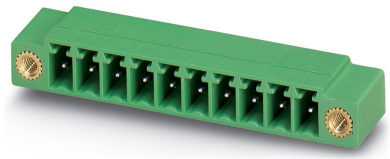
2021-03-02
Product version 07
Document revision 00

Data sheet

Order No.: 1843855

Type: MC 1,5/ 8-GF-3,5

PCB header



The figure shows a 10-position version of the product

1 Main features

- No. of pos. 8
- Nominal cross section 1.5 mm²
- Color green (6021)
- Pitch 3.5 mm
- Mounting type Wave soldering
- Nominal current 8 A
- Nominal voltage 160 V
- Connection direction 0 °
- Type of packaging packed in cardboard

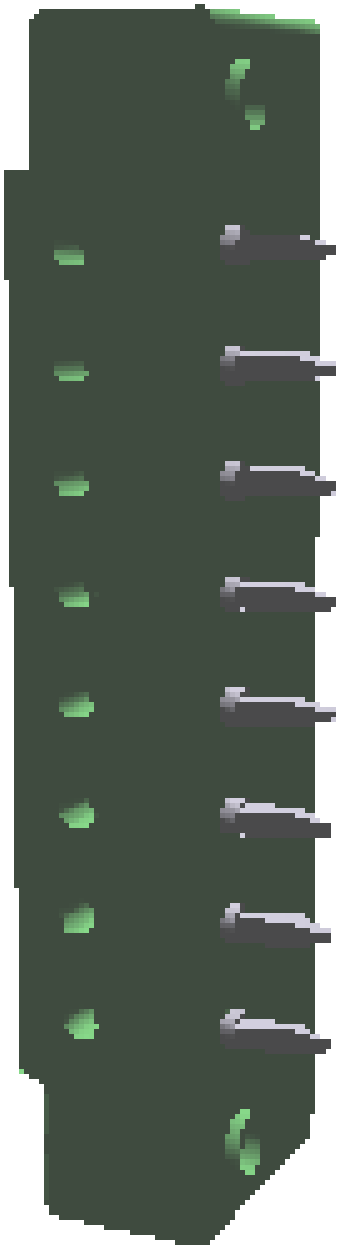
2 Your advantages

- Well-known mounting principle allows worldwide use
- Screwable flange for superior mechanical stability
- Maximum flexibility when it comes to device design – one header for connectors with different connection technologies

Make sure you always use the latest documentation.
It can be downloaded at: phoenixcontact.net/product/1843855

3 Table of contents

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



5 General Technical Data

5.1 item properties

Order No.	1843855
Type	MC 1,5/ 8-GF-3,5
Plug-in system	MINI COMBICON
Product type	PCB header
Type of contact	Male connector
Range of articles	MC 1,5/..-GF
Pitch	3.5 mm
Number of positions	8
Number of levels	1
Number of connections	8
Number of potentials	8
Mounting type	Wave soldering
Connection direction of the connector to the PCB	0 °
Pin layout	Linear pinning
Solder pins per potential	1
Type	Standard

6 Mounting

6.1 Flange mounting

Type of locking	Screw locking
Mounting flange	Threaded flange
Torque	0.3 Nm

7 Material properties

7.1 Material of metal parts

Note	WEEE/RoHS-compliant, whisker-free acc. to IEC 60068-2-82/JEDEC JESD 201
Contact material	Cu alloy
Surface contact area	Nickel (1.3 - 3 µm Ni) , Tin (3 - 5 µm Sn)
Soldering area surface	Nickel (1.3 - 3 µm Ni) , Tin (3 - 5 µm Sn)
Surface characteristics	Tin-plated

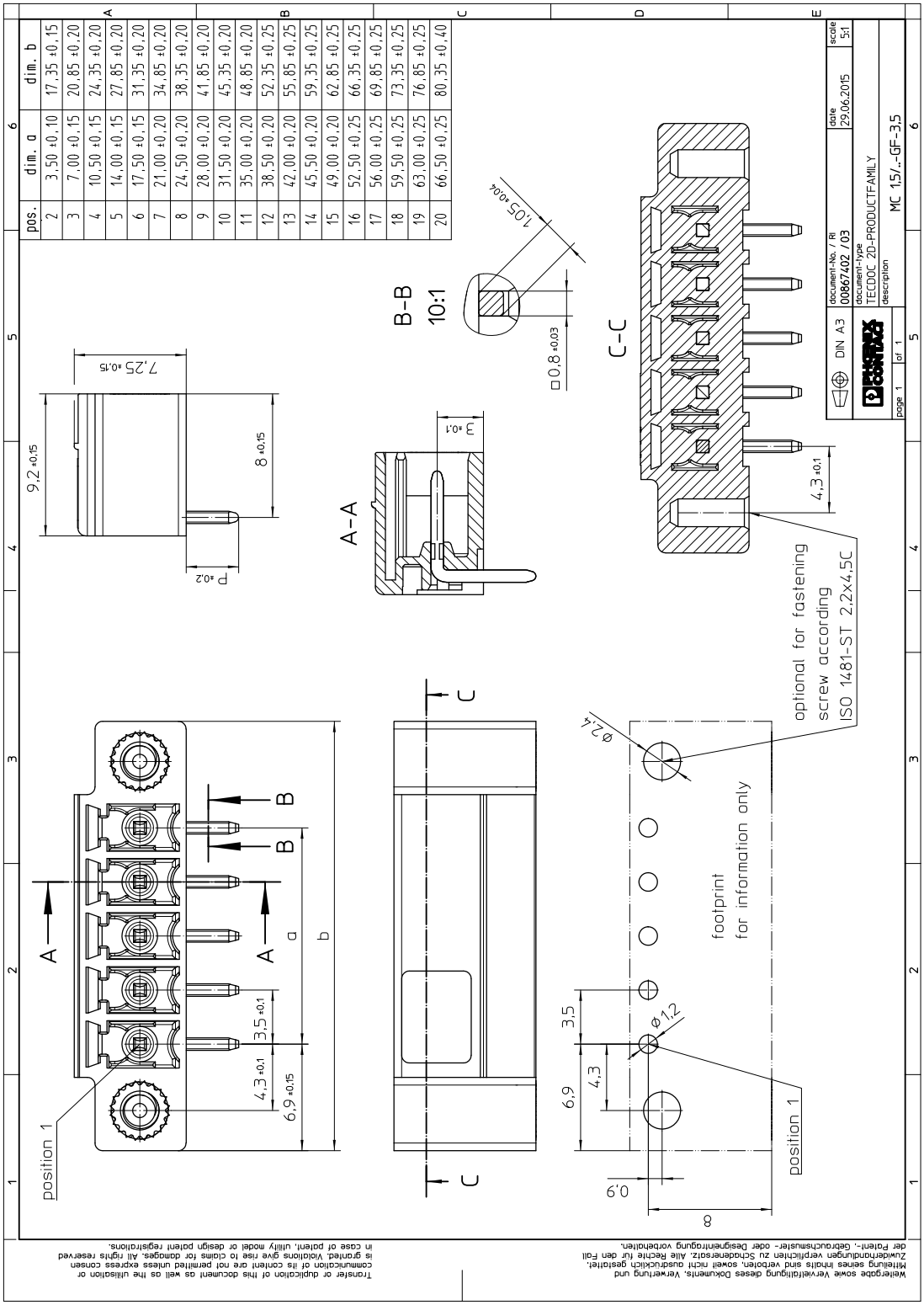
Insulating material data	Housing
Color	green (6021)
Insulating material	PBT
Insulating material group	IIIa
CTI according to IEC 60112	225
Flammability rating according to UL 94	V0

8 Dimensions

8.1 Dimensions for the product

Length	9.2 mm
Width	38.35 mm
Height (without solder pin)	7.25 mm
Total height	10.65 mm
Solder pin [P]	3.4 mm

9 Series drawing



10 Application

11 Packaging information

Type of packaging	packed in cardboard
Pieces per package	100

11.1 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 (dependent on the derating curve)

12 Mechanical tests

12.1 Visual examination

Specification	IEC 61984:2008-10
Visual examination	Test passed
Specification	IEC 60512-1-1:2002-02

12.2 Dimensional test

Dimensional test	Test passed
Specification	IEC 60512-1-2:2002-02

12.3 Resistance of marking

Resistance of marking	Test passed
Specification	IEC 60068-2-70:1995-12

12.4 Polarization and coding

Polarization and coding	Test passed
Specification	IEC 60512-13-5:2006-02
Test force	20 N

12.5 Contact retention in insert

Contact holder in insert Requirements >20 N	Test passed
Specification	IEC 60512-15-1:2008-05

13 Insertion and withdrawal forces

Insertion and withdrawal force	Test passed
Specification	IEC 60512-13-2:2006-02
No. of cycles	25
Insertion strength per pos. approx.	6 N
Withdraw strength per pos. approx.	4 N

14 Electrical tests

Rated current / conductor cross section	8 A / 1.5 mm²
Rated insulation voltage (III/2)	160 V
Rated surge voltage (III/2)	2.5 kV
Contact resistance	1.3 mΩ
Degree of pollution	2

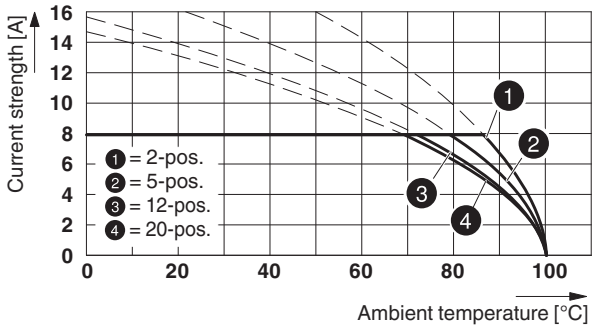
14.1 Air and creepage distances

Component	PCB header		
Specification	IEC 60664-1:2007-04		
Mains type	unearthed mains		
Insulating material group	IIIa		
Comparative tracking index (IEC 60112:2003-01)	CTI 225		
Rated insulation voltage	160 V	160 V	250 V
Rated surge voltage	2.5 kV	2.5 kV	2.5 kV
Degree of pollution	3	2	2
Overvoltage category	III	III	II
Minimum clearance case A (inhomogeneous field)	1.5 mm	1.5 mm	1.5 mm
Minimum value of the creepage path requirement in acc. with table	2.5 mm	1.6 mm	2.5 mm

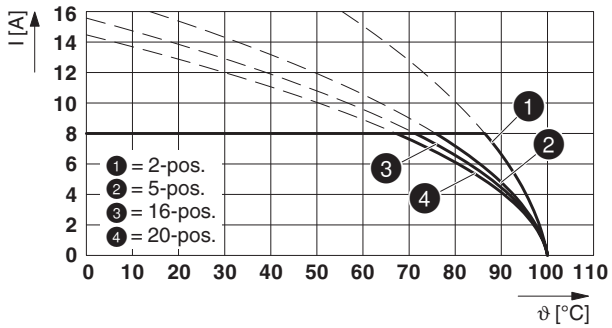
15 Current carrying capacity/derating curves

Specification	IEC 61984:2008-10
Note	Representation based on IEC 60512-5-2:2002-02
Note	For number of positions, see diagram
Reduction factor	0.8
Conductor cross section	1.5 mm²

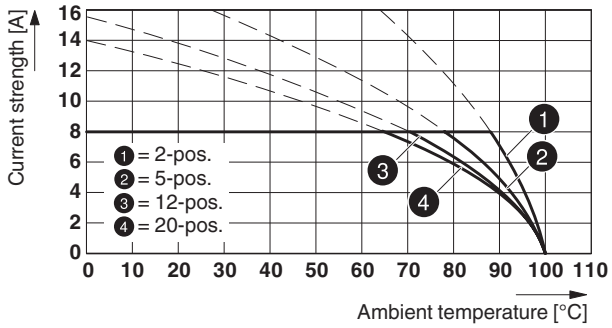
Type: MC 1,5/...-STF-3,5 with MC 1,5/...-GF-3,5



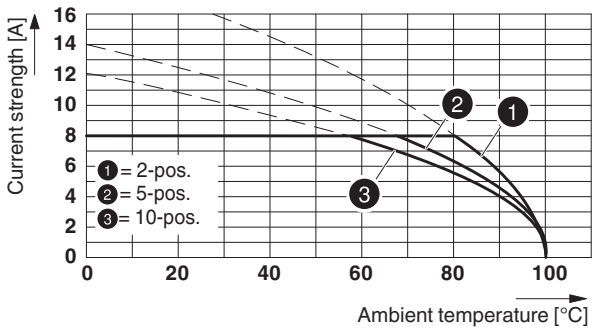
Type: FMC 1,5/...-STF-3,5 with MC 1,5/...-GF-3,5



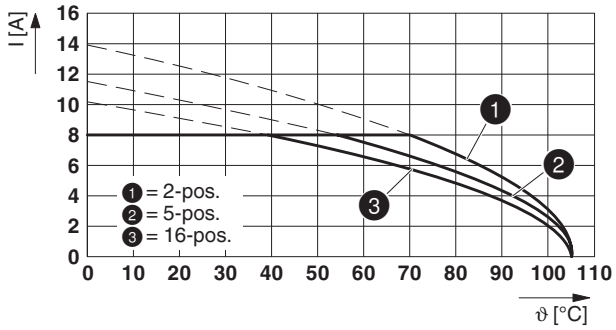
Type: FK-MCP 1,5/...-STF-3,5 with MC 1,5/...-GF-3,5



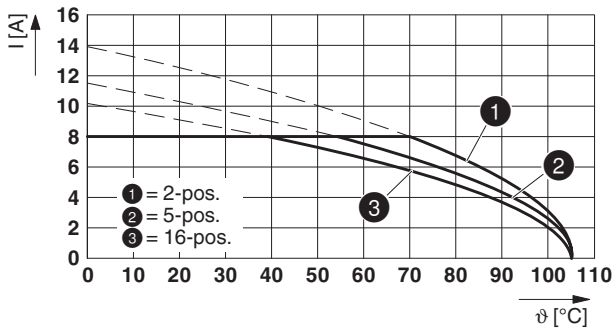
Type: TFMC 1,5/...-STF-3,5 with MC 1,5/...-GF-3,5



Type: MCVR 1,5/...-STF-3,5 with MC 1,5/...-GF-3,5



Type: MCVW 1,5/...-STF-3,5 with MC 1,5/...-GF-3,5



15.1 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
Note	The connected conductor loops were guided to the test sample at a distance of approx. 10 cm.

15.2 Insulation resistance

Specification	IEC 60512-3-1:2002-02
Result	Test passed
Insulation resistance, neighboring positions	> 5 MΩ

16 Approvals / Certificates

CSA	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm²]
Usegroup B				
	300 V	8 A	-	-
Usegroup D				
	300 V	8 A	-	-

IECEE CB Scheme	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm²]
	160 V	8 A	-	-

EAC				

VDE Gutachten mit Fertigungsüberwachung	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm²]
	160 V	8 A	-	-

cULus Recognized	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm²]
Usegroup B				
	300 V	8 A	-	-
Usegroup D				
	300 V	8 A	-	-

VDE Gutachten mit Fertigungsüberwachung	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm²]
	160 V	8 A	-	-

17 Commercial Data

Order No.	1843855
Type	MC 1,5/ 8-GF-3,5
Pieces per package	100
Net weight	2.776 g
GTIN	4017918112967
	Information that applies locally, see link on page 1
Country of origin	Information that applies locally, see link on page 1

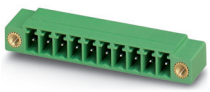
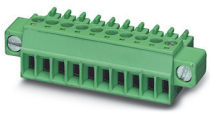
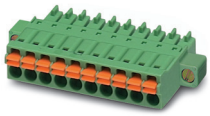
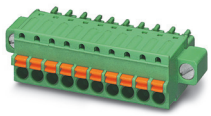
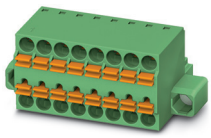
18 corresponding plugs

Order No.	Type
1772760	TFMC 1,5/ 8-STF-3,5
1847181	MC 1,5/ 8-STF-3,5
1863068	MCVW 1,5/ 8-STF-3,5
1863369	MCVR 1,5/ 8-STF-3,5
1940156	FK-MCP 1,5/ 8-STF-3,5
1966156	FMC 1,5/ 8-STF-3,5

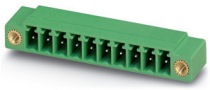
19 Accessories

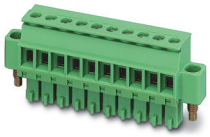
Description	Order No.	Type
	0804073	SK 3,5/2,8:FORTL.ZAHLEN
Coding profile, is inserted into the slot on the plug or inverted header, red insulating material	1734634	CP-MSTB
MINI COMBICON fiber optics, 3.5 mm pitch, 10-pos., separable for other numbers of positions (minimum: 2-pos.), inserts into the back of the MC header, color: transparent, dimension a: 1.5 mm	1841161	MC 1,5/10-LWL 1,5-3,5
MINI COMBICON fiber optics, 3.5 mm pitch, 10-pos., separable for other numbers of positions (minimum: 2-pos.), inserts into the back of the MC header, color: transparent, dimension a: 2.3 mm	1841187	MC 1,5/10-LWL 2,3-3,5
MINI COMBICON fiber optics, 3.5 mm pitch, 10-pos., separable for other numbers of positions (minimum: 2-pos.), inserts into the back of the MC header, color: transparent, dimension a: 4 mm	1841200	MC 1,5/10-LWL 4-3,5

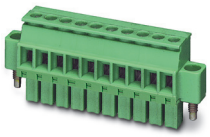
20 Combination tests

				
MC 1,5/..-GF	**MC 1,5/..-STF**	**FMC 1,5/..-STF**	**FK-MCP 1,5/..-STF**	**TFMC 1,5/..-STF**
IEC 61984	IEC 61984	IEC 61984	IEC 61984	IEC 61984
Mechanical tests (A)				
Insertion/withdrawal force per position	approx. 6 N / 4 N	approx. 8 N / 6 N	approx. 7 N / 5 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 1st level	1.3 mΩ	1.6 mΩ	2 mΩ	3.3 mΩ
Contact resistance R_1 2nd level				
Insertion/withdrawal cycles	25	25	25	25
Contact resistance R_2	1.4 mΩ	1.7 mΩ	2.2 mΩ	3.4 mΩ
Rated impulse voltage at sea level Voltage waveform ≥ (1.2/50 µs)	2.95 kV	2.95 kV	2.95 kV	2.95 kV
Power-frequency withstand voltage Voltage waveform ≥ (50/60 Hz)	1.39 kV	1.39 kV	1.39 kV	1.39 kV
Thermal tests (C)				
Tested number of positions	20	20	20	10
Tested conductor cross section	1.5 mm²	1.5 mm²	1.5 mm²	1.5 mm²
Test current	8 A DC	8 A	8 A DC	8 A DC
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)	2.95 kV	2.95 kV	2.95 kV	2.95 kV
Power-frequency withstand voltage Voltage waveform ≥ (50/60 Hz)	1.39 kV	1.39 kV	1.39 kV	1.39 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

1843855 MC 1,5/ 8-GF-3,5







MC 1,5/..-GF	MCVR 1,5/..-STF	MCVW 1,5/..-STF		
IEC 61984	IEC 61984	IEC 61984		
Mechanical tests (A)				
Insertion/withdrawal force per position	approx. 11 N / 8 N	approx. 11 N / 8 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 R_1 1st level	3.5 mΩ	3.5 mΩ		
Contact resistance R_1 2nd level				
Insertion/withdrawal cycles	25	25		
Contact resistance R_2	3.6 mΩ	3.6 mΩ		
Rated impulse voltage at sea level Voltage waveform ≥ (1.2/50 µs)	2.95 kV	2.95 kV		
Power-frequency withstand voltage Voltage waveform ≥ (50/60 Hz)	1.39 kV	1.39 kV		
Thermal tests (C)				
Tested number of positions	16	16		
Tested conductor cross section	1.5 mm²	1.5 mm²		
Test current	8 A	8 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	105 °C/168 h	105 °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		
Rated impulse voltage at sea level Voltage waveform ≥ (1.2/50 µs)	2.95 kV	2.95 kV		
Power-frequency withstand voltage Voltage waveform ≥ (50/60 Hz)	1.39 kV	1.39 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		