Product MaxiBridge - Crimp Snap In
Attachment I Tools and Cables

Application Specification
114-94926 A I
27 APR 23 Rev 1

TABLE OF CONTENTS

CHANGE HISTORY

Change #	Change Description	Date (DE)
1	Initial release; terminal-specific contents of Processing Specification MaxiBridge moved here, restructured, modified; separated 0.75².	11.01.2022
2	Separated remaining C1820 portions, i.e. AWG18/20.	10.02.2022
3	Added information on Insulation Grip Feature (IGF) for C2022	06.07.2022
4	Changed template closer to TE appearance while maintaining CAQ document numbers. All requirements are maintained w/o changes over previous issue with document # 074729.	24.04.2023

A I 1. REFERENCE MATERIAL

A I 1.1. Revision Summary

Refer to the above Change History.

A I 1.2. Notes, Terms and Abbreviations

ERNI is now an integral part of TE Connectivity.

All processing strictly has to follow ERNI's Application Specification in order to ensure best results.

ERNI reserves the right to apply changes to this document without prior notice.

The Application Specification can be obtained by download from www.erni.com. The edition on the website is the latest release and replaces all older versions. Make sure you regularly check there for more recent issues. If there is no Application Specification available online, please contact your local ERNI representative. This also applies to the Application Specification's attachments which may change independently from the main Application Specification.

Products and product information in this document are meant to be informative in nature and do not imply any assurance of performance or product properties, like availability, qualification, approval, or fit for a certain application, if not stated explicitly. For binding information inquire directly with ERNI.

The visualizations in this document are of a schematical nature and have been adjusted for their respective purposes. For exact product representations please refer to product drawings and CAD models, which can be found on our website (www.erni.com) or requested from ERNI directly.

All dimensions are specified in the unit millimeter (mm) if not explicitly stated otherwise.

"," (comma) may be used as a decimal delimiter instead of "." (period) in the course of this document and both are considered equal (2,1 = 2.1).

Six-digit numbers represent ERNI part numbers in this document (now as TE numbers with a "-E" on their ends).

This document's contents have been written in a clear and distinct context. Therefore, the specific product may not be named and PRODUCT or THE PRODUCT are used as placeholders. MaxiBridge and MaxiBridge QT are independent product families that must not be confused or intermixed and must clearly be distinguished.

A I 1.3. TE Specifications

The on-hand document constitutes an integral and essential part of

114-94926	Application Specification "Product MaxiBridge - Crimp Snap In" (formerly # 074718)

A I 2. WIRE SELECTION

In this document ERNI presents general wire selection criteria and exemplary wires.

The basic criteria are listed in Chapter 3.4.A. of the application specification (see reference above).

Based on the fundamental criteria conductor cross-section and insulation outer diameter, each user can evaluate wires on his own, checking and confirming their suitability himself. Some basic dimensions of the contact cavities of the receptacle housings are defined in the main part of the application specification Chapter 3.4.E. Figure 10 and must be taken into consideration, along with below Table 1, when selecting and evaluating crimped wires.

The critical dimensions to be considered are Terminal Cavity Width (W) and Terminal Cavity Height (H) which are defined in Figure 10 of the main part of the application specification. All receptacles of the

product have a terminal cavity width (W) of 2.06 mm. The terminal cavity height (H) of the single-row receptacle housings is 2.32 mm while that of the dual-row receptacle housings is 2.07 mm. These values are defined as minimum opening sizes and must be respected in evaluating new wire selections especially for wires with insulation outer diameters greater than 1.55 mm.

MAXIBRIDGE TERMINAL COMPATIBILITY

#	Part no. crimp terminals		Designation of crimp terminal	Nominal conductor cross-section	Range of Insulation Ø [mm]
	10,000 pcs	500 pcs			
1	464762-E	464763-E	C2022	AWG 20	1.20 - 1.55
2	544471-E	544472-E	C2022 IGF	-"-	-"-
3	464762-E	464763-E	C2022	0.50 mm²	1.20 - 1.55
4	544471-E	544472-E	C2022 IGF	-"-	-"-
5	464762-E	464763-E	C2022	AWG 22	1.20 - 1.55
6	544471-E	544472-E	C2022 IGF	-"-	-"-
7	464762-E	464763-E	C2022	0.35 mm²	1.20 - 1.55
8	544471-E	544472-E	C2022 IGF	-"-	-"-
9	464765-E	464766-E	C2426	AWG 24	0.9 – 1.15
10	464765-E	464766-E	C2426	AWG 26	0.9 – 1.15

Table 1

A I 3. EXAMPLES OF WIRES

ERNI has evaluated a limited number of wire types to be used with the Product. Other wire types and constructions are possible, provided the result of such evaluations meets all applicable customer and regulatory requirements for the application.

METRIC WIRES

#	Designation	Conductor construction	Insulation	Insulation-Ø [mm]	Manufacturer #	Crimp contact designation	Evaluated bason on
1	Leoni Mocar® 150C 0.5-A	0.5 mm², 19 x 0.19 mm, Cu bare	13Y	1.6	76M00010	C2022	Based on LV214:2010-04
2	Leoni Mocar® 150 C 0.35-A	0.35 mm², 7 x 0.26 mm, Cu bare	13Y	1.3	76M00020	C2022	Based on LV214:2010-04
3	Coficab FLR2X-0.35-A	0.35 mm², 7 x 0.26 mm, Cu bare	2X	1.3	FLR2X-0.35-A	C2022	IEC 60352-2 Short program
4	Coficab FHLR9Y-0.35-A	0.35 mm², 7 x 0.26 mm, Cu bare	9Y	1.3	HV9YA03545	C2022	IEC 60352-2 Short program
5	GuG FLR13Y-0,35-A	0.35², 7 x 0.26 mm Cu blank	13Y	1.3	68 534	C2022	IEC 60352-2 Short program

Table 2

AWG WIRES (NON-METRIC, AMERICAN WIRE SIZES)

#	Designation	Conductor construction	Insulation	Insulation-Ø [mm]	Manufacturer #	Crimp contact designation	Evaluated based on
1	Medi Kabel UL AWM Style 1007/1569	AWG 20, 7 x 0,32 mm Cu tin-plated	Y	1.8	120207	C2022	Based on IEC 60352-2
2	Leoni LI7Y 0.5/1.4 VZN UL AWM Style 1517	AWG 20, 19 x 0.19 mm Cu tin-plated	7Y	1.4	L45571-C1xx-H60	C2022	IEC 60352-2 Short program
3	Medi Kabel UL AWM Style 1007/1569	AWG 22, 7 x 0.254 mm Cu tin-plated	Y	1.65	120227	C2022	Based on IEC 60352-2
4	Leoni LI7Y 0.34/1.24 VZN UL AWM Style 11378	AWG22, 7 x 0.25 mm Cu tin-plated	7Y	1.27	L45571-P1xx-H60	C2022	Based on IEC 60352-2
5	Leoni LI7Y 1X0,34/1,3 VS UL AWM Style 1517	AWG 22, 7 x 0.25 mm Cu silver-plated	7Y	1.3	V45571-P110-H	C2022	IEC 60352-2 Short program
6	Leoni Li7Y 0.22/1.0 VZN UL AWM Style 11378	AWG 24, 7 x 0.2 mm, Cu tin-plated	7Y	1.0	L45571-B110-H60	C2426	Based on IEC 60352-2
7	Leoni LI7Y 0.15/1.03 VZN UL AWM Style 1671	AWG26, 7 x 0.17 mm, Cu tin-plated	7Y	1.03	L45571-L1xx-H60	C2426	Based on IEC 60352-2
8	Medi Kabel UL AWM Style 1061	AWG 26, 7 x 0.16 mm, Cu tin-plated	Y	1.0	122267	C2426	Based on IEC 60352-2

Table 3

Codes for insulation materials 2X = PE, Y = PVC, 7Y = ETFE, 9Y = PP, 13Y = TPE-E.

The information provided in the tables of this section was taken from the manufacturer's data sheets, are for information only, and is given without guarantee of correctness. Contact the manufacturer and consult manufacturer's data sheets.

A I 4. TOOLS – USED FOR EVALUATION BY ERNI

#	Part no. crimp terminals		Designation of crimp terminal	Nominal conductor cross-section	Crimping tool (applicator) with mechanical feed	Wearing parts kit for crimping tool (applicator) with mechanical feed	Hand crimping tool (extension of tool offerings)
	10,000 pcs	500 pcs					
1	464762-E	464763-E	C2022	AWG 20	817479-E	817737-E	952050-E
2	544471-E	544472-E	C2022 IGF	-"-	-"-	-"-	-"-
3	464762-E	464763-E	C2022	0.50 mm²	81747-E 9	817737-E	-
4	544471-E	544472-E	C2022 IGF	-"-	-"-	-"-	-"-
5	464762-E	464763-E	C2022	AWG 22	817479-E	817737-E	952050-E
6	544471-E	544472-E	C2022 IGF	-"-	-"-	-"-	-"-
7	464762-E	464763-E	C2022	0.35 mm²	817479-E	817737-E	-
8	544471-E	544472-E	C2022 IGF	-"-	-"-	-"-	-"-
9	464765-E	464766-E	C2426	AWG 24	817480-E	817477-E	992216-E
10	464765-E	464766-E	C2426	AWG 26	817480-E	817477-E	992216-E

Table 4

For tools with pneumatic feed consult with ERNI.

A I 5. TOOLS FROM OTHER SOURCES IN CONJUNCTION WITH CUSTOMER'S OWN QUALIFICATION

#	Part no. crimp terminals		Designation of crimp terminal	Nominal conductor cross-section	Crimping tool (applicator) with mechanical feed	Wearing parts kit for crimping tool (applicator) with mechanical feed	Remarks
	10,000 pcs	500 pcs					
1	464762-E	464763-E	C2022	Refer to drawing of tool	TE Connectivity x-2837428-y	TE Connectivity7x-2837428-7	Conductor crimp width 1.57 mm Insulation crimp width 1.80 mm
2	544471-E	544472-E	C2022 IGF	-"-	-"-	-"-	-"-

Table 5

„x" and „y" are placeholders describing various options.

A I 6. RECOMMENDATIONS FOR CRIMPING PARAMETERS

METRIC WIRES (EVALUATED BASED ON LV 214 ISSUE 2010-04)

#	Part no. crimp terminals		Designation of crimp terminal	Nominal conductor cross-section	Conductor crimp		Conductor construction for determining the conductor crimping parameters	Insulation crimp		Min. pull-out force [N]
	10,000 pcs	500 pcs			Height [mm]	Width [mm]		Height [mm] guiding value	Width [mm]	
1	464762-E	464763-E	C2022	0.50 mm²	0.92±0,03	1.63±0,05	0.5 mm², 19 x 0.19 mm, Cu bare	Insulation Ø +0.45 ±0.05	1.90 ±0,1	60
2	544471-E	544472-E	C2022 IGF	-"-	-"-	-"-	-"-	-"-	-"-	-"-
3	464762-E	464763-E	C2022	0.35 mm²	0.92±0,03	1.63±0,05	7 x 0.26 mm, Cu bare	Insulation Ø +0.45 ±0.05	1.90 ±0,1	50
4	544471-E	544472-E	C2022 IGF	-"-	-"-	-"-	-"-	-"-	-"-	-"-

Table 6

Notes at the end of the section apply!

AWG WIRES (AMERICAN WIRE SIZES - EVALUATED BASED ON IEC 60352-2)

#	Part no. crimp terminals		Designation of crimp terminal	Nominal conductor cross-section	Conductor crimp		Conductor construction for determining the conductor crimping parameters	Insulation crimp		Min. pull-out force [N]
	10,000 pcs	500 pcs			Height [mm]	Width [mm]		Height [mm] guiding value	Width [mm]	
1	464762-E	464763-E	C2022	AWG 20	1.13±0.03	1.63±0.05	7X0.320 mm, Cu tin-plated	Insulation Ø +0.45 ±0.05	1.90 ±0.1	60
2	544471-E	544472-E	C2022 IGF	-"-	-"-	-"-	-"-	-"-	-"-	-"-
3	464762-E	464763-E	C2022	AWG 22	0.98±0.03	1.63±0.05	AWG 22, 7 x 0.254 mm AWG 22, 7 x 0.25 mm, Cu tin-plated	Insulation Ø +0.45 ±0.05	1.90 ±0.1	40
4	544471-E	544472-E	C2022 IGF	-"-	-"-	-"-	-"-	-"-	-"-	-"-
5	464765-E	464766-E	C2426	AWG 24	0.93±0,03	1.45±0,05	AWG 24, 7 x 0.2 mm, Cu tin-plated	Insulation Ø +0.45 ±0.05	1.50 ±0,1	28
6	464765-E	464766-E	C2426	AWG 26	0.78±0,03	1.45±0,05	AWG 26, 7 x 0.16 mm, Cu bare	Insulation Ø +0.45 ±0.05	1.50 ±0,1	15

Table 7

NOTES FOR THE ABOVE TABLES:

- The tolerances and the resulting spread of the actual insulation diameters of wires are comparatively high and ERNI recommends to check them regularly during production and to make adjustments as necessary.
- The conductor crimping parameters listed above, in particular the conductor crimp height, must be checked and optimized for the respective conductor of each manufacturer, even if the conductor

construction is identical. A final optimization of the conductor crimp height may be necessary and is recommended by ERNI.

- The specified parameters were determined with ERNI original tools and are applicable in conjunction with these. All other tools require a complete determination of the crimping parameters and the execution of the respective release cycles required by the customer. ERNI is not liable for the processing results of alternative tools.
- A deeper impressing insulation crimp, i.e. with an addition of < 0.45 mm to the insulation diameter, may also be required in conjunction with certain insulation materials to achieve adequate fixation (insulating grip effectiveness) of the conductor insulation in the insulation crimp (for tests see DIN EN 60352-2 section 5.2.2.2 and DIN EN 60512-16-8)
  For the above-mentioned wires Coficab FLR2X-0.35-A and Coficab FHLR9Y-0.35-A evidence could be found, that an insulation crimp height of 1.6 +/-0.05 mm is needed to meet the requirements of DIN EN 60352-2 with respect to the insulation grip effectiveness.
- The insulation crimp barrel is not to be regarded a strain relief. It shall firmly enclose the insulating sheath but not penetrate it.
- Min. pull-out force measured with insulation crimp opened. Values in Table 6 taken from LV 214 PG 10 issue 2010-04 and Table 7 from IEC 60352-2.