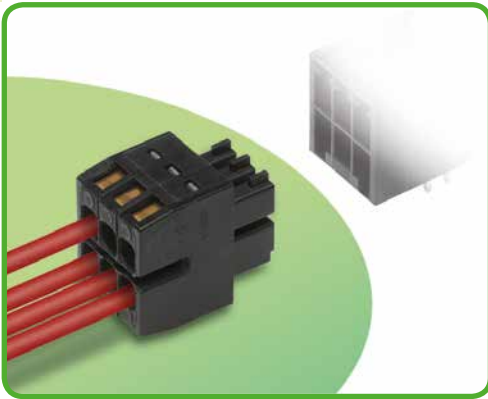


# 4 Female Connectors, Double-Row

## Pin Spacing: 3.5 mm

### MCS MINI HD

282



- Universal connection for all conductor types
- Unique, compact, double-row connector system for conductor cross sections up to 1.5 mm<sup>2</sup>
- High-density, “wire-to-board” connectors for use in very confined spaces
- Centered strain relief plate anchors conductors, while acting as convenient connection and disconnection handle. It also provides easy access to operating slots – even when wired.
- Optional dual-purpose lever doubles as a lock and disconnection aid, while preventing accidental disconnection in closed position
- 100% protected against mismatching, available with coding fingers

#### Technical data:

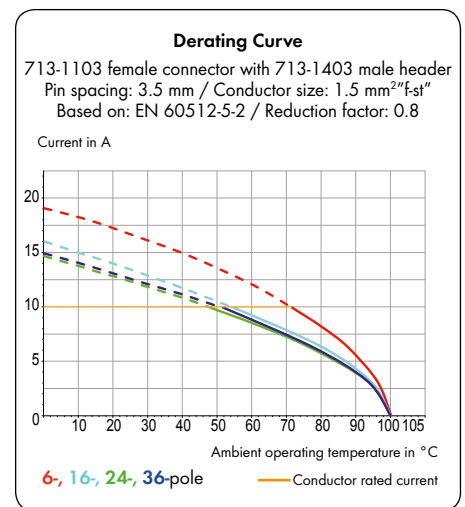
Pin Spacing	3.5 mm 0.138 in.		
Ratings per	IEC/EN 60664-1		
Overtension category	III	III	II
Pollution degree	3	2	2
Rated voltage	80 V	160 V	250 V
Rated surge voltage	2.5 kV	2.5 kV	2.5 kV
Nominal current	10 A	10 A	10 A
Approvals per	UL/CSA		
Use group UL 1059	B	C	D
Rated voltage	150 V	-	-
Nominal current UL	10 A	-	-
Nominal current CSA	10 A	-	-

#### Conductor data:

Connection technology	CAGE CLAMP®
Conductor size: solid	0.08 - 1.5 mm <sup>2</sup>
Conductor size: fine-stranded	0.08 - 1.5 mm <sup>2</sup>
Conductor size: fine-stranded	0.25 - 1.0 mm <sup>2</sup> (with insulated ferrule)
Conductor size: fine-stranded	0.25 - 1.0 mm <sup>2</sup> (with uninsulated ferrule)
AWG	28 - 16
Strip length	6 - 7 mm / 0.24 - 0.28 in.

#### Material data:

Material group	II
Insulating material	Glass fiber-reinforced polyamide 6.6 (PA 6.6-GF)
Flammability rating per UL 94	0V
Lower/Upper limit temperature	-60 °C / +100 °C
Clamping spring material	Chrome nickel spring steel (CrNi)
Contact material	Copper alloy
Contact plating	tin-plated
MCS connectors are also available upon request with gold-plated or partially gold-plated contact surfaces.	
Depending on the version requested, “item no. suffix ... /010-000” is added to the “basic item no.”	



#### MCS MINI HD accessories:

#### Pages:

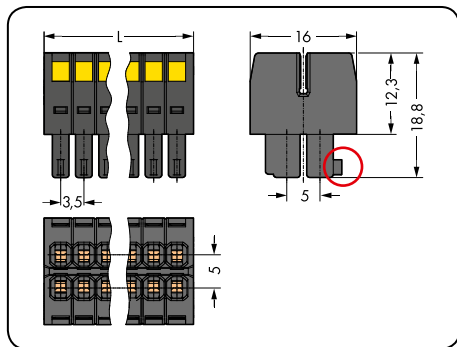
Marking accessories	570 - 573
Operating tools	296
Direct marking	297
Strain relief plates	296

MCS – MULTI CONNECTION SYSTEM includes connectors without breaking capacity in accordance with DIN EN 61984.

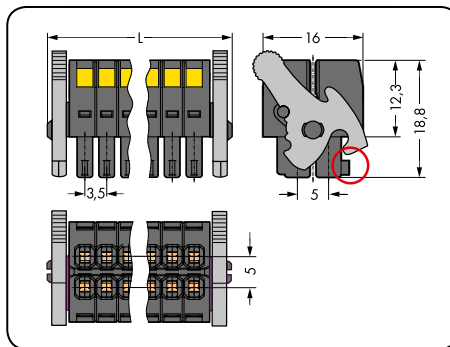
When used as intended, these connectors shall not be connected/disconnected when live or under load. The circuit design should ensure header pins, which can be touched, are not live when unmated.

# Female Connectors, Double-Row MCS MINI HD

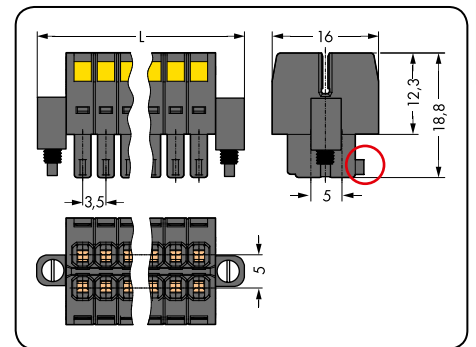
Pin spacing: 3.5 mm / 0.138 in.		With levers Pin spacing: 3.5 mm / 0.138 in.		With screw flanges Pin spacing: 3.5 mm / 0.138 in.	
0.08-1.5 mm <sup>2</sup>	28-16 AWG	0.08-1.5 mm <sup>2</sup>	28-16 AWG	0.08-1.5 mm <sup>2</sup>	28-16 AWG
160 V/2.5 kV/2 10 A	150 V/10 A	160 V/2.5 kV/2 10 A	150 V/10 A	160 V/2.5 kV/2 10 A	150 V/10 A



L = [(pole no./2) - 1] x pin spacing + 5.2 mm  
 ○ Coding finger



L = [(pole no./2) - 1] x pin spacing + 12.2 mm



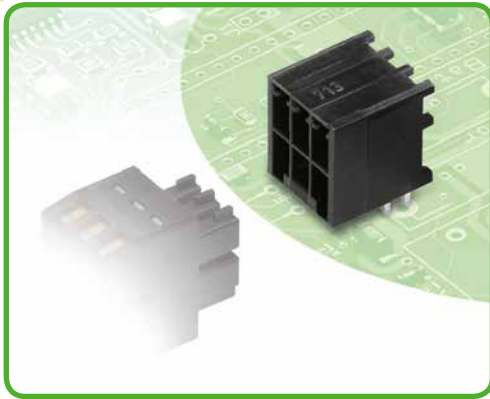
L = [(pole no./2) - 1] x pin spacing + 13.6 mm

Pole No.	Item No.	Pack. Unit	Pole No.	Item No.	Pack. Unit	Pole No.	Item No.	Pack. Unit
Female connector, double-row, black			Female connector with levers, double-row, black			Female connector with screw flanges, double-row, black		
6 (3x2)	713-1103	100	6 (3x2)	713-1103/037-000	50	6 (3x2)	713-1103/107-000	50
8 (4x2)	713-1104	50	8 (4x2)	713-1104/037-000	50	8 (4x2)	713-1104/107-000	50
10 (5x2)	713-1105	50	10 (5x2)	713-1105/037-000	50	10 (5x2)	713-1105/107-000	25
12 (6x2)	713-1106	50	12 (6x2)	713-1106/037-000	25	12 (6x2)	713-1106/107-000	25
14 (7x2)	713-1107	50	14 (7x2)	713-1107/037-000	25	14 (7x2)	713-1107/107-000	25
16 (8x2)	713-1108	25	16 (8x2)	713-1108/037-000	25	16 (8x2)	713-1108/107-000	25
18 (9x2)	713-1109	25	18 (9x2)	713-1109/037-000	25	18 (9x2)	713-1109/107-000	25
20 (10x2)	713-1110	25	20 (10x2)	713-1110/037-000	20	20 (10x2)	713-1110/107-000	20
22 (11x2)	713-1111	25	22 (11x2)	713-1111/037-000	20	22 (11x2)	713-1111/107-000	20
24 (12x2)	713-1112	25	24 (12x2)	713-1112/037-000	20	24 (12x2)	713-1112/107-000	20
26 (13x2)	713-1113	25	26 (13x2)	713-1113/037-000	20	26 (13x2)	713-1113/107-000	20
28 (14x2)	713-1114	20	28 (14x2)	713-1114/037-000	20	28 (14x2)	713-1114/107-000	20
30 (15x2)	713-1115	20	30 (15x2)	713-1115/037-000	20	30 (15x2)	713-1115/107-000	20
32 (16x2)	713-1116	20	32 (16x2)	713-1116/037-000	20	32 (16x2)	713-1116/107-000	10
34 (17x2)	713-1117	20	34 (17x2)	713-1117/037-000	10	34 (17x2)	713-1117/107-000	10
36 (18x2)	713-1118	20	36 (18x2)	713-1118/037-000	10	36 (18x2)	713-1118/107-000	10

# Male Headers with Solder Pins, Double-Row

## Pin Spacing: 3.5 mm

### MCS MINI HD



- Male headers may be mounted horizontally or vertically via straight or angled solder pins
- Header housing is molded of THR-compatible insulation material for lead-free reflow soldering
- Separated pin slots prevent damage and make the headers touch-proof when unplugged
- 100% protected against mismatching
- Coding pins available

#### Technical data:

Pin Spacing	3.5 mm		
	0.138 in.		
Ratings per	IEC/EN 60664-1		
Overtoltage category	III	III	II
Pollution degree	3	2	2
Rated voltage	80 V	160 V	250 V
Rated surge voltage	2.5 kV	2.5 kV	2.5 kV
Nominal current	10 A	10 A	10 A
Approvals per	UL/CSA		
Use group UL 1059	B	C	D
Rated voltage	150 V	-	-
Nominal current UL	10 A	-	-
Nominal current CSA	12 A	-	-

#### Solder pin data:

Solder pin: length/width	3.8 mm / 0.8 x 0.8 mm
Solder pin: drilled hole diameter	1.2 <sup>+0.1</sup> mm
For other pin lengths, please contact factory.	

#### Material data:

Material group	I
Insulating material	Glass-fiber-reinforced polyphthalamide (PPA-GF)
Flammability rating per UL 94	0V
Lower/Upper limit temperature	-60 °C / +100 °C
Contact material	Electrolytic copper (E <sub>C1</sub> )
Contact plating	tin-plated
MCS connectors are also available upon request with gold-plated or partially gold-plated contact surfaces.	
Depending on the version requested, "item no. suffix ... /010-000" is added to the "basic item no."	

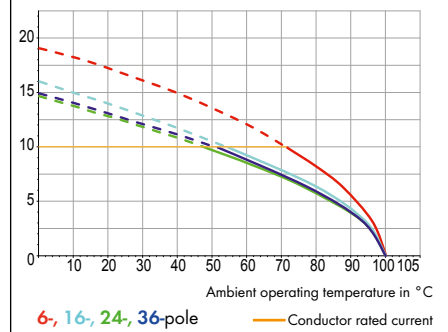
MCS – MULTI CONNECTION SYSTEM includes connectors without breaking capacity in accordance with DIN EN 61984.

When used as intended, these connectors shall not be connected/disconnected when live or under load. The circuit design should ensure header pins, which can be touched, are not live when unmated.

#### Derating Curve

713-1103 female connector with 713-1403 male header  
Pin spacing: 3.5 mm / Conductor size: 1.5 mm<sup>2</sup> "Est"  
Based on: EN 60512-5-2 / Reduction factor: 0.8

Current in A



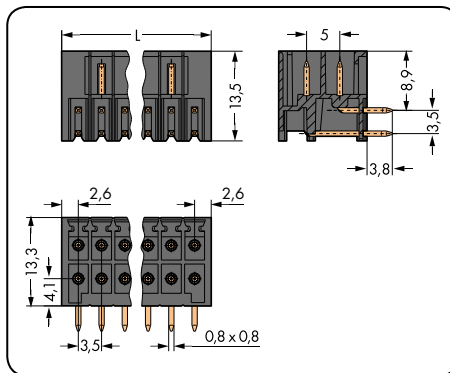
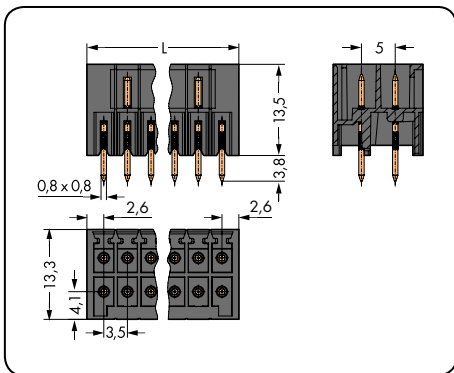
#### MCS MINI HD accessory:

Page:

Coding pin carrier	297

# Male Headers with Solder Pins, Double-Row MCS MINI HD

With straight solder pins Pin spacing: 3.5 mm / 0.138 in.		With angled solder pins Pin spacing: 3.5 mm / 0.138 in.	
160 V/2.5 kV/2 10 A	150 V/10 A	160 V/2.5 kV/2 10 A	150 V/10 A



$$L = [(\text{pole no.}/2) - 1] \times \text{pin spacing} + 5.2 \text{ mm}$$

Pole No.	Item No.	Pack. Unit	Pole No.	Item No.	Pack. Unit
<b>Male header with straight solder pins, double-row, black</b>			<b>Male header with angled solder pins, double-row, black</b>		
6 (3x2)	713-1403	100	6 (3x2)	713-1423	100
8 (4x2)	713-1404	50	8 (4x2)	713-1424	50
10 (5x2)	713-1405	50	10 (5x2)	713-1425	50
12 (6x2)	713-1406	50	12 (6x2)	713-1426	50
14 (7x2)	713-1407	50	14 (7x2)	713-1427	50
16 (8x2)	713-1408	25	16 (8x2)	713-1428	25
18 (9x2)	713-1409	25	18 (9x2)	713-1429	25
20 (10x2)	713-1410	25	20 (10x2)	713-1430	25
22 (11x2)	713-1411	25	22 (11x2)	713-1431	25
24 (12x2)	713-1412	25	24 (12x2)	713-1432	25
26 (13x2)	713-1413	25	26 (13x2)	713-1433	25
28 (14x2)	713-1414	20	28 (14x2)	713-1434	20
30 (15x2)	713-1415	20	30 (15x2)	713-1435	20
32 (16x2)	713-1416	20	32 (16x2)	713-1436	20
34 (17x2)	713-1417	20	34 (17x2)	713-1437	20
36 (18x2)	713-1418	20	36 (18x2)	713-1438	20

# 4 Accessories

## Strain Relief Plates and Operating Tool

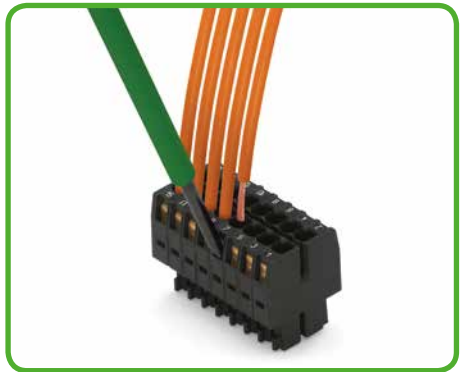
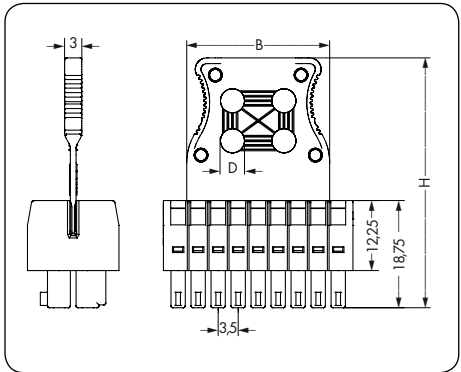
### MCS MINI HD

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<b>Strain relief plates for in-the-field assembly</b>  for female connectors with CAGE CLAMP®	<b>Strain relief plates, factory-assembled</b>  for female connectors with CAGE CLAMP®	<b>Operating tool</b>  with partially insulated shaft Type 1
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Width	Item No.	Pack. Unit	Width	Pole No.	Item No. Suffix:	Color	Item No.	Pack. Unit
<b>Strain relief plate, black</b>			<b>Strain relief plate, pre-assembled</b>			<b>Operating tool with partially insulated shaft, type 1, (2.5 x 0.4) mm blade</b>		
11 mm	<b>713-126</b>	100 (4 x 25)	11 mm	6-12	.../032-000		<b>210-719</b>	1
25 mm	<b>713-127</b>	100 (4 x 25)	25 mm	14-20	.../033-000			
39 mm	<b>713-128</b>	100 (4 x 25)	39 mm	22-28	.../034-000			
53 mm	<b>713-129</b>	100 (4 x 25)	53 mm	30-36	.../035-000			
			<b>Ordering example:</b>					
			Female connector, 3.5 mm pin spacing, 20-pole, black with strain relief plate: <b>713-1110/033-000</b>					
			An "item no. suffix", referring to the width of the strain relief plate, is added to the "basic item no." and determines the type of female connector.					



The arrangement of the attachments for cable ties allows single conductors or multi-core cables to be secured in different ways.

The width of the cable tie must correspond to the hole dimensions in the drawing for the strain relief plates.

WAGO does not offer the recommended cable ties and cable binding tools; those are available from suppliers such as Hellermann.

Pole No.	B	H	D
6-12	11	38.7	3
14-20	25	43.7	4.2
22-28	39	48.7	4.2
30-36	53	54.2	4.9

# Accessories

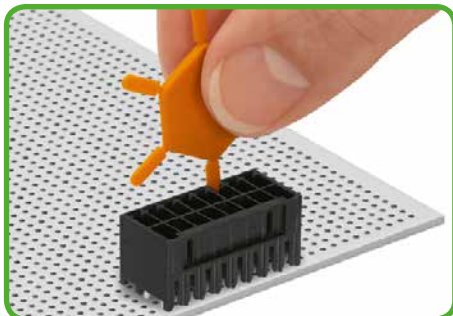
## Coding Pin Carrier and Direct Marking

### MCS MINI HD

<p><b>Coding pin carrier</b></p> <p>for male headers</p>	<p><b>Direct marking</b></p> <p><b>MCS MINI HD</b></p>	<p><b>Direct marking</b></p> <p><b>1 – pole no.</b></p> <p>of female connectors for conductor termination</p>
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Item No.	Pack. Unit	Direct Marking MCS MINI HD	Marking Perpendicular to Conductor Entry Item No. Suffix: /... - 047
<b>Coding pin carrier with six coding pins</b>			<b>Ordering examples:</b>
<b>714-101</b>	100 (4 x 25)	<p>713 Series female connectors can be marked with "1 – pole no." via factory direct printing</p> <p>Two standard marking orientations are available:</p> <ol style="list-style-type: none"> <li>1. Marking perpendicular to conductor entry</li> <li>2. Marking parallel to conductor entry</li> </ol> <p>Other custom marking options are available upon request.</p> <p>WAGO recommends pole marking on the PCB for 713 Series male headers.</p> <p>The marking type is always defined by the second 4-digit block of the item no. suffix for items with standard colors and materials.</p> <p><b>Example: 713-1110/. . . - xxxx</b> xxxx = Item no. suffix for direct pole marking</p>	<p><b>Female connector, double-row,</b> 3.5 mm pin spacing, 16-pole, black: <b>713-1108/000-0047</b></p> <p><b>Female connector with screw flanges, double-row,</b> 3.5 mm pin spacing, 16-pole, black: <b>713-1108/000-0047</b></p> <p><b>Female connector with levers and strain relief plate, double-row,</b> 3.5 mm pin spacing, 16-pole, black: <b>713-1108/037-047/033-000</b></p>



Coding a male header.



Coding a female connector.

**Marking parallel with Conductor Connection**  
Additional Item No.: /... - 9037

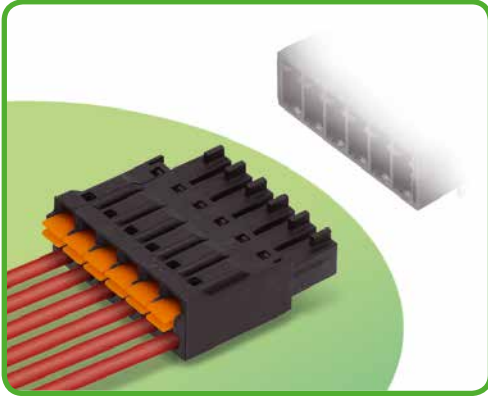
Ordering examples:
<p><b>Female connector, double-row,</b> 3.5 mm pin spacing, 16-pole, black: <b>713-1108/000-9037</b></p>
<p><b>Female connector with levers, double-row,</b> 3.5 mm pin spacing, 16-pole, black: <b>713-1108/037-9037</b></p>
<p><b>Female connector with strain relief plate, double-row,</b> 3.5 mm pin spacing, 16-pole, black: <b>713-1108/033-9037</b></p>

# 4 Female Connectors with Push-Buttons

## Pin Spacing: 3.5 mm

### MCS MINI SL

300



- Female connectors terminate both solid and ferruled, fine-stranded conductors via simple push-in terminations.
- Integrated push-buttons provide convenient, tool-free operation
- Ultra-low profile at just 7.8 mm, for conductor size up to 1.5 mm<sup>2</sup>
- Coding and testing options available

#### Technical data:

Pin Spacing	3.5 mm 0.138 in.		
Rating per	IEC/EN 60664-1		
Overvoltage category	III	III	II
Pollution degree	3	2	2
Rated voltage	160 V	160 V	320 V
Rated surge voltage	2.5 kV	2.5 kV	2.5 kV
Nominal current	8 A	8 A	8 A
Approvals per	UL/CSA		
Use group UL 1059	B	C	D
Rated voltage	150 V	-	-
Nominal current UL	8 A	-	-
Nominal current CSA	-	-	-

#### Conductor data:

Connection technology	CAGE CLAMP® S
Conductor size: solid	0.2-1.5 mm <sup>2</sup>
Conductor size: fine-stranded	0.2-1.5 mm <sup>2</sup>
Conductor size: fine-stranded	0.25-0.75 mm <sup>2</sup> (with insulated ferrule)
Conductor size: fine-stranded	0.25-1.5 mm <sup>2</sup> (with uninsulated ferrule)
AWG	24-16
Strip length	9-10 mm / 0.35-0.39 in.

#### Material data:

Material group	I
Insulating material	Polyamide 6.6 (PA 6.6)
Temperature stability	-60 °C to +100 °C
Flammability rating per UL 94	0V
Clamping spring material	Chrome nickel spring steel (CrNi)
Contact material	Copper alloy
Contact plating	tin-plated

#### MCS MINI SL accessories:

#### Pages:

Marking accessories	570 - 573
Operating tool	301
Direct marking	301
Test pin	568

MCS – MULTI CONNECTION SYSTEM includes connectors without breaking capacity in accordance with DIN EN 61984.

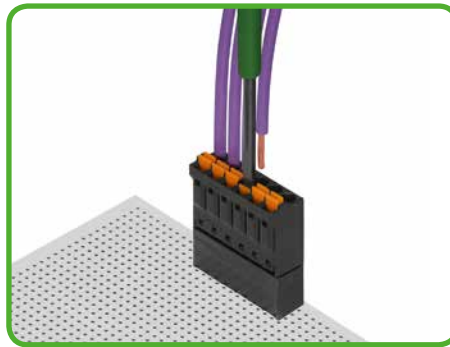
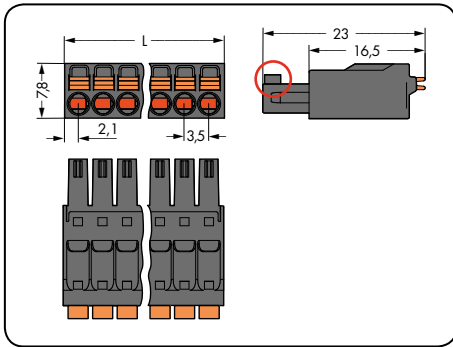
When used as intended, these connectors shall not be connected/disconnected when live or under load. The circuit design should ensure header pins, which can be touched, are not live when unmated.

# Female Connectors with Push-Buttons MCS MINI SL

<p><b>Pin spacing: 3.5 mm / 0.138 in.</b></p> <p>0.2-1.5 mm<sup>2</sup>   24-16 AWG 160 V/2.5 kV/2 8 A   150 V/8 A</p>	<p><b>Operating tool (screwdriver), with partially insulated shaft, for female connectors</b></p>	<p><b>Direct marking 1 - pole no.</b></p> <p>of female connectors for conductor termination</p>
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Pole No.	Item No.	Pack. Unit	Color	Item No.	Pack. Unit	Marking Perpendicular to Conductor Entry Item No. Suffix: /... - 047
Female connector with push-buttons, black			Operating tool (screwdriver), with partially insulated shaft, type 1, (2.5 x 0.4) mm blade			<b>Ordering example:</b>
2	714-102	200		210-719	1	Female connector with push-buttons, 3.5 mm pin spacing, 6-pole, black: 714-106/000-047
3	714-103	200				
4	714-104	200				
5	714-105	100				
6	714-106	100				
8	714-108	100				
10	714-110	100				
12	714-112	100				
14	714-114	50				
15	714-115	50				
16	714-116	50				



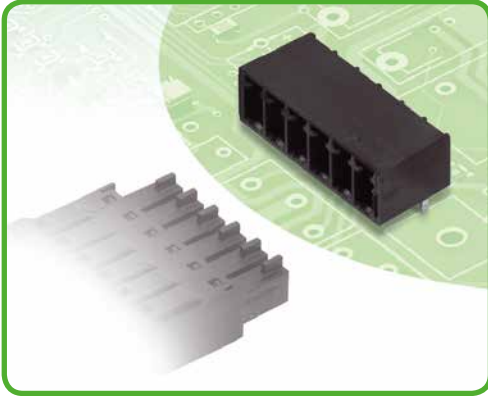
L = (pole no. - 1) x pin spacing + 4.2 mm  
 ○ Coding finger



# Male Headers with Solder Pins

## Pin Spacing: 3.5 mm

### MCS MINI SL



- Male headers may be mounted horizontally or vertically via straight or angled solder pins
- Header housing is molded of THR-compatible insulation material for reflow soldering
- Separated pin slots prevent damage and make the headers touch-proof when unplugged
- Coding pins available

**Technical data:**

Pin Spacing	3.5 mm 0.138 in.		
Rating per	IEC/EN 60664-1		
Overtoltage category	III	III	II
Pollution degree	3	2	2
Rated voltage	160 V	160 V	320 V
Rated surge voltage	2.5 kV	2.5 kV	2.5 kV
Nominal current	8 A	8 A	8 A
Approvals per	UL/CSA		
Use group UL 1059	B	C	D
Rated voltage	150 V	-	-
Nominal current UL	8 A	-	-
Nominal current CSA	-	-	-

**Solder pin data:**

Solder pin: length/width	3.4 mm / 0.8 x 0.8 mm
Solder pin: drilled hole diameter	1.2 <sup>+0.1</sup> mm

**Material data:**

Material group	I
Insulating material	Glass-fiber-reinforced polyphthalamide (PPA-GF)
Temperature stability	-60 °C to +115 °C
Flammability rating per UL 94	0V
Contact material	Electrolytic copper (E <sub>Cu</sub> )
Contact plating	tin-plated

**MCS MINI SL accessory:**

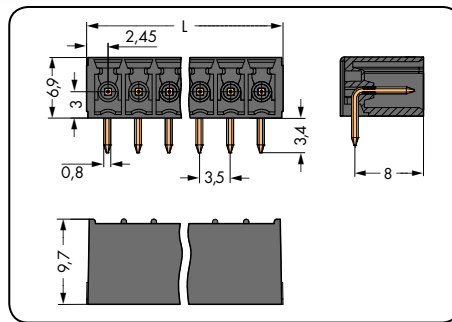
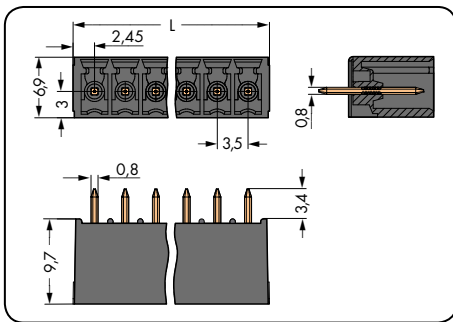
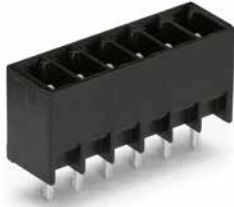
**Page:**

Coding pin carrier	303

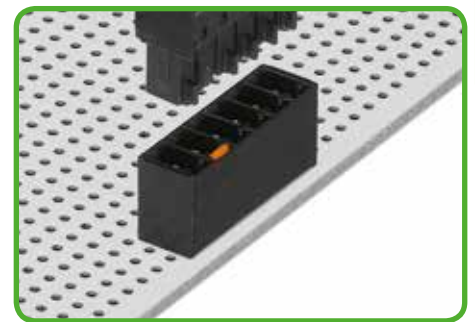
MCS – MULTI CONNECTION SYSTEM includes connectors without breaking capacity in accordance with DIN EN 61984. When used as intended, these connectors shall not be connected/disconnected when live or under load. The circuit design should ensure header pins, which can be touched, are not live when unmated.

# Male Headers with Solder Pins MCS MINI SL

<b>With straight solder pins</b> Pin spacing: 3.5 mm / 0.138 in.		<b>With angled solder pins</b> Pin spacing: 3.5 mm / 0.138 in.		<b>Coding pin carrier</b> for male headers
160 V/2.5 kV/2 8 A	150 V/8 A	160 V/2.5 kV/2 8 A	150 V/8 A	



$L = (\text{No. of poles} - 1) \times \text{pin spacing} + 4.9 \text{ mm}$



Pole No.	Item No.	Pack. Unit	Pole No.	Item No.	Pack. Unit	Item No.	Pack. Unit
<b>Male header with straight solder pins, black</b>			<b>Male header with angled solder pins, black</b>			<b>Coding pin carrier with six coding pins</b>	
2	714-132	200	2	714-162	200	714-101	100 (4 x 25)
3	714-133	200	3	714-163	200		
4	714-134	200	4	714-164	200		
5	714-135	200	5	714-165	200		
6	714-136	200	6	714-166	200		
8	714-138	200	8	714-168	200		
10	714-140	100	10	714-170	100		
12	714-142	100	12	714-172	100		
14	714-144	100	14	714-174	100		
15	714-145	100	15	714-175	100		
16	714-146	100	16	714-176	100		