

## COMBICON Direct Plug Connectors ZEC 1 and ZEC 1,5 3.5 / 5.0 and 7.5 mm Pitch

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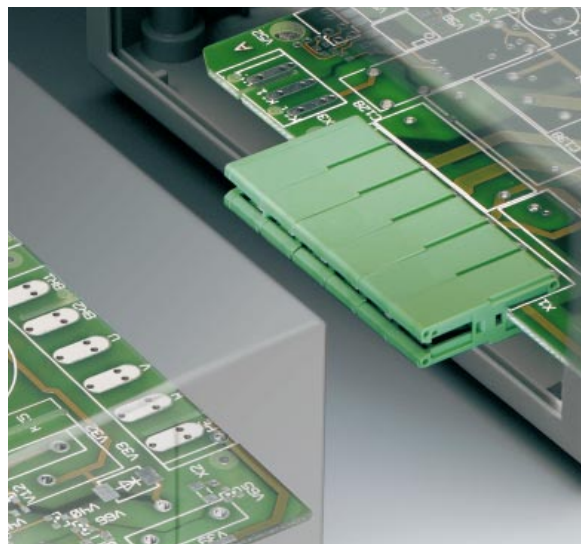
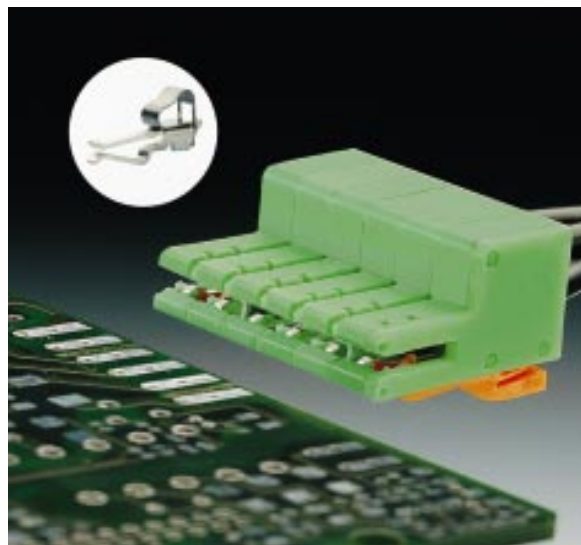
The direct plug connectors ZEC 1 and ZEC 1,5 make contact directly on the p.c.b. without the need for an extra pin strip. The plugs are simply snapped onto the pads at the edge of the 1.6 mm thick p.c.b. The plugs are available with 3.5 mm or 5 and 7.5 mm pitches and can be used for nominal voltages up to 400 V. Currents of up to 10 A can be transmitted through the solid contact springs.

The conductor connection is designed in spring-cage technology that can be accessed from the front with a screwdriver. The terminal compartment can hold solid and flexible conductors up to 1.5 mm<sup>2</sup> (1 mm<sup>2</sup> in case of 3.5 mm pitch) with and without ferrule.

To code the plug components, housings with a solid side element can be inserted at any position (standard pos. 2, individual coding on request). An appropriate slit has to be cut on the p.c.b. at this position. This combination guarantees that the plug cannot be inserted incorrectly or the poles reversed.

With the aid of two spring engagement latches, the plugs can be locked onto the p.c.b. All that is needed are two holes at the appropriate positions on the p.c.b. The plug is labeled with the self-adhesive marker cards SK 3,5/2,8, SK 5/3,8 or SK 7,5/3,8 (see COMBICON catalog).

The printed circuit board connectors are used to connect panted circuit boards to each other. If, for example, you want to connect a motor filter to a frequency converter, you simply plug it in. The external connection - i.e. the ZEC direct plug - then changes over to the auxiliary device. Mechanical forces have to be constructively absorbed via the housings of the devices.




# ZEC 1,0/...-ST-3,5 3.5 mm Pitch

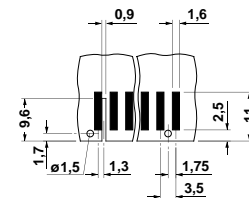
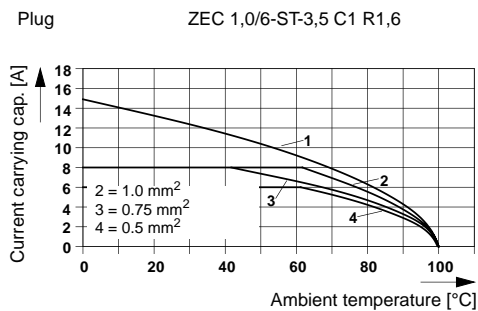


### Note:

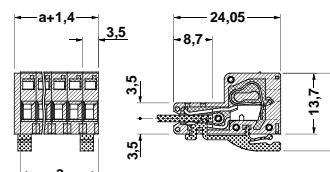
Only actuate COMBICON plug connectors when under no load condition. If for operating reasons small loads must be switched, experimental values are available upon request.

Description	No. of pos.	Dim. a [mm]	Type	Order No.	Pcs./Pkt.
<b>Direct plug connector, 3.5 mm pitch,</b> Color: green	2	7	<b>ZEC 1,0/2-ST-3,5 C1 R1</b>	<b>18 93 68 5</b>	50
	3	10.5	<b>ZEC 1,0/3-ST-3,5 C1 R1,3</b>	<b>18 93 69 8</b>	
	4	14	<b>ZEC 1,0/4-ST-3,5 C1 R1,4</b>	<b>18 93 70 8</b>	
	5	17.5	<b>ZEC 1,0/5-ST-3,5 C1 R1,5</b>	<b>18 93 71 1</b>	
	6	21	<b>ZEC 1,0/6-ST-3,5 C1 R1,6</b>	<b>18 93 72 4</b>	
	7	24.5	<b>ZEC 1,0/7-ST-3,5 C1 R1,7</b>	<b>18 93 73 7</b>	
	8	28	<b>ZEC 1,0/8-ST-3,5 C1 R1,8</b>	<b>18 93 74 0</b>	
	9	31.5	<b>ZEC 1,0/9-ST-3,5 C1 R1,9</b>	<b>18 93 75 3</b>	
	10	35	<b>ZEC 1,0/10-ST-3,5 C1 R1,10</b>	<b>18 93 76 6</b>	
	11	38.5	<b>ZEC 1,0/11-ST-3,5 C1 R1,11</b>	<b>18 93 77 9</b>	
	12	42	<b>ZEC 1,0/12-ST-3,5 C1 R1,12</b>	<b>18 93 78 2</b>	
(1) <b>Screwdriver,</b> Blade: 0.4 x 2.5 x 75 mm, Length: 160 mm,			<b>SZF 0-0,4 x 2,5</b>	<b>12 04 50 4</b>	
(2) <b>Marker card,</b> with 14 pcs., 10-section marker strips, white, self-adhesive, for 140 terminal blocks			<b>SK 3,5/2,8</b> (see COMBICON catalog)		
<b>Technical data</b>			see description		
Dimensions			3.5		
Pitch			3.5		
<b>Technical data in acc. with IEC / DIN VDE</b>					
Insulating material group			I		
Surge voltage category / contamination class			III / 3 III / 2 II / 2		
Rated voltage			160 200 320		
Rated surge voltage			2.5 2.5 2.5		
Nominal current / cross section			8 / 1		
Maximum load current / cross section			8 / 1		
<b>Capacity connection</b>					
Solid / stranded / conductor sizes			0.2 - 1.0 / 0.2 - 1.0 / 24 - 16		
Stranded with ferrule without / with plastic sleeve			0.34 - 1 / 0.25 - 0.75		
Stripping length			7		
<b>Insulating material</b>					
Inflammability class in acc. with UL 94			PA V0		
<b>Approval data (UL/CUL and CSA)</b>					
Nominal voltage / current / conductor sizes			300 / 10 / 26 - 16		
UL/CUL: [V]/[A]/AWG			--		
CSA: [V]/[A]/AWG			--		

### Current carrying capacity depending on the ambient temperature 1 = base curve



Size of the p.c.b.: 1.6 ±0.2 mm.



# ZEC 1,0/...-LPV-3,5 3.5 mm Pitch



**Note:**

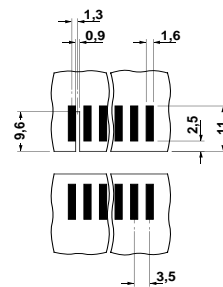
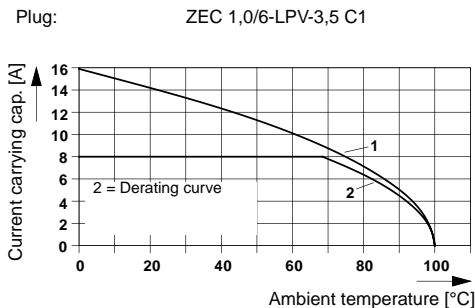
Only actuate COMBICON plug connectors when under no load condition. If for operating reasons small loads must be switched, experimental values are available upon request.

Description	No. of pos.	Dim. a [mm]	Type	Order No.	Pcs./Pkt.
<b>P.C.B. connector, 3.5 mm pitch,</b> Color: green					
	2	7	ZEC 1,0/2-LPV-3,5 C1	19 15 65 7	50
	3	10.5	ZEC 1,0/3-LPV-3,5 C1	19 15 66 0	
	4	14	ZEC 1,0/4-LPV-3,5 C1	19 15 67 3	
	5	17.5	ZEC 1,0/5-LPV-3,5 C1	19 15 68 6	
	6	21	ZEC 1,0/6-LPV-3,5 C1	19 15 69 9	
	7	24.5	ZEC 1,0/7-LPV-3,5 C1	19 15 70 9	
	8	28	ZEC 1,0/8-LPV-3,5 C1	19 15 71 2	
	9	31.5	ZEC 1,0/9-LPV-3,5 C1	19 15 72 5	
	10	35	ZEC 1,0/10-LPV-3,5 C1	19 15 73 8	
	11	38.5	ZEC 1,0/11-LPV-3,5 C1	19 15 74 1	
	12	42	ZEC 1,0/12-LPV-3,5 C1	19 15 75 4	

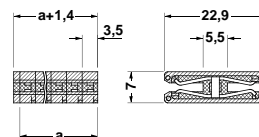
**Technical data**

Dimensions	see description		
Pitch	3.5		
<b>Technical data in acc. with IEC/ DIN VDE</b>			
Insulating material group	I		
Surge voltage category / contamination class	III / 3	III / 2	II / 2
Rated voltage [V]	160	200	320
Rated surge voltage [kV]	2.5	2.5	2.5
Nominal current / cross section [A]/[mm <sup>2</sup> ]	8 / -		
Maximum load current / cross section [A]/[mm <sup>2</sup> ]	8 / -		
<b>Capacity connection</b>			
Solid / stranded / conductor sizes [mm <sup>2</sup> ]/[mm <sup>2</sup> ]/AWG	--		
Stranded with ferrule without / with plastic sleeve [mm <sup>2</sup> ]	--		
<b>Stripping length</b> [mm]	--		
<b>Insulating material</b>		PA	
Inflammability class in acc. with UL 94		V0	
<b>Approval data (UL/CUL and CSA)</b>			
Nominal voltage / current / conductor sizes UL/CUL: [V]/[A]/AWG		--	
CSA: [V]/[A]/AWG		--	

**Current carrying capacity depending on the ambient temperature**  
1 = base curve

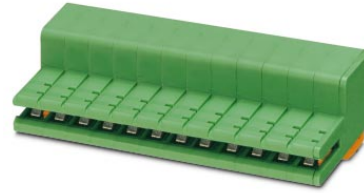


Size of the p.c.b.: 1.6 ± 0.2 mm.



# ZEC 1,5/...-ST-5,0

## 5.0 mm Pitch



### Note:

Only actuate COMBICON plug connectors when under no load condition. If for operating reasons small loads must be switched, experimental values are available upon request.

Description	No. of pos.	Dim. a [mm]	Type	Order No.	Pcs./Pkt.
<b>Direct plug connector, 5.0 mm pitch,</b> Color: green	2	10	ZEC 1,5/2-ST-5,0 C2 R 1,2	18 83 04 8	50
	3	15	ZEC 1,5/3-ST-5,0 C2 R 1,3	18 83 05 1	
	4	20	ZEC 1,5/4-ST-5,0 C2 R 1,4	18 83 06 4	
	5	25	ZEC 1,5/5-ST-5,0 C2 R 1,5	18 83 07 7	
	6	30	ZEC 1,5/6-ST-5,0 C2 R 1,6	18 83 08 0	
	7	35	ZEC 1,5/7-ST-5,0 C2 R 1,7	18 83 09 3	
	8	40	ZEC 1,5/8-ST-5,0 C2 R 1,8	18 83 10 3	
	9	45	ZEC 1,5/9-ST-5,0 C2 R 1,9	18 83 11 6	
	10	50	ZEC 1,5/10-ST-5,0 C2 R 1,10	18 83 12 9	
	11	55	ZEC 1,5/11-ST-5,0 C2 R 1,11	18 83 13 2	
	12	60	ZEC 1,5/12-ST-5,0 C2 R 1,12	18 83 80 2	

(1) **Screwdriver,**  
Blade: 0.6 x 3.5 x 100 mm,  
Length: 180 mm



(2) **Marker card,** with 12 pcs.,  
10-section marker strips, white,  
self-adhesive, for 120 terminal blocks

**SZF 1-0,6 x 3,5**

Order No. **12 04 51 7** Pcs./Pkt. **100**

**SK 5,08/3,8** (see COMBICON catalog)

### Technical data

Dimensions Pitch [mm]

see description  
5

### Technical data in acc. with IEC/ DIN VDE

Insulating material group -  
Surge voltage category / contamination class -/-  
Rated voltage [V]  
Rated surge voltage [kV]  
Nominal current / cross section [A]/[mm<sup>2</sup>]  
Maximum load current / cross section [A]/[mm<sup>2</sup>]

	I	II / 2
III / 3	III / 2	II / 2
250	320	630
4	4	4
	10 / 1.5	
	10 / 1.5	

### Capacity connection

Solid / stranded / conductor sizes [mm<sup>2</sup>]/[mm<sup>2</sup>]/AWG  
Stranded with ferrule without / with plastic sleeve [mm<sup>2</sup>]

0.2 - 1.5 / 0.2 - 1.5 / 24 - 16  
0.25 - 1.5 / 0.25 - 1.5

### Stripping length

[mm]

7

### Internal cylindrical gauge (IEC 60 947-1)

Insulating material

A 1

Inflammability class in acc. with UL 94

PA

### Approval data (UL/CUL and CSA)

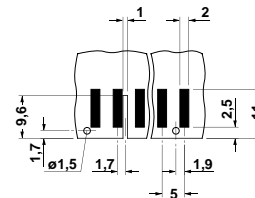
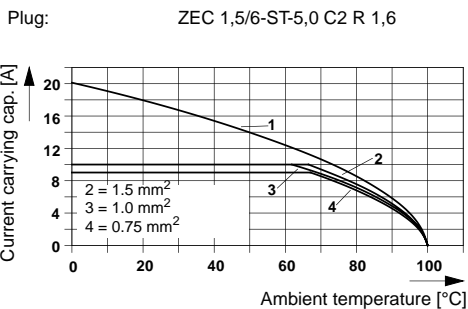
Nominal voltage / current / conductor sizes UL/CUL: [V]/[A]/AWG  
CSA: [V]/[A]/AWG

300 / 10 / 26 - 16

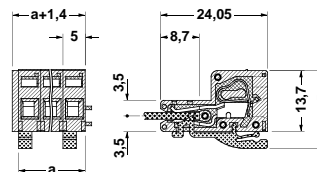
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### Current carrying capacity depending on the ambient temperature

1 = base curve

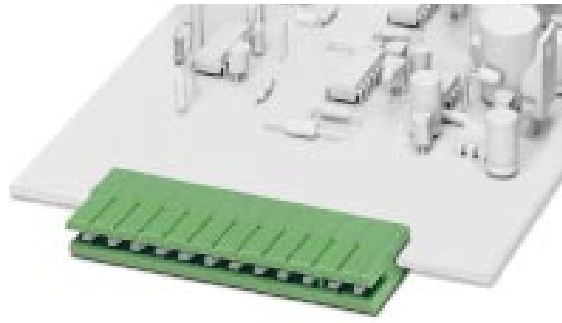


Size of the p.c.b.: 1.6 ± 0.2 mm.



# ZEC 1,5/...-LPV-5,0

## 5.0 mm Pitch



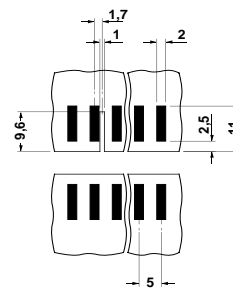
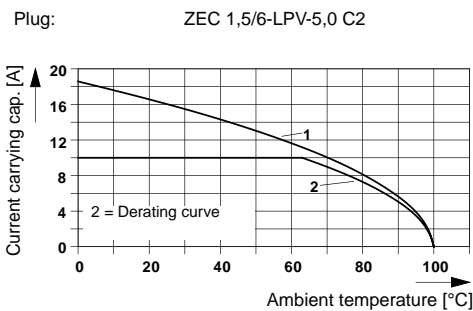
**Note:**

Only actuate COMBICON plug connectors when under no load condition. If for operating reasons small loads must be switched, experimental values are available upon request.

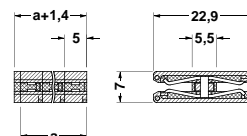
Description	No. of pos.	Dim. a [mm]	Type	Order No.	Pcs./Pkt.
<b>P.C.B. connector, 5.0 mm pitch,</b> Color: green	2	10	<b>ZEC 1,5/2-LPV-5,0 C2</b>	<b>18 98 26 6</b>	50
	3	15	<b>ZEC 1,5/3-LPV-5,0 C2</b>	<b>18 98 27 9</b>	
	4	20	<b>ZEC 1,5/4-LPV-5,0 C2</b>	<b>18 98 28 2</b>	
	5	25	<b>ZEC 1,5/5-LPV-5,0 C2</b>	<b>18 98 29 5</b>	
	6	30	<b>ZEC 1,5/6-LPV-5,0 C2</b>	<b>18 98 30 5</b>	
	7	35	<b>ZEC 1,5/7-LPV-5,0 C2</b>	<b>18 98 31 8</b>	
	8	40	<b>ZEC 1,5/8-LPV-5,0 C2<sup>1)</sup></b>	<b>18 98 32 1</b>	
<b>Technical data</b>					
Dimensions					
Pitch [mm]					
see description					
5					
<b>Technical data in acc. with IEC/ DIN VDE</b>					
Insulating material group -					
Surge voltage category / contamination class -/-					
Rated voltage [V]					
Rated surge voltage [kV]					
Nominal current / cross section [A]/[mm <sup>2</sup> ]					
Maximum load current / cross section [A]/[mm <sup>2</sup> ]					
<b>Capacity connection</b>					
Solid / stranded / conductor sizes [mm <sup>2</sup> ]/[mm <sup>2</sup> ]/AWG					
Stranded with ferrule without / with plastic sleeve [mm <sup>2</sup> ]					
<b>Stripping length</b> [mm]					
<b>Internal cylindrical gauge (IEC 60 947-1)</b> -					
<b>Insulating material</b>					
Inflammability class in acc. with UL 94					
<b>Approval data (UL/CUL and CSA)</b>					
Nominal voltage / current / conductor sizes UL/CUL: [V]/[A]/AWG					
CSA: [V]/[A]/AWG					

1) Further numbers of positions on request.

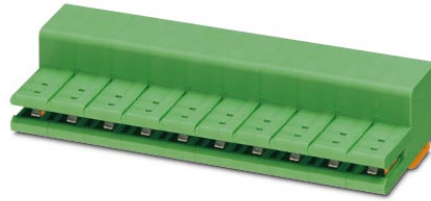
**Current carrying capacity depending on the ambient temperature**  
1 = base curve



Size of the p.c.b.: 1.6 ± 0.2 mm.




# ZEC 1,5/...-ST-7,5 7.5 mm Pitch



### Note:

Only actuate COMBICON plug connectors when under no load condition. If for operating reasons small loads must be switched, experimental values are available upon request.

Description	No. of pos.	Dim. a [mm]	Type	Order No.	Pcs./Pkt.
<b>Direct plug connector, 7.5 mm pitch,</b> Color: green	2	15	<b>ZEC 1,5/2-ST-7,5 C2 R 1,2</b>	<b>18 83 14 5</b>	50
	3	22.5	<b>ZEC 1,5/3-ST-7,5 C2 R 1,3</b>	<b>18 83 15 8</b>	
	4	30	<b>ZEC 1,5/4-ST-7,5 C2 R 1,4</b>	<b>18 83 16 1</b>	
	5	37.5	<b>ZEC 1,5/5-ST-7,5 C2 R 1,5</b>	<b>18 83 17 4</b>	
	6	45	<b>ZEC 1,5/6-ST-7,5 C2 R 1,6</b>	<b>18 83 18 7</b>	
	7	52.5	<b>ZEC 1,5/7-ST-7,5 C2 R 1,7</b>	<b>18 83 19 0</b>	
	8	60	<b>ZEC 1,5/8-ST-7,5 C2 R 1,8</b>	<b>18 83 20 0</b>	
	9	67.5	<b>ZEC 1,5/9-ST-7,5 C2 R 1,9</b>	<b>18 83 21 3</b>	
	10	75	<b>ZEC 1,5/10-ST-7,5 C2 R 1,10</b>	<b>18 83 22 6</b>	
	11	82.5	<b>ZEC 1,5/11-ST-7,5 C2 R 1,11</b>	<b>18 83 23 9</b>	
	12	90	<b>ZEC 1,5/12-ST-7,5 C2 R 1,12</b>	<b>18 83 24 2</b>	
(1) <b>Screwdriver,</b> Blade: 0.6 x 3.5 x 100 mm, Length 180 mm			<b>SZF 1-0,6 x 3,5</b>	<b>12 04 51 7</b>	
(2) <b>Marker card,</b> with 12 pcs., 10-section marker strips, white, self-adhesive, for 120 terminal blocks			<b>SK 7,5/3,8</b> (see COMBICON catalog)		

### Technical data

Dimensions

Pitch [mm]

see description

7.5

### Technical data in acc. with IEC/ DIN VDE

Insulating material group

-

Surge voltage category / contamination class

-/-

Rated voltage

[V]

Rated surge voltage

[kV]

Nominal current / cross section

[A]/[mm<sup>2</sup>]

Maximum load current / cross section

[A]/[mm<sup>2</sup>]

	I	II / 2
III / 3	III / 2	1000
400	630	6
6	6	10 / 1.5
	10 / 1.5	10 / 1.5

### Capacity connection

Solid / stranded / conductor sizes [mm<sup>2</sup>]/[mm<sup>2</sup>]/AWG

0.2 - 1.5 / 0.2 - 1.5 / 24 - 16

Stranded with ferrule without / with plastic sleeve [mm<sup>2</sup>]

0.25 - 1.5 / 0.25 - 1.5

### Stripping length

[mm]

7

### Internal cylindrical gauge (IEC 60 947-1)

-

A 1

### Insulating material

Inflammability class in acc. with UL 94

PA

### Approval data (UL/CUL and CSA)

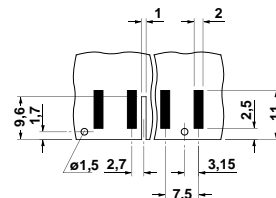
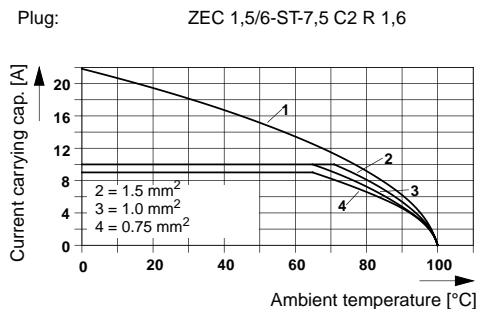
Nominal voltage / current / conductor sizes UL/CUL: [V]/[A]/AWG  
CSA: [V]/[A]/AWG

300 / 10 / 26 - 16

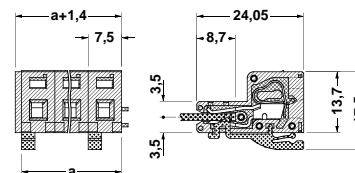
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### Current carrying capacity depending on the ambient temperature

1 = base curve



Size of the p.c.b.: 1,6 ± 0,2 mm.



# ZEC 1,5/...-LPV-7,5 7.5 mm Pitch



**Note:**

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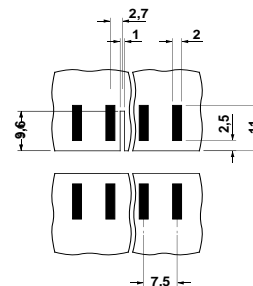
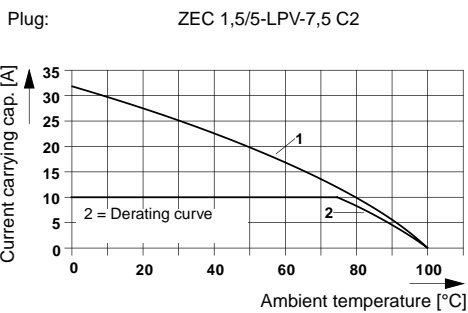
Description	No. of pos.	Dim. a [mm]	Type	Order No.	Pcs./Pkt.
<b>P.C.B. connector, 7.5 mm pitch,</b> Color: green					
	2	15	ZEC 1,5/2-LPV-7,5 C2	18 98 37 6	50
	3	22.5	ZEC 1,5/3-LPV-7,5 C2	18 98 38 9	
	4	30	ZEC 1,5/4-LPV-7,5 C2	18 98 39 2	
	5	37.5	ZEC 1,5/5-LPV-7,5 C2	18 98 40 2	
	6	45	ZEC 1,5/6-LPV-7,5 C2	18 98 41 5	
	7	52.5	ZEC 1,5/7-LPV-7,5 C2	18 98 42 8	
	8	60	ZEC 1,5/8-LPV-7,5 C2 <sup>1)</sup>	18 98 43 1	

**Technical data**

Dimensions	see description		
Pitch	7,5		
<b>Technical data in acc. with IEC/ DIN VDE</b>			
Insulating material group		I	
Surge voltage category / contamination class		III / 3	III / 2
Rated voltage [V]		400	630
Rated surge voltage [kV]		6	6
Nominal current / cross section [A]/[mm <sup>2</sup> ]		10 / --	
Maximum load current / cross section [A]/[mm <sup>2</sup> ]		10 / --	
<b>Capacity connection</b>			
Solid / stranded / conductor sizes [mm <sup>2</sup> ]/[mm <sup>2</sup> ]/AWG		--	
Stranded with ferrule without / with plastic sleeve [mm <sup>2</sup> ]		--	
<b>Stripping length</b> [mm]		--	
<b>Internal cylindrical gauge (IEC 60 947-1)</b>		--	
<b>Insulating material</b>		PA	
Inflammability class in acc. with UL 94		V0	
<b>Approval data (UL/CUL and CSA)</b>			
Nominal voltage / current / conductor sizes UL/CUL: [V]/[A]/AWG		--	
CSA: [V]/[A]/AWG		--	

<sup>1)</sup> Further numbers of positions on request.

**Current carrying capacity depending on the ambient temperature**  
1 = base curve



Size of the p.c.b.: 1.6 ± 0.2 mm.

