

TYPE APPROVAL CERTIFICATE

This is to certify:
that the Electrical Equipment

with type designation(s)
Heavy duty connector

issued to
Xiamen Wain Electrical Co., Ltd.
Xiamen, Fujian, China

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.

Temperature
Humidity
Vibration

Issued at **Hamburg** on **2025-06-02**

This Certificate is valid until **2029-08-27**.
DNV local unit: **China South NB**

Approval Engineer: **Carsten Hunsalz**



for **DNV**

This document has been digitally signed and will
therefore not have handwritten signature

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 USD 300 000.

Product description

Heavy duty connector with inserts as well as hoods and housings

The system consists of different housing combinations configured with inserts to the final heavy-duty connector.

Inserts	Number of contacts	Rating	Wire gauge
HA-Series	3, 4	10A, 400V	0,25-4,0mm ²
	10, 16, 32 (2x16) + PE	16A, 250V	
	RJ45 4, 8	1A, 50V	0,14-0,34mm ²
HD-Series	8	10A, ~50V/-120V	0,25-2,5mm ²
	7, 15, 25, 40, 50 (25x2)	10A, 250V	
	64, 80 (40x2)		
	128 (64x2) + PE		
HD Ultra-high density-Series	8	10A, ~50V/-120V	0,25-2,5mm ²
	7, 15, 25, 40, 50 (25x2)	10A, 250V	
	64, 80 (40x2)		
	128 (64x2) + PE		
HDD Ultra-high density-Series	24, 42, 72, 108	10A, 250V	0,25-2,5mm ²
	144 (2x72)		
	216 (2x108) + PE		
HE-Series	6, 10, 16, 24, 32 (2X16)	16A, 500V	0,25-4,0mm ²
	48 (2X24) + PE		
HE-MSS-FSS	6, 10, 16, 24	16A, 500V	0,25-2,5mm ²
HE AV Extendible-Series	6, 10, 16, 24 + PE	16A, 500V	0,25-2,5mm ²
HEE-Series	10, 18, 32, 40, 46, 64	16A, 500V	0,25-4,0mm ²
	64 (2x32),		
	92 (2x46) + PE		
HEE High density-Inserts	10, 18, 32, 40, 46, 64	16A, 500V	0,25-4,0mm ²
	64 (2x32),		
	92 (2x46) + PE		
HEEE-Inserts	32 + PE, 72 + PE	16A, 400V	0,25-4,0mm ²
HSB-Inserts	6, 12 + PE	35A, 400V	1,5-6,0mm ²
HSB Heavy-current-Inserts	6, 12 + PE	35A, 400V	1,5-6,0mm ²
HSB-004/2 Heavy-current	4/2 + PE	40 A / 16 A	0,5-6mm ²
Inserts (Quick-In)		690 V / 500 V	
HQ-Inserts	5 + PE	16A, 400V	0,25-2,5mm ²
HQ-001-Insert	1	100A, 400V	10-35mm ²
HQ-002-Inserts	2 + PE	40A, 830V	2,5-6,0mm ²
HQ-003-Inserts	3 + PE	40A, 400V	1,5-10,0mm ²
HQ-004/2-Inserts	4/2 + PE	40A, 690V	1,5-6,0mm ²
HQ-004/2-Compact inserts			
HQ-005/0 Quick-In Inserts	5 + PE	16A, 230 / 400V	0,25-4,0mm ²

Inserts	Number of contacts	Rating	Wire gauge
HQ-005/0-Inserts	5 + PE	16A, 230 / 400V	0,25-4,0mm ²
HQ-007-Inserts	7 + PE	16A, 400V	0,25-2,5mm ²
HQ-012/0-Inserts	12 + PE	10A, 400V	0,25-2,5mm ²
HQ-008-Inserts	8 + PE	16A, 500V	0,25-4,0mm ²
HQ-012-Inserts	12 + PE	10A, 400V	0,25-2,5mm ²
HQ-017-Inserts	17 + PE	10A, 160V	0,25-2,5mm ²
HQ-021 High density-Inserts	21	6,5A, 50V	0,09-0,52mm ²
HQ-RJ45/10 High Density-Ins.	10 + RJ45	1/5A, 50V	0,09-0,82 mm ²
HK-004 Inserts	4/0 + PE, 4/2 + PE	80A, 830V	1,5-16mm ²
HK-004/0, 004/2 Combi-Ins.	4/0 + PE, 4/2 + PE	80A, 830V	1,5-16mm ²
HK-004/4 Combi-Inserts	4/4 + PE	63A, 690V	6-22mm ²
HK-004/4 Combi-Crimp-Inserts	4/4 + PE	70A, 690V	10-25mm ²
HK-004/8 Inserts	4/8 + PE	80A, 400V	1,5-16mm ²
HK-004/8 Combi-Inserts	4/8 + PE	80A, 400V	1,5-16mm ²
HK-006/6 Combi-Inserts	6/6+PE	100A, 690V	16-35mm ²
HK-006/12 Combi-Inserts	6/12+PE	40A, 690V	2,5-10mm ²
HK-006/36 Inserts	6/36+PE	40A, 690V	1,5-6mm ²
HK-008/0 Combi-Inserts	8/0+PE	100A, 690V	10-25mm ²
HK-008/24 Inserts	8/24+PE	16A, 400V	0,5-4mm ²
HK-008/24 Combi-Inserts	8/24+PE	16A, 400V	0,5-4mm ²
HK-009/12/25 Combi-Inserts	9/12/15	10/40A, 250/630V	1,5-6mm ²
HK-009/9/18 Combi-Inserts	9/9/18 + PE	40/16A, 830/830V 10A, 250V	0,25-2,5mm ²
HK-032/55-Inserts	32/55 + PE	10/5A, 250V/50V	0,09-2,5mm ²
HK-012/2 Inserts	12/2+PE	40A, 690V	1,5-6mm ²
HKH-012/0 Combi-high mating cycle Inserts	12/0+PE	40A, 690V	1,5-6mm ²
HK-032/55 Combi-Inserts	32/55 + PE	10A, 250V	0,25-2,5mm ²
HK-006/6 Combi-Crimp-Inserts	6/6+PE	40A, 690V	4-10mm ²
HMD5-025-036--Modul-Series	25/36	4A, 50V/32V	0,09-0,52mm ²
HMDD-017-Modul-Series	17	10A, 160V	0,25-2,5mm ²
HMD-012-Modul-Series	12	10A, 250V	0,25-2,5mm ²
H2MDD-042-Modul-Series	42	10A, 150V	0,25-2,5mm ²
EMC-Modul-Series	1/4/8	5/10A, 50V	0,25-2,5mm ²

Inserts	Number of contacts	Rating	Wire gauge
HM-RJ45-Modul-Series	8	1A, 50V	
HMMB-008-Modul-Series	8	5A- 50V	0,09-0,52mm ²
HMGB-008-Modul-Series	8	5A, 50V	0,09-0,52mm ²
HMMB-008-Modul-Serie	8	10A,50V	0,25-2,5mm ²
HMSB-024-Modul-Series	24	4A, 32V	0,09-0,52mm ²
HMDS-009-Modul-Series	9	5A, 50V	0,09-0,52mm ²
HME-005-6-Modul-Series	5/6	16A, 400V	0,25-2,5mm ²
HMEE-Modul-Series	6/8	16A, 400V	0,25-4,0mm ²
HVME-006-Modul-Series	6	16A, 830V	0,25-4,0mm ²
H2MEE-020-Modul-Series	20	16A, 500V	0,25-4,0mm ²
HMK-Modul-Series	2/3/4	40A, 1000V 40A, 690V 40A, 500V	1,5-10,0mm ²
HMK-003 Modul-Series	3	40A, 690V	1,5-10,0mm ²
HMK-004-Modul-Series	4	40A-10A-830V	1,5-10,0mm ²
HMK70-002-Modul-Series	2	70A, 1000V	6,0-25,0mm ²
HMK-002-Modul-serei	2	40A -1000V	1,5-10,0mm ²
HMK-001-Modul-Series	1	100A, 830V	10,0-35,0mm ²
H2MK-Modul-Series	1/2	100A, 1000V	10,0-70,0mm ²
HE-AV-Inserts	6/10/16/24/ 32(2x16)/48(2x24) + PE	16A, 500V	0,25-2,5mm ²
HD-AV-Inserts	40/64 + PE	10A, 250V	0,25-2,5mm ²
HMPE.M – Serie	1	0	10-35mm ²
HY-004/RJ45 Combi-Inserts	4+PE / 8	16A, 240V	0,25-4mm ²
		1A, 50V	
HCM small-sized solder Ins.	15/18/21	5A, 50V	0,09-0,82mm ²
Further ratings and kind of termination acc. manufacturer documentation.			

Hoods and housing	Material	Ingress Protection
Size 3A	polycarbonate	IP65
Size 3A	polyamide	IP65
Size 3A	zinc die-cast	IP65
Size 3A	aluminium die-cast	H version IP65 / W version IP67
Size 3A Pressure tight	zinc die-cast	IP68/IP69K
Size 3A	zinc die-cast (3A) aluminium die-cast,	H version IP65 / W version IP67
Size 3A EMC	zinc die-cast (3A) aluminium die-cast (Type B)	H version IP65 / W version IP67
Size 3A Pressure tight	aluminium die-cast corrosion resistant	IP68 / IP69K
Size HC	zinc die-cast	IP65
Size HC	polycarbonate	IP65
Size HD.7	polycarbonate	IP65
Size HB-HD-HA.3 EMC	zinc die-cast (3A) aluminium die-cast (Type B)	IP65/IP66/IP67
Size HA-HB-HD	aluminium die-cast	IP65/IP66/IP67
Size HPA.3	zinc die-cast	IP68 / IP69K
Size HPA.3	aluminium die-cast	IP68 / IP69K
Size HB-M-HD-M-HA-M	zinc die-cast (3A) aluminium die-cast (Type B)	IP65/IP66/IP67
Size H1M	aluminum die-cast (Type B)	IP65
Size HPB	aluminium die-cast corrosion resistant	IP68 / IP69K
Size HG-Q	polycarbonate	IP65

Application/Limitation

Location Classes:

Temperature: B, Humidity: B, Vibration: A

Operating instruction of the manufacturer to be observed

Type Approval documentation

Report Nos.: 20240204002, 20240204003, 20240205002, 2014011006, XMIN1506003707PS, XMIN1611007343PS, XMIN1611007341PS, 5007864-1431-0001/176688, 2024-0073602, 2024-0073803

Tests carried out

EN 61984:2009, Environmental tests acc. DNV-CG-0339, Edition August 2021

Marking of product

Manufacturer - Type designation - Main data.

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