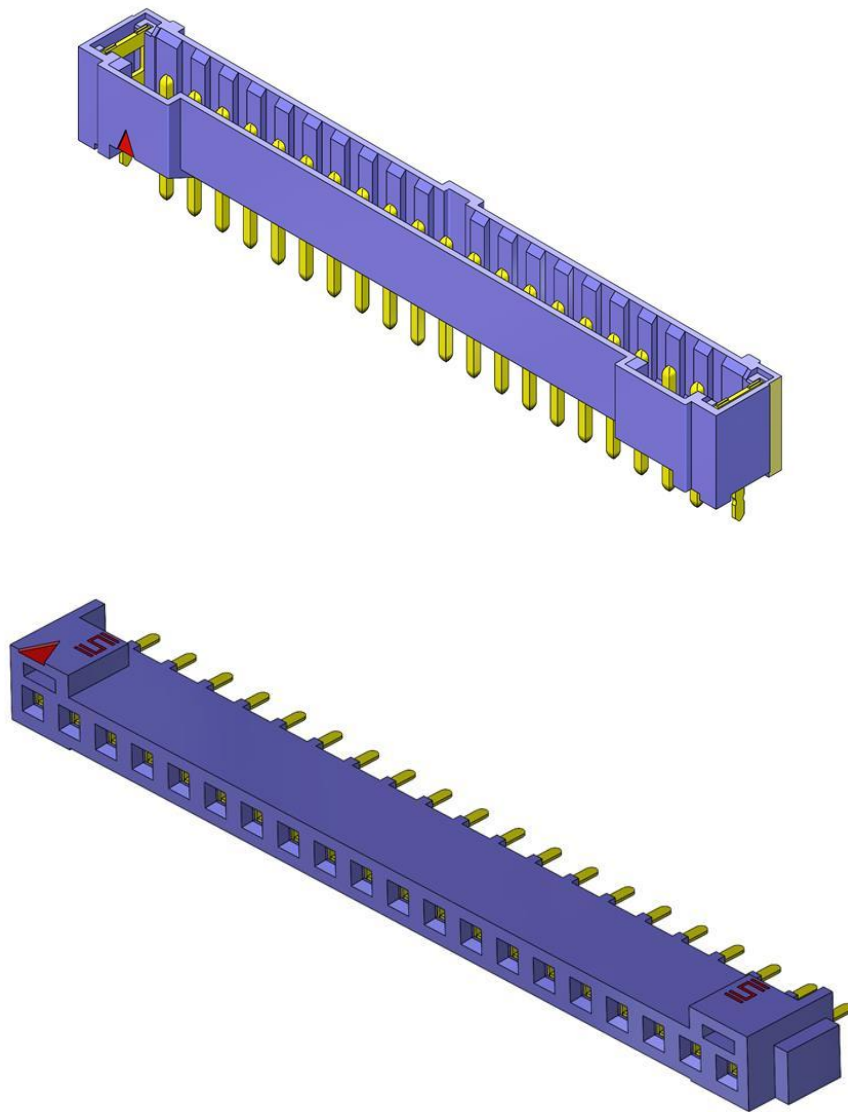


Project Number: Design Qualification Test Report	Tracking Code: CR-1384001_Report_Rev_2
Requested by: Alan Wang	Date: 10/27/2026
Part #: S2M-120-01-L-S /T2M-120-01-L-S-TH-WT	
Part description: S2M/T2M	Tech: Danton Gan
Test Start: 1/20/2026	Test Completed: 2/14/2026



DESIGN QUALIFICATION TEST REPORT
S2M/T2M
S2M-120-01-L-S /T2M-120-01-L-S-TH-WT

Tracking Code: CR-1384001 Report Rev 2	Part #: S2M-120-01-L-S /T2M-120-01-L-S-TH-WT
Part description: S2M/T2M	

REVISION HISTORY

DATA	REV.NUM.	DESCRIPTION	ENG
2/27/2026	1	Initial Issue	DG
5/29/2026	2	Updated Part Number	DG

CERTIFICATION

All instruments and measuring equipment were calibrated to National Institute for Standards and Technology (NIST) traceable standards according to ISO 10012-1 and ANSI/NCSL 2540-1, as applicable.

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SCOPE

To perform the following tests: Design Qualification test. Please see test plan.

APPLICABLE DOCUMENTS

Standards: EIA Publication 364

TEST SAMPLES AND PREPARATION

- 1) All materials were manufactured in accordance with the applicable product specification.
- 2) All test samples were identified and encoded to maintain traceability throughout the test sequences.
- 3) After soldering, the parts to be used for LLCR and DWV/IR testing were cleaned according to TLWI-0001.
- 4) Either an automated cleaning procedure or an ultrasonic cleaning procedure may be used.
- 5) The automated procedure is used with aqueous compatible soldering materials.
- 6) Parts not intended for testing LLCR and DWV/IR are visually inspected and cleaned if necessary.
- 7) Any additional preparation will be noted in the individual test sequences.
- 8) Solder Information: Lead free
- 9) Samtec Test PCBs used: PCB-114713-TST-XX/ PCB-114714-TST-XX / PCB-114715-TST-XX.

FLOWCHARTS

Mating/Unmating/Durability**Group 1**

S2M-120-01-L-S
T2M-120-01-L-S-TH-WT
8 Assemblies

Step	Description
1.	Contact Gaps
2.	LLCR ⁽²⁾ Max Delta = 15 mOhm
3.	Mating/Unmating Force ⁽³⁾
4.	Cycles Quantity = 25 Cycles
5.	Mating/Unmating Force ⁽³⁾
6.	Cycles Quantity = 25 Cycles
7.	Mating/Unmating Force ⁽³⁾
8.	Cycles Quantity = 25 Cycles
9.	Mating/Unmating Force ⁽³⁾
10.	Cycles Quantity = 25 Cycles
11.	Mating/Unmating Force ⁽³⁾
12.	Contact Gaps
13.	LLCR ⁽²⁾ Max Delta = 15 mOhm
14.	Thermal Shock ⁽⁴⁾
15.	LLCR ⁽²⁾ Max Delta = 15 mOhm
16.	Humidity ⁽¹⁾
17.	LLCR ⁽²⁾ Max Delta = 15 mOhm
18.	Mating/Unmating Force ⁽³⁾

Group 2

S2M-110-01-L-S
T2M-110-01-L-S-TH-WT
8 Assemblies

Step	Description
1.	Contact Gaps
2.	Mating/Unmating Force ⁽³⁾
3.	Cycles Quantity = 25 Cycles
4.	Mating/Unmating Force ⁽³⁾
5.	Cycles Quantity = 25 Cycles
6.	Mating/Unmating Force ⁽³⁾
7.	Cycles Quantity = 25 Cycles
8.	Mating/Unmating Force ⁽³⁾
9.	Cycles Quantity = 25 Cycles
10.	Mating/Unmating Force ⁽³⁾

Group 3

S2M-102-02-L-S-LC-K-TR
T2M-102-01-L-S-SM-WT
8 Assemblies

Step	Description
1.	Contact Gaps
2.	Mating/Unmating Force ⁽³⁾
3.	Cycles Quantity = 25 Cycles
4.	Mating/Unmating Force ⁽³⁾
5.	Cycles Quantity = 25 Cycles
6.	Mating/Unmating Force ⁽³⁾
7.	Cycles Quantity = 25 Cycles
8.	Mating/Unmating Force ⁽³⁾
9.	Cycles Quantity = 25 Cycles
10.	Mating/Unmating Force ⁽³⁾

- (1) Humidity = EIA-364-31
Test Condition = B (240 Hours)
Test Method = III (+25°C to +65°C @ 90% RH to 98% RH)
Test Exceptions: ambient pre-condition and delete steps 7a and 7b
- (2) LLCR = EIA-364-23
Open Circuit Voltage = 20 mV Max
Test Current = 100 mA Max
- (3) Mating/Unmating Force = EIA-364-13
- (4) Thermal Shock = EIA-364-32
Exposure Time at Temperature Extremes = 1/2 Hour
Method A, Test Condition = I (-55°C to +85°C)
Test Duration = A-3 (100 Cycles)

FLOWCHARTS Continued**IR/DWV****Pin-to-Pin****Group 1**

S2M-120-01-L-S
T2M-120-01-L-S-TH-WT
2 Assemblies

Step	Description
1.	DWV Breakdown (2)

Group 2

S2M-120-01-L-S

2 Assemblies

Step	Description
1.	DWV Breakdown (2)

Group 3

T2M-120-01-L-S-TH-WT
2 Assemblies

Step	Description
1.	DWV Breakdown (2)

Group 4

S2M-120-01-L-S
T2M-120-01-L-S-TH-WT
2 Assemblies

Step	Description
1.	IR (4)
2.	DWV at Test Voltage (1)
3.	Thermal Shock (5)
4.	IR (4)
5.	DWV at Test Voltage (1)
6.	Humidity (3)
7.	IR (4)
8.	DWV at Test Voltage (1)

Pin-to-Closest Metallic Hardware**Group 5**

S2M-120-01-L-S
T2M-120-01-L-S-TH-WT
2 Assemblies

Step	Description
1.	DWV Breakdown (2)

Group 6

S2M-120-01-L-S

2 Assemblies

Step	Description
1.	DWV Breakdown (2)

Group 7

T2M-120-01-L-S-TH-WT
2 Assemblies

Step	Description
1.	DWV Breakdown (2)

Group 8

S2M-120-01-L-S
T2M-120-01-L-S-TH-WT
2 Assemblies

Step	Description
1.	IR (4)
2.	DWV at Test Voltage (1)
3.	Thermal Shock (5)
4.	IR (4)
5.	DWV at Test Voltage (1)
6.	Humidity (3)
7.	IR (4)
8.	DWV at Test Voltage (1)

(1) DWV at Test Voltage = EIA-364-20

Test Condition = 1 (Sea Level)

DWV test voltage is equal to 75% of the lowest breakdown voltage

Test voltage applied for 60 seconds

(2) DWV Breakdown = EIA-364-20

Test Condition = 1 (Sea Level)

DWV test voltage is equal to 75% of the lowest breakdown voltage

Test voltage applied for 60 seconds

(3) Humidity = EIA-364-31

Test Condition = B (240 Hours)

Test Method = III (+25°C to +65°C @ 90% RH to 98% RH)

Test Exceptions: ambient pre-condition and delete steps 7a and 7b

(4) IR = EIA-364-21

Test Condition = 500 Vdc, 2 Minutes Max

(5) Thermal Shock = EIA-364-32

Exposure Time at Temperature Extremes = 1/2 Hour

Method A, Test Condition = I (-55°C to +85°C)

Test Duration = A-3 (100 Cycles)

FLOWCHARTS Continued**Current Carrying Capacity**Group 1

S2M-120-01-L-S
T2M-120-01-L-S-TH-WT
1 Pins Powered
Signal

Step	Description
1.	CCC ⁽¹⁾ Rows = 1 Number of Positions = 1

Group 2

S2M-120-01-L-S
T2M-120-01-L-S-TH-WT
2 Pins Powered
Signal

Step	Description
1.	CCC ⁽¹⁾ Rows = 1 Number of Positions = 2

Group 3

S2M-120-01-L-S
T2M-120-01-L-S-TH-WT
3 Pins Powered
Signal

Step	Description
1.	CCC ⁽¹⁾ Number of Positions = 3 Rows = 1

Group 4

S2M-120-01-L-S
T2M-120-01-L-S-TH-WT
4 Pins Powered
Signal

Step	Description
1.	CCC ⁽¹⁾ Rows = 1 Number of Positions = 4

Group 5

S2M-120-01-L-S
T2M-120-01-L-S-TH-WT
20 Pins Powered
Signal

Step	Description
1.	CCC ⁽¹⁾ Number of Positions = 20 Rows = 1

(1) CCC = EIA-364-70

Method 2, Temperature Rise Versus Current Curve

(TIN PLATING) - Tabulate calculated current at RT, 65°C, 75°C and 95°C after derating 20% and based on 105°C

(GOLD PLATING) - Tabulate calculated current at RT, 85°C, 95°C and 115°C after derating 20% and based on 125°C

ATTRIBUTE DEFINITIONS

The following is a brief, simplified description of attributes.

THERMAL SHOCK:

- 1) EIA-364-32, *Thermal Shock (Temperature Cycling) Test Procedure for Electrical Connectors*.
- 2) Test Condition 1: -55°C to +85°C
- 3) Test Time: ½ hour dwell at each temperature extreme
- 4) Number of Cycles: 100
- 5) All test samples are pre-conditioned at ambient.
- 6) All test samples are exposed to environmental stress in mated conditions.

HUMIDITY:

- 1) Reference document: EIA-364-31, *Humidity Test Procedure for Electrical Connectors*.
- 2) Test Condition B, 240 Hours.
- 3) Method III, +25° C to + 65° C, 90% to 98% Relative Humidity excluding sub-cycles 7a and 7b.
- 4) All samples are pre-conditioned at ambient.
- 5) All test samples are exposed to environmental stress in mated conditions.

MATING/UNMATING:

- 1) Reference document: EIA-364-13, *Mating and Unmating Forces Test Procedure for Electrical Connectors*.
- 2) The full insertion position was to within 0.003” to 0.004” of the plug bottoming out in the receptacle to prevent damage to the system under test.
- 3) One of the mating parts is secured to a floating X-Y table to prevent damage during cycling.

LLCR:

- 1) EIA-364-23, *Low Level Contact Resistance Test Procedure for Electrical Connectors and Sockets*.
- 2) A computer program, *LLCR 221.exe*, ensures repeatability for data acquisition.
- 3) The following guidelines are used to categorize the changes in LLCR as a result of stress
 - a. <= +5.0 mOhms: -----Stable
 - b. +5.1 to +10.0 mOhms: -----Minor
 - c. +10.1 to +15.0 mOhms: -----Acceptable
 - d. +15.1 to +50.0 mOhms: -----Marginal
 - e. +50.1 to +1000 mOhms: -----Unstable
 - f. >+1000 mOhms: -----Open Failure

ATTRIBUTE DEFINITIONS Continued**TEMPERATURE RISE (Current Carrying Capacity, CCC):**

- 1) EIA-364-70, *Temperature Rise versus Current Test Procedure for Electrical Connectors and Sockets*.
- 2) When current passes through a contact, the temperature of the contact increases as a result of I^2R (resistive) heating.
- 3) The number of contacts being investigated plays a significant part in power dissipation and therefore temperature rise.
- 4) The size of the temperature probe can affect the measured temperature.
- 5) Copper traces on PC boards will contribute to temperature rise:
 - a. Self-heating (resistive)
 - b. Reduction in heat sink capacity affecting the heated contacts
- 6) A de-rating curve, usually 20%, is calculated.
- 7) Calculated de-rated currents at three temperature points are reported:
 - a. Ambient
 - b. 85° C
 - c. 95° C
 - d. 115° C
- 8) Typically, neighboring contacts (in close proximity to maximize heat buildup) are energized.
- 9) The thermocouple (or temperature measuring probe) will be positioned at a location to sense the maximum temperature in the vicinity of the heat generation area.
- 10) A computer program, *TR 803.exe*, ensures accurate stability for data acquisition.
- 11) Hook-up wire cross section is larger than the cross section of any connector that leads/PC board traces, jumpers, etc.
- 12) Hook-up wire length is longer than the minimum specified in the referencing standard.

ATTRIBUTE DEFINITIONS Continued**INSULATION RESISTANCE (IR):**

To determine the resistance of insulation materials to leakage of current through or on the surface of these materials when a DC potential is applied.

- 1) PROCEDURE:
 - a. Reference document: EIA-364-21, *Insulation Resistance Test Procedure for Electrical Connectors*.
 - b. Test Conditions:
 - i. Between Adjacent Contacts or Signal-to-Ground
 - ii. Electrification Time 2.0 minutes
 - iii. Test Voltage (500 VDC) corresponds to calibration settings for measuring resistances.
- 2) MEASUREMENTS:
- 3) When the specified test voltage is applied (VDC), the insulation resistance shall not be less than 5000 megohms.

DIELECTRIC WITHSTANDING VOLTAGE (DWV):

To determine if the sockets can operate at their rated voltage and withstand momentary over potentials due to switching, surges, and another similar phenomenon. Separate samples are used to evaluate the effect of environmental stresses so not to influence the readings from arcing that occurs during the measurement process.

- 1) PROCEDURE:
 - a. Reference document: EIA-364-20, *Withstanding Voltage Test Procedure for Electrical Connectors*.
 - b. Test Conditions:
 - i. Between Adjacent Contacts or Signal-to-Ground
 - ii. Barometric Test Condition 1
 - iii. Rate of Application 500 V/Sec
 - iv. Test Voltage (VAC) until breakdown occurs
- 2) MEASUREMENTS/CALCULATIONS
 - a. The breakdown voltage shall be measured and recorded.
 - b. The dielectric withstanding voltage shall be recorded as 75% of the minimum breakdown voltage.
 - c. The working voltage shall be recorded as one-third (1/3) of the dielectric withstanding voltage (one-fourth of the breakdown voltage).

RESULTS

Temperature Rise, CCC at a 20% de-rating

- CCC for a 30°C Temperature Rise-----4.0 A per contact with 1 contact (1 x 1) powered
- CCC for a 30°C Temperature Rise-----3.1 A per contact with 2 contacts (1 x 2) powered
- CCC for a 30°C Temperature Rise-----2.6 A per contact with 3 contacts (1 x 3) powered
- CCC for a 30°C Temperature Rise-----2.4 A per contact with 4 contacts (1 x 4) powered
- CCC for a 30°C Temperature Rise-----1.6 A per contact with 20 contacts (1x20) powered

Mating/Unmating Forces

Mating-Unmating Durability (S2M-120-01-L-S /T2M-120-01-L-S-TH-WT)

- Initial
 - Mating
 - Min ----- 2.67 Lbs
 - Max----- 3.51 Lbs
 - Unmating
 - Min ----- 1.69 Lbs
 - Max----- 2.42 Lbs
- After 25 Cycles
 - Mating
 - Min ----- 3.05 Lbs
 - Max----- 3.89 Lbs
 - Unmating
 - Min ----- 2.20 Lbs
 - Max----- 3.21 Lbs
- After 50 Cycles
 - Mating
 - Min ----- 3.13 Lbs
 - Max----- 3.89 Lbs
 - Unmating
 - Min ----- 2.77 Lbs
 - Max----- 3.85 Lbs
- After 75 Cycles
 - Mating
 - Min ----- 3.32 Lbs
 - Max----- 4.01 Lbs
 - Unmating
 - Min ----- 3.25 Lbs
 - Max----- 4.22 Lbs
- After 100 Cycles
 - Mating
 - Min ----- 3.55 Lbs
 - Max----- 4.17 Lbs
 - Unmating
 - Min ----- 3.58 Lbs
 - Max----- 4.41 Lbs
- Humidity
 - Mating
 - Min ----- 2.45 Lbs
 - Max----- 2.95 Lbs
 - Unmating
 - Min ----- 1.94 Lbs
 - Max----- 2.25 Lbs

RESULTS Continued**Mating-Unmating Basic (S2M-110-01-L-S/T2M-110-01-L-S-TH-WT)**

- **Initial**
 - **Mating**
 - **Min** ----- 1.40 Lbs
 - **Max** ----- 1.98 Lbs
 - **Unmating**
 - **Min** ----- 0.96 Lbs
 - **Max** ----- 1.14 Lbs
- **After 25 Cycles**
 - **Mating**
 - **Min** ----- 1.83 Lbs
 - **Max** ----- 2.17 Lbs
 - **Unmating**
 - **Min** ----- 1.30 Lbs
 - **Max** ----- 1.78 Lbs
- **After 50 Cycles**
 - **Mating**
 - **Min** ----- 1.85 Lbs
 - **Max** ----- 2.14 Lbs
 - **Unmating**
 - **Min** ----- 1.63 Lbs
 - **Max** ----- 2.03 Lbs
- **After 75 Cycles**
 - **Mating**
 - **Min** ----- 1.90 Lbs
 - **Max** ----- 2.13 Lbs
 - **Unmating**
 - **Min** ----- 1.88 Lbs
 - **Max** ----- 2.14 Lbs
- **After 100 Cycles**
 - **Mating**
 - **Min** ----- 1.98 Lbs
 - **Max** ----- 2.19 Lbs
 - **Unmating**
 - **Min** ----- 2.04 Lbs
 - **Max** ----- 2.24 Lbs

RESULTS Continued**Mating-Unmating Basic (S2M-102-02-L-S-LC-K-TR/T2M-102-01-L-S-SM-WT)**

- **Initial**
 - **Mating**
 - **Min ----- 0.43 Lbs**
 - **Max ----- 0.66 Lbs**
 - **Unmating**
 - **Min ----- 0.29 Lbs**
 - **Max ----- 0.51 Lbs**
- **After 25 Cycles**
 - **Mating**
 - **Min ----- 0.44 Lbs**
 - **Max ----- 0.56 Lbs**
 - **Unmating**
 - **Min ----- 0.39 Lbs**
 - **Max ----- 0.62 Lbs**
- **After 50 Cycles**
 - **Mating**
 - **Min ----- 0.46 Lbs**
 - **Max ----- 0.58Lbs**
 - **Unmating**
 - **Min ----- 0.49Lbs**
 - **Max ----- 0.69 Lbs**
- **After 75 Cycles**
 - **Mating**
 - **Min ----- 0.48 Lbs**
 - **Max ----- 0.59 Lbs**
 - **Unmating**
 - **Min ----- 0.53 Lbs**
 - **Max ----- 0.77 Lbs**
- **After 100 Cycles**
 - **Mating**
 - **Min ----- 0.50 Lbs**
 - **Max ----- 0.60 Lbs**
 - **Unmating**
 - **Min ----- 0.58 Lbs**
 - **Max ----- 0.80 Lbs**

RESULTS Continued**Insulation Resistance minimums, IR****Pin to Pin**

- **Initial**
 - Mated-----45000 Meg Ω ----- Passed
 - Unmated ----- 45000 Meg Ω ----- Passed
- **Thermal Shock**
 - Mated----- 45000 Meg Ω ----- Passed
 - Unmated ----- 45000 Meg Ω ----- Passed
- **Humidity**
 - Mated-----13200 Meg Ω ----- Passed
 - Unmated -----45000 Meg Ω ----- Passed

Pin to Closest Metallic Hardware

- **Initial**
 - Mated-----45000 Meg Ω ----- Passed
 - Unmated ----- 45000 Meg Ω ----- Passed
- **Thermal Shock**
 - Mated----- 45000 Meg Ω ----- Passed
 - Unmated ----- 45000 Meg Ω ----- Passed
- **Humidity**
 - Mated-----45000 Meg Ω ----- Passed
 - Unmated -----45000 Meg Ω ----- Passed

Dielectric Withstanding Voltage minimums, DWV

- **Minimums**
 - Breakdown Voltage----- 1659 VAC
 - Test Voltage ----- 1244 VAC
 - Working Voltage ----- 415 VAC

Pin to Pin

- **Initial DWV** -----Passed
- **Thermal DWV**-----Passed
- **Humidity DWV**-----Passed

Pin to Closest Metallic Hardware

- **Initial DWV** -----Passed
- **Thermal DWV**-----Passed
- **Humidity DWV**-----Passed

RESULTS Continued**LLCR Mating/Unmating Durability Group (128 signals LLCR test points)**

- **Initial** -----8.77 mOhms Max
- **Durability, 100 Cycles**
 - **<= +5.0 mOhms** ----- 128 Points ----- Stable
 - **+5.1 to +10.0 mOhms** -----0 Points ----- Minor
 - **+10.1 to +15.0 mOhms** -----0 Points ----- Acceptable
 - **+15.1 to +50.0 mOhms** -----0 Points ----- Marginal
 - **+50.1 to +1000 mOhms** -----0 Points ----- Unstable
 - **>+1000 mOhms** -----0 Points ----- Open Failure
- **Thermal Shock**
 - **<= +5.0 mOhms** ----- 128 Points ----- Stable
 - **+5.1 to +10.0 mOhms** -----0 Points ----- Minor
 - **+10.1 to +15.0 mOhms** -----0 Points ----- Acceptable
 - **+15.1 to +50.0 mOhms** -----0 Points ----- Marginal
 - **+50.1 to +1000 mOhms** -----0 Points ----- Unstable
 - **>+1000 mOhms** -----0 Points ----- Open Failure
- **Humidity**
 - **<= +5.0 mOhms** ----- 128 Points ----- Stable
 - **+5.1 to +10.0 mOhms** -----0 Points ----- Minor
 - **+10.1 to +15.0 mOhms** -----0 Points ----- Acceptable
 - **+15.1 to +50.0 mOhms** -----0 Points ----- Marginal
 - **+50.1 to +1000 mOhms** -----0 Points ----- Unstable
 - **>+1000 mOhms** -----0 Points ----- Open Failure

DATA SUMMARIES

TEMPERATURE RISE (Current Carrying Capacity, CCC):

- 1) High quality thermocouples whose temperature slopes track one another were used for temperature monitoring.
- 2) The thermocouples were placed at a location to sense the maximum temperature generated during testing.
- 3) Temperature readings are recorded for which three successive readings, 15 minutes apart, differ less than 1° C (computer-controlled data acquisition).
- 4) Adjacent contacts were powered:

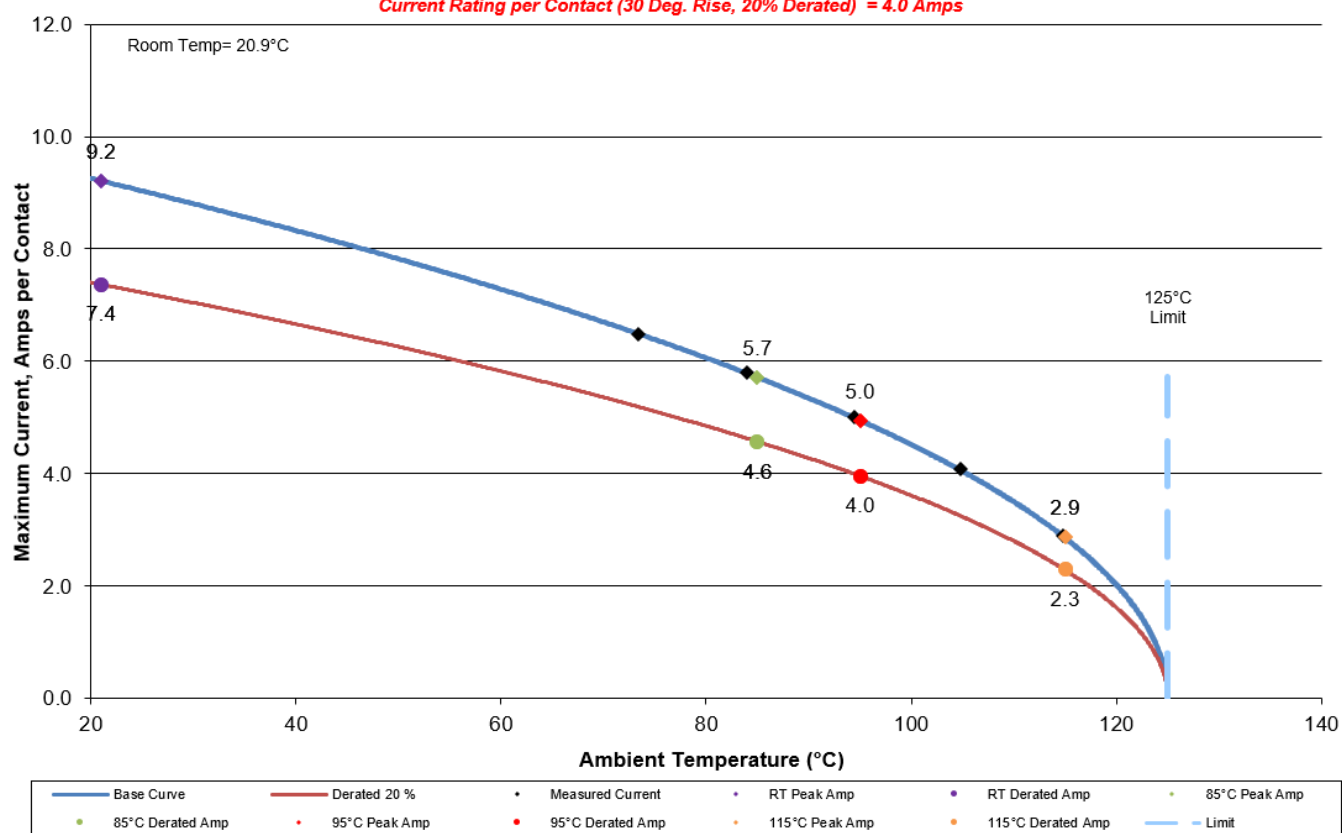
Signal pin

- a. Linear configuration with 1 signal conductors/contacts powered

CR-1384001

1 (1X1) Contacts in Series

Part Numbers: S2M-120-01-L-S/T2M-120-01-L-S-TH-WT

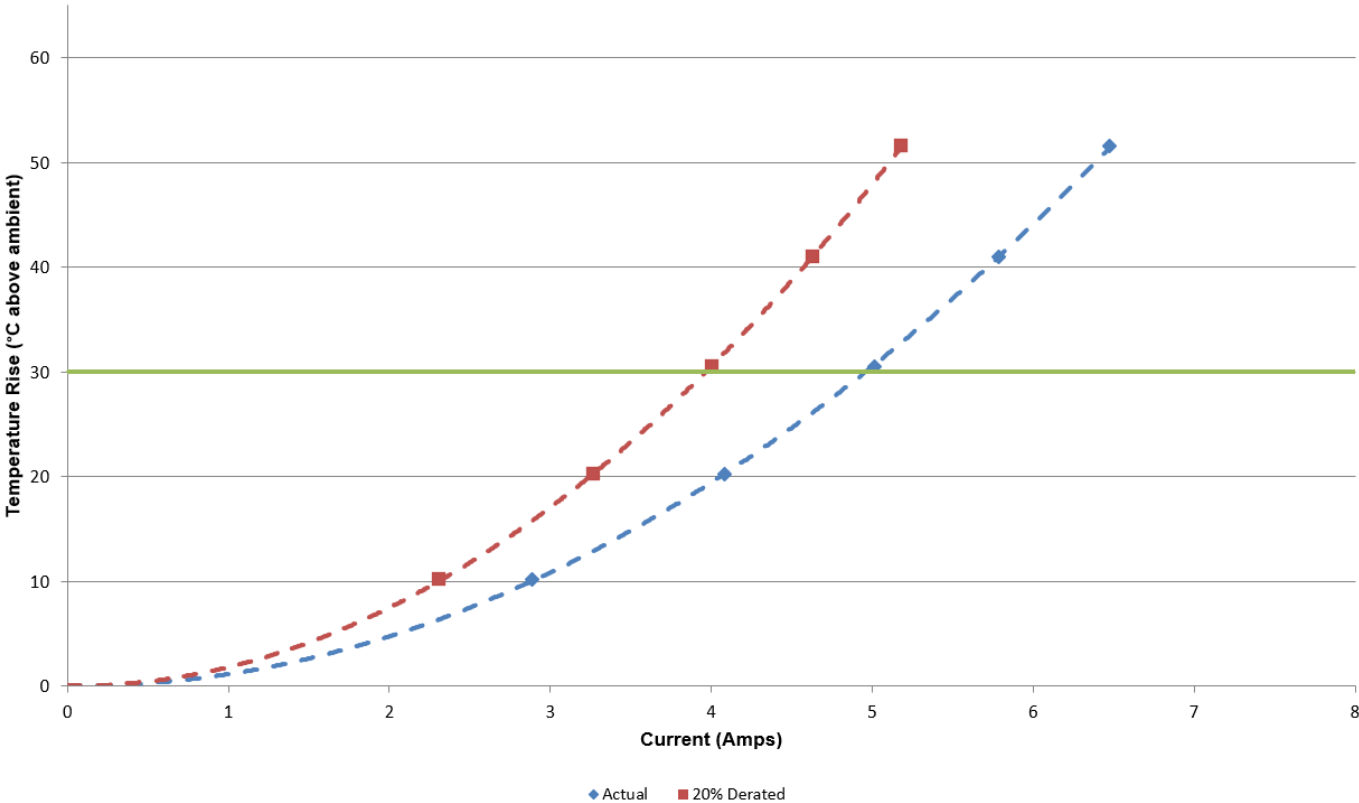
Current Rating per Contact (30 Deg. Rise, 20% Derated) = 4.0 Amps

DATA SUMMARIES Continued

CR-1384001

1 (1X1) Contacts in Series

Part Numbers:S2M-120-01-L-S/T2M-120-01-L-S-TH-WT

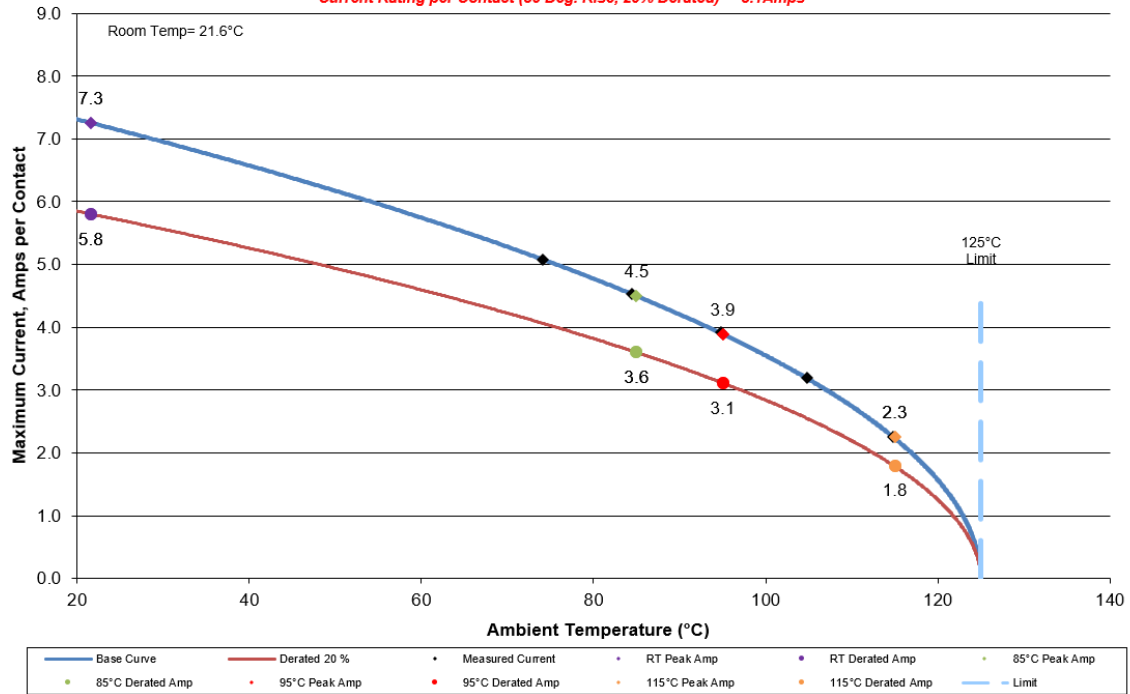


DATA SUMMARIES Continued**b. Linear configuration with 2 adjacent signal conductors/contacts powered**

CR-1384001

2 (1X2) Contacts in Series

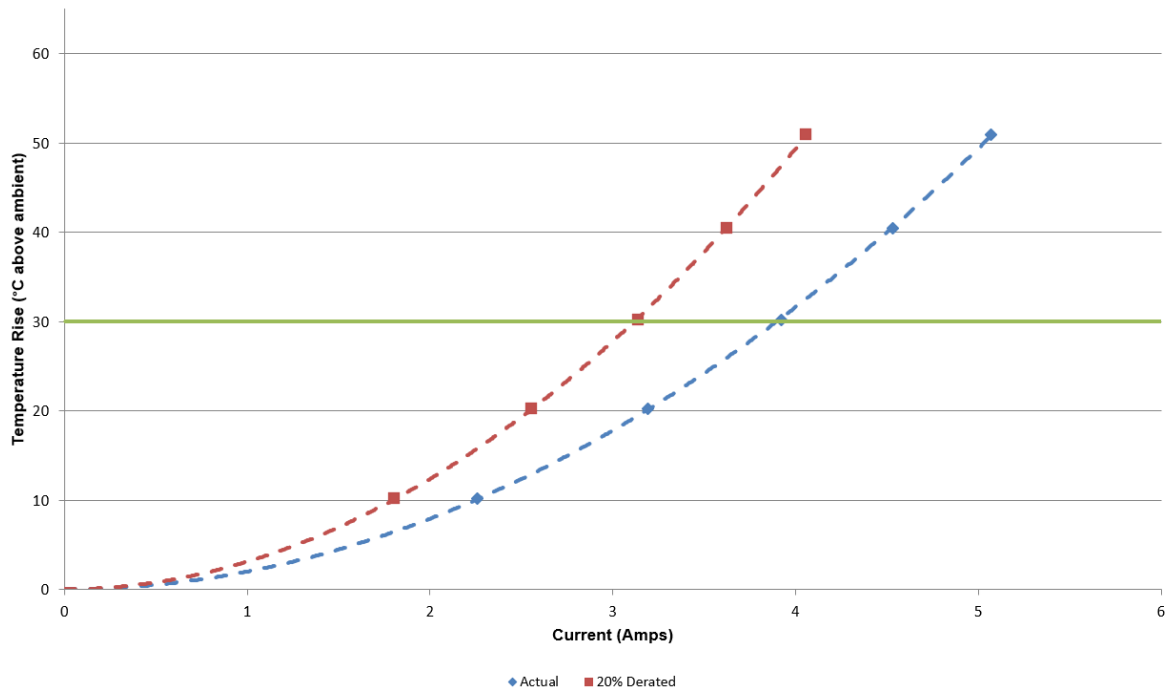
Part Numbers: S2M-120-01-L-S/T2M-120-01-L-S-TH-WT

Current Rating per Contact (30 Deg. Rise, 20% Derated) = 3.1Amps

CR-1384001

2 (1X2) Contacts in Series

Part Numbers: S2M-120-01-L-S/T2M-120-01-L-S-TH-WT



DATA SUMMARIES Continued

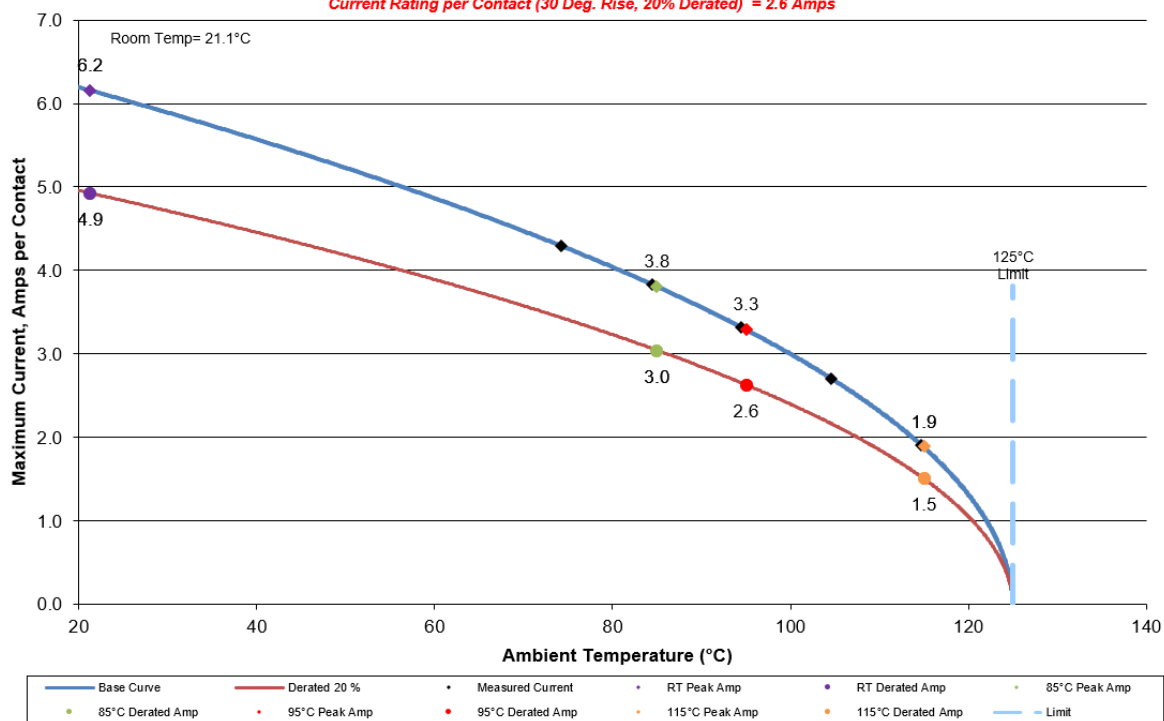
c. Linear configuration with 3 adjacent signal conductors/contacts powered

CR-1384001

3 (1X3) Contacts in Series

Part Numbers: S2M-120-01-L-S/T2M-120-01-L-S-TH-WT

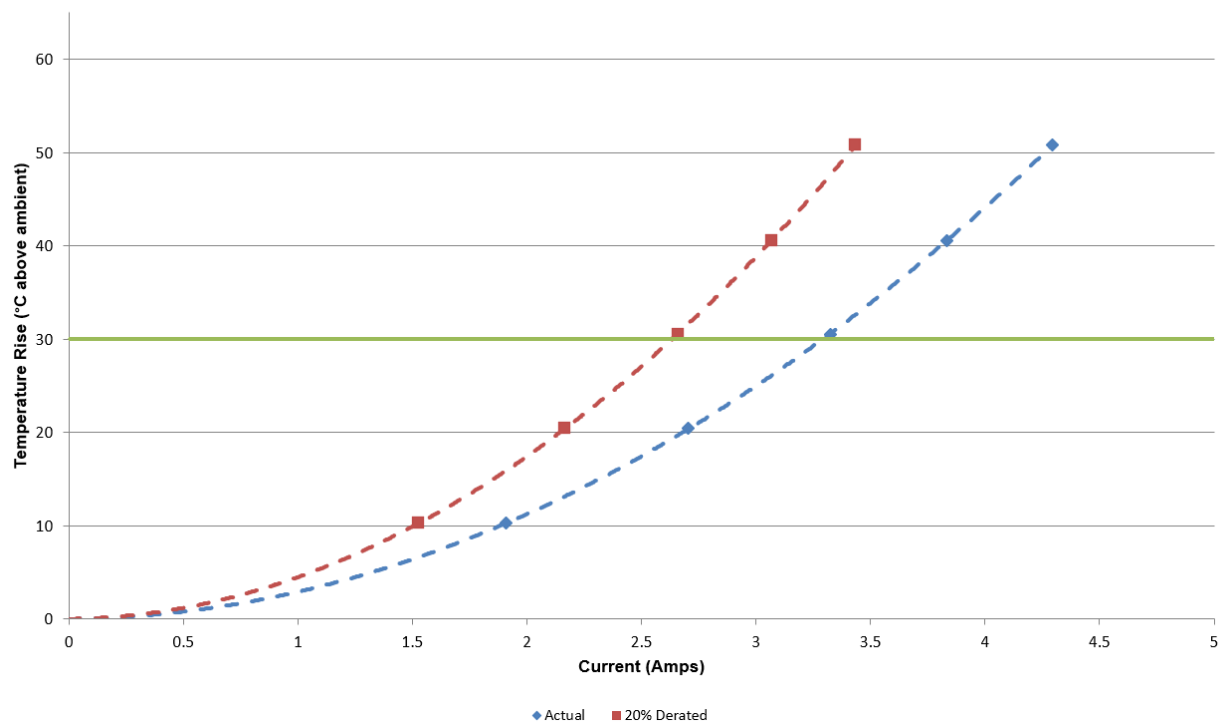
Current Rating per Contact (30 Deg. Rise, 20% Derated) = 2.6 Amps



CR-1384001

3 (1X3) Contacts in Series

Part Numbers: S2M-120-01-L-S/T2M-120-01-L-S-TH-WT



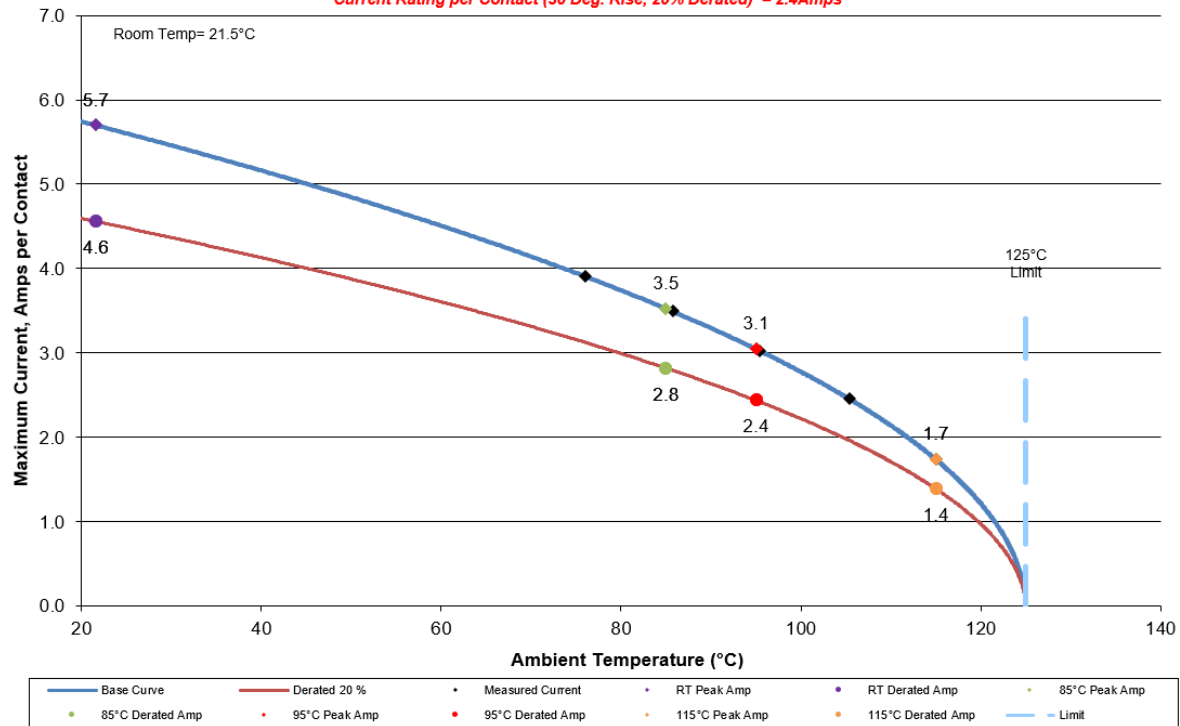
DATA SUMMARIES Continued

d. Linear configuration with 4 adjacent signal conductors/contacts powered

CR-1384001

4 (1X4) Contacts in Series

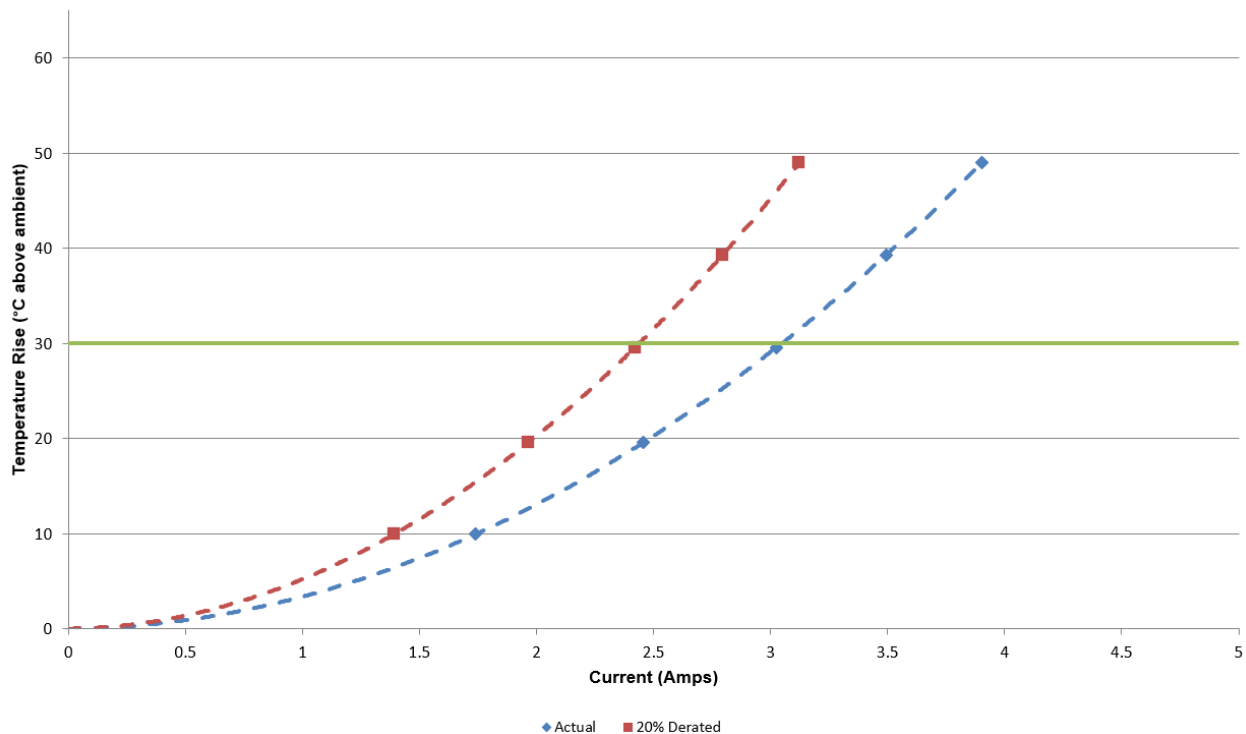
Part Numbers: S2M-120-01-L-S/T2M-120-01-L-S-TH-WT

Current Rating per Contact (30 Deg. Rise, 20% Derated) = 2.4Amps

CR-1384001

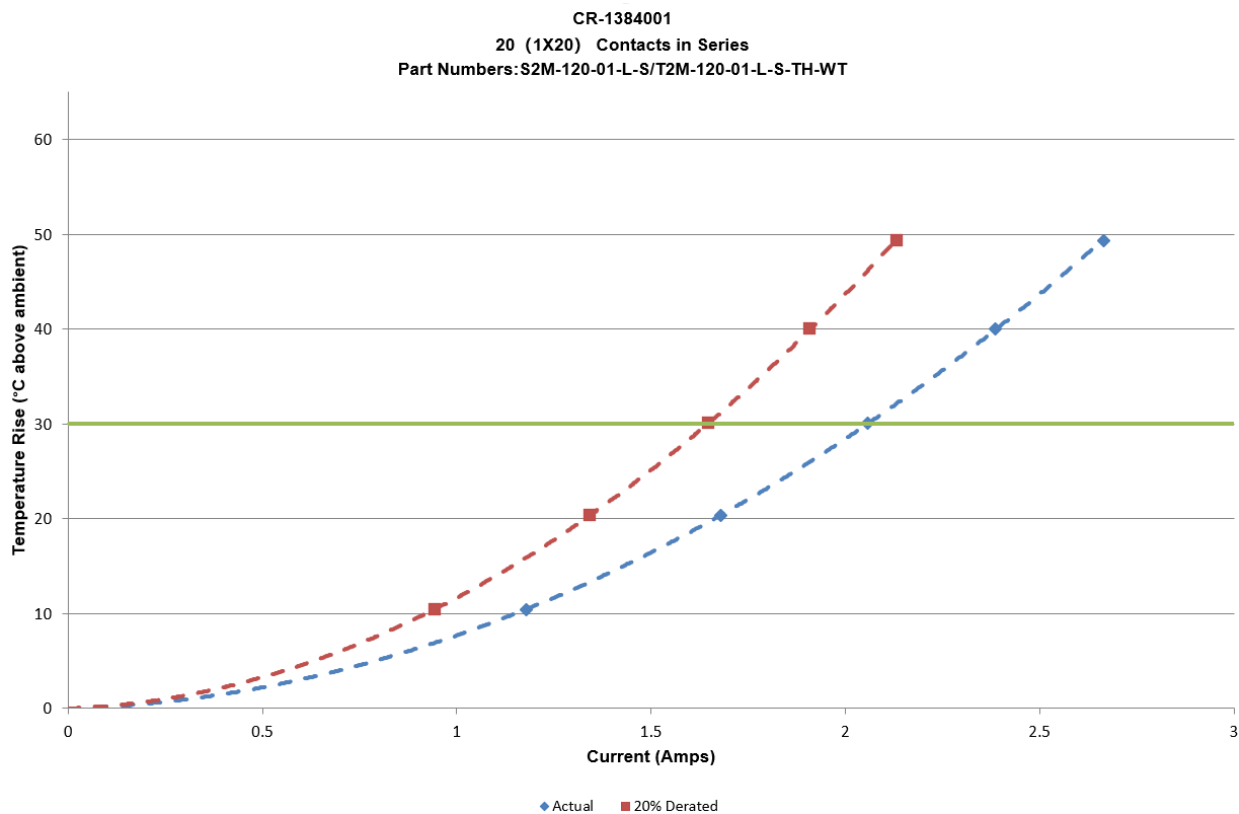
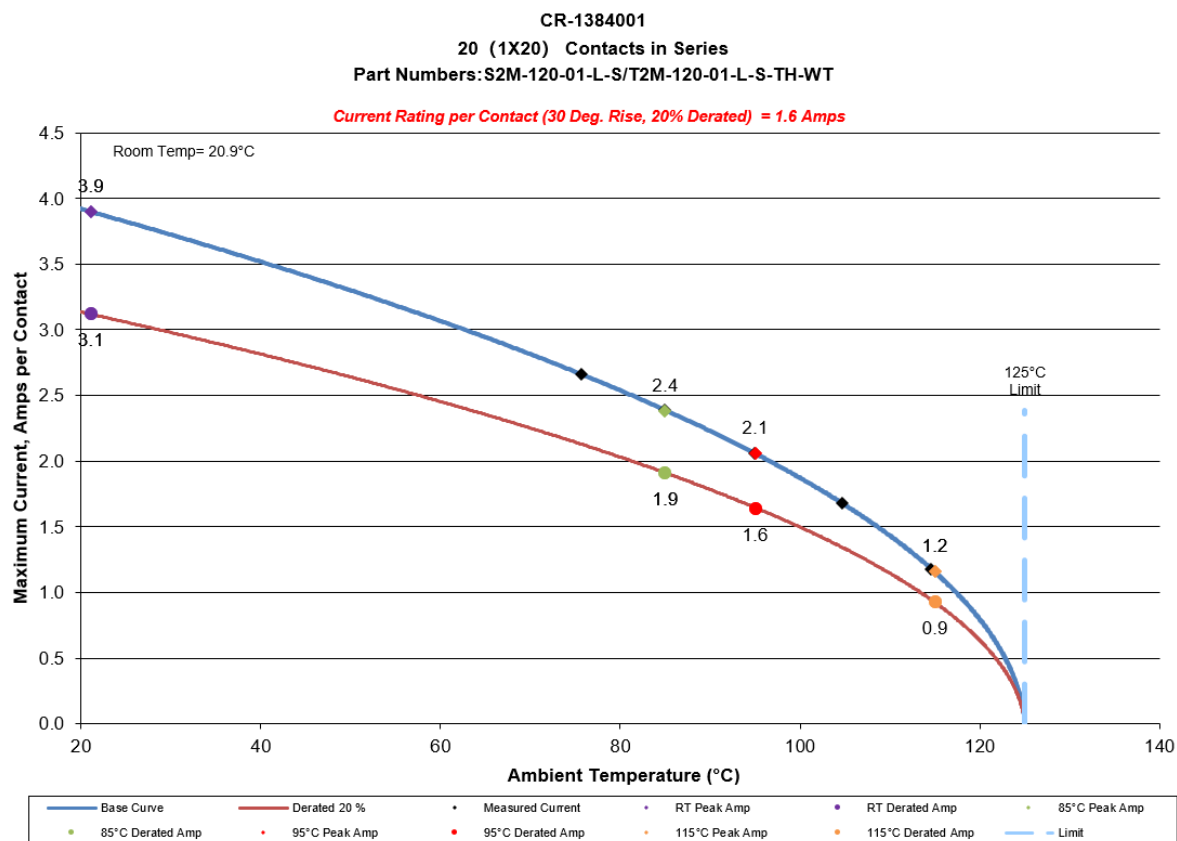
4 (1X4) Contacts in Series

Part Numbers: S2M-120-01-L-S/T2M-120-01-L-S-TH-WT



DATA SUMMARIES Continued

e. Linear configuration with all adjacent signal conductors/contacts powered



DATA SUMMARIES Continued**MATING-UNMATING FORCE:****Mating-Unmating Durability Group (S2M-120-01-L-S/T2M-120-01-L-S-TH-WT)**

	Initial				After 25 Cycles			
	Mating		Unmating		Mating		Unmating	
	Newton	Force (Lbs)	Newton	Force (Lbs)	Newton	Force (Lbs)	Newton	Force (Lbs)
Minimum	11.88	2.67	7.52	1.69	13.57	3.05	9.79	2.20
Maximum	15.61	3.51	10.76	2.42	17.30	3.89	14.28	3.21
Average	14.11	3.17	8.89	2.00	15.38	3.46	11.95	2.69
St Dev	1.32	0.30	1.13	0.25	1.45	0.33	1.82	0.41
Count	8	8	8	8	8	8	8	8
	After 50 Cycles				After 75 Cycles			
	Mating		Unmating		Mating		Unmating	
	Newton	Force (Lbs)	Newton	Force (Lbs)	Newton	Force (Lbs)	Newton	Force (Lbs)
Minimum	13.92	3.13	12.32	2.77	14.77	3.32	14.46	3.25
Maximum	17.30	3.89	17.12	3.85	17.84	4.01	18.77	4.22
Average	15.75	3.54	14.65	3.29	16.50	3.71	16.56	3.72
St Dev	1.23	0.28	1.92	0.43	1.09	0.25	1.69	0.38
Count	8	8	8	8	8	8	8	8
	After 100 Cycles				After Humidity			
	Mating		Unmating		Mating		Unmating	
	Newton	Force (Lbs)	Newton	Force (Lbs)	Newton	Force (Lbs)	Newton	Force (Lbs)
Minimum	15.79	3.55	15.92	3.58	10.90	2.45	8.63	1.94
Maximum	18.55	4.17	19.62	4.41	13.12	2.95	10.01	2.25
Average	17.26	3.88	17.80	4.00	11.95	2.69	9.27	2.08
St Dev	1.01	0.23	1.42	0.32	0.62	0.14	0.49	0.11
Count	8	8	8	8	8	8	8	8

DATA SUMMARIES Continued**Mating-Unmating Basic (S2M-110-01-L-S/T2M-110-01-L-S-TH-WT)**

	Initial				After 25 Cycles			
	Mating		Unmating		Mating		Unmating	
	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)
Minimum	6.23	1.40	4.27	0.96	8.14	1.83	5.78	1.30
Maximum	8.81	1.98	5.07	1.14	9.65	2.17	7.92	1.78
Average	7.53	1.69	4.57	1.03	8.93	2.01	6.66	1.50
St Dev	0.78	0.18	0.26	0.06	0.49	0.11	0.61	0.14
Count	8	8	8	8	8	8	8	8
	After 50 Cycles				After 75 Cycles			
	Mating		Unmating		Mating		Unmating	
	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)
Minimum	8.23	1.85	7.25	1.63	8.45	1.90	8.36	1.88
Maximum	9.52	2.14	9.03	2.03	9.47	2.13	9.52	2.14
Average	8.89	2.00	8.17	1.84	9.02	2.03	9.05	2.03
St Dev	0.42	0.09	0.50	0.11	0.36	0.08	0.36	0.08
Count	8	8	8	8	8	8	8	8
	After 100 Cycles							
	Mating		Unmating					
	Newtons	Force (Lbs)	Newtons	Force (Lbs)				
Minimum	8.81	1.98	9.07	2.04				
Maximum	9.74	2.19	9.96	2.24				
Average	9.29	2.09	9.63	2.17				
St Dev	0.33	0.07	0.29	0.07				
Count	8	8	8	8				

DATA SUMMARIES Continued**Mating-Unmating Basic (S2M-102-02-L-S-LC-K-TR/T2M-102-01-L-S-SM-WT)**

	Initial				After 25 Cycles			
	Mating		Unmating		Mating		Unmating	
	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)
Minimum	1.91	0.43	1.29	0.29	1.96	0.44	1.73	0.39
Maximum	2.94	0.66	2.27	0.51	2.49	0.56	2.76	0.62
Average	2.42	0.54	1.72	0.39	2.16	0.49	2.09	0.47
St Dev	0.34	0.08	0.36	0.08	0.17	0.04	0.37	0.08
Count	8	8	8	8	8	8	8	8
	After 50 Cycles				After 75 Cycles			
	Mating		Unmating		Mating		Unmating	
	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)
Minimum	2.05	0.46	2.18	0.49	2.14	0.48	2.36	0.53
Maximum	2.58	0.58	3.07	0.69	2.62	0.59	3.42	0.77
Average	2.24	0.50	2.51	0.57	2.32	0.52	2.77	0.62
St Dev	0.16	0.04	0.31	0.07	0.15	0.03	0.35	0.08
Count	8	8	8	8	8	8	8	8
	After 100 Cycles							
	Mating		Unmating					
	Newtons	Force (Lbs)	Newtons	Force (Lbs)				
Minimum	2.22	0.50	2.58	0.58				
Maximum	2.67	0.60	3.56	0.80				
Average	2.37	0.53	2.95	0.66				
St Dev	0.16	0.03	0.33	0.08				
Count	8	8	8	8				

DATA SUMMARIES Continued**INSULATION RESISTANCE (IR):**

	Pin to Pin		
	Mated	Unmated	Unmated
Minimum	S2M/T2M	S2M	T2M
Initial	45000	45000	45000
Thermal	45000	45000	45000
Humidity	13200	45000	45000

	Pin to Closest Metallic Hardware		
	Mated	Unmated	Unmated
Minimum	S2M/T2M	S2M	T2M
Initial	45000	45000	45000
Thermal	45000	45000	45000
Humidity	45000	45000	45000

DIELECTRIC WITHSTANDING VOLTAGE (DWV):

Voltage Rating Summary	
Minimum	S2M/T2M
Break Down Voltage	1659
Test Voltage	1244
Working Voltage	415

Pin to Pin	
Initial Test Voltage	Passed
After Thermal Test Voltage	Passed
After Humidity Test Voltage	Passed

Pin to Closest Metallic Hardware	
Initial Test Voltage	Passed
After Thermal Test Voltage	Passed
After Humidity Test Voltage	Passed

DATA SUMMARIES Continued**LLCR Mating/Unmating Durability Group**

- 1). A total of 128 signals points were measured.
- 2). EIA-364-23, *Low Level Contact Resistance Test Procedure for Electrical Connectors and Sockets*.
- 3). A computer program, *LLCR 221.exe*, ensures repeatability for data acquisition.
- 4). The following guidelines are used to categorize the changes in LLCR as a result of stress.
 - a. $\leq +5.0$ mOhms: -----Stable
 - b. $+5.1$ to $+10.0$ mOhms: -----Minor
 - c. $+10.1$ to $+15.0$ mOhms: -----Acceptable
 - d. $+15.1$ to $+50.0$ mOhms: -----Marginal
 - e. $+50.1$ to $+1000$ mOhms: -----Unstable
 - f. $> +1000$ mOhms: -----Open Failure

LLCR Measurement Summaries by Pin Type				
Date	2026/1/20	2026/1/23	2026/2/2	2026/2/13
Room Temp (Deg C)	23	23	23	23
Rel Humidity (%)	50	45	50	50
Technician	Danton Gan	Danton Gan	Danton Gan	Danton Gan
mOhm values	Actual Initial	Delta Cycles	Delta Therm Shck	Delta Humidity
Pin Type: Signal 1				
Average	8.44	0.21	0.19	0.23
St. Dev.	0.13	0.23	0.09	0.21
Min	7.85	0	0	0
Max	8.77	1.69	0.52	1.43
Summary Count	128	128	128	128
Total Count	128	128	128	128

LLCR Delta Count by Category						
	Stable	Minor	Acceptable	Marginal	Unstable	Open
mOhms	≤ 5	>5 & ≤ 10	>10 & ≤ 15	>15 & ≤ 50	>50 & ≤ 1000	>1000
Cycles	128	0	0	0	0	0
Therm Shck	128	0	0	0	0	0
Humidity	128	0	0	0	0	0

EQUIPMENT AND CALIBRATION SCHEDULES**Equipment #:** HZ-TCT-01**Description:** Normal force analyzer**Manufacturer:** Mecmesin Multitester**Model:** Mecmesin Multitester 2.5-i**Serial #:** 08-1049-04**Accuracy:** Last Cal: 6/25/2025, Next Cal: 6/24/2026**Equipment #:** HZ-THC-01**Description:** Humidity transmitter**Manufacturer:** Thermtron**Model:** SM-8-8200**Serial #:** 38846**Accuracy:** Last Cal: 6/27/2025, Next Cal: 6/26/2026**Equipment #:** DG-HPT-01**Description:** Hipot Safety Tester**Manufacturer:** Vitrek**Model:** V73**Serial #:** 025866**Accuracy:**

... Last Cal: 06/16/2025, Next Cal: 06/15/2026

Equipment #: HZ-MO-05**Description:** Micro-ohmmeter**Manufacturer:** Keithley**Model:** 3706**Serial #:** 1285188**Accuracy:** Last Cal: 11/14/2025, Next Cal: 11/13/2026**Equipment #:** HZ-TSC-01**Description:** Vertical Thermal Shock Chamber**Manufacturer:** Cincinnatti Sub Zero**Model:** VTS-3-6-6-SC/AC**Serial #:** 10-VT14994**Accuracy:** See Manual

... Last Cal: 06/26/2025, Next Cal: 06/25/2026

Equipment #: HZ-MO-01**Description:** Multimeter /Data Acquisition System**Manufacturer:** Keithley**Model:** 2700**Serial #:** 1199807**Accuracy:** See Manual

... Last Cal: 07/01/2025, Next Cal: 06/30/2026

EQUIPMENT AND CALIBRATION SCHEDULES**Equipment #:** ACLM-01**Description:** Accelerometer**Manufacturer:** PCB Piezotronics**Model:** 352C03**Serial #:** 115819**Accuracy:** See Manual

... Last Cal: 07/18/2025, Next Cal: 07/18/2026