



TYPE APPROVAL CERTIFICATE

Certificate No:
TAE0000386
Revision No:
1

This is to certify:

That the Cable Gland

with type designation(s)
PERFECT, PERFECT EMC

Issued to

Jacob GmbH Elektrotechnische Fabrik
Kernen im Remstal, Baden-Württemberg, Germany

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

Application :

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

Type	Material	Suitable for open deck	Suitable for Hazardous areas
PERFECT	Metallic	Yes	n/a
PERFECT EMC	Metallic	Yes	n/a

Issued at **Høvik** on **2023-10-18**

for **DNV**

This Certificate is valid until **2028-10-17**.

DNV local unit: **Augsburg**

Approval Engineer: **Maik Gagern**

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Oddvar Deinboll
Head of Section

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

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



Product description

Cable glands type: PERFECT
 PERFECT EMC
 several series according Type code designation

Gland size ranges: M12x1,5
 M16x1,6
 M20x1,5
 M25x1,5
 M32x1,5
 M40x1,5
 M50x1,5
 M63x1,5
 Connecting thread metric, as per EN 60423
 (IEC 60423:2007)

Classification according to IEC 62444

6.1 Material	Metallic Brass (nickel plated) Brass lead-free (nickel plated) Stainless steel
6.2.1 Mechanical properties non-armoured cable	M12x1,5 to M63x1,5: Anchorage Type A over the whole clamping ranges,
6.2.2 Mechanical properties armoured cable	no
6.2.3 Impact category	M12x1,5 to M16x1,5 Category 5 M20x1,5 to M32x1,5 Category 6 M40x1,5 to M63x1,5 Category 7
6.3 Electrical properties	Not declared
6.4.1 Degree of protection	M12x1,5 to M63x1,5: IP68 - 5 bar (30 min.)
6.4.2 Temperature range	-20 °C / +100 °C
6.4.3 Resistance to UV light	Resistant The metallic materials listed under 6.1 are resistant to UV light
6.5 Sealing system	With a single-orifice seal (see also Jacob Type code designation, Variations sealing ring)

Additional accessories

Locknuts:

Hexagonal locknuts are necessary for mounting in the cable glands in clearance holes.

Hexagonal locknuts Type / series 50.2xx M, 50.2xx Y, 50.2xx YPOT, 50.2xx ES

Nomenclature / Type code designation:

xx = place holder for connecting thread size „12“, „16“, „20“, „25“, „32“, „40“, „50“, „63“;

Inner thread M12x1,5 to M63x1,5 / metric, as per EN 60423 (IEC 60423:2007)

Product description / Type code designation:

PERFECT cable gland
 PERFECT EMC cable gland

Serie 50.6xx M/EMV/R/L

Größe:
 size:

12, 16, 20, 25, 32, 40, 50, 63

Werkstoff:
 material:

Messing Brass	M
Messing bleifrei Brass lead-free	Y
Edelstahl Stainless steel	ES

EMV-Variante:
 EMC version:

ohne EMV without EMC	EMV
mit EMV with EMC	

Dichtring:
 sealing ring:

mit äußerem Dichtring with outer sealing ring	R
mit beiden Dichtringen with both sealing rings	

Anschlußgewindelänge:
 connecting thread length:

standard standard	L
lang long	

Several series according Type code designation

Type		Material	Suitable for open deck	Suitable for Hazardous areas
PERFECT	50.6xx M	Brass (nickel plated)	Yes	n/a
PERFECT	50.6xx M/R	Brass (nickel plated)	Yes	n/a
PERFECT EMC	50.6xx M/EMV	Brass (nickel plated)	Yes	n/a
PERFECT EMC	50.6xx M/EMV/R	Brass (nickel plated)	Yes	n/a
PERFECT	50.6xx Y	Brass lead-free (nickel plated)	Yes	n/a
PERFECT	50.6xx Y/R	Brass lead-free (nickel plated)	Yes	n/a
PERFECT EMC	50.6xx Y/EMV	Brass lead-free (nickel plated)	Yes	n/a
PERFECT EMC	50.6xx Y/EMV/R	Brass lead-free (nickel plated)	Yes	n/a
PERFECT	50.6xx ES	Stainless steel	Yes	n/a
PERFECT	50.6xx ES/R	Stainless steel	Yes	n/a
PERFECT EMC	50.6xx ES/EMV	Stainless steel	Yes	n/a
PERFECT EMC	50.6xx ES/EMV/R	Stainless steel	Yes	n/a
Locknut	50.2xx M	Brass (nickel plated)	Yes	n/a
Locknut	50.2xx Y	Brass lead-free (nickel plated)	Yes	n/a
Locknut	50.2xx YPOT	Brass lead-free (nickel plated)	Yes	n/a
Locknut	50.2xx ES	Stainless steel	Yes	n/a

Application/Limitation

Manufacturer's installation description, instructions and DNV GL rules to be followed.

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV. Not to be used in bulkheads/decks or for penetrating boundaries of tanks.

Suitable for open deck: Yes

Degree of protection will be safeguarded only when sealing and cable entry fittings are properly fitted. The manufacturer's instructions must be followed.

Type Approval documentation

Test report: VDE Certificate No.: 40020901, dated 2007-05-09, updated 2020-10-27

File ref.: 715700-1492-0002 / 276556

Documents: Jacob GmbH data sheets, dated 2023

Tests carried out

Acc. to DNV Class Programme DNV-CP-0408 (2021-09) / IEC 62444 (2010) / EN 62444 (2013)

Marking of product



Jacob GmbH registered trademark (Letters WJ) on smallest packaging unit and / or on the product.
Type designation / size on smallest packaging unit

Periodical assessment

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

The main elements of the assessment are:

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

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

END OF CERTIFICATE