

#### POWERTRAIN SYSTEMS



#### SAFETY & SECURITY SYSTEMS



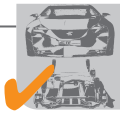
#### CONVENIENCE



#### DRIVER INFORMATION



#### BODY & CHASSIS SYSTEMS



#### E-BIKE APPLICATIONS



## NanoMQS CONTACTS

### NanoMQS CONTACTS INTRODUCTION

To address the growing requirements of the automotive industry in relation to the optimization of the space envelopes for control units and assemblies, TE Connectivity has developed the NanoMQS contact product family.

The base element is a female contact suitable for a contact blade cross-section of 0.5 x 0.4mm. The NanoMQS contact expands the family of MQS contacts already proven in the automotive industry and makes it possible to reduce spatial volume up to 50%. As such, compared to systems with a nominal size of 0.63, significant space and weight savings are possible. The NanoMQS contact features very good current carrying capability at high ambient temperatures. On the other hand the insertion and extraction forces are very low and avoid mechanical aids for the actuation of connection systems with up to 32 contact positions.

As a result further space savings are possible compared to other systems. Of course the contact system and the connectors have been designed in strict compliance with the design and function guidelines published by major car manufacturers. All NanoMQS applications are therefore extremely robust.

Despite the small size, it was possible to integrate the internationally required elements for the catch mechanism (primary lock) and catch lock (secondary locking); these features also comply with the force requirements in the underlying automotive specifications. In accordance with the design philosophy for the MQS system, the NanoMQS contact can also be arranged in a grid as an integer multiple of all contacts in the series.

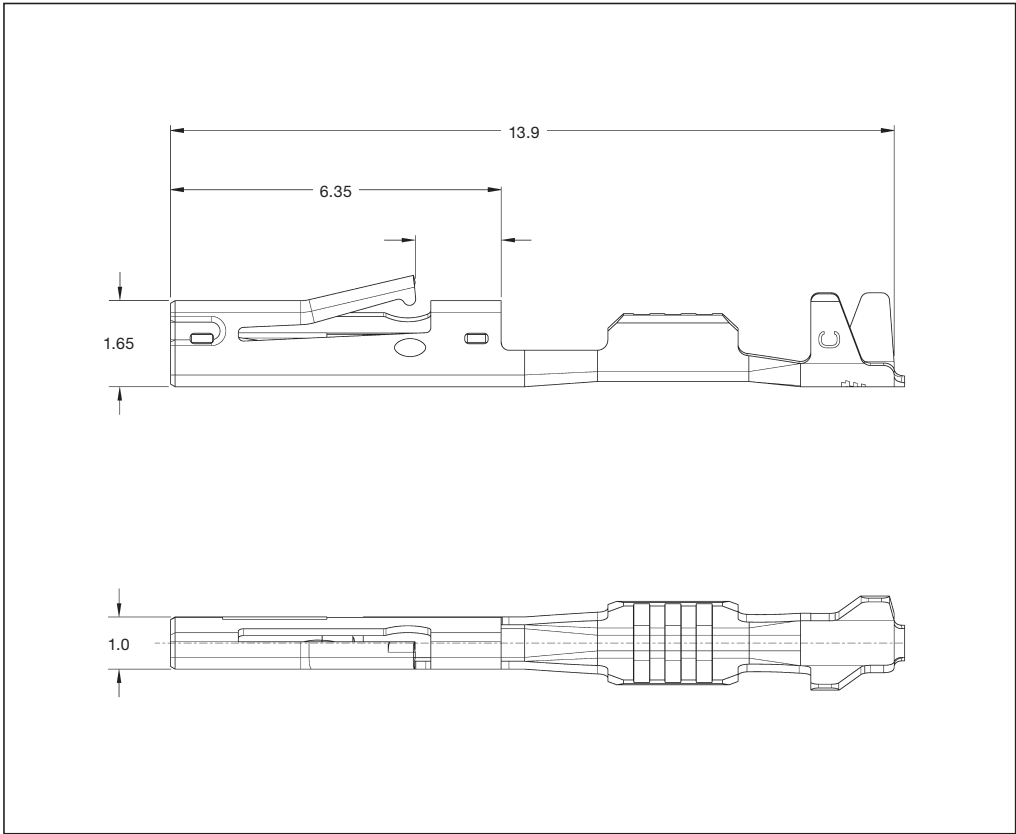
All contacts can be realized in mixed arrangements almost without limitation, as the position of the catch lock also follows the platform standard for the MQS family.

Receptacle Contacts



Technical Features

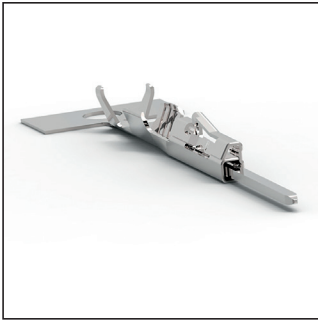
- Contact Material:**  
CuNiSi/CuSn
- Surface Contact Area:**  
Tin plated: 0.8-2.2 µm Sn  
Silver plated: 1.8-5 µm Ag
- Wire Size Range:**  
0.13–0.35mm<sup>2</sup>
- Current Carrying Capacity:**  
Up to 3 A at 90 °C
- Temperature Range:**  
–40° C ... +105 °C (tin plated)  
–40° C ... +170 °C (silver plated)
- Cycles:**  
20 tin plated  
50 silver plated
- Application Specification:**  
114-18858
- Product Specification:**  
108-94099



Receptacle Contacts

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) | Material and Finish   | Mating Tab Contact | Part Numbers |            |             |
|------------------------------------|--------------------------|-----------------------|--------------------|--------------|------------|-------------|
|                                    |                          |                       |                    | Strip Form   | Applicator | Hand Tool   |
| 0.13 – 0.17                        | max. 1.1                 | CuNiSi, silver plated | 2236905-3          | 1-1703930-2  | 2151332-x  | 4-1579014-0 |
|                                    |                          | CuSn, tin plated      | 2236905-1          | 1-1703930-1  |            |             |
| 0.22 – 0.35                        | 0.95 – 1.2               | CuNiSi, silver plated | 1-2236905-3        | 2-1703930-2  | 2151523-x  | 4-1579014-0 |
|                                    |                          | CuSn, tin plated      | 1-2236905-1        | 2-1703930-1  |            |             |
| 0.35                               | min. 1.2<br>max. 1.3     | CuNiSi, silver plated | 1-2236905-3        | 2-1703930-2  | 2151524-x  | 4-1579014-0 |
|                                    |                          | CuSn, tin plated      | 1-2236905-1        | 2-1703930-1  |            |             |

Mating Tab Contact  
see page 3



Selecting an Applicator Online:  
[www.te.com/usa-en/products/application-tooling/mini-applicator-parts-search.html](http://www.te.com/usa-en/products/application-tooling/mini-applicator-parts-search.html)

Selecting Applicator Replaceable Tooling Online:  
[www.te.com/global-en/products/application-tooling/applicator-spare-parts-search.html](http://www.te.com/global-en/products/application-tooling/applicator-spare-parts-search.html)

## Tab Contacts



### Technical Features

**Contact Material:**

CuSn

**Surface Contact Area:**

Tin plated: 1-3  $\mu\text{m}$  Sn

Silver plated: 2-4  $\mu\text{m}$  Ag

**Wire Size Range:**

0.13–0.35mm<sup>2</sup>

**Current Carrying Capacity:**

Up to 3 A at 90 °C

**Temperature Range:**

–40 °C ... +105 °C (tin plated)

–40 °C ... +170 °C (silver plated)

**Cycles:**

20 tin plated

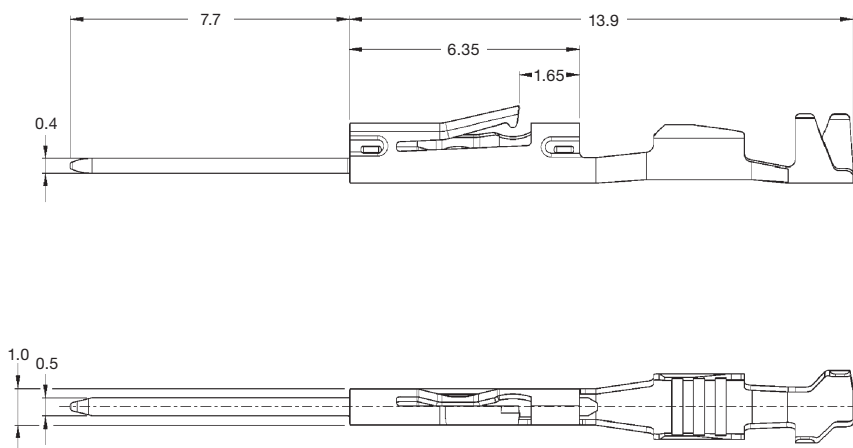
50 silver plated

**Application Specification:**

114-94288

**Product Specification:**

108-94099



## Tab Contacts

| Wire Size Range (mm <sup>2</sup> ) | Insulation Diameter (mm) | Material and Finish   | Mating Receptacle Contact | Part Numbers |            |             |
|------------------------------------|--------------------------|-----------------------|---------------------------|--------------|------------|-------------|
|                                    |                          |                       |                           | Strip Form   | Applicator | Hand Tool   |
| 0.13 – 0.17                        | 0.85 – 1.10              | CuSn, tin plated      | 1-1703930-2               | 2236905-1    | 2266620-2  | 4-1579014-3 |
|                                    |                          | CuNiSi, silver plated | 1-1703930-1               | 2236905-3    |            |             |
| 0.22 – 0.35                        | 0.95 – 1.30              | CuSn, tin plated      | 2-1703930-2               | 1-2236905-1  | 2266621-x  | 4-1579014-3 |
|                                    |                          | CuNiSi, silver plated | 2-1703930-1               | 1-2236905-3  |            |             |
| 0.35                               | 1.20 – 1.30              | CuSn, tin plated      | 2-1703930-2               | 1-2236905-1  | 2266622-x  | 4-1579014-3 |
|                                    |                          | CuNiSi, silver plated | 2-1703930-1               | 1-2236905-3  |            |             |

**Mating Receptacle Contact**  
see page 2



**Selecting an Applicator Online:**

[www.te.com/usa-en/products/application-tooling/mini-applicator-parts-search.html](http://www.te.com/usa-en/products/application-tooling/mini-applicator-parts-search.html)

**Selecting Applicator Replaceable Tooling Online:**

[www.te.com/global-en/products/application-tooling/applicator-spare-parts-search.html](http://www.te.com/global-en/products/application-tooling/applicator-spare-parts-search.html)

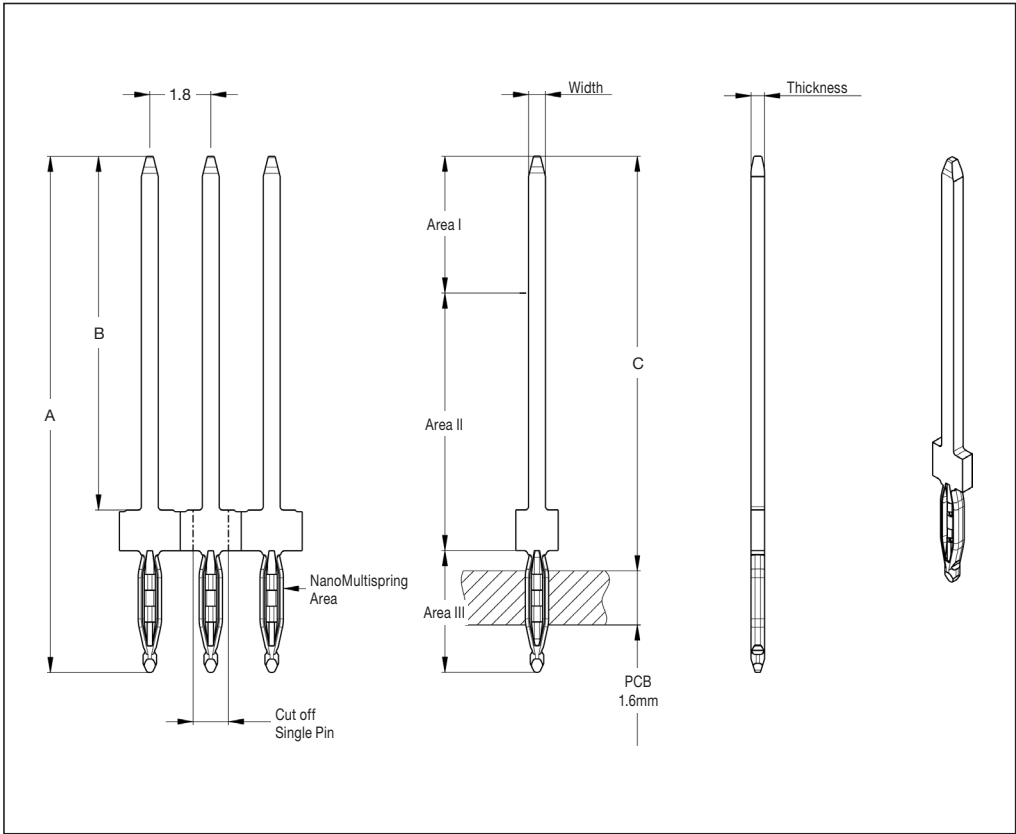
NanoMQS Interconnectors  
NanoMultispring Press-Fit Pin

NanoMultispring Press-Fit Pin



Technical Features

- Press-Fit Zone:**  
NanoMultispring
- Material Thickness:**  
0.4 mm
- Total Temperature Range:**  
-40 °C ... +125 °C
- Insertion Force:**  
Max 100 N
- Push-out Force:**  
Min 20 N
- Product Drawing:**  
2282347
- Product Requirements:**  
IEC 60352-5 / TE 108-90836
- Product Specification:**  
TE 108-90836



NanoMultispring Press-Fit Pin

| Dimension Area I,<br>Contact Tab Area<br>(mm) | Dimensions (mm)   |      |       | Nominal<br>PCB Hole Diameter<br>(mm) | Material | Finish Area I,<br>Contact Tab<br>Area | Finish Area III,<br>Press-Fit<br>Area | Part Number | Mating<br>Receptacle<br>Contact |
|-----------------------------------------------|-------------------|------|-------|--------------------------------------|----------|---------------------------------------|---------------------------------------|-------------|---------------------------------|
|                                               | Width x Thickness | A    | B     |                                      |          |                                       |                                       |             |                                 |
| 0.5 x 0.4                                     | 13.70             | 8.90 | 12.25 | 0.6                                  | CuSn6    | Sn                                    | Sn                                    | 2282347-1   | x-1703930-x                     |
|                                               |                   |      |       |                                      |          |                                       |                                       |             | x-2177908-x                     |
|                                               |                   |      |       |                                      |          |                                       |                                       |             | x-2177909-x                     |
| 0.5 x 0.4                                     | 12.80             | 8.00 | 11.35 | 0.6                                  | CuSn6    | Sn                                    | Sn                                    | 2282347-2*  | x-1703930-x                     |
|                                               |                   |      |       |                                      |          |                                       |                                       |             | x-2177908-x                     |
|                                               |                   |      |       |                                      |          |                                       |                                       |             | x-2177909-x                     |

\* on request