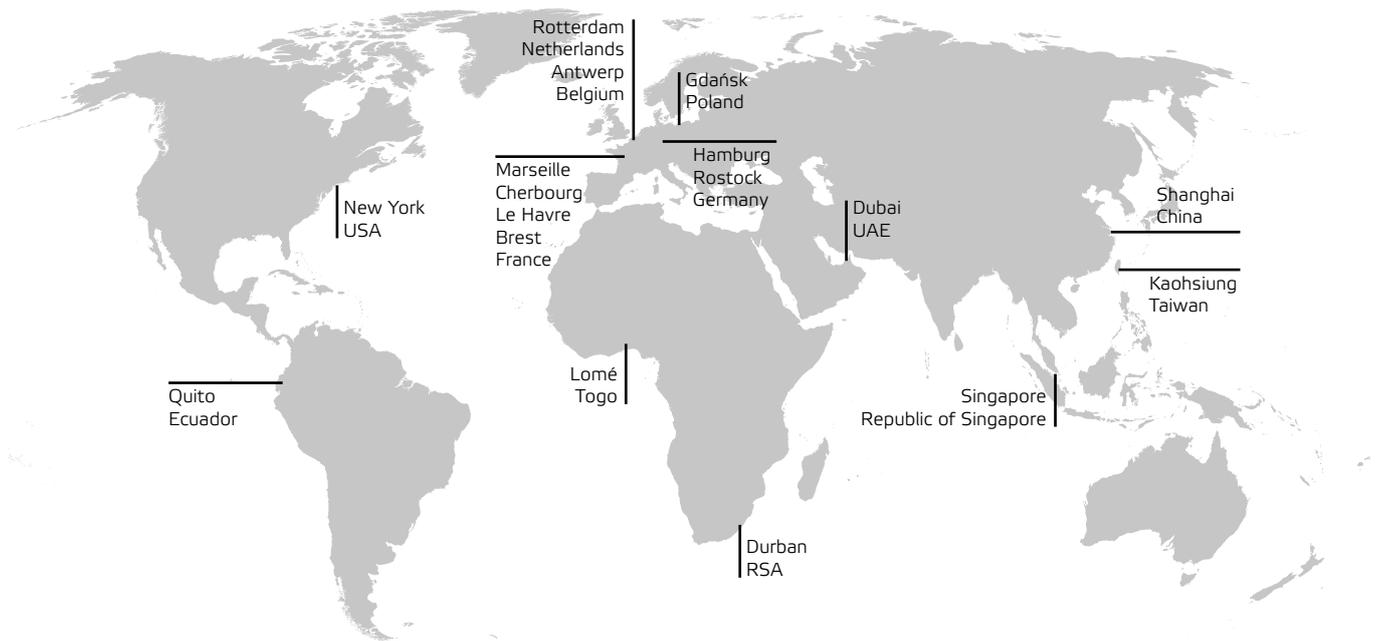


## Our responsibility to the highest quality

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.

# Reefer Container Plugs and Sockets

Reference projects



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 16mm<sup>2</sup>)
- 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.



# Reefer Container Plugs and Sockets

Our products

Technical information

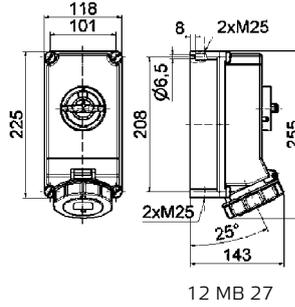
- Container operating voltage 400 - 400V, clock face position 3h
- IEC 60309, EN60309, VDE 0623
- Protection degree IP67

## Surface Mounting Socket Outlet TE

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



16050



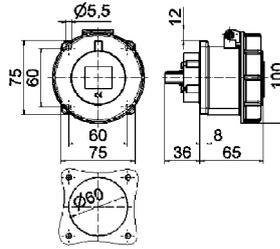
Amperes	3P+E Poles	380V (50Hz) and 440V (60Hz)	3h	Qty	9 each
		16050			

## Panel Mounting Socket Outlet TE

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



13021



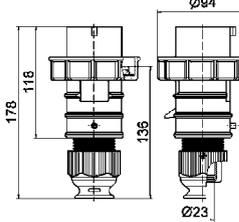
Amperes	3P+E Poles	380V (50Hz) and 440V (60Hz)	3h	Qty	9 each
		130156			

## Plug 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



210328



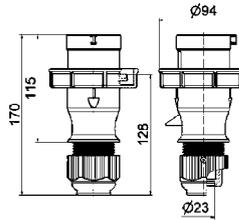
Amperes	3P+E Poles	380V (50Hz) and 440V (60Hz)	3h	Qty	9 each
		2148509			

## Plug with MULTI-GRIP

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



210824



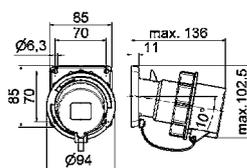
Amperes	3P+E Poles	380V (50Hz) and 440V (60Hz)	3h	Qty	9 each
		210824			
Screw terminal					
32	4	21232-TLQ			

## Appliance Inlet with Flange TE

- Screw terminals
- With closure cap
- High-temperature-resistant contact carrier
- Nickel plated contacts
- Protection degree IP67



27027



Amperes	3P+E Poles	380V (50Hz) and 440V (60Hz)	3h	Qty	9 each
		27027			

## 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

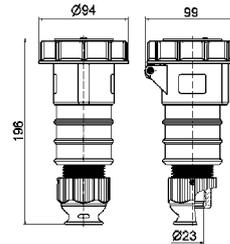
	Order no.
16A / 3p	<b>830</b>
16A / 4p	<b>835</b>
16A / 5, 7p	<b>831</b>
32A / 3p, 4p	<b>837</b>
32A / 5p, 7p	<b>832</b>
63A / 3p, 4p, 5p	<b>833</b>
125A / 3p, 4p, 5p	<b>834</b>

### 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	<b>310426</b>	10	390

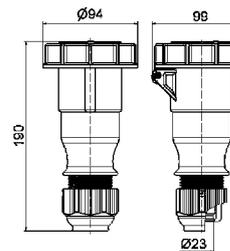
3 MB 72

### 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	<b>310567</b>	10	334

Screw terminal

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

**QUICK-CONNECT**

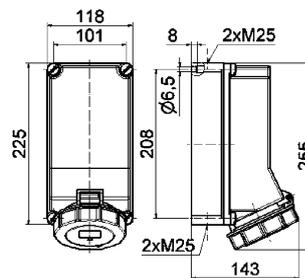
3 MB 80

### 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	<b>11556</b>	1	805

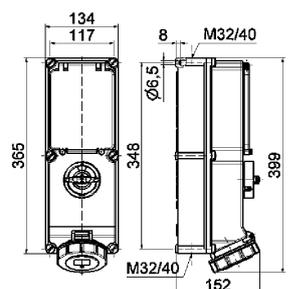
1 MB 30

### Surface Mounting Socket Outlet TE

- CEE socket with 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	<b>17026</b>	1	1910

12 MB 26

# Reefer Container Plugs and Sockets

Our products

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

				9
Ampere	32	4	<b>2298</b>	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	<b>29148</b>
for 16A / 5p TE + TE Plus	<b>29149</b>
for 32A / 5p TE + TE Plus	<b>29150</b>
32A / 5p, TE + TE Plus	<b>29132</b>
for 125A / 3p, 4p, 5p TE	<b>29133</b>

## Variobox 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 Variobox 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 mm<sup>2</sup>

## 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 mm<sup>2</sup>

## 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 mm<sup>2</sup>

## 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 mm<sup>2</sup>

## 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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