

Product Specification [产品规格书]:	Document No	PS-0631-01
Subject [主题]: 0.63mm MQS Series Connector Specification	Date Issued	2023/01/20
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	Version	A

This specification is referred to the 0.63mm MQS series Connector

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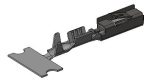
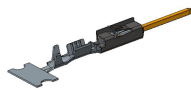
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【1.适用范围 Scope】

此种规格包括 0.63mm MQS Series 端子连接器规格说明.

This Specification Covers the 0.63mm Series MQS Terminal Connector Specification.

【2.规格与料号 Spec and Part number】

规格内容 Specification	产品料号 Production No.	产品图示 Picture of Product
母端/ Female Terminal	0631TXF-HY2B	
公端/ Male Terminal	0631TXM-HY2B	

【3.材质与表面处理 Disposal of Material and surface】

规格内容 Specification	材质 Materials	表面处理 Disposal of Surface
Shell/Body	SUS 301	/
Contact	Copper Alloy	Tin Plated: 40~120u" (1~3μm)
PIN	Copper Alloy	Tin Plated: 40~120u" (1~3μm) Ni : 80~200u" (2~5μm)

(上述参数请以工程图为准/Please Refer to the Project drawing for the above Specification)

【4. 额定等级 Ratings and applicable wires】

项 目 【Item】	规 格 【Standard】	
额定电压 Rated Voltage (Max.)	12V	[AC/DC]
额定电流 Rated Current (Max.)	7.5A	
使用温度范围 Ambient temperature Range	-40°C ~ +125°C	

【 *升温时含端子.Including terminal temperature rise. 】

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【5.性能 PERFORMANCE】

测试内容 Item		规格要求 Specification requirements	参考标准 Reference standard																																																																																																	
5-1	产品验收检查 Inspection of as-received condition	接触区域的体积电阻符合 DIN EN 60512-2-1 连接区域的体积电阻符合 DIN EN 60512-2-1 Visual inspection Contact resistance in contact area Crimp resistance	VW75174 Rev.2018 TG0																																																																																																	
5-2	机械和热张弛特性 Mechanical and thermal relaxation behavior	根据 DIN EN 60512-1-1 进行目视检查 接触法向力测试, 确定法向接触力 热老化测试, 持续时间 1000H, 然后在相应的时间 (1 小时、100 小时、200 小时、500 小时和 1000 小时) 依次取出, 并测量法向力不能小于 1N。 Visual inspection /Contact normal force and Aging in dry heat	VW75174 Rev.2018 TG5																																																																																																	
5-3	接触部件在接触外壳中的插入和保持力 Insertion and holding forces of the contact parts in the contact housing	护套与端子间的保持力测试 护套与端子间的保持力测试, 主锁>40N 护套与端子间的保持力测试, 二级锁>55N Contact pull-out strength in the contact housing, primary locking device only : >40N Contact pull-out strength in the contact housing, secondary locking device Only:>55N	VW75174 Rev.2018 TG8																																																																																																	
5-4	端子与线材间的引张强度 Conductor pull out strength	<table border="1"> <thead> <tr> <th rowspan="2">Cable cross-section (Cu)</th> <th colspan="6">Contact size in mm</th> </tr> <tr> <th>0.5</th> <th>0.63</th> <th>1.2 or 1.5</th> <th>2.8</th> <th>4.8</th> <th>9.5</th> </tr> </thead> <tbody> <tr> <td>0.35 mm²</td> <td colspan="5">50 N (75 N)</td> <td>-</td> </tr> <tr> <td>0.13 mm² (CuMg)</td> <td colspan="5">50 N (75 N)</td> <td>-</td> </tr> <tr> <td>0.5 mm²</td> <td>-</td> <td colspan="4">60 N (85 N)</td> <td>-</td> </tr> <tr> <td>0.75 mm²</td> <td>-</td> <td colspan="4">85 N (105 N)</td> <td>-</td> </tr> <tr> <td>1.0 mm²</td> <td>-</td> <td>-</td> <td>108 N (125 N)</td> <td colspan="2">140 N (162 N)</td> <td>-</td> </tr> <tr> <td>1.5 mm²</td> <td>-</td> <td>-</td> <td>150 N (180 N)</td> <td colspan="2">150 N (180 N)</td> <td>-</td> </tr> <tr> <td>2.5 mm²</td> <td>-</td> <td>-</td> <td>-</td> <td colspan="2">200 N (235 N)</td> <td>-</td> </tr> <tr> <td>4.0 mm²</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>310 N (325 N)</td> <td>-</td> </tr> <tr> <td>6.0 mm²</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>450 N</td> <td>450 N</td> </tr> <tr> <td>10.0 mm²</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>500 N</td> </tr> <tr> <td>16.0 mm²</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>1 500 N</td> </tr> <tr> <td>25.0 mm²</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>1 900 N</td> </tr> </tbody> </table>	Cable cross-section (Cu)	Contact size in mm						0.5	0.63	1.2 or 1.5	2.8	4.8	9.5	0.35 mm ²	50 N (75 N)					-	0.13 mm ² (CuMg)	50 N (75 N)					-	0.5 mm ²	-	60 N (85 N)				-	0.75 mm ²	-	85 N (105 N)				-	1.0 mm ²	-	-	108 N (125 N)	140 N (162 N)		-	1.5 mm ²	-	-	150 N (180 N)	150 N (180 N)		-	2.5 mm ²	-	-	-	200 N (235 N)		-	4.0 mm ²	-	-	-	-	310 N (325 N)	-	6.0 mm ²	-	-	-	-	450 N	450 N	10.0 mm ²	-	-	-	-	-	500 N	16.0 mm ²	-	-	-	-	-	1 500 N	25.0 mm ²	-	-	-	-	-	1 900 N	VW75174 Rev.2018 TG10
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5-5	端子插入力与拔出力 Insertion and removal forces, mating cycle frequency	插入和拔出力, 无需额外润滑剂 Sn: 20 次插拔循环, Ag: 50 次插拔循环 Au: 100 次插拔循环 Mating and unmating forces /Mating cycles Sn: 20 mating cycles, Ag: 50 mating cycles , Au: 100 mating cycles. The insertion force may change by at most 25% compared to the initial value. The insertion and extraction forces must correspond to the drawing or the, product specification.	VW75174 Rev.2018 TG11																																																																																																	

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5-6 温升/降额 Current temperature rise, derating	<p>负载逐渐增加的电流并测量温升 要求: 测量值必须符合规格要求, 在降额图中标出以下内容: 测量值的 80% 特性曲线必须在图表中表示 (根据 DIN EN 60512-5-2), 电流是可以从 80 °C 环境温度下的降额曲线读取的电流.</p> <p>The 80-% characteristic curve of the measured values must be represented in the graph (as per DIN EN 60512-5-2). The nominal current is the current that can be read from the derating curve at 80 °C ambient temperature.</p>	VW71574 Rev.2018 TG12
5-7 热时间常数 Thermal time constant	<p>以 1/2/3/4/5 倍的额定电流加载触点并同时记录随时间推移的温度曲线, 直至稳定或达到最大值。 达到允许的温度。</p> <p>Loading of a contact with 1/2/3/4/5times the nominal current and simultaneous recording of the temperature curve over time until stabilization occurs or until the max. permissible component temperature is reached.</p>	VW71574 Rev.2018 TG14
5-8 电气压力测试 Electrical stress test	<p>对于试验前后的降额, 80°C环境温度下的载流能力相对于TG 启动时的降容变化不超过 20%。</p> <p>For the derating before and after the test, the current-carrying capacity at 80 °C ambient temperature may change by no more than 20% relative to the derating at the start of the TG.</p>	VW71574 Rev.2018 TG15
5-9 摩擦腐蚀 Friction corrosion	<p>规定达到 300 mΩ 体积电阻的摩擦循环次数</p> <p>Specification of the number of friction cycles to achieve the volume resistance of 300 mΩ</p>	VW71574 Rev.2018 TG16
5-10 动态加载 Dynamic loading	<p>电流中断监控在测试期间进行。允许的电流中断: < 1 000 ns 当体积电阻超过 7 Ω 时, 电路被视为中断。 不允许中断</p> <p>Current interruption monitoring takes place during the test. Permissible current interruption: < 1 000 ns The electric circuit is considered interrupted when the volume resistance exceeds 7 Ω. Interruptions are not permissible.</p>	VW71574 Rev.2018 TG17

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项 目 【Item】		条 件 【Test Condition】	规 格 【Requirement】
5-11	沿海气候负荷 Coastal climate load	0.13~0.22 平方电阻值<30 毫欧 , 0.35~0.75 平方电阻值<15 毫欧 0.13~0.22 square resistance value < 30 milliohm, 0.35~0.75 square resistance < 15 milliohm	VW7157 4 Rev.2018 TG18
5-12	环境模拟 Environmental simulation	1. 体积电阻 0.13~0.22 平方电阻值<30 毫欧 , 0.35~0.75 平方电阻值<15 毫欧 2.接触区区域不得发生腐蚀. 1. 0.13~0.22 square resistance value < 30 milliohm, 0.35~0.75 square resistance < 15 milliohm 2. No corrosion must occur in the area of the contact zone.	VW7157 4 Rev.2018 TG19
5-13	长期温度老化 Long-term temperature aging	1. 测试完成后, 外壳上不得有可检测到的功能损伤。不允许出现影响功能的裂纹或分层。 2. 体积电阻 0.13~0.22 平方电阻值<30 毫欧 , 0.35~0.75 平方电阻值<15 毫欧 1. After completion of the test, there must be no detectable functional impair-ments on the housings. Cracking or delamination that affect the function are not permissible. 2. 0.13~0.22 square resistance value < 30 milliohm, 0.35~0.75 square resistance < 15 milliohm	VW7157 4 Rev.2018 TG21

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【6.测试组 Test Group】

流程图		连接器机械测试						
参考标准	测试序列	Receiving inspection and testing 接收检验和测试	Mechanical and thermal relaxation 机械和热松弛行为	Contact retention force 触点保持力	Conductor pull-out strength 导体拉拔强度	Insertion and removal forces, mating cycle frequency 插拔力, 配合循环频率	Current temperature rise, derating (withouth housing) 电流温升、降额(无外壳)	Thermal time constant 热时间常数
VW715 74 2018	序列 ID	A	B	C	D	E	F	G
	Visual inspection 目视检查	1	1,5	1,3	1,3	1,3	1,3	1,3
	Contact resistance 接触电阻	2						
	Contact normal force 接触法向力		2,4					
	Contact retention force 触点保持力			2				
	Conductor pull-out strength 导体拉拔强度				2			
	Cross section 横截面							
	Insertion and removal forces, mating cycle frequency 插拔力, 配合 周期 频率					2		
	Derating 降额						2	
	Aging in dry heat 干热老化		3					
	Thermal time constant 热时间常数							2

说明:

准备的样品应与适用于生产的说明一致, 应随机从当前生产中选择

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流程图		连接器系统电性能测试顺序				
参考标准	测试序列	Electrical stress test 电应力试验	Dynamic stress 振动测试	Coastal climate load 沿海气候负荷	Environmental simulation 环境模拟	Longterm temp. duration test 长期温度老化
	序列 ID	H	I	J	K	L
VW71574 2018	Visual inspection 目视检查	1,9	1,4,6,8	1,5	1,6,9,13	1,5
	Contact resistance 接触电阻	2,7	2,9	2,4	2,12	2,4
	Derating 降额	3,8				
	Contact resistance continuous (testing current) 接触电阻连续	4,5,6	3,5,7		3,4,5,8,10,11	
	Temperature cycle endurance test, current cycle endurance test 温度循环耐力试验, 电流循环耐力试验	4,6				
	Humid heat, cyclic 湿热, 循环	5				
	Dynamic load 振动测试		3			
	Dynamic load, broad band random vibration 动态载荷, 宽频带随机振动		5		10	
	Mechanical shock test 机械冲击试验		7		11	
	Resonance frequency of the contact assembly		10			
	Salt spray, cyclic 盐雾, 循环			3		
	Temperature shock 温度冲击				3	
	Temperature cycling 温度循环				4	
	Aging in dry heat 干热老化				5	3
	Industrial climate (multiple-component climate) 工业气候(多组分气候)				7	
	Humid heat, cyclic 湿热, 循环				8	