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### *PPAP Package for:*

**Newark Electronics  
Customer Part Number: 17R2906  
(TE Connectivity Part Number): 1241394-1  
Aug-2021**

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## **Nondisclosure Agreement**

If a nondisclosure agreement has been reached with your company, it will be included on the following page(s). Please review the terms of this agreement to ensure that further actions associated with information contained within this PPAP package do not violate these terms.

If a nondisclosure agreement HAS NOT been reached, certain documents deemed confidential by TE Connectivity will not be included in this PPAP package. These documents include but are not limited to the Design FMEA, the Process Flow Diagram, the Process FMEA and the Control Plan. These documents can be reviewed by you company but cannot be retained.

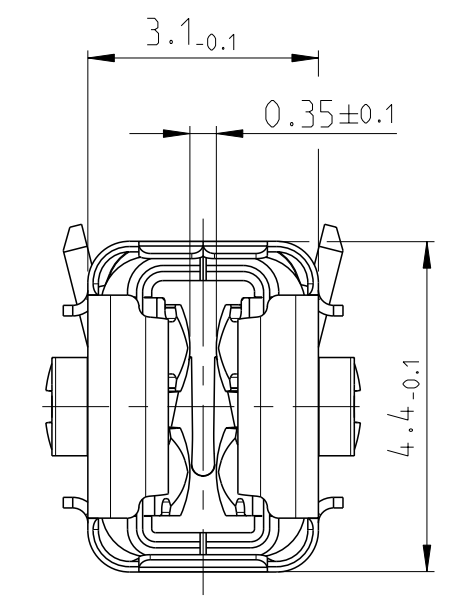
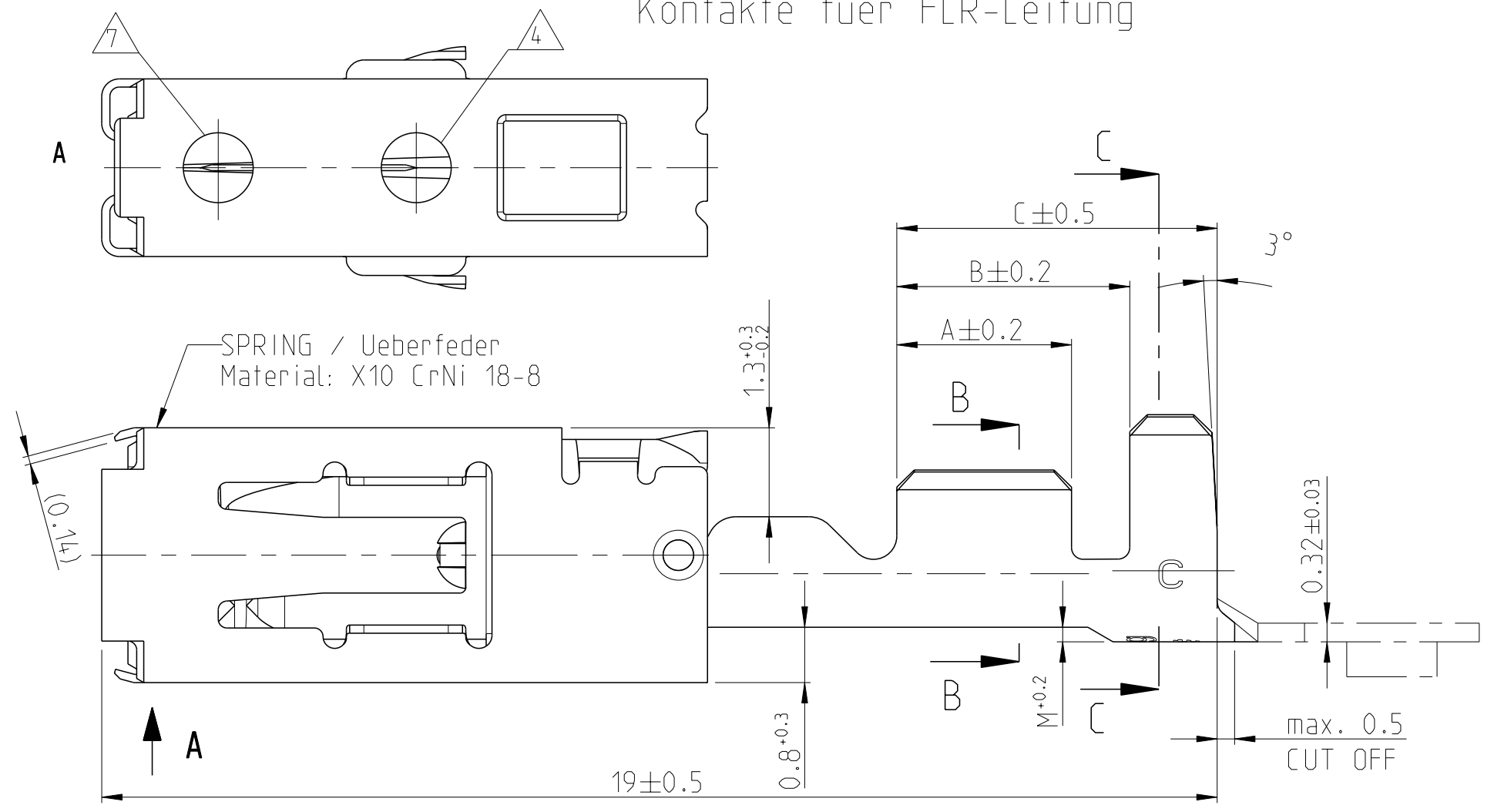


# Section 1

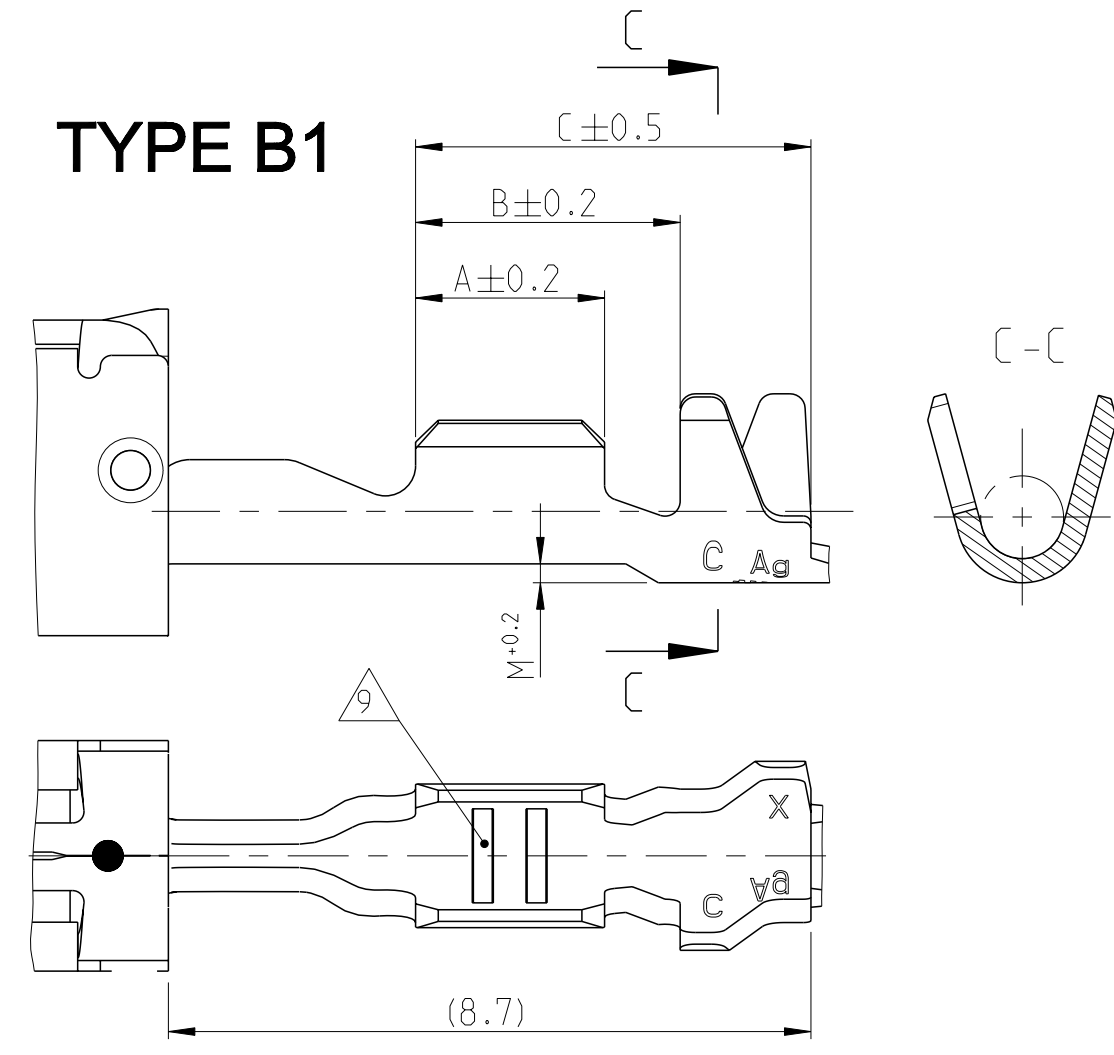
# Design Records

USABLE WITH TAB 0.8mm AND TAB 0.6mm THICKNESS  
Verwendbar mit Flachstecker 0.8mm und 0.6mm Dicke

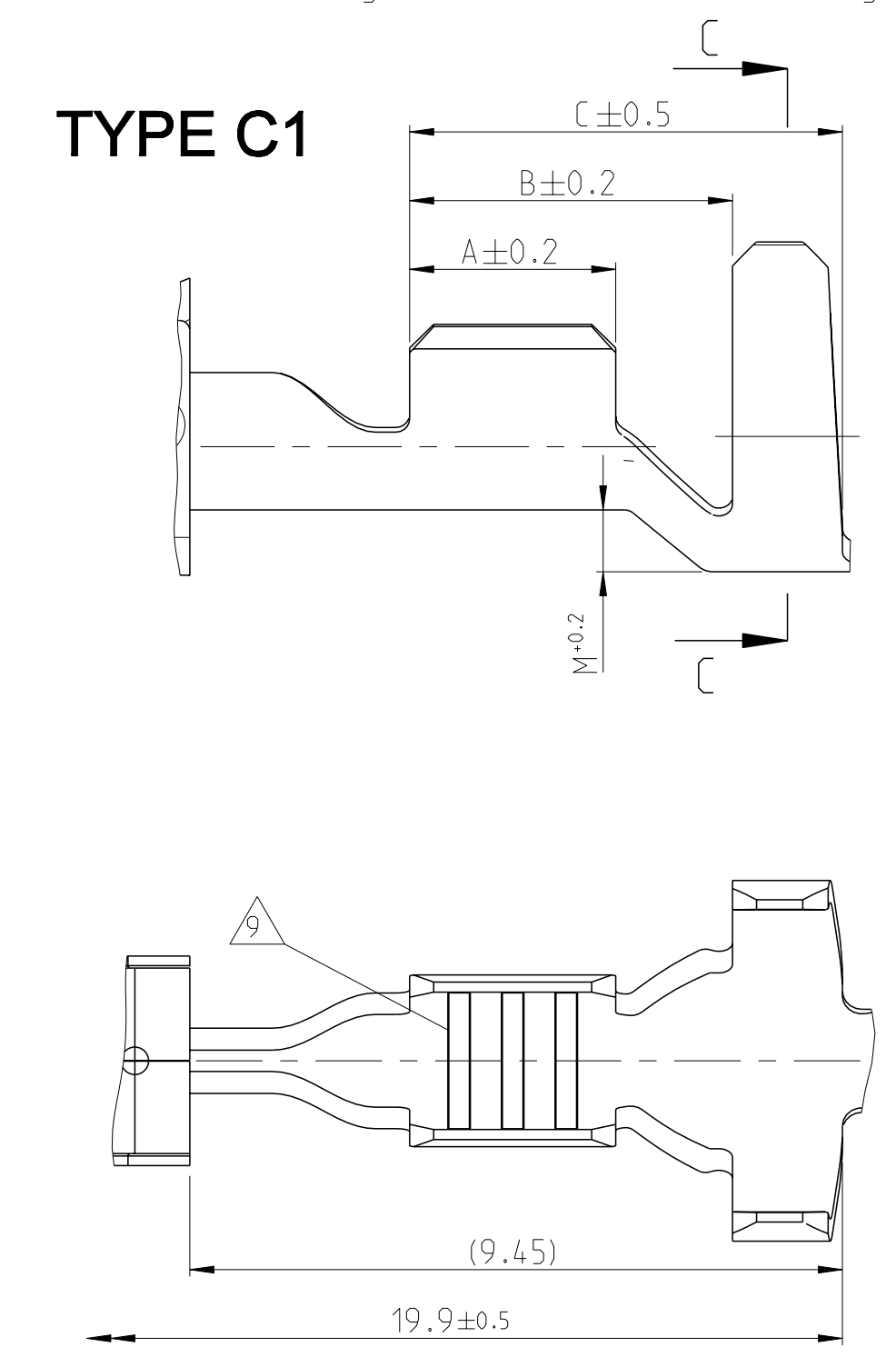
CONTACTS FOR FLR-CABLE  
Kontakte fuer FLR-Leitung



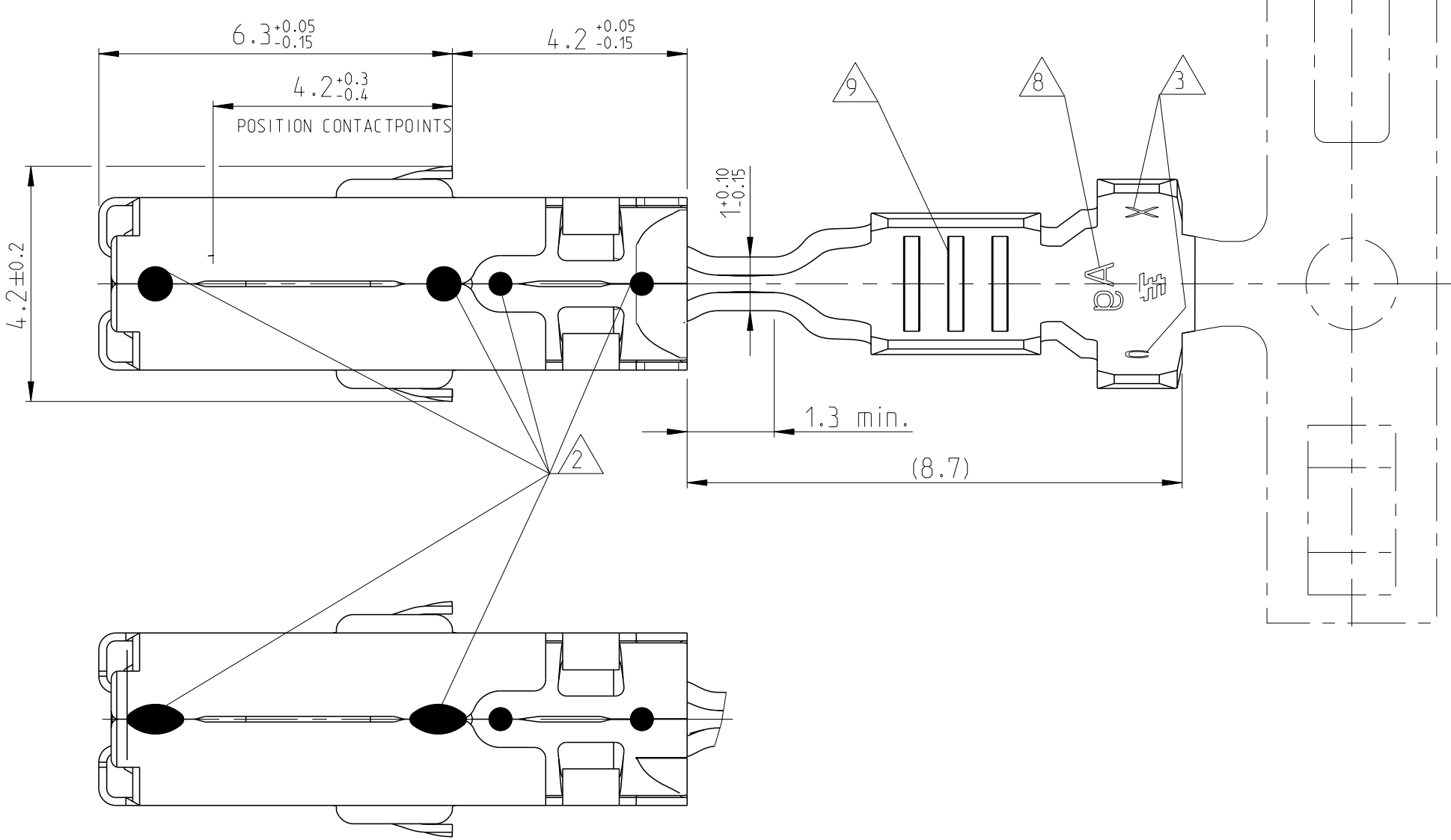
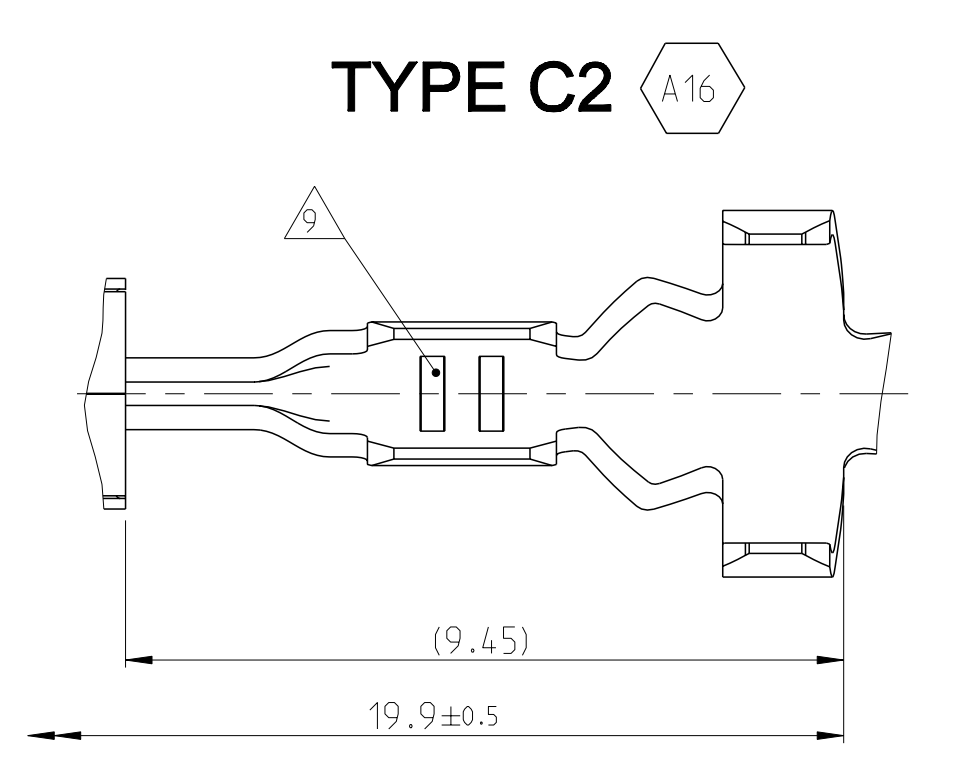
TYPE B1



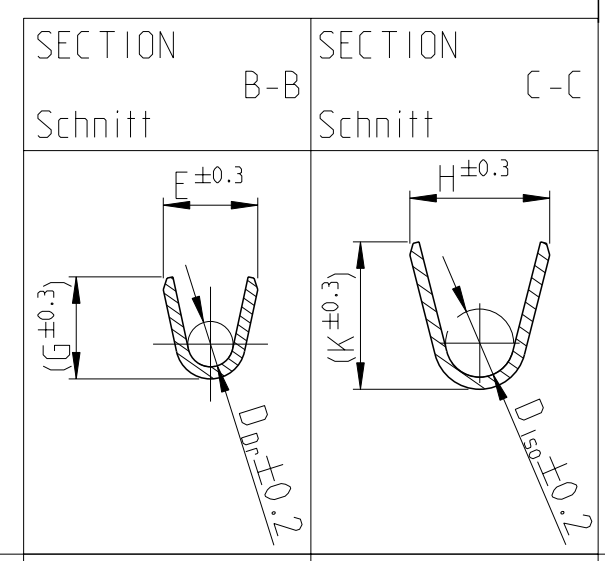
TYPE C1



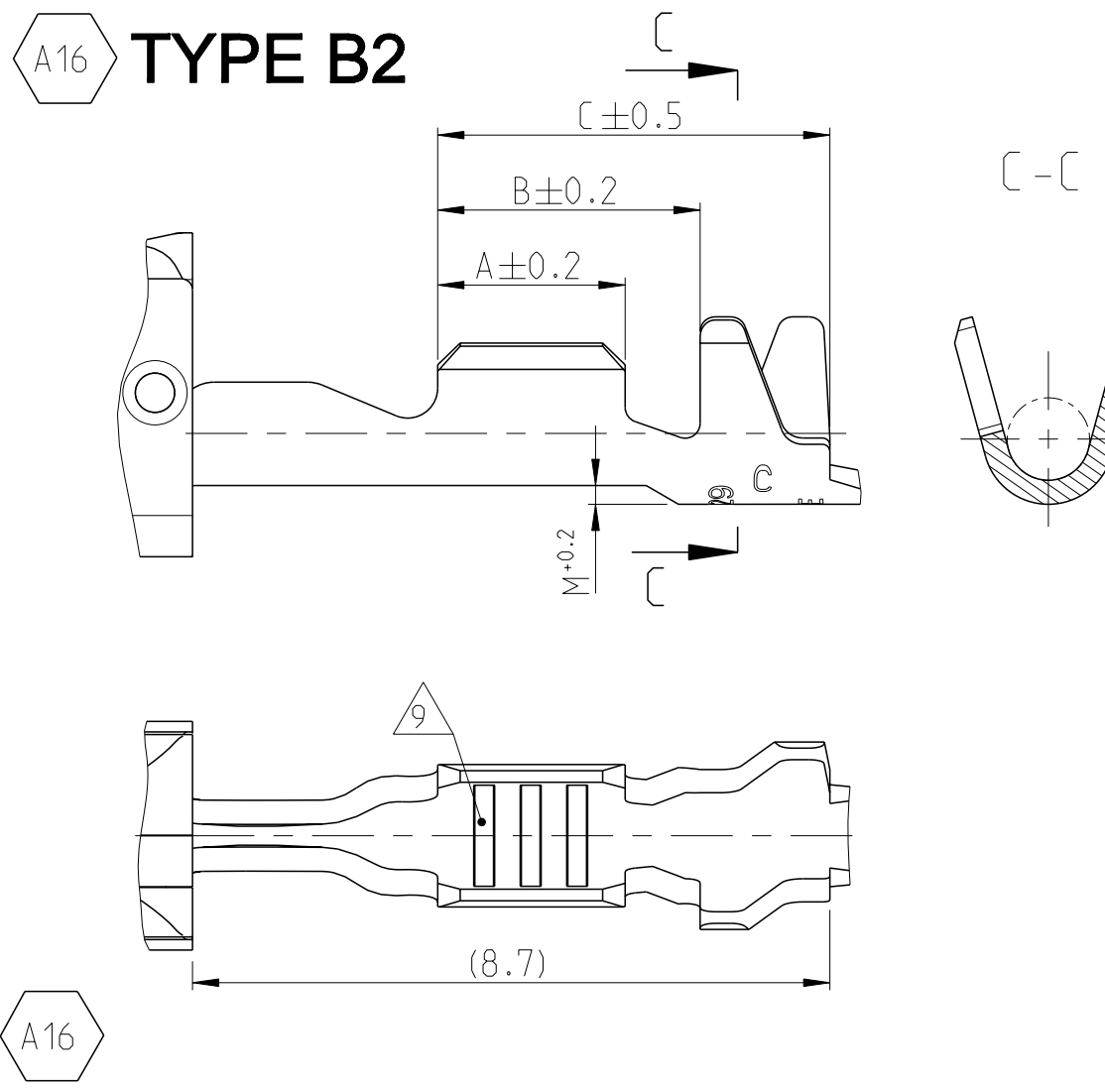
TYPE C2 A16



TYPE A

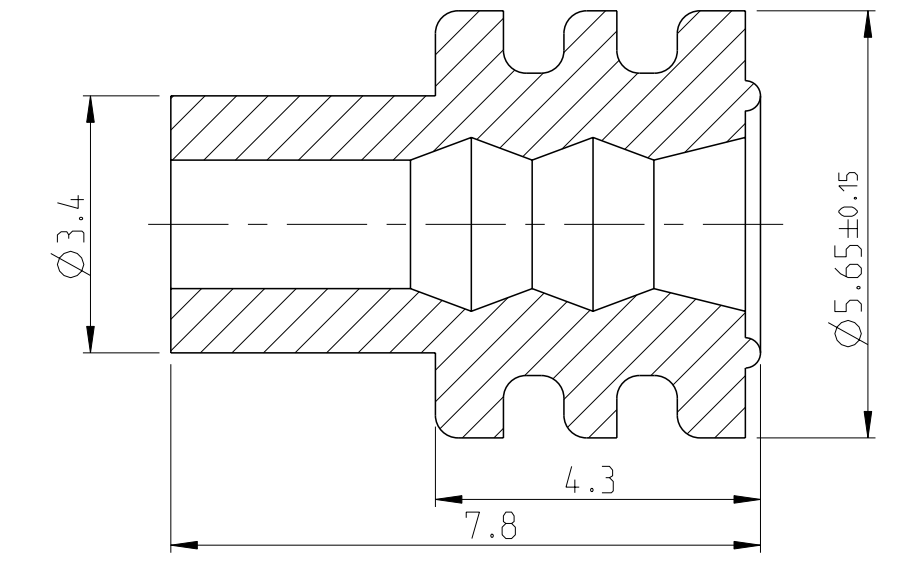


TYPE B2 A16



SINGLE WIRE SEALING SYSTEM

ORDER NO. Bestell-Nr.	INSULATION DIA Isolations Ø	COLOUR Farbe
963292-1	2.7...3.0	YELLOW gelb
963293-1	2.0...2.7	REDBROWN rotbraun
963294-1	1.2...2.1	BLUE blau



ORDER NO. Bestell-Nr.	REV.	WIRE RANGE Drahtgroessen- bereich (mm 2)	INSULATION DIA Isolations Ø (mm)	MATERIAL Werkstoff	PLATING Ueberzug	LENGTH Laenge	WIRE CRIMP Drahtcrimp	INSUL. CRIMP Isol.-Crimp	TYPE	TOOL / INSERT Handzange / Matrize	EXTRACTION TOOL Ausdruckwerkzeug	CRIMP DATA AND CRIMP TOOL
0-1241396-4	C	>1.0-2.5	2.2-3.0	CuNiSi	SILVERPLATED versilbert	A = 3.5 B = 5.2 C = 6.8	E = 3.6 G = 3.8 D <sub>Dr</sub> = 1.8	H = 5.45 K = (4.8) D <sub>ISO</sub> = 3.5 M = 0.85	C1	HANDCRIMP TOOL Handcrimpwerkzeug 539635-1	539969-1	SEE APPLICATION SPECIFICATION siehe Verarbeitungsspezifikation 114-18387
0-1241396-3	C			CuNiSi	PRESILVER vorversilbert				C1	INSERT / Matrize 539952-2		
0-1241396-2	C			CuNiSi	TINPLATED vorverzinkt				C1	HANDCRIMP TOOL 539635-1		
0-1241394-1	C	0.5-1.0	1.4-2.7	CuNiSi	PRESILVER vorversilbert	A = 3.0 B = 4.7 C = 6.3	E = 2.5 G = 2.7 D <sub>Dr</sub> = 1.2	H = 5.25 K = (4.8) D <sub>ISO</sub> = 3.3 M = 0.75	C1	INSERT / Matrize 539952-2	539969-1	SEE APPLICATION SPECIFICATION siehe Verarbeitungsspezifikation 114-18387
0-1241394-2	C			CuNiSi	TINPLATED vorverzinkt				C1	HANDCRIMP TOOL 539635-1		
0-1241392-3	C			CuNiSi	PRESILVER vorversilbert				C1	INSERT / Matrize 4-1579016-1		
0-1241392-2	C	0.2-0.35	1.1-1.4	CuNiSi	PRESILVER vorversilbert	A = 2.5 B = 4.7 C = 6.3	E = 1.9 G = 1.9 D <sub>Dr</sub> = 0.75	H = 4.85 K = (4.4) D <sub>ISO</sub> = 3.2 M = 0.7	C2	HANDCRIMP TOOL 539635-1	539969-1	SEE APPLICATION SPECIFICATION siehe Verarbeitungsspezifikation 114-18387
0-1241392-1	C			CuNiSi	TINPLATED vorverzinkt				C2	INSERT / Matrize 4-1579016-1		
0-1564984-3	C			CuNiSi	PRESILVER vorversilbert				C1	HANDCRIMP TOOL 539635-1		
0-1564984-2	C	0.2-0.35	1.1-1.4	CuNiSi	PRESILVER vorversilbert	A = 3.3 B = 4.3 C = 5.8	E = 2.4 G = 2.3 D <sub>Dr</sub> = 1.0	H = 4.7 K = (4.9) D <sub>ISO</sub> = 2.6 M = 0.4	C1	INSERT / Matrize 4-1579016-1	539969-1	SEE APPLICATION SPECIFICATION siehe Verarbeitungsspezifikation 114-18387
0-1564984-1	C			CuNiSi	TINPLATED vorverzinkt				C1	HANDCRIMP TOOL 539635-1		
0-1241390-3	C			CuNiSi	PRESILVER vorversilbert				C1	INSERT / Matrize 4-1579016-1		
0-1241390-2	C	>1.0-2.5	2.2-3.0	CuNiSi	PRESILVER vorversilbert	A = 3.3 B = 4.3 C = 5.8	E = 3.6 G = 3.8 D <sub>Dr</sub> = 1.8	H = 4.7 K = (4.9) D <sub>ISO</sub> = 2.6 M = 0.4	A	HANDCRIMP TOOL Handcrimpwerkzeug 539635-1	539969-1	SEE APPLICATION SPECIFICATION siehe Verarbeitungsspezifikation 114-18387
0-1241390-1	C			CuNiSi	TINPLATED vorverzinkt				A	INSERT / Matrize 539951-2		
0-1241388-3	C			CuNiSi	PRESILVER vorversilbert				A	HANDCRIMP TOOL Handcrimpwerkzeug 539635-1		
0-1241388-2	C	0.5-1.0	1.4-2.1	CuNiSi	PRESILVER vorversilbert	A = 3.0 B = 4.0 C = 5.5	E = 2.5 G = 2.7 D <sub>Dr</sub> = 1.2	H = 3.7 K = (3.9) D <sub>ISO</sub> = 1.8 M = 0.2	B1	HANDCRIMP TOOL Handcrimpwerkzeug 539635-1	539969-1	SEE APPLICATION SPECIFICATION siehe Verarbeitungsspezifikation 114-18387
0-1241388-1	C			CuNiSi	TINPLATED vorverzinkt				B1	INSERT / Matrize 539951-2		
0-1241386-3	C			CuNiSi	PRESILVER vorversilbert				B1	HANDCRIMP TOOL Handcrimpwerkzeug 539635-1		
0-1241386-2	C	0.2-0.35	1.1-1.4	CuNiSi	PRESILVER vorversilbert	A = 2.5 B = 3.5 C = 5.2	E = 1.9 G = 1.9 D <sub>Dr</sub> = 0.75	H = 2.5 K = (2.5) D <sub>ISO</sub> = 1.1 M = 0.2	B2	HANDCRIMP TOOL 539635-1	539969-1	SEE APPLICATION SPECIFICATION siehe Verarbeitungsspezifikation 114-18387
0-1241386-1	C			CuNiSi	TINPLATED vorverzinkt				B2	INSERT / Matrize 4-1579016-1		
0-1564982-3	C			CuNiSi	PRESILVER vorversilbert				B2	HANDCRIMP TOOL 539635-1		
0-1564982-2	C	0.2-0.35	1.1-1.4	CuNiSi	PRESILVER vorversilbert	A = 2.5 B = 3.5 C = 5.2	E = 2.4 G = 2.3 D <sub>Dr</sub> = 1.0	H = 2.5 K = (2.5) D <sub>ISO</sub> = 1.1 M = 0.2	B2	HANDCRIMP TOOL 539635-1	539969-1	SEE APPLICATION SPECIFICATION siehe Verarbeitungsspezifikation 114-18387
0-1564982-1	C			CuNiSi	TINPLATED vorverzinkt				B2	INSERT / Matrize 4-1579016-1		

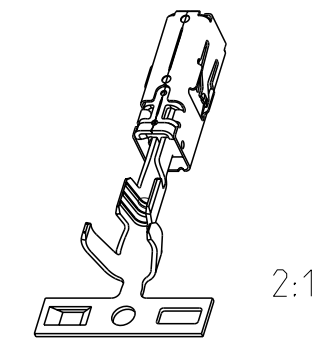
CONTACTS FOR SINGLE WIRE SEALING SYSTEM:  
FLR- AND FLK- CABLE  
Kontakte fuer Einzel-Dichtung-System:  
FLR- und FLK-Leitung

LOC	DIST	REV	DESCRIPTION	DATE	OWN	APVD
A1	-	-	-	-	-	-
		C13	ECR-15-010777	20JUL2015	SG	RL
		C14	ECR-15-012070	22SEP2015	JBH	BK
		C15	ECR-15-017391	30NOV2015	SG	RL
		C16	Type B2 added, see PCN E-18-010946	19APR2018	FRAN	MERZ

DIMENSIONS SEE FIGURE "CONTACTS FOR FLR-CABLE"  
Masse siehe Darstellung der Kontakte fuer FLR-Leitung

Notes  
Bemerkungen:

- TO BE USED ON Flachstecker / TAB 2.8 ±0.3 x 0.6 ±0.07  
Geeignet fuer Flachstecker / TAB 2.8 ±0.3 x 0.8 ±0.03
- ALTERNATIVELY LASERWELDED POINT OR LINE SHAPED (DIE CAUSED)  
Laserschweissung wahlweise Punkt- oder Linienformig (Fertigungsbedingt)
- DIE-IDENTIFICATION AND REVISION STATUS  
Kennung fuer Werkzeug und Revisionsstand
- MIN. 0.8µm GOLDPLATE IN CONTACT AREA OVER MIN. 1.3µm NICKELPLATE;  
MIN. 1µm TINPLATE IN CRIMP AREA.  
AS INDEX SEE HOLE AT SPRING  
0.8µm Goldueberzug im Kontaktbereich ueber min. 1.3µm Nickelueberzug;  
min. 1µm Zinnueberzug im Crimpbereich.  
Zur Kennzeichnung siehe Loch an der Ueberfeder
- FOR DOUBLE AND SINGLE CRIMP  
Fuer Doppel- und Einzelcrimp
- SINGLE WIRE SEAL TO BE SELECTED ACCORDING TO INSULATION-DIA  
Auswahl der Einzeldichtung entsprechend dem Isolationsdurchmesser
- MANUFACTURIN-CONDITIONED HOLE, IS STARTING FROM REV. C AT ALL VERSIONS  
Fertigungsbedingtes Loch, befindet sich ab Rev. C an allen Kontakten
- MARKING WITH "Ag" FOR SILVERPLATE IN CONTACT AREA  
Kennzeichnung mit "Ag" bei Silberueberzug im Kontaktbereich
- DIFFERENT FORM OF THE SERRATION POSSIBLE  
Unterschiedliche Ausuehrung der Rillen moeglich
- PN 1241386 AND 1241392 NOT FOR NEW APPLICATION, REPLACED BY PN 1564982 AND PN1564984.  
PN 1241386 und 1241392 nicht fuer Neuanwendung, Ersatz durch PN 1564982 und 1564984
- DETAILS OF DESIGN ARE LEFT TO MANUFACTURER  
Einzelheiten der Ausuehrung bleiben dem Hersteller ueberlassen
- "Ag" MARKING ON SILVER PLATED VERSIONS FOR INCREASED LIMIT TEMPERATURE  
"Ag" Markierung auf versilberten Versionen fuer erhoehete Grenztemperatur



THIS DRAWING IS A CONTROLLED DOCUMENT. DIESER ZEICHNUNGSDRUCK IST EIN KONTROLLIERTES DOKUMENT. ALLE REVISIONEN SIND IN DIESEM ZEICHNUNGSDRUCK VEREINLEBET. ALLE ANDEREN REVISIONEN SIND UNKONTROLLIERT.	OWN Pr. Liebing	DATE 05JUN2006
MASSSTABEINHEIT: mm	CHK	
OTHERWISE SPECIFIED: ALLE DIMENSIONEN SIND IN mm ANGEFUEHRT.	APVD	
SCALE: 1:1	NAME	PRODUCT GROUP DRAWING FOR AMP MCP 2.8K
MATERIAL: see table	SIZE	A1
	CAGE CODE	00779
	DRAWING NO.	1241437
	SCALE	10:1
	SHEET	1
	VON	1
	REV	C16



## **Section 2**

# **Engineering Change Documents**



# Product Change Notification

Current Date: 29-Jul-2020

## TE Connectivity

Product Change Notification: P-20-019110

PCN Date: 20-MAY-20

TE would like to inform you of the following change(s) to the listed TE Connectivity Product. In case of any further questions about this change(s), please contact your TE Connectivity Sales Engineer. Affected part, drawing and/or specification numbers are listed on the attached sheet(s).

**General Product Description:**

AMP MCP 2.8K, CONTACT, Sealed

**Description of Changes**

TE Connectivity Brazil would like to inform about local production of AMP MCP 2.8K, CONTACT, SEALED listed in this PCN.

**Reason for Changes:**

Dear Customer, we hereby inform you about local production of AMP MCP 2.8K, CONTACT, SEALED listed in this PCN. Brazil Production is to better meet customer demands and improve our delivery. The Brazil Manufacturing location operates under certified quality management system in accordance with standard concerned automotive requirements. A TE internal release test based on relevant part specifications will be executed before delivery. PPAP will be submitted before SOP for all customers which had required.

**Estimated Dates:**

<b>Last Order Date</b> (Obsolete Parts Only):	<b>First Date To Ship</b> (Changed Parts Only):
	20-AUG-2020
<b>Last Ship Date</b> (Obsolete Parts Only):	<b>Last Date for Mixed Shipments:</b> (Changed Parts Only):
	No Mixed Shipments

**Part Number(s) being Modified:**

Part Number	Part Discontinued per PCN	Customer Drawing	Alias Part Number(s)	Substitute Part Number	Substitute Alias Part Number(s)	Description Of Difference
<a href="#">1241394-1</a>	NO					
<a href="#">1241396-1</a>	NO					



## **Section 3**

# **Customer Engineering Approval**

# Not Applicable





# Section 4

# Design FMEA

**See Section A for nondisclosure conditions.**

**The Design FMEA, if included, is a Class II confidential document belonging to TE Connectivity. A class II document may not be further distributed and is subject to the conditions of the nondisclosure agreement.**



## **Section 5**

# **Process Flow Diagram**

**See Section A for nondisclosure conditions.**

**The Process Flow Diagram, if included, is a Class II confidential document belonging to TE Connectivity. A class II document may not be further distributed and is subject to the conditions of the nondisclosure agreement.**



## **Section 6**

# **Process FMEA**

**See Section A for nondisclosure conditions.**

**The Process FMEA, if included, is a Class II confidential document belonging to TE Connectivity. A class II document may not be further distributed and is subject to the conditions of the nondisclosure agreement.**



# **Section 7**

# **Control Plan**

**See Section A for nondisclosure conditions.**  
**The Control Plan, if included, is a Class II confidential document belonging to TE Connectivity. A class II document may not be further distributed and is subject to the conditions of the nondisclosure agreement.**



## **Section 8**

# **Measurement System Analysis**

# Not Applicable

# Section 9

# Dimensional Results



# Production Part Approval

## Dimensional Test Results

Organization: TE Connectivity Brazil

Part Name: AMP MCP 2.8K, CONTACT, SWS

Inspection Facility TE Connectivity Brazil

Cust. Part Number: 1241394-1

Shown on Drawing No.: C-1241437

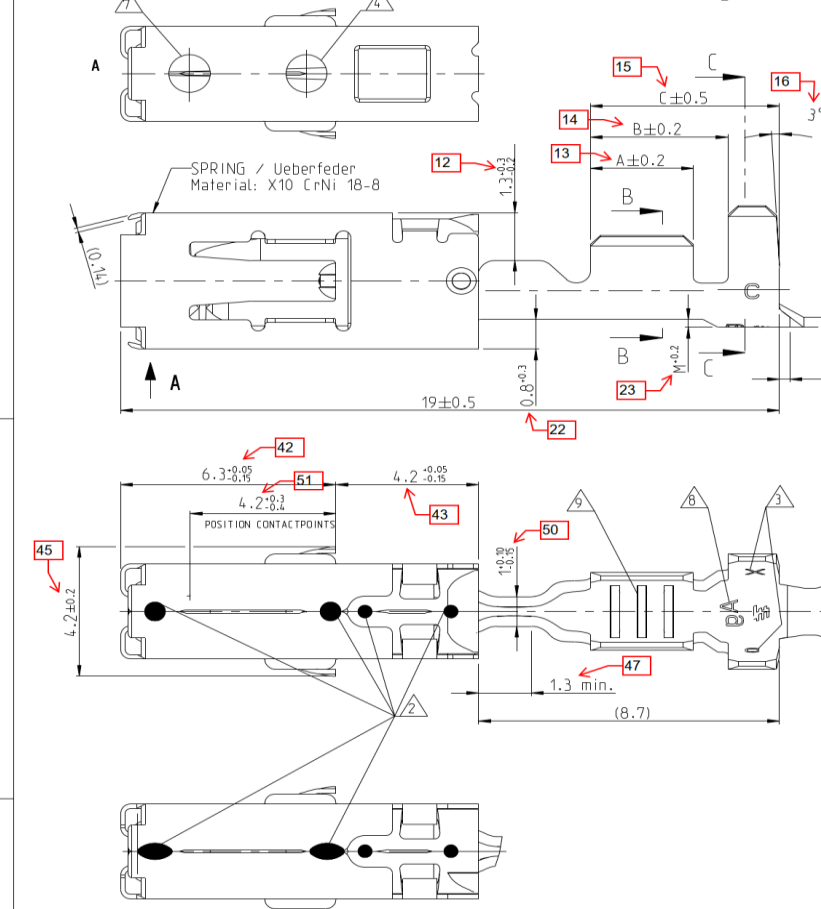
Engineering Change Level: C16

ITEM	DIMENSION / SPECIFICATION			SPECIFICATION / LIMITS		TEST DATE	QTY. TESTED	ORGANIZATION MEASUREMENT RESULTS (DATA)				OK	NOT OK
	Nominal	-	+	Min.	Max.								
-	Construction according:												
	Drawing C-1241437			-	-	-	-	According				X	
-	Acabamento de construção			-	-	-	-	According				X	
-	Dimensional (mm)			Min.	Max.	Date							
	Nominal	-	+					<b>Part 1</b>					
12	1,3	0,2	0,3	1,1	1,6	21-Dec-20	01	1,321				X	
13-1	3	0,2	0,2	2,8	3,2	21-Dec-20	01	3,029				X	
13-2	3	0,2	0,2	2,8	3,2	21-Dec-20	01	3,022				X	
14-1	4,7	0,2	0,2	4,5	4,9	21-Dec-20	01	4,739				X	
14-2	4,7	0,2	0,2	4,5	4,9	21-Dec-20	01	4,754				X	
15-1	6,3	0,5	0,5	5,8	6,8	21-Dec-20	01	6,367				X	
15-1	6,3	0,5	0,5	5,8	6,8	21-Dec-20	01	6,399				X	
16-1	3	1	1	2,0	4,0	21-Dec-20	01	2,241				X	
16-2	3	1	1	2,0	4,0	21-Dec-20	01	2,189				X	
17	0,32	0,03	0,03	0,29	0,35	21-Dec-20	01	0,322				X	
20	19,9	0,5	0,5	19,40	20,40	21-Dec-20	01	19,783				X	
22	0,8	0	0,3	0,8	1,1	21-Dec-20	01	0,907				X	
23	0,75	0	0,2	0,8	1,0	21-Dec-20	01	0,793				X	
42	6,3	0,15	0,05	6,2	6,4	21-Dec-20	01	6,294				X	
43	4,2	0,15	0,05	4,1	4,3	21-Dec-20	01	4,131				X	
45	4,2	0,2	0,2	4,0	4,4	21-Dec-20	01	4,350				X	
47	1,3	0	999	1,3	1000,3	21-Dec-20	01	1,755				X	
47	1,3	0	999	1,3	1000,3	21-Dec-20	01	1,699				X	
50	1,0	0,15	0,1	0,9	1,1	21-Dec-20	01	0,925				X	
51	4,2	0,4	0,3	3,8	4,5	21-Dec-20	01	4,049				X	
60	2,5	0,3	0,3	2,2	2,8	21-Dec-20	01	2,596				X	
62	1,2	0,2	0,2	1,0	1,4	21-Dec-20	01	1,143				X	
70	5,25	0,30	0,30	4,95	5,55	21-Dec-20	01	5,310				X	
72	3,30	0,2	0,2	3,1	3,5	21-Dec-20	01	3,212				X	
80	3,10	0,1	0	3,0	3,1	21-Dec-20	01	3,044				X	
81	0,35	0,1	0,1	0,3	0,5	21-Dec-20	01	0,361				X	
85	4,40	0,1	0	4,3	4,4	21-Dec-20	01	4,396				X	

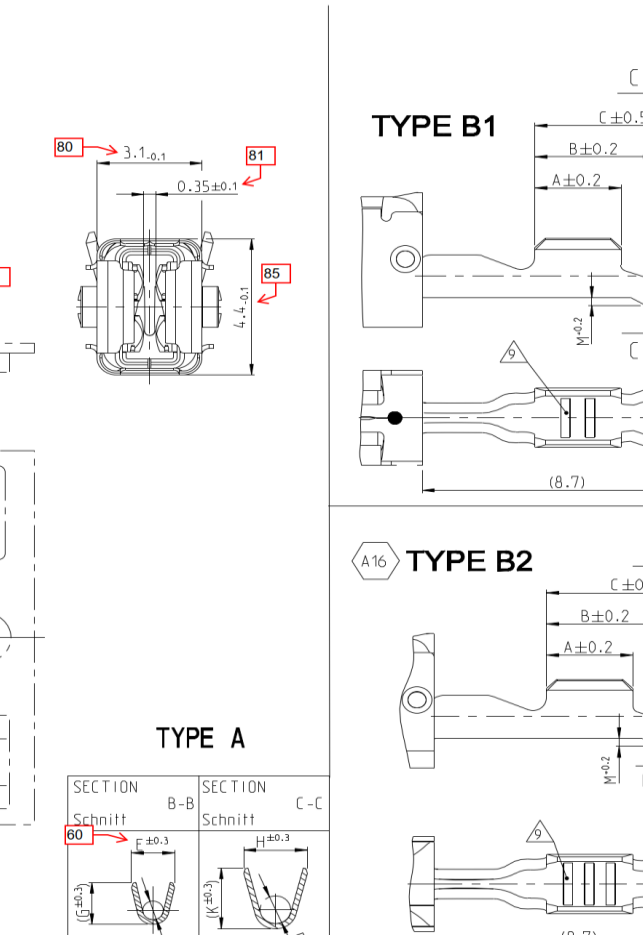
Signature	Title	Date
Rafael Moreira de Souza	Quality Engineer	June 23, 2021



CONTACTS FOR FLR-CABLE  
 Kontakte fuer FLR-Leitung

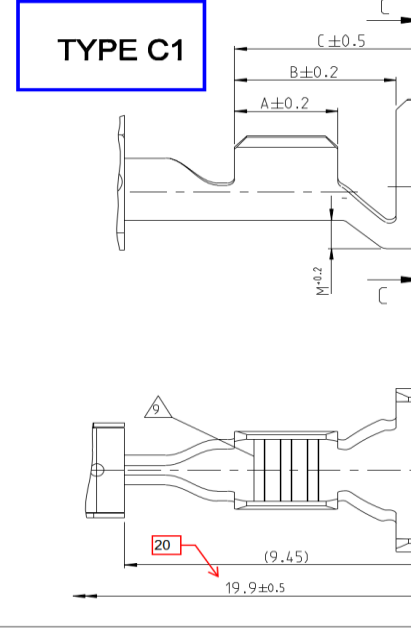


USABLE WITH TAB 0.8mm AND TAB 0.6mm THICKNESS  
 Verwendbar mit Flachstecker 0.8mm und 0.6mm Dicke



CONTACTS FOR SINGLE WIRE SEALING SYSTEM:  
 FLR- AND FLK- CABLE  
 Kontakte fuer Einzel-Dichtung-System:  
 FLR- und FLK-Leitung

DIMENSIONS SEE FIGURE "CONTACTS FOR FLR-CABLE"  
 Masse siehe Darstellung der Kontakte fuer FLR-Leitung



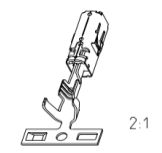
SINGLE WIRE SEALING SYSTEM

ORDER NO. Bestell-Nr.	INSULATION DIA Isolations Ø	COLOUR Farbe
963292-1	2.7...3.0	YELLOW gelb
963293-1	2.0...2.7	REDBROWN rotbraun
963294-1	1.2...2.1	BLUE blau

REV. NO.	DESCRIPTION	DATE	BY	APPV
C13	ECR-15-010777	20 JUN 2015	SG	RL
C14	ECR-15-012070	22 SEP 2015	BJH	BK
C15	ECR-15-017391	30 NOV 2015	SG	RL
C16	Type B2 added. see PCN E-18-010946	19 APR 2018	FRAN	MERZ

ORDER NO. Bestell-Nr.	REV.	WIRE RANGE Drahtgroessen- bereich (mm 2)	INSULATION DIA Isolations Ø (mm)	MATERIAL Werkstoff	PLATING Ueberzug	LENGTH Laenge	WIRE CRIMP Drahtcrimp	INSUL. CRIMP Isol.-Crimp	CRIMP DIMENSIONS Crimpabmessungen (mm)	ORDER NO. Bestell-Nr.	ORDER NO. Bestell-Nr.	CRIMP DATA AND CRIMP TOOL
0-1241396-4	C			CuNiSi	SILVERPLATED versilbert							
0-1241396-3	C	>1.0-2.5	2.2-3.0	CuNiSi	PRESILVER vorversilbert	A = 3.5 B = 5.2 C = 6.8	E = 3.6 G = 3.8 D <sub>Dr</sub> = 1.8	H = 5.45 K = (4.8) D <sub>150</sub> = 3.5 M = 0.85				
0-1241396-2	C			CuNiSi	TINPLATED vorverzinkt							
0-1241396-1	C			CuNiSi	PRESILVER vorversilbert							
0-1241394-3	C	0.5-1.0	1.4-2.7	CuNiSi	TINPLATED vorverzinkt	A = 3.0 B = 4.7 C = 6.3	E = 2.5 G = 2.7 D <sub>Dr</sub> = 1.2	H = 5.25 K = (4.8) D <sub>150</sub> = 3.3 M = 0.75				
0-1241394-2	C			CuNiSi	PRESILVER vorversilbert							
0-1241394-1	C			CuNiSi	TINPLATED vorverzinkt							
0-1241392-3	C	0.2-0.35	1.1-1.4	CuNiSi	PRESILVER vorversilbert		E = 1.9 G = 1.9 D <sub>Dr</sub> = 0.75	H = 4.85 K = (4.4) D <sub>150</sub> = 3.2 M = 0.7				
0-1241392-2	C			CuNiSi	TINPLATED vorverzinkt	A = 2.5 B = 4.7 C = 6.3						
0-1241392-1	C			CuNiSi	PRESILVER vorversilbert							
0-1564984-3	C	0.2-0.35	1.1-1.4	CuNiSi	TINPLATED vorverzinkt		E = 2.4 G = 2.3 D <sub>Dr</sub> = 1.0					
0-1564984-2	C			CuNiSi	PRESILVER vorversilbert							
0-1564984-1	C			CuNiSi	TINPLATED vorverzinkt							
0-1241390-3	C	>1.0-2.5	2.2-3.0	CuNiSi	PRESILVER vorversilbert	A = 3.3 B = 4.3 C = 5.8	E = 3.6 G = 3.8 D <sub>Dr</sub> = 1.8	H = 4.7 K = (4.9) D <sub>150</sub> = 2.6 M = 0.4				
0-1241390-2	C			CuNiSi	TINPLATED vorverzinkt							
0-1241390-1	C			CuNiSi	PRESILVER vorversilbert							
0-1241388-3	C	0.5-1.0	1.4-2.1	CuNiSi	TINPLATED vorverzinkt	A = 3.0 B = 4.0 C = 5.5	E = 2.5 G = 2.7 D <sub>Dr</sub> = 1.2	H = 3.7 K = (3.9) D <sub>150</sub> = 1.8 M = 0.2				
0-1241388-2	C			CuNiSi	PRESILVER vorversilbert							
0-1241388-1	C			CuNiSi	TINPLATED vorverzinkt							
0-1241386-3	C	0.2-0.35	1.1-1.4	CuNiSi	PRESILVER vorversilbert		E = 1.9 G = 1.9 D <sub>Dr</sub> = 0.75	H = 2.5 K = (2.5) D <sub>150</sub> = 1.1 M = 0.2				
0-1241386-2	C			CuNiSi	TINPLATED vorverzinkt	A = 2.5 B = 3.5 C = 5.2						
0-1241386-1	C			CuNiSi	PRESILVER vorversilbert							
0-1564982-3	C	0.2-0.35	1.1-1.4	CuNiSi	TINPLATED vorverzinkt		E = 2.4 G = 2.3 D <sub>Dr</sub> = 1.0					
0-1564982-2	C			CuNiSi	PRESILVER vorversilbert							
0-1564982-1	C			CuNiSi	TINPLATED vorverzinkt							

SEE APPLICATION SPECIFICATION  
 siehe Verarbeitungspezifikation  
 T14-18387



2.1

- Notes  
 Bemerkungen:
- TO BE USED DN Flachstecker /TAB 2.8 -0.3 0.6 -0.07  
 Geeignet fuer Flachstecker / TAB 2.8 -0.3 x 0.8 ±0.03
  - ALTERNATIVELY LASERWELDED POINT OR LINE SHAPED (DIE CAUSED)  
 Laserschweißung wahlweise Punkt- oder Linienformig (Fertigungsbedingt)
  - DIE-IDENTIFICATION AND REVISION STATUS  
 Kennung fuer Werkzeug und Revisionsstand
  - MIN. 0.8µm GOLDPLATE IN CONTACT AREA OVER MIN. 1.3µm NICKELPLATE.  
 MIN. 1µm TINPLATE IN CRIMP AREA.  
 AS INDEX SEE HOLE AT SPRING  
 0.8µm Goldüberzug im Kontaktbereich ueber min. 1.3µm Nickelüberzug;  
 min. 1µm Zinnüberzug im Crimpbereich.  
 Zur Kennzeichnung siehe Loch an der Ueberfeder
  - FOR DOUBLE AND SINGLE CRIMP  
 Fuer Doppel- und Einzelcrimp
  - SINGLE WIRE SEAL TO BE SELECTED ACCORDING TO INSULATION-DIA  
 Auswahl der Einzeldichtung entsprechend dem Isolationsdurchmesser
  - MANUFACTURER-CONDITIONED HOLE, IS STARTING FROM REV. C AT ALL VERSIONS  
 Fertigungsbedingtes Loch, befindet sich ab Rev. C an allen Kontakten
  - MARKING WITH "Ag" FOR SILVERPLATE IN CONTACT AREA  
 Kennzeichnung mit "Ag" bei Silberüberzug im Kontaktbereich
  - DIFFERENT FORM OF THE SERRATION POSSIBLE  
 Unterschiedliche Ausfuehrung der Rillen moeglich
  - PN 1241386 AND 1241392 NOT FOR NEW APPLICATION. REPLACED BY PN 1564982 AND PN1564984.  
 PN 1241386 and 1241392 nicht fuer Neuanwendung. Ersatz durch PN 1564982 und 1564984
  - DETAILS OF DESIGN ARE LEFT TO MANUFACTURER  
 Einzelheiten der Ausfuehrung bleiben dem Hersteller uebertlassen
  - "Ag" MARKING ON SILVER PLATED VERSIONS FOR INCREASED LIMIT TEMPERATURE  
 "Ag" Markierung auf versilberten Versionen fuer erhoehete Grenztemperatur
  - "Ag" Markierung auf versilberten Versionen fuer erhoehete Grenztemperatur

THIS DRAWING IS A CONTROLLED DOCUMENT. <small>ALLE ZEICHNUNGEN SIND UNTER EINER KONTROLLENUMMER ZUSAMMENGEFASST. KEINE ANDEREN KONTAKTZEICHNUNGEN ZWISCHEN DEN KONTAKTZEICHNUNGEN ZULASSEN.</small>		REV. C	05 JUN 2005	TE Connectivity	
DRAWN BY: Liebing		DATE: 05 JUN 2005	TE Connectivity		
CHECKED BY: Liebing		DATE: 05 JUN 2005	TE Connectivity		
APPROVED BY: Liebing		DATE: 05 JUN 2005	TE Connectivity		
MATERIAL: see table siehe Tabelle		INSULATION DIA: see table siehe Tabelle	WIRE RANGE: see table siehe Tabelle	ORDER NO.: see table siehe Tabelle	CRIMP DATA AND CRIMP TOOL: see table siehe Tabelle
PRODUCT SPEC: AMP MCP 2.8K		PROJECT NO.: 100-10717	APPLICATION SPEC: T14-18387	SCALE: 10:1	SHEET 1 OF 1
CUSTOMER DRAWING		DATE: 05 JUN 2005	SCALE: 10:1	SHEET 1 OF 1	REV. C



## **Section 10**

# **Material, Performance Test Results**



# Production Part Approval

## Material Test Results

Organization: **TE Connectivity Brazil**  
Material Supplier: **TE Connectivity Brazil**  
Name of Laboratory: **TE Connectivity Brazil**

Part Name: **AMP MCP 2.8K, CONTACT, SWS**  
Cust. Part Number: **1241394-1**  
Shown on Drawing No.: **C-1241437**  
Engineering Change Level: **C16**

MATERIAL SPEC. Nº. / REV. / DATE	SPECIFICATION / LIMITS	TEST DATE	QTY. TESTED	SUPPLIER TEST RESULTS (DATA)	OK	NOT OK
- Material:						
Coil/Slit 1.4310(HT5) 2H 0.14x15.5m		29-Apr-21	Batch	SC Otelineox AS	X	
CuNiSi		22-Apr-21	Batch	Wieland K55 CuNi3Si1Mg	X	

Signature	Title	Date
Rafael Moreira de Souza	Quality Engineer	June 23, 2021



A subsidiary of SAMSUNG C&T

MANAGEMENT SYSTEMS CERTIFIED  
ACCORDING TO ISO 9001 & IATF 16949,  
ISO 14001, ISO 45001  
LABORATORY ACCREDITED ACCORDING TO ISO/IEC 17025

<b>INSPECTION CERTIFICATE</b>	
<b>1000591684</b>	
(according to DIN EN 10204, type 3.1)	
<b>Manufacturer:</b>	<b>SC Otelinox SA</b>
<b>Address:</b>	16, Gaesti Street, Targoviste, 130087, Romania

**IDENTITY**

<b>Product:</b>	Coil/Slit 1.4310(HT5) 2H 0.14x15.5mm COIL	
<b>Customer:</b>	TE CONNECTIVITY BRASIL INDÚSTRIA DE	
<b>SO No. / Cust PO.</b>	1000397862 / PO 2713985455	
<b>Customer Art No:</b>	705410-4	
<b>Otx Art No:</b>	N10989 BR	
<b>Spec No:</b>	EN 10088-2 ; TEC-100-309-2 rev U ; ID 875 Version A1	
<b>Pallet No.</b>	1000591684	
<b>Coil No.</b>	5E24/201-213027/2/A/2 / 11 12 13 14 15 16 17 18	/ /
<b>Net Weight [kg]</b>	816	
<b>Heat Treatment</b>	Without	

**CHEMICAL ANALYSIS(%) Heat No: 0DLX Melting Process: E**

xxx	C	Mn	Si	P	S	Cr	Ni
<b>Req. (min-max)</b>	0.05-0.15	MAX 2.0	MAX 2.0	MAX 0.045	MAX 0.015	16.00-19.00	6.00-9.50
<b>Measured</b>	0.1000	1.0380	0.9170	0.02700	0.00100	16.7050	6.4150
Element	Mo	Ti	N	Al	Cu	Co	
<b>Req. (min-max)</b>	MAX 0.8	xxx	MAX 0.10	xxx	xxx	xxx	
<b>Measured</b>	0.3780	xxx	0.0610	xxx	xxx	xxx	

**TEST RESULTS**

Test Direction	Longitudinal						Bending Test
Position/Test No:	T/ 297	B/ 298					
Requirement	Rp02(MPa)	Rm(MPa)	Elong(A80%)	HV2	Ra(um)		
<b>min-max</b>	min 1,000	1,350-1,500	min 13.0	xxx	xxx		
<b>T</b>	1,165	1,411	21.5	432	0.20	Ok	
<b>B</b>	1,171	1,402	20.0	430	0.19	Ok	

**GEOMETRY MEASUREMENTS**

Requirement	Thick[mm]	Width[mm]	Burr[%/mm]
<b>Nominal Value</b>	0.140	15.50	
<b>min/max</b>	-0.010/0.007	-0.05/0.05	max 5%
<b>Min</b>	0.139	15.480	2.2
<b>Max</b>	0.141	15.490	2.9

**Other Test Results**

PN-International 0-0705410-4/Rev.O PN-Germany 1-1262050-0/Rev.A
--

Surface and dimensional control, material identity test : OK

Marking: Producer Trade Mark, Material, Heat No., Coil No.

Delivered product is in conformity with order requirements.

IL-CQ-1

Targoviste, 29.04.2021

Work Inspector : MOISE VIOLETA



# wieland

Page 1 of 4

Wieland-Werke AG D-89079 Ulm

TE Connectivity Brasil Industria  
de Eletronicos Ltda.  
Rua Ampere 304  
Campo Da Penha  
BRAGANCA PAULISTA  
12929-570  
BRASILIEIN

Your order No.	2715181593
Date	Feb 8, 2021
Your material No.	7-703314-6
Our confirmation No.	<b>12200681 001</b>
Our delivery note No.	82908648 010
Quantity delivered	4992 KG
Date	Apr 22, 2021

## Inspection certificate 3.1 as per EN 10204 : 2004

Product:	Dimensions:
Tinned strip	Dim A: 0,32 mm - 0.01 + 0.002
Material:	Dim B: 25 mm - 0.05 + 0.05
Wieland K55 CuNi3Si1Mg	Dim C:
	Dim D:

Specification:	Revision/Date of issue:	Temper designation
Further applicable spec TEC 100-1086 Chem. Comp.	Rev. Z	
Further applicable spec TEC-112-20-8	Rev. AE	
Further specifications: TE-Spec. 100-1086 Rev. Z		
Further specifications: Temper R620S		
Further specifications: Verp. n. 107-18010 Rev. F		

Remarks:

Coil-No.	3655030406	3655030407	3655030408
Heat-No.	R2520.0004	L2515.0004	R2520.0003
Prod-No.	36548580	36548580	36548580

## Chemical composition as 3.1 EN 10204 : 2004

The sum of the other elements corresponds to what is specified in the chemical standard.

<b>Cu Copper</b>	<b>Fe Iron</b>	<b>Pb Lead</b>
<b>Mg Magnesium</b>	<b>Ni Nickel</b>	<b>1B 1B = Nickel + Cobalt</b>
<b>Zn Zinc</b>		

Specified values:

Parameter tested (in %)	Cu	Fe	Pb	Mg	Ni	1B	Zn
Minimum/Reference(R)				0,05	2,2		
Maximum/Reference(R)		0,2	0,05	0,3	4,2		1

Measured values:\*

Heat/Lot No.

# wieland

Page 2 of 4

TE Connectivity Brasil Industria

Your order No.	2715181593
Date	Feb 8, 2021
Your material No.	7-703314-6

Our confirmation No.	12200681 001
Our delivery note No.	82908648 010
Quantity delivered	4992 KG
Date	Apr 22, 2021

## Inspection certificate 3.1 as per EN 10204 : 2004

2515	97,071	< 0,2	< 0,05	0,07	2,2	2,2487	0,1
2515	97,089	< 0,2	< 0,05	0,07	2,3	2,2586	0,1
2520	97,006	< 0,2	< 0,05	0,07	2,2	2,2497	0,2
2520	97,025	< 0,2	< 0,05	0,07	2,3	2,2546	0,2

**Mn Manganese**

**Si Silicon**

### Specified values:

Parameter tested (in %)	Mn	Si
Minimum/Reference(R)		0,25
Maximum/Reference(R)	0,1	1,2

### Measured values:\*

Heat/Lot No.

2515	< 0,1	0,42
2515	< 0,1	0,42
2520	< 0,1	0,42
2520	< 0,1	0,42

### Mechanical testing

TE Connectivity Brasil Industria

Your order No.	2715181593
Date	Feb 8, 2021
Your material No.	7-703314-6

Our confirmation No.	12200681 001
Our delivery note No.	82908648 010
Quantity delivered	4992 KG
Date	Apr 22, 2021

## Inspection certificate 3.1 as per EN 10204 : 2004

**RM Tensile strength Rm      RP0,2 Rp 0.2 % yield strength    A2" Elongation A2"**  
**HV5 Vickers hardness HV5**

Specified values:

Parameter tested	RM	RP0,2	A2"	HV5
Unit	MPa	MPa	%	
Minimum/Reference(R)	620	550	14,0	180 R
Maximum/Reference(R)		600		220 R

Measured values:

sample number

L2515_A	696	561	17,2	208
L2515_E	695	560	16,6	208
R2520_A	697	560	17,3	206
R2520_E	695	558	17,1	207

### Further inspections

Test method	Unit	Specified Reference(R)		Measured	
		Min.	Max.		
Electrical conductivity	MS/m	23		27,19	27,19
Electrical conductivity - IACS	%	39,66		46,88	46,88
Grain size	µm		30	7	8
90° bend test parallel R=0				Result good	
90° bend test perpend. R=0				Result good	
180° bend test perpend.				Result good	
180° bend test parallel R=0,32 MM				Result good	
Ra - arithmetic average roughness	µm		0,3	0,063	0,082
Ra arithm. average roughness coating	µm		0,35	0,35	0,35
SnTEM®				Result good	
Coating thickness pure tin	µm	0,8	2	1,3	1,9

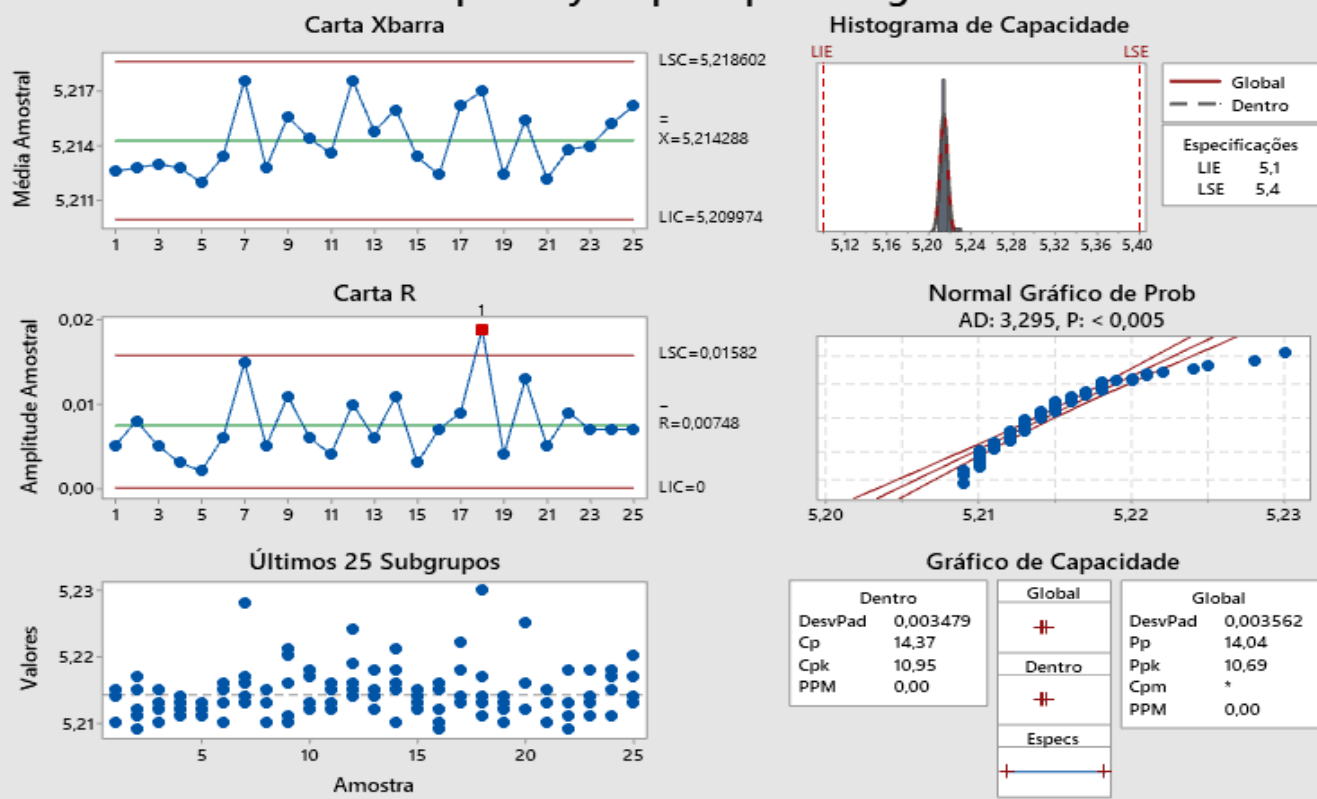


# **Section 11**

# **Initial Process Studies**



## Relatório de Process Capability Sixpack para Largura da Garra Isolante



A dispersão do processo real é representada por 6 sigma.

Dimension:

5,10 ~ 5,40 mm

Report Date:

June 10, 2021

Equipment:

Otto Technology  
PSS-40

001	5,214	026	5,216	051	5,215	076	5,215	101	5,215
002	5,214	027	5,213	052	5,213	077	5,216	102	5,213
003	5,210	028	5,215	053	5,212	078	5,210	103	5,210
004	5,215	029	5,210	054	5,216	079	5,212	104	5,213
005	5,210	030	5,213	055	5,212	080	5,209	105	5,210
006	5,211	031	5,213	056	5,214	081	5,218	106	5,213
007	5,209	032	5,214	057	5,224	082	5,213	107	5,209
008	5,217	033	5,216	058	5,215	083	5,214	108	5,211
009	5,215	034	5,217	059	5,219	084	5,222	109	5,218
010	5,212	035	5,228	060	5,216	085	5,214	110	5,218
011	5,212	036	5,213	061	5,218	086	5,213	111	5,214
012	5,215	037	5,215	062	5,212	087	5,211	112	5,218
013	5,210	038	5,213	063	5,215	088	5,214	113	5,213
014	5,213	039	5,210	064	5,214	089	5,230	114	5,214
015	5,215	040	5,213	065	5,215	090	5,217	115	5,211
016	5,214	041	5,210	066	5,215	091	5,213	116	5,215
017	5,214	042	5,211	067	5,218	092	5,214	117	5,218
018	5,213	043	5,221	068	5,221	093	5,213	118	5,217
019	5,212	044	5,220	069	5,210	094	5,212	119	5,215
020	5,211	045	5,216	070	5,216	095	5,210	120	5,211
021	5,213	046	5,218	071	5,213	096	5,216	121	5,220
022	5,211	047	5,213	072	5,214	097	5,212	122	5,217
023	5,212	048	5,217	073	5,213	098	5,212	123	5,213
024	5,212	049	5,212	074	5,212	099	5,225	124	5,217
025	5,212	050	5,212	075	5,215	100	5,212	125	5,214



## **Section 12**

# **Qualified Laboratory Documentation**

# Certificate of Approval

This is to certify that the Management System of:

## TE Connectivity Brasil Industria de Eletronicos Ltda.

Rua Ampere, 304 - Campo da Penha, Bragança Paulista, 12900-002, Brazil

has been approved by Lloyd's Register to the following standards:

### IATF 16949:2016

Approval number(s): IATF 16949 – 00014928

This certificate is valid only in association with the certificate schedule bearing the same number on which the locations applicable to this approval are listed.

#### The scope of this approval is applicable to:

Development, Design and Production of Modules and Electronic and Electrical Connection Systems, Sensors, Components Mechatronics, Special Cable Assemblies.



**Cliff Muckleroy**

Area Operations Manager Americas

Issued by: Lloyd's Register Quality Assurance Limited



# Certificate Schedule

Location	Activities
<b>Centro de Distribuição</b> Centro Logístico Zimba, Rodovia Dom Pedro, Km 93,6, Itatiba, 13254741, Brazil	<b>IATF 16949:2016</b> Receiving, Storage, Packaging and Delivery of Products.





## **Section 13**

# **Appearance Approval Report**

# Not Applicable



## **Section 14**

# **Sample Product**

**Sent in separate package  
(if required)**



# **Section 15**

# **Master Sample**

**Retained at manufacturing location**





# Section 16

# Checking Aids



**Not Applicable**



## **Section 17**

# **Records of Compliance with Customer-Specific Requirements**

# MDS Report

## Substances of assemblies and materials

This report is for internal Automotive industry use only. Distribution to non-Automotive clients is a violation of the Terms of Use, and is not permitted unless a written permission was given by DXC Technology. Parsing is not allowed.

### 1. Company and Product Name

#### 1.1 Supplier Data

Name [ID]: **Tyco Electronics GAD [913]**  
DUNS Number: **-**  
Street/Postal Code: **Amperestr. 12-14**  
Nat./ZipCode/City: **DE 64625 Bensheim**  
Supplier Code: **-**  
Contact Person: **IMDS Team (India) Engineering Services**  
- Phone: **-**  
- Fax No.: **-**  
- E-Mail Address: **imds@te.com**

#### 1.2 Product Identification

Part/Item No.: **1241394-1**  
Description: **AMP MCP 2.8K Flat Type Receptacle**  
Report No.: **-**  
Date of Report: **-**  
Purchase Order No.: **-**  
Bill of Delivery No.: **-**  
Preliminary MDS: **No**  
Multi Sourced: **No**  
IMDS ID / Version: **8770263 / 27**  
Node ID: **986691361**  
MDS Status (Change Date): **Internally released (01/18/2021)**

# MDS Report

## Substances of assemblies and materials

Materials which are subject to legal prohibitions must not be included!  
 Dangerous substances formed or released during use must also be declared  
 Please note: GADSL list for substances that require declaration

### 2. Characterization of the Component

Part/Item No.: **1241394-1**  
 Description: **AMP MCP 2.8K Flat Type Receptacle**


Report No.: **-**  
 IMDS ID / Version: **8770263 / 27**  
 Node ID: **986691361**

Tree Level	Description Article Name Name Substance name	Part/Item No. Item- /Mat.-No. Material-No. CAS No.	IMDS ID / Version	Quantity	Weight [g]	Portion [%]	Portion (from - to) [%]	Classif. GADSL, SVHC	Parts Marking Recyclate (Indust./Consumer) Application [ID]
1	AMP MCP 2.8K Flat Type Receptacle	1241394-1	8770263 / 27		0.5094				
├2	Body			1	0.375				
├3	Copper Nickel		73855529 / 5		0.3683			3.2	No
├4	Copper	7440-50-8				94.775		D	

Tree Level	Description Article Name Name Substance name	Part/Item No. Item- /Mat.-No. Material-No. CAS No.	IMDS ID / Version	Quantity	Weight [g]	Portion [%]	Portion (from - to) [%]	Classif. GADSL, SVHC	Parts Marking Recyclate (Indust./Consumer) Application [ID]
└4	Nickel	7440-02-0				3.2	2.2 - 4.2	D	Not applicable [34]
└4	Cobalt	7440-48-4				0.2	0 - 0.4	D	
└4	Silicon	7440-21-3				0.725	0.25 - 1.2		
└4	Iron	7439-89-6				0.1	0 - 0.2		
└4	Magnesium (metal)	7439-95-4				0.175	0.05 - 0.3	D	
└4	Manganese	7439-96-5				0.05	0 - 0.1		
└4	Lead	7439-92-1				0.025	0 - 0.05	D / P / SVHC	Concentration within acceptable GADSL limits [44]
└4	Zinc (metal)	7440-66-6				0.5	0 - 1		
└4	Misc., not to declare	system				0.25	0 - 0.5		
└3	e-plate Sn (electrodeposited Tin Coatings, bright and matt)		756885 / 6		0.0067			4.2	No
└4	Carbon	7440-44-0				0.505	0.01 - 1		
└4	Sulphur	7704-34-9				0.02	0 - 0.04		
└4	Lead	7439-92-1				0.05	0 - 0.1	D / P / SVHC	Concentration within acceptable GADSL limits [44]
└4	Tin	7440-31-5				99.425			
└2	Spring For AMP MCP 2.8K	0-1241385-1	3520662 / 15	1	0.1344				
└3	X10CrNi18-8		36413360 / 6		0.1344			1.1.2	No
└4	Carbon	7440-44-0				0.1	0.05 - 0.15		
└4	Chromium	7440-47-3				17.5	16 - 19		

Tree Level	Description Article Name Name Substance name	Part/Item No. Item- /Mat.-No. Material-No. CAS No.	IMDS ID / Version	Quantity	Weight [g]	Portion [%]	Portion (from - to) [%]	Classif. GADSL, SVHC	Parts Marking Recyclate (Indust./Consumer) Application [ID]
└4	Manganese	7439-96-5				1	0 - 2		
└4	Nitrogen	7727-37-9				0.05	0 - 0.1		
└4	Nickel	7440-02-0				7.75	6 - 9.5	D	Other application (Surface not routinely touched or nickel release rate < 0.5µg/cm2/week) [33]
└4	Phosphorus	7723-14-0				0.0225	0 - 0.045		
└4	Sulphur	7704-34-9				0.0075	0 - 0.015		
└4	Silicon	7440-21-3				1	0 - 2		
└4	Iron	7439-89-6				71.67			
└4	Copper	7440-50-8				0.5	0 - 1	D	
└4	Molybdenum	7439-98-7				0.4	0 - 0.8		
This is an uncontrolled copy of a document created by IMDS. End of the report.									

## Legend

 Multi Sourced Component



## **Section 18**

# **Part Submission Warrant**



# Part Submission Warrant

EPPAP:

Part Name \_\_\_\_\_ Cust. Part Number \_\_\_\_\_  
Shown on Drawing Number \_\_\_\_\_ Org. Part Number \_\_\_\_\_  
Engineering Change Level \_\_\_\_\_ Dated \_\_\_\_\_  
Additional Engineering Changes \_\_\_\_\_ Dated \_\_\_\_\_  
Safety and/or Government Regulation Yes No Purchase Order No. \_\_\_\_\_ Weight (kg) \_\_\_\_\_  
Checking Aid Number \_\_\_\_\_ Checking Aid Engineering Change Level \_\_\_\_\_ Dated \_\_\_\_\_

## ORGANIZATION MANUFACTURING INFORMATION

## CUSTOMER SUBMITTAL INFORMATION

Organization Name and Supplier Code \_\_\_\_\_  
Street Address \_\_\_\_\_  
City \_\_\_\_\_ Region \_\_\_\_\_ Postal Code \_\_\_\_\_ Country \_\_\_\_\_

Customer Name/Division \_\_\_\_\_  
Buyer/Buyer Code \_\_\_\_\_  
Application \_\_\_\_\_

## MATERIALS REPORTING

Has customer-required Substance of Concern information been reported  
Submitted by IMDS or other customer format Yes No NA  
Are polymeric parts identified with appropriate ISO marking codes? Yes No NA

## REASON FOR SUBMISSION (Check at least one)

Initial submission	Change to Optional Construction or Material
Engineering Change(s)	Sub-Supplier or Material Source Change
Tooling: Transfer, Replacement, Refurbishment, or additional	Change in Part Processing
Correction of Discrepancy	Parts Produced at Additional Location
Tooling Inactive > than 1 year	Other - please specify

## REQUESTED SUBMISSION LEVEL (Check one)

Level 1 - Warrant only (and for designated appearance items, an Appearance Approval Report) submitted to customer.  
Level 2 - Warrant with product samples and limited supporting data submitted to customer.  
Level 3 - Warrant with product samples and complete supporting data submitted to customer.  
Level 4 - Warrant and other requirements as defined by customer.  
Level 5 - Warrant with product samples and complete supporting data reviewed at supplier's manufacturing location.

## SUBMISSION RESULTS

The results for \_\_\_\_\_ dimensional measurement \_\_\_\_\_ material and functional tests \_\_\_\_\_ appearance criteria \_\_\_\_\_ statistical process package  
These results meet all design record requirements: Yes No (If "No" - Explanation Required)  
Mold / Cavity / Production Process \_\_\_\_\_

## DECLARATION

I affirm that the samples represented by this warrant are representative of our parts, which were made by a process that meets all Production Part Approval Process Manual 4th Edition Requirements. I further affirm that these samples were produced at the production rate of **Production Rate is TE Proprietary**. I also certify that documented evidence of such compliance is on file and is available for review. I have noted any deviations from this declaration below.

## EXPLANATION/COMMENTS

Is each Customer Tool properly tagged and numbered? Yes No NA

Organization Authorized Signature Enrique Espinoza Date \_\_\_\_\_

Print Name \_\_\_\_\_ Phone No. \_\_\_\_\_ Fax \_\_\_\_\_

Title \_\_\_\_\_ Email \_\_\_\_\_

## FOR CUSTOMER USE ONLY (IF APPLICABLE)

PPAP Warrant Disposition : Approved Rejected Other \_\_\_\_\_

Customer Signature \_\_\_\_\_ Date \_\_\_\_\_

Print Name \_\_\_\_\_ Customer Tracking Number (optional) \_\_\_\_\_



## **Section 18a**

# **Bulk Material Requirements**



**Not Applicable**