

# Data sheet

Order No.: 1831183

Type: MKDSN 1,5/ 2-HT BK R24

PCB terminal block, Reflow/wave soldering, Screw connection with tension sleeve



The figure shows a 2-pos. version of the product

## 1 Main features



- |                           |                                      |                        |                 |
|---------------------------|--------------------------------------|------------------------|-----------------|
| • No. of pos.             | 2                                    | • Nominal current      | 13.5 A          |
| • Conductor cross section | 1.5 mm <sup>2</sup>                  | • Nominal voltage      | 320 V           |
| • Color                   | black (9005)                         | • Connection direction | 0 °             |
| • Pitch                   | 5 mm                                 | • Type of packaging    | 24 mm wide tape |
| • Connection method       | Screw connection with tension sleeve |                        |                 |

## 2 Your advantages

- ✓ Well-known connection principle allows worldwide use
- ✓ Low temperature rise, thanks to maximum contact force
- ✓ Allows connection of two conductors
- ✓ Extremely small design for the respective conductor cross section
- ✓ Designed for integration into the SMT soldering process
- ✓ The latching on the side enables various numbers of positions to be combined



Make sure you always use the latest documentation.

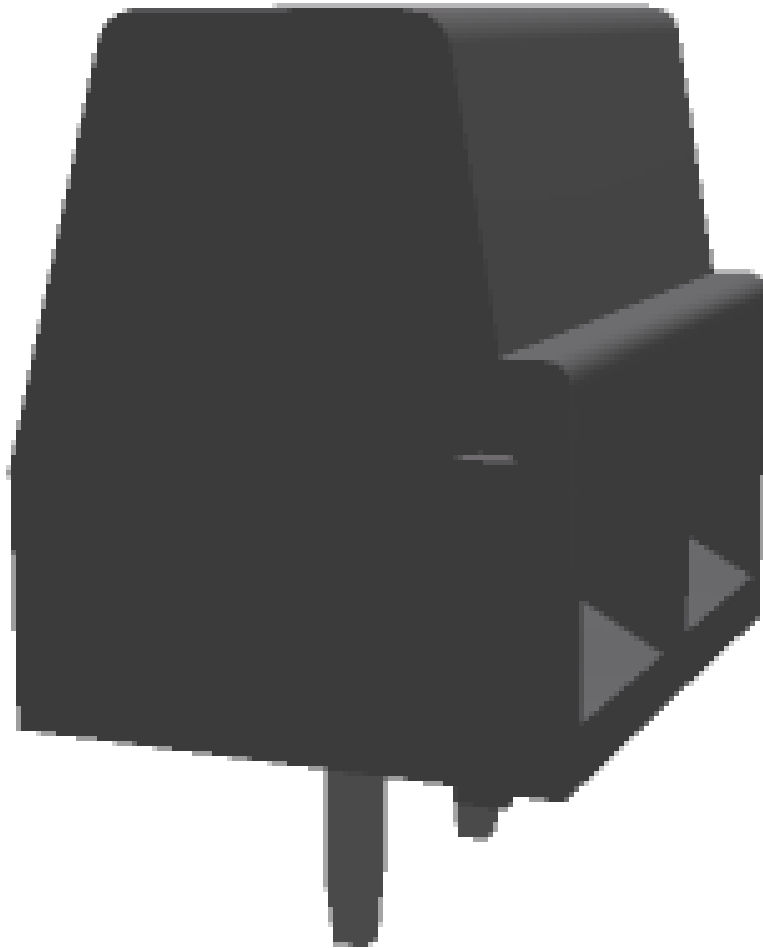
It can be downloaded at: [phoenixcontact.net/product/1831183](https://phoenixcontact.net/product/1831183)

**1831183 MKDSN 1,5/ 2-HT BK R24****3 Table of contents**

1	Main features.....	1
2	Your advantages .....	1
3	Table of contents .....	2
4	3D model in PDF can be activated (Acrobat Reader only).....	3
5	General Technical Data .....	4
	5.1 item properties .....	4
	5.2 Connection capacity .....	4
	5.3 Connection capacity AWG .....	4
6	Material properties.....	4
	6.1 Material of metal parts.....	4
	6.2 Material Kunststoffteile .....	5
7	Dimensions.....	6
	7.1 Dimensions for the product .....	6
8	Series drawing.....	7
	8.1 Dimensions for PCB design.....	8
9	Application.....	8
	9.1 General information.....	8
10	Packaging information .....	8
11	Blister drawing.....	9
	11.1 Processing notes .....	10
	11.2 Temperature limit values .....	10
12	Mechanical tests.....	11
	12.1 Pull-out test .....	11
	12.2 Check for damage to conductor or loosening .....	11
13	Electrical tests .....	12
	13.1 Electrical data .....	12
	13.2 Air and creepage distances .....	12
	13.3 Temperature rise test.....	12
	13.4 Stoßspannungsprüfung .....	12
14	Current carrying capacity/derating curves .....	13
15	Environmental and durability tests .....	14
	15.1 Vibration test .....	14
	15.2 Assessment of fire risk (glow wire test).....	14
	15.3 Shock protection .....	14
16	Approvals .....	14
17	Commercial Data.....	16

1831183 MKDSN 1,5/ 2-HT BK R24

4 3D model in PDF can be activated (Acrobat Reader only)



**1831183 MKDSN 1,5/ 2-HT BK R24****5 General Technical Data****5.1 item properties**

Order No.	1831183
Type	MKDSN 1,5/ 2-HT BK R24
Product type	PCB terminal block
Range of articles	MKDSN 1,5/..-HT
Pitch	5 mm
Range of positions	2...8
Number of positions	2
Number of levels	1
Number of connections	2
Number of potentials	2
Connection method	Screw connection with tension sleeve
Screw thread	M3
Drive form screw head	Slotted (L)
Mounting type	THR soldering
Connection direction of the conductor to the PCB	0 °
Pin layout	Linear pinning
Solder pins per potential	1
Type	PC termination block

**5.2 Connection capacity**

Conductor cross section, solid	0.14 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Conductor cross section, flexible	0.14 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Conductor cross section flexible, with ferrule without plastic sleeve	0.25 mm <sup>2</sup> ... 1 mm <sup>2</sup>
Conductor cross section flexible, with ferrule with plastic sleeve	0.25 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
2 conductors with same cross section, solid	0.14 mm <sup>2</sup> ... 0.75 mm <sup>2</sup>
2 conductors with same cross section, stranded	0.14 mm <sup>2</sup> ... 0.75 mm <sup>2</sup>
2 conductors with same cross section, stranded, with ferrule without plastic sleeve	0.25 mm <sup>2</sup> ... 0.5 mm <sup>2</sup>
2 conductors with same cross section, stranded, with TWIN ferrules with plastic sleeve	0.5 mm <sup>2</sup> ... 0.75 mm <sup>2</sup>
Cylindrical gauge a x b / diameter	2.4 mm x 1.5 mm / 1.9 mm
Stripping length	6 mm
Tightening torque	0.5 Nm ... 0.6 Nm

**5.3 Connection capacity AWG**

Conductor cross section AWG	26 ... 16
-----------------------------	-----------

**6 Material properties****6.1 Material of metal parts**

**1831183 MKDSN 1,5/ 2-HT BK R24**

Note	WEEE/RoHS-compliant, whisker-free acc. to IEC 60068-2-82/JEDEC JESD 201
Contact material	Cu alloy
Terminal point surface	Nickel (2 - 3 µm Ni) , Tin (5 - 7 µm Sn)
Soldering area surface	Nickel (2 - 3 µm Ni) , Tin (5 - 7 µm Sn)
Surface characteristics	Tin-plated

**6.2 Material Kunststoffteile**

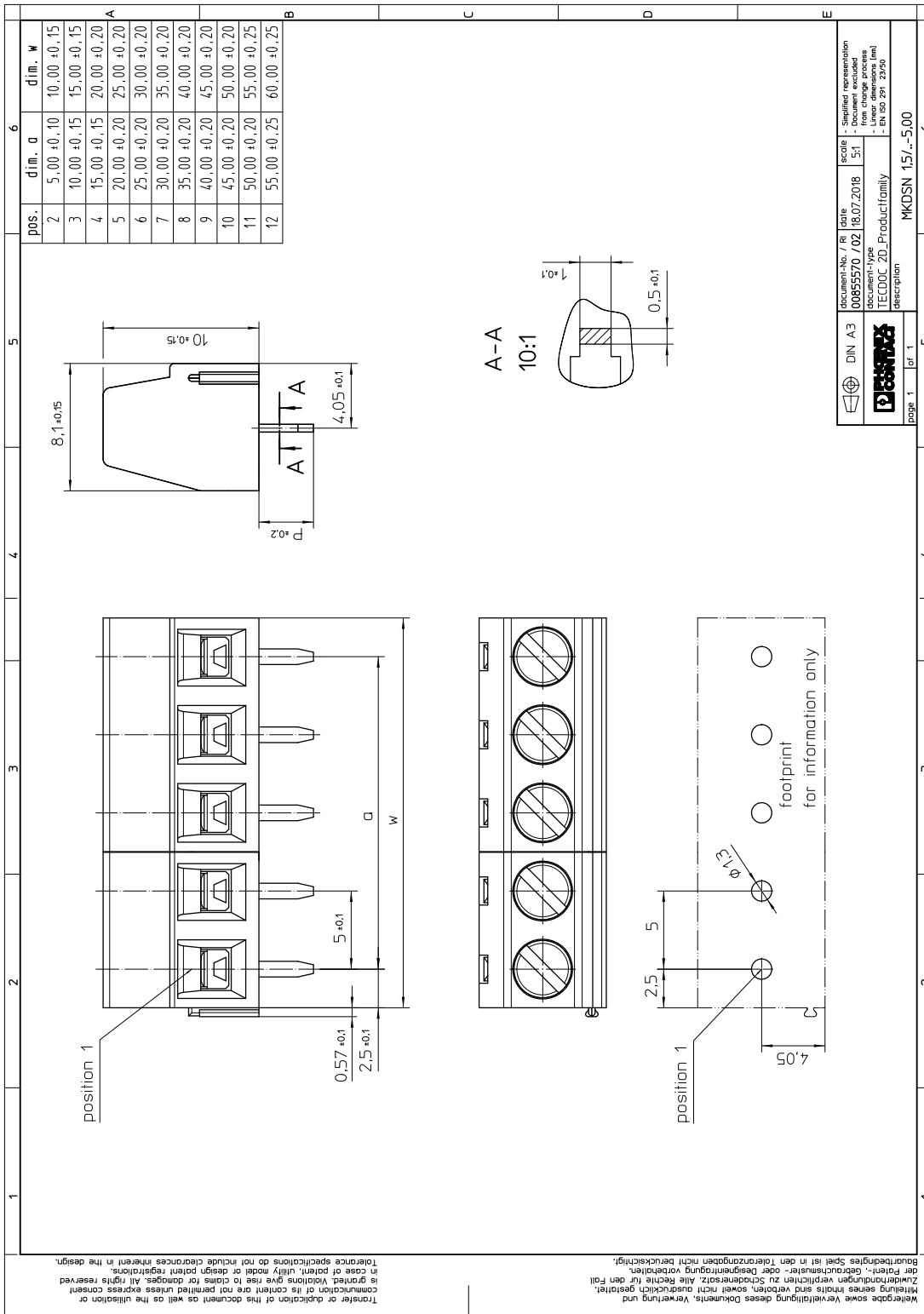
	Housing
Color	black (9005)
Insulating material	PA
Insulating material group	IIIa
CTI according to IEC 60112	250 - 399
Flammability rating according to UL 94	V0

**1831183 MKDSN 1,5/ 2-HT BK R24****7 Dimensions****7.1 Dimensions for the product**

Length	8.1 mm
Width	10 mm
Height (without solder pin)	10 mm
Total height	10 mm
Solder pin [P]	3.5 mm
Dimension a	5 mm

1831183 MKDSN 1,5/ 2-HT BK R24

8 Series drawing



**1831183 MKDSN 1,5/ 2-HT BK R24****8.1 Dimensions for PCB design**

Hole diameter	1.3 mm
Pin dimensions	0.5 x 1 mm
Pin spacing	5 mm

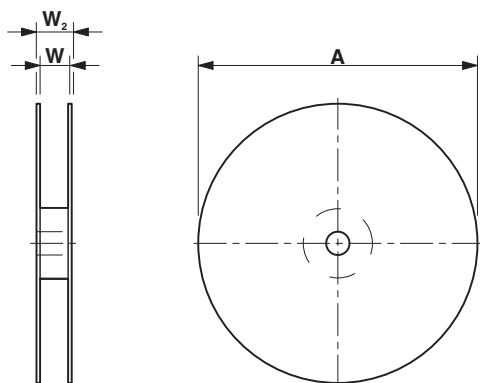
**9 Application****9.1 General information**

Note on application

For safe conductor connection, always adhere to a defined tightening torque. Particularly in the case of PCB terminal blocks with two or three positions, the individual solder pin for each contact point cannot compensate for this. That is why the terminal blocks must be supported during conductor connection (held with one hand, support on the housing).

**10 Packaging information**

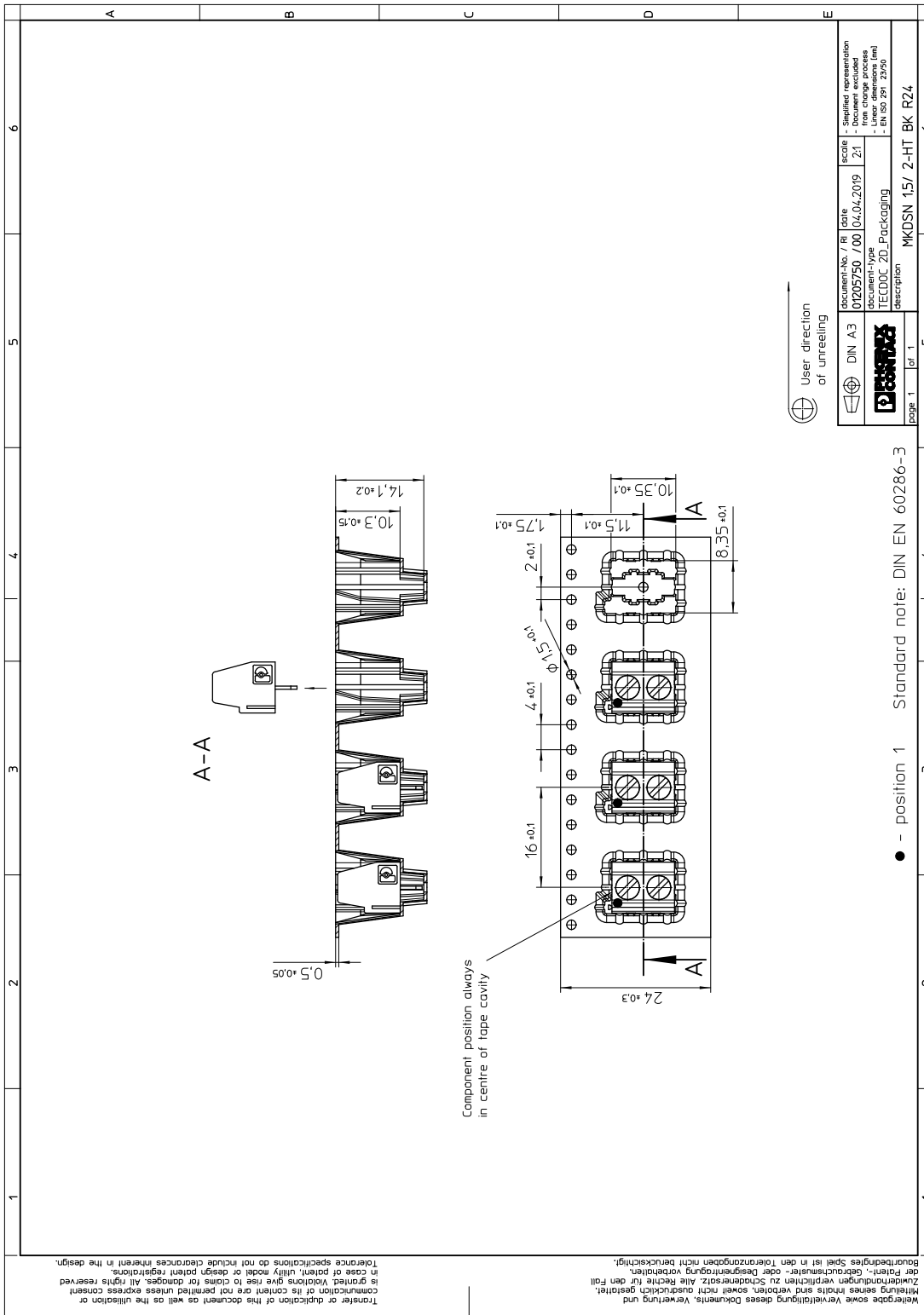
Type of packaging	24 mm wide tape
Pieces per package	280
Outer packaging type	Dry bag
ESD level	(D) electrostatically conductive
Specification	DIN EN 61340-5-1 (VDE 0300-5-1): 2008-07
[W] tape width	24 mm
[A] coil diameter	330 mm
[W2] coil overall dimension	30.4 mm
Number of products per coil	280





1831183 MKDSN 1,5/ 2-HT BK R24

11 Blister drawing



**1831183 MKDSN 1,5/ 2-HT BK R24****11.1 Processing notes**

Process	Reflow/wave soldering
Specification	Following IPC/JEDEC J-STD-020D.1:2008-03
Specification	Following IEC 61760-1:2006-04
Specification	Following IEC 60068-2-58:2005-02
Moisture Sensitive Level	MSL 3
Classification temperature $T_c$	max. 250 °C
Solder cycles in the reflow	3
swash circumference	see dimensional drawing

**11.2 Temperature limit values**

Ambient temperature (storage/transport)	-40 °C ... 70 °C
Ambient temperature (assembly)	-5 °C ... 100 °C
Ambient temperature (operation)	-40 °C ... 100 °C (Depending on the current carrying capacity/derating curve)

**1831183 MKDSN 1,5/ 2-HT BK R24****12 Mechanical tests****12.1 Pull-out test**

Specification	IEC 60998-2-1:1990-04
Result	Test passed
Conductor cross section/conductor type/tractive force actual value	0.14 mm <sup>2</sup> / solid / > 10 N
Conductor cross section/conductor type/tractive force actual value	0.14 mm <sup>2</sup> / flexible / > 10 N
Conductor cross section/conductor type/tractive force actual value	1.5 mm <sup>2</sup> / solid / > 40 N
Conductor cross section/conductor type/tractive force actual value	1.5 mm <sup>2</sup> / flexible / > 40 N

**12.2 Check for damage to conductor or loosening**

Specification	IEC 60998-2-1:1990-04
Result	Test passed

**1831183 MKDSN 1,5/ 2-HT BK R24****13 Electrical tests****13.1 Electrical data**

Rated current / conductor cross section	13.5 A / 1.5 mm <sup>2</sup>
Rated insulation voltage (III/2)	
Rated surge voltage (III/2)	
Contact resistance	
Degree of pollution	2

**13.2 Air and creepage distances**

Component	PCB terminal block		
Specification	IEC 60947-1:2007-06 + A1:2010-12 + A2:2014-09		
Mains type	unearthed mains		
Insulating material group	IIIa		
Comparative tracking index (IEC 60112:2003-01)	CTI 250 - 399		
Rated insulation voltage	320 V		
Rated surge voltage			
Degree of pollution	3	2	2
Overvoltage category	III	III	II
Minimum clearance case A (inhomogeneous field)	3 mm	3 mm	3 mm
Minimum value of the creepage path requirement in acc. with table	3.2 mm	3.2 mm	3.2 mm

**13.3 Temperature rise test**

Specification	IEC 60998-2-1:1990-04
Result	Test passed
Requirement temperature-rise test	Increase in temperature ≤ 45 K
Conductor cross section/test current/temperature rise	1 mm <sup>2</sup> / 13.5 A / 35 K

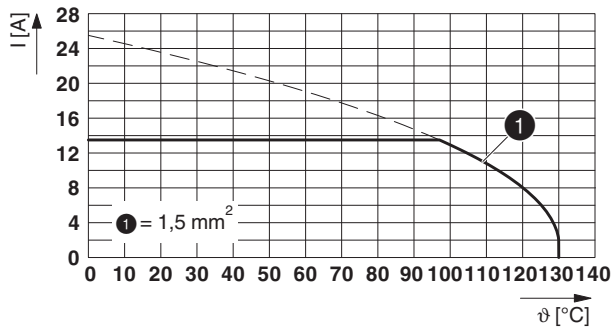
**13.4 Stoßspannungsprüfung**

Result	Test passed
Specification	IEC 60664-1:1992-10
Surge voltage between neighboring positions	4.8 kV

1831183 MKDSN 1,5/ 2-HT BK R24

14 Current carrying capacity/derating curves

Type: MKDSN 1,5/ 5 HT BK



**1831183 MKDSN 1,5/ 2-HT BK R24****15 Environmental and durability tests****15.1 Vibration test**

Specification	IEC 60068-2-6:1995-03
Result	Test passed
Frequency	10 - 150 - 10 Hz
Sweep speed	1 octave/min
Amplitude	0.35 mm (10 - 60.1 Hz)
Acceleration	5 g (60.1 - 150 Hz)
Test duration per axis	2.5 h
Test directions	X-, Y- and Z-axis
Note	

**15.2 Assessment of fire risk (glow wire test)**

Specification	IEC 60998-2-1:1990-04
Result	Test passed
Temperature	850 °C
Time of exposure	5 s

**15.3 Shock protection**

Specification	DIN VDE 0106-100:1983-03
Back of the hand protection (Ball ø 50)	guaranteed
Finger protection (movable test finger)	guaranteed
Note	unenclosed basic insulation - protected against finger contact with IP20 test finger in acc. with IEC 60529 when connected, above the PCB

**Mechanical strength/tumbling barrel**

Specification	IEC 60998-2-1:1990-04
Result	
Height of fall	50 cm
Number of drop cycles	50

**16 Approvals****DNV GL****IECEE CB Scheme**


mm <sup>2</sup> /AWG/kcmil	1.5
Voltage	250 V
Current	13.5 A

**SEV**

mm <sup>2</sup> /AWG/kcmil	1.5
Voltage	250 V
Current	13.5 A

# 1831183 MKDSN 1,5/ 2-HT BK R24

EAC 

cULus Recognized 

Use group	B1			
mm <sup>2</sup> /AWG/kcmil	18			
Voltage	300 V			
Current	10 A			

**1831183 MKDSN 1,5/ 2-HT BK R24****17 Commercial Data**

Order No.	1831183
Type	MKDSN 1,5/ 2-HT BK R24
Pieces per package	280
Net weight	3.16 g
GTIN	4046356916134
	Information that applies locally, see link on page 1
Country of origin	Information that applies locally, see link on page 1



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