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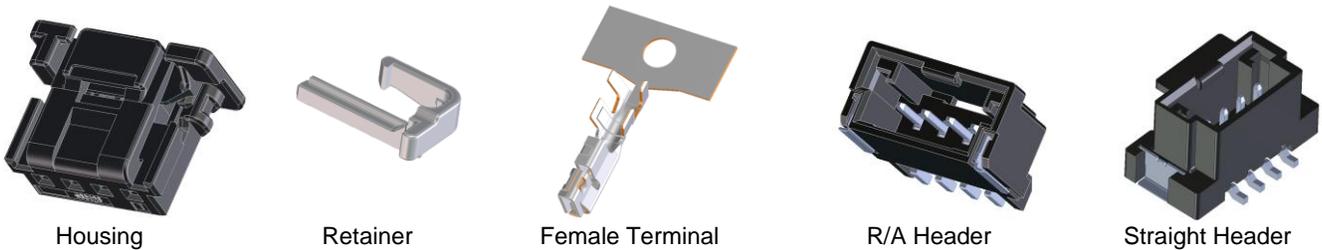
Appendix 1: Derating curves

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1.0 SCOPE

This product specification covers the performance of **2.0mm Pitch DuraClik™ ISL Wire-to-Board Connector System** (includes Housings, Retainers, Female Terminals and SMT Headers (R/A and Straight)) according **German Automotive Connector Specification LV 214**.

2.0 PRODUCT DESCRIPTION



2.1 PRODUCT NAMES AND SERIES NUMBERS

Description	Series numbers	Availability & Remarks
DuraClik™ ISL Female Housing	560123	2,3,4,5,6,8,10,12 CKT Color options: natural, black, red, blue*
DuraClik™ ISL Retainer	560125	2,3,4,5,6,8,10,12 CKT Colors options: grey & black*
DuraClik™ ISL Female Terminal	560124	Sn and Au plated for wire FLR 0,35-A
DuraClik™ R/A Header	502352	2 to 15 CKT, Sn and Au plated, Colors: natural, black, red, blue*
DuraClik™ Straight Header	560020	2 to 15 CKT, Sn and Au plated, Colors: natural, black, red, blue*

* Check sales drawing or contact Molex for detailed information on available colors per version

2.2 DIMENSIONS, MATERIALS, PLATING AND MARKINGS

For each part, all dimensions, materials, plating and marking descriptions can be found on the applicable sales drawing.

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2.3 FEATURES AND BENEFITS

- Terminal out of high performance copper alloy CuNiSi
- One piece terminal design
- Available in tin and gold version
- Fits harsh high temperature applications from -40° C to + 125° C
- Robust housing design with side lock ISL (Independent Secondary Locking)
- Mates to same SMT headers as DuraClik Standard & TPA
- Most compact 2.00mm system in the Automotive market

3.0 APPLICABLE DOCUMENTS AND SPECIFICATIONS

3.1 MOLEX PART DRAWINGS

- DuraClik™ ISL Housing SD-560123-00X
- DuraClik™ ISL Retainer SD-560125-00X
- DuraClik™ ISL Female Terminal Sn SD-560124-001
- DuraClik™ ISL Female Terminal Au SD-560124-002
- DuraClik™ Header R/A SD-502352-001
- DuraClik™ Header Straight SD-560020-001

3.2 MOLEX SPECIFICATIONS

- Crimp Specification CS-560124-001
- Application Tooling Specification ATS-639037400
- Packaging DuraClik™ ISL Female Terminal PK-560124-00X
- Packaging DuraClik™ ISL Housing PK-560123-001
- Packaging DuraClik™ ISL Retainer PK-560125-001

3.3 STANDARDS

- LV 214 (2010-03) Motor Vehicle Connectors – Test Specification
- VW 60330 (2013-12) Crimp Connections – Solderless Electrical Connections
- SAE/USCAR-21 Performance specification for cable-to-terminal electrical crimps
- DIN IEC 60512 Electromechanical components for electronic components, basic testing procedures and measuring methods
- DIN EN 60068 Environmental tests
- DIN IEC 68 Electrical Engineering, basic environmental testing procedures

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4.0 SAFETY AGENCY APPROVALS

Agency	Approval Status
CSA File Number	Not Applicable
TUV License number	Not Applicable
UL File Number	Not Applicable
IMDS	Available upon request
Environmental Compliance	Available on molex.com

5.0 RATINGS

Description	Rating	Comment
Rated Voltage	125 V max.	AC (rms) / DC
Insulation Resistance	R_{iso} > 100 MΩ	U = 500V, t = 60s
Mating cycles	20 min.	For Sn terminal
Derating free in air	6A max.	On wire FLR 0,35-A
Derating in housing	4A max.	On wire FLR 0,35-A
Operating Temperature	-40°C to +125°C	Includes terminal heating

6.0 PERFORMANCE OF DURACLIK™ ISL ACC. LV 214

Test description	Properties	Report / Comment
PG 0 Receiving Inspection Visual inspection Contact Resistance Insulation Resistance	Drawing conformity R _c init < 10 mΩ R _{isol} > 100 MΩ (at U=500V, t=60s)	Report Lab150520-021 / PG 0
PG 1 Dimensions	Drawing conformity	Report Lab150520-021 / PG 1
PG 2 Material and surface analysis, Contacts	All materials are conform to drawing	Refer to material certificates in report Lab150520-021 / PG 2
PG 3 Material and surface analysis, Housings	All materials are conform to drawing	Refer to material certificates in report Lab150520-021 / PG 3

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Test description	Properties	Report / Comment
PG 4 Contact Engagement Length	Contact Overlap > 1,00 mm Clearance > 0 mm	Calculation + cross-section Report Lab150520-021 / PG 4
PG 5 Mechanical and thermal relaxation behaviour	The normal contact force is documented and graphically extrapolated to 3 000 h. Contact opening dimensions documented.	Report Lab150520-021 / PG 5
PG 6 Interaction between contact and housing	All clearances are sufficient. Drop test OK. The primary lock latches audibly. The secondary lock is closable with with $F < 50$ N when terminals seated. No closing possible with partially mated terminal.	Report Lab150520-021 / PG 6
PG 7 Handling and functional reliability of the housing	Polarization efficiency $F_{pol} > 80$ N Connector mating force $F_{mate} < 75$ N Connector retention force $F_{ret} > 60$ N	Report Lab150520-021 / PG 7
PG 8 Insertion and retention forces of the contact parts in the housing	Terminal insertion force $F_{ins} > 10$ N Primary retention force $F_{prim} > 15$ N Secondary retention force $F_{sec} > 55$ N	Report Lab150520-021 / PG 8
PG 10 Conductor pull-out force	$F_{pull-out} > 50$ N with wire FLR 0,35-A	Report Lab150520-021 / PG 10
PG 11 Contacts: Insertion and removal forces, mating cycle frequency	Terminal mating force (Sn): 1 st mating: $2,4$ N < $F < 3,1$ N 20 th mating: $2,1$ N < $F < 2,5$ N No change > 25% Terminal un-mating force (Sn): 1st mating: $1,2$ N < $F < 1,8$ N 20th mating: $1,4$ N < $F < 1,8$ N	Report Lab150520-021 / PG 11
PG 12 Current heating, derating (free in air)	$I_{max.} = 6$ A	See derating curve in appendix 1
PG 13 Housing influence on derating	$I_{max.} = 4$ A (with housing 8w fully loaded)	See derating curve in appendix 1

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Test description	Properties	Report / Comment
PG 14 Thermal time constant	Terminals reached T _{max} . when loaded with 3x I _{max} . from derating curve. No impact on function.	Report Lab150520-021 / PG 14
PG 15 Electrical stress test	Initial contact resistance R _{c init} < 10 mΩ Final contact resistance R _{c final} < 15 mΩ Derating current reduced by 18% Gap measurements documented.	Report Lab150520-021 / PG 15
PG 17 Dynamic load Severity 2 Body sealed	Initial contact resistance R _{c init} < 10 mΩ Final contact resistance R _{c final} < 15 mΩ No micro-cuts (R > 7 Ω) during t > 1 μs.	Report Lab150520-021 / PG 17
PG 19 Environmental simulation	For all 3 test groups: Initial contact resistance R _{c init} < 10 mΩ Final contact resistance R _{c final} < 15 mΩ No visible corrosion or rubbing through in contact area.	Report Lab150520-021 / PG 19*
PG 20 Climate load of the housing	No functional deviation occurred. Mate / Un-mate at -20°C without issue. No broken part or unlocked retainer were found after drop test.	Report Lab150520-021 / PG 20
PG 21 Long-term temperature aging	Initial contact resistance R _{c init} < 10 mΩ Final contact resistance R _{c final} < 15 mΩ No functional deviation occurred. Retention force after test F _{ret} > 55 N	Report Lab150520-021 / PG 21
PG 22A Chemical resistance	Test performed with: <ul style="list-style-type: none"> - Cold cleaning agent - Penetrating oil - Undiluted washer fluid antifreeze - Isopropanol - Grease Dimensions and visual OK after test. All samples passed R _{isol} > 100 MΩ.	Report Lab150520-021 / PG 22A

* 21d industrial climate only with 0,2 ppm SO₂ and 75% r.H. H₂S, NO₂, Cl₂ gases could not tested because no equipment available.

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Test description	Properties	Report / Comment
PG 28 Locking noise	Locking noise LA peak ≥ 70 dB(A) in average	Report Lab150520-021 / PG 28
Crimp qualification acc. VW 60330 <ul style="list-style-type: none"> Incoming inspection Dimensions Pull-out forces Slow Motion Test acc. LV 214-2 	$0,21 \text{ m}\Omega \leq R_{\text{crimp init}} \leq 0,41 \text{ m}\Omega$ According VW 60330 § 4.3.4 $75 \text{ N} \leq F_{\text{pull-out}} \leq 86 \text{ N}$ In new state, $\Delta R_1 = 0,36 \text{ m}\Omega (\leq 1 \text{ m}\Omega)$ During slow motion test: $\Delta R_2 \text{ max.} = 0,58 \text{ m}\Omega (\leq 3 \text{ m}\Omega)$ $\Delta R_3 \text{ max.} = 1,35 \text{ m}\Omega (\leq 3 \text{ m}\Omega)$	Report TR17618 Report TR17617 Report TR17620 Report 021601-1258
Crimp qualification acc. USCAR-21 <ul style="list-style-type: none"> Cross section analysis Initial crimp resistance Pull-out forces Crimp resistance change after 72h T-shock and 96h Temp/Humidity 	Pass $R_{\text{crimp init}} = 0,41 \text{ m}\Omega \text{ max.} (\leq 0,55 \text{ m}\Omega)$ $75 \text{ N} \leq F_{\text{pull-out}} \leq 86 \text{ N}$ $\Delta R_{\text{crimp}} = 0,15 \text{ m}\Omega \text{ max.} (\leq 0,42 \text{ m}\Omega)$	Report TR17617 Report TR17618 Report TR17620 Report TR17618

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7.0 PACKAGING / STORAGE CONDITIONS

Parts are packaged to protect against damage during handling, transit and storage. Please refer to relevant packaging specification as listed in 3.2.

Storage temperature is recommended between +20°C and +60°C.

Under these conditions, Molex recommended shelf life is 6 months from manufacturing date.

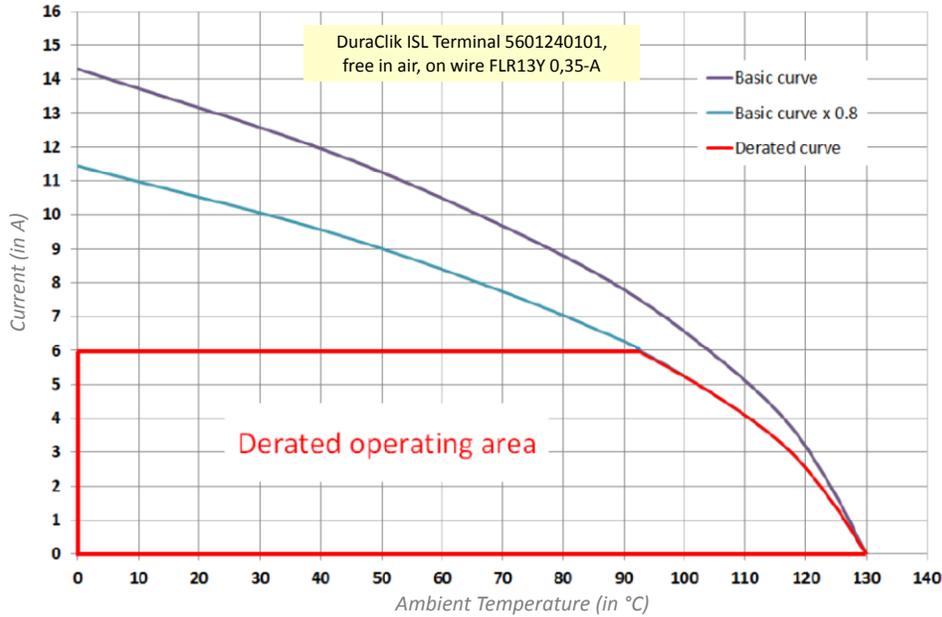
8.0 INTERNET LINK

Please visit [DuraClik Homepage](#) for further information.

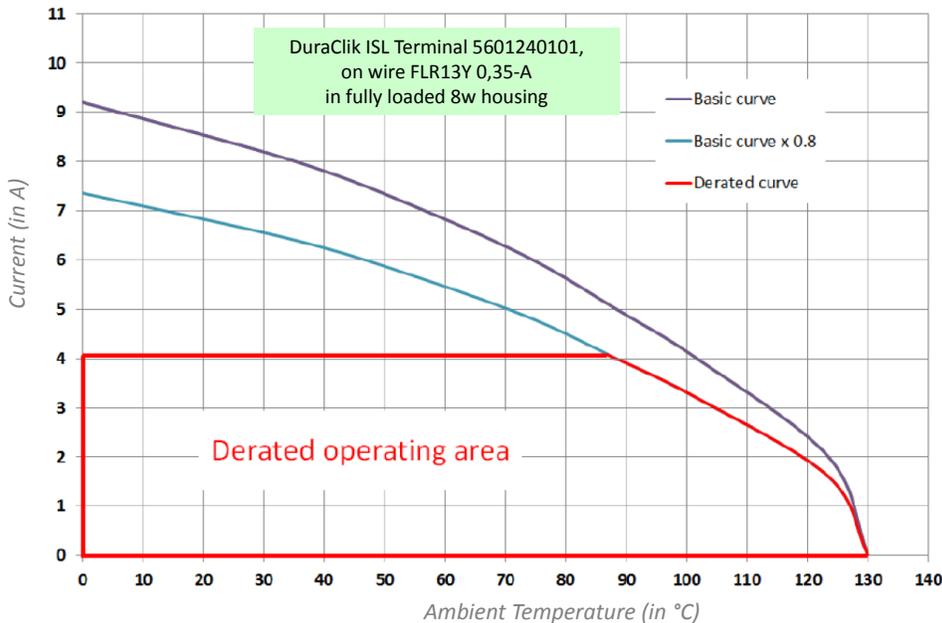
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APPENDIX 1

Derating DuraClik™ ISL Female Terminal Sn 5601240101 on wire FLR13Y 0,35-A



Derating DuraClik™ ISL Female Terminal Sn 5601240101 on wire FLR13Y 0,35-A in fully assembled 8w housing 5601250800.



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