

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Electrical Equipment**

with type designation(s)

1. CK / CKS, 2. CDA / CDC, 3. CD, 4. CDD, 5. CN / CNE / CSE / CSH / CCE / CQE, 6. CX, 7. MIXO, 8. CTE / CTSE / CT / CTS, 9. CQ

Issued to

**Industria Lombarda Materiale Elettrico I.L.M.E. S.p.A.
Milano MI, Italy**

is found to comply with

DNV GL rules for classification – Ships and offshore units**Application :****Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.**

Type	Temperature	Humidity	Vibration
1. CK / CKS	45°C	100%	0,7g
2. CDA / CDC	45°C	100%	0,7g
3. CD	55°C	100%	4,0g
4. CDD	45°C	100%	0,7g
5. CN / CNE / CSE / CSH / CCE / CQE	45°C	100%	0,7g
6. CX	45°C	100%	0,7g
7. MIXO	45°C	100%	0,7g
8. CTE / CTSE / CT / CTS	45°C	100%	0,7g
9. CQ	45°C	100%	0,7g

This Certificate is valid until **2021-07-17**.Issued at **Hamburg** on **2016-07-18**DNV GL local station: **Milan**for **DNV GL**Approval Engineer: **Harald Amberger**

Duy Nam Le
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.

Product description

Connectors for use in signal, control and power system, with locking device

1. Multipole connectors series CK/CKS

CKM/F 03, CKM/F 03 N, CKM/F 04, CKM/F 04 N : I = 10A, U = 230/400V, poles = 3+PE, 4+PE, connection = screw 2,5 mm², housing = die cast aluminium or zinc or thermoplastic, IP44 (IP65/IP67) or IP68 (series CGK/MGK)

CKSM/F 03, CKSM/F 03 N, CKSM/F 04, CKS/M 04 N: I=10A, U=400V, poles=3+PE, 4+PE, connection=spring 2.5mm², housing=die cast aluminium or zinc or thermoplastic, IP44(IP65/IP67) or IP68 (series CGK/MGK)

2. Multipole connectors series CDA (screw) / CDC (crimp)

CDAM/F 10, 10 X, 16, 16 X, 16 N, 16 XN : I = 16A, U = 250V, poles = 10, 16, 32 all types +PE, connection = screw 2,5 mm², housing = die cast aluminium, IP65

CDCM/F 10, 16, 16 N : I = 16A, U = 250V, poles = 10, 16, 32 all types +PE, connection = crimp 4 mm², housing = die cast aluminium, IP65

3. Multipole connectors series CD

CDM/F 07, 07 N, 08 (U = 50V), 15, 25, 25 Z, 40, 64 : I = 10A, U = 250V, poles 7, 8, 15, 25, (50), 40, (80), 64, (128), connection = crimp 2,5 mm², housing = die cast aluminium or zinc, (CDM/F 07 additional thermoplastic), IP65, IP68 (series CGK/MGK for CDM/F 08, series CG/MG for CDM/F 40, 64), thermoplastic (series T-Type for CDM/F 40, 64) IP65

4. Multipole connectors series CDD

CDDM/F 24, 38, 42, 72, 72 N, 108, 108 N : I = 10A, U = 250V, poles = 24, 38, 42, 72, (76), 108, (144), (216) all types +PE, connection = crimp 2,5 mm², housing = die cast aluminium, IP65, IP68 (series CG/MG for all but CDDM/F 38 thermoplastic /T-Type IP 65)

5. Multipole connectors series CN / CNE / CCE / CQE / CSE / CSH

CNM/F 06, 06 X, 06 RY, 10, 10 X, 10 RY, 16, 16 X, 16 N, 16 XN, 16 RY, 16 RYN, 24, 24 X, 24 N, 24 XN, 24 RY, 24 RY, I = 16A, U = 230/400V, poles=6, 10, 16, 24, (32), (48) all types +PE, connection = screw 2.5mm², housing = die cast aluminium, IP65, IP68 (seriesCG/MG), thermoplastic (series T-Type) IP65

CNEM/F 06, 06 T, 06 X, 06 TX, 10, 10 T, 10 X, 10 TX, 16, 16 T, 16 X, 16 TX, 16 N, 16 TN, 16 XN, 16 TXN, 24, 24 T, 24 X, 24 TX, 24 N, 24 TN, 24 XN, 24 TXN

CNEM/F 06 RY, 06 TRY, 06 RYX, 06 TRYX, 10 RY, 10 TRY, 10 RYX, 10 TRYX, 16 RY, 16 TRY, 16 RYX, 16 TRYX, 16 RYN, 16 TRYN, 16 RYXN, 16 TRYXN, 24 TRY, 24 RYX, 24 TRYX, 24 RYN, 24 TRYN, 24 RYXN, 24 TRYXN, I = 16A, U = 500V, poles = 6, 10, 16, 24, (32), (48) all types +PE, connection = screw 2,5 mm², housing = die cast aluminum, IP65, IP68 (series CG/MG), thermoplastic (series T-Type) IP65

CCEM/F 06, 10, 16, 24, 16 N, 24 N, I = 16A, U = 500V, poles = 6, 10, 16, 24, (32), (48) all types + PE, connection = crimp 4 mm², housing = die cast aluminium, IP65, IP68 (series CG/MG), thermoplastic (series T-Type) IP65

CQEM/F 10, 18, 32, 32 N, 46, 46 N, I = 16A, U = 500V, poles = 10, 18, 32, 46, (64) all types + PE connection = crimp 4 mm², housing = die cast aluminium, IP65, IP68 (series CG/MG), thermoplastic (series T-Type) IP65

CSEM/F 06, 10, 16, 24, 16 N, 24 N, I = 16A, U = 500V, poles = 6, 10, 16, 24, (32), (48) all types + PE connection = screwless 2,5 mm², housing = die cast aluminium, IP65, IP68 (series CG/MG), thermoplastic (series T-Type) IP65

CSHM/F 06, 10, 16, 24, 16N, 24N, I = 16A, U = 500V, poles=6, 10, 16, 24, (32), (48) all types + PE connection = screwless with actuator 2,5mm², housing = die cast aluminium, IP65, IP68 (series CG/MG), thermoplastic (series T-Type) IP 65

6. Combined connectors series CX

CXM/F 4/0 : poles = 4 +PE, I = 80A, U = 690V, connection = screw 16 mm², housing = die cast al., IP65, IP68 (series CG/MG), thermoplastic (series T-Type) IP65

CXM/F 4/2 : poles = 4 +PE, I = 80A, U = 690V, connection = screw 16 mm² and 2 poles, I = 16A, U = 400V, connection = screw 2,5 mm² housing = die cast aluminium, IP65, IP68 (series CG/MG), thermoplastic (series T-Type) IP65

CXM/F 4/8 : poles = 4 +PE, I = 80A, U = 400V, connection = screw 16 mm² and 8 poles, I = 16A, U = 400V, connection = screw 2,5 mm² housing = die cast aluminium, IP65, IP68 (series CG/MG), thermoplastic (series T-Type) IP65

CXM/F 6/36 : poles = 6 +PE, I = 40A, U = 690V, connection = crimp 6 mm² and 36 poles, I = 10A, U = 160V, connection = crimp 2,5 mm² housing = die cast aluminium, IP65, IP68 (series CG/MG), thermoplastic (series T-Type) IP65

CXM/F 8/24 : poles = 8 +PE, I = 16A, U = 230/400V, connection = crimp 4 mm² and 24 poles, I = 10A, U = 160V, connection = crimp 2,5 mm² housing = die cast aluminium, IP65, IP68 (series CG/MG), thermoplastic (series T-Type) IP65

CXM/F 12/2 : poles = 12 +PE, I = 40A, U = 690V, connection = crimp 6 mm² and 2 poles, I = 10A, U = 250V, connection = crimp 2,5 mm² housing = die cast aluminium, IP65, IP68 (series CG/MG), thermoplastic (series T-Type) IP65

7. Modular connectors series MIXO

CX 01 YM/F poles = 1 I = 200A U = 1000V, connection = crimp 70mm²

CX 01 YPEM/F poles = 1 I = 200A U = 1000V, connection = crimp 70mm²

CX 02 GM/F poles = 2 I = 100A U = 1000V, connection = crimp 35 mm²

CX 02 4AM/F poles = 2 I = 40A U = 1000V, connection = axial screw 8 mm²

CX 02 4BM/F poles = 2 I = 40A U = 1000V, connection = axial screw 10 mm²

CX 03 4M/F poles = 3 I = 40A U = 400/690V, connection = crimp 6 mm²

CX 05 SM/F poles = 5 I = 16A U = 400V, connection = screwless 2,5 mm²

CX 06 CM/F poles = 6 I = 16A U = 500V, connection = crimp 4 mm²

CX 08 CM/F poles = 8 I = 16A U = 400V, connection = crimp 4 mm²

CX 12 DM/F poles = 12 I = 10A U = 250V, connection = crimp 2,5 mm²

CX 20 CM/F poles = 20 I = 16A U = 500V, connection = crimp 4 mm²

CX 02 P, for 2 quick couplings Ø 6 mm, CX 03 P : for 3 quick couplings Ø 1,6 – 3 – 4 mm (pneumatic)

Accessories : fixed assembly frames for 1, 2, 3, 4 or 6 modules with PE connection, material = die cast zinc. Housing = die cast al., IP65, IP68 (series CG/MG), thermoplastic (series T-Type) IP65.

8. Terminal block connectors series CTE / CTSE / CT / CTS

CTEM/F 06 L/R, 10 L/R, 16 L/R, 24 L/R : I = 16A, U = 500V, poles = 6, 10, 16, 24, (32), (48) all types + PE, connection = screw 2,5 mm²

CTSEM/F 06 L/R, 10 L/R, 16 L/R, 24 L/R : I = 16A, U = 500V poles = 6, 10, 16, 24, (32), (48) all types + PE, connection = screwless 2,5 mm²

CTM/F 40 L/R, 64 L/R : I = 10A, U = 250V, poles = 40 +PE, 64 +PE, connection = screw 2,5 m²

CTSM/F 40 L/R, 64 L/R : I = 10A, U = 250V, poles = 40 +PE, 64 +PE, connection = screwless 2,5 m²

9. Multipole connectors series CQ

CQM/F 05 : I = 16A, U = 230/400V (05), poles = 5 + PE, connection = crimp 2,5 m², housing thermoplastic IP65/IP67 or die cast aluminium IP44 (IP65/IP67), or IP68 (series CGK/MGK)

CQM/F12: I = 16A, U = 400V(12), poles = 12 + PE, connection = crimp 2,5mm², housing thermoplastic IP65/IP67 or die cast aluminium IP 44 (IP65/IP67) or IP68 (series CGK/MGK)

Application/Limitation

LGL Environmental category: Pos. 1, 2, 4-9 = A, Pos. 3 = D

Operating instruction of the manufacturer to be observed

Type Approval documentation

Tests carried out

GL Guidelines for the Performance of Type Approvals Part 2, Edition 2012, IEC 61984:2001

Marking of product

Manufacturers' label containing data and manufacturers' type number.

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 Production Sample Tests (PST) and Routines (RT) checked (if not available tests according to PST and 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.
- Assessment to be performed at least every 2½ year.

END OF CERTIFICATE