

# SM-7ES1N8AY000 - Device connector front mounting with knurled nut



1605865  
<https://www.phoenixcontact.com/us/products/1605865>

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Device connector front mounting with knurled nut, straight, Screw locking mechanism, M40, number of positions: 4+3+PE, contact connection type: Socket, Axial O-ring, 4x Ø4,2, shielded: yes, flange dimensions: 40 mm x 40 mm, degree of protection: IP67, cable diameter range: 0 mm ... 0 mm, number of positions: 8, connection method: Crimp connection, series: SM, Alternative product in accordance with RoHS II without Exemption 6c (Pb < 0.1 %) item no.: 1242014

## Commercial data

Item number	1605865
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	AB32
Product key	ABRBGN
Catalog page	Page 167 (C-2-2019)
GTIN	4046356255370
Weight per piece (including packing)	323 g
Weight per piece (excluding packing)	268.766 g
Customs tariff number	85366990
Country of origin	DE

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## Technical data

### Notes

Order information:	Order crimp contacts 4 x Ø 2 mm, 4 x Ø 3.6 mm separately
Safety note	
Safety note	<p>WARNING: The connectors may not be plugged in or disconnected under load. Ignoring the warning or improper use may damage persons and/or property.</p> <ul style="list-style-type: none"><li>• WARNING: Commission properly functioning products only. The products must be regularly inspected for damage. Decommission defective products immediately. Replace damaged products. Repairs are not possible.</li><li>• WARNING: Only electrically qualified personnel may install and operate the product. They must observe the following safety notes. The qualified personnel must be familiar with the basics of electrical engineering. They must be able to recognize and prevent danger. The relevant symbol on the packaging indicates that only personnel familiar with electrical engineering are allowed to install and operate the product.</li><li>• The products are suitable for applications in plant, controller, and electrical device engineering.</li><li>• When operating the connectors in outdoor applications, they must be separately protected against environmental influences.</li><li>• Assembled products may not be manipulated or improperly opened.</li><li>• Only use mating connectors that are specified in the technical data of the standards listed (e.g. the ones listed in the product accessories online at <a href="https://www.phoenixcontact.com/products">phoenixcontact.com/products</a>).</li><li>• When using the product in direct connection with third-party manufacturers, the user is responsible.</li><li>• For operating voltages &gt; 50 V AC, conductive connector housings must be grounded</li><li>• Ensure that the protective or functional ground has been properly connected.</li><li>• VDE 0100/1.97 § 411.1.3.2 and DIN EN 60 204/11.98 § 14.1.3 are applicable when combining several circuits in a cable and/or connector</li><li>• Only use tools recommended by Phoenix Contact</li><li>• The installation notes/Design In documents online on the download page at <a href="https://www.phoenixcontact.com/products">phoenixcontact.com/products</a> must be observed for this product.</li><li>• Operate the connector only when it is fully plugged in and interlocked.</li><li>• Ensure that when laying the cable, the tensile load on the connectors does not exceed the upper limit specified in the standards.</li><li>• Observe the minimum bending radius of the cable. Lay the cable without twisting it.</li><li>• The connector warms up in normal operation. Depending on the</li></ul>

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ambient conditions, the surface of the connector can continue to warm up. In this case, the user is responsible for posting warnings (e.g. DIN EN ISO 13732-1:2008-12).

## Mounting

Mounting type	Front mounting
Mounting	4x Ø4,2

## Product properties

Product type	Circular connectors (device side)
Series	SM
Application	Power
Number of positions	8
Connection profile	4+3+PE
Shielded	yes
Coding	N
Thread type	M40

## Dimensions

### Housing

Flange dimensions	40 mm x 40 mm
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## Material specifications

Seal material	FPM
Housing material	Metal
Housing material	Turned parts: copper zinc alloy (CuZn), die-cast parts: zinc (GD-Zn)
Insulator material	PA 6.6
Gasket and O-ring material	FPM

## Electrical properties

### Contact

Contact diameter	3.6 mm
Max. current	70 A
Nominal voltage $U_N$	630 V
Overvoltage category	III
Degree of pollution	3
Rated surge voltage	6 kV

### Contact

Contact diameter	2 mm
Max. current	30 A
Nominal voltage $U_N$	250 V
Overvoltage category	III

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Degree of pollution	3
Rated surge voltage	4 kV

## Connection data

### Conductor connection

Connection method	Crimp connection
Contact connection type	Socket

## Connector

Type	straight
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### Connection 1

Head design	Socket
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## Cable/line

External cable diameter	0 mm ... 0 mm
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## Environmental and real-life conditions

### Ambient conditions

Degree of protection	IP67
Ambient temperature (operation)	-40 °C ... 125 °C
Altitude	3000 m

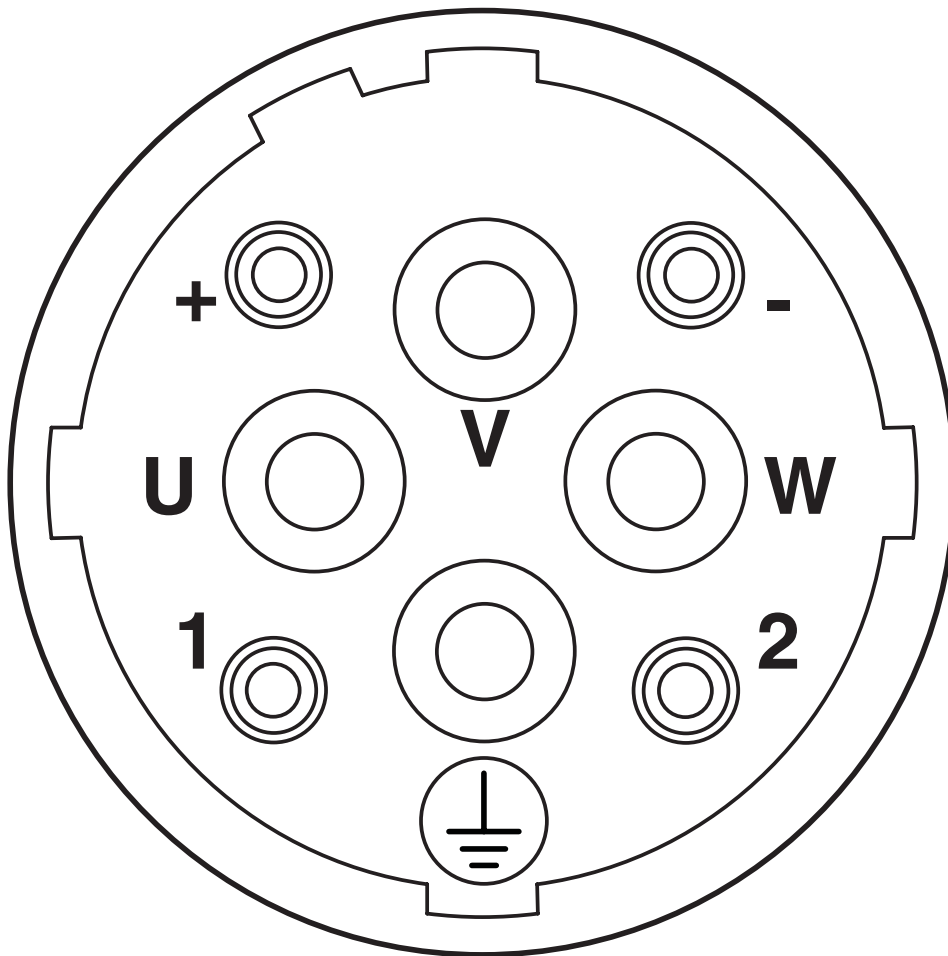
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## Drawings

Schematic diagram



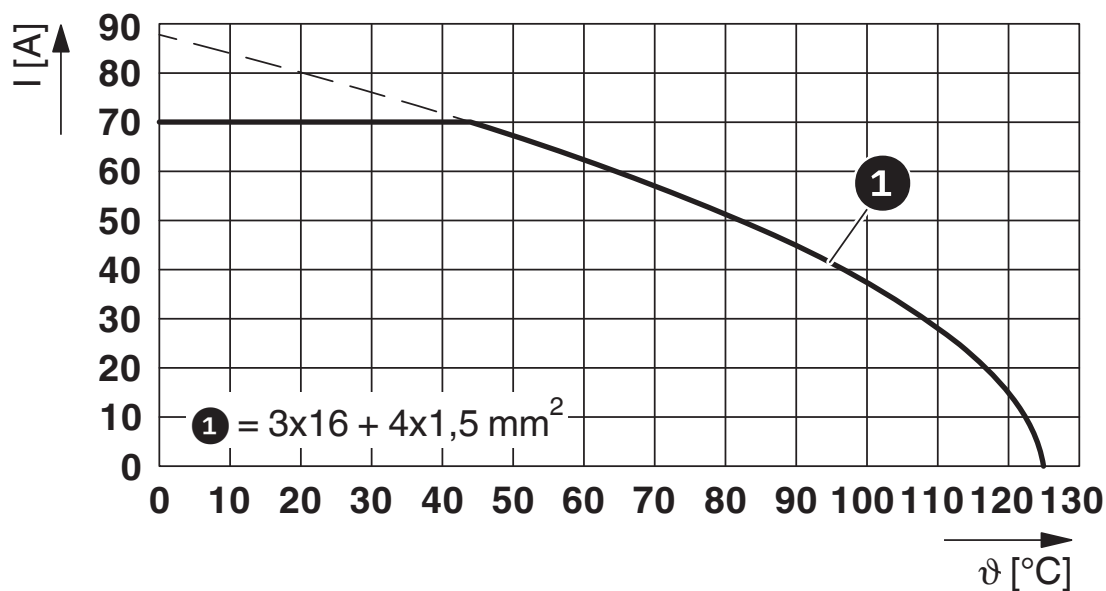
Connector pin assignment

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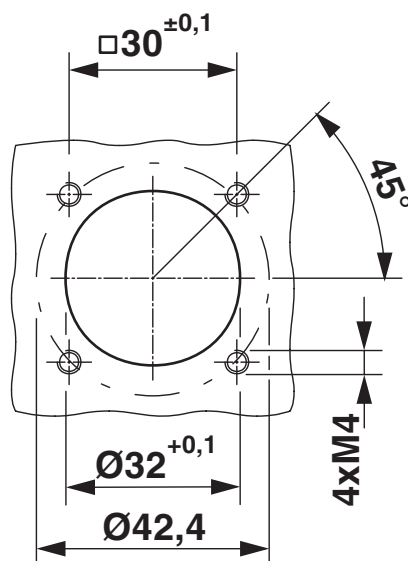
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Diagram



$I$  = current strength,  $T$  = ambient temperature

Dimensional drawing



Installation dimensions

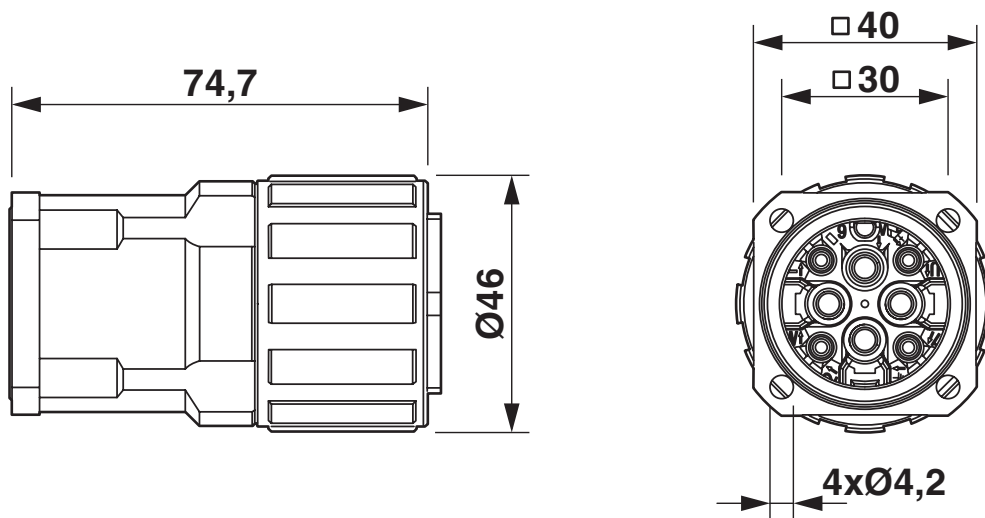
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Dimensional drawing



Dimensional drawing

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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1605865>

cUL Recognized Approval ID: E153698-20150903				
	Nominal voltage U <sub>N</sub>	Nominal current I <sub>N</sub>	Cross section AWG	Cross section mm <sup>2</sup>
Power	600 V	40 A	-	-
Signal	600 V	20 A	-	-

UL Recognized Approval ID: E153698-20150903				
	Nominal voltage U <sub>N</sub>	Nominal current I <sub>N</sub>	Cross section AWG	Cross section mm <sup>2</sup>
Power	600 V	65 A	-	-
Signal	600 V	30 A	-	-

cULus Recognized				
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## Classifications

### ECLASS

ECLASS-11.0	27440102
ECLASS-12.0	27440116
ECLASS-13.0	27440116

### ETIM

ETIM 9.0	EC002635
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### UNSPSC

UNSPSC 21.0	39121400
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## Environmental product compliance

EU RoHS	
Fulfills EU RoHS substance requirements	Yes
Exemption	6(c)
China RoHS	
Environment friendly use period (EFUP)	EFUP-50
	An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required.
EU REACH SVHC	
REACH candidate substance (CAS No.)	Lead(CAS: 7439-92-1)
SCIP	5be65b78-e905-4ed7-807e-4fffbfcf7772

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## Accessories

### SM-36KS001 - Crimp contact

1605756

<https://www.phoenixcontact.com/us/products/1605756>



Crimp contact, Socket, turned, Single contact, contact diameter: 3.6 mm, crimp range: 1 mm<sup>2</sup> ... 2.5 mm<sup>2</sup>, Alternative product in accordance with RoHS II without Exemption 6c (Pb < 0.1 %) item no.: 1241977

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### SM-36KS002 - Crimp contact

1605758

<https://www.phoenixcontact.com/us/products/1605758>



Crimp contact, Socket, turned, Single contact, contact diameter: 3.6 mm, crimp range: 2.5 mm<sup>2</sup> ... 4 mm<sup>2</sup>, Alternative product in accordance with RoHS II without Exemption 6c (Pb < 0.1 %) item no.: 1241979

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### SM-36KS003 - Crimp contact

1605760

<https://www.phoenixcontact.com/us/products/1605760>



Crimp contact, Socket, turned, Single contact, contact diameter: 3.6 mm, crimp range: 4 mm<sup>2</sup> ... 6 mm<sup>2</sup>, Alternative product in accordance with RoHS II without Exemption 6c (Pb < 0.1 %) item no.: 1241979

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### SM-36KS004 - Crimp contact

1605762

<https://www.phoenixcontact.com/us/products/1605762>



Crimp contact, Socket, turned, Single contact, contact diameter: 3.6 mm, crimp range: 6 mm<sup>2</sup> ... 10 mm<sup>2</sup>, Alternative product in accordance with RoHS II without Exemption 6c (Pb < 0.1 %) item no.: 1241980

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### SF-7PS2000 - Crimp contact

1605636

<https://www.phoenixcontact.com/us/products/1605636>



Crimp contact, Socket, turned, Single contact, contact diameter: 2 mm, crimp range: 0.25 mm<sup>2</sup> ... 1 mm<sup>2</sup>, Alternative product in accordance with RoHS II without Exemption 6c (Pb < 0.1 %) item no.: 1241952

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### SF-7NS2000 - Crimp contact

1605631

<https://www.phoenixcontact.com/us/products/1605631>



Crimp contact, Socket, turned, Single contact, contact diameter: 2 mm, crimp range: 0.75 mm<sup>2</sup> ... 1.5 mm<sup>2</sup>, Alternative product in accordance with RoHS II without Exemption 6c (Pb < 0.1 %) item no.: 1237431

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### SF-7QS2000 - Crimp contact

1605643

<https://www.phoenixcontact.com/us/products/1605643>



Crimp contact, Socket, turned, Single contact, contact diameter: 2 mm, crimp range: 1 mm<sup>2</sup> ... 2.5 mm<sup>2</sup>, Alternative product in accordance with RoHS II without Exemption 6c (Pb < 0.1 %) item no.: 1237431

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### SF-7MS2000 - Crimp contact

1605628

<https://www.phoenixcontact.com/us/products/1605628>



Crimp contact, Socket, turned, Single contact, contact diameter: 2 mm, crimp range: 4 mm<sup>2</sup> ... 4 mm<sup>2</sup>, Alternative product in accordance with RoHS II without Exemption 6c (Pb < 0.1 %) item no.: 1241949

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## PROT-M40-PW-IT-IP20 - Plastic protective cap

1577213

<https://www.phoenixcontact.com/us/products/1577213>

Plastic protective cap, M40, degree of protection: IP20, series: SM, SB



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