

Data sheet

Order No.: 1786938

Type: MSTB 2,5/12-STF

Plug component, Screw connection with tension sleeve



The figure shows a 10-position version of the product

1 Main features



• No. of pos.	12	• Nominal current	12 A
• Conductor cross section	2.5 mm ²	• Nominal voltage	320 V
• Color	green	• Connection direction	0°
• Pitch	5 mm	• Type of packaging	packed in cardboard
• 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
- ✓ Screwable flange for superior mechanical stability
- ✓ Allows connection of two conductors



Make sure you always use the latest documentation.

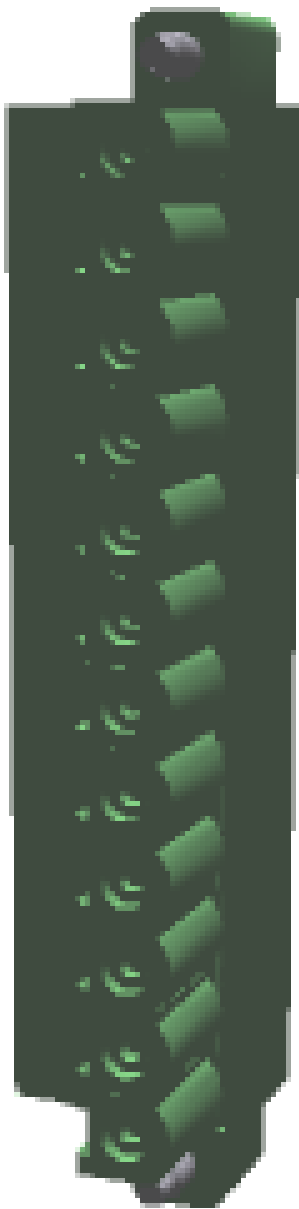
It can be downloaded at: phoenixcontact.net/product/1786938

1786938 MSTB 2,5/12-STF**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	item properties.....	4
	5.1 Connection capacity	4
	5.2 Material data	4
6	Dimensions.....	4
	6.1 Dimensions for the product	5
7	Series drawing.....	6
8	Packaging information	7
9	Application.....	7
	9.1 Temperature limit values	7
10	Mechanical tests.....	8
	10.1 Termination and connection method.....	8
	10.2 Pull-out test	8
11	Electrical tests	9
	11.1 Electrical data	9
	11.2 Air and creepage distances	9
12	Current carrying capacity/derating curves	10
13	Environmental and durability tests	12
	13.1 Vibration test	12
14	Classification for connectors.....	12
15	Approvals	12
16	Commercial Data.....	14
17	corresponding headers.....	14
18	Accessories.....	14
19	Combination tests.....	15

1786938 MSTB 2,5/12-STF

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



1786938 MSTB 2,5/12-STF**5 item properties**

Order No.	1786938
Type	MSTB 2,5/12-STF
Type of contact	Female connector
Range of articles	MSTB 2,5/...STF
Pitch	5 mm
Number of positions	12
Connection method	Screw connection with tension sleeve
Drive form screw head	Slotted
Screw thread	M3
Tightening torque	0.5 Nm ... 0.6 Nm
Locking	Screw flange

5.1 Connection capacity

Conductor cross section, solid	0.2 mm ² to 2.5 mm ²
Conductor cross section, flexible	0.2 mm ² to 2.5 mm ²
Conductor cross section AWG/kcmil	24 to 12
2 conductors with same cross section, solid	0.2 mm ² to 1 mm ²
2 conductors with same cross section, stranded	0.2 mm ² to 1.5 mm ²
Conductor cross section flexible, with ferrule without plastic sleeve	0.25 mm ² to 2.5 mm ²
Conductor cross section flexible, with ferrule with plastic sleeve	0.25 mm ² to 2.5 mm ²
2 conductors with same cross section, stranded, with ferrule without plastic sleeve	0.25 mm ² to 1 mm ²
2 conductors with same cross section, stranded, with TWIN ferrules with plastic sleeve	0.5 mm ² to 1.5 mm ²
Cylindrical gauge a x b / diameter	2.8 mm x 2.0 mm / 2.4 mm
Stripping length	7 mm

5.2 Material data

Material of metal parts	
Note	WEEE/RoHS-compliant, whisker-free acc. to IEC 60068-2-82/JEDEC JESD 201
Contact material	Cu alloy
Terminal point surface	Sn 5 µm ... 7 µm
Surface contact area	Sn 5 µm ... 7 µm
Surface characteristics	hot-dip tin-plated
Insulating material data	
Insulating material	PA
CTI according to IEC 60112	600
Flammability rating according to UL 94	V0
Color	green (6021)
Glow wire flammability index GWFI according to EN 60695-2-12	850
Glow wire ignition temperature GWIT according to EN 60695-2-13	775
Temperature for the ball pressure test according to EN 60695-10-2	125 °C

6 Dimensions

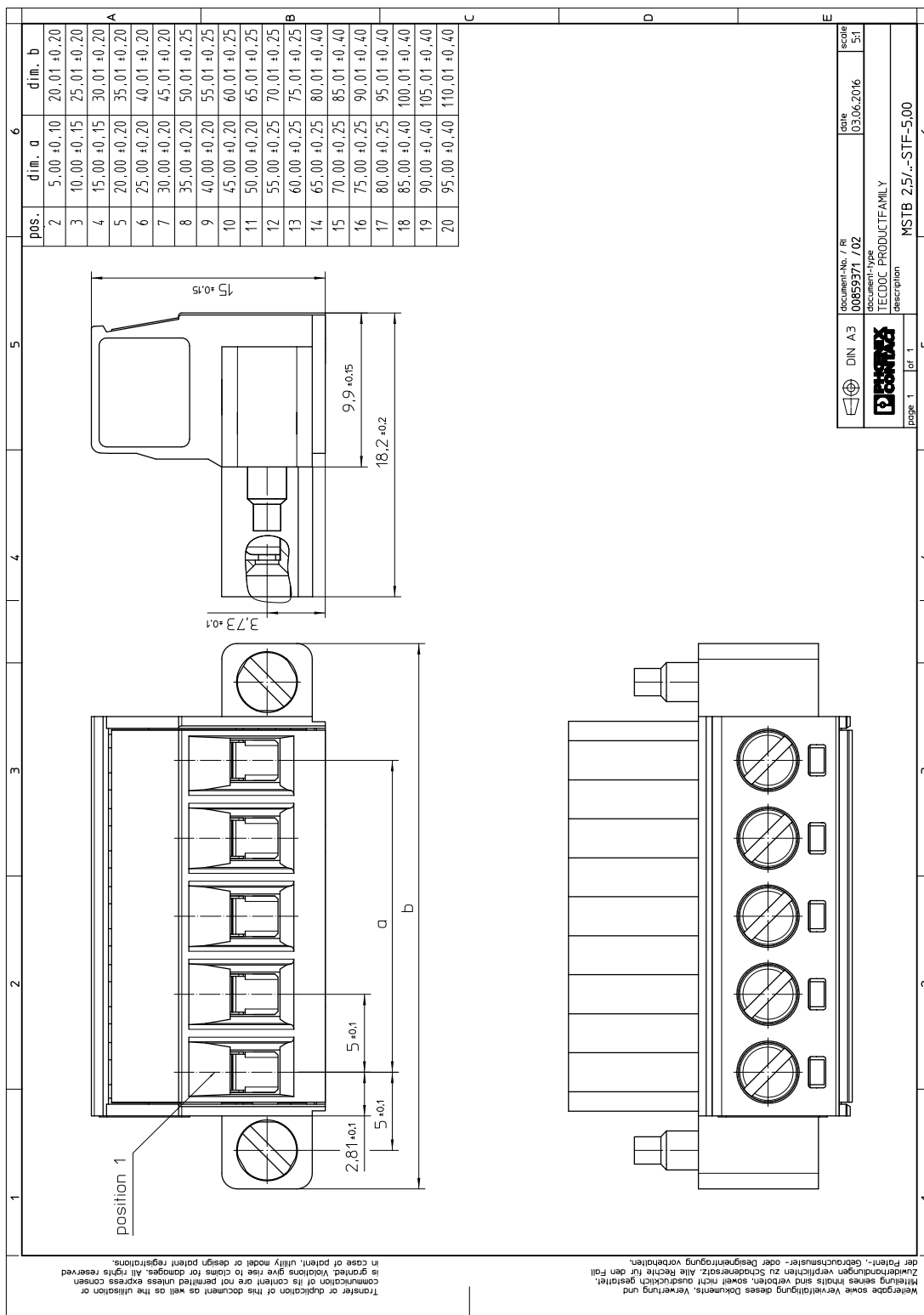
1786938 MSTB 2,5/12-STF

6.1 Dimensions for the product

Length	18.2 mm
Width	70.01 mm
Total height	15 mm
Dimension a	55 mm

1786938 MSTB 2,5/12-STF

7 Series drawing



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of 1	description	TECDOC PRODUCTFAMILY	

1786938 MSTB 2,5/12-STF**8 Packaging information**

Type of packaging	packed in cardboard
Pieces per package	50

9 Application**9.1 Temperature limit values**

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

1786938 MSTB 2,5/12-STF**10 Mechanical tests**

Mechanical test group A	
Specification	IEC 61984:2008-10
Visual test	Test passed
Specification	IEC 60512-1-1:2002-02
Dimensional test	Test passed
Specification	IEC 60512-1-2:2002-02
Resistance of marking	Test passed
Specification	IEC 60068-2-70:1995-12
Insertion and withdrawal force	Test passed
Specification	IEC 60512-13-2:2006-02
No. of cycles	25
Insertion strength per pos. approx.	8 N
Withdraw strength per pos. approx.	6 N
Polarization and coding	Test passed
Specification	IEC 60512-13-5:2006-02
Test force	20 N
Contact retention in insert	Test passed
Specification	IEC 60512-15-1:2008-05
Test force per pos.	36 N

10.1 Termination and connection method

Specification	IEC 60999-1:1999-11
Check for damage to conductor or loosening	Test passed

10.2 Pull-out test

Termination and connection method: pull-out test	
Specification	IEC 60999-1:1999-11
Result	Test passed
Conductor cross section/conductor type/tractive force actual value	0.14 mm ² / solid / > 10 N
Conductor cross section/conductor type/tractive force actual value	0.14 mm ² / stranded / > 10 N
Conductor cross section/conductor type/tractive force actual value	2.5 mm ² / solid / > 50 N
Conductor cross section/conductor type/tractive force actual value	2.5 mm ² / stranded / > 50 N

1786938 MSTB 2,5/12-STF**11 Electrical tests****11.1 Electrical data**

Rated current / conductor cross section	12 A / 2.5 mm ²
Rated insulation voltage (III/2)	320 V
Rated surge voltage (III/2)	4 kV
Contact resistance	1.7 mΩ
Degree of pollution	2

11.2 Air and creepage distances

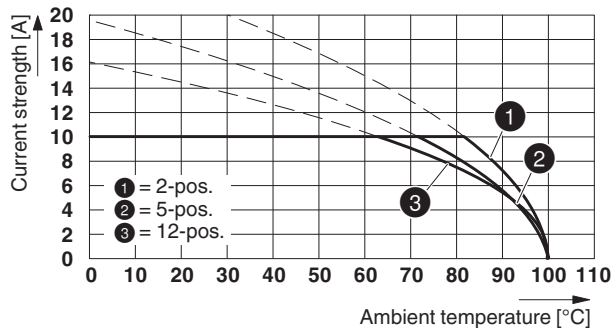
Component	Plug component		
Specification	IEC 60664-1:2007-04		
Mains type	unearthed mains		
Insulating material group	I		
Comparative tracking index (IEC 60112:2003-01)	CTI 600		
Rated insulation voltage	250 V	320 V	630 V
Rated surge voltage	4 kV	4 kV	4 kV
Degree of pollution	3	2	2
Overvoltage category	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 mm	3 mm	3.2 mm

1786938 MSTB 2,5/12-STF

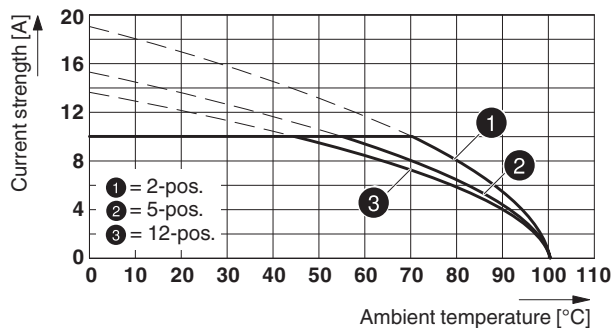
12 Current carrying capacity/derating curves

Specification	IEC 61984:2008-10
Note	Representation based on IEC 60512-5-2:2002-02
Reduction factor	0.8
Number of positions	See diagram
Conductor cross section	2.5 mm ²

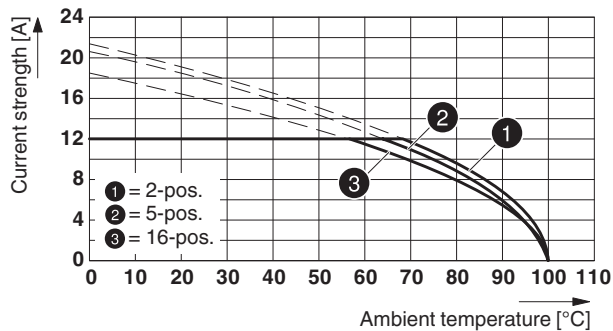
Type: MSTB 2,5/...-STF with MDSTB 2,5/...-GF



Type: MSTB 2,5/...-STF with MDSTBV 2,5/...-GF



Type: MSTB 2,5/...-STF with DFK-MSTB 2,5/...-GF



Type: MSTB 2,5/...-STF with MSTB 2,5/...-GF

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2017-10-23

Product version 04
Document revision 0

1786938 MSTB 2,5/12-STF

Type: MSTB 2,5/...-STF with CC 2,5/...-GF-LR P20 THR

Type: MSTB 2,5/...-STF with CCV 2,5/...-GF-LR P20 THR


1786938 MSTB 2,5/12-STF**13 Environmental and durability tests****13.1 Vibration test**


Specification	IEC 60068-2-6:2007-12
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

14 Classification for connectors


Specification	IEC 61984:2008-10
Main features	Connectors without switching capacity (COC)
Construction form	Fixed connectors
Strain relief elements	without strain relief
Connection method	Can be reconnected
Protection against electric shock	Not encapsulated - touch-proof when inserted
Protective conductor	without PE
Lock	no
Connection method	Screw terminal points

15 Approvals

CSA 				
Use group	B	D		
mm ² /AWG/kcmil	28-12	28-12		
Voltage	300 V	300 V		
Current	10 A	10 A		

VDE Gutachten mit Fertigungsüberwachung 				
mm ² /AWG/kcmil	0.2-2.5			
Voltage	250 V			
Current	12 A			

RS 				
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IECEE CB Scheme 				
mm ² /AWG/kcmil	0.2-2.5			
Voltage	250 V			
Current	12 A			

cULus Recognized 				
Use group	B	D		

2017-10-23

Product version 04

Document revision 0

1786938 MSTB 2,5/12-STFcULus Recognized 

mm ² /AWG/kcmil	30-12	30-12		
Voltage	300 V	150 V		
Current	15 A	15 A		

EAC 

DNV GL

1786938 MSTB 2,5/12-STF**16 Commercial Data**

Order No.	1786938
Type	MSTB 2,5/12-STF
Pieces per package	50
Net weight	20.628 g
GTIN	4017918042899
	Information that applies locally, see link on page 1
Country of origin	Information that applies locally, see link on page 1

17 corresponding headers

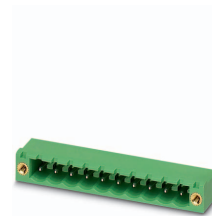
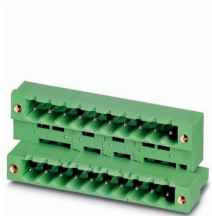
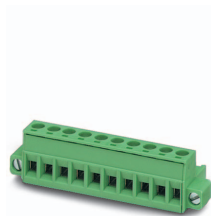
Order No.	Type
1776799	MSTB 2,5/12-GF
1776980	MSTBV 2,5/12-GF
1846182	MDSTBV 2,5/12-GF
1846797	MDSTB 2,5/12-GF
1900170	EMSTB 2,5/12-GF
1915165	EMSTBV 2,5/12-GF

18 Accessories

Description	Order No.	Type
Actuation tool, for ST terminal blocks, insulated, also suitable for use as a bladed screwdriver, size: 0.6 x 3.5 x 100 mm, 2-component grip, with non-slip grip	1205053	SZS 0,6X3,5
	0804183	SK 5/3,8:FORTL.ZAHLEN
Coding profile, is inserted into the slot on the plug or inverted header, red insulating material	1734634	CP-MSTB
Insertion bridge, fully insulated, for connectors with 5.0 or 5.08 mm pitch, no. of positions: 2	1733169	EBP 2- 5

1786938 MSTB 2,5/12-STF

19 Combination tests



MSTB 2,5/12-STF

MDSTB 2,5/12-GF

MDSTBV 2,5/12-GF

DFK-MSTB 2,5/12-GF

MSTB 2,5/12-GF

Specification	IEC 61984	IEC 61984	IEC 61984	IEC 61984
Mechanical tests (A)				
Insertion/withdrawal force per position	approx. 8 N / 6 N	approx. 8 N / 6 N	approx. 10 N / 7 N	approx. 8 N / 6 N
Polarization when inserted Requirement >20 N	Test passed	Test passed	Test passed	Test passed
Contact holder in insert Requirements >20 N	Test passed	Test passed	Test passed	Test passed
Durability tests (B)				
Contact resistance R ₁	1.7 mΩ	2.5 mΩ	1.6 mΩ	1.4 mΩ
Insertion/withdrawal cycles	25	25	25	25
Contact resistance R ₂	1.7 mΩ	2.6 mΩ	1.7 mΩ	1.4 mΩ
Rated impulse voltage at sea level Voltage waveform ≥ (1.2/50 μs)	4.8 kV	4.8 kV	4.8 kV	4.8 kV
Power-frequency withstand voltage Voltage waveform ≥ (50/60 Hz)	2.21 kV	2.21 kV	2.21 kV	2.21 kV
Insulation resistance Requirements > 5 MΩ	> 0.3 TΩ	> 0.3 TΩ	> 0.2 TΩ	> 0.5 TΩ
Thermal tests (C)				
Tested number of positions	12	12	16	20
Tested conductor cross section	2.5 mm ²	2.5 mm ²	2.5 mm ²	2.5 mm ²
Test current	10 A	10 A	12 A	
Upper limiting temperature Requirements < 100°C	Test passed	Test passed	Test passed	Test passed
Climatic tests (D)				
Test sequence 1: low temperature storage	-40 °C/2 h	-40 °C/2 h	-40 °C/2 h	-40 °C/2 h
Test sequence 2: heat storage	100 °C/168 h	100 °C/168 h	100 °C/168 h	100 °C/168 h
Test sequence 3: noxious gas storage (ISO 6988)	0.2 dm ³ SO ₂ on 300 dm ³ / 40 °C/1 cycle	0.2 dm ³ SO ₂ on 300 dm ³ / 40 °C/1 cycle	0.2 dm ³ SO ₂ on 300 dm ³ / 40 °C/1 cycle	0.2 dm ³ SO ₂ on 300 dm ³ / 40 °C/1 cycle
Rated impulse voltage at sea level Voltage waveform ≥ (1.2/50 μs)	4.8 kV	4.8 kV	4.8 kV	4.8 kV
Power-frequency withstand voltage Voltage waveform ≥ (50/60 Hz)	2.21 kV	2.21 kV	2.21 kV	2.21 kV
Environmental and endurance tests (E)				
Specification	IEC 61984:2008-10	IEC 61984:2008-10	IEC 61984:2008-10	IEC 61984:2008-10
Degree of protection	Finger safety with IP20 test finger	Finger safety with IP20 test finger	Finger safety with IP20 test finger	Finger safety with IP20 test finger

1786938 MSTB 2,5/12-STF



MSTB 2,5/..-STF

CC 2,5/..-GF-LR

CCV 2,5/..-GF-LR

Specification

IEC 61984

IEC 61984

Mechanical tests (A)

Insertion/withdrawal force per position

approx. 8 N / 6 N

approx. 8 N / 6 N

Polarization when inserted
Requirement >20 N

Test passed

Test passed

Contact holder in insert
Requirements >20 N

Test passed

Test passed

Durability tests (B)

Contact resistance R₁

1.1 mΩ

1.2 mΩ

Insertion/withdrawal cycles

25

25

Contact resistance R₂

1.2 mΩ

1.2 mΩ

Rated impulse voltage at sea level
Voltage waveform ≥ (1.2/50 μs)

4.8 kV

4.8 kV

Power-frequency withstand voltage
Voltage waveform ≥ (50/60 Hz)

2.21 kV

2.21 kV

Insulation resistance
Requirements > 5 MΩ

> 1 TΩ

> 1 TΩ

Thermal tests (C)

Tested number of positions

20

20

Tested conductor cross section

2.5 mm²

2.5 mm²

Test current

12 A

12 A

Upper limiting temperature
Requirements < 100°C

Test passed

Test passed

Climatic tests (D)

Test sequence 1: low temperature storage

-40 °C/2 h

-40 °C/2 h

Test sequence 2: heat storage

100 °C/168 h

100 °C/168 h

Test sequence 3: noxious gas storage
(ISO 6988)

0.2 dm³ SO₂ on 300 dm³/
40 °C/1 cycle

0.2 dm³ SO₂ on 300 dm³/
40 °C/1 cycle

Rated impulse voltage at sea level
Voltage waveform ≥ (1.2/50 μs)

4.8 kV

4.8 kV

Power-frequency withstand voltage
Voltage waveform ≥ (50/60 Hz)

2.21 kV

2.21 kV

Environmental and endurance tests (E)

Specification

IEC 61984:2008-10

IEC 61984:2008-10

Degree of protection

Finger safety with IP20
test finger

Finger safety with IP20
test finger



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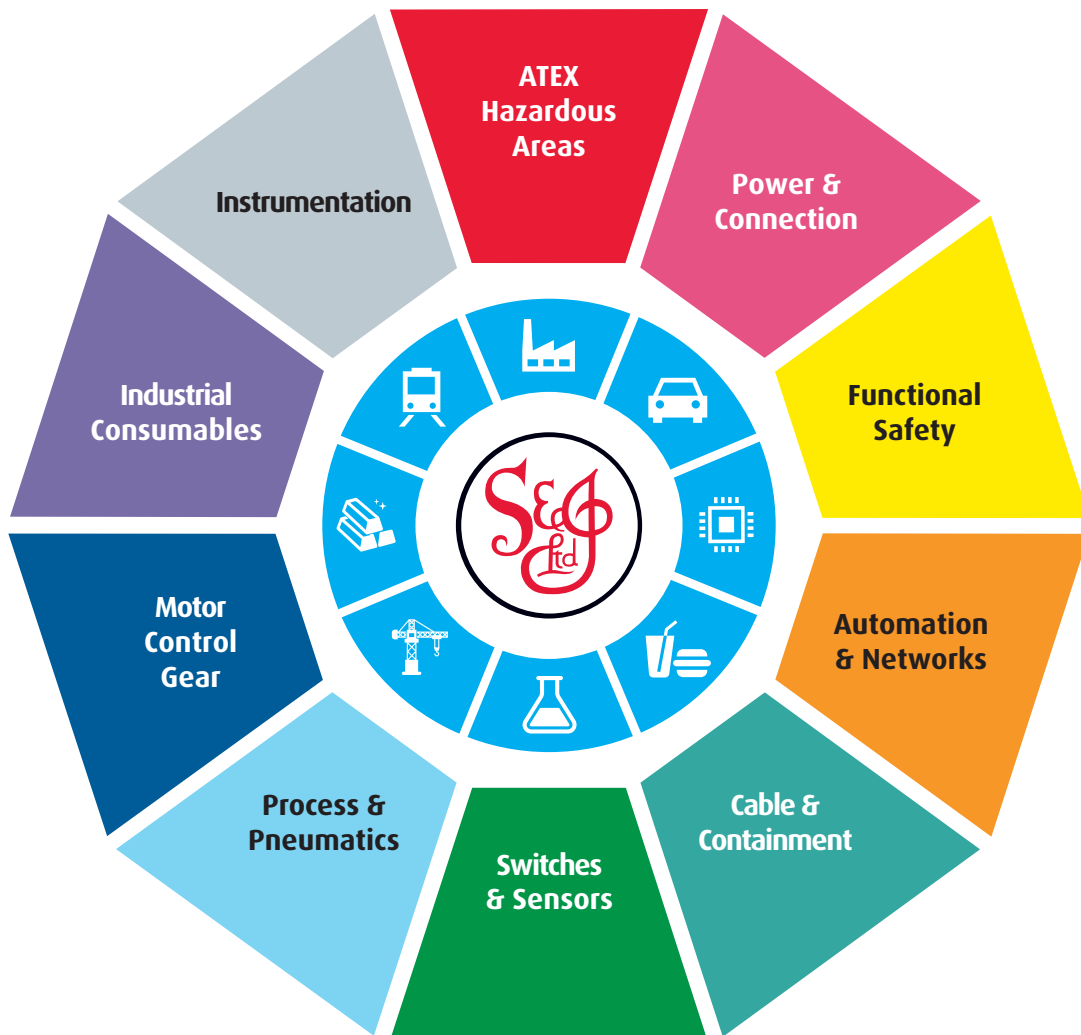
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