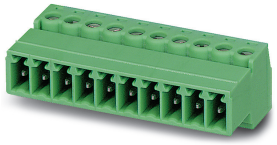
# Printed-circuit board connector - IMC 1,5/12-ST-3,81 - 1857980

Please be informed that the data shown in this PDF Document is generated from our Online Catalog. Please find the complete data in the user's documentation. Our General Terms of Use for Downloads are valid (http://phoenixcontact.com/download)



The figure shows a 10-position version of the product

PCB connector, nominal cross section: 1.5 mm², color: green, nominal current: 8 A, rated voltage (III/2): 160 V, contact surface: Tin, type of contact: Male connector, number of potentials: 12, Number of rows: 1, Number of positions per row: 12, number of connections: 12, product range: IMC 1,5/..-ST, pitch: 3.81 mm, connection method: Screw connection with tension sleeve, screw head form: L Slotted, conductor/PCB connection direction: 0 °, plug-in system: MINI COMBICON, Locking: without, mounting: without, type of packaging: packed in cardboard

## Your advantages

- Well-known connection principle allows worldwide use
- Low temperature rise, thanks to maximum contact force
- Inverted connector with pin contacts for touch-proof device outputs or free-hanging cable/cable connections
- Allows connection of two conductors


## Key Commercial Data

| | |
|---|---|
| Packing unit | 50 pc |
| Minimum order quantity | 50 pc |
| GTIN | 4 017918 144227 |
| GTIN | 4017918144227 |
| Weight per Piece (excluding packing) | 9.540 g |
| Custom tariff number | 85366990 |
| Country of origin | Poland |
| Sales Key | AAAEAA |

## Technical data

### Item properties

| | |
|---|---|
| Brief article description | Printed-circuit board connector |
| Connector system | MINI COMBICON |
| Type of contact | Male connector |
| Range of articles | IMC 1,5/..-ST |
| Pitch | 3.81 mm |
| Number of positions | 12 |

# Printed-circuit board connector - IMC 1,5/12-ST-3,81 - 1857980

## Technical data

### Item properties

| | |
|---|---|
| Drive form screw head | Slotted (L) |
| Screw thread | M2 |
| Locking | without |
| Number of rows | 1 |
| Number of connections | 12 |
| Number of potentials | 12 |

### Electrical parameters

| | |
|---|---|
| Nominal current | 8 A |
| Nom. voltage | 160 V |
| Rated voltage (III/3) | 160 V |
| Rated voltage (III/2) | 160 V |
| Rated voltage (II/2) | 320 V |
| Rated surge voltage (III/3) | 2.5 kV |
| Rated surge voltage (III/2) | 2.5 kV |
| Rated surge voltage (II/2) | 2.5 kV |

### Connection capacity

| | |
|---|---|
| Connection method | Screw connection with tension sleeve |
| pluggable | Yes |
| Conductor cross section solid | 0.14 mm² ... 1.5 mm² |
| Conductor cross section flexible | 0.14 mm² ... 1.5 mm² |
| Conductor cross section AWG / kcmil | 28 ... 16 |
| Conductor cross section flexible, with ferrule without plastic sleeve | 0.25 mm² ... 1.5 mm² |
| Conductor cross section, flexible, with ferrule, with plastic sleeve | 0.25 mm² ... 0.5 mm² |
| 2 conductors with same cross section, solid | 0.08 mm² ... 0.5 mm² |
| 2 conductors with same cross section, flexible | 0.08 mm² ... 0.75 mm² |
| 2 conductors with same cross section, flexible, with ferrule without plastic sleeve | 0.2 mm² ... 0.34 mm² |
| 2 conductors with the same cross section, flexible, with TWIN ferrule with plastic sleeve | 0.5 mm² ... 0.5 mm² |
| Cylindrical gauge a x b / diameter | 2.4 mm x 1.5 mm / 1.9 mm |
| Stripping length | 7 mm |
| Torque | 0.22 Nm ... 0.25 Nm |

### Flange specifications

| | |
|---|---|
| Type of locking | without |

### Material data - contact

| | |
|---|---|
| Note | WEEE/RoHS-compliant, free of whiskers according to IEC 60068-2-82/ JEDEC JESD 201 |
| Contact material | Cu alloy |
| Surface characteristics | Tin-plated |
| Metal surface terminal point (top layer) | Tin (5 - 7 µm Sn) |

# Printed-circuit board connector - IMC 1,5/12-ST-3,81 - 1857980

## Technical data

### Material data - contact

| | |
|---|---|
| Metal surface terminal point (middle layer) | Nickel (2 - 3 µm Ni) |
| Metal surface contact area (top layer) | Tin (5 - 7 µm Sn) |
| Metal surface contact area (middle layer) | Nickel (2 - 3 µm Ni) |

### Material data - housing

| | |
|---|---|
| Housing color | green (6021) |
| Insulating material | PA |
| Insulating material group | I |
| CTI according to IEC 60112 | 600 |
| Flammability rating according to UL 94 | V0 |
| 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 |

### Dimensions for the product

| | |
|---|---|
| Caption | Schematische Abbildung - weitere Details siehe Produktfamilienzeichnung im Download Center |
| Length [ l ] | 18.45 mm |
| Width [ w ] | 46.51 mm |
| Height [ h ] | 11.1 mm |
| Pitch | 3.81 mm |
| Height (without solder pin) | 11.1 mm |

### Packaging information

| | |
|---|---|
| Type of packaging | packed in cardboard |
| Pieces per package | 50 |
| Denomination packing units | Pcs. |

### Ambient conditions

| | |
|---|---|
| Ambient temperature (storage/transport) | -40 °C ... 70 °C |
| Relative humidity (storage/transport) | 30 % ... 70 % |
| Ambient temperature (assembly) | -5 °C ... 100 °C |
| Ambient temperature (operation) | -40 °C ... 100 °C (dependent on the derating curve) |

### Termination and connection method

| | |
|---|---|
| Test for conductor damage and slackening | IEC 60999-1:1999-11 |
| | Test passed |

### Pull-out test

| | |
|---|---|
| Pull-out test | IEC 60999-1:1999-11 |
| Conductor cross section / conductor type / tensile force | 0.14 mm² / solid / > 7 N |
| | 0.14 mm² / flexible / > 7 N |
| | 1.5 mm² / solid / > 40 N |
| | 1.5 mm² / flexible / > 40 N |

# Printed-circuit board connector - IMC 1,5/12-ST-3,81 - 1857980

## Technical data

### Mechanical tests according to standard

| | |
|---|---|
| Test specification | IEC 61984 |
| Visual inspection | IEC 60512-1-1:2002-02 |
| Dimension check | IEC 60512-1-2:2002-02 |
| Resistance of inscriptions | IEC 60068-2-70:1995-12 |
| Insertion and withdrawal force | IEC 60512-13-2:2006-02 |
| No. of cycles | 25 |
| Insertion strength per pos. approx. | 7 N |
| Withdraw strength per pos. approx. | 4 N |
| Polarization and coding | IEC 60512-13-5:2006-02 |
| Contact holder in insert | IEC 60512-15-1:2008-05 |
| Test force per pos. | 24 N |

### Air clearances and creepage distances

| | |
|---|---|
| Clearances and creepage distances | IEC 60664-1:2007-04 |
| Specification | IEC 60664-1:2007-04 |
| Minimum clearance - inhomogeneous field (III/3) | 1.5 mm |
| Minimum clearance - inhomogeneous field (III/2) | 1.5 mm |
| Minimum clearance - inhomogeneous field (II/2) | 1.5 mm |
| Minimum creepage distance value (III/3) | 2 mm |
| Minimum creepage distance value (III/2) | 1.5 mm |
| Minimum creepage distance value (II/2) | 1.6 mm |
| Note on connection cross section | With connected conductor 1.5 mm² . |

### Current carrying capacity / derating curves

| | |
|---|---|
| Caption | Type: IMC 1,5/...-ST-3,81 with IMC 1,5/...-G-3,81 |

### Mechanical tests (A)

| | |
|---|---|
| Test specification | IEC 61984 |
| Insertion strength per pos. approx. | 7 N |
| Withdraw strength per pos. approx. | 4 N |
| Polarization when inserted requirement >20 N | Test passed |
| Contact holder in insert requirements >20 N | Test passed |

### Durability tests (B)

| | |
|---|---|
| Specification | IEC 60512-9-1:2010-03 |
| Contact resistance $R_1$ | 2 mΩ |
| Insertion/withdrawal cycles | 25 |
| Contact resistance $R_2$ | 2.1 mΩ |
| Impulse withstand voltage at sea level | 2.95 kV |
| Insulation resistance, neighboring positions | > 5 MΩ |

### Thermal tests (C)

| | |
|---|---|
| Specification | IEC 60512-5-1:2002-02 |

# Printed-circuit board connector - IMC 1,5/12-ST-3,81 - 1857980

## Technical data

### Thermal tests (C)

| | |
|---|---|
| Number of positions | 16 |
| Upper limiting temperature requirements <100 °C | Test passed |

### Climatic tests (D)

| | |
|---|---|
| Specification | ISO 6988:1985-02 |
| Cold stress | -40 °C/2 h |
| Thermal stress | 100 °C/168 h |
| Corrosive stress | 0.2 $dm^3$ $SO_2$ on 300 $dm^3$/40 °C/1 cycle |
| Impulse withstand voltage at sea level | 2.95 kV |
| Power-frequency withstand voltage | 1.39 kV |

### Environmental and durability tests (E)

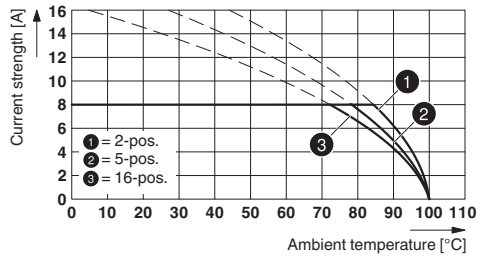
| | |
|---|---|
| Specification | IEC 61984:2008-10 |
| Result, degree of protection, IP code | Finger safety with IP20 test finger |

### Environmental Product Compliance

| | |
|---|---|
| REACh SVHC | Lead 7439-92-1 |
| China RoHS | Environmentally Friendly Use Period = 50 years |
| | For details about hazardous substances go to tab “Downloads”, Category “Manufacturer's declaration” |

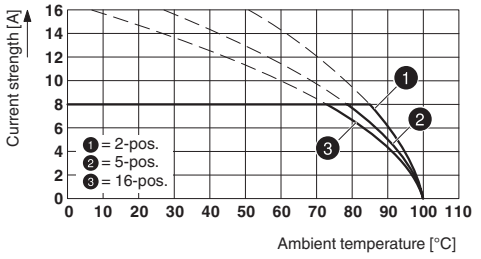
## Drawings

Diagram



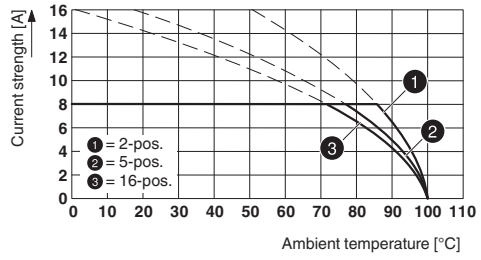

Type: MC 1,5/...-ST-3,81 with IMC 1,5/...-ST-3,81

Diagram



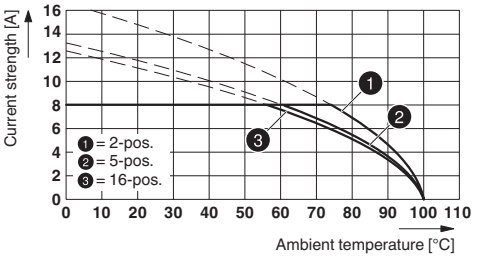

Type: FRONT-MC 1,5/...-ST-3,81 with IMC 1,5/...-ST-3,81

Diagram




Type: FK-MCP 1,5/...-ST-3,81 with IMC 1,5/...-ST-3,81

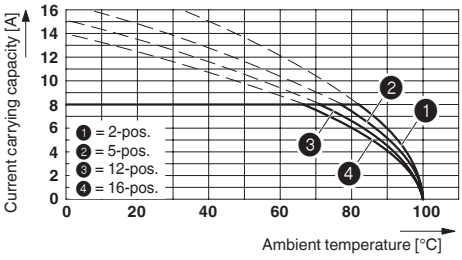
Diagram




Type: MCV(W/R) 1,5/...-STF-3,81 with IMC 1,5/...-ST-3,81

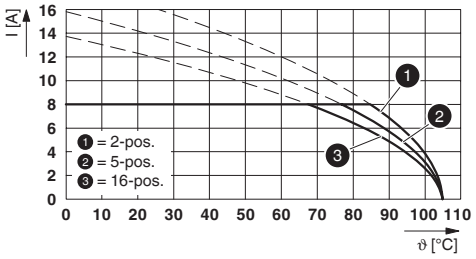
# Printed-circuit board connector - IMC 1,5/12-ST-3,81 - 1857980

Diagram




Type: IMC 1,5/...-ST-3,81 with IMC 1,5/...-G-3,81

Diagram




Type: IMC 1,5/...-ST-3,81 with IMCV 1,5/...-G-3,81

## Classifications

### eCl@ss

| | |
|---|---|
| eCl@ss 10.0.1 | 27440309 |
| eCl@ss 11.0 | 27460202 |
| eCl@ss 4.0 | 27260700 |
| eCl@ss 4.1 | 27260700 |
| eCl@ss 5.0 | 27260700 |
| eCl@ss 5.1 | 27260700 |
| eCl@ss 6.0 | 27260700 |
| eCl@ss 7.0 | 27440309 |
| eCl@ss 9.0 | 27440309 |

### ETIM

| | |
|---|---|
| ETIM 3.0 | EC001121 |
| ETIM 4.0 | EC002638 |
| ETIM 6.0 | EC002638 |
| ETIM 7.0 | EC002638 |

### UNSPSC

| | |
|---|---|
| UNSPSC 6.01 | 30211810 |
| UNSPSC 7.0901 | 39121409 |
| UNSPSC 11 | 39121409 |
| UNSPSC 12.01 | 39121409 |
| UNSPSC 13.2 | 39121409 |
| UNSPSC 18.0 | 39121409 |
| UNSPSC 19.0 | 39121409 |
| UNSPSC 20.0 | 39121409 |
| UNSPSC 21.0 | 39121409 |

## Approvals

### Approvals

# Printed-circuit board connector - IMC 1,5/12-ST-3,81 - 1857980

## Approvals

Approvals

VDE Gutachten mit Fertigungsüberwachung / IECEE CB Scheme / EAC / cULus Recognized

Ex Approvals

## Approval details

| VDE Gutachten mit Fertigungsüberwachung | http://www2.vde.com/de/Institut/Online-Service/VDE-gepruefteProdukte/Seiten/Online-Suche.aspx | 40011723 |
|---|---|---|

| | |
|---|---|
| Nominal voltage UN | 160 V |
| Nominal current IN | 8 A |
| mm²/AWG/kcmil | 0.2-1.5 |

| IECEE CB Scheme | http://www.iecee.org/ | DE1-60987-B1B2 |
|---|---|---|

| | |
|---|---|
| Nominal voltage UN | 160 V |
| Nominal current IN | 8 A |
| mm²/AWG/kcmil | 0.2-1.5 |

| EAC | | B.01687 |
|---|---|---|

| cULus Recognized | http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm | E60425-20110128 |
|---|---|---|

| | B | D |
|---|---|---|
| Nominal voltage UN | 300 V | 300 V |
| Nominal current IN | 8 A | 8 A |
| mm²/AWG/kcmil | 30-14 | 30-14 |

SCATTERGOOD & JOHNSON LTD
ELECTRICAL ENGINEERING & FLUID CONTROL DISTRIBUTORS
Est.1899

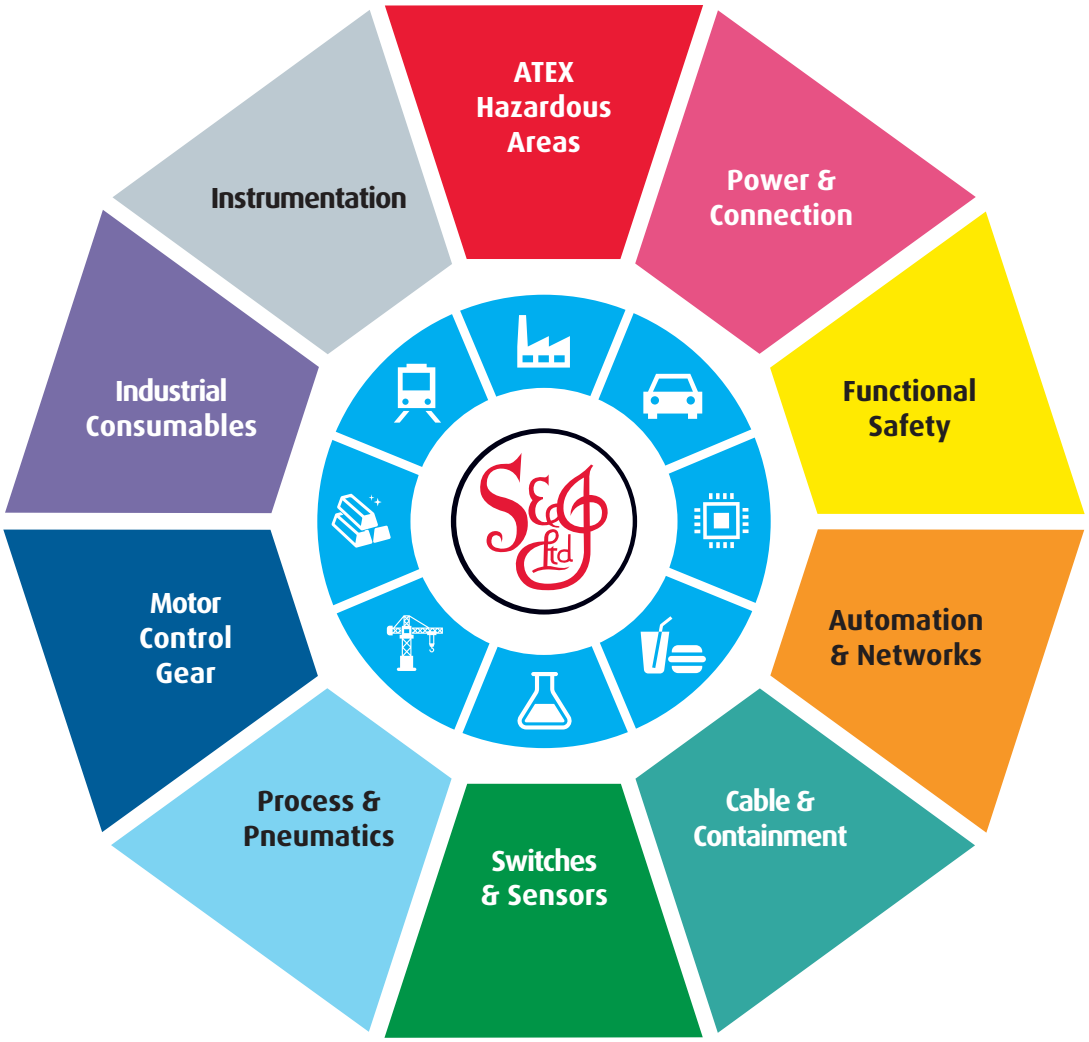
At Scattergood & Johnson Ltd, we pride ourselves on being a technical distributor to specialist industries.

Working with a range of quality product manufacturers across a number of specialist markets, we are not your average 'box shifter' - we are your technical and supply chain partner.

We fully support every product we sell - for free! Our internal team and external sales engineers can answer any product or application question, no matter the complexity.

Backing up this technical ability is a range of 50,000+ products available from stock for nationwide next day delivery (same day if required!), or you can collect what you need from any of our trade counters around the UK.

Select your specialist interest below to learn more about how we can help.




Online, In Branch and On the Road - Scattergood & Johnson Ltd, there when you need us.

**www.scatts.co.uk**