TYPE APPROVAL CERTIFICATE

Certificate No:
TAE00001EV
Revision No:
1

This is to certify:

That the
1. Terminals for printed circuit boards
2. Multi-pole terminals for printed circuit board

with type designation(s)
1. FRONT 2,5-.., FRONT 4.., KDS 4, KDS 10, KDS10-..
2. GMKDS 1,5/.., GMKDS 3/.., MKDS 1,5/.., MKDS 3/.., MKDS 5/.., MKDSN 1,5/..

Issued to
Phoenix Contact GmbH & Co. KG
Blomberg, Nordrhein-Westfalen, Germany

is found to comply with
DNV 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.
Temperature B
Humidity B
Vibration A

Issued at **Hamburg** on **2022-04-28**
This Certificate is valid until **2027-04-27**.
DNV local station: **Magdeburg**

Approval Engineer: **Didier Girardin**

for **DNV**

Joannis Papanuskas
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

PCB terminal blocks

1. Type	A (mm²)	I (A)	U (V)	2. Type	A (mm²)	I (A)	U (V)
FRONT 2,5-H/SA5	2,5	16	250	GMKDS 1,5/ ...	1,5	10	500
FRONT 2,5-H/SA10	2,5	16	250	GMKDS 3/ ...	2,5	16	500
FRONT 2,5-V/SA5	2,5	16	250	MKDS 1,5/ ...	1,5	10	250
FRONT 2,5-V/SA10	2,5	16	250	MKDS 3/ ...	2,5	16	250
FRONT 4 H-6,35	4	26	250	MKDS 5/ ...	4	20	500
FRONT 4 H-7,62	4	26	400	MKDSN 1,5/ ...	1,5	10	250
FRONT 4 V-6,35	4	26	250				
FRONT 4 V-7,62	4	26	400				
KDS 4	4	26	250				
KDS 10	10	50	250				
KDS 10-PE	10						
KDS 10-PE/SO	10						
KDS 10-SO	10	50	400				

Application/Limitation

Operating instruction of the manufacturer to be observed

Type Approval documentation

See ANNEX

Tests carried out

See test standards and related Article

Article	Doc. & Ref.N° **"Bold"**	**Test standards**
FRONT 2.5-H-SA 5 MKDSN 1.5	TR_FRONT 2.5-H-SA 5_**0413-05** TR_MKDSN 1.5_**0271-10**	IEC 60947-7-4:2013-08 IEC 60999-1:1999-11 IEC 60068-2-6:2007-12
FRONT 2.5-H-SA 10	TR_FRONT 2.5-H-SA 10_**3773-00**	IEC 60947-7-4-ED 2.0 2019-01 IEC 60999-1:1999-11 IEC 60068-2-6:2007-12
FRONT 2.5-V-SA 5 FRONT 2.5-V-SA10 FRONT 4-H-7.62 FRONT 4-V-7.62	TR_FRONT 2.5-V-SA 5_**0206-06** TR_FRONT 2.5-V-SA10_**0206-06** TR_FRONT 4-H-7.62_**0482-01** TR_FRONT 4-V-7.62_**0482-01**	DIN EN 60998 Part 2-1/ VDE 0613 Part 2-1:1994-04
FRONT 4-V-6.35 FRONT 4-H-6.35	TR_FRONT 4-V-6.35_**764-02** TR_FRONT 4-H-6.35_**731-02**	IEC 60947-7-4:2013-08 IEC 60999-1 (VDE 0609-1):2000-12
GMKDS 1.5-2 GMKDS 1.5-2-7.62	TR_GMKDS 1.5-2_**0336-05** TR_GMKDS 1.5-2-7.62_**0336-05**	DIN EN 60998, part 2-1/ VDE 0613 Part 2-1:1994-04
GMKDS 3-2 GMKDS 3-2-7.62 MKDS 1.5-2 MKDS 1.5-2-5.08 MKDS 3 MKDS 3-5.08 MKDSN 1.5-5.08 MKDS 5-9.5	TR_GMKDS 3-2_**0162-04** TR_GMKDS 3-2-7.62_**3786-00** TR_MKDS 1.5-2_**0284-05** TR_MKDS 1.5-2-5.08_**3787-00** TR_MKDS 3_**3788-00** TR_MKDS 3-5.08_**0078-06** TR_MKDSN 1.5-5.08_**3455-02** TR_MKDS 5-9.5_**0339-03**	IEC 60947-7-4 ED 2.0 2019-01 IEC 60999-1:1999-11 IEC 60068-2-6: 2007-12
KDS 4	TR_KDS 4_**0070-04**	DIN EN 60999:1994-04 & E DIN VDE 0627:1993-05
KDS 10 KDS 10-PE MKDS 5-6.35 MKDS 5-7.62	TR_KDS 10_**0082-01** TR_KDS 10-PE_**0083-01** TR_MKDS 5-6.35_**0071-03** TR_MKDS 5-7.62_**0454-02**	DIN EN 60998 Part 2-1/ VDE 0613 Part 2-1:1994-04

Marking of product

The products to be marked with:
• model name
• manufacturer name

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the type are complied with, and that no alterations are made to the product design or choice of systems, software versions, components and/or materials.

The main elements of the assessment are:

- Ensure that type approved documentation is available
- Inspection of factory samples, selected at random from the production line (where practicable)
- Review of production and inspection routines, including test records from product sample tests and control routines
- Ensuring that systems, software versions, components and/or materials used comply with type approved documents and/or referenced system, software, component and material specifications
- Review of possible changes in design of systems, software versions, components, materials and/or performance, and make sure that such changes do not affect the type approval given
- Ensuring traceability between manufacturer's product type marking and the 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

ANNEX

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