KA1 SERIES: 8.5mm PITCH HIGH POWER CONNECTORS

JUNE 2021

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1. DESCRIPTION OF CONNECTOR SYSTEM

The Kona range consists of male and female high-reliability mating connectors, based on an 8.5mm pitch single row format – part numbers start with the series code KA1. These connectors are designed for higher power applications with a rugged or durable requirement. Each contact on both male and female connectors is individually shrouded and recessed (to prevent accidental touch). Polarization and contact 1 identification marks are also incorporated into the housing designs.

The male contact is designed to provide the spring force inside the female contact for positive engagement. Both contacts are plated with a hard acid gold finish at 98% purity for high performance and long life. Cable contacts are solder style (compatible with 8AWG cable) and are removable & replaceable inside housings.

Connector housings are fitted with stainless steel screw-lock fixings, capable of mate-before-lock for easy connection and faster fixing. Options include thumbscrews for manual assembly, board or panel mount studs for connector retention, and reverse fix style for floating screw on the male.

For detailed test results on the below specifications, please see: Harwin Test Summary Report HT072XX (latest revision).

2. RATINGS

2.1. MATERIALS

Contacts	Beryllium Copper.
Contact plating finish	Hard Gold over Nickel.
Contact latching collar	Cupro-Nickel, 100% Tin over Nickel
Housing & Cap	40% Glass-Filled Thermoplastic, UL94V-0
Screw Lok Fixings	Stainless Steel

2.2. ELECTRICAL CHARACTERISTICS

Current Rating (EIA-364-70A: 1998)	60A max per contact
Dieletric Withstanding Voltage (EIA-364-20C, Method B):	
Sea Level	3,000V AC for 1 minute
Altitude 70,000ft	500V AC for 1 minute
Voltage Rating	1,500V DC or AC peak
Contact Resistance (EIA-364-23B):	
Pre and Post Conditioning	2mΩ max
Insulation Resistance (EIA-364-21C)	10GΩ min at 1,000V
Creepage (see appendix 3)	Male PCT Vertical: 5.5mm Female Cable: 17.54mm
Clearance (see appendix 3)	Male PCT Vertical: 3.5mm Female Cable: 2.7mm

2.3. ENVIRONMENTAL CHARACTERISTICS

Operating Temperature Range	-65°C to +150°C
Vibration (EIA-364-28D, Condition IV)	10Hz to 2kHz, 1.52mm pk-pk displacement or 20gn pk (whichever is less), 198m/s2 (20G), 12 cycles per axis, 20 minutes per cycle.
Mechanical Shock (EIA-364-27B,Condition C)	981m/s^2 (100G) for 6ms in all axis
Thermal Shock (EIA-364-32C, Condition IV)	-65°C to +150°C, 10 cycles, 30 mins each extreme
Termperature Life (EIA-364-17B, Method A)	+150°C for 1000 hours
Humidity (EIA-364-31B, Condition A)	96 hours, 90-95% RH at +40°C
Salt Spray (EIA-364-26B)	24 hours at +35°C, concentration 5%

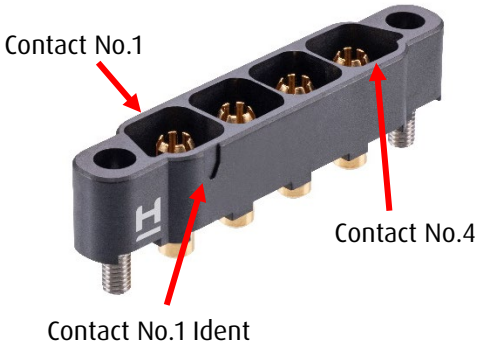
2.4. MECHANICAL CHARACTERISTICS

Durability (EIA-364-09C).....250 operations
Mating and Unmating Forces (EIA-364-13C):
Insertion Force (per contact*):
Initial.....50N max
Post Conditioning.....70N max
Withdrawal Force (per contact*).....5N min
*- *per contact when fully assembled connector is being mated and un-mated.*
Contact Retention Force (EIA-364-29C).....75N min per contact
Screw-Lock Torque.....22-25cmN

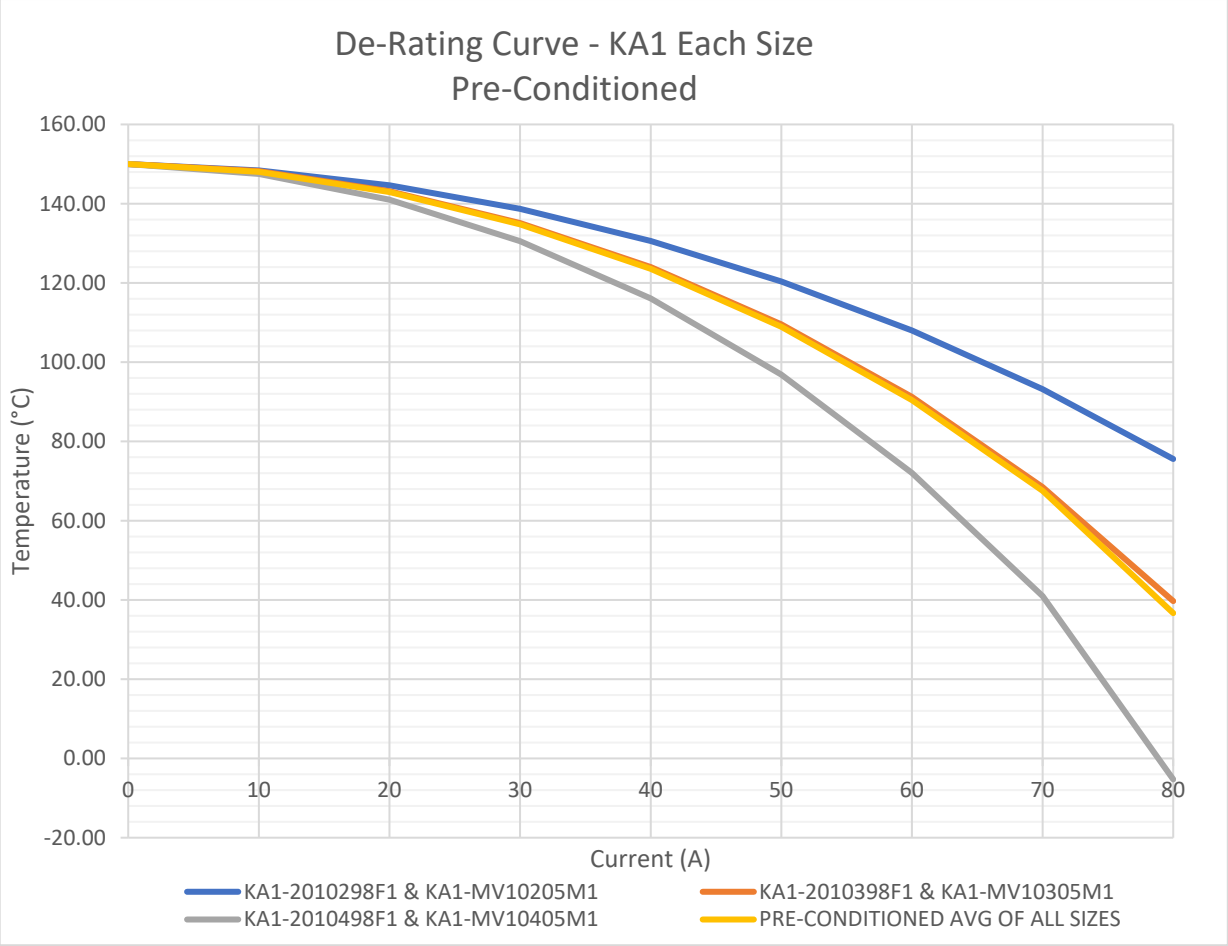
APPENDIX 1 – CONTACT NUMBERING

Female Connector

Male Connector

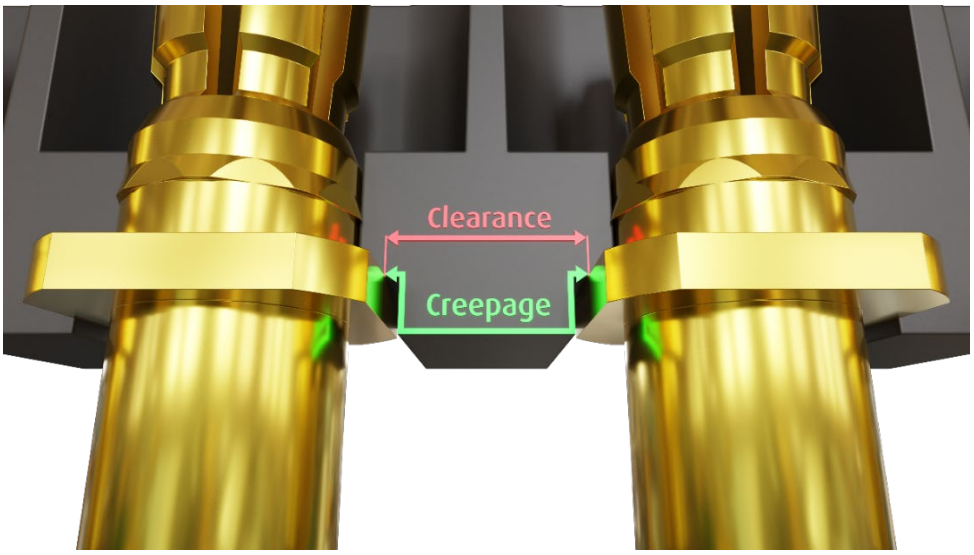


APPENDIX 2 – DE-RATING GRAPH



APPENDIX 3 – Creepage & Clearance

Male Vertical PCT Creepage & Clearance Location:



Female Cable Creepage & Clearance Location: