

# Radsok<sup>®</sup>

## High Power Connectors



# Note from the CEO



**Ladies and Gentlemen,**

For over 75 years Amphenol has enjoyed success as the interconnection technology provider of choice to industry-leading companies around the world. One of our key strategic areas of focus has been and is the Industrial market. Our organization works with leading manufacturers across a wide range of applications - including Energy Generation & Distribution, Transportation, Heavy Equipment, Factory Automation, Wireless Outdoor, ChipCard Readers - enabling smarter, faster and better technologies to connect products to customer solutions.

The Industrial market footprint of Amphenol covers over facilities in more than 12 different European countries and more than 30 countries worldwide. Our successful expansion into new regions as well as new industrial applications is a direct reflection of our agile, entrepreneurial management team and our unwavering commitment to execute Amphenol's strategies for the benefit of our customers, shareholders and employees.

Thank you for partnering with Amphenol. Our entire organization is at your service.

A handwritten signature in black ink, appearing to read 'R. Adam Norwitt'. The signature is fluid and cursive, with a large initial 'R'.

R. Adam Norwitt  
President and CEO, Amphenol Corporation



# Make use of the best

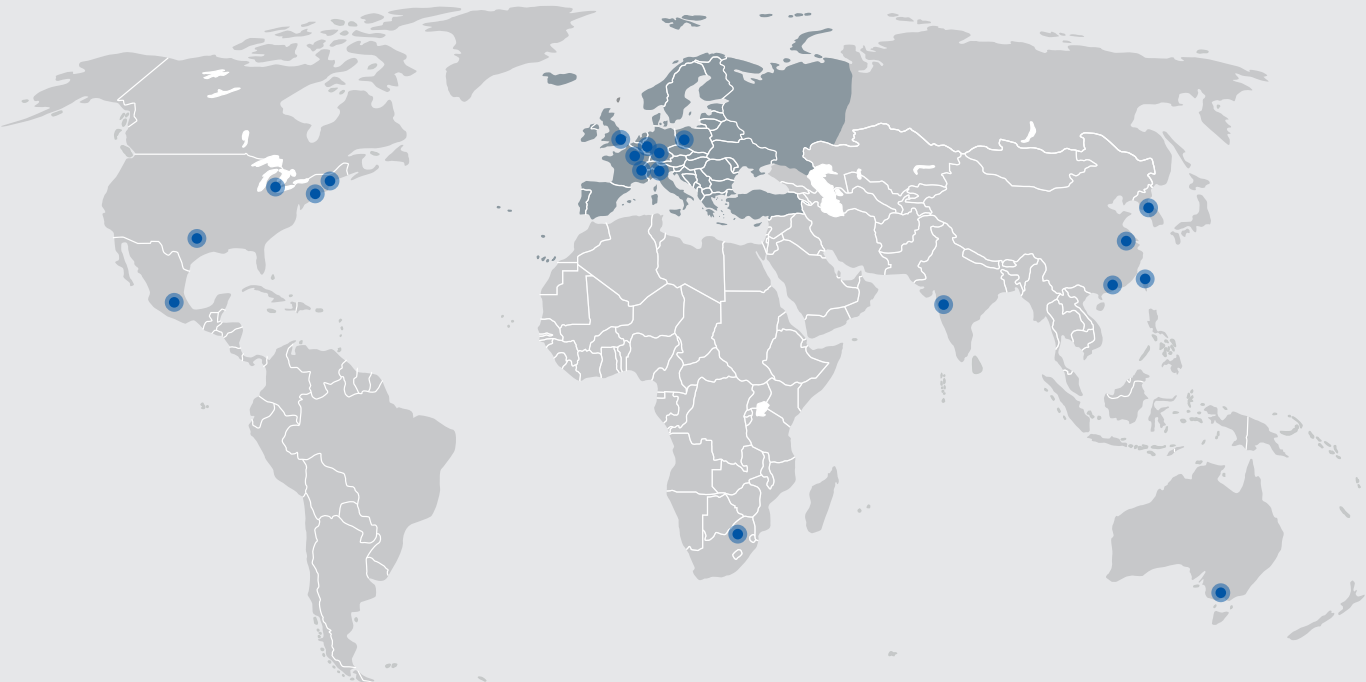
## Use our global resources

“Think global, act local!” Independently from where you are in Europe, we offer you our global expertise and great variety of products and technologies. And in comfort with your personal contact. Our numerous European offices are your access to our global resources.

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Enjoy security, reliability and comfortable service from one source. INDUSTRIAL@AMPHENOL offers one of the most individual and most diversified service programmes in the market – exclusively for industrial customers. Access all possibilities of the Amphenol group through your personal expert adviser.



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Take advantage of a choice of Amphenol products. Our broad product portfolio offers individual solutions from more than 85 member companies in the global Amphenol group.



## EXCLUSIVENESS AND FLEXIBILITY

One face to the customer: every inquiry is handled on an individual service level by your personal key account service partner. This ensures maximum transparency and best-in-class flexibility in the whole process.



## QUALITY

Interconnect systems need reliability, speed and flawless data transmission. We continuously test and guarantee the required standard in our products – and also in our personal services.



## INDIVIDUAL SOLUTIONS

Your project requires an individual solution that is not available off-the-shelf? As your think tank and discussion partner we provide engineering support and solution-oriented development for your tailor-made Amphenol product.



## SPEED AND AVAILABILITY

Smart and intelligent processes are the secret behind our service programme. Flexible planning and distribution, perfect logistics and highest availability are our key factors for best customer service.



## GLOBAL KEY ACCOUNT SERVICE

Our key account service is your individual entrance to global know-how, products and services. More than 85 Amphenol companies around the world offer an extensive range of technologies and products. We offer access to our worldwide resources through one individual contact person.

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More and more electrical and electronic components require higher amounts of energy. Conventional connection technology is not always able to meet such requirements. Pluggable connections are often no longer able to be applied. Amphenol offers a new generation of power contacts: Radsok. The hyperbolic construction offers many advantages such as contact coverage of up to 65%, absorption of vibrations as well as durable stability of the contact elements. Current transfer of several hundred Ampere in addition to a high number of mating cycles is not a problem.

RADSOK means Radial Socket. The RADSOK terminal is a patented high performance hyperboloid socket style electrical contact system for applications >30 amps.. Hyperboloid connectors offer superior

performance compared to standard pin and socket connectors. In the RADSOK terminal, multiple contacting elements are hyperbolically arrayed around the inner diameter of the socket. In addition, each of the contact elements is skewed with respect to the axial direction of the terminal. The result is the multiple contact surfaces, comprising what is referred to as the “grid.” See also the picture on the next page.

When viewing the grid profile, a hyperbola shape is seen that is the basis of the unique RADSOK contact. The hyperbolic configuration results in a mechanical interference between an inserted pin and the contact elements. When a pin is inserted into the socket, the contacting elements of the grid mechanically wrap around the pin providing pressure (normal force) necessary for a superior electrical connection.

## Key Features

### LOW CONTACT RESISTANCE AND HIGH CURRENT CAPACITY

The grid provides a greater surface area of electrical contact per contacting element than standard contacts. RADSOK contacts do not relax as a result of repeated insertion, which occurs in standard terminals. The associated millivolt loss that is common in standard terminals due to repeated insertion relaxation does not occur with RADSOK. The result is superior electrical transfer that does not deteriorate from repeated insertion.

### VIBRATION RESISTANCE/OFF AXIS INSERTION TOLERANCE

The hyperbolic grid of the RADSOK terminal assures full contact with an inserted pin. Tests have confirmed that when subjected to vibration, this hyperbolic elastic grid maintains electrical continuity. This unique feature also provides for some axial misalignment without sacrifice of electrical contact.

### EXCELLENT DURABILITY

Certain applications require repeated insertion/extraction cycles. Due to its unique design and used materials the RADSOK contact is ideally fitted for applications with a high number of mating cycles while maintaining ability to carry high current capacity and withstand vibrations.

### SELF CLEANING LOW CONTACT RESISTANCE AND HIGH CURRENT

When talking about connectors it should be taken care to assure that the contact remain clean and free of contaminates to prevent voltage loss and heating. The design of the RADSOK contact provides a degree of self-cleaning. As the pin is inserted into the socket, the grid elements provide a wiping action that remove minor contaminants from the pin. The spaces between the grid elements provide space for contaminates.

## Radsok® Electrical Characteristics

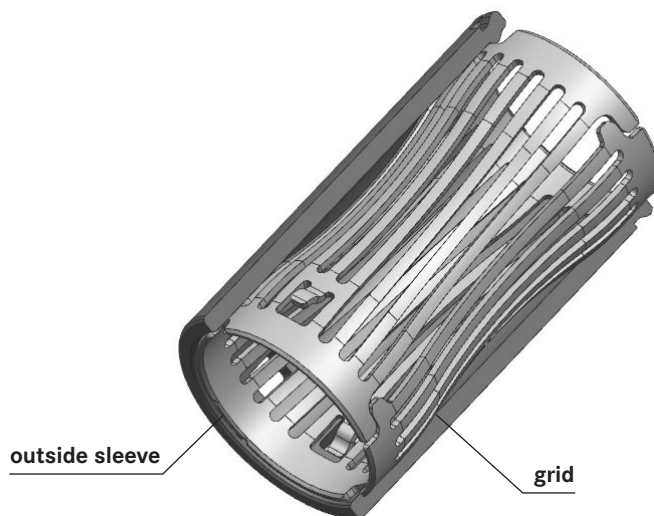
All electrical measurements have been performed with RADSOK-terminals in standard configuration

Attribute		RADSOK	3.6	6.0	8.0
Transition resistance			< 0.2 mΩ	< 0.1 mΩ	< 0.1 mΩ
Typical Transition resistance (for information only)			(0.15 mΩ)	(0.09 mΩ)	(0.06 mΩ)
<b>Continuous current carrying capacity</b>					
Parameter		cross section	4, 6, 10 mm <sup>2</sup>	10, 16, 25 mm <sup>2</sup>	16, 25, 35, 50 mm <sup>2</sup>
Ambient temperature	20 °C		125 A	190 A	300 A
	85 °C		88 A	135 A	210 A
	125 °C		60 A	85 A	130 A
<b>Max transmission duration for high power</b>					
Ambient temperature	power				
40 °C	200 A		40 s	500 s	cont.
	500 A		2 s	25 s	100 s
	1000 A		0.2 s	3 s	15 s
100 °C	200 A		10 s	120 s	600 s
	500 A		0.9 s	10 s	40 s
	1000 A		0.1 s	1 s	8 s

## Radsok Mechanical Characteristics

Mating Force and Mating Cycles

Attribute		RADSOK	3.6	6.0	8.0
Mating Force			9 N (±3)	21 N (±10)	30 N (±12)
Mating Cycles			1000	1000	1000



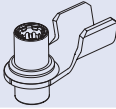

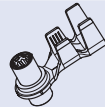
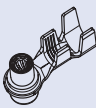
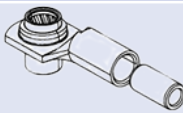
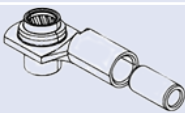
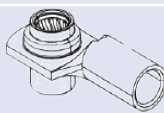




## ground | mate

- **for grounding systems or potential equalisation (PE)**
- **for power applications**
- **fast and easy mating**
- **secure and reliable contact system**
- **vibration-proof solution**





Description	Part number	Drawing	Housing
<b>3.6 mm Radsok</b>			
Socket for 4 - 6 mm <sup>2</sup>	N 02 036 6126 001		C360 G01 041 E1 Z
Socket with <b>click   fit</b> for 4 - 6 mm <sup>2</sup>	N 02 036 6136 002		C360 G01 141 E1 Z
Socket for 6 - 10 mm <sup>2</sup>	N 02 036 6109 002		C360 G01 241 E1 Z
Socket with <b>click   fit</b> for 6 - 10 mm <sup>2</sup>	N 02 036 6137 002		C360 G01 341 E1 Z
<b>6 mm Radsok</b>			
Socket for 10 mm <sup>2</sup>	N 02 060 6126 002		C360 G41 041 G2
Socket for 16 mm <sup>2</sup>	N 02 060 6127 002		C360 G42 041 G2
Socket for 25 mm <sup>2</sup>	N 02 060 6128 002		C360 G44 041 G2
<b>8 mm Radsok</b>			
Socket for 16 - 25 mm <sup>2</sup>	N 02 080 7108 002		C360 G39 041 G3
Socket for 35 - 50 mm <sup>2</sup>	N 02 080 7102 002		C360 G39 041 G3




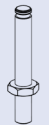
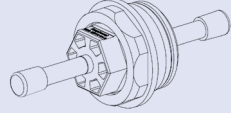
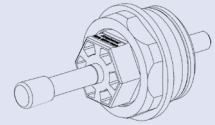

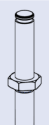
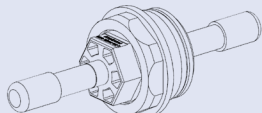
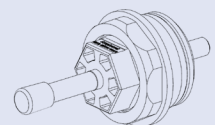
- no tooling
- quick and easy assembly by plugging
- standard bolt or thread (for grounding)
- hidden assembly possible
- easy maintenance
- axial assembly (e.g. in line) possible

SAVE 50-60% ASSEMBLY TIME  
COMPARED TO BOLTED RING  
TERMINAL SOLUTIONS

#### YOUR BENEFITS

- optional touch proof housing available
- secure and reliable contact system
- fast and easy mating saves time and assembly cost
- optical and haptic feedback
- no torque control necessary
- 6 mm Radsok compatible with M6 threads

Find the right pins for your RADSOK housing below, suitable for any installation situation. Whether for connection to printed circuit boards as a press-fit solution or as a panel feed-through with IP protection, with the RADSOK pins from Amphenol, you create a reliable connection in every situation, through the integrated locking mechanism in connection with the corresponding Active PinLock housings.

Description	Part number	Drawing
<b>3.6 mm Radsok</b>		
PCB pressfit pin	N 01 036 6501 001	
male pin with screw-in thread	N 01 036 6601 001	
<b>6 mm Radsok</b>		
PCB pressfit pin	N 01 060 6501 001	
male pin with screw-in thread	N 01 060 6602 001	
wallbushing connector	C360 10D001 001 2	
universal wallbushing connector for one-sided mounting with M6 thread	C360 10D001 002 2	
<b>8 mm Radsok</b>		
PCB pressfit pin	N 01 080 6501 001	
male pin with screw-in thread	N 01 080 6601 001	
wallbushing connector	C360 10D001 001 3	
universal wallbushing connector for one-sided mounting with M8 thread	C360 10D001 006 3	

## Radsok® housings

There are three categories of housings for Radsok contacts. Each housing fits to a specific contact so please check for additional information when choosing the contact.

Part number	Connection cross section	Cable diameter
<b>3.6 mm Radsok</b>		
<b>Housing with integrated locking</b>		
C360 G01 041 E1 Z	4 - 6 mm <sup>2</sup>	for max. 5 mm
C360 G01 241 E1 Z	6 - 10 mm <sup>2</sup>	for max. 6.5 mm
<b>Housings for click fit</b>		
C360 G01 141 E1 Z	4 - 6 mm <sup>2</sup>	for max. 5 mm
C360 G01 341 E1 Z	6 - 10 mm <sup>2</sup>	for max. 6.5 mm
<b>6 mm Radsok / Active PinLock</b>		
<b>Housing with integrated locking</b>		
C360 G41 041 G2	10 - 16 mm <sup>2</sup>	for max. 8.5 mm
C360 G42 042 G2	25 mm <sup>2</sup>	for max. 10.5 mm
C360 G44 041 G2	25 mm <sup>2</sup>	for max. 13.5 mm
<b>Housing with integrated locking on M6 thread</b>		
C360 G50 041 G2	10 - 16 mm <sup>2</sup>	for max. 8.5 mm
C360 G51 041 G2	25 mm <sup>2</sup>	for max. 10.5 mm
C360 G52 041 G2	25 mm <sup>2</sup>	for max. 13.5 mm
<b>Up to 1.000 Volt</b>		
C360 G46 041 G2	10 - 16 mm <sup>2</sup>	for max. 6.5 mm
C360 G45 041 G2	25 mm <sup>2</sup>	for max. 10.5 mm
<b>8 mm Radsok / Active PinLock</b>		
<b>Housing with integrated locking</b>		
C360 G39 041 G3	16, 25, 35, 50 mm <sup>2</sup>	for max. 12 mm



"Z" stands for 400 pcs per packing unit. Please consider when ordering.

### HOUSINGS WITH ACTIVE PINLOCK CONNECTOR

- **for 8 mm Radsok**
- Mating- / unmating force: < 45N
- Pullout force: ≥ 500N (once only)
- Mating cycles: min. 1000
- Voltage level: ≤ 60V DC/AC (higher level on request)
- Temperature range: -40 °C to 125 °C, short time 150 °C
- Accepted wire range: 35 and 50 mm<sup>2</sup>
- Material: housing, cover and locking slider: PBT GF30





# tools

- tools needed to crimp Radsok contacts

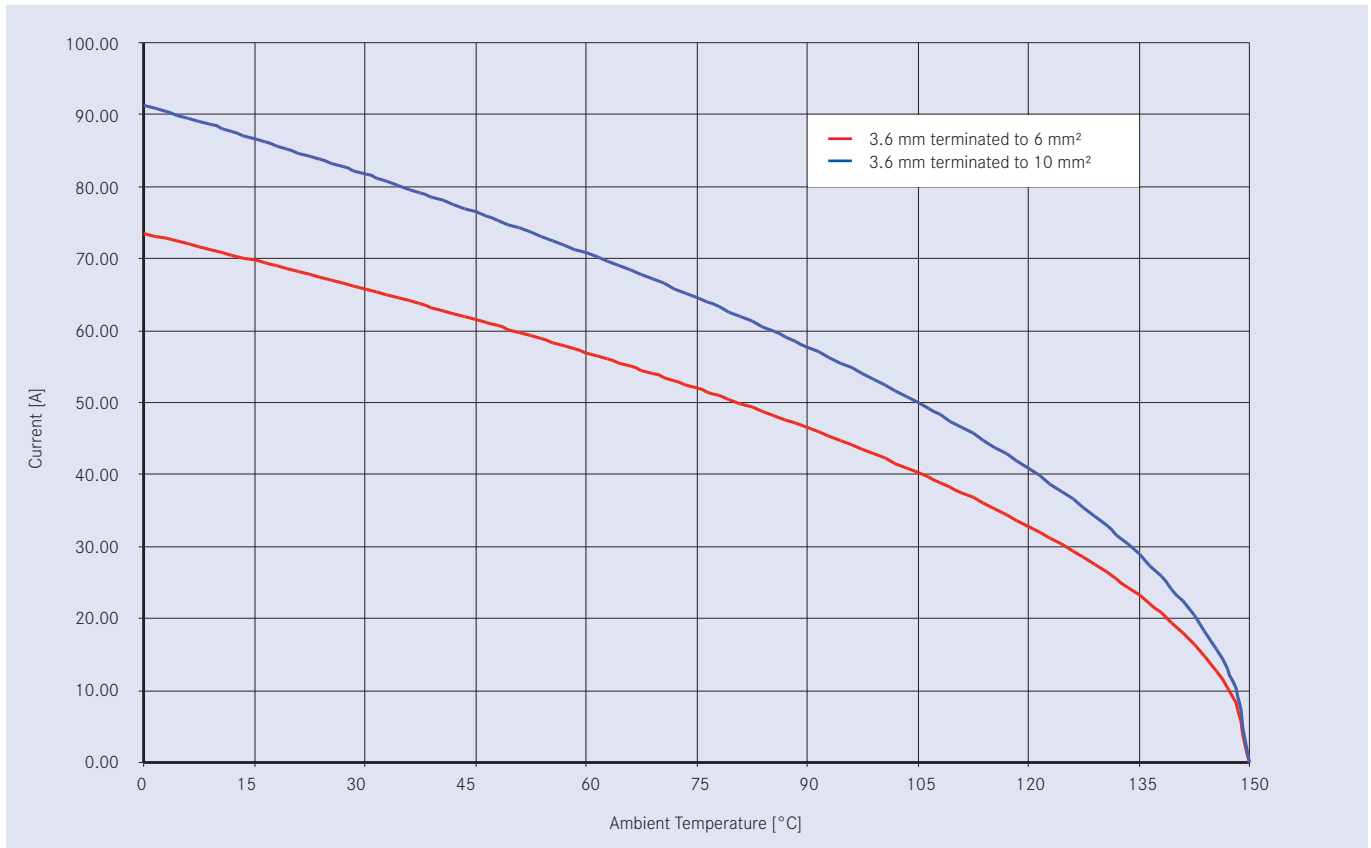
FOR CRIMPING RADSOK CONTACTS YOU NEED:

- **Electro Hydraulic Crimping Unit**  
KLAUKE p/n EK12042L  
NEKO p/n: APHW400C
- **Crimping dies**  
Regarding on contact  
(see below)

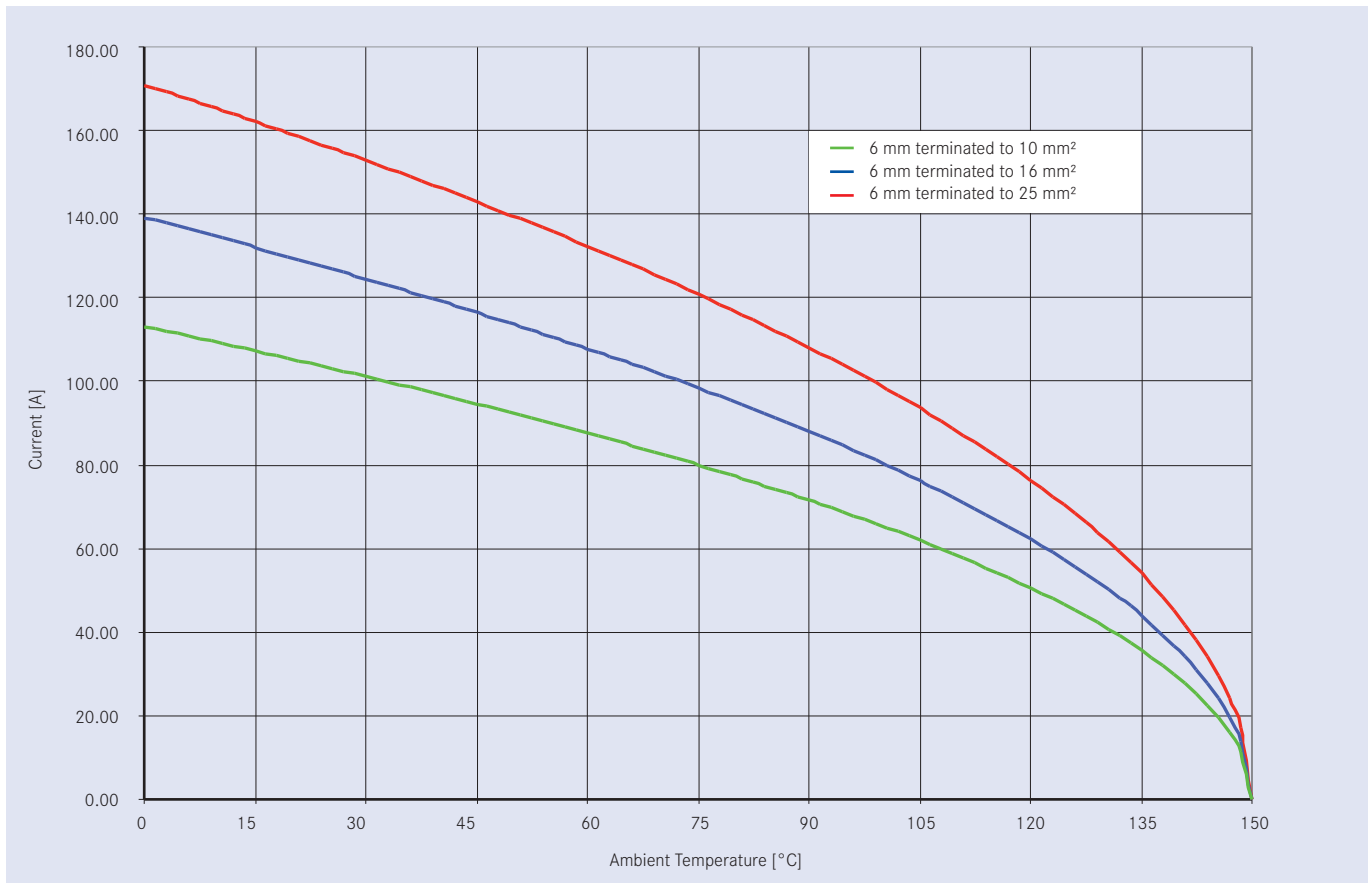


Crimping dies			Contacts	
Part number	Comment		Part number	Comment
<b>3.6 mm Crimping die for Radsok</b>				
TE 0500-101	Crimping die for Radsok 3.6 mm for 4 - 6 mm <sup>2</sup>	←	N 02 036 6126 001	crimp socket 3.6 mm 4 - 6 mm <sup>2</sup> cable diameter
			N 02 036 6136 002	crimp socket 3.6 mm with <b>click fit</b> 4 - 6 mm <sup>2</sup> cable diameter
TE 0500-082	Crimping die for Radsok 3.6 mm with isola-crimp for 6 - 10 mm <sup>2</sup>	←	N 02 036 6109 002	crimp socket 3.6 mm with Isola 6 - 10 mm <sup>2</sup> cable diameter
			N 02 036 6137 002	crimp socket 3.6 mm with Isola 6 - 10 mm <sup>2</sup> cable diameter <b>click fit</b>
<b>6 mm Crimping die for Radsok</b>				
TE 0600-042	Crimping die for Radsok 6 mm for 10 mm <sup>2</sup>	↔	N 02 060 6126 002	crimp socket contact 6 mm 10 mm <sup>2</sup> cable diameter
TE 0600-042	Crimping die for Radsok 6 mm for 16 mm <sup>2</sup>	↔	N 02 060 6127 002	crimp socket contact 6 mm 16 mm <sup>2</sup> cable diameter
TE 0600-042	Crimping die for Radsok 6 mm for 25 mm <sup>2</sup>	↔	N 02 060 6128 002	crimp socket contact 6 mm 25 mm <sup>2</sup> cable diameter
<b>8 mm Crimping die for Radsok</b>				
TE 0600-042	Crimping die for Radsok 8 mm for 16 - 25 mm <sup>2</sup>	↔	N 02 080 7108 002	crimp socket contact 8 mm 16 - 25 mm <sup>2</sup> cable diameter
TE 0500-011	Crimping die for Radsok 8 mm for 35 - 50 mm <sup>2</sup>	↔	N02 080 7102 002	crimp socket 8 mm 35 - 50 mm <sup>2</sup> cable diameter

Derating 3.6 mm Radsok

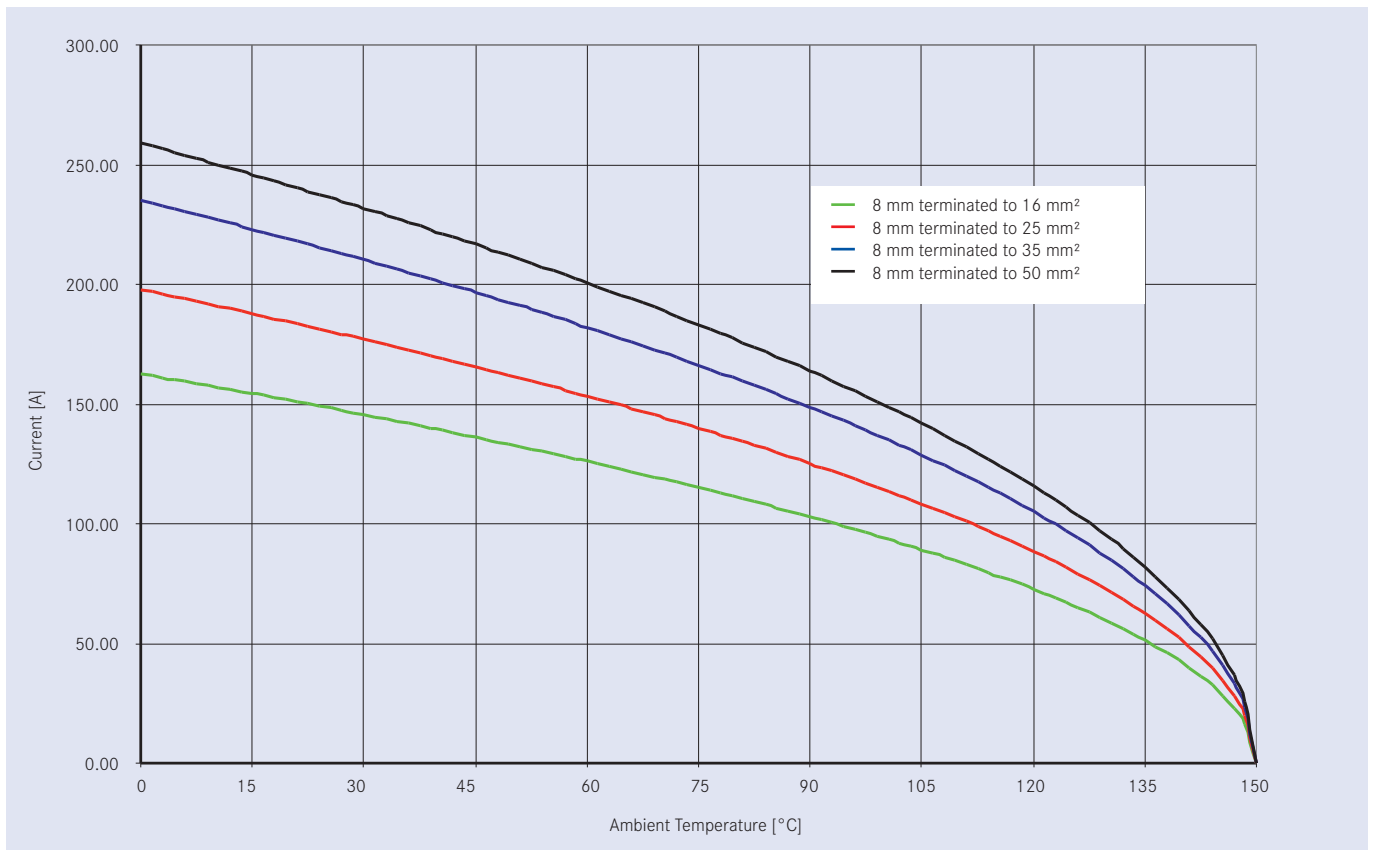


Derating 6 mm Radsok



Remark: The given electrical values correspond to a single contact. With the addition of a housing, an increased number of poles or other modifications the values must be adjusted downwards accordingly. All measurements are performed according to DIN IEC 60512-5-2.

Derating 8 mm Radsok



Remark: The given electrical values correspond to a single contact. With the addition of a housing, an increased number of poles or other modifications the values must be adjusted downwards accordingly.  
 All measurements are performed according to DIN IEC 60512-5-2.

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