

# Amphenol

Amphenol-Tuchel Electronics GmbH

## Radsok<sup>®</sup> Automotive *activePinLock* Connector



# Amphenol Radsok®

## The cost effective hyperbolic high power contact in stamp & form technology – perfect for automotive applications

The increasing number of electrical and electronic components leads to an ever higher demand for electric power in the car, which exceeds the limits of conventional connector technologies. The hyperbolic contact geometry offers many advantages, such as contact coverage of up to 65%, absorption of vibrations as well as a superior durability of the contact element. Amperage capacities above 400 A with a high number of mating cycles can be realized.



### Radsok benefits at a glance

- Cost-effective production using stamp & form technology
- Fully automated production for full process capability
- Low insertion and extraction forces
- High number of mating cycles
- Reduced assembly effort
- Long lasting contact normal forces guaranteed through optimal grid technology
- Contact coverage up to 65%
- Self cleaning effect during the mating process
- No torque resistance required of electric housing – allowing easier designs



### A plus for Radsok®

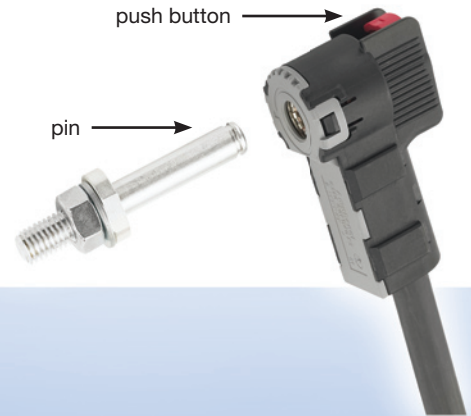
- Blind mating by optimized self centering
- Easy to assemble without tools
- Less space required for mating
- Defined position after the mating process
- Connector systems available
- Waterproofed version optional
- High corrosion resistance

# Amphenol Radsok®

## activePinLock Connector

### General characteristics

- Housing (unsealed)
- Primary locking of the Radsok terminal in the connector housing
- Terminal position assurance (TPA) implemented in the housing
- Primary housing locking device (spring loaded), fixed in the groove of the pin
- Final position of the connector on the contact bolt is verified by acoustics and tactile feedback
- Optical and mechanical coding
- Covers stepped, optional flat design available
- Qualification according VDA AK Specification 02.96



### 6mm version

- Voltage level:  $\leq 60V$  DC/AC (higher level on request)
- Temperature range:  $-40^{\circ}\text{C}$  to  $125^{\circ}\text{C}$ , short time  $150^{\circ}$
- Applicable wire range: 10, 16 and  $25\text{ mm}^2$
- Material: Housing, cover and locking slider: PBT GF30
- Used with standard  $90^{\circ}$  Radsok 6mm crimp contact
  - $10\text{mm}^2 - 16\text{mm}^2$  wire: N 02 060 6121 002
  - $25\text{mm}^2$  wire: N 02 060 6120 002






Coming up soon!

# Amphenol Radsok®

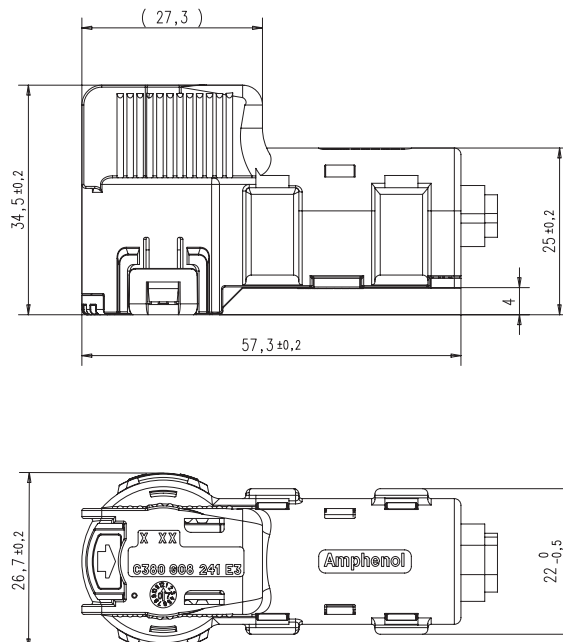
## activePinLock Connector

### 8mm version

- Mating- / unmating force: < 45N
- Pullout force:  $\geq 500\text{N}$  (once only)
- Mating cycles: min. 1000
- Voltage level:  $\leq 60\text{V DC/AC}$  (higher level on request)
- Temperature range:  $-40^{\circ}\text{C}$  to  $125^{\circ}\text{C}$ , short time  $150^{\circ}$
- Accepted wire range: 35 and 50 mm<sup>2</sup>
- Material: housing , cover and locking slider: PBT GF30
- Used with standard 90° Radsok 8mm crimp contact
  - 35mm<sup>2</sup> – 50mm<sup>2</sup>: N 02 080 6121 002

Type		w/o coding	Code A	Code B	Code C	Code D
Colour		black	red	white	blue	brown
						
Amphenol Part-No.	Housing	C380 10E004 241 2	C380 10E004 143 2	C380 10E004 147 2	C380 10E004 142 2	C380 10E004 149 2
	Cover 35mm <sup>2</sup>	C380 G09 241 E3				
	Cover 50mm <sup>2</sup>	C380 G09 341 E3				
	Contact 35 - 50mm <sup>2</sup>	N 02 080 6121 002				
Drawing-No.		M-C380 10E104 X4X 2				

### Dimensions



Attribute	RADSOK	6mm	8mm
Cable diameter		10, 16, 25 mm <sup>2</sup>	35, 50 mm <sup>2</sup>
Mating force		21 N (±10)	30 N (±12)
Mating cycles		1.000	1.000
Mating cycles *		20 000	20 000
Temperature range		-40°C to 150°C	-40°C to 150°C
Transition resistance		< 0,1 mΩ	< 0,1 mΩ
Typical transition resistance (for information only)		(0,09 mΩ)	(0,06 mΩ)

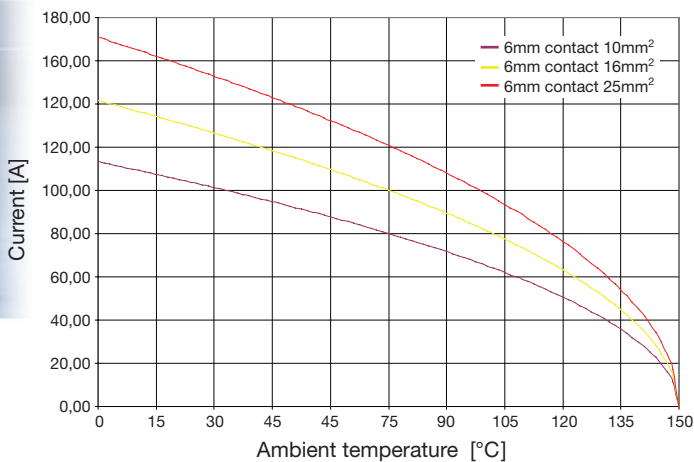
\* Special conditions necessary

### Derating curve & dynamic stress

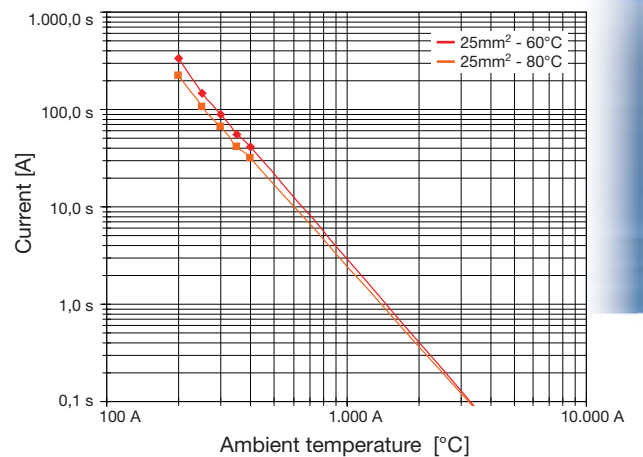
- No additional heat sink
- > 60 minutes load / current value to ensure steady state condition
- 20% performance reduction according to DIN already included!

### 6mm contact

Derating curve - Radsok 6mm

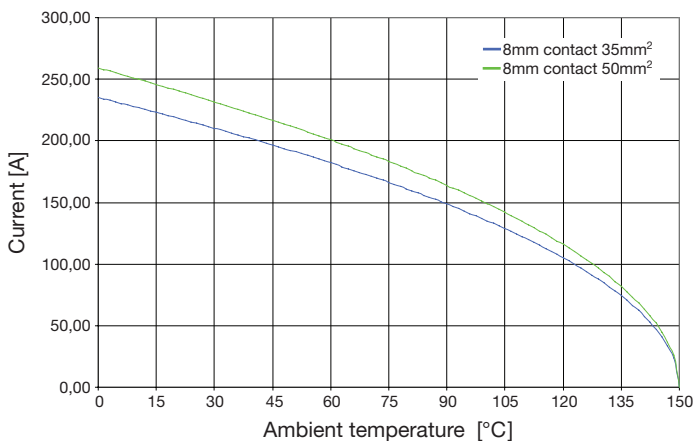


Dynamic stress - Radsok 6mm

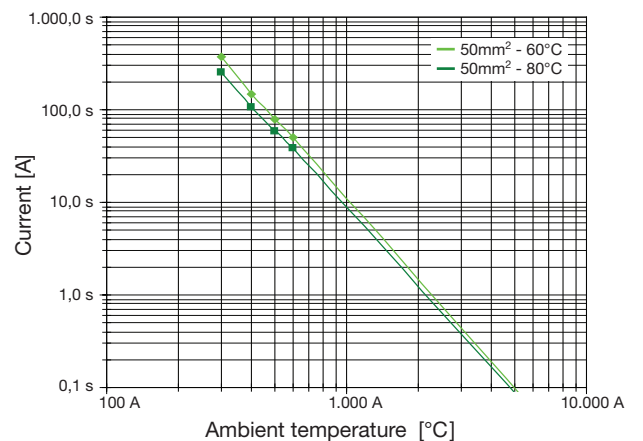


### 8mm contact

Derating curve - Radsok 8mm



Dynamic stress - Radsok 8mm



# Radsok® High Power Connectors – Test It!



For the design of optimal connection solutions our development team benefits from an extensive knowledge base and the latest CAD and CAE capabilities. From initial concept through prototyping and industrialization all functional and process related criteria are considered in the development supported by simulations such as FEM or Mold Flow analysis. Rapid Prototyping and our in house tool shop can provide functioning samples and small series in the shortest possible time. Our own, well equipped laboratory provides all required test & analysis evaluations using elaborate test programs to assure 100% product reliability and total customer satisfaction.

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