

# NanoMQS INTERCONNECTORS

FOR THE AUTOMOTIVE INDUSTRY

# INNOVATIVE TECHNOLOGIES

TE Connectivity (TE) is a leader in automotive connectivity and sensor technology. Our engineers are always working to meet complex requirements. We connect nearly every electronic function in the vehicle – from alternative power systems to infotainment and sensor technologies. Our technologies withstand harsh environments and tolerate high temperature, vibration, shock, pressure and long-life in electronic control systems.



## INTERCONNECTION SYSTEMS

Our electrical and electronic interconnection products and solutions are used to electrically and mechanically connect wires and cables, printed circuit boards, integrated circuit packages, batteries and more.



## CABLE ASSEMBLIES

TE is your partner for vehicle-specific cable assemblies. We offer research and development capabilities, prototypes and samples, as well as manufacturing facilities.



## HYBRID & ELECTRIC MOBILITY SOLUTIONS

Our technologies leverage decades of innovation and experience with high-voltage transmission and distribution. Our hybrid and electric mobility solutions include a complete line of connectors, terminals, sensors, cable assemblies, contactors, and battery connection protection to help safeguard the flow of power in hybrid and electric vehicles. Connection after connection, you can count on TE for smaller, greener, lighter and smarter solutions you can trust.



## SENSOR SOLUTIONS

Data is critical for making vehicles safer, greener, smarter and more connected. Customers rely on our sensor technology to provide data for control, adaptation and response of vehicle functions and features that increase safety, comfort, efficiency, and more. We collaborate to provide solutions for demanding and harsh applications such as automated transmissions, engines, chassis, clutch, brake and exhaust. Our products can be found in vehicles traveling the world's roads and highways.





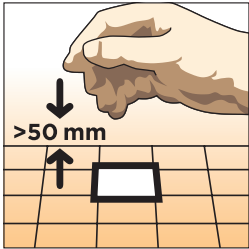

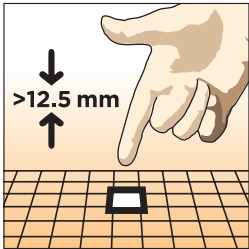
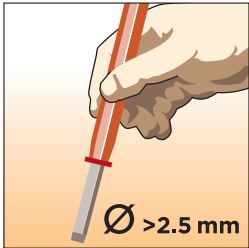
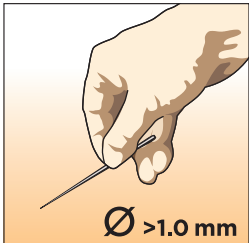
## INFOTAINMENT

Our wide range of infotainment solutions are ideal for consumer port connections, high data rate applications, next-generation harness architecture, board-to-board connections and vehicle-to-vehicle communication.





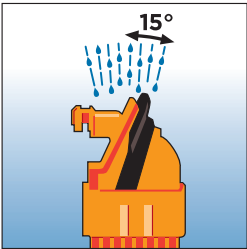

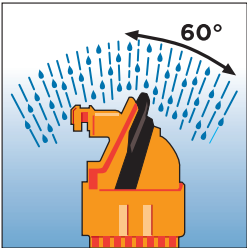
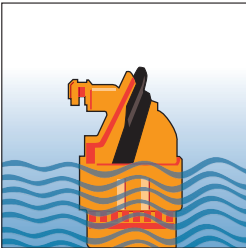
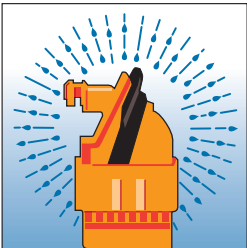
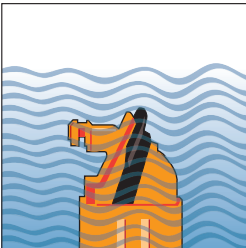
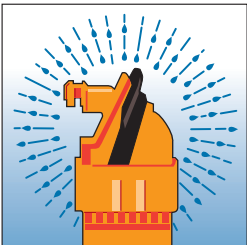



## RELAYS

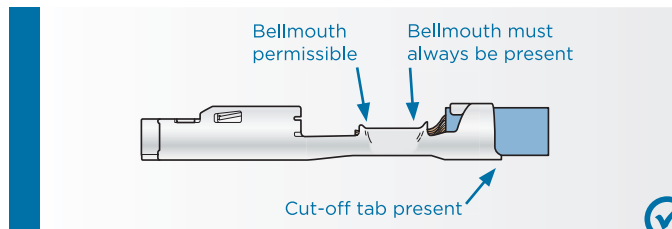
From passenger comfort and infotainment to higher DC voltages and power levels to harsh environments, our relays and contactors provide critical switching functions in multiple vehicle applications. With increased contact gaps and other key design features, our relays are ideal for harsh environments such as shock and vibration.

1st Digit	Against Foreign Objects (incl. Dust)	1st Digit	Against Foreign Objects (incl. Dust)
0	 <p>Not protected.</p>	5K	 <p>Dust protected.</p>
1	 <p>Protected against solid objects greater than 50 mm (ex. back of hand).</p>	6K	 <p>Dust tight.</p>
2	 <p>Protected against solid objects greater than 12.5 mm (ex. finger).</p>		
3	 <p>Protected against solid objects greater than 2.5 mm (ex. tool).</p>		
4	 <p>Protected against solid objects greater than 1.0 mm (ex. wire).</p>		

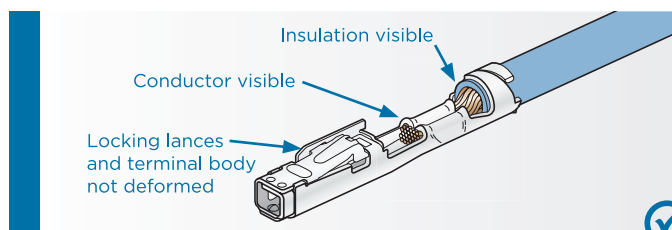


2nd Digit	Against Water		2nd Digit	Against Water	
0		Not protected.	5		Protected against jetting water.
1		Protected against vertically dripping water.	6		Protected against powerfully jetting water.
2		Protected against dripping water when tilted up to 15°.	6K		Protected against powerfully jetting water with increased pressure (Automotive).
3		Protected against spraying water (up to 60° inclination).	7		Protected against the temporary effects of immersion up to 1 meter.
4		Protected against splashing water.	8		Protected against continuous submersion agreed with customer, but more severe than code 7.
4K		Protected against splashing water with increased pressure.	9K		Protected against high-pressure/steam-jet cleaning (Automotive).

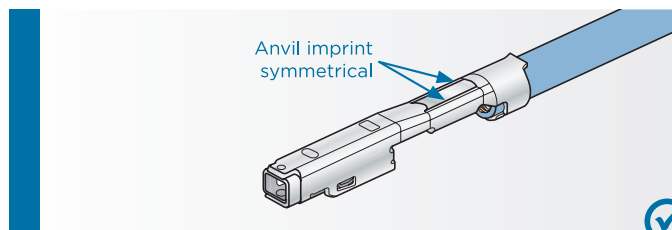
# Good Crimp Quality



F-CRIMP



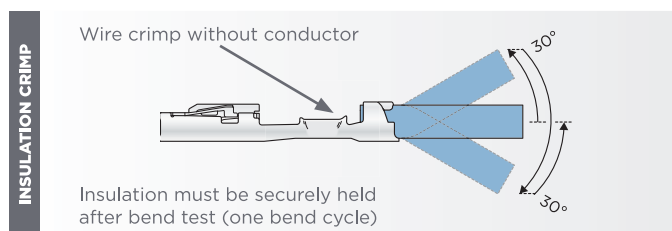
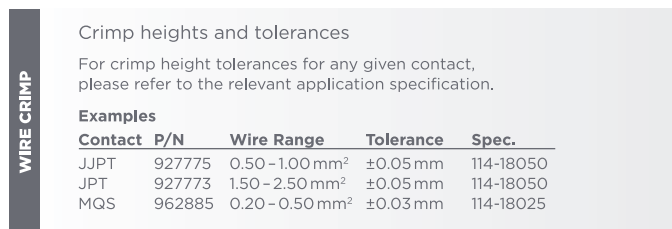
OVERLAP CRIMP



WRAP OVER CRIMP

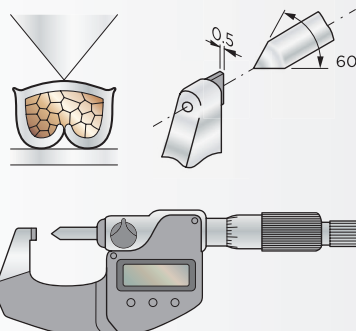


## Test



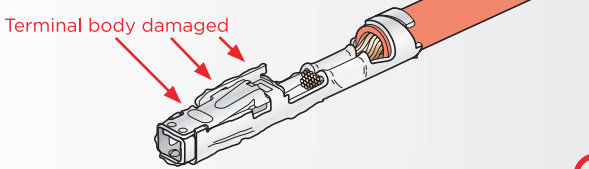

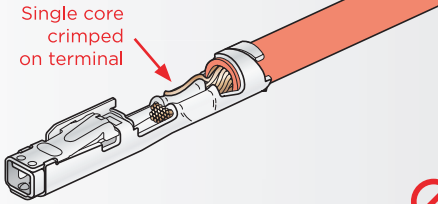

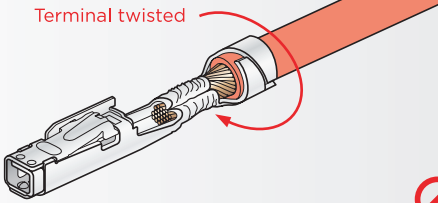

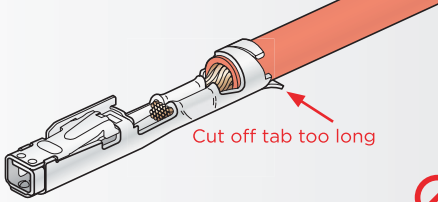
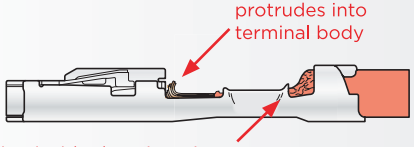
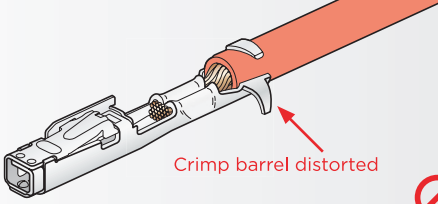
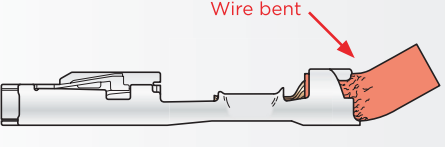
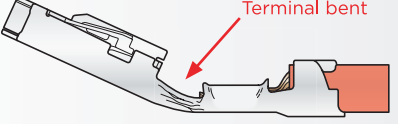
INSULATION CRIMP

Digital crimp height micrometer (0.001 mm increments) according to DIN ISO 9001  
Part number: 547203-1



WIRE CRIMP

# Incorrect Crimp Quality

 <p>Terminal body damaged</p>	<p>F-CRIMP</p>	 <p>Crimp legs are not closed</p> <p>Insulation is pierced</p>
 <p>Single core crimped on terminal</p>	<p>INSULATION CRIMP OVERLAP CRIMP</p>	 <p>Crimp legs do not overlap</p> <p>Insulation is pierced</p>
 <p>Terminal twisted</p>	<p>WRAP OVER CRIMP</p>	 <p>Insulation is not securely held</p> <p>Insulation is over crimped</p>
 <p>Cut off tab too long</p>		 <p>Conductor brush protrudes into terminal body</p> <p>Insulation inside the wire crimp</p>
 <p>Crimp barrel distorted</p>		 <p>Wire bent</p>
		 <p>Terminal bent</p>

Correct

Incorrect

Test

At TE Connectivity, we support your RoHS requirements. We've assessed more than 1.5 million end items/components for RoHS compliance, and issued new part numbers where any change was required to eliminate the restricted materials. Part numbers in this catalog are identified as:

## RoHS Compliant

Part numbers in this catalog are RoHS Compliant, unless marked otherwise. These products comply with European Union Directive 2002/95/EC as amended 1 January 2006 that restricts the use of lead, mercury, cadmium, hexavalent chromium, PBB, and PBDE in certain electrical and electronic products sold into the EU as of 1 July 2006.

Note: For purposes of this Catalog, included within the definition of RoHS Compliant are products that are clearly "Out of Scope" of the RoHS Directive such as hand tools and other non-electrical accessories.

## Non-RoHS Compliant

These part numbers are identified with a "t" symbol. These products do not comply with the material restrictions of the European Union Directive 2002/95/EC.

## 5 of 6 Compliant

A "l" symbol identifies these part numbers. These products do not fully comply with the European Union Directive 2002/95/EC because they contain lead in solderable interfaces (they do not contain any of the other five restricted substances above allowable limits). However, these products may be suitable for use in RoHS applications where there is an application-based exception for lead in solders, such as the server, storage, or networking infrastructure exemption.

Note: Information regarding RoHS compliance is provided based on reasonable inquiry of our suppliers and represents our current actual knowledge based on the information provided by our suppliers. This information is subject to change. For latest compliance status, refer to our website referenced below. So whatever your questions when it comes to RoHS, we've got the answers at <http://www.TE.com/customersupport/rohssupportcenter/>

## Getting the information you need

Our comprehensive on-line RoHS Customer Support Center provides a forum to answer your questions and support your RoHS needs. A RoHS FAQ (Frequently Asked Questions) is available with links to more detailed information. You can also submit RoHS questions and receive a response within 24 hours during a normal work week. The Support Center also provides:

- Cross-Reference from Non-compliant to Compliant Products
- Ability to browse RoHS Compliant Products in our on-line catalog:  
[www.TE.com/commerce/alt/RohsAltHome.do](http://www.TE.com/commerce/alt/RohsAltHome.do)
- Downloadable Technical Data Customer Information Presentation
- More detailed information regarding the definitions used above

## Conversion Tables

### AWG Conversion Table (Average Value)

AWG Code	Diameter (Inch)	Diameter (mm)	F (mm²)
000000	0.5800	14.733	170.0
00000	0.5165	13.13	135.0
0000	0.4600	11.684	103.8
000	0.4096	10.40	79.0
00	0.3648	9.27	67.5
0	0.3249	8.25	53.4
1	0.2893	7.34	42.2
2	0.2576	6.55	33.7
3	0.2294	5.82	26.6
4	0.2043	5.18	21.0
5	0.1819	4.62	16.9
6	0.1620	4.115	13.25
7	0.1443	3.66	10.25
8	0.1285	3.26	8.34
9	0.1144	2.90	6.6
10	0.1019	2.59	5.27
11	0.0907	2.30	4.15
12	0.0808	2.05	3.3
13	0.0720	1.83	2.63
14	0.0641	1.63	2.08
15	0.0571	1.45	1.65
16	0.0508	1.29	1.305
17	0.0453	1.14	1.01
18	0.0403	1.02	0.79
19	0.0359	0.91	0.65
20	0.0320	0.81	0.51
21	0.0285	0.72	0.407
22	0.0253	0.64	0.32
23	0.0226	0.57	0.255
24	0.0201	0.51	0.205
25	0.0179	0.455	0.162
26	0.0159	0.40	0.125
27	0.0142	0.36	0.102
28	0.0126	0.320	0.08
29	0.0113	0.287	0.0646
30	0.0100	0.254	0.0516
31	0.0089	0.226	0.04
32	0.0080	0.203	0.0324
33	0.0071	0.180	0.0255
34	0.0063	0.160	0.02
35	0.0056	0.142	0.0158
36	0.0050	0.127	0.0127
37	0.0045	0.114	0.01
38	0.0040	0.101	0.008
39	0.0035	0.089	0.0062
40	0.0031	0.079	0.0049
41	0.0028	0.071	0.00395
42	0.0025	0.064	0.00321
43	0.0022	0.056	0.00246
44	0.00198	0.050	0.00196
45	0.00176	0.045	
46	0.00157	0.040	
47	0.00140	0.036	
48	0.00124	0.031	
49	0.00110	0.028	
50	0.00099	0.025	

Most of the wire size ranges are mentioned in mm², as well as the insulation diameters which are in many cases only in mm's We therefore included the conversion tables on page X and page XI.

Please note that wire and insulation sizes are for guidance only. Consult the customer drawing for precise detail.

#### FLK and FLR

stand for German DIN (72551) abbreviations.

#### FLK means:

In German:

- Fahrzeug Leitung Kunststoff

In English:

- Vehicle Cable Plastic

#### FLR means:

In German:

- Fahrzeug Leitung Reduziert

In English:

- Thin Walled Cable (reduced insulation thickness)

Remark: Starting from 0.03 mm² (AWG 32) a wire can be crimped.

MQS Terminals  
Performance Overview

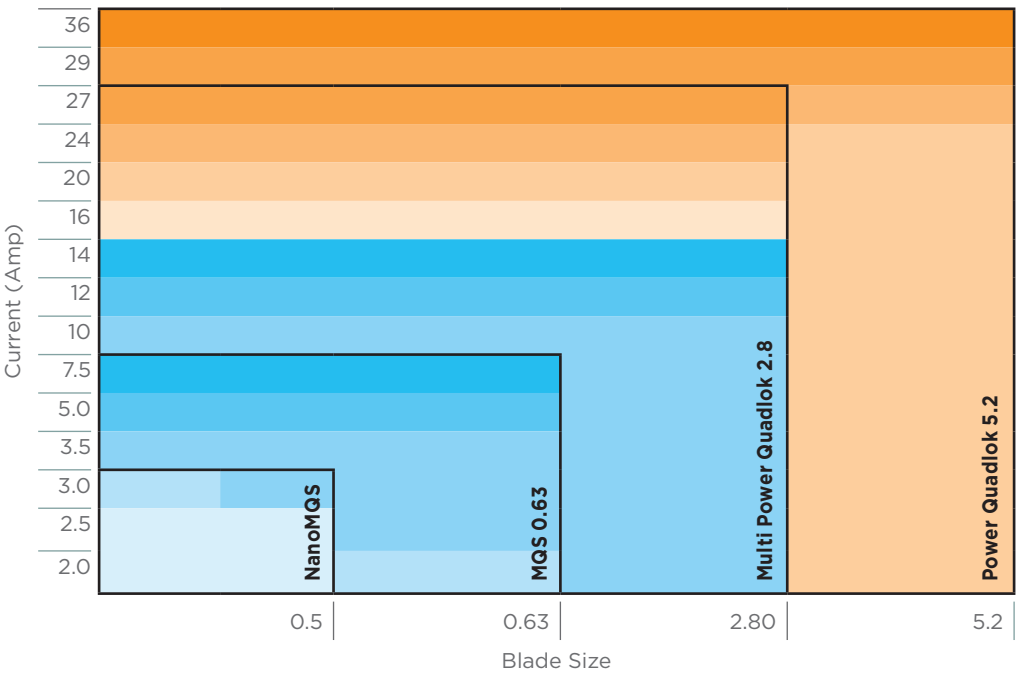
Blade Size vs. Current

Wire Size

- 6.00mm<sup>2</sup>
- 4.00mm<sup>2</sup>
- 2.50mm<sup>2</sup>
- 1.50mm<sup>2</sup>
- 1.00mm<sup>2</sup>
- 0.75mm<sup>2</sup>
- 0.50mm<sup>2</sup>
- 0.35mm<sup>2</sup>
- 0.20/0.22mm<sup>2</sup>
- 0.13/0.17mm<sup>2</sup>

Temperature

Depending on Wire Size      85° C +





NanoMQS Interconnectors		Page	Powertrain Systems	Safety & Security Systems	Convenience	Driver Information	Body & Chassis Systems	E-Bike Applications
<b>NanoMQS Contacts</b>								
Introduction	1							
NanoMQS Terminal - Receptacle Contacts	2	•	•	•	•	•	•	•
NanoMQS Terminal - Tab Contacts	3	•	•	•	•	•	•	•
NanoMultispring Press-Fit Pin	4	•	•	•	•	•	•	•
<b>NanoMQS Top Latch   Side Latch   Unsealed</b>								
Introduction	5							
<b>NanoMQS Top Latch Unsealed</b>	6 - 17							
<b>Printed Circuit Board Headers</b>								
Right Angle - 8 positions	6	•	•	•	•	•	•	•
Right Angle - 12 positions	7	•	•	•	•	•	•	•
Right Angle - 20 positions	8	•	•	•	•	•	•	•
Right Angle - 32 positions	9	•	•	•	•	•	•	•
Vertical - 8 positions	10	•	•	•	•	•	•	•
Vertical - 12 positions	11	•	•	•	•	•	•	•
Vertical - 20 positions	12	•	•	•	•	•	•	•
Vertical - 32 positions	13	•	•	•	•	•	•	•
<b>Receptacle Housings</b>								
8 positions	14	•	•	•	•	•	•	•
12 positions	15	•	•	•	•	•	•	•
20 positions	16	•	•	•	•	•	•	•
32 positions	17	•	•	•	•	•	•	•
<b>NanoMQS Top Latch Unsealed</b>	18 - 33							
<b>Printed Circuit Board Headers - 2 Row Design</b>								
6 positions	18	•	•	•	•	•	•	•
20 positions	19	•	•	•	•	•	•	•
<b>Receptacle Housings - 2 Row Design</b>								
6 positions	20	•	•	•	•	•	•	•
10 positions	21	•	•	•	•	•	•	•
14 positions	22	•	•	•	•	•	•	•
20 positions	23	•	•	•	•	•	•	•

NanoMQS Interconnectors	Page	Powertrain Systems	Safety & Security Systems	Convenience	Driver Information	Body & Chassis Systems	E-Bike Applications
<b>NanoMQS Top Latch Unsealed</b>	18 – 33						
Receptacle Housings – 1 Row Design							
2 positions	24	•	•	•	•	•	•
3 positions	25	•	•	•	•	•	•
4 positions	26	•	•	•	•	•	•
5 positions	27	•	•	•	•	•	•
6 positions	28	•	•	•	•	•	•
7 positions	29	•	•	•	•	•	•
8 positions	30	•	•	•	•	•	•
9 positions	31	•	•	•	•	•	•
10 positions	32	•	•	•	•	•	•
11 positions	33	•	•	•	•	•	•
<b>NanoMQS Sealed Housings</b>	34 – 37						
Receptacle Housings							
2 positions	34	•	•	•	•	•	•
4 positions	35	•	•	•	•	•	•
2 – 6 positions	36	•	•	•	•	•	•
6 positions	37	•	•	•	•	•	•
<b>Application Tooling</b>	39						
<b>Numerical Index</b>	41						
<b>TE Connectivity online</b>	42						
<b>Global Contacts   Imprint</b>	43						

#### POWERTRAIN SYSTEMS



#### SAFETY & SECURITY SYSTEMS



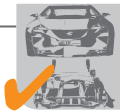
#### CONVENIENCE



#### 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.

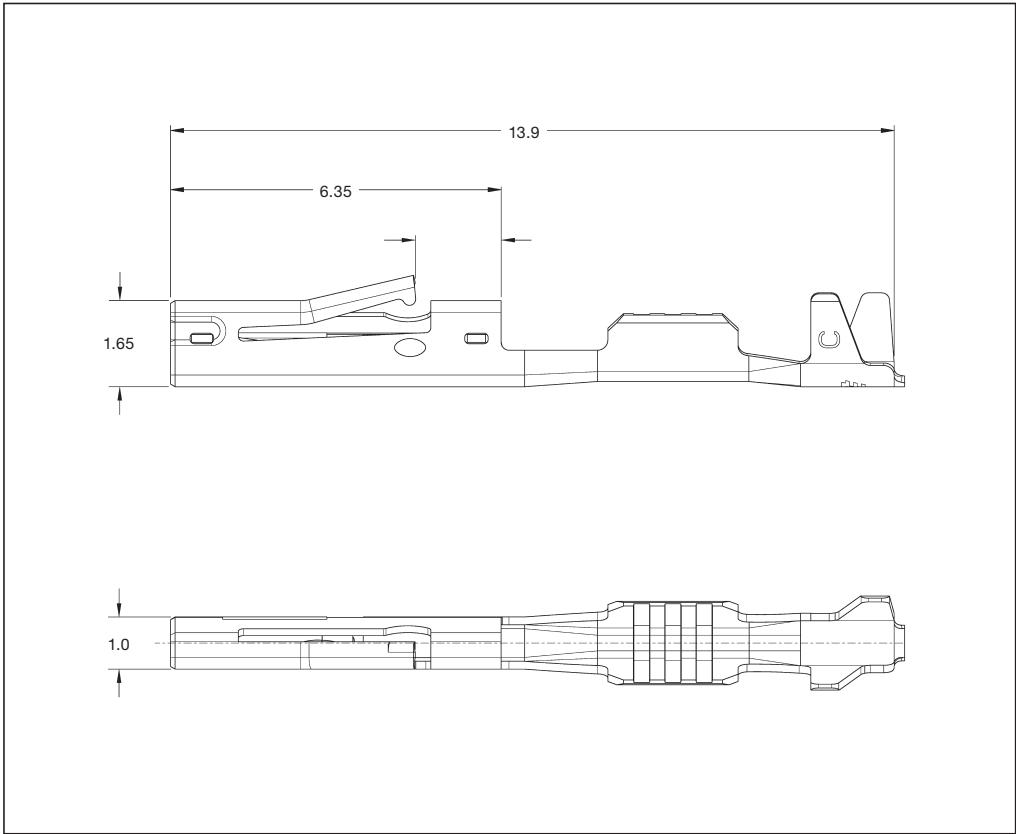
All contacts can be realized in mixed arrangements almost without limitation, as the position of the catch lock also follows the platform standard for the MQS family.

Receptacle Contacts



Technical Features

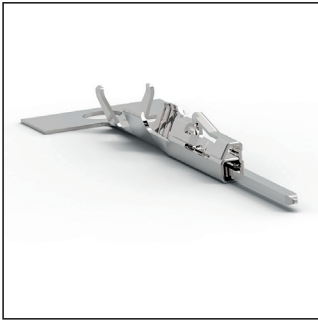
- Contact Material:**  
CuNiSi/CuSn
- Surface Contact Area:**  
Tin plated: 0.8-2.2 µm Sn  
Silver plated: 1.8-5 µm Ag
- Wire Size Range:**  
0.13–0.35mm<sup>2</sup>
- Current Carrying Capacity:**  
Up to 3 A at 90 °C
- Temperature Range:**  
–40° C ... +105 °C (tin plated)  
–40° C ... +170 °C (silver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

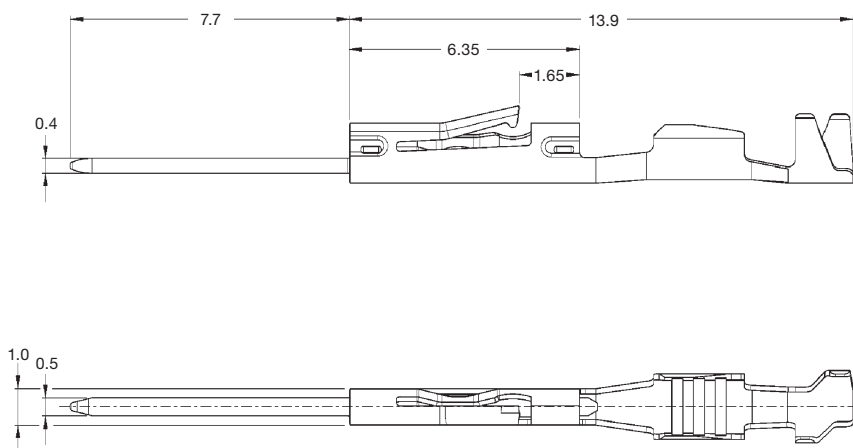
50 silver plated

**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)

NanoMultispring Press-Fit Pin



Technical Features

**Press-Fit Zone:**  
NanoMultispring

**Material Thickness:**  
0.4 mm

**Total Temperature Range:**  
-40 °C ... +125 °C

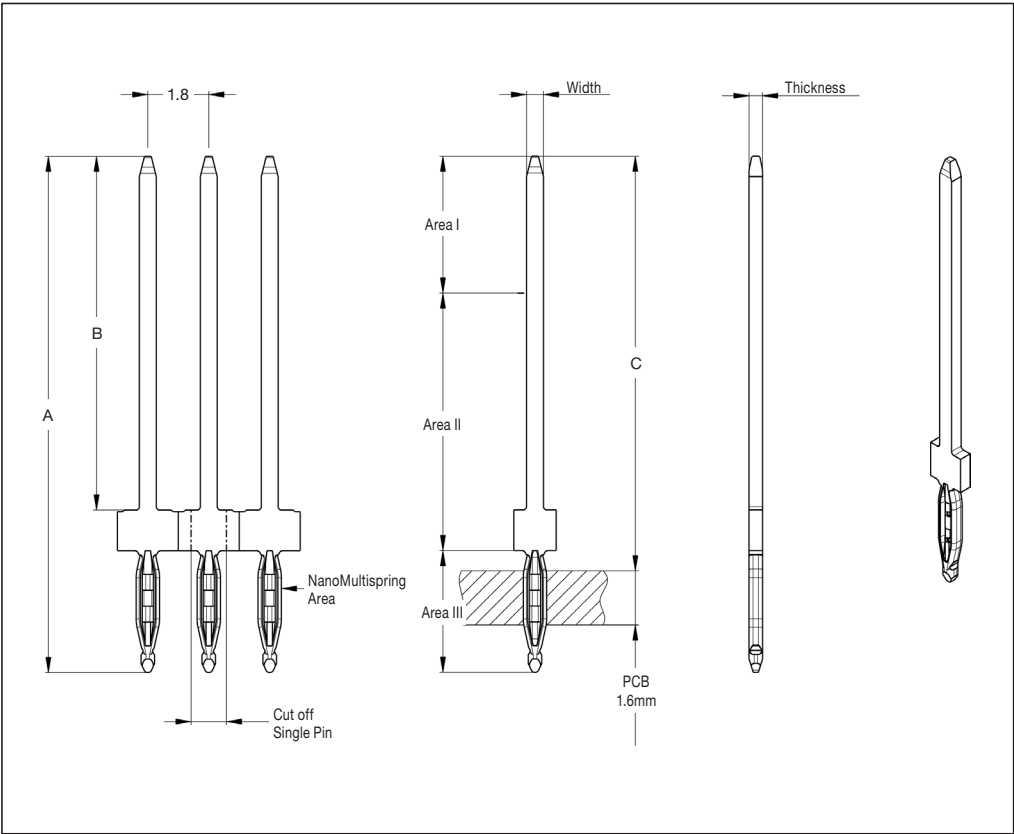
**Insertion Force:**  
Max 100 N

**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, Contact Tab Area (mm)	Dimensions (mm)			Nominal PCB Hole Diameter (mm)	Material	Finish Area I, Contact Tab Area	Finish Area III, Press-Fit Area	Part Number	Mating Receptacle 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



#### POWERTRAIN SYSTEMS



#### SAFETY & SECURITY SYSTEMS



#### CONVENIENCE



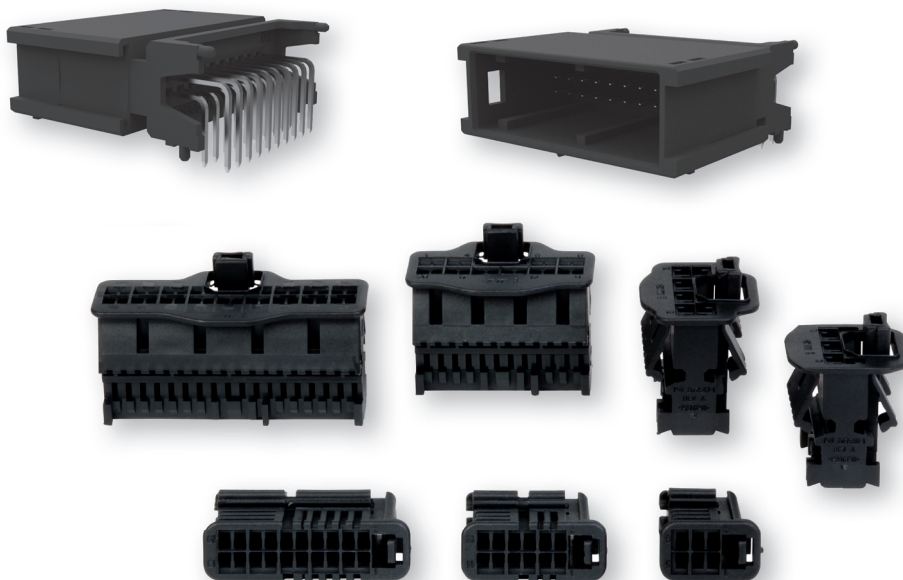
#### DRIVER INFORMATION



#### BODY & CHASSIS SYSTEMS



#### E-BIKE APPLICATIONS



## NanoMQS TOP LATCH / SIDE LATCH UNSEALED

### INTRODUCTION

The NanoMQS Top Latch (TL) and Side Latch (SL) series features a high possible connector robustness, a multitude of possibilities in mechanical integration and manufacturability. Available in 2 to 32 connections and the ease of combination of several modules support a wide range coverage of applications. Smooth extraction and insertion along with convenient handling show that the miniaturization of connector systems does not necessarily signify loss of convenience.

The development of the system was targeted to meet the same requirements as non-miniaturized ones: Current carrying capability at high ambient temperatures, reliable operation, robust protection against incorrect insertion and acoustic feedback on insertion. The ability to integrate multipin connectors in all types of enclosures as well as the possibility of orientating the connectors perpendicular and parallel to the circuit board make the TL and SL series a real all-rounder.

By selecting high quality housing materials – of course resistant to high temperatures and suitable for reflow processes – and due to a ultra robust housing design, the connector system can stand critical loads and installation.

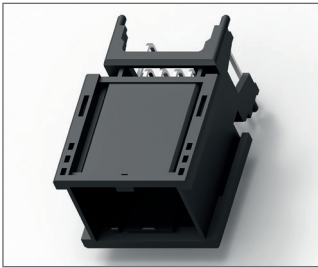
The Connector housing with its multifunction surfaces on the multipin is made for reliable and precise soldering processes using grippers or suction cups, effortlessly being integrated into fully automatic processes. The female connector housings have been developed to meet both manual contact loading as well as fully automated block loading, and does therefore as well support the different customer preferences.

The Side Latch interface has been selected by the German OEM group AK as a standard interface of 0.5mm Miniaturization.

### Product Features

- Miniaturized terminal system for high density connectors
- Signal terminal max. 3 Amps
- Pin dimensions 0.5mm x 0.4mm
- Nominal pitch 1.5mm
- Wire size range max. 0.13 – 0.35mm<sup>2</sup>
- Integrated into the MQS terminal family series
- Single piece locking lance terminal
- Primary and secondary locking capability
- Designed for automotive applications

Printed Circuit Board Headers – Right Angle – 8 Positions



Technical Features

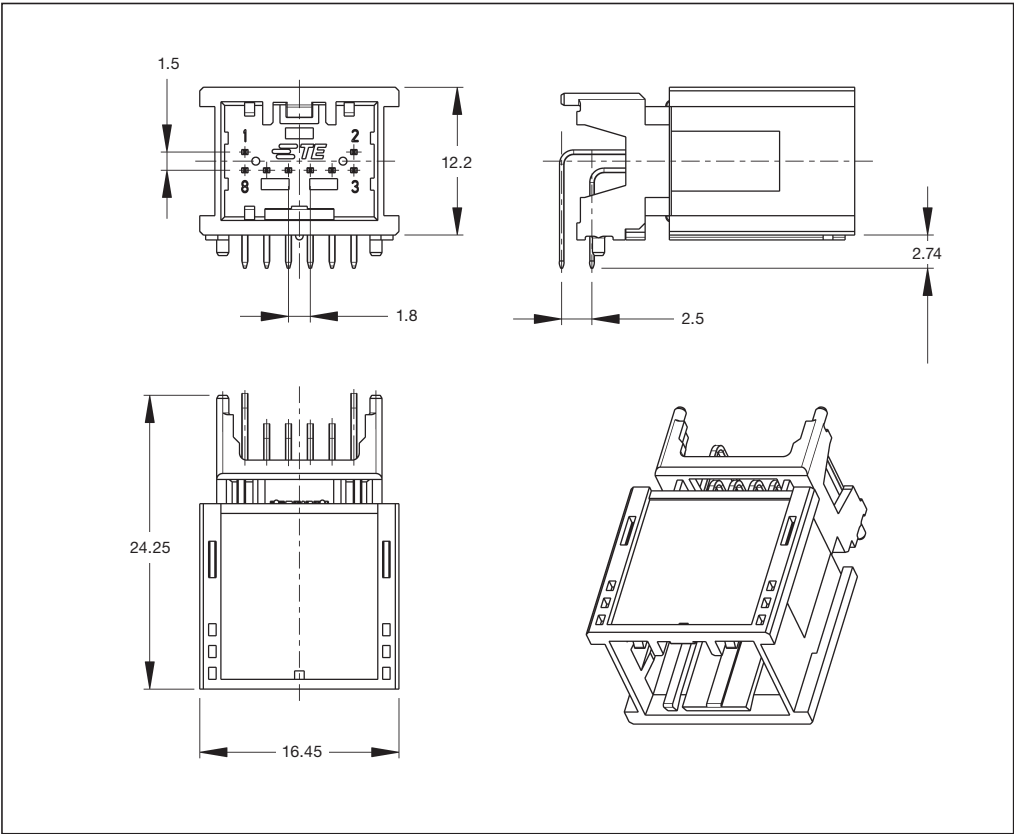
**No. of Positions:**  
8 Positions

**Housing Material:**  
LCP, Glas fibre reinforced

**Material and Finish:**  
CuMg01, Sn over Ni

**Product Specification:**  
108-94313

**Application Specification:**  
114-94160

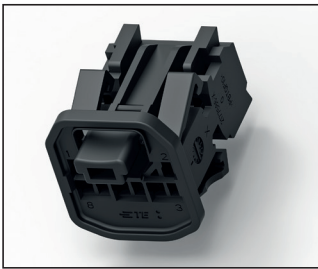


Printed Circuit Board Headers – Right Angle – 8 Positions

Keying Options	Housing Color	Part Numbers				
		PCB Header Right Angle	Cover	Lever	Retainer Housings	Mating Receptacle Housing
Coding A	Black	0-2177372-3	N/A	N/A	N/A	2177586-1
Coding B		1-2177372-3				2177586-2
Coding C		2-2177372-3*				2177586-3*
Coding D		3-2177372-3*				2177586-4*

\*on request

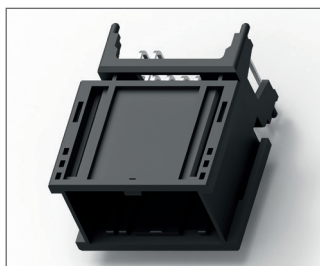
Mating Receptacle Housing  
see page 14



## NanoMQS Interconnectors

### NanoMQS Top Latch Unsealed

#### Printed Circuit Board Headers – Right Angle – 12 Positions



##### Technical Features

**No. of Positions:**

12 Positions

**Housing Material:**

LCP, Glas fibre reinforced

**Material and Finish:**

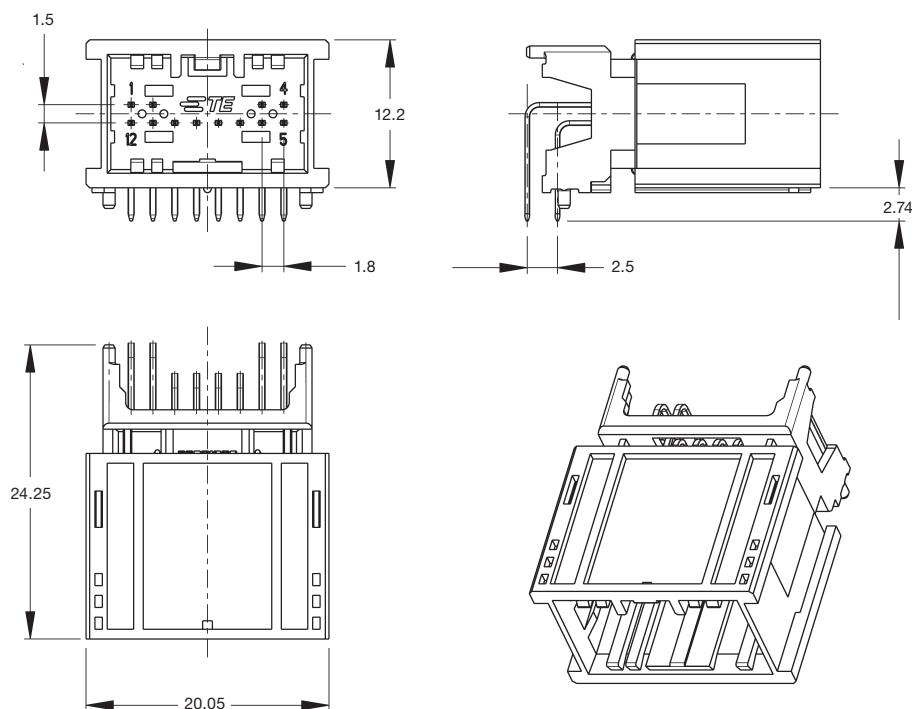
CuMg01, Sn over Ni

**Product Specification:**

108-94313

**Application Specification:**

114-94160

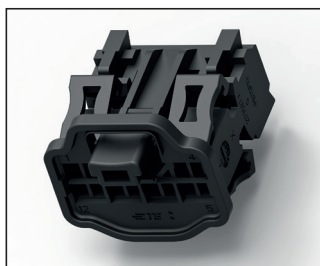


#### Printed Circuit Board Headers – Right Angle – 12 Positions

Keying Options	Housing Color	Part Numbers				
		PCB Header Right Angle	Cover	Lever	Retainer Housings	Mating Receptacle Housing
Coding A	Black	0-2177370-3	N/A	N/A	N/A	2177587-1
Coding B		1-2177370-3				2177587-2
Coding C		2-2177370-3*				2177587-3*
Coding D		3-2177370-3*				2177587-4*

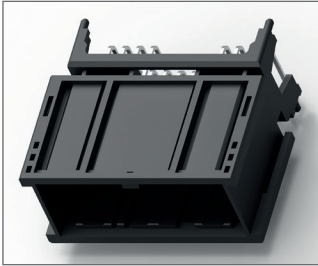
\*on request

**Mating Receptacle Housing**  
see page 15



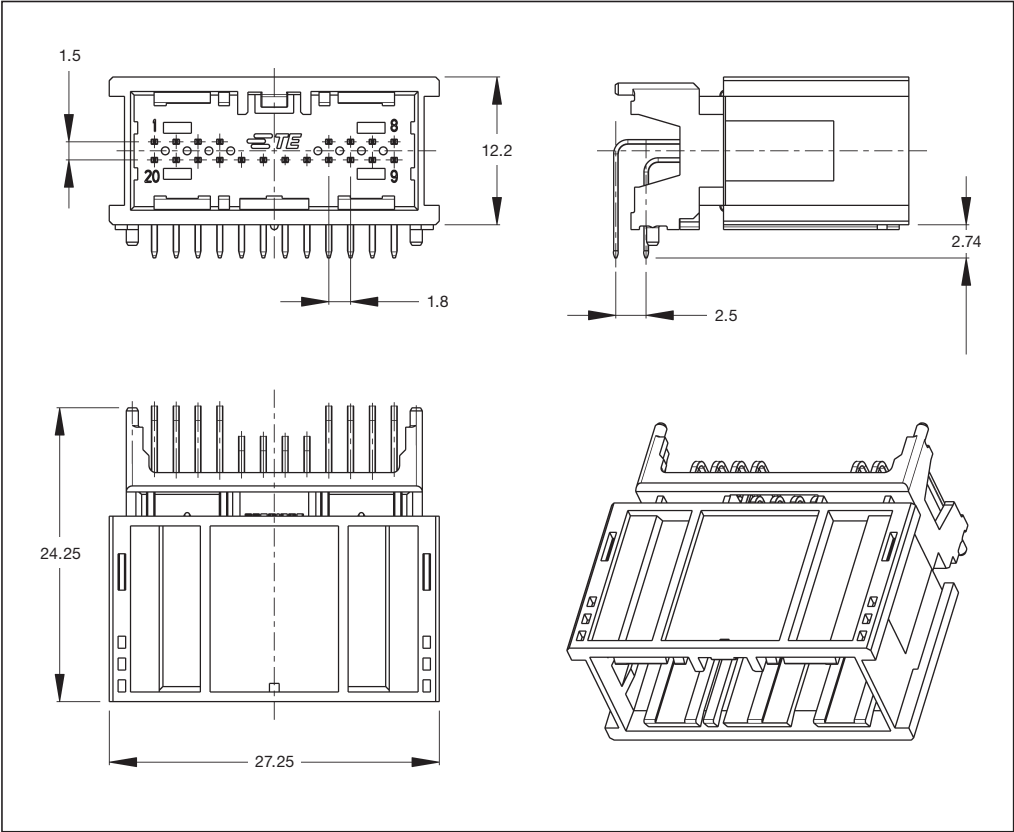
NanoMQS Interconnectors  
NanoMQS Top Latch Unsealed

Printed Circuit Board Headers – Right Angle – 20 Positions



Technical Features

- No. of Positions:**  
20 Positions
- Housing Material:**  
LCP, Glas fibre reinforced
- Material and Finish:**  
CuMg01, Sn over Ni
- Product Specification:**  
108-94313
- Application Specification:**  
114-94160

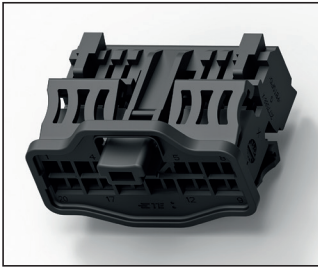


Printed Circuit Board Headers – Right Angle – 20 Positions

Keying Options	Housing Color	Part Numbers				
		PCB Header Right Angle	Cover	Lever	Retainer Housings	Mating Receptacle Housing
Coding A	Black	0-2177367-3	N/A	N/A	N/A	2177588-1
Coding B		1-2177367-3				2177588-2
Coding C		2-2177367-3*				2177588-3*
Coding D		3-2177367-3*				2177588-4*

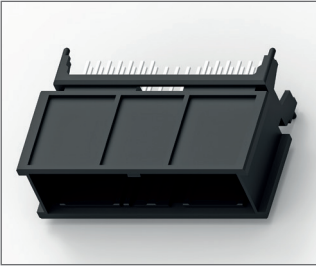
\*on request

Mating Receptacle Housing  
see page 16



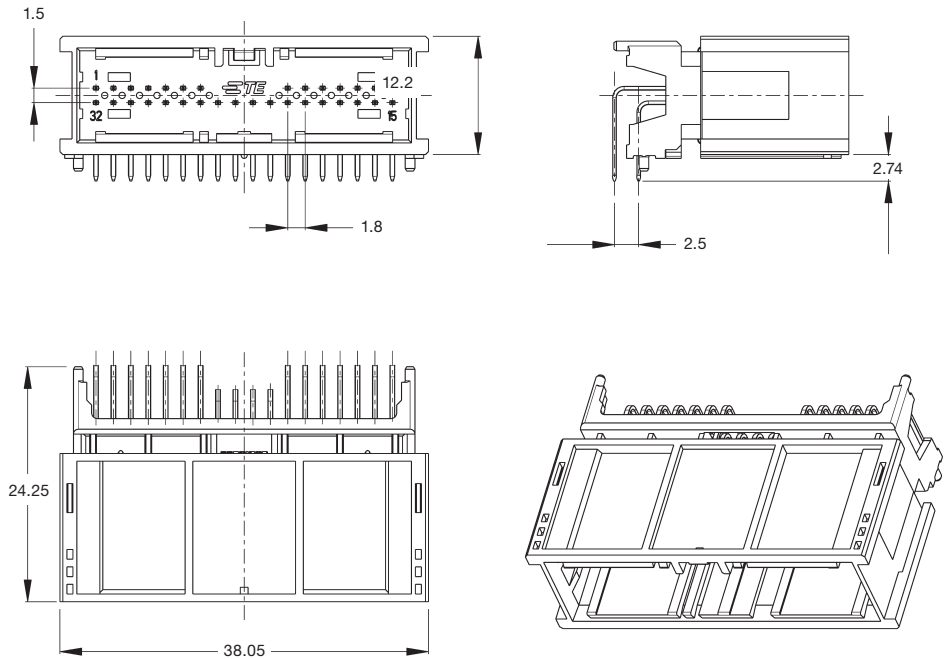
NanoMQS Interconnectors  
NanoMQS Top Latch Unsealed

Printed Circuit Board Headers – Right Angle – 32 Positions



Technical Features

- No. of Positions:**  
32 Positions
- Housing Material:**  
LCP, Glas fibre reinforced
- Material and Finish:**  
CuMg01, Sn over Ni
- Product Specification:**  
108-94313
- Application Specification:**  
114-94160

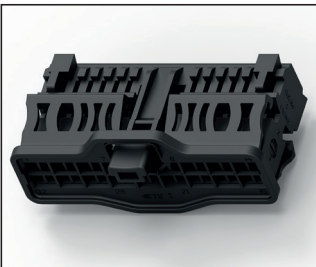


Printed Circuit Board Headers –Right Angle – 32 Positions

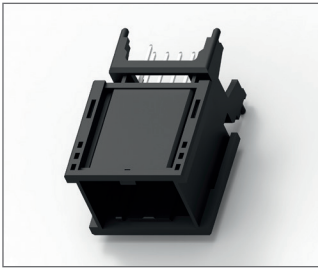
Keying Options	Housing Color	Part Numbers				
		PCB Header Right Angle	Cover	Lever	Retainer Housings	Mating Receptacle Housing
Coding A	Black	0-2177419-3	N/A	N/A	N/A	2141576-1
Coding B		1-2177419-3				2141576-2
Coding C		2-2177419-3				2141576-3
Coding D		3-2177419-3*				2141576-4*

\*on request

Mating Receptacle Housing  
see page 15

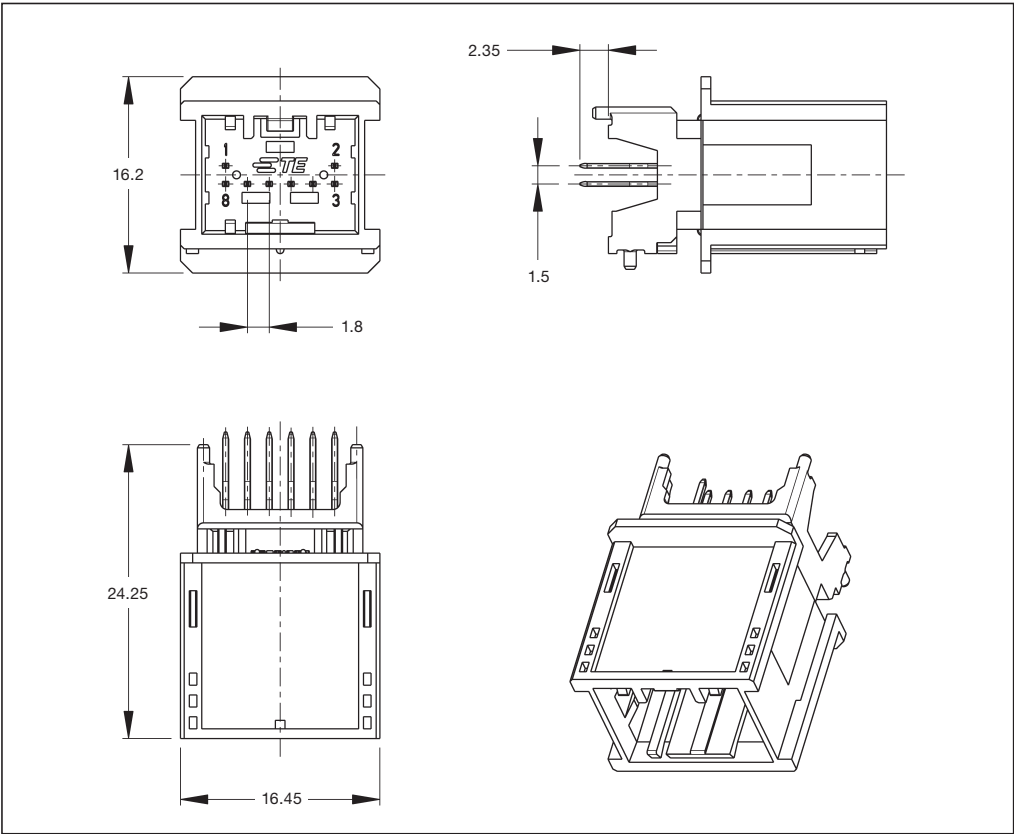


Printed Circuit Board Headers – Vertical – 8 Positions



Technical Features

- No. of Positions:**  
8 Positions
- Housing Material:**  
LCP, Glas fibre reinforced
- Material and Finish:**  
CuMg01, Sn over Ni
- Product Specification:**  
108-94313
- Application Specification:**  
114-94160

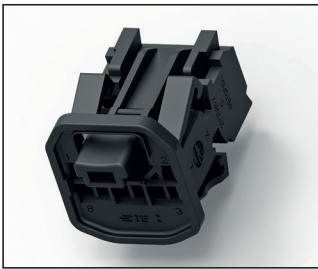


Printed Circuit Board Headers – Vertical – 8 Positions

Keying Options	Housing Color	Part Numbers				
		PCB Header Vertical	Cover	Lever	Retainer Housings	Mating Receptacle Housing
Coding A	Black	0-2177768-3	N/A	N/A	N/A	2177586-1
Coding B		1-2177768-3				2177586-2
Coding C		2-2177768-3*				2177586-3*
Coding D		3-2177768-3*				2177586-4*

\*on request

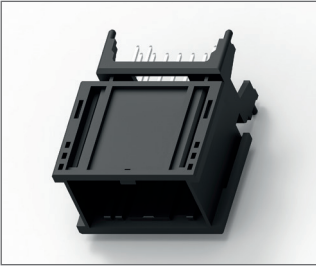
Mating Receptacle Housing  
see page 14





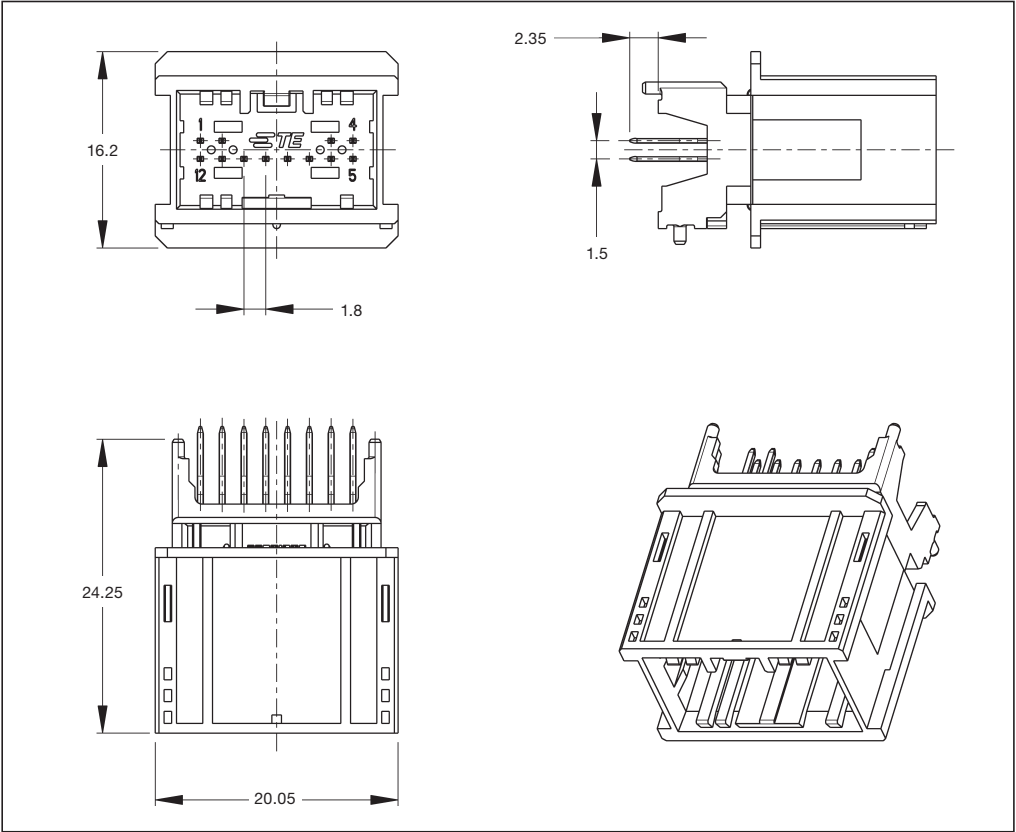
NanoMQS Interconnectors  
NanoMQS Top Latch Unsealed

Printed Circuit Board Headers – Vertical – 12 Positions



Technical Features

- No. of Positions:**  
12 Positions
- Housing Material:**  
LCP, Glas fibre reinforced
- Material and Finish:**  
CuMg01, Sn over Ni
- Product Specification:**  
108-94313
- Application Specification:**  
114-94160

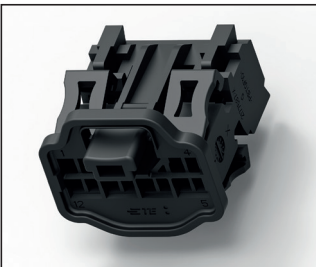


Printed Circuit Board Headers – Vertical – 12 Positions

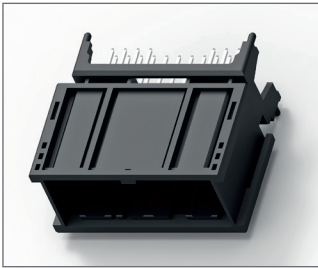
Keying Options	Housing Color	Part Numbers				
		PCB Header Vertical	Cover	Lever	Retainer Housings	Mating Receptacle Housing
Coding A	Black	0-2177767-3	N/A	N/A	N/A	2177587-1
Coding B		1-2177767-3				2177587-2
Coding C		2-2177767-3*				2177587-3*
Coding D		3-2177767-3*				2177587-4*

\*on request

Mating Receptacle Housing  
see page 15

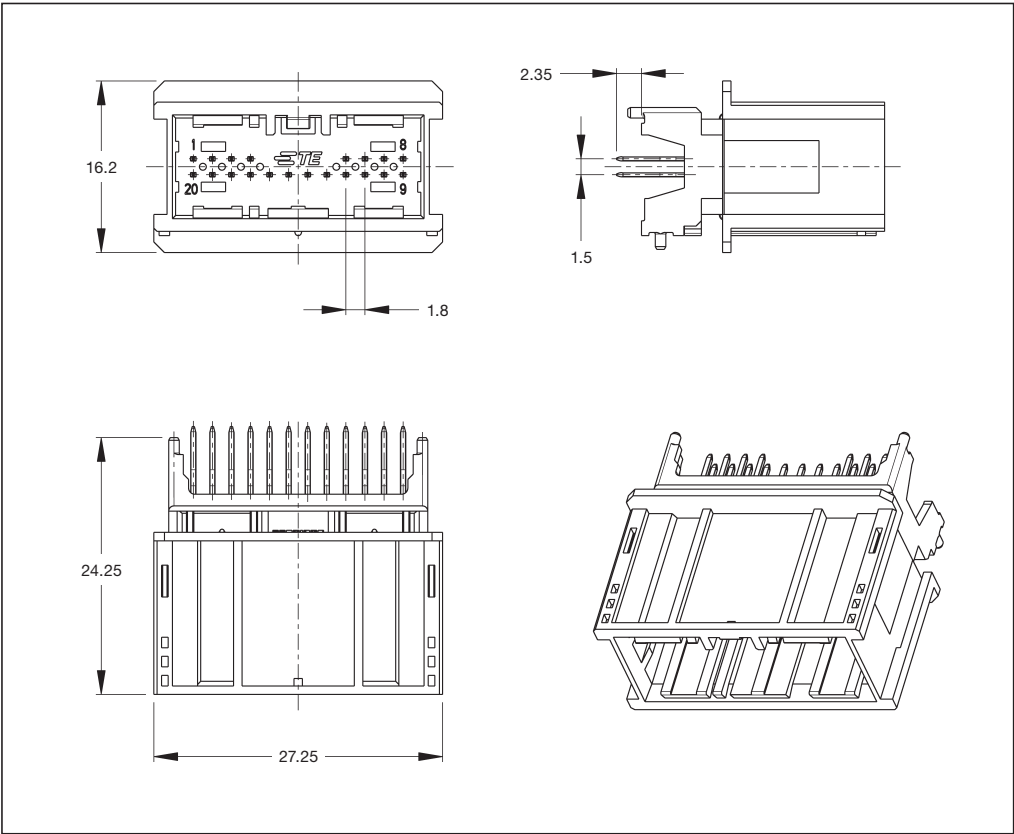


Printed Circuit Board Headers – Vertical – 20 Positions



Technical Features

- No. of Positions:**  
20 Positions
- Housing Material:**  
LCP, Glas fibre reinforced
- Material and Finish:**  
CuMg01, Sn over Ni
- Product Specification:**  
108-94313
- Application Specification:**  
114-94160

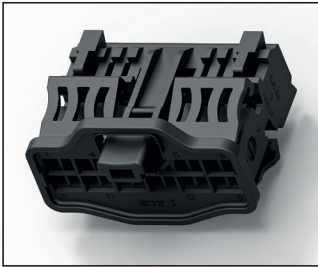


Printed Circuit Board Headers – Vertical – 20 Positions

Keying Options	Housing Color	Part Numbers				
		PCB Header Vertical	Cover	Lever	Retainer Housings	Mating Receptacle Housing
Coding A	Black	0-2177766-3	N/A	N/A	N/A	2177588-1
Coding B		1-2177766-3				2177588-2
Coding C		2-2177766-3*				2177588-3*
Coding D		3-2177766-3*				2177588-4*

\*on request

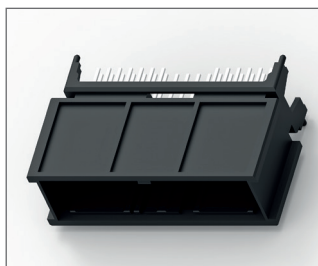
Mating Receptacle Housing  
see page 16



## NanoMQS Interconnectors

### NanoMQS Top Latch Unsealed

#### Printed Circuit Board Headers – Vertical – 32 Positions



#### Technical Features

**No. of Positions:**

32 Positions

**Housing Material:**

LCP-GF30 / LCP-GF35

**Material and Finish:**

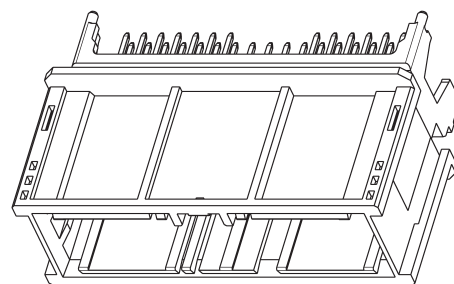
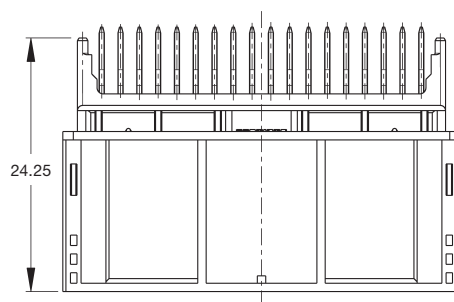
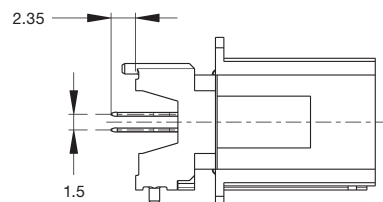
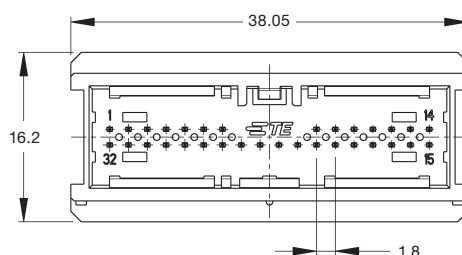
CuMg01, Sn over NiMating

**Product Specification:**

108-94313

**Application Specification:**

114-94160

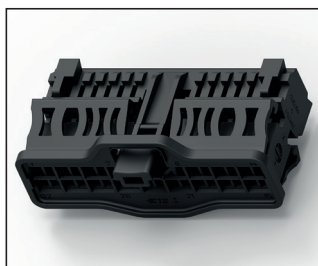


#### Printed Circuit Board Headers – Vertical – 32 Positions

Keying Options	Housing Color	Part Numbers				
		PCB Header Vertical	Cover	Lever	Retainer Housings	Mating Receptacle Housing
Coding A	Black	0-2177748-3	N/A	N/A	N/A	2141576-1
Coding B		1-2177748-3				2141576-2
Coding C		2-2177748-3				2141576-3
Coding D		3-2177748-3*				2141576-4*

\*on request

**Mating Receptacle Housing**  
see page 17

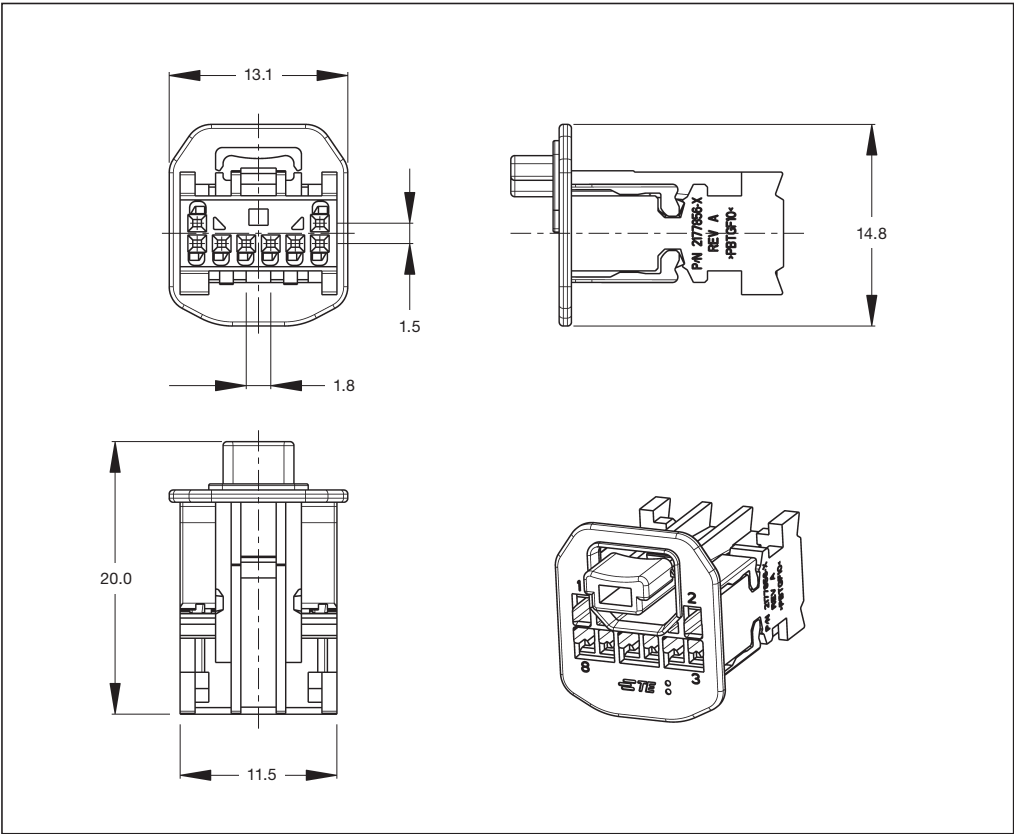


Receptacle Housings – 8 Positions



Technical Features

- No. of Positions:**  
8 Positions
- Housing Material:**  
PBT Glas fibre reinforced
- Wire Size Range:**  
0.13 – 0.35mm<sup>2</sup>
- Product Specification:**  
108-20315
- Application Specification:**  
114-94033
- Extraction Tool**  
1355968-1

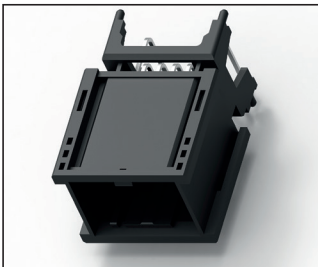


Receptacle Housings – 8 Positions

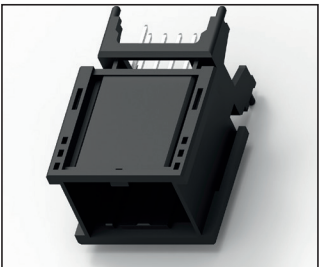
Keying Options	Housing Color	Receptacle Housing	Cover	Locking Device	Cover and Lever	Part Numbers	Mating PCB Headers		Contacts
						Mating Tab Housing	Right Angle	Vertical	
Coding A	Black	2177586-1	N/A	N/A	N/A	N/A	0-2177372-3	0-2177768-3	x-1703930-x
Coding B		2177586-2					1-2177372-3	1-2177768-3	
Coding C		2177586-3*					2-2177372-3*	2-2177768-3*	
Coding D		2177586-4*					3-2177372-3*	3-2177768-3*	

\*on request

Mating Header Connector  
Right Angle see page 6



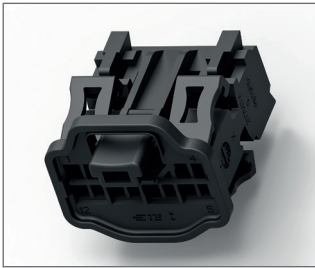
Mating Header Connector  
Vertical see page 10



## NanoMQS Interconnectors

### NanoMQS Top Latch Unsealed

#### Receptacle Housings – 12 Positions



#### Technical Features

**No. of Positions:**

12 Positions

**Housing Material:**

PBT Glas fibre reinforced

**Wire Size Range:**

0.13 – 0.35mm<sup>2</sup>

**Product Specification:**

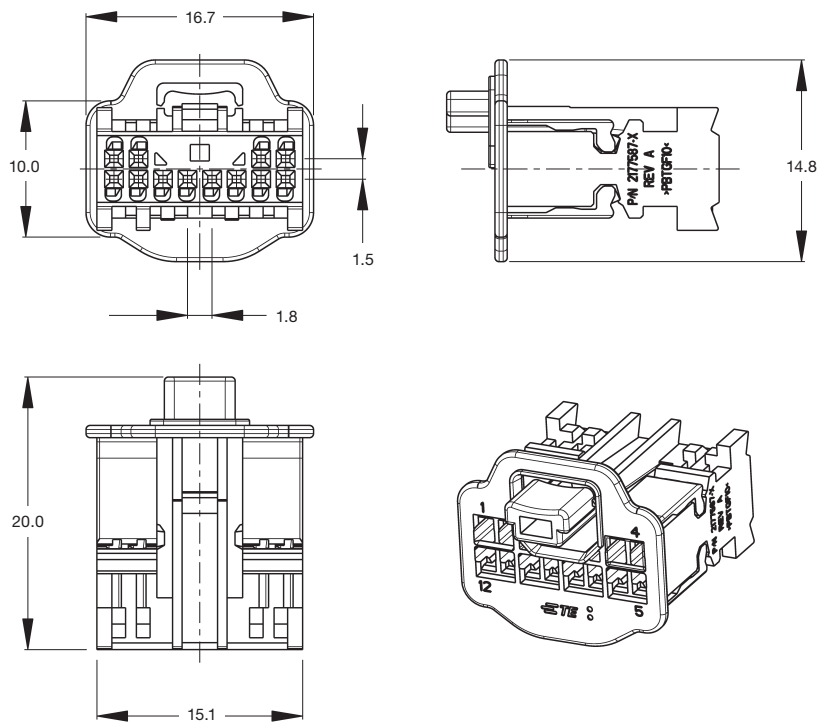
108-20315

**Application Specification:**

114-94033

**Extraction Tool**

1355968-1



#### Receptacle Housings – 12 Positions

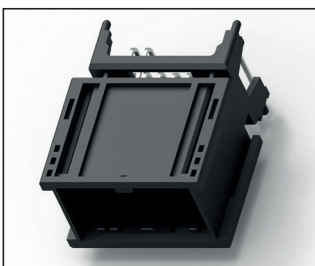
Keying Options	Housing Color	Part Numbers							
		Receptacle Housing	Cover	Locking Device	Cover and Lever	Mating Tab Housing	Mating PCB Headers		Contacts
							Right Angle	Vertical	
Coding A	Black	2177587-1	N/A	N/A	N/A	N/A	0-2177370-3	0-2177767-3	x-1703930-x
Coding B		2177587-2					1-2177370-3	1-2177767-3	
Coding C		2177587-3*					2-2177370-3*	2-2177767-3*	
Coding D		2177587-4*					3-2177370-3*	3-2177767-3*	

\*on request

**Mating Header Connector**

Right Angle

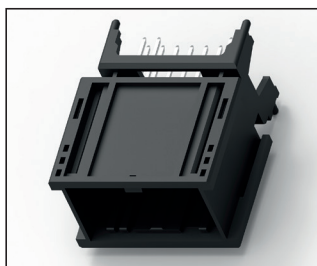
see page 7



**Mating Header Connector**

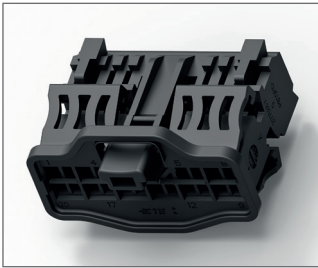
Vertical

see page 11



NanoMQS Interconnectors  
NanoMQS Top Latch Unsealed

Receptacle Housings – 20 Positions



Technical Features

**No. of Positions:**  
20 Positions

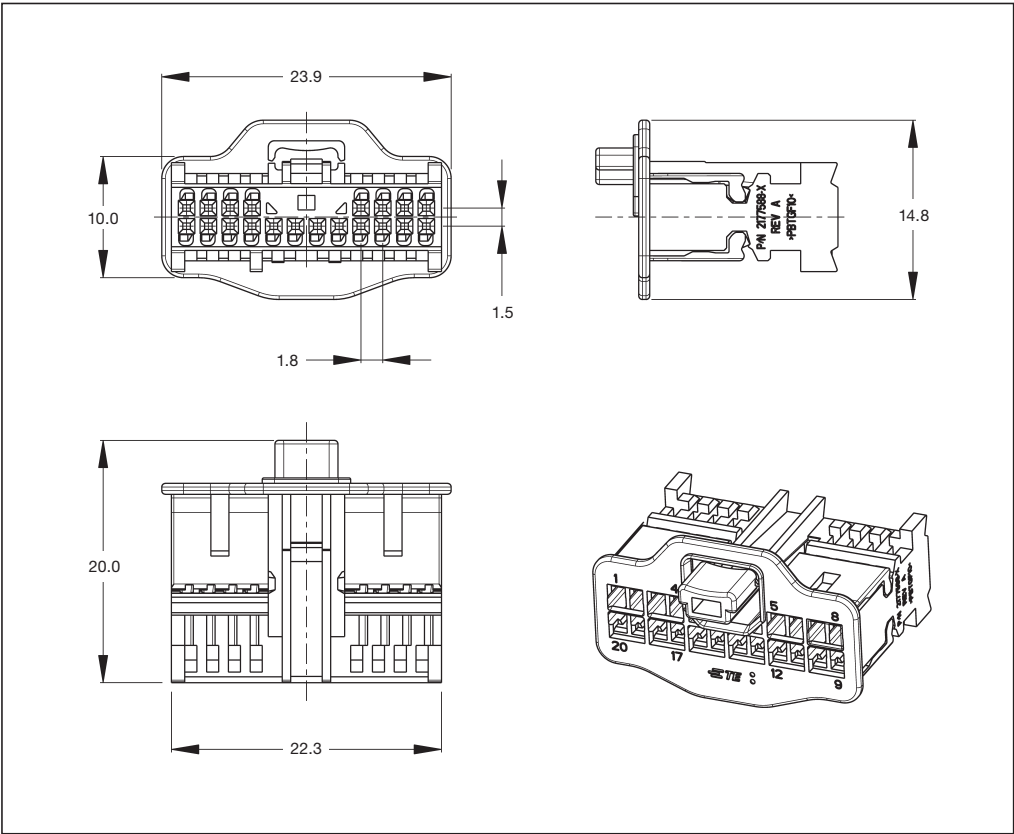
**Housing Material:**  
PBT Glas fibre reinforced

**Material and Finish:**  
CuMg01, Sn over NiMating

**Product Specification:**  
108-20315

**Application Specification:**  
114-94033

**Extraction Tool**  
1355968-1

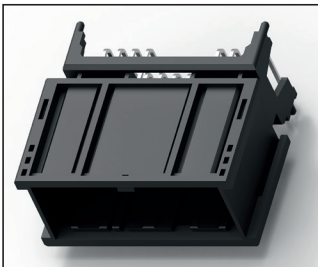


Receptacle Housings – 20 Positions

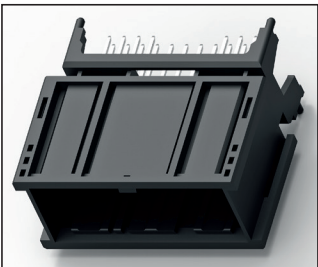
Keying Options	Housing Color	Part Numbers							
		Receptacle Housing	Cover	Locking Device	Cover and Lever	Mating Tab Housing	Mating PCB Headers		Contacts
							Right Angle	Vertical	
Coding A	Black	2177588-1	N/A	N/A	N/A	N/A	0-2177367-3	0-2177766-3	x-1703930-x
Coding B		2177588-2					1-2177367-3	1-2177766-3	
Coding C		2177588-3*					2-2177367-3*	2-2177766-3*	
Coding D		2177588-4*					3-2177367-3*	3-2177766-3*	

\*on request

Mating Header Connector  
Right Angle see page 8



Mating Header Connector  
Vertical see page 12

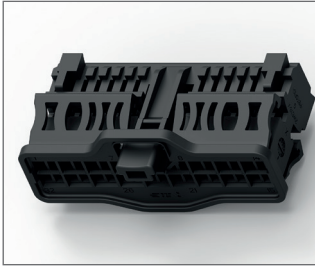




## NanoMQS Interconnectors

### NanoMQS Top Latch Unsealed

#### Receptacle Housings – 32 Positions



##### Technical Features

**No. of Positions:**

32 Positions

**Housing Material:**

PBT GF

**Wire Size Range:**

0.13 – 0.35mm<sup>2</sup>

**Product Specification:**

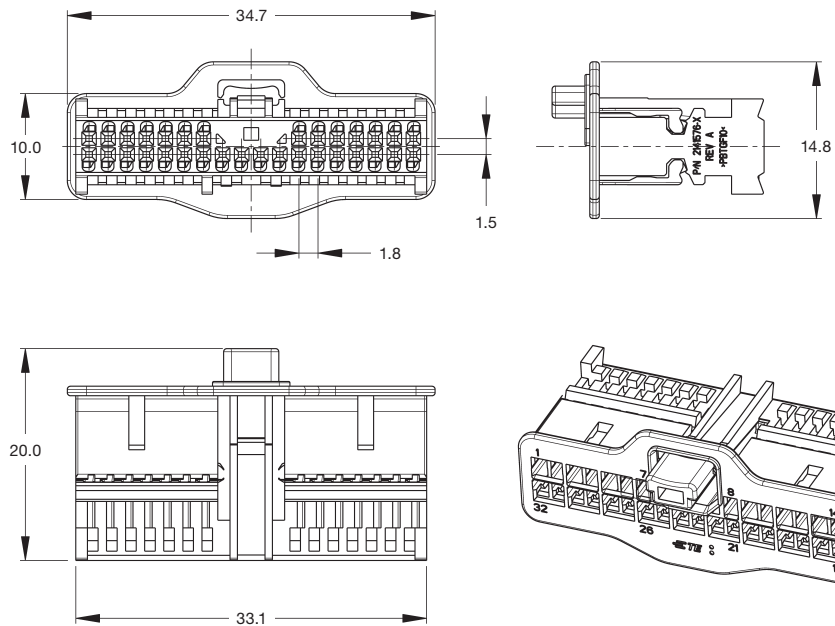
108-20315

**Application Specification:**

114-94033

**Extraction Tool**

1355968-1



#### Receptacle Housings – 12 Positions

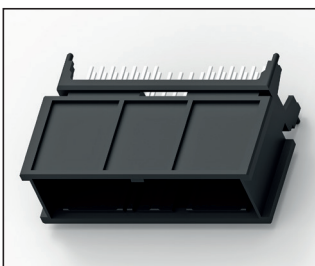
Keying Options	Housing Color	Part Numbers							
		Receptacle Housing	Cover	Locking Device	Cover and Lever	Mating Tab Housing	Mating PCB Headers		Contacts
							Right Angle	Vertical	
Coding A	Black	2141576-1	N/A	N/A	N/A	N/A	0-2177419-3	0-2177748-3	x-1703930-x
Coding B		2141576-2					1-2177419-3	1-2177748-3	
Coding C		2141576-3					2-2177419-3	2-2177748-3	
Coding D		2141576-4*					3-2177419-3*	3-2177748-3*	

\*on request

**Mating Header Connector**

Right Angle

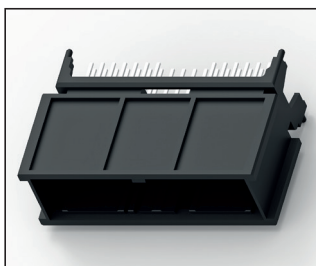
see page 9



**Mating Header Connector**

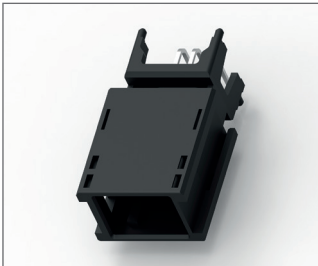
Vertical

see page 13



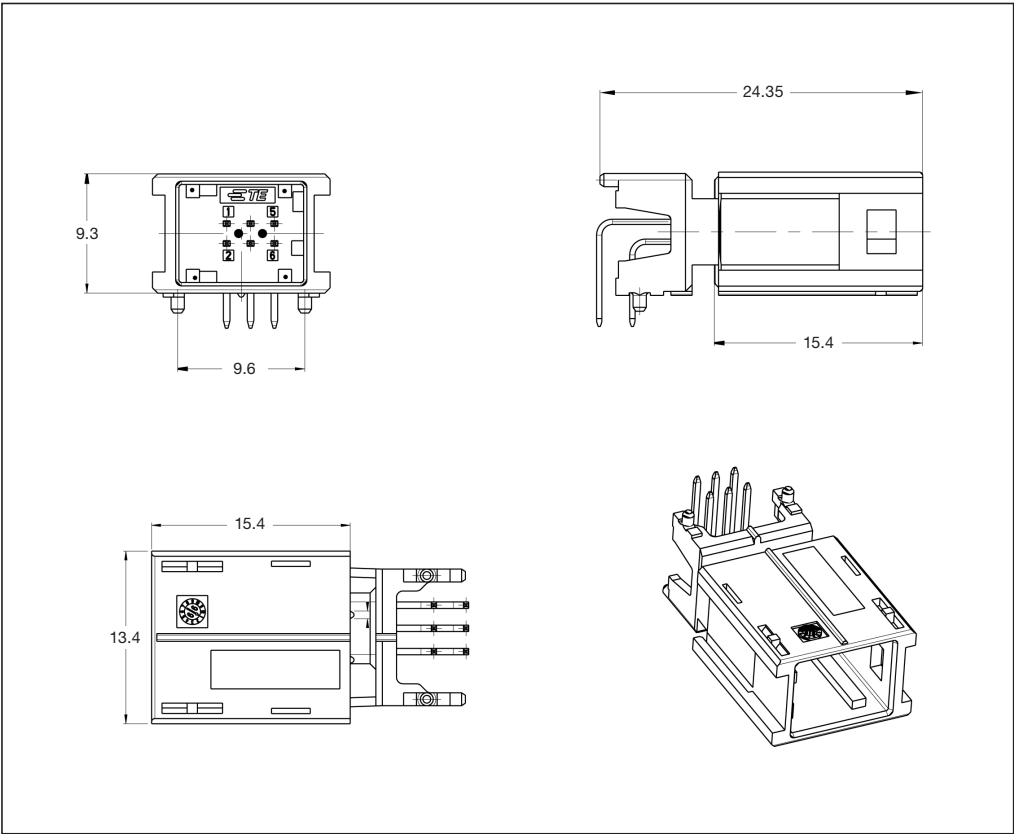
NanoMQS Interconnectors  
NanoMQS Side Latch Unsealed

Printed Circuit Board Header – 2 Row Design – 6 Positions



Technical Features

- No. of Positions:**  
6 Positions
- Housing Material:**  
LCP, Glas fibre reinforced
- Material and Finish:**  
CuMg01, Sn over Ni
- Product Specification:**  
108-94359
- Application Specification:**  
114-94160



Printed Circuit Board Header – 2 Row Design – 6 Positions

Keying Options	Housing Color	Part Numbers				
		PCB Header Right Angle	Cover	Lever	Retainer Housing	Mating Receptacle Housings
Coding A	Black	2208636-1	N/A	N/A	N/A	2208338-1
Coding B		2208636-2*				2208338-2
Coding C		2208636-3*				2208338-3*
Coding D		2208636-4*				2208338-4*

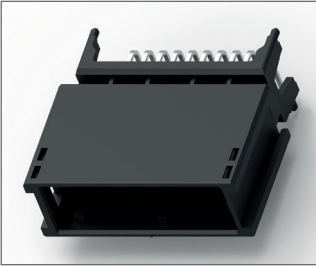
\*on request

Mating Receptacle Housing  
see page 20



NanoMQS Interconnectors  
NanoMQS Side Latch Unsealed

Printed Circuit Board Header – 2 Row Design – 20 Positions



Technical Features

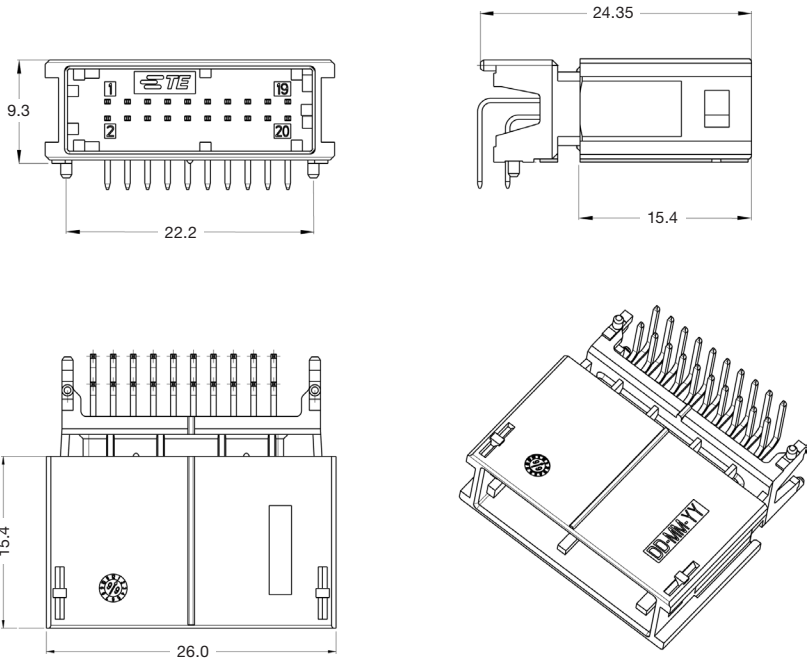
**No. of Positions:**  
20 Positions

**Housing Material:**  
LCP, Glas fibre reinforced

**Material and Finish:**  
CuMg01, Sn over Ni

**Product Specification:**  
108-94347

**Application Specification:**  
114-94160

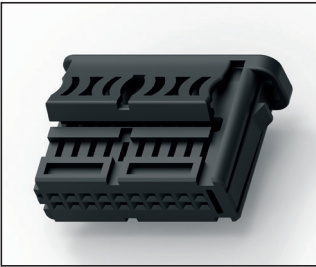


Printed Circuit Board Header – 2 Row Design – 20 Positions

Keying Options	Housing Color	Part Numbers				
		PCB Header Right Angle	Cover	Lever	Retainer Housing	Mating Receptacle Housings
Coding A	Black	2208165-1	N/A	N/A	N/A	2141404-1
Coding B		2208165-2				2141404-2
Coding C		2208165-3*				2141404-3*
Coding D		2208165-4*				2141404-4*

\*on request

Mating Receptacle Housing  
see page 23



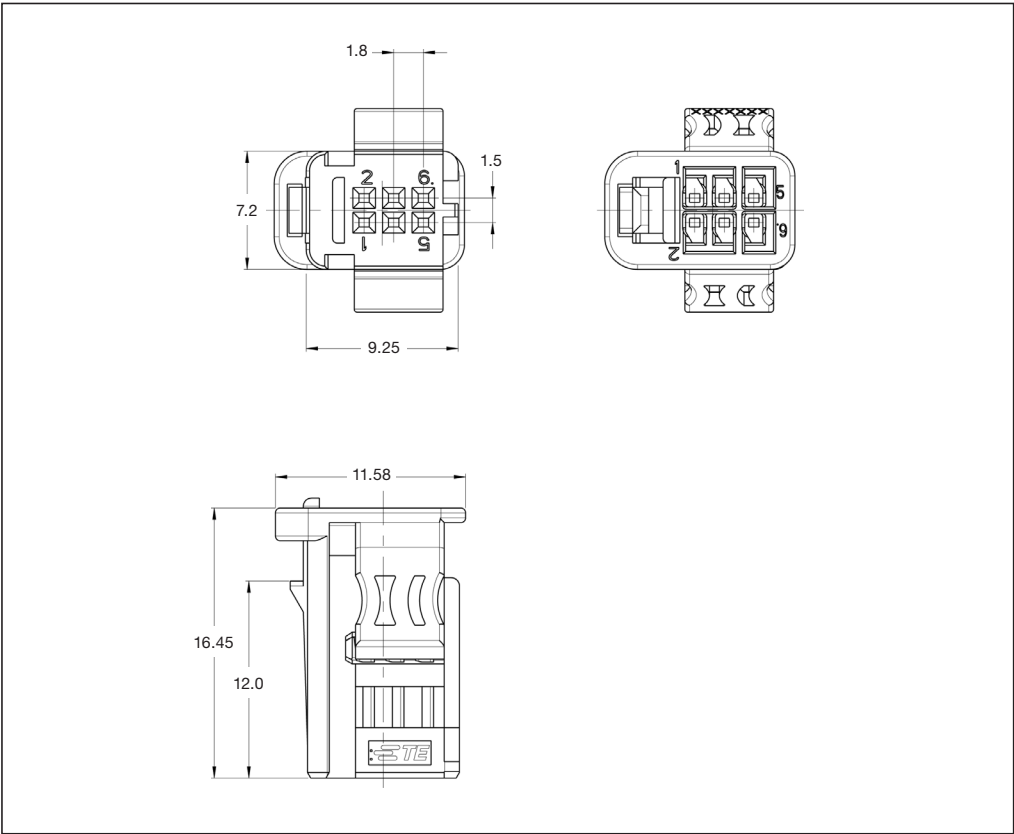
NanoMQS Interconnectors  
NanoMQS Side Latch Unsealed

Receptacle Housings – 2 Row Design – 6 Positions



Technical Features

- No. of Positions:  
6 Positions
- Housing Material:  
PBT Glas fibre reinforced
- Wire Size Range:  
0.13 – 0.35 mm<sup>2</sup>
- Product Specification:  
108-94288
- Application Specification:  
114-94033
- Extraction Tool  
1355968-1

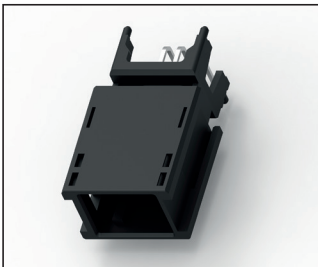


Receptacle Housings – 2 Row Design – 6 Positions

Keying Options	Housing Color	Part Numbers							
		Receptacle Housing	Cover	Locking Device	Cover and Lever	Mating Tab Housing	Mating PCB Headers		Contacts
							Right Angle	Vertical	
Coding A	Black	2208338-1	N/A	N/A	N/A	N/A	2208636-1	TBD	x-1703930-x
Coding B		2208338-2					2208636-2 *		
Coding C		2208338-3 *					2208636-3 *		
Coding D		2208338-4 *					2208636-4 *		

\*on request

Mating Header  
see page 18



## NanoMQS Interconnectors

### NanoMQS Side Latch Unsealed

#### Receptacle Housings – 2 Row Design – 10 Positions



#### Technical Features

**No. of Positions:**

10 Positions

**Housing Material:**

PBT Glas fibre reinforced

**Wire Size Range:**

0.13 – 0.35 mm<sup>2</sup>

**Product Specification:**

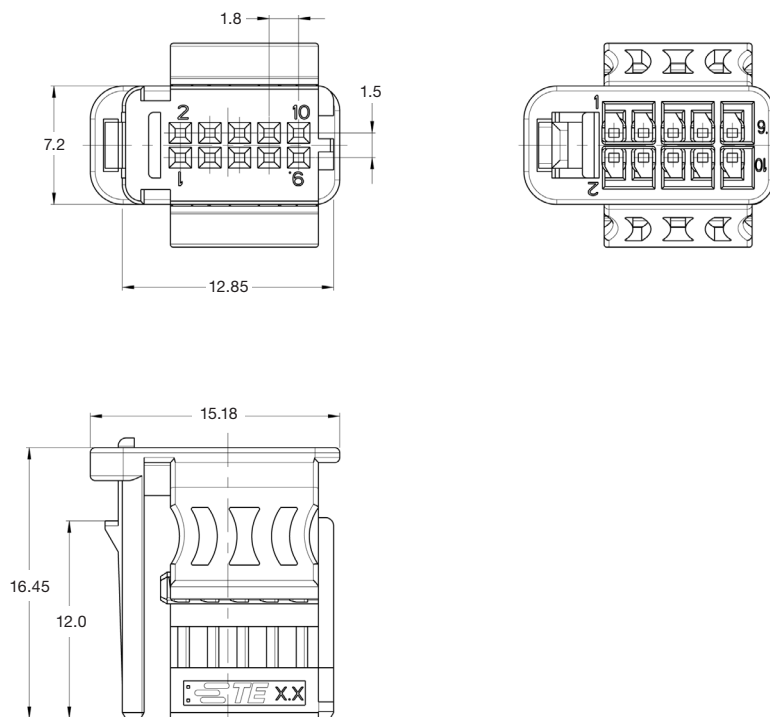
108-94288

**Application Specification:**

114-94033

**Extraction Tool**

1355968-1



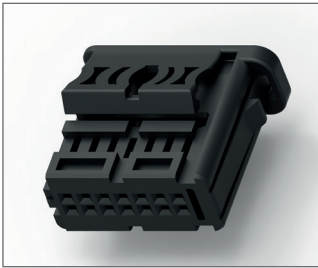
#### Receptacle Housings – 2 Row Design – 10 Positions

Keying Options	Housing Color	Part Numbers							
		Receptacle Housing	Cover	Locking Device	Cover and Lever	Mating Tab Housing	Mating PCB Headers		Contacts
							Right Angle	Vertical	
Coding A	Black	2208339-1	N/A	N/A	N/A	N/A	TBD	TBD	x-1703930-x
Coding B		2208339-2							
Coding C		2208339-3 *							
Coding D		2208339-4 *							

\*on request

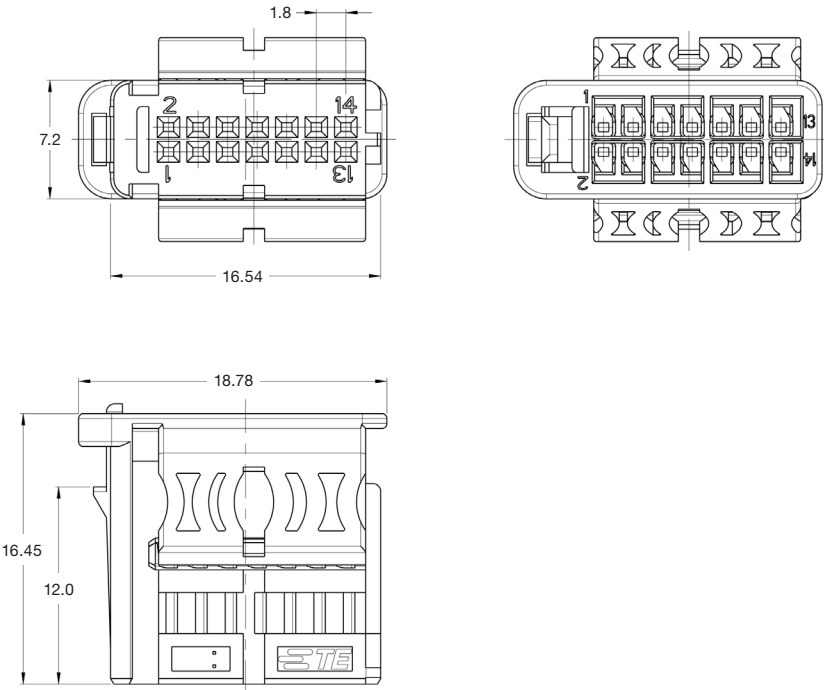
NanoMQS Interconnectors  
NanoMQS Side Latch Unsealed

Receptacle Housings – 2 Row Design – 14 Positions



Technical Features

- No. of Positions:  
14 Positions
- Housing Material:  
PBT Glas fibre reinforced
- Wire Size Range:  
0.13 – 0.35 mm<sup>2</sup>
- Product Specification:  
108-94288
- Application Specification:  
114-94033
- Extraction Tool  
1355968-1



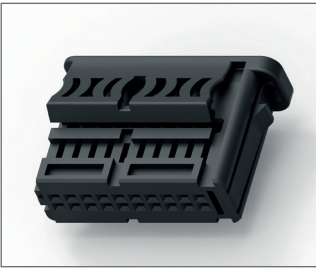
Receptacle Housings – 2 Row Design – 14 Positions

Keying Options	Housing Color	Part Numbers							
		Receptacle Housing	Cover	Locking Device	Cover and Lever	Mating Tab Housing	Mating PCB Headers		Contacts
							Right Angle	Vertical	
Coding A	Black	2208340-1	N/A	N/A	N/A	N/A	TBD	TBD	x-1703930-x
Coding B		2208340-2							
Coding C		2208340-3 *							
Coding D		2208340-4 *							

\*on request

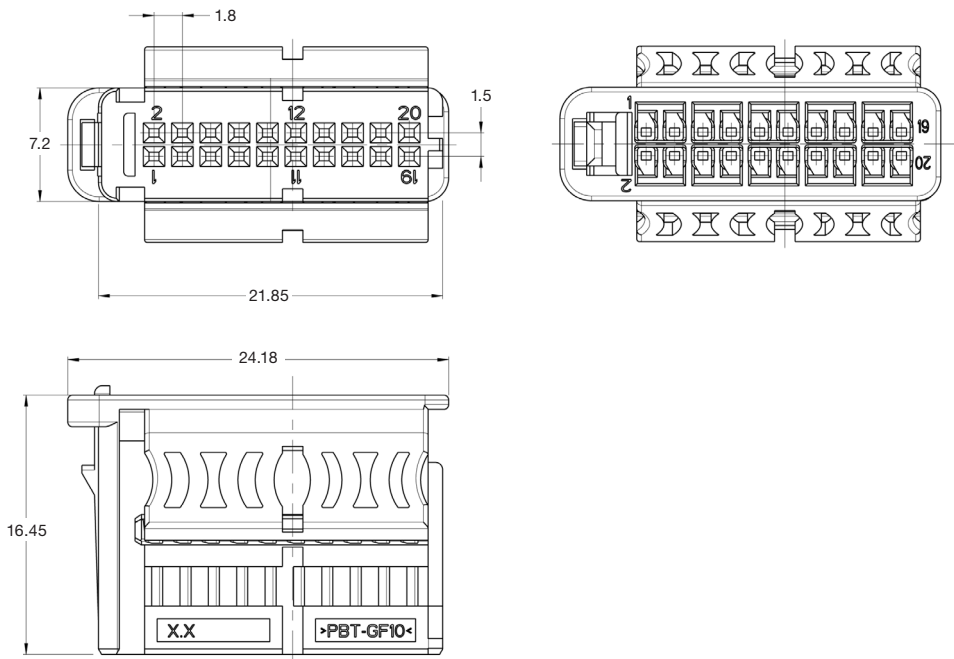
NanoMQS Interconnectors  
NanoMQS Side Latch Unsealed

Receptacle Housings – 2 Row Design – 20 Positions



Technical Features

- No. of Positions:**  
20 Positions
- Housing Material:**  
PBT Glas fibre reinforced
- Wire Size Range:**  
0.13 – 0.35 mm<sup>2</sup>
- Product Specification:**  
108-94288
- Application Specification:**  
114-94033
- Extraction Tool**  
1355968-1

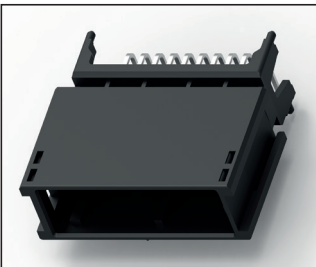


Receptacle Housings – 2 Row Design – 20 Positions

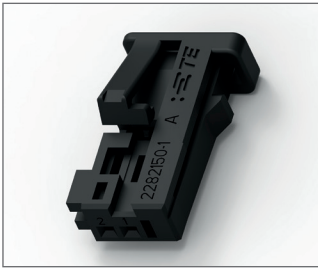
Keying Options	Housing Color	Part Numbers					Mating PCB Headers		Contacts
		Receptacle Housing	Cover	Locking Device	Cover and Lever	Mating Tab Housing	Right Angle	Vertical	
Coding A	Black	2141404-1	N/A	N/A	N/A	N/A	2208165-1	TBD	x-1703930-x
Coding B		2141404-2					2208165-2		
Coding C		2141404-3*					2208165-3*		
Coding D		2141404-4*					2208165-4*		

\*on request

Mating Header  
see page 19

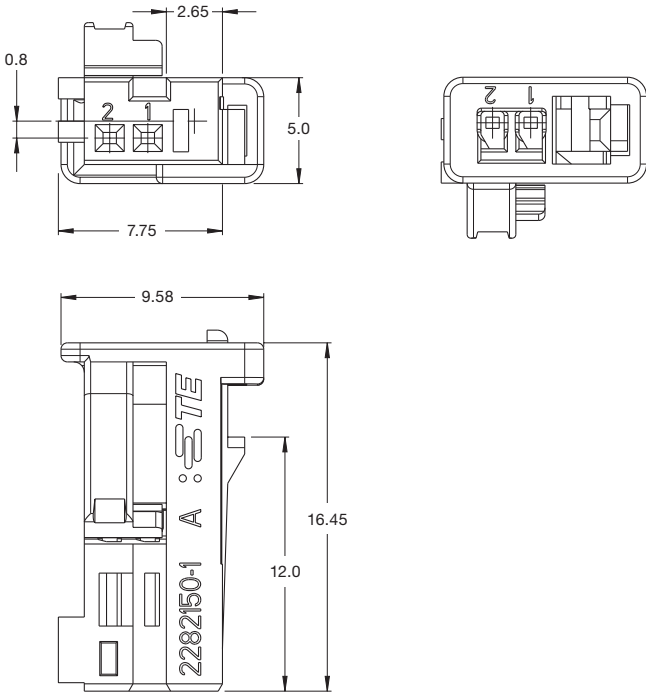


Receptacle Housings – 1 Row Design – 2 Positions



Technical Features

- No. of Positions:**  
2 Positions
- Housing Material:**  
PBT Glas fibre reinforced
- Wire Size Range:**  
0.13 – 0.35 mm<sup>2</sup>
- Product Specification:**  
108-94288
- Application Specification:**  
114-94033
- Extraction Tool**  
1355968-1



Receptacle Housings – 1 Row Design – 2 Positions

Keying Options	Housing Color	Part Numbers							
		Receptacle Housing	Cover	Locking Device	Cover and Lever	Mating Tab Housing	Mating PCB Headers		Contacts
							Right Angle	Vertical	
Coding A	Black	2282150-1	N/A	N/A	N/A	TBD	TBD	TBD	x-1703930-x
Coding B		2282150-2							
Coding C		2282150-3 *							
Coding D		2282150-4 *							

\*on request



## NanoMQS Interconnectors

### NanoMQS Side Latch Unsealed

#### Receptacle Housings – 1 Row Design – 3 Positions



#### Technical Features

##### No. of Positions:

3 Positions

##### Housing Material:

PBT Glas fibre reinforced

##### Wire Size Range:

0.13 – 0.35 mm<sup>2</sup>

##### Product Specification:

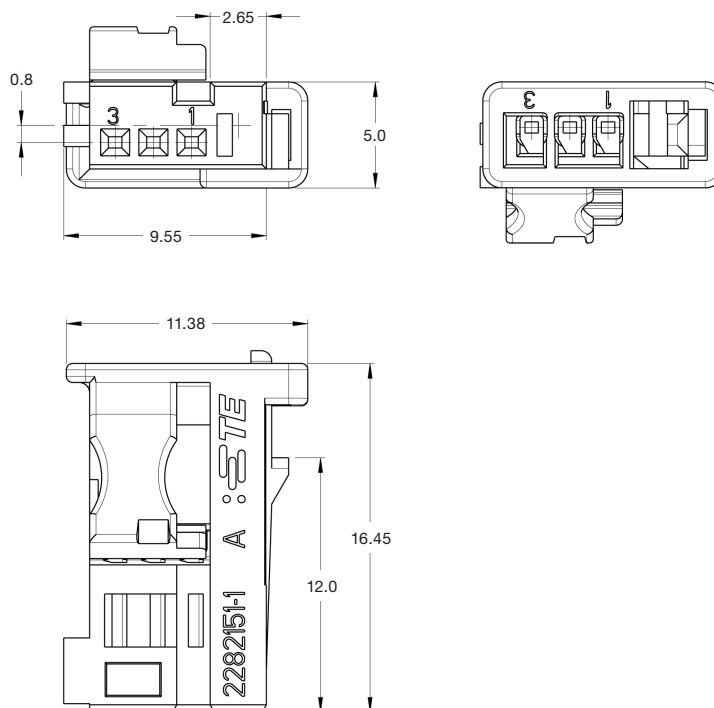
108-94288

##### Application Specification:

114-94033

##### Extraction Tool

1355968-1



#### Receptacle Housings – 1 Row Design – 3 Positions

Keying Options	Housing Color	Part Numbers							
		Receptacle Housing	Cover	Locking Device	Cover and Lever	Mating Tab Housing	Mating PCB Headers		Contacts
Coding A	Black	2282151-1	N/A	N/A	N/A	TBD	TBD	TBD	x-1703930-x
Coding B		2282151-2							
Coding C		2282151-3*							
Coding D		2282151-4*							

\*on request

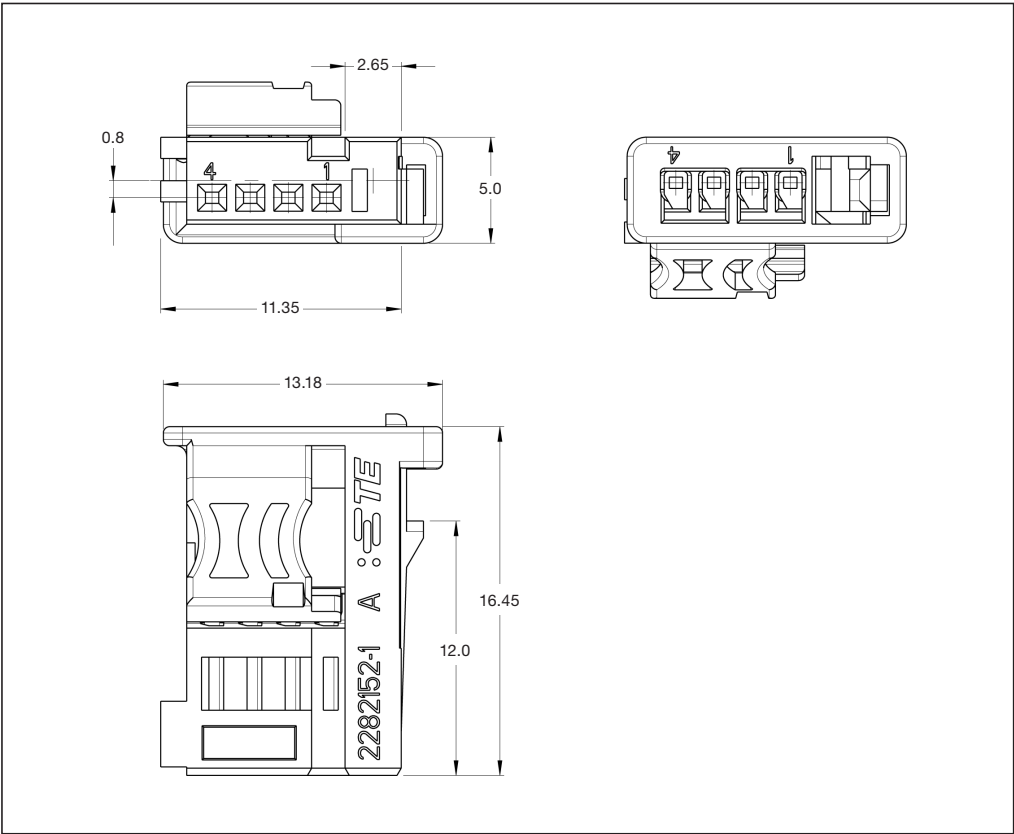
NanoMQS Interconnectors  
NanoMQS Side Latch Unsealed

Receptacle Housings – 1 Row Design – 4 Positions



Technical Features

- No. of Positions:**  
4 Positions
- Housing Material:**  
PBT Glas fibre reinforced
- Wire Size Range:**  
0.13 – 0.35 mm<sup>2</sup>
- Product Specification:**  
108-94288
- Application Specification:**  
114-94033
- Extraction Tool**  
1355968-1



Receptacle Housings – 1 Row Design – 4 Positions

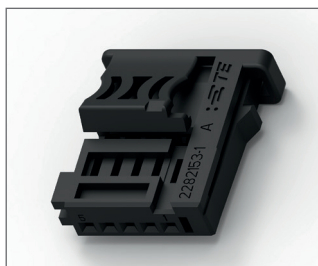
Keying Options	Housing Color	Part Numbers							
		Receptacle Housing	Cover	Locking Device	Cover and Lever	Mating Tab Housing	Mating PCB Headers		Contacts
							Right Angle	Vertical	
Coding A	Black	2282152-1	N/A	N/A	N/A	TBD	TBD	TBD	x-1703930-x
Coding B		2282152-2							
Coding C		2282152-3*							
Coding D		2282152-4*							

\*on request

## NanoMQS Interconnectors

### NanoMQS Side Latch Unsealed

#### Receptacle Housings – 1 Row Design – 5 Positions



#### Technical Features

##### No. of Positions:

5 Positions

##### Housing Material:

PBT Glas fibre reinforced

##### Wire Size Range:

0.13 – 0.35 mm<sup>2</sup>

##### Product Specification:

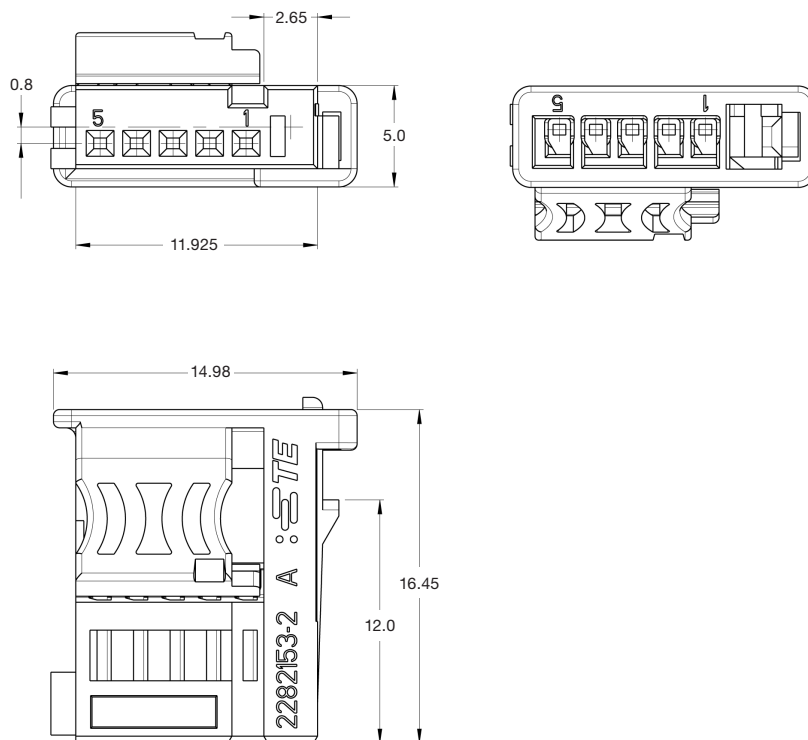
108-94288

##### Application Specification:

114-94033

##### Extraction Tool

1355968-1



#### Receptacle Housings – 1 Row Design – 5 Positions

Keying Options	Housing Color	Part Numbers							
		Receptacle Housing	Cover	Locking Device	Cover and Lever	Mating Tab Housing	Mating PCB Headers		Contacts
Coding A	Black	2282153-1	N/A	N/A	N/A	TBD	TBD	TBD	x-1703930-x
Coding B		2282153-2							
Coding C		2282153-3*							
Coding D		2282153-4*							

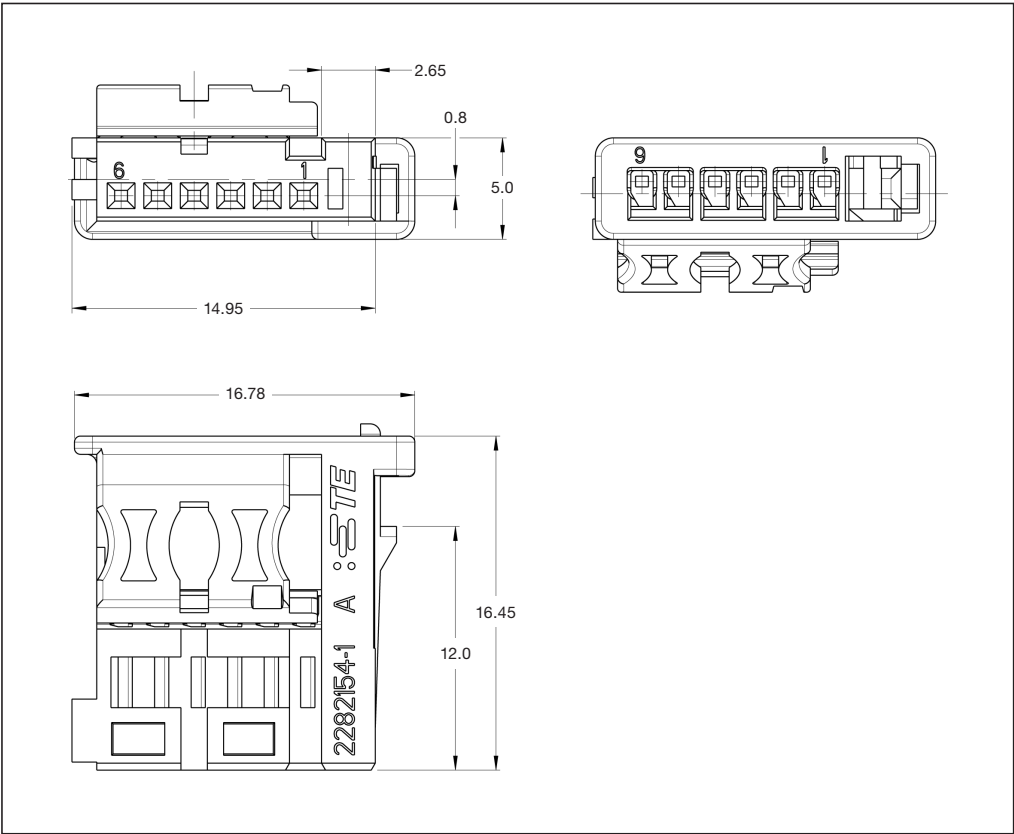
\*on request

Receptacle Housings – 1 Row Design – 6 Positions



Technical Features

- No. of Positions:  
6 Positions
- Housing Material:  
PBT Glas fibre reinforced
- Wire Size Range:  
0.13 – 0.35 mm<sup>2</sup>
- Product Specification:  
108-94288
- Application Specification:  
114-94033
- Extraction Tool  
1355968-1



Receptacle Housings – 1 Row Design – 6 Positions

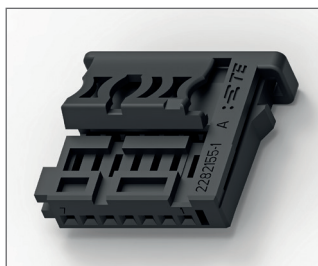
Keying Options	Housing Color	Part Numbers							
		Receptacle Housing	Cover	Locking Device	Cover and Lever	Mating Tab Housing	Mating PCB Headers		Cover
							Right Angle	Vertical	
Coding A	Black	2282154-1	N/A	N/A	N/A	TBD	TBD	TBD	x-1703930-x
Coding B		2282154-2							
Coding C		2282154-3*							
Coding D		2282154-4*							

\*on request

## NanoMQS Interconnectors

### NanoMQS Side Latch Unsealed

#### Receptacle Housings – 1 Row Design – 7 Positions



#### Technical Features

##### No. of Positions:

7 Positions

##### Housing Material:

PBT Glas fibre reinforced

##### Wire Size Range:

0.13 – 0.35 mm<sup>2</sup>

##### Product Specification:

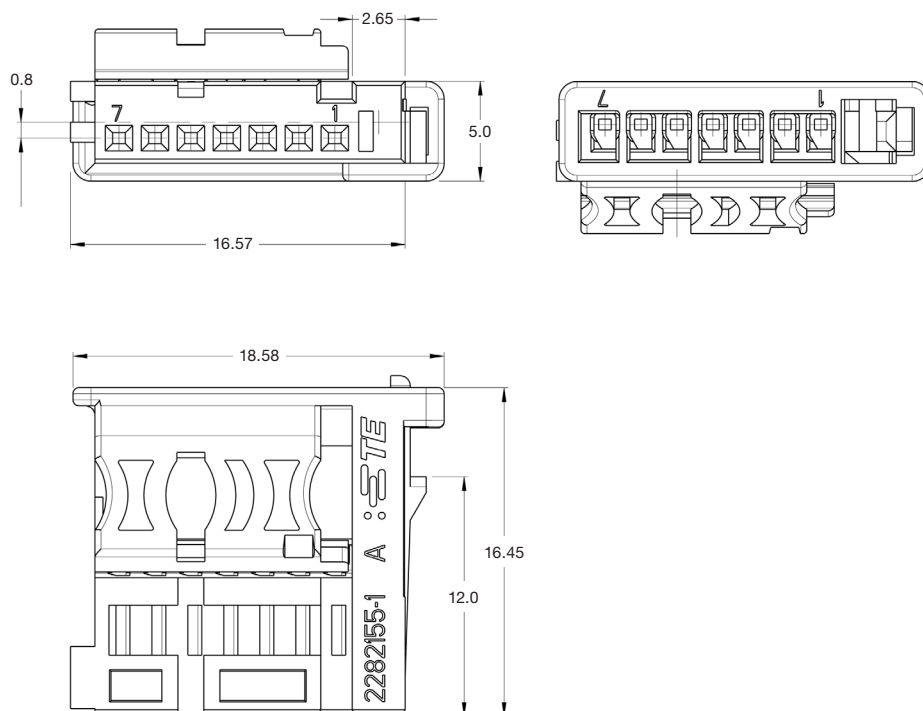
108-94288

##### Application Specification:

114-94033

##### Extraction Tool

1355968-1



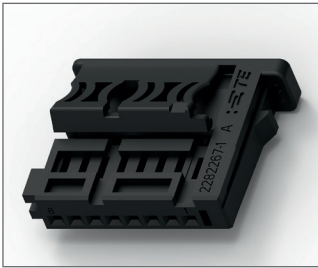
#### Receptacle Housings – 1 Row Design – 7 Positions

Keying Options	Housing Color	Part Numbers							
		Receptacle Housing	Cover	Locking Device	Cover and Lever	Mating Tab Housing	Mating PCB Headers		Contacts
							Right Angle	Vertical	
Coding A	Black	2282155-1	N/A	N/A	N/A	TBD	TBD	TBD	x-1703930-x
Coding B		2282155-2							
Coding C		2282155-3 *							
Coding D		2282155-4 *							

\*on request

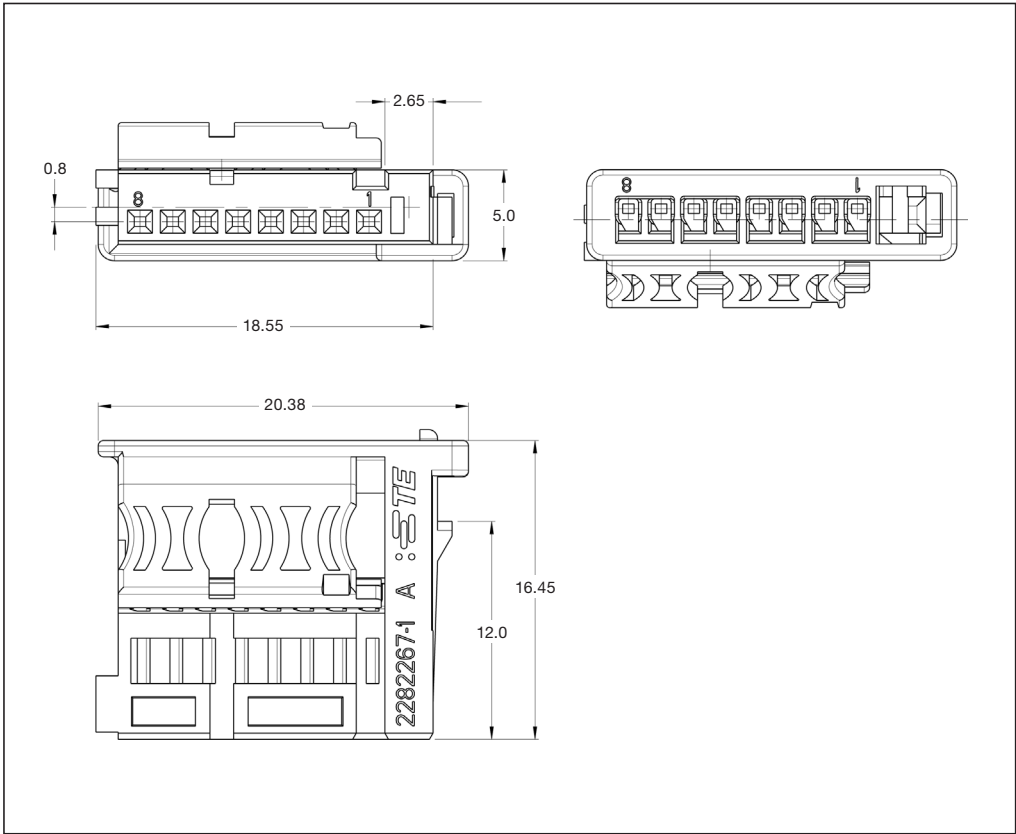
NanoMQS Interconnectors  
NanoMQS Side Latch Unsealed

Receptacle Housings – 1 Row Design – 8 Positions



Technical Features

- No. of Positions:  
8 Positions
- Housing Material:  
PBT Glas fibre reinforced
- Wire Size Range:  
0.13 – 0.35 mm<sup>2</sup>
- Product Specification:  
108-94288
- Application Specification:  
114-94033
- Extraction Tool  
1355968-1



Receptacle Housings – 1 Row Design – 8 Positions

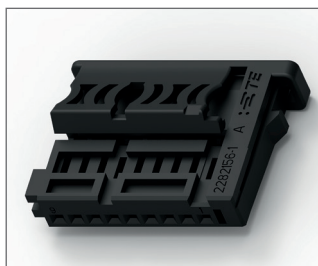
Keying Options	Housing Color	Part Numbers							
		Receptacle Housing	Cover	Locking Device	Cover and Lever	Mating Tab Housing	Mating PCB Headers		Contacts
							Right Angle	Vertical	
Coding A	Black	2282267-1	N/A	N/A	N/A	TBD	TBD	TBD	x-1703930-x
Coding B		2282267-2							
Coding C		2282267-3*							
Coding D		2282267-4*							

\*on request

## NanoMQS Interconnectors

### NanoMQS Side Latch Unsealed

#### Receptacle Housings – 1 Row Design – 9 Positions



#### Technical Features

##### No. of Positions:

9 Positions

##### Housing Material:

PBT Glas fibre reinforced

##### Wire Size Range:

0.13 – 0.35 mm<sup>2</sup>

##### Product Specification:

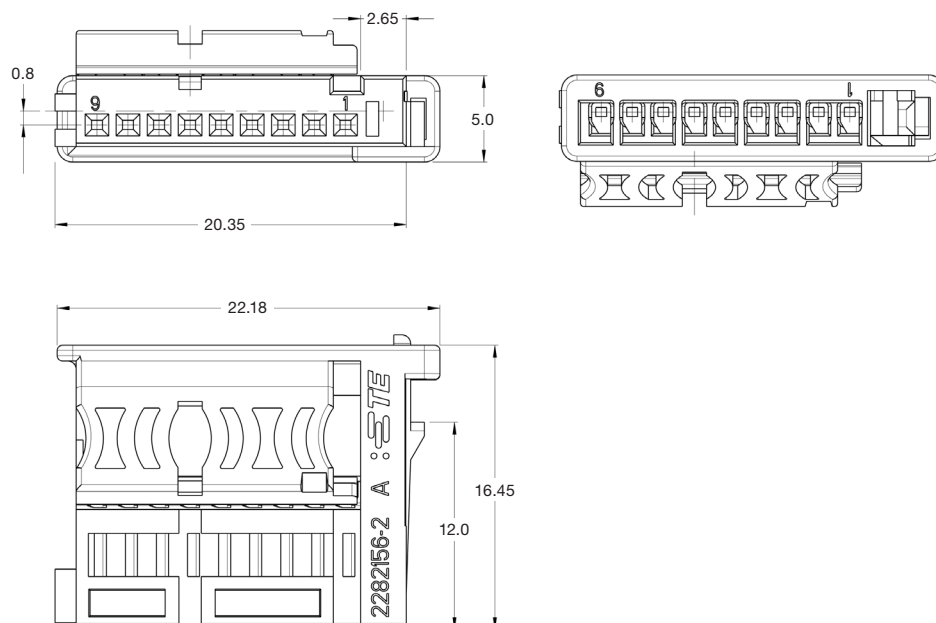
108-94288

##### Application Specification:

114-94033

##### Extraction Tool

1355968-1



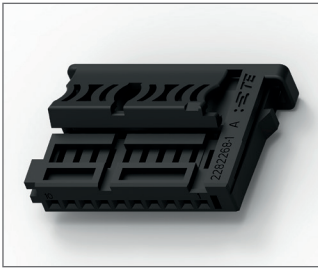
#### Receptacle Housings – 1 Row Design – 9 Positions

Keying Options	Housing Color	Part Numbers							
		Receptacle Housing	Cover	Locking Device	Cover and Lever	Mating Tab Housing	Mating PCB Headers		Contacts
							Right Angle	Vertical	
Coding A	Black	2282156-1	N/A	N/A	N/A	TBD	TBD	TBD	x-1703930-x
Coding B		2282156-2							
Coding C		2282156-3 *							
Coding D		2282156-4 *							

\*on request

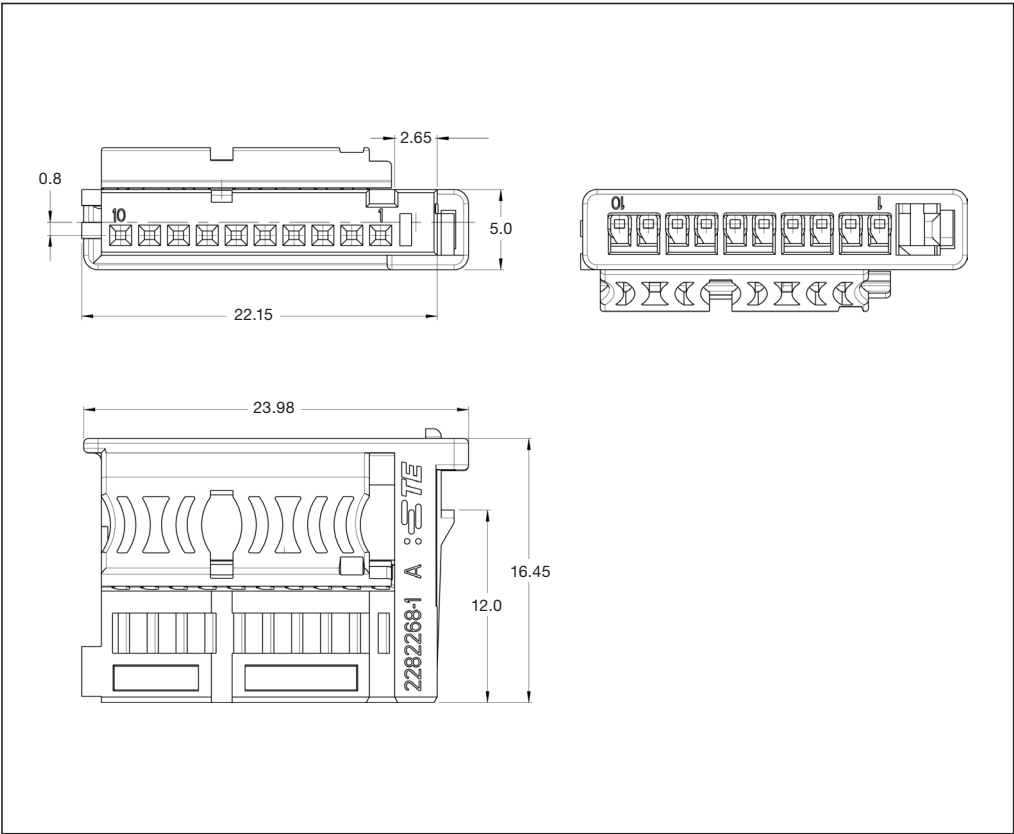
NanoMQS Interconnectors  
NanoMQS Side Latch Unsealed

Receptacle Housings – 1 Row Design – 10 Positions



Technical Features

- No. of Positions:  
10 Positions
- Housing Material:  
PBT Glas fibre reinforced
- Wire Size Range:  
0.13 – 0.35 mm<sup>2</sup>
- Product Specification:  
108-94288
- Application Specification:  
114-94033
- Extraction Tool  
1355968-1



Receptacle Housings – 1 Row Design – 10 Positions

Keying Options	Housing Color	Part Numbers							
		Receptacle Housing	Cover	Locking Device	Cover and Lever	Mating Tab Housing	Mating PCB Headers		Contacts
							Right Angle	Vertical	
Coding A	Black	2282268-1	N/A	N/A	N/A	TBD	TBD	TBD	x-1703930-x
Coding B		2282268-2							
Coding C		2282268-3*							
Coding D		2282268-4*							

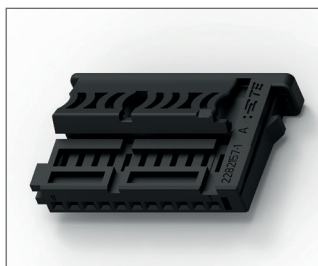
\*on request



## NanoMQS Interconnectors

### NanoMQS Side Latch Unsealed

#### Receptacle Housings – 1 Row Design – 11 Positions



#### Technical Features

##### No. of Positions:

11 Positions

##### Housing Material:

PBT Glas fibre reinforced

##### Wire Size Range:

0.13 – 0.35 mm<sup>2</sup>

##### Product Specification:

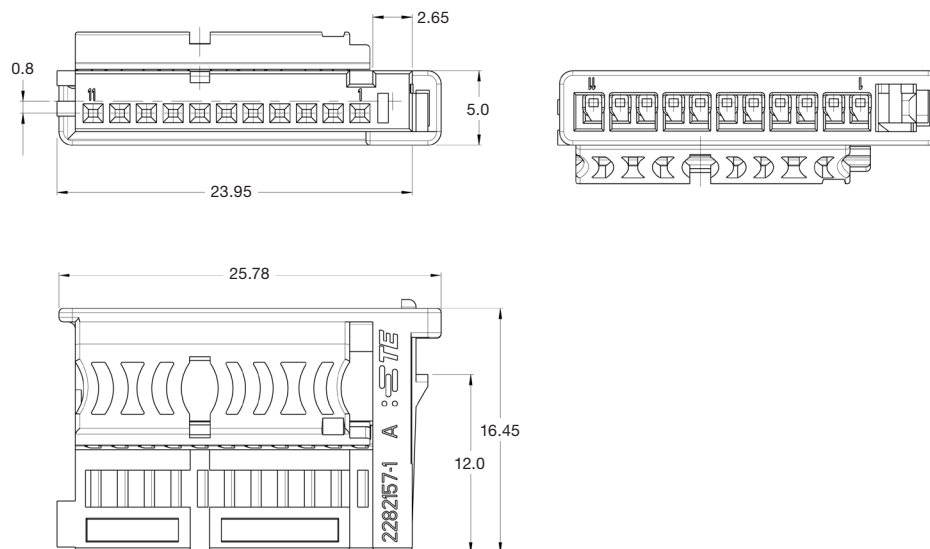
108-94288

##### Application Specification:

114-94033

##### Extraction Tool

1355968-1



#### Receptacle Housings – 1 Row Design – 11 Positions

Keying Options	Housing Color	Part Numbers							
		Receptacle Housing	Cover	Locking Device	Cover and Lever	Mating Tab Housing	Mating PCB Headers		Contacts
							Right Angle	Vertical	
Coding A	Black	2282157-1	N/A	N/A	N/A	TBD	TBD	TBD	x-1703930-x
Coding B		2282157-2							
Coding C		2282157-3*							
Coding D		2282157-4*							

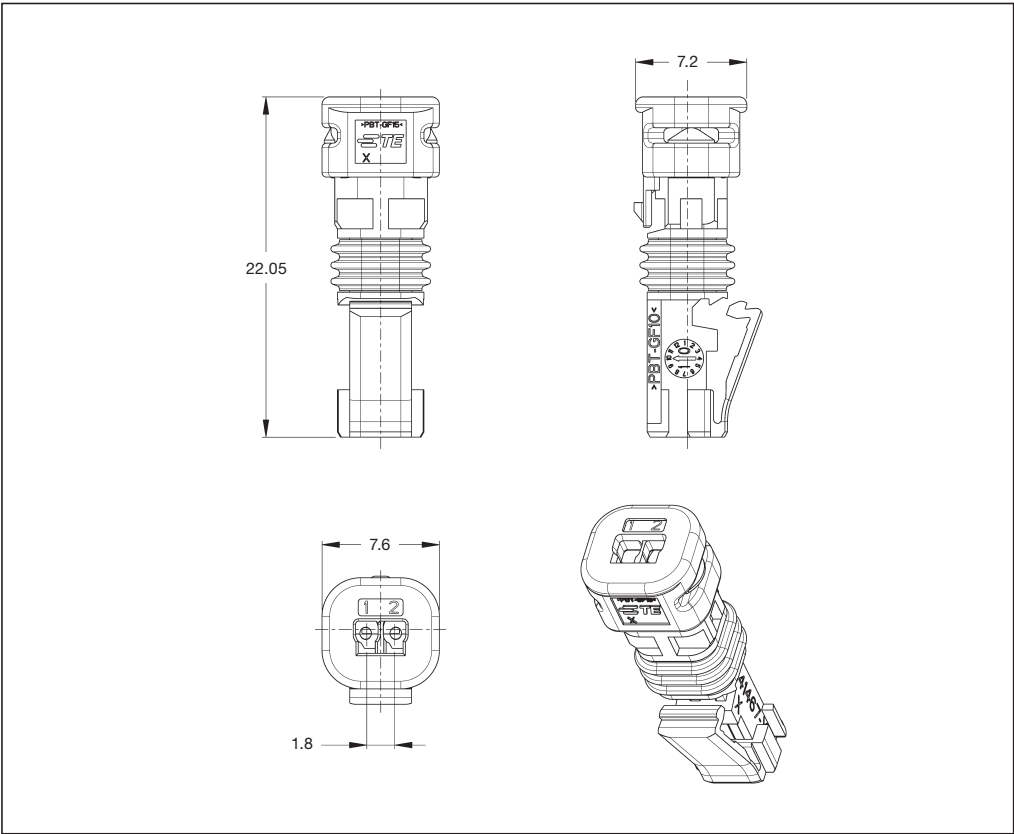
\*on request

Receptacle Housings – 2 Positions



Technical Features

- No. of Positions:  
2 Positions
- Housing Material:  
PBT Glas fibre reinforced
- Wire Size Range:  
0.22 – 0.35mm<sup>2</sup>
- Product Specification:  
108-94320
- Application Specification:  
114-94174
- Extraction Tool  
1355968-1



Receptacle Housings – 2 Positions

Keying Options	Housing Color	Part Numbers							
		Receptacle Housing	Cover	Locking Device	Cover and Lever	Mating Tab Housing	Mating PCB Headers		Contacts
							Right Angle	Vertical	
Coding A	Black	2141467-1	N/A	N/A	N/A	114-94000-14 *)	←	←	x-1703930-x
Coding B		2141467-2							
Coding C		2141467-3							

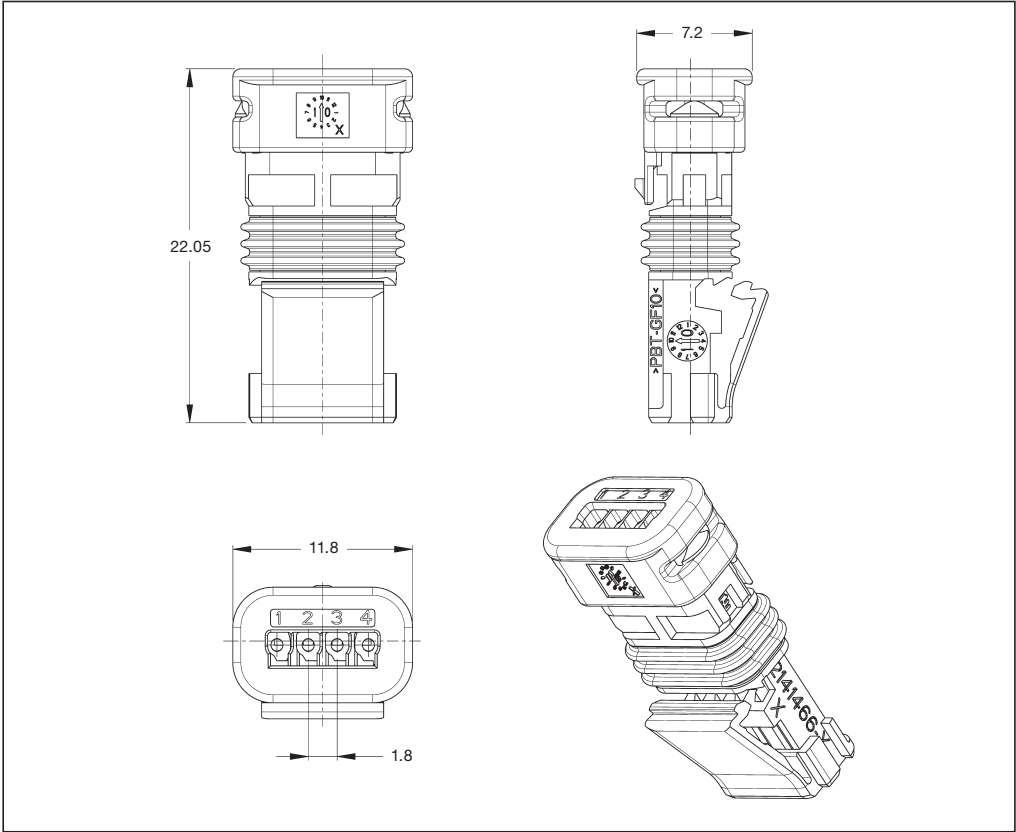
\*) Interface Drawing Number

Receptacle Housings – 4 Positions



Technical Features

- No. of Positions:  
4 Positions
- Housing Material:  
PBT Glas fibre reinforced
- Wire Size Range:  
0.22 – 0.35mm<sup>2</sup>
- Product Specification:  
108-94320
- Application Specification:  
114-94174
- Extraction Tool  
1355968-1



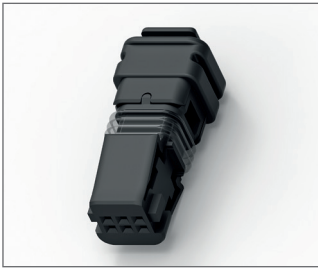
Receptacle Housings – 4 Positions

Keying Options	Housing Color	Part Numbers						Mating PCB Headers		Contacts
		Receptacle Housing	Cover	Locking Device	Cover and Lever	Mating Tab Housing		Right Angle	Vertical	
Coding A	Black	2141466-1	N/A	N/A	N/A	114-94000-14 *)		←	←	x-1703930-x

\*) Interface Drawing Number

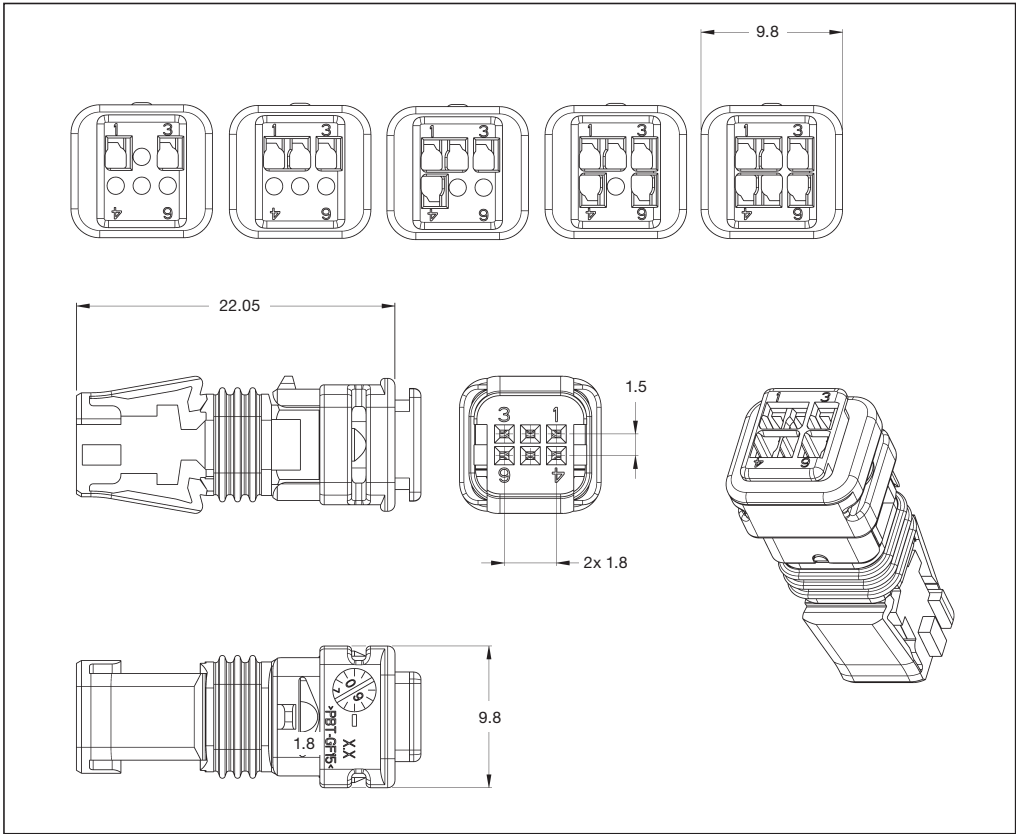
NanoMQS Interconnectors  
NanoMQS Sealed Housings

Receptacle Housings – 2-6 Positions



Technical Features

- No. of Positions:  
2–6 Positions
- Housing Material:  
PBT Glas fibre reinforced
- Wire Size Range:  
0.22 – 0.35mm<sup>2</sup>
- Product Specification:  
108-94288-4
- Application Specification:  
114-94033
- Extraction Tool  
1355968-1



Receptacle Housings – 2-6 Positions

No. of Positions	Keying Options	Housing Color	Part Numbers							Contacts
			Receptacle Housing	Cover	Locking Device	Cover and Lever	Mating Tab Housing	Mating PCB Headers		
								Right Angle	Vertical	
6	Coding A	Black	0-2112594-1	N/A	N/A	N/A	114-94000-18 *)	←	←	x-1703930-x
	Coding B	Grey	0-2112594-2					←	←	
5	Coding A	Black	5-2112594-1	N/A	N/A	N/A	114-94000-18 *)	←	←	
	Coding B	Grey	5-2112594-2					←	←	
4	Coding A	Black	4-2112594-1	N/A	N/A	N/A	114-94000-18 *)	←	←	
	Coding B	Grey	4-2112594-2					←	←	
3	Coding A	Black	3-2112594-1	N/A	N/A	N/A	114-94000-18 *)	←	←	
	Coding B	Grey	3-2112594-2					←	←	
2	Coding A	Black	2-2112594-1	N/A	N/A	N/A	114-94000-18 *)	←	←	
	Coding B	Grey	2-2112594-2					←	←	

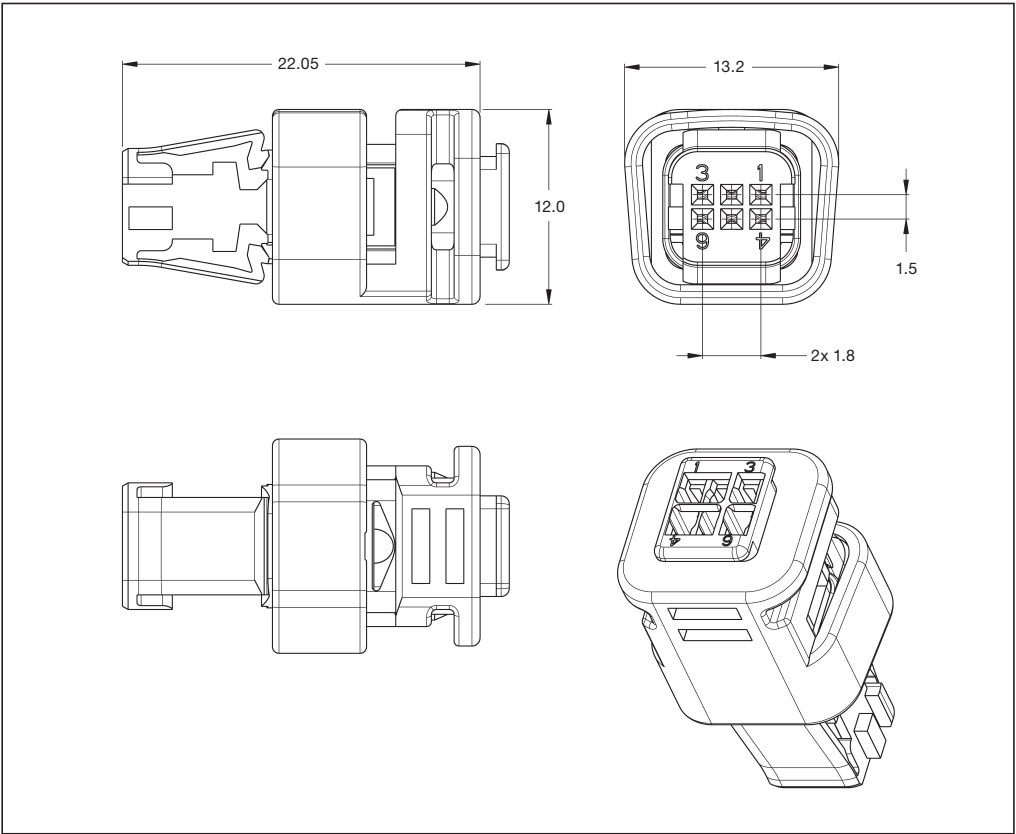
\*) Interface Drawing Number

Receptacle Housings – 6 Positions



Technical Features

- No. of Positions:  
6 Positions
- Housing Material:  
PBT Glas fibre reinforced
- Wire Size Range:  
0.22 – 0.35mm<sup>2</sup>
- Product Specification:  
108-94288-4
- Application Specification:  
114-94033
- Extraction Tool  
1355968-1

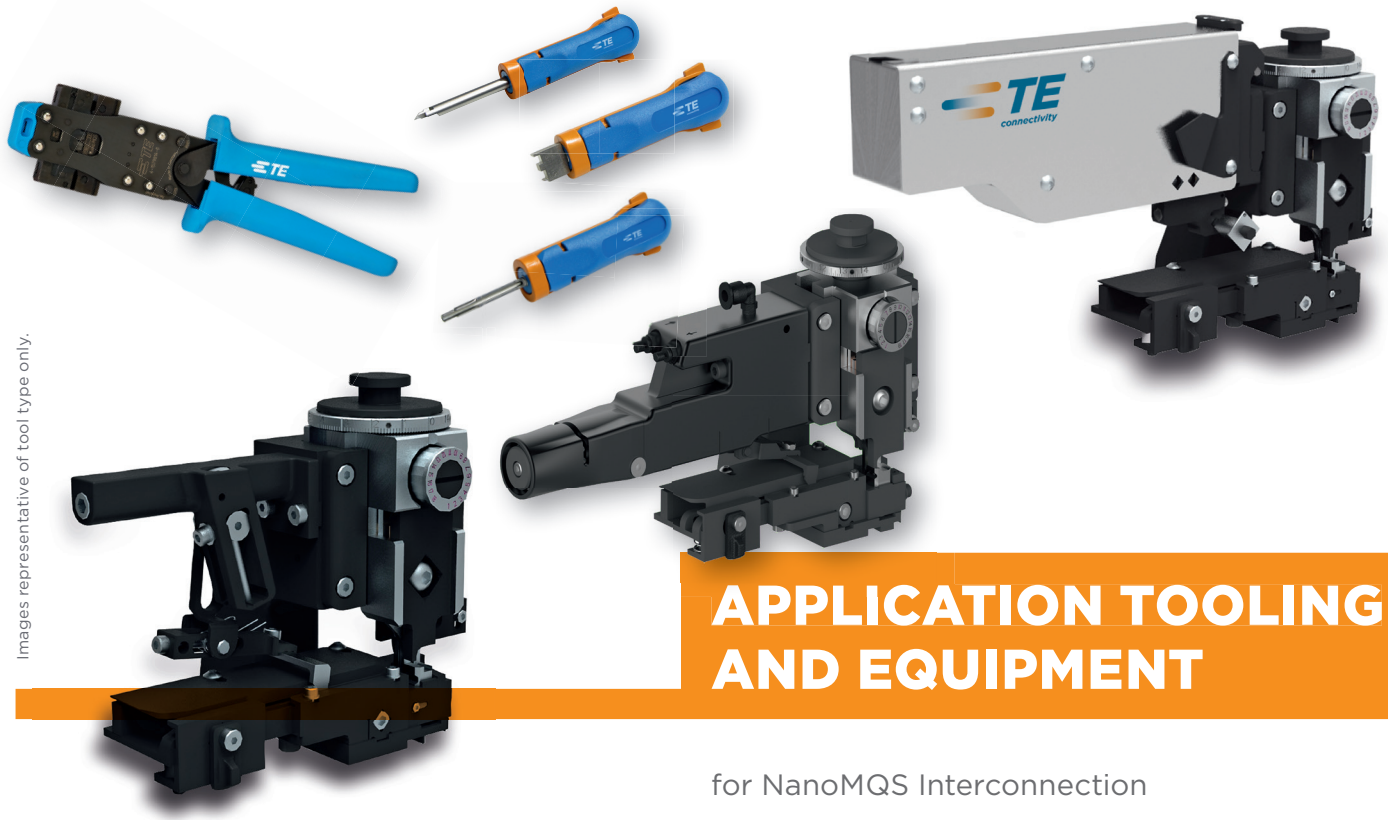


Receptacle Housings – 6 Positions

Keying Options	Housing Color	Part Numbers					Mating PCB Headers		Contacts
		Receptacle Housing	Cover	Locking Device	Cover and Lever	Mating Tab Housing	Right Angle	Vertical	
Coding A	Black	0-2112593-1	N/A	N/A	N/A	114-94000-18 *)	←	←	x-1703930-x
Coding B	Gray	0-2112593-2	N/A	N/A	N/A	114-94000-18 *)	←	←	

\*) Interface Drawing Number





## APPLICATION TOOLING AND EQUIPMENT

for NanoMQS Interconnection

TE Application Tooling is dedicated to providing high quality equipment options to meet all levels of our connector products specifications. We are also able to provide a broad range of equipment for other manufacturer's products.

Our equipment range is vast and almost unmatched by others operating in the same industry segments, as is our global presence and support network in the form of field service engineers and product managers.

We supply everything from simple hand tools to the most complex automated systems.

Termination of small wires via crimping requires appropriate tools to ensure that the wire is terminated with the same level of quality that is generally expected of a crimp connection – this applies to automatic termination and hand-operation processes alike.

Only precision application tools like our specific applicators and hand tool for NanoMQS connectors deliver the essential air-tight crimping connection without potentially damaging the fine wire.

Insertion and extraction tools are used for inserting discrete terminals into connector housings or removing them, without causing damage to either the terminals or housings. Many different design types exist for our vast terminal product range including NanoMQS connectors.

Equipment is segregated into two types and managed accordingly:

### Generic equipment

Where we can supply you with sufficient information referenced by Part Number such that you can identify and order what you need yourself.

### Specialized Equipment

Where you will need help from our specialist product managers to identify what's just right for your Application.

### Finding Equipment Online

[www.tooling.te.com](http://www.tooling.te.com)

- Powerful searches to find generic equipment options (Hand Tools / Applicators)
- Brochures and more detailed flyers for the specialized equipment.
- It's quick, easy and more importantly the latest and most up to date information is available online.

### Regional Assistance

[www.te.com/support-center](http://www.te.com/support-center)





## NanoMQS Interconnectors

### Numerical Index

PN	Page	PN	Page	PN	Page
1-1703930-1	2, 3	2177588-4	8, 12, 16	2282157-1	33
1-1703930-2	2, 3	2177748-3	13, 17	2282157-2	33
1-2177367-3	8, 16	2177766-3	12, 16	2282157-3	33
1-2177370-3	7, 15	2177767-3	11, 15	2282157-4	33
1-2177372-3	6, 14	2177768-3	10, 14	2282267-1	30
1-2177419-3	9, 17	2208165-1	19, 23	2282267-2	30
1-2177748-3	13, 17	2208165-2	19, 13	2282267-3	30
1-2177766-3	12, 16	2208165-3	19, 23	2282267-4	30
1-2177767-3	11, 15	2208165-4	19, 23	2282268-1	32
1-2177768-3	10, 14	2208338-1	18, 20	2282268-2	32
1-2236905-1	2, 3	2208338-2	18, 20	2282268-3	32
1-2236905-3	2, 3	2208338-3	18, 20	2282268-4	32
2-1703930-1	2, 3	2208338-4	18, 20	2282347-1	4
2-1703930-2	2, 3	2208339-1	21	2282347-2	4
2-2112594-1	36	2208339-2	21	3-2112594-1	36
2-2112594-2	36	2208339-3	21	3-2112594-2	36
2-2177367-3	8, 16	2208339-4	21	3-2177367-3	8, 16
2-2177370-3	7, 15	2208340-1	22	3-2177370-3	7, 15
2-2177372-3	6, 14	2208340-2	22	3-2177372-3	6, 14
2-2177419-3	9, 17	2208340-3	22	3-2177419-3	9, 17
2-2177748-3	13, 17	2208340-4	22	3-2177748-3	13, 17
2-2177766-3	12, 16	2208636-1	18, 20	3-2177766-3	12, 16
2-2177767-3	11, 15	2208636-2	18, 20	3-2177767-3	11, 15
2-2177768-3	10, 14	2208636-3	18, 20	3-2177768-3	10, 14
2112593-1	37	2208636-4	18, 20	4-2112594-1	36
2112593-2	37	2236905-1	2, 3	4-2112594-2	36
2112594-1	36	2236905-3	2, 3	5-2112594-1	36
2112594-2	36	2282150-1	24	5-2112594-2	36
2141404-1	19, 23	2282150-2	24		
2141404-2	19, 13	2282150-3	24		
2141404-3	19, 23	2282150-4	24		
2141404-4	19, 23	2282151-1	25		
2141466-1	35	2282151-2	25		
2141467-1	34	2282151-3	25		
2141467-2	34	2282151-4	25		
2141467-3	34	2282152-1	26		
2141576-1	9, 13, 17	2282152-2	26		
2141576-2	9, 13, 17	2282152-3	26		
2141576-3	9, 13, 17	2282152-4	26		
2141576-4	9, 13, 17	2282153-1	27		
2177367-3	8, 16	2282153-2	27		
2177370-3	7, 15	2282153-3	27		
2177372-3	6, 14	2282153-4	27		
2177419-3	9, 17	2282154-1	28		
2177586-1	6, 10, 14	2282154-2	28		
2177586-2	6, 10, 14	2282154-3	28		
2177586-3	6, 10, 14	2282154-4	28		
2177586-4	6, 10, 14	2282155-1	29		
2177587-1	7, 11, 15	2282155-2	29		
2177587-2	7, 11, 15	2282155-3	29		
2177587-3	7, 11, 15	2282155-4	29		
2177587-4	7, 11, 15	2282156-1	31		
2177588-1	8, 12, 16	2282156-2	31		
2177588-2	8, 12, 16	2282156-3	31		
2177588-3	8, 12, 16	2282156-4	31		

# TE CONNECTIVITY ONLINE

[TE.com](http://TE.com) offers an enhanced digital experience, with more than 250,000 parts profiled. The site has deep, rich product data and easier access to tools and services. Other offerings include improved search and navigation and knowledge and idea sharing.



## COLLATERAL

TE.com offers a variety of product-specific catalogs, brochures, white papers and other technical information. To download our literature visit

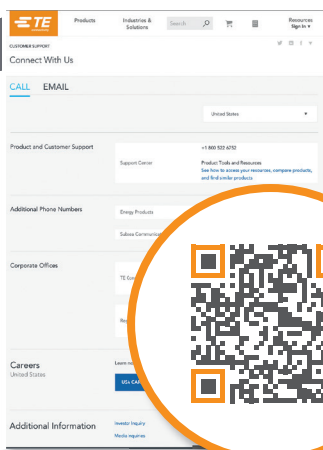
[www.te.com/automotiveliterature.html](http://www.te.com/automotiveliterature.html)



## PRODUCT INFORMATION

Search for a specific product by category, part number or document number.

[www.TE.com](http://www.TE.com)



## STAY CONNECTED

You can rely on TE's PIC Team to answer your general or technical questions. To contact a PIC representative, visit

[www.TE.com/support-center](http://www.TE.com/support-center)

## EUROPE

### Germany – Bensheim

Product Information Center:  
Phone: +49 6251-133-1999  
Fax: +49 6251-133-1988

## UNITED STATES

### United States – Harrisburg

Product Information Center:  
Phone: +1 800-522-6752  
Fax: +1 717-986-7575

## SOUTH AMERICA

### South America

Phone: +54 11-4733-2015  
Fax: +54 11-4733-2083

## AFRICA

### South Africa – Port Elizabeth

Phone: +27 41-503-4500  
Fax: +27 41-581-0440

## ASIA / PACIFIC

### Australia – Sydney

Product Information Center:  
Phone: +61 2-9840-8200  
Fax: +61 2-9634-6188

### People's Republic of China

Hong Kong  
Phone: +852 2738-8731  
Fax: +852 2735-0243

### People's Republic of China

Shanghai  
Phone: +86 21-3398-0000  
Fax: +86 21-3398-1999

### Korea – Seoul

Phone: +82 2-3415-4500  
Fax: +82 2-3486-3810

## DISCLAIMER

While TE Connectivity (TE) has made every reasonable effort to ensure the accuracy of the information in this catalog, TE does not guarantee that it is error-free, nor does TE make any other representation, warranty or guarantee that the information is accurate, correct, reliable or current. TE reserves the right to make any adjustments to the information contained herein at any time without notice.

TE expressly disclaims all implied warranties regarding the information contained herein, including, but not limited to, any implied warranties of merchantability or fitness for a particular purpose. The dimensions in this catalog are for reference purposes only and are subject to change without notice. Specifications are subject to change without notice. Consult TE for the latest dimensions and design specifications.

## TRADEMARKS

NanoMQS, TE, TE Connectivity, and TE connectivity (logo), are trademarks.

Other product names, logos, and company names mentioned herein may be trademarks of their respective owners.

## COPYRIGHT

© 2016 TE Connectivity family of companies.

All rights reserved.

TE Connectivity Germany GmbH certified acc. ISO 14001 and ISO/TS 16949:2002

### TE Connectivity Germany GmbH

Ampèrestrasse 12-14 | 64625 Bensheim | Germany

Phone: +49 (0)6251 133-0

Fax: +49 (0)6251 133-1600

