1 SCOPE

This specification defines the detailed requirements for the Minitek Pwr4.2 HCC (High Current Connectors) when terminated with 16 to 20 AWG wires using crimp technology.

2 PRODUCT DESCRIPTION

2.1 Product Name and applicable Series Numbers

Product Name	Series Numbers
Dual Row	
Wire Connector, Receptacle HSG	10127815, 10122956
Wire Connector, Plug HSG	10127816, 10144559
Board Connector, R/A Header	10131318
Board Connector, V/T Header	10131319
Single Row	
Wire Connector, Receptacle HSG	10136644
Wire Connector, Plug HSG	10136645
Board Connector, R/A Header	10137784, 10153082
Board Connector, V/T Header	10137785
Crimp Terminal	
Wire Connector, Receptacle Crimp Terminal	10136289, 10134170
Wire Connector, Plug Crimp Terminal	10136290, 10156852

2.2 Dimensions, Materials, Plating and Markings

See the appropriate drawings for the information on dimensions, materials, plating and markings.

3 APPLICABLE DOCUMENTS AND SPECIFICATIONS

3.1 See sales drawings and the other sections of this specification for the necessary referenced documents and specifications.

3.2 Minitek Pwr4.2 Product Specification: GS-12-1181.

3.3 Application Specification: GS-20-0401

3.4 UL Files: E66906*, E467317*

*(*Please check with manufacturing site on UL status of each individual series.)*

4 RATINGS

4.1 Ratings: 600 Volts AC (RMS) (or 600 Volts DC)

4.2 Applicable Wires and Current Rating

Applicable Wires

Applicable Wire Gauges and Maximum Insulation Diameter	16-20 AWG: 3.10mm MAX.

Current Rating, Wire to Board, Dual Row

MAXIMUM CURRENT RATING (Amperes)						
Circuits	**2**	**4**	**6~8**	**10~12**	**14~18**	**20~24**
AWG 16	12.5	11.5	10	9	8.5	8.0
AWG 18	10.5	9.5	8.5	8	7.5	7
AWG 20	9	8	7	6.5	6	5.5

Current Rating, Wire to Wire, Dual Row

MAXIMUM CURRENT RATING (Amperes)						
Circuits	**2**	**4**	**6~8**	**10~12**	**14~18**	**20~24**
AWG 16	13	12	11	10.5	10	9.5
AWG 18	11	10	9	8.5	8	7.5
AWG 20	9.5	8.5	8	7.5	7	6.5

Current Rating, Wire to Board, Single Row

MAXIMUM CURRENT RATING (Amperes)			
Circuits	**3**	**4**	**5**
AWG 16	12.5A	12A	11.5A
AWG 18	10.5A	10A	9.5A
AWG 20	9A	8.5A	8.5A

4.3 Temperature

Operating: * -40℃ ~ 105℃

Non-operating: -40℃ ~ 105℃

** Including 30℃ terminal temperature rise at rated current*

PERFORMANCE

4.4 Electrical Requirements

Item	Description	Test Condition	Requirement
5.1.1	Contact Resistance (Low Level)	Mate connectors. Apply a maximum voltage of 20mV and a current of 100mA. Wire resistance shall be removed from the measured value.	10 milliohms MAXIMUM [initial]
5.1.2	Contact Resistance @ Rated Current	Mate connectors: apply a maximum voltage of 20 mV at rated current.	10 milliohms MAXIMUM [initial]
5.1.3	Temperature Rise (via Current Cycling)	Serial connection for all contacts on one pair mate connectors. Measure the temperature rise at the rated current after 96 hours, during current cycling (45 minutes ON and 15 minutes OFF per hour) for 240 hours, and after final 96-hour steady state.	Temperature rise: +30°C MAXIMUM

4.5 Mechanical Requirements

Item	Description	Test Condition	Requirement
5.2.1	Terminal Insertion and Withdrawal Forces, per contact	Insert and withdraw terminal (male to female) at a rate of 25±6mm per minute.	14.7N MAXIMUM insertion force & 1.0N MINIMUM withdrawal force
5.2.2	Durability	Mate connectors up to 30 cycles at a maximum rate of 10 cycles per minute prior to Environmental Tests.	20 milliohms MAXIMUM

5.2.3	Wire Pullout Force (Axial)	Apply an axial pullout force on the wire at a rate of 25 ± 6 mm	16 Awg: 88.0N Min. 18 Awg: 88.0N Min. 20 Awg: 59.0N Min. 22 Awg: 39.0N Min. 24 Awg: 29.0N Min. 26 Awg: 19.0N Min. 28 Awg: 9.80N Min.
5.2.4	Crimp Terminal Insertion Force (into Housing)	Apply an axial insertion force on the terminal at a rate of 25 ± 6 mm.	15.0N MAXIMUM insertion force
5.2.5	Crimp Terminal Retention Force (in Housing)	Axial pullout force on the terminal in the housing at a rate of 25±6mm per minute.	30N MINIMUM retention force
5.2.6	Header contact retention force (in housing)	Apply axial push force on the contact in the housing at a rate of 25 ± 6mm per minute.	9.81N MINIMUM retention force

4.6 Environmental Requirements

Item	Description	Test Condition	Requirement
5.3.1	Thermal Aging	Mate connectors Expose to: 96 hours at 105 ± 2℃	20 milliohms MAXIMUM; Visual: No Damage;

4.7 Refer to GS-12-1181, for those requirements not listed in this product specification.

5 PRODUCT QUALIFICATION AND REQUALIFICATION TEST SEQUENCE

Test Items	Section	Test Group						
		A	B	C	D	E		
		Test Sequence						
Examination of Product		1	1, 4	1	1	1		
Low Level Contact Resistance	**5.1.1**	2, 8				2, 4		
Contact Resistance @ Rated Current	**5.1.2**		3					
Insertion Forces (Max.)	**5.2.1**	3, 6						
Withdrawal Forces (Min.)	**5.2.1**	4, 7						
Crimping Terminal Insertion Force (Max.)	**5.2.4**			2				
Crimping Terminal Retention Force (Min.)	**5.2.5**			3				
Durability	**5.2.2**	5						
Wire Pull Out Force	**5.2.3**				2			
Temperature Rise	**5.1.3**		2					
Temperature Life (Thermal Aging)	**5.3.1**					3		
Sample Size / Test Group		**5**	**2**	**5**	**5**	**5**		

REVISION RECORD

Rev	Page	Description	EC#	Date
A	ALL	New Release		2015/08/10
B	ALL	Page 2, Add Single Row P/N and Current Rating Spec.	ELX-T-22943	2016-01-05
C	ALL	• New series added • UL details updated	ELX-I-40957	2021/05/19