





# PREFACE

## **DOSE – Innovative and Aware of Traditions**

Our recipe for success is a mixture of two important values – innovation and tradition – they are the foundation on which we build, now and in the future.

Despite all tradition, which we can refer to, we never forget to move forward – as tradition does not mean standstill.

Despite all innovation which we pursue, we never forget what enables us to take these new paths – as innovation does not mean forgetting the tried and trusted.

## **Expertise – High Quality – Established Service – Approved Quality**

- We assure **expertise** in the supervision and technical support on site – worldwide.
- The **high quality** of our product range is self-explaining and the primary concern of our company, because at the end of the day you will be judged by what you are offering to your customers.
- For us **established service** means customer care in all situations – from the friendly support over the phone right up to the delivery - we're happy to help you.
- **Approved Quality** – with every new order we take up the challenge of proving our quality requirements once more, not just concerning service but also product quality.

## **New Design – New Catalogue – New Naming – New Layout**

- We have the finger on the pulse of time and an open ear for our customers. Our newly designed website conveys that visually.
- A **new catalogue** offers our customers an even more appealing and clear overview of our range.
- We want to simplify the access to our products – for this purpose we have introduced new product names. Names allow associations and hence are easy to remember.
- The catalogue's **new layout** – a clear tripartition in image, description and technical illustration allows you to capture relevant data at a glance and makes the order process easier.

The new DOSE catalogue represents the company's next evolutionary step towards transparency and more customer friendliness.

...and best of all: further developments are in progress...

Thank you for your attention and enjoy our new catalogue.

Thorsten Marquardt

# DOSE VISION

## **Quality with tradition for over 90 years**

For over 90 years our family business has been developing durable and resistant products for a secure electricity and light supply on the high seas.

Founded 1920 as specialists for ships electrics, we consequently expanded our product range to other maritime areas. Nowadays it ranges from marine lighting, spotlights and searchlights to container sockets and electric installation material and is orientated towards potentially explosive areas.

Professional advice, dependable delivery, fast order processing as well as a high safety standard are guaranteed through our qualified employees and the latest manufacturing technology.

## **Quality guarantee: Close contact to the customer**

The close contact to our customers, partners and employees plays an important role – especially for us as a family business. It ensures that we can provide practical products on which you can rely when it comes down to it.

Next to our comprehensive standard product range we also develop solutions together with our customers, which fulfil more individual requirements. Starting with special series in brass and red brass through to spotlights or searchlights, made to suit your needs. Feel free to contact us, we are happy to help.



### **Our focus: Quality products for your safety**

DOSE stands for quality: Since our foundation, crew complement from all over the world have been able to rely on the quality of the DOSE products, one hundred per cent. We put our trust in ongoing quality controls, from the production to the delivery and beyond. Only when you are satisfied, we are satisfied.

Modern technology is principally used in our products, however it has to meet our high quality requirements and offers an added value in terms of usability or durability.

Absolute reliability in every phase of the cooperation is guaranteed by our quality management system, according to DIN EN ISO 9001.

### **Your efficient partner - worldwide**

Our head office in Hamburg is amongst other things responsible for the areas quality management, product development, marketing and customer service. Modern manufacturing facilities are located in Portugal and Czech Republic. Our company representatives in over 26 shipyards location all over the world take care of the personal contact on site.

### **Specialists of today and tomorrow**

Offering qualitative products doesn't just mean optimising production processes, it also means guiding and training employees properly. That's why it is important for us to offer the specialists of tomorrow apprenticeships.



# International Agencies



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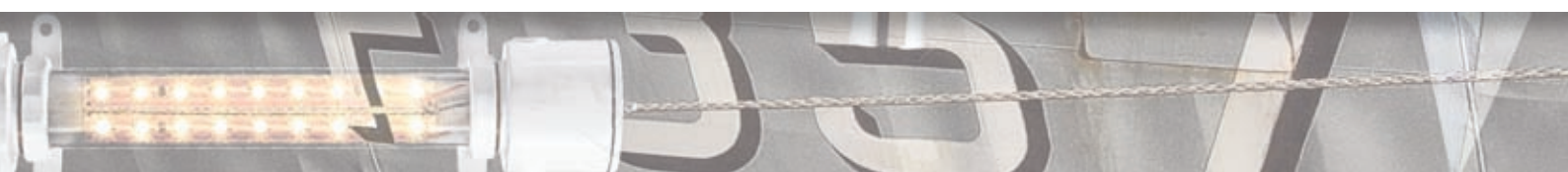
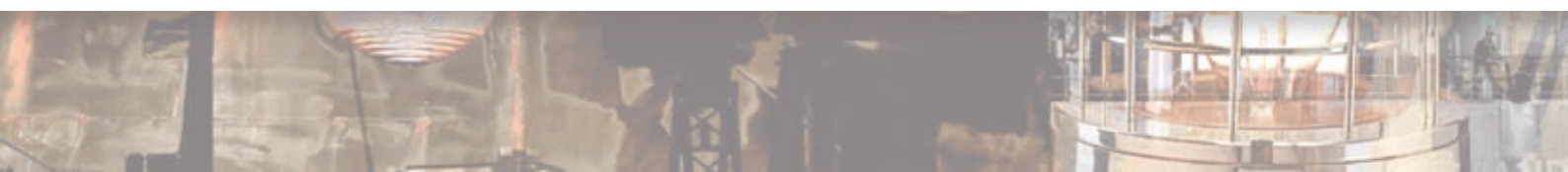
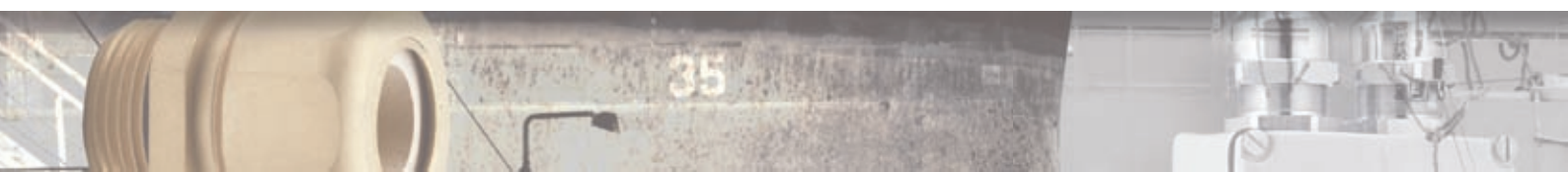
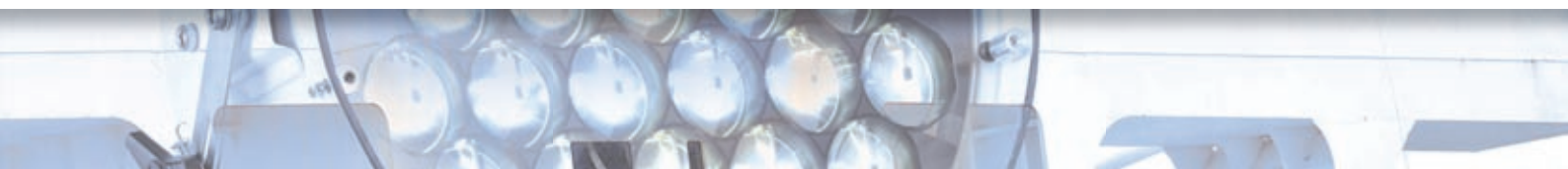
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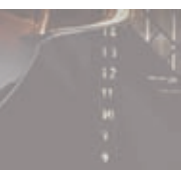
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LIGHTING FOR SHIPS



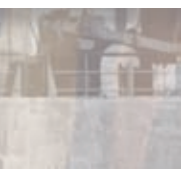
EQUIPMENT FOR  
ELECTRICAL INSTALLATIONS



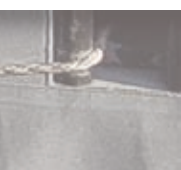
CONTAINER SOCKETS



CABLE INSTALLATION



EQUIPMENT FOR  
HAZARDOUS AREAS



NAVY EQUIPMENT



98 32  
96 31  
94 31  
92 30  
8m 29  
88 28  
88 28  
84 27  
82 27  
8m 26  
78 26  
76 25  
74 24  
72 24  
7m 23  
68 22  
66 22  
64 21  
62 20  
6m 19  
5 18  
34 18

LIGHTING FOR SHIPS  
EQUIPMENT FOR ELECTRICAL INSTALLATIONS  
CONTAINER-SOCKET

## **CABLE INSTALLATION**

EQUIPMENT FOR HAZARDOUS AREAS  
NAVY EQUIPMENT





### Do you like cable glands?

Over 90 years Karl Dose in Hamburg - your system provider for ship's electrics.

The base range of the DOSE cable installation segment consists of cable inlets according to DIN 89280 and VG 88812, versions with higher protection classes

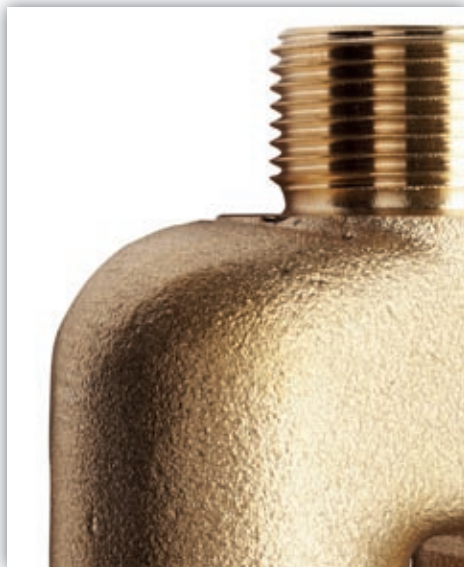




as well as cable inlets according to EN 50262. Amongst others the range also includes brass reductions/extensions, brass reduction/extension cable inlets, steel and aluminium ASS-thick-walled tube cable glands, cable

glands for electroconductive walls as well as especially developed tools.

Custom made designs are also one of our strengths concerning cable installations.



Why

Islands?

Islands arouse  
various associations.

They take us on a journey to past holiday experiences or adventure stories from our childhood. The number of islands worldwide is vast and their diversity is unlimited – like our cable glands. Products from the DOSE cable installation range are named by aesthetic and exciting islands.



164



165



166-167



168-170



171-172



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174



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188-189



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## ASS-Thick-Walled Tube-Cable Glands



Cedros ASS



Cedros ASSA

**Technical Data**

No.	Thread mm	Length mm	kg/piece	Description
ASS M24/50	M 24 x 1,5	50	0,143	<ul style="list-style-type: none"> <li>• thick-walled tube-cable gland</li> <li>• welding type</li> <li>• for wall or deck bushing</li> <li>• material: galvanized steel (type ASSA: Aluminium)</li> <li>• screw bush: brass</li> <li>• internal parts on page 176/177</li> </ul>
ASS M24/200	M 24 x 1,5	200	0,570	
ASS M24/265	M 24 x 1,5	265	0,755	
ASS M24/495	M 24 x 1,5	495	1,411	
ASS M24/745	M 24 x 1,5	745	2,123	
ASS M24/990	M 24 x 1,5	990	2,822	
ASS M24/1250	M 24 x 1,5	1250	3,563	
ASS M30/200	M 30 x 2	200	0,969	
ASS M30/700	M 30 x 2	700	3,610	
ASS M24/50	M 24 x 1,5	50	0,068	
ASS M24/200	M 24 x 1,5	200	0,216	
ASS M30/60	M 30 x 2	60	0,130	
ASS M30/200	M 30 x 2	200	0,303	

Other sizes on request.





Fidschi CES

**Technical Data**

No.	Thread Ø	Thread-length mm	For Cabel Ø mm	Package Pieces	Description
CES M 12	M 12 x 1,5 mm	5	3 - 6	100	<ul style="list-style-type: none"> <li>• cable gland, brass nickel plated</li> <li>• with excellent strain relief</li> <li>• with fully insulated neoprene seal</li> <li>• wide clamping range</li> <li>• O-ring on outer thread</li> <li>• EN 50626</li> <li>• protection type: IP68 - 5 bar</li> <li>• flat locknuts see page 180/181</li> </ul>
CES M 16	M 16 x 1,5 mm	5	5 - 9	100	
CES M 20	M 20 x 1,5 mm	6	9 - 13	100	
CES M 25	M 25 x 1,5 mm	7	11 - 16	50	
CES M 32	M 32 x 1,5 mm	8	14 - 21	25	
CES M 40	M 40 x 1,5 mm	8	19 - 27	10	
CES M 50	M 50 x 1,5 mm	9	24 - 35	5	
CES M 63	M 63 x 1,5 mm	10	32 - 42	5	
CES PG 7	PG 7	5	3 - 6,5	100	
CES PG 9	PG 9	6	4 - 8	100	
CES PG 11	PG 11	6	5 - 10	50	
CES PG 13,5	PG 13,5	6,5	6 - 12	50	
CES PG 16	PG 16	6,5	10 - 14	50	
CES PG 21	PG 21	7	13 - 18	50	
CES PG 29	PG 29	8	18 - 25	25	
CES PG 36	PG 36	9	24 - 32	10	
CES PG 42	PG 42	10	30 - 38	5	
CES PG 48	PG 48	10	34 - 44	5	



## Cable Glands with Class of Protection IP 68 and Strain Relief



Borneo CVKI

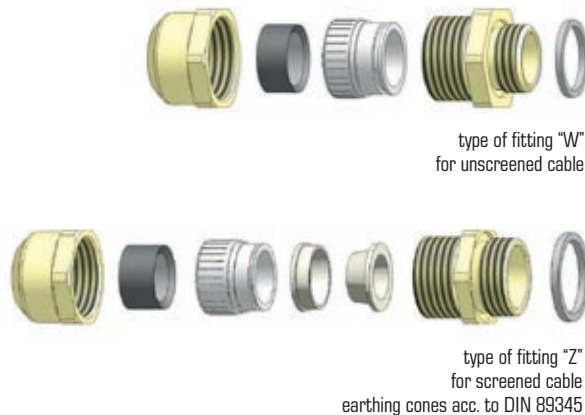
type of fitting "W"  
for unshielded cabletype of fitting "Z"  
for screened cable  
earthing cones acc. to DIN 89345

## Technical Data

No. Outfit "Z"	Thread mm	For Cable Ø mm "Z"	Nominal Size of Earthing Insert DIN 89349	Crimper Cage	Sealing Ring Inner Ø mm DIN 89349	kg piece	Description
CVKI 20 - Z 18 06	M 20 x 1,5	6 bis 8,5	18 06	EMKK 20	FDR 20	0,06	<ul style="list-style-type: none"> <li>• brass cable gland with connection thread acc. to DIN 89280, strain relief</li> <li>• with connection thread sealing ring EN 50262</li> <li>• class of protection IP 68</li> <li>• flat locknuts see page 180/181</li> </ul>
CVKI 20 - Z 18 07		8 bis 10,5	18 07				
CVKI 25 - Z 24 06	M 25 x 1,5	7 bis 8,5	24 06	EMKK 25	FDR 14	0,09	
CVKI 25 - Z 24 07		8 bis 10,5	24 07				
CVKI 25 - Z 24 08		10 bis 12,5	24 08				
CVKI 25 - Z 24 10		12 bis 14,5	24 10				
CVKI 25 - Z 24 13		14 bis 16,5	24 13				
CVKI 25 - Z 24 14		16 bis 17,5	24 14				
CVKI 32 - Z 30 16	M 32 x 1,5	16,5 bis 18,5	30 16	EMKK 32	FDR 32	0,16	
CVKI 32 - Z 30 18		18 bis 20,5	30 18				
CVKI 40 - Z 36 20	M 40 x 1,5	16,5 bis 22,5	36 20	EMKK 40	FDR 40	0,25	
CVKI 40 - Z 36 22		22 bis 24,5	36 22				
CVKI 40 - Z 36 24		24 bis 26,5	36 24				
CVKI 50 - Z 45 27	M 50 x 1,5	26 bis 28,5	45 27	EMKK 50	FDR 50	0,36	
CVKI 50 - Z 45 30		28 bis 32,5	45 30				
CVKI 63 - Z 56 35	M 63 x 1,5	32 bis 35,5	56 35	EMKK 63	FDR 63	0,61	
CVKI 63 - Z 56 39		35 bis 41,5	56 39				
No. Outfit "W"	Thread mm	for cable Ø mm "Z"	Nominal size of earthing insert DIN 89349	crimper cage	Sealing ring inner Ø mm DIN 89349	kg piece	
CVKI 16	M 16 x 1,5	4,5 bis 10	–	EMKK 16	FDR 16	0,03	
CVKI 20	M 20 x 1,5	6 bis 13	–	EMKK 20	FDR 20	0,06	
CVKI 25	M 25 x 1,5	7 bis 12,5 9 bis 17	–	EMKK 25	FDR 14 FDR 25	0,08	
CVKI 32	M 32 x 1,5	13 bis 21	–	EMKK 32	FDR 32	0,14	
CVKI 40	M 40 x 1,5	16 bis 28	–	EMKK 40	FDR 40	0,23	
CVKI 50	M 50 x 1,5	21 bis 35	–	EMKK 50	FDR 50	0,33	
CVKI 63	M 63 x 1,5	34 bis 48	–	EMKK 63	FDR 63	0,57	

For an extra charge all cable glands are also available with chrome plated or nickel plated galvanic surface.

Cable Glands with Class of Protection IP 68 and Strain Relief



Borneo CVKS

**Technical Data**

No. Outfit "Z"	Thread mm	For Cable Ø mm "Z"	Nominal Size of Earthing Insert DIN 89349	Crimper Cage	Sealing Ring Inner Ø mm DIN 89349	kg piece	Description
CVKS 18 - Z 18 06	M 18 x 1,5	6 bis 8,5	18 06	EMKK 20	FDR 20	0,06	<ul style="list-style-type: none"> <li>• brass cable gland with connection thread acc. to DIN 89280, strain relief</li> <li>• with connection thread sealing ring EN 50262</li> <li>• class of protection IP 68</li> <li>• flat locknuts see page 180/181</li> </ul>
CVKS 18 - Z 18 07		8 bis 10,5	18 07				
CVKS 24 - Z 24 06	M 24 x 1,5	7 bis 8,5	24 06	EMKK 25	FDR 14	0,09	
CVKS 24 - Z 24 07		8 bis 10,5	24 07				
CVKS 24 - Z 24 08		10 bis 12,5	24 08				
CVKS 24 - Z 24 10		12 bis 14,5	24 10				
CVKS 24 - Z 24 13		14 bis 16,5	24 13				
CVKS 24 - Z 24 14		16 bis 17,5	24 14				
CVKS 30 - Z 30 16	M 30 x 2	16 bis 18,5	30 16	EMKK 32	FDR 32	0,14	
CVKS 30 - Z 30 18		18 bis 20,5	30 18				
CVKS 36 - Z 36 20	M 36 x 2	20 bis 22,5	36 20	EMKK 40	FDR 40	0,23	
CVKS 36 - Z 36 22		22 bis 24,5	36 22				
CVKS 36 - Z 36 24		24 bis 26,5	36 24				
CVKS 45 - Z 45 27	M 45 x 2	26 bis 28,5	45 27	EMKK 50	FDR 50	0,36	
CVKS 45 - Z 45 30		28 bis 32,5	45 30				
CVKS 56 - Z 56 35	M 56 x 2	32 bis 35,5	56 35	EMKK 63	FDR 63	0,61	
CVKS 56 - Z 56 39		35 bis 41,5	56 39				
CVKS 72 - Z 44	M 72 x 2	41 bis 44,5	72 44		72-44	0,70	
CVKS 72 - Z 48		44 bis 48,5	72 48		72-48		
CVKS 72 - Z 52		48 bis 52,5	72 52		72-52		
No. Outfit "W"	Thread mm	for cable Ø mm "Z"	Nominal size of earthing insert DIN 89349	crimper cage	Sealing ring inner Ø mm DIN 89349	kg piece	
CVKS 16	M 16 x 1,5	4,5 bis 10	-	EMKK 16	FDR 16	0,03	
CVKS 18	M 18 x 1,5	6 bis 13	-	EMKK 20	FDR 20	0,05	
CVKS 24	M 24 x 1,5	7 bis 12,5	-	EMKK 25	FDR 14	0,08	
		9 bis 17			FDR 25		
CVKS 30	M 30 x 2	13 bis 21	-	EMKK 32	FDR 32	0,13	
CVKS 36	M 36 x 2	16 bis 28	-	EMKK 40	FDR 40	0,21	
CVKS 45	M 45 x 2	21 bis 35	-	EMKK 50	FDR 50	0,34	
CVKS 56	M 56 x 2	34 bis 48	-	EMKK 63	FDR 63	0,57	
CVKS 72 - W 44	M 72 x 2	41 bis 44,5	-		72-44	0,70	
CVKS 72 - W 48		44 bis 48,5	-		72-48		
CVKS 72 - W 52		48 bis 52,5	-		72-52		
CVKS 72 - W 56		52 bis 56,5	-		72-56		

For an extra charge all cable glands are also available with chrome plated or nickel plated galvanic surface.



Tonga



type of fitting "W"  
for unscreened cable



type of fitting "Z"  
for screened cable

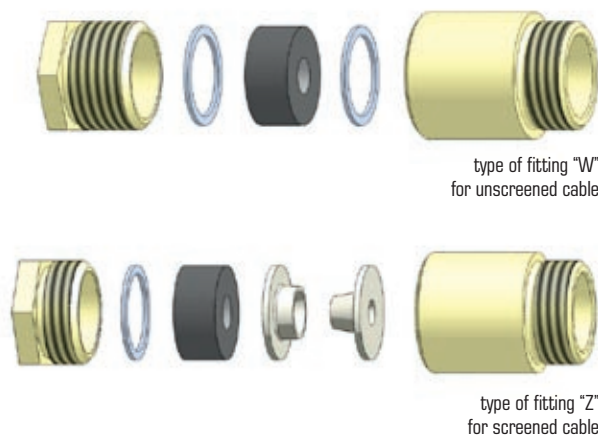
### Technical Data

No. Outfit "Z"	No. Outfit "W"	Thread mm	For Cable Ø mm	Sealing Ring Inner Ø mm DIN 89349	Washer Inner Ø mm DIN 89347	Nominal Size of Earthing Insert DIN 89345	kg/piece	Description
187 S - Z 6	187 S - W 6	M 18 x 1,5	6 - 7,5	6**	9	18 06	0,062	<ul style="list-style-type: none"> <li>• brass cable gland acc. to DIN 89280</li> <li>• screw-in type</li> <li>• flat lock nuts see page 180/181</li> </ul>
187 S - Z 8	187 S - W 8		7 - 8,5	8	9	18 06		
187 S - Z 10	187 S - W 10		8 - 10,5	10	11	18 07		
186 S - Z 8 A	186 S - W 8 A	M 24 x 1,5	7 - 8,5	8	9	24 06	0,095	
186 S - Z 10 A	186 S - W 10 A		8 - 10,5	10	11	24 07		
186 S - Z 12	186 S - W 12		10 - 12,5	12	13	24 08		
186 S - Z 14	186 S - W 14		12 - 14,5	14	15	24 10		
186 S - Z 16	186 S - W 16		14 - 16,5	16	17	24 13		
186 S - Z 17	186 S - W 17		16 - 17,5	17	18	24 14		
185 S - Z 15	185 S - W 15		M 30 x 2	14,5 - 16,5	15**	19		
185 S - Z 18	185 S - W 18	16 - 18,5		18	19	30 16		
185 S - Z 20	185 S - W 20	18 - 20,5		20	21	30 18		
184 S - Z 18 A	184 S - W 18 A	M 36 x 2	16,5 - 18,5	18**	18	36 20	0,220	
184 S - Z 22	184 S - W 22		20 - 22,5	22	23	36 20		
184 S - Z 24	184 S - W 24		22 - 24,5	24	25	36 22		
184 S - Z 26	184 S - W 26		24 - 26,5	26	27	36 24		
183 S - Z 28	183 S - W 28	M 45 x 2	26 - 28,5	28	29	45 27	0,370	
183 S - Z 30	183 S - W 30		28 - 30,5	30	31	45 30		
183 S - Z 32	183 S - W 32		30 - 32,5	32	33	45 30		
182 S - Z 35	182 S - W 35	M 56 x 2	32 - 35,5	35	36	56 35	0,495	
182 S - Z 38	182 S - W 38		35 - 38,5	38	39	56 39		
182 S - Z 41	182 S - W 41		38 - 41,5	41	42	56 39		
181 S - Z 44	181 S - W 44	M 72 x 2	41 - 44,5	44	45	72 44	0,725	
181 S - Z 48	181 S - W 48		44 - 48,5	48	49	72 48		
181 S - Z 52	181 S - W 52		48 - 52,5	52	53	72 52		
-	181 S - W 56		52 - 56,5	56	57	-		
180 S - Z 64*	180 S - W 64*	M 80 x 2	62 - 66	64	67	EE 80 a	1,250	
179 S - Z 70*	179 S - W 70*		68 - 73	70	75	EE 105 a		
-	179 S - W 80*		78 - 83	80	85	-	2,700	

\* Special size (similar to DIN 89280)

\*\* Special size (similar to DIN 89349)

For an extra charge all cable glands are also available with chrome plated or nickel plated galvanic surface.



type of fitting "W"  
for unshielded cable

type of fitting "Z"  
for shielded cable



**Technical Data**

No. Outfit "Z"	No. Outfit "W"	Thread Outside mm	Thread Inside mm	Outfit	For Cable Ø mm	Sealing Ring Inner Ø mm DIN 89349	Washer Inner Ø mm DIN 89347	Nominal Size of Earthing Insert DIN 89345	kg/piece	Description
-	188 S/M .. - W 7	M 16 x 1,5	M 16 x 1,5	W 7	6 - 7,5	7	8	-	0,045	<ul style="list-style-type: none"> <li>• brass cable gland similar to DIN 89280</li> <li>• screw-in-type</li> <li>• thread acc. to EN 50262</li> <li>• flat locknuts see page 180/181</li> </ul>
187 S/M .. - Z	187 S/M .. - W 8	M 20 x 1,5	M 18 x 1,5	Z 6 / W 6	6 - 7,5	6	9	18 06	0,062	
	187 S/M .. - W 10			Z 8 / W 8	7 - 8,5	8	9	18 06		
				Z 10 / W 10	8 - 10,5	10	11	18 07		
186 S/M .. - Z	186 S/M .. - W	M 16 x 1,5	M 24 x 1,5	Z 8A / W 8A	7 - 8,5	8	9	24 06	0,095	
		M 20 x 1,5		Z 10A / W 10A	8 - 10,5	10	11	24 07		
		M 25 x 1,5		Z 12 / W 12	10 - 12,5	12	13	24 08		
		M 32 x 1,5		Z 14 / W 14	12 - 14,5	14	15	24 10		
		M 40 x 1,5		Z 16 / W 16	14 - 16,5	16	17	24 13		
		Z 17 / W 17	16 - 17	17	18	24 14				
185 S/M .. - Z	185 S/M .. - W	M 25 x 1,5	M 30 x 2	Z 15 / W 15	14,5 - 16,5	15	19	30 16	0,163	
		M 32 x 1,5		Z 18 / W 18	16 - 18,5	18	19	30 16		
		M 40 x 1,5		Z 20 / W 20	18 - 20,5	20	21	30 18		
184 S/M .. - Z	184 S/M .. - W	M 32 x 1,5	M 36 x 2	Z 18A / W 18A	16,5 - 18,5	18	23	36 20	0,220	
		M 40 x 1,5		Z 22 / W 22	20 - 22,5	22	23	36 20		
		M 50 x 1,5		Z 24 / W 24	22 - 24,5	24	25	36 22		
				Z 26 / W 26	24 - 26,5	26	27	36 24		
183 S/M .. - Z	183 S/M .. - W	M 40 x 1,5	M 45 x 2	Z 28 / W 28	26 - 28,5	28	29	45 27	0,370	
		M 50 x 1,6		Z 30 / W 30	28 - 30,5	30	31	45 30		
				Z 32 / W 32	30 - 32,5	32	33	45 30		
182 S/M .. - Z	182 S/M .. - W	M 50 x 1,5	M 56 x 2	Z 35 / W 35	32 - 35,5	35	36	56 35	0,495	
		M 63 x 1,5		Z 38 / W 38	35 - 38,5	38	39	56 39		
				Z 41 / W 41	38 - 41,5	41	42	56 36		
181 S/M .. - Z	181 S/M .. - W	M 63 x 1,5	M 72 x 2	Z 44 / W 44	41 - 44,5	44	45	72 44	0,725	
				Z 48 / W 48	44 - 48,5	48	49	72 48		
				Z 52 / W 52	48 - 52,5	52	53	72 52		
-				W 56	52 - 56,5	56	57	-		

For an extra charge all cable glands are also available with chrome plated or nickel plated galvanic surface.

## Cable Gland with PG-Type Connection Thread



Tonga



type of fitting "W"  
for unscreened cable



type of fitting "Z"  
for screened cable

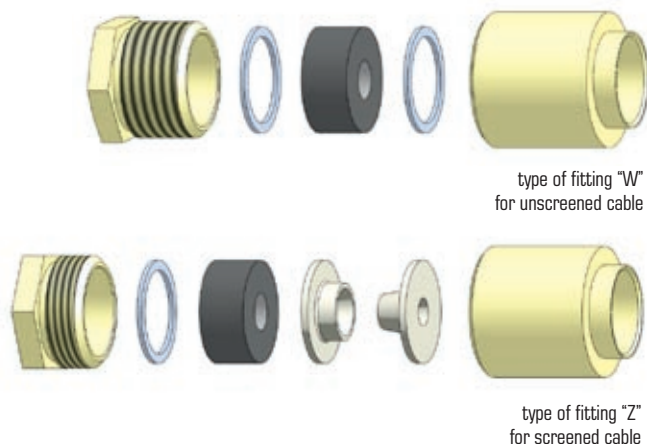
### Technical Data

No. Outfit "Z"	No. Outfit "W"	Thread Outside mm	Thread Inside mm	Outfit	Sealing ring Inner Ø mm DIN 89349	Washer Inner Ø mm DIN 89347	Nominal Size of Earthing Insert DIN 89345	For Kabel Ø mm	Description
187/PG 9 -Z..	187/PG 9 -W..	PG 9	M 18 x 1,5	Z 6 / W 6	6*	9	18 06	6,5 - 7,5	<ul style="list-style-type: none"> <li>• brass cable gland acc. to DIN 89280</li> <li>• screw-in-type with PG-thread</li> <li>• flat counter nuts see page 180/181</li> <li>example for purchase order: 186 / PG 11 - Z 17 186 / PG 21 - Z 17</li> </ul>
187/PG 11 -Z..	187/PG 11 -W..	PG 11		Z 8 / W 8	8	9	18 06	7,5 - 8,5	
187/PG 13,5 -Z..	187/PG 13,5 -W..	PG 13,5		Z 10 / W 10	10	11	18 07	8,5 - 10,5	
187/PG 16 -Z..	187/PG 16 -W..	PG 16							
186/PG 9 -Z..	186/PG 9 -W..	PG 9	M 24 x 1,5	Z 8 A / W 8 A	8	9	24 06	7,5 - 8,5	
186/PG 11 -Z..	186/PG 11 -W..	PG 11		Z 10 A / W 10 A	10	11	24 07	8,5 - 10,5	
186/PG 13,5 -Z..	186/PG 13,5 -W..	PG 13,5		Z 12 / W 12	12	13	24 08	10,5 - 12,5	
186/PG 16 -Z..	186/PG 16 -W..	PG 16		Z 14 / W 14	14	15	24 10	12,5 - 14,5	
186/PG 21 -Z..	186/PG 21 -W..	PG 21		Z 16 / W 16	16	17	24 13	14,5 - 16,5	
186/PG 29 -Z..	186/PG 29 -W..	PG 29		Z 17 / W 17	17	18	24 14	16,5 - 17,5	
185/PG 11 -Z..	185/PG 11 -W..	PG 11	M 30 x 2	Z 15 / W 15	15*	19	30 16	14,5 - 16,5	
185/PG 13,5 -Z..	185/PG 13,5 -W..	PG 13,5		Z 18 / W 18	18	19	30 16	16,5 - 18,5	
185/PG 16 -Z..	185/PG 16 -W..	PG 16		Z 20 / W 20	20	21	30 18	18,5 - 20,5	
185/PG 21 -Z..	185/PG 21 -W..	PG 21			16	17	36 20	14,5 - 16,5	
185/PG 29 -Z..	185/PG 29 -W..	PG 29							
185/PG 36 -Z..	185/PG 36 -W..	PG 36							
184/PG 16 -Z..	184/PG 16 -W..	PG 16	M 36 x 2	Z 18 A / W 18 A	18*	23	36 20	16,5 - 18,5	
184/PG 21 -Z..	184/PG 21 -W..	PG 21		Z 22 / W 22	22	23	36 22	20,5 - 22,5	
184/PG 29 -Z..	184/PG 29 -W..	PG 29		Z 24 / W 24	24	25	36 24	22,5 - 24,5	
184/PG 36 -Z..	184/PG 36 -W..	PG 36		Z 26 / W 26	26	27	45 27	24,5 - 26,5	
184/PG 42 -Z..	184/PG 42 -W..	PG 42							
183/PG 21 -Z..	183/PG 21 -W..	PG 21	M 45 x 2	Z 28 / W 28	28	29	45 30	26,5 - 28,5	
183/PG 29 -Z..	183/PG 29 -W..	PG 29		Z 30 / W 30	30	31	45 30	28,5 - 30,5	
183/PG 36 -Z..	183/PG 36 -W..	PG 36		Z 32 / W 32	32	33	56 35	30,5 - 32,5	
183/PG 42 -Z..	183/PG 42 -W..	PG 42							
183/PG 48 -Z..	183/PG 48 -W..	PG 48							
182/PG 36 -Z..	182/PG 36 -W..	PG 36	M 56 x 2	Z 35 / W 35	35	36	56 39	32,5 - 35,5	
182/PG 42 -Z..	182/PG 42 -W..	PG 42		Z 38 / W 38	38	39	56 36	35,5 - 38,5	
182/PG 48 -Z..	182/PG 48 -W..	PG 48		Z 41 / W 41	41	42	72 44	38,5 - 41,5	
181/PG 42 -Z..	181/PG 42 -W..	PG 42	M 72 x 2	Z 44 / W 44	44	45	72 48	41,5 - 44,5	
181/PG 48 -Z..	181/PG 48 -W..	PG 48		Z 48 / W 48	48	49	72 52	44,5 - 48,5	
				Z 52 / W 52	52	53	72 52	48,5 - 52,5	
				- / W 56	56	57	-	52,5 - 56,5	

\* Sondergröße (ähnlich DIN 89280)

Alle Kabeleinführungen gegen Mehrpreis auch in verchromter oder vernickelter Ausführung lieferbar.

Rivet Type Cable Glands of Steel



Calypso

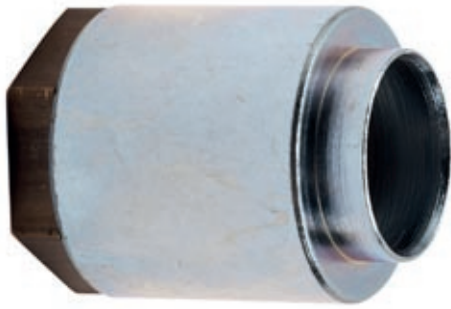
**Technical Data**

No. Outfit "Z"	No. Outfit "W"	Thread/ Rivet Ø mm	For Cabel Ø mm	Sealing Ring Inner Ø mm DIN 89349	Washer Inner Ø mm DIN 89347	Nominal Size of Earthing Insert DIN 89345	kg/piece	Description
287 N - Z 6	287 N - W 6	M 18 x 1,5/15	6 - 7,5	6*	9	18 06	0,055	<ul style="list-style-type: none"> <li>• cable gland acc. to DIN 89280 rivet type</li> <li>• material: steel, galvanized</li> <li>• screw bush: brass</li> <li>• cable glands are also available with thread as screw-in type, then indication "S" (i. e. 286 S-Z 14)</li> </ul>
287 N - Z 8	287 N - W 8		7 - 8,5	8	9	18 06		
287 N - Z 10	287 N - W 10		8 - 10,5	10	11	18 07		
286 N - Z 8 A	286 N - W 8 A	M 24 x 1,5/20	7 - 8,5	8	9	24 06	0,082	
286 N - Z 10 A	286 N - W 10 A		8 - 10,5	10	11	24 07		
286 N - Z 12	286 N - W 12		10 - 12,5	12	13	24 08		
286 N - Z 14	286 N - W 14		12 - 14,5	14	15	24 10		
286 N - Z 16	286 N - W 16		14 - 16,5	16	17	24 13		
286 N - Z 17	286 N - W 17		16 - 17	17	18	24 14		
285 N - Z 15	285 N - W 15	M 30 x 2/26	14,5 - 16,5	15*	19	30 16	0,142	
285 N - Z 18	285 N - W 18		16 - 18,5	18	19	30 16		
285 N - Z 20	285 N - W 20		18 - 20,5	20	21	30 18		
284 N - Z 18 A	284 N - W 18 A	M 36 x 2/32	16,5 - 18,5	18*	18	36 20	0,195	
284 N - Z 24	284 N - W 24		20 - 22,5	22	23	36 20		
284 N - Z 26	284 N - W 26		22 - 24,5	24	25	36 22		
284 N - Z 22	284 N - W 22		24 - 26,5	26	27	36 24		
283 N - Z 28	283 N - W 28	M 45 x 2/40	26 - 28,5	28	29	45 27	0,325	
283 N - Z 30	283 N - W 30		28 - 30,5	30	31	45 30		
283 N - Z 32	283 N - W 32		30 - 32,5	32	33	45 30		
282 N - Z 35	282 N - W 35	M 56 x 2/50	32 - 35,5	35	36	56 35	0,430	
282 N - Z 38	282 N - W 38		35 - 38,5	38	39	56 39		
282 N - Z 41	282 N - W 41		38 - 41,5	41	42	56 36		
281 N - Z 44	281 N - W 44	M 72 x 2/65	41 - 44,5	44	45	72 44	0,610	
281 N - Z 48	281 N - W 48		44 - 48,5	48	49	72 48		
281 N - Z 52	281 N - W 52		48 - 52,5	52	53	72 52		
-	281 N - W 56		52 - 56,5	56	57	-		

\* Special size (similar to DIN 89349)

For an extra charge all cable glands are also available with chrome plated or nickel plated galvanic surface.

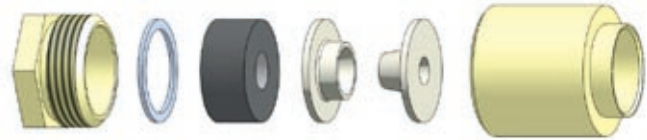
## Rivet Type Cable Glands of Brass



Calypso



type of fitting "W"  
for unshielded cable



type of fitting "Z"  
for shielded cable

### Technical Data

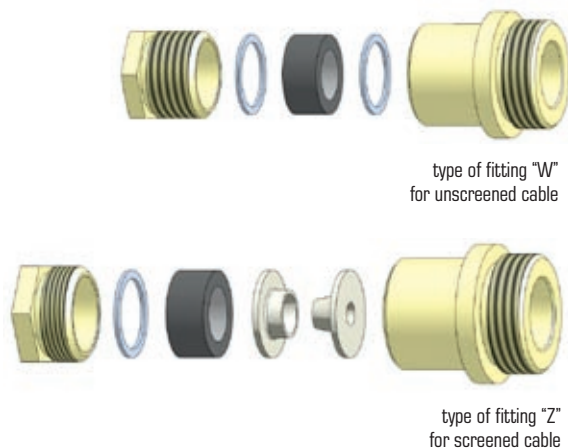
No. Outfit "Z"	No. Outfit "W"	Thread/ Rivet Ø mm	For Cabel Ø mm	Sealing Ring Inner Ø mm DIN 89349	Washer Inner Ø mm DIN 89347	Nominal Size of Earthing Insert DIN 89345	kg/piece	Description
187 N - Z 6	187 N - W 6	M 18 x 1,5/15	6 - 7,5	6*	9	18 06	0,057	• brass cable gland acc. to DIN 89280, rivet type
187 N - Z 8	187 N - W 8		7 - 8,5	8	9	18 06		
187 N - Z 10	187 N - W 10		8 - 10,5	10	11	18 07		
186 N - Z 8 A	186 N - W 8 A	M 24 x 1,5/20	7 - 8,5	8	9	24 06	0,085	
186 N - Z 10 A	186 N - W 10 A		8 - 10,5	10	11	24 07		
186 N - Z 12	186 N - W 12		10 - 12,5	12	13	24 08		
186 N - Z 14	186 N - W 14		12 - 14,5	14	15	24 10		
186 N - Z 16	186 N - W 16		14 - 16,5	16	17	24 13		
186 N - Z 17	186 N - W 17		16 - 17,5	17	18	24 14		
185 N - Z 15	185 N - W 15	M 30 x 2/26	14,5 - 16,5	15*	19	30 16	0,150	
185 N - Z 18	185 N - W 18		16 - 18,5	18	19	30 16		
185 N - Z 20	185 N - W 20		18 - 20,5	20	21	30 18		
184 N - Z 18 A	184 N - W 18 A	M 36 x 2/32	16,5 - 18,5	18*	18	36 20	0,205	
184 N - Z 22	184 N - W 22		20 - 22,5	22	23	36 20		
184 N - Z 24	184 N - W 24		22 - 24,5	24	25	36 22		
184 N - Z 26	184 N - W 26		24 - 26,5	26	27	36 24		
183 N - Z 28	183 N - W 28	M 45 x 2/40	26 - 28,5	28	29	45 27	0,345	
183 N - Z 30	183 N - W 30		28 - 30,5	30	31	45 30		
183 N - Z 32	183 N - W 32		30 - 32,5	32	33	45 30		
182 N - Z 35	182 N - W 35	M 56 x 2/50	32 - 35,5	35	36	56 35	0,455	
182 N - Z 38	182 N - W 38		35 - 38,5	38	39	56 39		
182 N - Z 41	182 N - W 41		38 - 41,5	41	42	56 36		
181 N - Z 44	181 N - W 44	M 72 x 2/65	41 - 44,5	44	45	72 44	0,645	
181 N - Z 48	181 N - W 48		44 - 48,5	48	49	72 48		
181 N - Z 52	181 N - W 52		48 - 52,5	52	53	72 52		
-	181 N - W 56		52 - 56,5	56	57	-		

\* Special size (similar to DIN 89349)

For an extra charge all cable glands are also available with chrome plated or nickel plated galvanic surface.



Reduction-Type Cable Glands of Brass



Hebriden

**Technical Data**

No. Outfit "Z"	No. Outfit "W"	Thread Inside mm	Thread Outside mm	Outfit	Sealing Ring Inner Ø mm DIN 89349	Washer Inner Ø mm DIN 89347	Nominal Size of Earthing Insert DIN 89345	For Cable Ø mm	Description
587 - Z../M 24	587 - W../M 24	M 18 x 1,5	M 24 x 1,5	Z 6 / W 6	6*	9	18 06	6 - 7,5	<ul style="list-style-type: none"> <li>• brass reduction-type cable gland screw-in type with metric thread</li> <li>• flat locknuts see page 180/181 example for purchase order: 586 - Z 17 / M 30</li> </ul>
587 - Z../M 30	587 - W../M 30		M 30 x 2	Z 8 / W 8	8	9	18 06	7 - 8,5	
				Z 10 / W 10	10	11	18 07	8 - 10,5	
586 - Z../M 30	586 - W../M 30	M 24 x 1,5	M 30 x 2	Z 8 A / W 8 A	8	9	24 06	7 - 8,5	
586 - Z../M 36	586 - W../M 36		M 36 x 2	Z 10 A / W 10 A	10	11	24 07	8 - 10,5	
				Z 12 / W 12	12	13	24 08	10 - 12,5	
				Z 14 / W 14	14	15	24 10	12 - 14,5	
				Z 16 / W 16	16	17	24 13	14 - 16,5	
				Z 17 / W 17	17	18	24 14	16 - 17,5	
				Z 15 / W 15	15*	19	30 16	14,5 - 16,5	
585 - Z../M 36	585 - W../M 36	M 30 x 2	M 36 x 2	Z 18 / W 18	18	19	30 16	16 - 18,5	
585 - Z../M 45	585 - W../M 45		M 45 x 2	Z 20 / W 20	20	21	30 18	18 - 20,5	
584 - Z../M 45	584 - W../M 45	M 36 x 2	M 45 x 2	Z 18 A / W 18 A	18*	18	36 20	16,5 - 18,5	
584 - Z../M 56	584 - W../M 56		M 56 x 2	Z 22 / W 22	22	23	36 20	20 - 22,5	
				Z 24 / W 24	24	25	36 22	22 - 24,5	
				Z 26 / W 26	26	27	36 24	24 - 26,5	
583 - Z../M 56	583 - W../M 56	M 45 x 2	M 56 x 2	Z 28 / W 28	28	29	45 27	26 - 28,5	
				Z 30 / W 30	30	31	45 30	28 - 30,5	
				Z 32 / W 32	32	33	45 30	30 - 32,5	
582 - Z../M 72	582 - W../M 72	M 56 x 2	M 72 x 2	Z 35 / W 35	35	36	56 35	32 - 35,5	
				Z 38 / W 38	38	39	56 39	35 - 38,5	
				Z 41 / W 41	41	42	56 36	38 - 41,5	

\* Special size (similar to DIN 89349)

For an extra charge all cable glands are also available with chrome plated or nickel plated galvanic surface.



Hebriden

type of fitting "W"  
for unscreened cabletype of fitting "Z"  
for screened cable**Technical Data**

No. Outfit „Z“	No. Outfit „W“	Thread Inside mm	Thread Outside mm	Outfit	Sealing Ring Inner Ø mm DIN 89349	Washer Inner Ø mm DIN 89347	Nominal Size of Earthing Insert DIN 89345	For Cable Ø mm	Description
596 - Z../M 18	596 - W../M 18	M 24 x 1,5	M 18 x 1,5	Z 8 A / W 8 A Z 10 A / W 10 A Z 12 / W 12 Z 14 / W 14 Z 16 / W 16 Z 17 / W 17	8 10 12 14 16 17	9 11 13 15 17 18	2406 2407 2408 2410 2413 2414	7 - 8,5 8 - 10,5 10 - 12,5 12 - 14,5 14 - 16,5 16 - 17,5	<ul style="list-style-type: none"> <li>• brass extension-type cable gland with metric thread, screw-in type</li> <li>• flat counter nuts see page 180/181</li> </ul> example for purchase order: 596 - Z 14 / M 18
595 - Z../M 18	595 - W../M 18	M 30 x 2	M 18 x 1,5	Z 15 / W 15	15*	19	3016	14,5 - 16,5	
595 - Z../M 24	595 - W../M 24		M 24 x 1,5	Z 18 / W 18 Z 20 / W 20	18 20	19 21	3016 3018	16 - 18,5 18 - 20,5	
594 - Z../M 24	594 - W../M 24		M 36 x 2	M 24 x 1,5	Z 18 A / W 18 A	18*	18	3020	
594 - Z../M 30	594 - W../M 30	M 30 x 2		Z 22 / W 22 Z 24 / W 24 Z 26 / W 26	22 24 26	23 25 27	3020 3022 3024	20 - 22,5 22 - 24,5 24 - 26,5	
593 - Z../M 30	593 - W../M 30	M 45 x 2		M 30 x 2	Z 28 / W 28	28	29	45 27	
593 - Z../M 36	593 - W../M 36		M 36 x 2	Z 30 / W 30 Z 32 / W 32	30 32	31 33	45 30 45 30	28 - 30,5 30 - 32,5	
592 - Z../M 36	592 - W../M 36		M 56 x 2	M 36 x 2	Z 35 / W 35	35	36	56 35	
592 - Z../M 45	592 - W../M 45	M 45 x 2		Z 38 / W 38 Z 41 / W 41	38 41	39 42	56 39 56 36	35 - 38,5 38 - 41,5	
591 - Z../M 56	591 - W../M 56	M 72 x 2		M 56 x 2	Z 44 / W 44	44	45	72 44	
			Z 48 / W 48		48	49	72 48	44 - 48,5	
			Z 52 / W 52		52	53	72 52	48 - 52,5	
			W 56		56	57	-	52 - 56,5	

\* Special size (similar to DIN 89349)

For an extra charge all cable glands are also available with chrome plated or nickel plated galvanic surface.



screw bush - 6 (short)  
DIN 89280  
for type of fitting Z

screw bush - 5 (long)  
DIN 89280  
for type of fitting W/VG/U

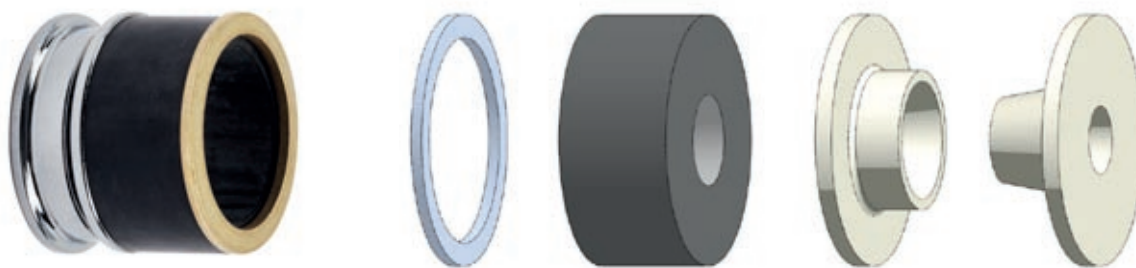
**Technical Data**

No.	Thread mm	Length mm	Description
SBL 16	M 16 x 1,5	19	• brass screw bush acc. to DIN 89280
SBL 18	M 18 x 1,5	20	
SBL 24	M 24 x 1,5	21	
SBL 30	M 30 x 2	24	
SBL 36	M 36 x 2	25	
SBL 45	M 45 x 2	27	
SBL 56	M 56 x 2	28	
SBL 72	M 72 x 2	30	
SBK 18	M 18 x 1,5	12	
SBK 24	M 24 x 1,5	15	
SBK 30	M 30 x 2	16	
SBK 36	M 36 x 2	17	
SBK 45	M 45 x 2	19	
SBK 56	M 56 x 2	20	
SBK 72	M 72 x 2	22	

For an extra charge also available with chrome plated or nickel plated galvanic surface.



## Internal Parts Type of Fitting "Z"



consisting of:  
1 washer DIN 89347  
1 sealing ring DIN 89349  
1 set earthing cones DIN 89345

### Technical Data

No.	For Cable Gland	For Cable Ø mm	Sealing Ring Inner Ø mm DIN 89349	Washer Inner Ø mm DIN 89347	Nominal Size of Earthing Insert DIN 89345	Description
Z 6	M 18 x 1,5	6 - 7,5	6**	9	18 06	<ul style="list-style-type: none"> <li>internal parts for screened cable</li> <li>type of fitting "Z"</li> </ul>
Z 8		7 - 8,5	8	9	18 06	
Z 10		8 - 10,5	10	11	18 07	
Z 8 A	M 24 x 1,5	7 - 8,5	8	9	24 06	
Z 10 A		8 - 10,5	10	11	24 07	
Z 12		10 - 12,5	12	13	24 08	
Z 14		12 - 14,5	14	15	24 10	
Z 16		14 - 16,5	16	17	24 13	
Z 17		16 - 17,5	17	18	24 14	
Z 15	M 30 x 2	14,5 - 16,5	15**	19	30 16	
Z 18		16 - 18,5	18	19	30 16	
Z 20		18 - 20,5	20	21	30 18	
Z 18 A	M 36 x 2	16,5 - 18,5	18**	18	36 20	
Z 22		20 - 22,5	22	23	36 20	
Z 24		22 - 24,5	24	25	36 22	
Z 26		24 - 26,5	26	27	36 24	
Z 28	M 45 x 2	26 - 28,5	28	29	45 27	
Z 30		28 - 30,5	30	31	45 30	
Z 32		30 - 32,5	32	33	45 30	
Z 35	M 56 x 2	32 - 35,5	35	36	56 35	
Z 38		35 - 38,5	38	39	56 39	
Z 41		38 - 41,5	41	42	56 36	
Z 44	M 72 x 2	41 - 44,5	44	45	72 44	
Z 48		44 - 48,5	48	49	72 48	
Z 52		48 - 52,5	52	53	72 52	
Z 64*	M 80 x 2	52 - 56,5	64	67	EE 80 a	
Z 70*	M 105 x 2	62 - 66	70	75	EE 105 a	

\* Special size (similar to DIN 89280)

\*\* Special size (similar to DIN 89349)

## Internal Parts Type of Fitting "W"



consisting of:  
1 sealing ring DIN 89349  
2 washer DIN 89347

## Technical Data

No.	For Cable Gland	For Cable Ø mm	Sealing Ring Inner Ø mm DIN 89349	Washer Inner Ø mm DIN 89347	Description
W 7	M 16 x 1,5	6 - 7,5	7	8	• internal parts for unscreened cable • type of fitting "W"
W 6	M 18 x 1,5	6 - 7,5	6**	9	
W 8		7 - 8,5	8	9	
W 10		8 - 10,5	10	11	
W 8 A	M 24 x 1,5	7 - 8,5	8	9	
W 10 A		8 - 10,5	10	11	
W 12		10 - 12,5	12	13	
W 14		12 - 14,5	14	15	
W 16		14 - 16,5	16	17	
W 17		16 - 17,5	17	18	
W 15	M 30 x 2	14,5 - 16,5	15**	19	
W 18		16 - 18,5	18	19	
W 20		18 - 20,5	20	21	
W 18 A	M 36 x 2	16,5 - 18,5	18**	18	
W 22		20 - 22,5	22	23	
W 24		22 - 24,5	24	25	
W 26		24 - 26,5	26	27	
W 28	M 45 x 2	26 - 28,5	28	29	
W 30		28 - 30,5	30	31	
W 32		30 - 32,5	32	33	
W 35	M 56 x 2	32 - 35,5	35	36	
W 38		35 - 38,5	38	39	
W 41		38 - 41,5	41	42	
W 44	M 72 x 2	41 - 44,5	44	45	
W 48		44 - 48,5	48	49	
W 52		48 - 52,5	52	53	
W 56		52 - 56,5	56	57	
W 64*	M 80 x 2	62 - 66	64	67	
W 70*	M 105 x 2	68 - 73	70	75	
W 80*		78 - 83	80	85	

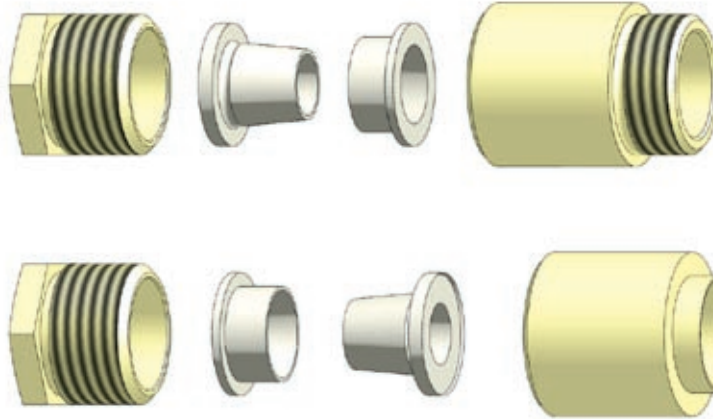
\* Special size (similar to DIN 89280)

\*\* Special size (similar to DIN 89349)

## Cable Glands Type of Fitting VG 88812



Sumatra



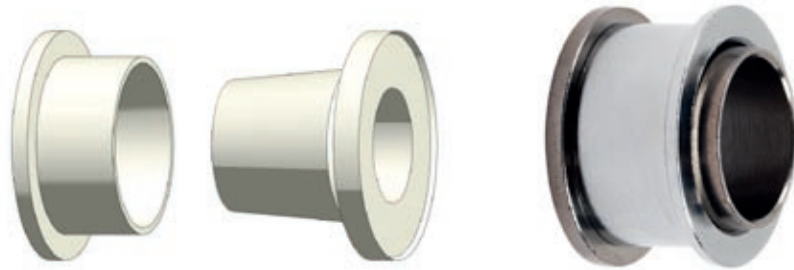
screw-in type  
long screw-bush  
chrome plated earthing cones  
VG 88812

rivet-type  
long screw-bush  
chrome plated earthing cones  
VG 88812

### Technical Data

No.	No.	Thread mm	For Cable Ø mm	Nominal Size of Earthing Insert DIN 89345	kg/piece	Description
488 S - 16 - 8	488 N - 16 - 8	M 16 x 1,5	- 10,5	16 - 8	0,048	<ul style="list-style-type: none"> <li>brass cable gland acc. to DIN 89280 with type of fitting VG 88812</li> <li>flat locknuts see page 180/181</li> </ul>
487 S - 18 - 7	487 N - 18 - 7	M 18 x 1,5	- 9,5	18 - 7	0,066	
487 S - 18 - 8	487 N - 18 - 8		9,5 - 10,5	18 - 8		
487 S - 18 - 9	487 N - 18 - 9		10,5 - 11,5	18 - 9		
487 S - 18 - 10	487 N - 18 - 10		11,5 - 12,5	18 - 10		
486 S - 24 - 7	486 N - 24 - 7		M 24 x 1,5	- 9,5		
486 S - 24 - 8	486 N - 24 - 8	9,5 - 10,5		24 - 8		
486 S - 24 - 9	486 N - 24 - 9	10,5 - 11,5		24 - 9		
486 S - 24 - 10,6	486 N - 24 - 10,6	11,5 - 13,5		24 - 10,6		
486 S - 24 - 13,6	486 N - 24 - 13,6	13,5 - 16,5		24 - 13,6		
485 S - 30 - 13,6	485 N - 30 - 13,6	M 30 x 2	- 16,5	30 - 13,6	0,185	
485 S - 30 - 15,2	485 N - 30 - 15,2		16,5 - 18	30 - 15,2		
485 S - 30 - 16,7	485 N - 30 - 16,7		18 - 19,5	30 - 16,7		
485 S - 30 - 17,7	485 N - 30 - 17,7		19,5 - 20,5	30 - 17,7		
484 S - 36 - 17,7	484 N - 36 - 17,7	M 36 x 2	- 21	36 - 17,7	0,250	
484 S - 36 - 19	484 N - 36 - 19		20,5 - 22,5	36 - 19		
484 S - 36 - 21,8	484 N - 36 - 21,8		22,5 - 25,5	36 - 21,8		
483 S - 45 - 23,8	483 N - 45 - 23,8	M 45 x 2	25,5 - 27,5	45 - 23,8	0,420	
483 S - 45 - 27,4	483 N - 45 - 27,4		27,5 - 31,5	45 - 27,4		
482 S - 56 - 27,4	482 N - 56 - 27,4	M 56 x 2	- 31,5	56 - 27,4	0,590	
482 S - 56 - 30	482 N - 56 - 30		31,5 - 34	56 - 30		
482 S - 56 - 33,5	482 N - 56 - 33,5		34 - 37,5	56 - 33,5		
482 S - 56 - 36,6	482 N - 56 - 36,6		37,5 - 41	56 - 36,6		
481 S - 72 - 36,6	481 N - 72 - 36,6	M 72 x 2	- 41,5	72 - 36,6	0,930	
481 S - 72 - 41,2	481 N - 72 - 41,2		41 - 46	72 - 41,2		
481 S - 72 - 45,8	481 N - 72 - 45,8		46 - 50,5	72 - 45,8		
481 S - 72 - 48	481 N - 72 - 48		50 - 55	72 - 48		

For an extra charge all cable glands are also available with chrome plated or nickel plated galvanic surface.  
VG 88773: cable gland completely chrome plated or nickel plated.



### Technical Data

No.	Old Name	Thread mm	Dimensions d <sub>1</sub> d <sub>2</sub> mm	For Cable Ø mm	Description
VG 16 - 8	VG 16	M 16 x 1,5	8 x 13,5	- 10,5	<ul style="list-style-type: none"> <li>• earthing cones for screened cable</li> <li>• type of fitting VG 88812</li> <li>• material: brass chrome plated</li> </ul>
VG 18 - 7	VG C18	M 18 x 1,5	7 x 15,5	- 9,5	
VG 18 - 8	VG D18		8 x 15,5	9,5 - 10,5	
VG 18 - 9	VG A18		9 x 15,5	10,5 - 11,5	
VG 18 - 10	VG B18		10 x 15,5	11,5 - 12,5	
VG 24 - 7	VG E24	M 24 x 1,5	7 x 21	- 9,5	
VG 24 - 8	VG D24		8 x 21	9,5 - 10,5	
VG 24 - 9	VG A24		9 x 21	10,5 - 11,5	
VG 24 - 10,6	VG B24		10,6 x 21	11,5 - 13,5	
VG 24 - 13,6	VG C24		13,6 x 21	13,5 - 16,5	
VG 30 - 13,6	VG D30	M 30 x 2	13,6 x 27	- 16,5	
VG 30 - 15,2	VG A30		15,2 x 27	16,5 - 18	
VG 30 - 16,7	VG B30		16,7 x 27	18 - 19,5	
VG 30 - 17,7	VG C30		17,7 x 27	19,5 - 20,5	
VG 36 - 17,7	VG C36	M 36 x 2	17,7 x 33	- 21	
VG 36 - 19	VG A36		19 x 33	20,5 - 22,5	
VG 36 - 21,8	VG B36		21,8 x 33	22,5 - 25,5	
VG 45 - 23,8	VG A45	M 45 x 2	23,8 x 42	25,5 - 27,5	
VG 45 - 27,4	VG B45		27,4 x 42	27,5 - 31,5	
VG 56 - 27,4	VG D56	M 56 x 2	27,4 x 53	- 31,5	
VG 56 - 30	VG A56		30 x 53	31,5 - 34	
VG 56 - 33,5	VG B56		33,5 x 53	34 - 37,5	
VG 56 - 36,6	VG C56		36,6 x 53	37,5 - 41	
VG 72 - 36,6	VG C72	M 72 x 2	36,6 x 69	- 41,5	
VG 72 - 41,2	VG A72		41,2 x 69	41 - 46	
VG 72 - 45,8	VG B72		45,8 x 69	46 - 50,5	
VG 72 - 48	VG D72		48 x 69	50 - 55	





flat claws locknuts of brass similar to DIN 89280 for optimal vibration resistance.

flat locknuts of brass, DIN 89280

### Technical Data

No.	Thread mm	Key-width Hexagonal mm	Key-width Octagonal mm	Thickness mm	Description
Mu 16	M 16 x 1,5	22	–	4	• on extra charge counter nuts with galvanic surface (chrome plated) available
Mu 18	M 18 x 1,5	22	–	4	
Mu 24	M 24 x 1,5	30	–	5	
Mu 30	M 30 x 2	36	–	6	
Mu 36	M 36 x 2	41	–	7	
Mu 45	M 45 x 2	55	–	8	
Mu 56	M 56 x 2	–	65	9	
Mu 72	M 72 x 2	–	85	10	
Mu 80*	M 80 x 2	–	90	12	
Mu 105*	M 105 x 2	–	120	14	
Mu 16 EMV	M 16 x 1,5	22	–	4	
Mu 18 EMV	M 18 x 1,5	22	–	4	
Mu 24 EMV	M 24 x 1,5	30	–	5	
Mu 30 EMV	M 30 x 2	36	–	6	
Mu 36 EMV	M 36 x 2	41	–	7	
Mu 45 EMV	M 45 x 2	55	–	8	
Mu 56 EMV	M 56 x 2	–	65	9	
Mu 72 EMV	M 72 x 2	–	85	10	
Mu 80 EMV*	M 80 x 2	90	–	12	
Mu 105 EMV*	M 105 x 2	–	120	14	

\* Special size (similar to DIN 89280)  
Also available with chrome plated galvanic surface for extra charge.



Flat Locknuts of Brass, Nickel Plated



flat locknut of brass,  
nickel plated, DIN 46319

flat locknut of brass,  
nickel plated, DIN 46320  
with PG-thread

**Technical Data**

No.	Thread mm	Key-width Hexagonal mm	Key-width Octagonal mm	Thickness mm
Mu PG 7	PG 7	15		2,8
Mu PG 9	PG 9	18		2,8
Mu PG 11	PG 11	21		3
Mu PG 13,5	PG 13,5	23		3
Mu PG 16	PG 16	26		3
Mu PG 21	PG 21	32		3,5
Mu PG 29	PG 29	41		3
Mu PG 36	PG 36	51		3,5
Mu PG 42	PG 42	60		3
Mu PG 48	PG 48	61		3,5
Mu M12	M 12 x 1,5 mm	15		2,8
Mu M16	M 16 x 1,5 mm	19		2,8
Mu M20	M 20 x 1,5 mm	24		3
Mu M25	M 25 x 1,5 mm	30		3,5
Mu M32	M 32 x 1,5 mm	36		4
Mu M40	M 40 x 1,5 mm	46		5
Mu M50	M 50 x 1,5 mm	60		5
Mu M63	M 63 x 1,5 mm	70		6

\* Special size (similar to DIN 89280)





Hu 194



Hu Bli Pg7



ADicht

**Technical Data**

No.	Size mm	kg/piece	Description	
193	M 16 x 1,5	0,015	<ul style="list-style-type: none"> <li>• plug with metric thread for closing of not required cable entries</li> <li>• material: brass</li> </ul>	
194	M 18 x 1,5	0,020		
195	M 24 x 1,5	0,035		
196	M 30 x 2	0,060		
197	M 36 x 2	0,065		
198*	M 45 x 2	0,095		
199*	M 56 x 2	0,130		
200*	M 72 x 2	0,220		
Bli PG 7	PG 7	0,004		<ul style="list-style-type: none"> <li>• plug with PG-thread</li> <li>• material: brass nickel plated</li> </ul>
Bli PG 9	PG 9	0,006		
Bli PG 11	PG 11	0,008		
Bli PG 13	PG 13,5	0,009		
Bli PG 16	PG 16	0,012		
Bli PG 21	PG 21	0,021		
Bli PG 29	PG 29	0,038		
Bli PG 36	PG 36	0,053		
Bli PG 42	PG 42	0,083		
Bli PG 48	PG 48	0,136		

\* instead of above shown with square  
Also available with chrome plated galvanic surface for extra charge.

No.	For Outer Thread	No.	For Outer Thread	Description
ADicht M 18	M 18	ADicht PG 7	PG 7	<ul style="list-style-type: none"> <li>• sealing ring for ext. thread made of polyethylen</li> </ul>
ADicht M 24	M 24	ADicht PG 9	PG 9	
ADicht M 30	M 30	ADicht PG 11	PG 11	
ADicht M 36	M 36	ADicht PG 13,5	PG 13,5	
ADicht M 45	M 45	ADicht PG 16	PG 16	
ADicht M 56	M 56	ADicht PG 21	PG 21	
ADicht M 72	M 72	ADicht PG 29	PG 29	
		ADicht PG 36	PG 36	
		ADicht PG 42	PG 42	
		ADicht PG 48	PG 48	





Lofoten M 12



Lofoten CG PG 11

**Technical Data**

No. Standard Cable	Thread	For Cable Ø mm	Package/Pieces	Description
CG M 12	M 12 x 1,5 mm	2 - 6,5	100	<ul style="list-style-type: none"> <li>• cable gland DIN EN 50262</li> <li>• IP 68-5 bar-, watertight made of polyamide</li> <li>• -30°C to +100°C</li> <li>• colour: RAL 7035</li> <li>• standard cable version type CG</li> <li>• multiple sealing insert on request</li> <li>• other colours on request</li> </ul>
CG M 16	M 16 x 1,5 mm	4 - 10	100	
CG M 20	M 20 x 1,5 mm	7 - 14	100	
CG M 25	M 25 x 1,5 mm	9 - 16	50	
CG M 32	M 32 x 1,5 mm	10 - 21	25	
CG M 40	M 40 x 1,5 mm	16 - 28	10	
CG M 50	M 50 x 1,5 mm	21 - 34,5	5	
CG M 63	M 63 x 1,5 mm	32 - 44,5	5	
CG PG 7	PG 7	3 - 6,5	50	
CG PG 9	PG 9	4 - 8	50	
CG PG 11	PG 11	5 - 10	50	
CG PG 13	PG 13,5	6 - 12	50	
CG PG 16	PG 16	10 - 14	50	
CG PG 21	PG 21	13 - 18	25	
CG PG 29	PG 29	18 - 25	25	
CG PG 36	PG 36	22 - 34	10	
CG PG 42	PG 42	30 - 38	10	
CG PG 48	PG 48	32 - 44,5	10	





Lofoten CGN

**Technical Data**

No.	Thread	Key-width mm	Package Pieces	Description
CGN M 12	M 12 x 1,5 mm	17	100	<ul style="list-style-type: none"> <li>• flat locknuts made of polyamide</li> <li>• colour: RAL 7035</li> <li>• other colours on request</li> </ul>
CGN M 16	M 16 x 1,5 mm	22	100	
CGN M 20	M 20 x 1,5 mm	27	100	
CGN M 25	M 25 x 1,5 mm	32	100	
CGN M 32	M 32 x 1,5 mm	41	100	
CGN M 40	M 40 x 1,5 mm	50	50	
CGN M 50	M 50 x 1,5 mm	60	50	
CGN M 63	M 63 x 1,5 mm	75	50	
CGN PG 7	PG 7	19	100	
CGN PG 9	PG 9	22	100	
CGN PG 11	PG 11	24	100	
CGN PG 13	PG 13,5	27	100	
CGN PG 16	PG 16	30	100	
CGN PG 21	PG 21	36	100	
CGN PG 29	PG 29	46	100	
CGN PG 36	PG 36	60	100	
CGN PG 42	PG 42	65	100	
CGN PG 48	PG 48	70	100	



Lofoten CGP



Lofoten MN



**Technical Data**

No.	Thread	No.	Thread	Package Pieces	Description
CGP M12	M 12 x 1,5 mm	CGP PG 7	PG 7	100	<ul style="list-style-type: none"> <li>• blind plug made of polyamide</li> <li>• colour: RAL 7035</li> </ul>
CGP M16	M 16 x 1,5 mm	CGP PG 9	PG 9	100	
CGP M20	M 20 x 1,5 mm	CGP PG 11	PG 11	100	
CGP M25	M 25 x 1,5 mm	CGP PG 13	PG13,5	100	
CGP M32	M 32 x 1,5 mm	CGP PG 16	PG 16	100	
CGP M40	M 40 x 1,5 mm	CGP PG 21	PG 21	50	
CGP M50	M 50 x 1,5 mm	CGP PG 29	PG 29	50	
CGP M63	M 63 x 1,5 mm	CGP PG 36	PG 36	50	
		CGP PG 42	PG 42	50	
		CGP PG 48	PG 48	50	
MN M 12	M 12x 1,5 mm	MN PG 9	MN PG 9	100	<ul style="list-style-type: none"> <li>• membrane nipples made of PE-LD</li> <li>• colour: RAL 7035</li> </ul>
MN M 16	M 16x 1,5 mm	MN PG 11	PG 11	100	
MN M20	M 20x 1,5 mm	MN PG 13	PG 13,5	100	
MN M25	M 25x 1,5 mm	MN PG 16	PG 16	100	
MN M32	M 32x 1,5 mm	MN PG 21	PG 21	50	
MN M40	M 40x 1,5 mm	MN PG 29	PG 29	50	
MN M50	M 50x 1,5 mm	MN PG 36	PG 36	50	
MN M63	M 63x 1,5 mm	MN PG 42	PG 42	25	
		MN PG 42	PG 48	25	



**Technical Data**

No.	Thread Outer	Thread Inner	Package Pieces	Description
Red PG 9/7	PG 9	PG 7	100	<ul style="list-style-type: none"> <li>• PG to PG</li> <li>• reduction (knurled) with big PG outer thread and small PG inner thread</li> <li>• material: brass, nickel plated</li> </ul>
Red PG 11/7	PG 11	PG 7	100	
Red PG 11/9	PG 11	PG 9	100	
Red PG 13,5/7	PG 13,5	PG 7	100	
Red PG 13,5/9	PG 13,5	PG 9	100	
Red PG 13,5/11	PG 13,5	PG 11	100	
Red PG 16/7	PG 16	PG 7	100	
Red PG 16/9	PG 16	PG 9	100	
Red PG 16/11	PG 16	PG 11	100	
Red PG 16/13,5	PG 16	PG 13,5	100	
Red PG 21/11	PG 21	PG 11	50	
Red PG 21/13,5	PG 21	PG 13,5	50	
Red PG 21/16	PG 21	PG 16	50	
Red PG 29/16	PG 29	PG 16	50	
Red PG 29/21	PG 29	PG 21	50	
Red PG 36/21	PG 36	PG 21	25	
Red PG 36/29	PG 36	PG 29	25	
Red PG 42/29	PG 42	PG 29	25	
Red PG 42/36	PG 42	PG 36	25	
Red PG 48/36	PG 48	PG 36	25	
Red PG 48/42	PG 48	PG 42	25	



**Technical Data**

No.	Thread Outer	Thread Inner	Package Pieces	Description
Red MPG M 16/7	M 16	PG 7	100	<ul style="list-style-type: none"> <li>• metric to PG</li> <li>• reduction (hexagonal) with big metric outer thread, small PG inner thread and oil resistant O-ring</li> <li>• material: brass, nickel plated</li> </ul>
Red MPG M 20/9	M 20	PG 9	100	
Red MPG M 25/9	M 25	PG 9	100	
Red MPG M 25/11	M 25	PG 11	100	
Red MPG M 25/13,5	M 25	PG 13,5	100	
Red MPG M 32/13,5	M 32	PG 13,5	50	
Red MPG M 32/16	M 32	PG 16	50	
Red MPG M 32/21	M 32	PG 21	50	
Red MPG M 40/16	M 40	PG 16	25	
Red MPG M 40/21	M 40	PG 21	25	
Red MPG M 40/29	M 40	PG 29	25	
Red MPG M 50/21	M 50	PG 21	10	
Red MPG M 50/29	M 50	PG 29	10	
Red MPG M 50/36	M 50	PG 36	10	
Red MPG M 63/29	M 63	PG 29	10	
Red MPG M 63/36	M 63	PG 36	10	
Red MPG M 63/42	M 63	PG 42	10	



**Technical Data**

No.	Thread Outer	Thread Inner	Package Pieces	Description
Erw PG 7/9	PG 7	PG 9	100	<ul style="list-style-type: none"> <li>• PG to PG enlargement (round) with small and big PG inner thread acc. to DIN 46320</li> <li>• material: brass, nickel plated</li> </ul>
Erw PG 9/11	PG 9	PG 11	100	
Erw PG 9/13,5	PG 9	PG 13,5	100	
Erw PG 11/13,5	PG 11	PG 13,5	100	
Erw PG 11/16	PG 11	PG 16	100	
Erw PG 11/21	PG 11	PG 21	100	
Erw PG 13,5/16	PG 16	13,5 PG	100	
Erw PG 13,5/21	PG 21	13,5 PG	50	
Erw PG 16/21	PG 16	PG 21	50	
Erw PG 16/29	PG 16	PG 29	50	
Erw PG 21/29	PG 21	PG 29	50	
Erw PG 29/36	PG 29	PG 36	25	
Erw PG 36/42	PG 36	PG 42	25	
Erw PG 42/48	PG 42	PG 48	25	





**Technical Data**

No.	Thread Outer	Thread Inner	Package Pieces	Description
Erw MPG M 12/9	M 12	PG 9	100	<ul style="list-style-type: none"> <li>• PG to metric</li> <li>• enlargement (round) with small metric outer thread and big PG inner thread acc. to DIN 46320</li> <li>• material: brass, nickel plated</li> </ul>
Erw MPG M 16/11	M 16	PG 11	100	
Erw MPG M 20/16	M 20	PG 16	100	
Erw MPG M 25/21	M 25	PG 21	50	
Erw MPG M 32/29	M 32	PG 29	25	
Erw MPG M 40/36	M 40	PG 36	10	
Erw MPG M 50/42	M 50	PG 42	10	
Erw MPG M 50/48	M 50	PG 48	5	
Erw PG 16/21	PG 16	PG 21	50	
Erw PG 16/29	PG 16	PG 29	50	
Erw PG 21/29	PG 21	PG 29	50	
Erw PG 29/36	PG 29	PG 36	25	
Erw PG 36/42	PG 36	PG 42	25	
Erw PG 42/48	PG 42	PG 48	25	





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152/3



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### Technical Data

No.	For Cable Ø mm	Pipethread	kg/piece	Description
142	9 - 21	R 1"	0,520	<ul style="list-style-type: none"> <li>• brass stuffing glands for bulkheads up to 14 mm thickness</li> <li>• without sealing material</li> <li>• stuffing glands are normally supplied for the smallest cable diameter, if not indicated</li> <li>• also available for bulkheads from 16-33mm thickness (please indicate with your order)</li> </ul>
141	22 - 27	R 1 1/4"	0,650	
140	28 - 34	R 1 1/2"	0,760	
139	35 - 44	R 2"	1,190	
138	45 - 55	R 2 3/8"	1,460	
137	56 - 62	R 2 2/4"	1,780	

No.	Number of Cables	Outside Ø mm	kg/piece	Description
151	1	31 - 40	0,150	<ul style="list-style-type: none"> <li>• brass bulkhead flanges for flush tight cable passage</li> <li>• bulkhead flanges are normally undrilled, otherwise please indicate required diameter with your order</li> </ul>
152	1	21 - 30	0,095	
153	1	10 - 20	0,055	
152/3	2 - 3	21 - 30	0,180	
153/3	2 - 3	10 - 20	0,095	





Honshu IKL

**Technical Data**

No.	Thread mm	For Cabel	Description
IKL A 18	M 18 x 1,5	- 11,5	<ul style="list-style-type: none"> <li>• brass chrome plated cable passage for electrical conducted walls</li> <li>• consisting of:                             <ul style="list-style-type: none"> <li>1 locknut</li> <li>2 special housing</li> <li>3 special earthing half shells</li> <li>4 outside earthing parts</li> <li>5 screw-bush long</li> </ul> </li> </ul>
IKL B 18		11,5 - 12,5	
IKL A 24	M 24 x 1,5	- 11,5	
IKL B 24		11,5 - 13,5	
IKL C 24		13,5 - 16,5	
IKL A 30	M 30 x 2	16,5 - 18	
IKL B 30		18 - 19,5	
IKL C 30		19,5 - 20,5	
IKL A 36	M 36 x 2	20,5 - 22,5	
IKL B 36		22,5 - 25,5	
IKL A 45	M 45 x 2	25,5 - 27,5	
IKL B 45		27,5 - 31,5	
IKL A 56	M 56 x 2	31,5 - 34	
IKL B 56		34 - 37,5	
IKL C 56		37,5 - 41	
IKL A 72	M 72 x 2	41 - 46	
IKL B 72		46 - 50,5	



## Screw-in Tools



EDW 30

patented screw-in tool for  
damage free installation  
of cable glands

### Technical Data

No.	Thread mm	Wrench Size mm	Torque (Nm)		kg/piece	Description
			Gland Body	Screw Bush		
EDW 18	M 18 x 1,5	24	40 + 5	20 + 5	0,520	<ul style="list-style-type: none"> <li>• With this tool it is possible to screw-in cable glands without scratching the surface, especially if they are chrome or nickel plated.</li> <li>• For the first time cable glands can be fitted with a defined and controlled torque. This avoids loosening of the gland while mounting or dismantling the cable.</li> <li>• Herewith the EMV-requirement for low-ohmic and unchangeable fixing of the gland is guaranteed.</li> <li>• very important for documentation and quality control</li> </ul>
EDW 24	M 24 x 1,5	24	60 + 5	40 + 5	0,650	
EDW 30	M 30 x 2	24	80 + 5	60 + 5	0,760	
EDW 36	M 36 x 2	24	90 + 5	60 + 5	1,190	
EDW 45	M 45 x 2	30	100 + 5	60 + 5	1,460	
EDW 56	M 56 x 2	36	110 + 5	70 + 5	1,160	
EDW 72	M 72 x 2	46	120 + 5	70 + 5	1,160	



Gotland 203

**Technical Data**

No.	kg/piece	Description
Gotland 203	0,29	<ul style="list-style-type: none"> <li>• brass twin-cable gland</li> <li>• for connection of two cables into one gland</li> <li>• inside- and outside-thread M24x1,5mm</li> <li>• complete with screw-bushes, washers, sealing rings and earthing cones, available for outfits "Z" or "W" (please indicate with your order)</li> </ul>
Gotland 203/PG 16	0,29	<ul style="list-style-type: none"> <li>• as Gotland 203, but with outside thread PG 16</li> </ul>





**Specification**

Most screwed cable glands for ships – and thus offering EMC – manufactured in Germany conform to two standards. For use in merchant ships, DIN 89280 is the relevant standard, and for naval vessels VG 88812.

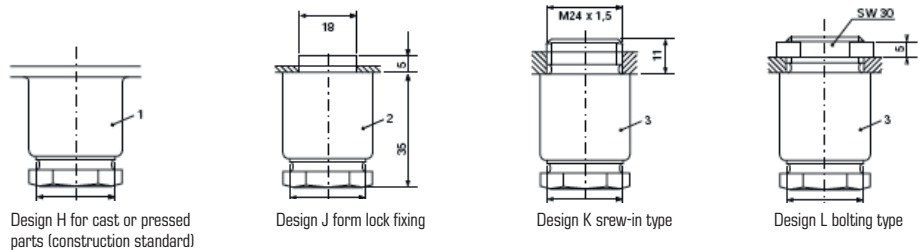
**Cable Glands according to DIN 89280**

For applications in ships, cable glands in accordance with DIN 89280 are used. This standard defines the field of application, the dimensions and the design. In most cases, the standard calls for screwed cable glands to be provided with metric threads and made of brass. Cable glands are further classified according to:

**a. Size**

The outside diameter of the cable and the panel hole size are the key dimensions.

**b. Type**

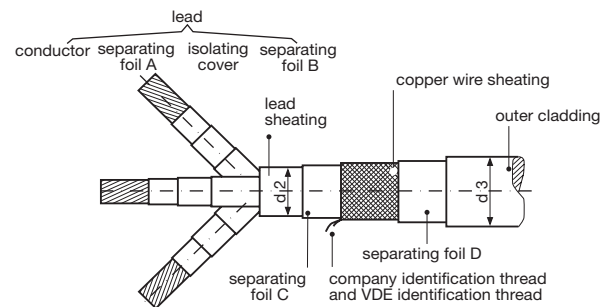


**c. Design**

The cable used determines the interior design of the gland.

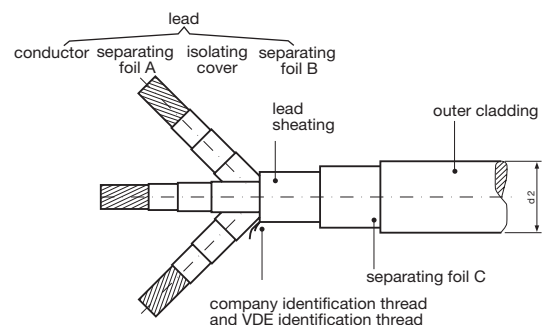
**c1. Interior Design Z**

Interior design Z is the standard EMC provision in ships, and is used in conjunction with **screened cables (MGCG or FMGCG cables)**. This cable is characterised by a layer of copper braid below the outer sheath which is designed to protect the cable from interference. To ensure effective protection, earthing cones must be used to connect the braid to the metal casing of the equipment.



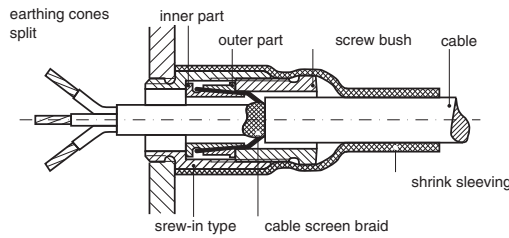
**c2. Interior Design W**

Interior design W is used in conjunction with cables without screening (MGG cable).



### Cable Glands with Interior Design acc. to VG 88812

This design provides optimum electromagnetic compatibility. The gland comprises a body with a threaded sleeve in accordance with DIN 89280. The internal components comprise special earthing inserts in accordance with VG 88812, which ensure optimum positioning of the screen; no sealing washer is used. The cable gland is sealed using a heat shrinkable sleeve. Unless otherwise specified, these glands must be supplied with nickel or chromium plating.



### Cable Gland with PG Mounting Thread

For reasons of cost, equipment designed for shore applications is increasingly being used in ships. This equipment is not normally fitted with cable glands in accordance with DIN 89280; often the relevant standards are DIN 46319/46320. This means that these glands often have PG mounting threads, not metric ones. Screwed cable glands for ship applications are available for such cases which have a PG thread on the equipment side, but a DIN 89280 type design on the side where the cable is to be sealed. This allows optimum EMC solutions for screwed cable glands with PG threads as well.

### Reducer Glands and Adaptor Glands

These special glands are used when there is a mismatch between the cable and the existing mounting thread.

### Cable Glands IP 68

This newly developed cable gland is fully compatible with glands conforming to DIN 89280, but without additional work also fulfils the requirements of the highest EN 60529 protection classification, IP 68. There is no need to fit heat shrinkable tubing over the gland, for example; there is an external hexagon, additional O ring on the equipment side of the thread, and conical compression rings, all of which are easy to handle.

### Cable Gland Made of Brass with a Very High Degree of Protection of IP 68. Fully Compatible to Cable Glands acc. to DIN 89280.

- The overlapping screw cap guarantees a close seal to the cable. No injurious formation of watersacks by cable installation from top.
- A conical pressing produces radial and axial acting sealing strength.
- Sealing rings acc. to DIN 89349 ensure usual and approved graduation of diameters for optimal adaption to the cable.
- The application of earthing-cones acc. to DIN 89347 ensures the necessary EMV-requirements.
- The new cable gland body with external hexagon guarantees max. tightening momentum without damaging the cable gland.
- The perfect sealing between gland and housing is granted by the connection-thread gasket.



## General:

DOSE's products are manufactured in accordance with the relevant standards, regulations and DIN-HNA (German Institute for Standardization e. V. Standardization committee for Shipbuilding) stated in the working sheets in force.

The description on application area, the fixing of basic dimensions as well as allowed materials mentioned in the guidelines of the DIN-HNA, and DOSE's consequent realization and compliance control of the product signifies highest quality standard and precision, safety and reliability for DOSE's products.

DOSE products are internationally approved by all renowned classification societies and are, depending on type, tested where necessary.

DOSE produces and supplies equipment in accordance with defense equipment standards (VG-Norm) specifically for the particular requirements for the Federal Marines' ships and boats.

DOSE has been actively involved for decades in the design organization of the Standards Office Marines (NM) at the DIN (German Institute for Standardization e. V.) published regulations.

If not specifically stated in the text, casings are made of protective type IP 56 brass in accordance with EN 60529.

All dimensions, weights and construction details given in this catalogue are noncommittal. Please contact us if you require our scale drawing for construction purposes.

Rights reserved for technical amendments.

## Cable Glands:

Unless otherwise indicated, all cable glands are in accordance with DIN 89280.

Fitted as standard to fittings in Chapter 1 is the M24 x 1,5 thread for use with armoured MGCG 3 x 1,5mm<sup>2</sup> cable, fitting Z 14, with:

Earthing cones	24-10 DIN 89345
Gasket	24-14 DIN 89349
Washer	24-15 DIN 89347

For exports unless otherwise indicated cable glands, fitting W 14, (non-armoured cable) are used; these are in accordance with the afore-mentioned DIN standards.

All non-metallic products will be equipped with plastic cable glands PG 13,5 or M20 (IP68)

If you have a non-standard requirement please include information about the external cable diameter with your order.

All exceptions are described in the design information.





**Seal:**

The sealing material used depends on the different operational conditions of the appliance and is chosen for durability.

**Lampholder:**

In general, unless otherwise indicated in the design information, all lights listed in Chapter 1 are supplied without lampholder. Where required, all lights can be supplied at additional charge with fixed lampholder.

**Cylindrical Glasses/Globes:**

Unless otherwise stated, all clear cylindrical glasses and structured globes are supplied with drip holes, whilst coloured cylindrical glasses and structured globes are generally supplied without drip holes. Where required, non-standard equipment can of course be supplied.

All lights which can be supplied with coloured glass are indicated in the design information.

**Customisation:**

The ability to produce customer-specific customisations and the speed with which these are manufactured illustrate the high level of performance of a competent partner.

**Spare Parts:**

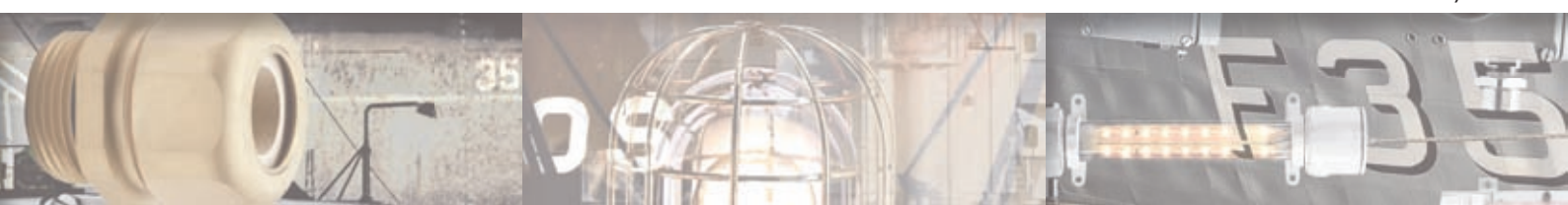
All components of our products can be supplied as spare parts.

All measurements, weights and structural information given in the catalogue are approximate.

For structural purposes please ask for our detail drawings.

We reserve the right to modify technical specifications.

Contact us...!



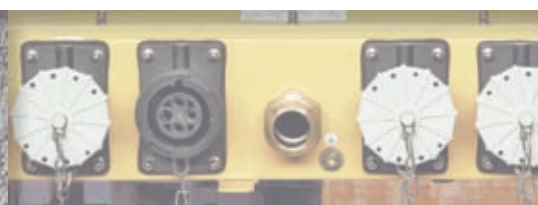






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# Terms and Conditions of Delivery and Payment

## 1. Scope

These Terms and Conditions shall be deemed valid unless otherwise agreed in writing. **Deviating and conflicting Terms and Conditions shall not be deemed binding by us.** This shall also apply if we do not explicitly raise objection or if we carry out delivery without complaint.

## 2. Conclusion of Agreement

- 2.1. All quotations submitted by us are subject to change at any time.
- 2.2. All agreements, telephone calls, faxes and declarations made in connection with the conclusion of this Agreement must be legally approved and signed off by us in writing in order to assume validity.
- 2.3. Terms and Conditions of Delivery and Payment defined by us shall apply exclusively, even in the event that the contractual partner submits or approves divergent Terms and Conditions. If deviating Terms and Conditions pertaining to the conclusion of this Agreement are negotiated, they must be drawn up in writing and must be approved by us.
- 2.4. As a rule, all documents, weight data, designs, etc. provided by us are deemed **only approximate**.
- 2.5. We shall reserve the right to effect changes in design, material and similar properties at any time before delivery, provided price, delivery and functionality are not impacted to the detriment of the customer.

## 3. Delivery timelines

- 3.1. Delivery timelines specified in our quotations are generally applicable unless an interim stock clearance is effected.
- 3.2. Unless otherwise specified in writing, our delivery timelines are **non-binding**.
- 3.3. The delivery period specified may be extended by events beyond our control, including delayed collection.
- 3.4. Partial delivery is permissible if deemed reasonable by the contractual partner.

## 4. Despatch, transfer of risk

- 4.1. In the absence of specific customer instructions, despatch is effected at our considered discretion, but without necessarily guaranteeing the cheapest mode of transportation.
- 4.2. Risk is transferred to the customer once the item is despatched – even in the event of a partial delivery. All transportation, including carriage-paid delivery, is deemed to be at the customer's risk. **Transit insurance is not provided by us.**

## 5. Prices

- 5.1. As a rule, **prices effective on the date of delivery** apply to all business transactions, even if the quotation specifies other prices. Delivery prices are, thus, aligned with current market prices. Please refer to the respective price list for an explanation of the calculation of metal surcharges.
- 5.2. Prices are quoted ex-works and exclude packaging charges. For orders accepted that are of at least EUR 500.00 net, we undertake delivery within the Federal Republic of Germany carriage paid to the receiving location exclusive of packaging carriage charges. For orders accepted that are of at least EUR 1000.00 net, we undertake delivery within the Federal Republic of Germany carriage paid to the receiving location inclusive of packaging but exclusive of carriage charges. As a rule, we accord consignments with an order value of below EUR 50.00 net a logistic lump sum of EUR 50.00.
- 5.3. All payments by customers are to be remitted to our bank without any deductions whatsoever at the latest **30 days from the date of invoice**. We guarantee a discount of 2% on all payments received within 8 days of the date of invoice (domestic conditions apply). Discounts are not applicable to payments made by means of a bill of exchange, nor in the event of payment arrears. Sums below EUR 30.00 are payable immediately net within 8 days of the invoice being received.
- 5.4. Payments made to our account by cheque and by bills of exchange shall be deemed received only upon the issue of valid credit advice pertinent to the transaction. All bank charges, collection charges and interest rate charges are to be borne by the customer.
- 5.5. In the event of non-adherence to payment timelines, we reserve the right to levy a preferential interest rate of **3%** over and above the prevailing statutory base interest rate, and at the minimum the debit interest rate calculated by our bank.
- 5.6. Customers may be issued a refund only in the case of undisputed or legally established claims, or if defects are glaringly obvious. The customer has the right to compensation only in the case of undisputed or legally established claims.
- 5.7. In the event of an obvious decline in the financial position of the customer, we reserve the right to withdraw from this Agreement if, upon our request, the customer fails to effect a security deposit within an appropriate time period.

## 6. Warranty for defects

- 6.1. We are liable for defects and for the absence of warranted properties of goods inasmuch as we undertake to rectify the defective goods or to replace them with non-defective goods within an appropriate time span. **The choice between rectification of the defect and replacement delivery shall be retained by us.**
- 6.2. Our seller's warranties apply on the precondition that the customer, if deemed a merchant according to the German Commercial Code (HGB), has lodged a specific and detailed written complaint with us in consequence of visible defects in accordance with § 377 HGB within 10 days of receipt of the goods in question. Complaints pertaining to defects arising thereafter are to be similarly lodged within the same time period, calculated from the time at which they are apprehended.
- 6.3. We are bound by warranty only if the delivered goods are properly installed and put into operation in complete accordance with our instructions.
- 6.4. The customer has the right to withdraw from this Agreement or to request a reduction in prices if we are not prepared or if we are not in a position to correct the defects in question or – above all – if the correction of the defects extends beyond a reasonable time span for reasons occasioned by us.
- 6.5. We are liable for damages only in the event of intent and gross negligence as defined by legal regulations. Liability is limited to gross negligence and typically foreseeable damages, provided no basic contractual obligations are impacted, or bodily damages incurred.
- 6.6. The warranty period effective for claims and rights in respect of defects – irrespective of the legal basis upon which they arise – is one year from delivery.
- 6.7. In the event of bespoke orders, we reserve the right to over-deliver or under-deliver by up to 10%. Returns are explicitly disallowed.

## 7. Retention of proprietary rights

- 7.1. The delivered goods remain our property until complete payment has been effected. The goods may then be re-sold by the customer in accordance with routine business norms. The customer is, however, to assign to us in advance all claims raised against a buyer or against a third party for the respective invoiced amount arising from the re-sale. The customer is authorised to collect these claims even after their assignment. At our request, the customer is to provide details of the amount of the assigned claim and of the debtor, to provide all information necessary for collection, to submit all associated documents to us immediately and to issue written notice of the assignment to the debtor, notwithstanding our right to issue written notice of the assignment to the debtor ourselves.
- 7.2. The customer is not entitled to transfer delivered goods to a third party as security, nor to pawn them.
- 7.3. In the event that the customer violates the Terms of this Agreement – in particular by delaying payment, we are entitled to re-possess the goods without necessarily issuing notice.
- 7.4. The customer is to inform us immediately of any attachment and other interventions or claims.
- 7.5. If the goods are re-sold in conjunction with other goods that are not ours, the customer's claim against the buyer for the amount agreed between us and the customer as the delivery price is deemed assigned to us upon cessation of the Agreement.
- 7.6. In the event that goods delivered are damaged owing to faulty installation, the customer cedes the resulting claim for replacement to us.

## 8. Place of fulfillment – place of jurisdiction

- 8.1. Place of fulfillment for all obligations derived from this Agreement is Hamburg, provided the contractual partner is deemed a merchant according to the German Commercial Code (HGB).
- 8.2. The exclusive place of jurisdiction shall be Hamburg, provided the contractual partner is deemed a merchant according to the German Commercial Code (HGB).
- 8.3. German legislation is applicable to the Agreement between the contractual parties with the exception of the reference rules of Private International Law and the UN Convention on Contracts for the International Sale of Goods.

## 9. Data protection

We reserve the right to process customer data within the parameters of prevailing data protection laws.

## 10. Final clause

Should a clause within these Terms and Conditions of Delivery and Payment become ineffective, the validity of the remaining provisions is to remain unaffected.

Updated: 2010



## Imprint

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