Registration No. 1293

JAXA-QTS-2180/105B 6 February 2025

Superseding JAXA-QTS-2180/105A Cancelled 6 February 2025

TEMPERATURE SENSORS, PLATINUM, SURFACE TYPE, RADIATION HARDENED, LONG-LIFE, HIGH RELIABILITY, SPACE USE, DETAIL SPECIFICATION FOR

Prepared and Established by Mitsubishi Heavy Industries, Ltd.

Issued by Japan Aerospace Exploration Agency

This document is the English version of JAXA QTS/ADS which was originally written and authorized in Japanese and carefully translated into English for international users. If any question arises as to the context or detailed description, it is strongly recommended to verify against the latest official Japanese version.

The release date of the English version of this specification: 28 May 2025.

JAX 6	JAXA-QTS-2180/105B 6 February 2025		J A X A Parts Specification	Page	-i-			
	Record of revisions							
Rev.	Date		Description					
NC	11 Aug. 2009	Original						
A	24 Sept. 2015	Reflected the o	change of document by Mitsubishi He VET25109 (Rev. A)	avy Industries, Ltd.				
В	6 Feb. 2025	Reflected the of Document No:	change of document by Mitsubishi He VET25109 (Rev. B)	avy Industries, Ltd.				
			The remainder of this page is intention	onally left blank.				

JAXA-QTS-2180/105B 6 February 2025		J A X A Parts Specification	Page	— ii —		
		· ·		VET25109		
Revision history						
Rev. Date		Description				
NC 11 Aug. 2009	Original					
A 24 Sept. 2015	 (1) Cover particular change in change in (2) Clarified to Parage Mease Parage And control of the parage and control of th	 (1) Cover page: The name of organization was changed (however no name change in English) (2) Clarified the description Paragraph 3 and Table 5 Interchangeability: Reflected and clarified Measured temperature range. Paragraphs 4.2 and 4.3: Added the description of test in Tables 5, 6, and 7 and clarified the test items whose results will be substitued by the inspection data during manufacturing process 				
B 6 Feb. 2025	(1) Added me · Table "-196 · Table calibl applid · Adde	easured temperature condition a 1 and Table 2: Added the measured °C to +400°C" (for 90 series) and "-18 a 3: Changed the description from "the ation temperature level" to "the measured cable caliblation temperature level" in d new part numbers to Figure 1, and	temperature range 33°C to +400°C" (fo series and the appured temperature ra "interchangeability Note (1) to Tables	s of or 91 series.) olicable ange and the " 4 and 5.		

VET25109 Contents				
Contents 1. GENERAL 1 1.1 Scope 1 1.2 Part Number 1 1.3 Rating 1 1.3 Rating 1 2. APPLICABLE DOCUMENTS 2 2.1 Applicable Documents 2 2.2 Reference Documents 2 3. REQUIREMENTS 2 3.1 Performance 2 3.2 Externals, Dimensions and Markings 4 3.2.1 Externals, Dimensions, Mass and Interface 4 3.2.2 Markings 6 4. QUALITY ASSURANCE PROVISION 7 4.1 In-process Inspection 7 4.2 Qualification Test 7 4.3 Quality Conformance Inspection 9				
1. GENERAL 1 1.1 Scope 1 1.2 Part Number 1 1.3 Rating 1 2. APPLICABLE DOCUMENTS 2 2.1 Applicable Documents 2 2.2 Reference Documents 2 3. REQUIREMENTS 2 3.1 Performance 2 3.2 Externals, Dimensions and Markings 4 3.2.1 Externals, Dimensions, Mass and Interface 4 3.2.2 Markings 6 4. QUALITY ASSURANCE PROVISION 7 4.1 In-process Inspection 7 4.2 Qualification Test 7 4.3 Quality Conformance Inspection 9				
1.1 Scope. 1 1.2 Part Number. 1 1.3 Rating 1 1.3 Rating 1 2. APPLICABLE DOCUMENTS. 2 2.1 Applicable Documents. 2 2.2 Reference Documents. 2 3. REQUIREMENTS 2 3.1 Performance 2 3.1 Performance 2 3.2 Externals, Dimensions and Markings 4 3.2.1 Externals, Dimensions, Mass and Interface. 4 3.2.2 Markings 6 4. QUALITY ASSURANCE PROVISION 7 4.1 In-process Inspection 7 4.2 Qualification Test 7 4.3 Qualification Test 7 4.3 Quality Conformance Inspection 9				
1.1 Scope 1.2 Part Number 1.3 Rating 1.3 Rating 1 1.3 2. APPLICABLE DOCUMENTS 2 2.1 Applicable Documents 2 2.2 Reference Documents 2 3. REQUIREMENTS 2 3.1 Performance 2 3.2 Externals, Dimensions and Markings 4 3.2.1 Externals, Dimensions, Mass and Interface 4 3.2.2 Markings 6 4. QUALITY ASSURANCE PROVISION 7 4.1 In-process Inspection 7 4.2 Qualification Test 7 4.3 Quality Conformance Inspection 9				
1.2 Part Number 1.3 Rating 1.3 Rating 1 2 APPLICABLE DOCUMENTS 2 2.1 Applicable Documents 2 2.2 Reference Documents 2 3. REQUIREMENTS 2 3.1 Performance 2 3.2 Externals, Dimensions and Markings 4 3.2.1 Externals, Dimensions, Mass and Interface 4 3.2.2 Markings 6 4. QUALITY ASSURANCE PROVISION 7 4.1 In-process Inspection 7 4.2 Qualification Test 7 4.3 Quality Conformance Inspection 9				
1.3 Nating 1 2. APPLICABLE DOCUMENTS 2 2.1 Applicable Documents 2 2.2 Reference Documents 2 3. REQUIREMENTS 2 3.1 Performance 2 3.2 Externals, Dimensions and Markings 4 3.2.1 Externals, Dimensions, Mass and Interface 4 3.2.2 Markings 6 4. QUALITY ASSURANCE PROVISION 7 4.1 In-process Inspection 7 4.2 Qualification Test 7 4.3 Quality Conformance Inspection 9				
2.1 Applicable Documents. 2 2.2 Reference Documents. 2 3. REQUIREMENTS 2 3.1 Performance 2 3.2 Externals, Dimensions and Markings 4 3.2.1 Externals, Dimensions, Mass and Interface 4 3.2.2 Markings 6 4. QUALITY ASSURANCE PROVISION 7 4.1 In-process Inspection 7 4.2 Qualification Test 7 4.3 Quality Conformance Inspection 9				
2.1 Applicable Documents. 2 2.2 Reference Documents. 2 3. REQUIREMENTS 2 3.1 Performance 2 3.2 Externals, Dimensions and Markings 4 3.2.1 Externals, Dimensions, Mass and Interface 4 3.2.2 Markings 6 4. QUALITY ASSURANCE PROVISION 7 4.1 In-process Inspection 7 4.2 Qualification Test 7 4.3 Quality Conformance Inspection 9				
3. REQUIREMENTS 2 3.1 Performance 2 3.2 Externals, Dimensions and Markings 4 3.2.1 Externals, Dimensions, Mass and Interface 4 3.2.2 Markings 6 4. QUALITY ASSURANCE PROVISION 7 4.1 In-process Inspection 7 4.2 Qualification Test 7 4.3 Quality Conformance Inspection 9				
3.1 Performance 2 3.2 Externals, Dimensions and Markings 4 3.2.1 Externals, Dimensions, Mass and Interface 4 3.2.2 Markings 6 4. QUALITY ASSURANCE PROVISION 7 4.1 In-process Inspection 7 4.2 Qualification Test 7 4.3 Quality Conformance Inspection 9				
3.2 Externals, Dimensions and Markings 4 3.2.1 Externals, Dimensions, Mass and Interface 4 3.2.2 Markings 6 4. QUALITY ASSURANCE PROVISION 7 4.1 In-process Inspection 7 4.2 Qualification Test 7 4.3 Quality Conformance Inspection 9				
3.2.1 Externals, Dimensions, Mass and Interface				
3.2.2 Markings				
4. QUALITY ASSURANCE PROVISION 7 4.1 In-process Inspection 7 4.2 Qualification Test 7 4.3 Quality Conformance Inspection 9				
 4.1 In-process Inspection				
4.2 Qualification Test				
4.3 Quality Conformance Inspection				
4.4 Long-term Storage				
4.4.1 Disposition of Products Stored for a Long Time at Manufacturer's Site				
4.4.2 Storage by Purchaser10				
4.5 Changes of Tests and Inspections10				
5. PREPARATION FOR DELIVERY10				
6. NOTE10				

	JAXA-QTS-2180/105B 6 February 2025	Par	J A X A ts Specification	Page	- 1 -	
	TE		E SENSORS. PLATINU	IM.	VET25109	
SURFACE TYPE, RADIATION HARDENED.						
LONG-LIFE, HIGH RELIABILITY,						
		SF	PACE USE,			
		DETAIL SF	PECIFICATION FOR			
۱.	GENERAL					
.1	Scope					
	This specification estal	plishes the deta	ail requirements and qu	ality assurance	provisions for	
	long-life, radiation hard	lened, surface	type, platinum tempera	ture sensors (he	reinafter	
	referred to as "tempera	iture sensors")	of the space use, high	reliability, platinu	um	
	temperature sensors (JAXA-QTS-218	30).			
1.2	Part Number					
	The part number is as s	hown in the ex	ample below. The deta	ails shall be shov	vn in Table 1.	
(Example) N1043 / 501 - UU - UU Compatible special fluid Maximum operating pressure Measured temperature range Series (90, 91)						
			R	auirement		
	ltem	2180 Paragraph	90 series	91 s	eries	
Mea	sured temperature range	3.7 a)	3: -260°C to +400°C 4: -196°C to +400°C	6: -183°C to 7: -196°C to	+400°C +400°C	
Max	imum operating pressure	3.7 b)	0: Atmospheric pressur	e 0: Atmosphe	ric pressure	
~	anatible special fluid	3371	0: Cryogenic fluid	0: Cryogenic	a : .	

1.3 Rating

The ratings shall be in accordance with Table 2.

JAXA-QTS-2180/105B 6 February 2025		J A X A Parts Specification	1	Page	- 2 -
		Table 2. Ratings			VET25109
Item		Specif	ication		
nem	90 series		91 series		
Measured temperature range (Operating temperature range)	-260°C to +400°C/(-260°C to +400°C) -196°C to +400°C/(-260°C to +400°C)		-183°C -196°C	C to +400°C/(-196°(C to +400°C/(-196°(C to +400°C) C to +400°C)
Maximum Operating Pressure	Atmospheric pressure			Atmospheric pres	sure
Supply Current	Max. 5mA		Max. 5mA		
Nominal Resistance	2000±4Ω (at 0°C)			500±1Ω (at 0°C)	

2. APPLICABLE DOCUMENTS

2.1 Applicable Documents

The applicable documents shall be as specified in paragraph 2.1 of JAXA-QTS-2180.

2.2 Reference Documents

The reference documents shall be as specified in paragraph 2.2 of JAXA-QTS-2180.

3. REQUIREMENTS

The requirements shall be as specified in paragraph 3 of JAXA-QTS-2180 and as follows.

3.1 Performance

The performance of the temperature sensors shall be as shown in Table 3.

JAXA-QTS-2180/105B JAXA 6 February 2025 Parts Specification Page - 3	3 –
---	-----

VET25109

ltem	Paragraph in JAXA-QTS-2180	Performance
Parts and materials		
Machined parts	3.3.1.1	As specified in JAXA-QTS-2180.
Compatibility with fluids	3.3.2.1	Shall be compatible with the basic fluids and special fluids A-1 and B.
Outgassing	3.3.2.2	As specified in JAXA-QTS-2180.
Radiation hardness	3.3.2.3	As specified in JAXA-QTS-2180.
Design and structure	3.4	As specified in JAXA-QTS-2180.
Externals, dimensions and markings	3.5	As specified in Figures 1 and 2.
Workmanship		
Structure (DPA)	3.6.1	(1) Internal structure and main dimensions(2) Welding state(3) Soldering state
Cleanliness	3.6.2	As specified in JAXA-QTS-2180. For the particle count, the requirement level B shall apply.
Basic characteristics		
Proof pressure	3.8.1.1	As specified in JAXA-QTS-2180.
Leakage	3.8.1.2	Not applicable
Insulation resistance	3.8.1.3	As specified in JAXA-QTS-2180. The measuring method shall be as specified in paragraph 4.6.4.3 b).
Dielectric withstanding voltage	3.8.1.4	As specified in JAXA-QTS-2180.
Interchangeability	3.8.1.5	As specified in Tables 4 and 5. The applicable levels of the calibration temperature shall be as follows. Measured temperature range: -260 to +400°C : Level B Measured temperature range: -183 to +400°C : Level D Measured temperature range: -196 to +400°C : Level K
Other characteristics		
Strength of extension wire connection	3.8.2.1	Not applicable
Over current	3.8.2.2	As specified in JAXA-QTS-2180.
Pressure dependence	3.8.2.3	Not applicable
Repeatability	3.8.2.4	90 series: Within ±0.65°C (level A) (equivalent to ±5.18Ω at 0°C) 91 series: Within ±0.60°C (level A) (equivalent to ±1.19Ω at 0°C)
Response time	3.8.2.5	Maximum of 0.4 seconds.
Self-heating	3.8.2.6	The temperature rise due to self-heating shall be: 90 series: 1°C max. at an input level of 160mW. 91 series: 1°C max. at an input level of 100mW.
Thermoelectromotive force	3.8.2.7	As specified in JAXA-QTS-2180.

Table 3. Performance (1/2)

JAXA-QTS-2180/105B 6 February 2025			J A X A rts Specification	Page	- 4 -
					VET25109
Table 3. Performance (2/2)					
	Item	Paragraph in JAXA-QTS-2180	P	erformance	
Er	vironmental characteristics				
	Dynamic pressure	3.8.3.1	Not applicable		
	Sine wave vibration (I)	3.8.3.2	As specified in JAXA-QTS-2	2180	

Not applicable

followings shall apply.

91 series: Levels D, J and K

90 series: Level H

As specified in JAXA-QTS-2180. For test condition, the

	Shock	3.8.3.5	As specified in JAXA-QTS-2180. For test condition, the followings shall apply. 90 series: Level B 91 series: Levels B and D
	Radiation hardness	3.8.3.6	As specified in JAXA-QTS-2180.
	Pressure cycle	3.8.3.7	Not applicable
	Humidity resistance	3.8.3.8	Not applicable
Lif	e		
	Storage life	3.8.4.1	As specified in JAXA-QTS-2180. For test condition, the level A shall apply.
	Operating life (High temperature life)	3.8.4.2.1	The change in temperature/resistance characteristics shall be as follows. 90 series: within $\pm 0.65^{\circ}$ C (level C) 91 series: within $\pm 0.60^{\circ}$ C (level C)
	Operating life (Temperature cycling)	3.8.4.2.2	The change in temperature/resistance characteristics shall be as follows. 90 series: within $\pm 0.65^{\circ}$ C (level D) 91 series: within $\pm 0.60^{\circ}$ C (level D)
De	estructive characteristics		
	Burst pressure	3.8.5.1	As specified in JAXA-QTS-2180, however the requirement in paragraph 3.8.5.1b) shall not apply.

3.2 Externals, Dimensions and Markings

Sine wave vibration (II)

Random vibration

3.8.3.3

3.8.3.4

3.2.1 Externals, Dimensions, Mass and Interface

The externals, dimensions, mass and interface of the temperature sensor shall be as shown in Figure 1.





JAXA-QTS-2180/105B 6 February 2025	J A X A Parts Specification	Page	- 6 -
			VET25109

The marking on the temperature sensors shall be as specified in Figure 2. The location of the marking shall be specified in Figure 1.



3.2.2

Markings

— Most significant digit number of base resistance

QML manufacturer's serial number, starting with "0001"

Figure 2. Marking

Temperature	Resistance (Ω)		Temperature	Resistance (Ω)	
(°C) ⁽¹⁾	Minimum	Maximum	(°C)	Minimum	Maximum
-260	2.62	8.62	60	2466.84	2480.84
-253	9.86	14.46	80	2621.94	2637.54
-240	48.89	53.49	100	2776.12	2793.12
-220	174.76	182.56	120	2929.30	2947.70
-200	339.79	348.39	140	3081.47	3101.27
-196	374.26	382.86	160	3231.84	3254.64
-183	486.86	495.46	180	3382.12	3406.12
-180	512.84	521.44	200	3531.30	3556.70
-160	684.82	693.42	220	3679.48	3706.28
-140	854.34	862.74	240	3826.78	3854.78
-120	1021.43	1029.83	260	3972.29	4003.09
-100	1186.80	1195.00	280	4117.61	4149.61
-80	1350.62	1358.82	300	4261.94	4295.14
-60	1513.27	1521.47	320	4405.29	4439.69
-40	1675.03	1683.03	340	4547.64	4583.24
-20	1835.87	1843.87	360	4688.31	4726.51
0	1996.00	2004.00	380	4828.68	4868.08
20	2154.18	2163.78	400	4968.16	5008.56
40	2311.42	2322.42	-	-	-

Table 4. Interchangeability (90 series)

Note: ⁽¹⁾ Measured temperature range: Values below the lower limit temperature are for reference only.

JAXA-QTS-2180/105B	JAXA	Davia	7
6 February 2025	Parts Specification	Page	- / -

Temperature	Resista	nce (Ω)	Temperature	Resistance (Ω)		
(°C) ⁽¹⁾	Minimum	Maximum	(°C)	Minimum	Maximum	
-200	84.79	86.99	100	693.59	697.79	
-196	93.41	95.61	120	731.79	736.39	
-183	121.59	123.79	140	769.76	774.76	
-180	128.10	130.30	160	807.38	812.98	
-160	171.17	173.37	180	844.87	850.87	
-140	213.61	215.81	200	882.11	888.51	
-120	255.56	257.56	220	919.22	925.82	
-100	296.95	298.95	240	955.99	962.99	
-80	337.96	339.96	260	992.43	1000.03	
-60	378.64	380.64	280	1028.73	1036.73	
-40	419.02	421.02	300	1064.79	1073.19	
-20	459.14	461.14	320	1100.71	1109.31	
0	499.00	501.00	340	1136.30	1145.30	
20	538.43	540.83	360	1171.55	1181.15	
40	577.61	580.41	380	1206.76	1216.56	
60	616.35	619.95	400	1241.63	1251.83	
80	655.14	658.94	—	—	—	

Table 5. Interchangeability (91 series)

VET25109

Note ⁽¹⁾ Measured temperature range: Values below the lower limit temperature are for reference only.

4. QUALITY ASSURANCE PROVISION

The quality assurance provisions shall be in accordance with paragraph 4 of JAXA-QTS-2180 and as follows.

4.1 In-process Inspection

The in-process inspection shall be in accordance with paragraph 4.3 of JAXA-QTS-2180.

4.2 Qualification Test

The qualification test shall be in accordance with paragraph 4.4 of JAXA-QTS-2180 and Table 6.

<text> Image: basis in the transmer interview of the transmer interview of transmer interview o</text>	JAXA-QTS-2180/105B 6 February 2025				J A X A Parts Specification		Page		- 8 -	
GroupSub groupOrderImage: Test itemRequirement paragraphTest method paragraphNumber of samplesQuantity 	VET25109 Table 6. Qualification Test									
$ \begin{array}{ c c c c c } & & & & & & & & & &$	Group	Sub- group	Order		Test item	Requiremer paragraph	t Test method paragraph	Numl of samp	ber lles	Quantity of allowable defects
$ \begin{array}{ c c c c c } & & & & & & & & & &$			1	External and othe	ls, dimensions, marking ers	3.5	4.6.2			
I Basic characteristics testsIInsulation resistanceNANANAB1Insulation resistance3.8.1.34.6.4.34.6.4.34.6.4.4C1Interchangeability(1)3.8.1.54.6.4.50.6.4.50.6.4.5D1Humidity resistanceNANANAE1Cleanliness(1)3.6.24.6.3.20.6.3.2IStrength of extension wire connectionNANANA2Over current3.8.2.24.6.5.24.6.5.23Pressure dependenceNANANA2Response time3.8.2.54.6.5.53Self-heating3.8.2.64.6.5.63Self-heating3.8.2.74.6.5.7P1Sinusoidal vibration (I)3.8.3.24.6.6.2C1Random vibration3.8.3.34.6.6.6F1Sinusoidal vibration (II)3.8.3.24.6.6.5F1Sinusoidal vibration (II)NANAIIIPressure cycleNANAIII1Humidity resistanceNANAIII1Sinusoidal vibration (III)NANAIII1Sinusoidal vibration (III)NANAIII1Sinusoidal vibration (III)NANAIII1Sinusoidal vibration (III)NANAIII1Sinusoidal vibration (III)NANAIIII1Sinuso		A	2	Proof pr	essure ⁽¹⁾	3.8.1.1	4.6.4.1			
$ \begin{array}{ c c c c c c } & H & 1 & Insulation resistance & 3.8.1.3 & 4.6.4.3 \\ \hline 2 & Dielectric withstanding voltage & 3.8.1.4 & 4.6.4.4 \\ \hline 2 & 1 & Interchangeability^{(1)} & 3.8.1.5 & 4.6.4.5 \\ \hline D & 1 & Humidity resistance & NA & NA \\ \hline D & 1 & Interchangeability^{(1)} & 3.6.1.5 & 4.6.4.5 \\ \hline D & 1 & Interchangeability^{(1)} & 3.6.1.5 & 4.6.4.5 \\ \hline D & 1 & Interchangeability^{(1)} & 3.6.2 & 4.6.3.2 \\ \hline D & 1 & Interchangeability^{(1)} & 3.6.2 & 4.6.3.2 \\ \hline D & 1 & Interchangeability^{(1)} & 3.6.2 & 4.6.5.2 \\ \hline D & 1 & Interchangeability^{(1)} & 3.6.2 & 4.6.5.2 \\ \hline D & 1 & Interchangeability^{(1)} & 3.8.2.2 & 4.6.5.2 \\ \hline D & 1 & Repeatability & 3.8.2.4 & 4.6.5.4 \\ \hline D & 1 & Repeatability & 3.8.2.5 & 4.6.5.5 \\ \hline 3 & Self-heating & 3.8.2.5 & 4.6.5.5 \\ \hline 3 & Self-heating & 3.8.2.6 & 4.6.5.6 \\ \hline 2 & Response time & 3.8.2.7 & 4.6.5.7 \\ \hline 1 & Interchangeability & 3.8.3.2 & 4.6.6.2 \\ \hline D & 1 & Shock & 3.8.3.2 & 4.6.6.2 \\ \hline D & 1 & Shock & 3.8.3.4 & 4.6.6.4 \\ \hline D & 1 & Shock & 3.8.3.5 & 4.6.6.5 \\ \hline E & 1 & Radiation hardness & 3.8.3.6 & 4.6.6.6 \\ \hline F & 1 & Sinusoidal vibration (II) & 3.8.3.2 & 4.6.5.2 \\ \hline H & 1 & Humidity resistance & NA & NA \\ \hline M & 1 & Humidity resistance & NA & NA \\ \hline M & 1 & Regeability & 3.8.4.1 & 4.6.7.1 \\ \hline M & 1 & Humidity resistance & NA & NA \\ \hline M & 1 & Humidity resistance & NA & NA \\ \hline M & 1 & Storage life & 3.8.4.1 & 4.6.7.1 \\ \hline M & 1 & Storage life & 3.8.4.1 & 4.6.7.1 \\ \hline M & 1 & Storage life & 3.8.4.1 & 4.6.7.1 \\ \hline M & 1 & Storage life & 3.8.4.1 & 4.6.7.1 \\ \hline M & 1 & Destructive ressure & S.8.5.1 & 4.6.8.1 \\ \hline M & 1 & Destructive ressure & 3.8.5.1 & 4.6.8.1 \\ \hline M & 1 & Destructive ressure & 3.8.5.1 & 4.6.8.1 \\ \hline M & 1 & Order Mark & Order & 0 \\ \hline M & 1 & Order Mark & Order & 0 \\ \hline M & 1 & Order Mark & Order & 0 \\ \hline M & 1 & Order Mark & Order & 0 \\ \hline M & 1 & Order Mark & Order & 0 \\ \hline M & 1 & Order Mark & Order & 0 \\ \hline M & 1 & Order Mark & Order & 0 \\ \hline M & 1 & Order Mark & Order & 0 \\ \hline M & 1 & Order Mark & Order & 0 \\ \hline M & 1 & Order Mark & Order & 0 \\ \hline M & 1 & Order Mark & Order & 0 \\ \hline M$	I		3	Leakage	9	NA	NA			
$ \begin{array}{c c c c c c } \label{eq:characteristics} & c c c c c c c } & c c c c c c c c c c c c c c c c c c $	Basic	D	1	Insulatio	on resistance	3.8.1.3	4.6.4.3	4		0
Image: Solution of the sector of the sec	characteristics tests	ם	2	Dielectri	c withstanding voltage	3.8.1.4	4.6.4.4			
$ \begin{array}{ c c c c } \hline \begin{tabular}{ c c } \hline \hline \begin{tabular}{ c c } \hline \hline \begin{tabular}{ c c } \hline \begin{tabular}{ c c } \hline \begin{tabular}{ c c } \hline \hline \begin{tabular}{ c c c } \hline \hline \begin{tabular}{ c c c } \hline \hline \begin{tabular}{ c c } \hline \hline \ \ \ \end{tabular} ta$	10010	С	1	Intercha	ngeability ⁽¹⁾	3.8.1.5	4.6.4.5			
$ \begin{array}{ c c c c c } \hline \begin{tabular}{ c c c c c } \hline \begin{tabular}{ c c c c c c } \hline \begin{tabular}{ c c c c c c } \hline \begin{tabular}{ c c c c c c } \hline \begin{tabular}{ c c c c c c } \hline \begin{tabular}{ c c c c c c } \hline \begin{tabular}{ c c c c c c c } \hline \begin{tabular}{ c c c c c c c c c c c c c c c c c c c$		D	1	Humidity	y resistance	NA	NA			
$ \begin{array}{c c c c c c c } & \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \$		Е	1	Cleanlin	ess ⁽¹⁾	3.6.2	4.6.3.2			
$ \begin{array}{c c c c c c c } & A & 2 & Over current & 3.8.2.2 & 4.6.5.2 \\ \hline & 3 & \mbox{Pressure dependence} & NA & NA \\ \hline & 3 & \mbox{Pressure dependence} & NA & NA \\ \hline & 1 & Repetation in the interval of th$		A	1	Strength connect	n of extension wire ion	NA	NA			
$ \begin{array}{c c c c c c } \label{eq:restrict} $ $ $ $ $ $ $ $ $ $ $ $ $ $ $ $ $ $ $$			2	Over current		3.8.2.2	4.6.5.2			
$ \begin{array}{ c c c c c c c } \label{eq:characteristics} \\ \mbox{tests} \\ \mbox{test} \\ \mbox{tests} \\ \$	Other		3	Pressur	e dependence	NA	NA	,	0	
$ \begin{array}{c c c c c c } \mbox{tests} & & & \\ \begin{tabular}{ c c c c } & & & & & & & & & & & & & & & & & & &$	characteristics	в	1	Repeata	ability	3.8.2.4	4.6.5.4	4		
$ \begin{array}{c c c c c c c } \hline \begin{tabular}{ c c c c c } \hline \begin{tabular}{ c c c c c c } \hline \begin{tabular}{ c c c c c } \hline \begin{tabular}{ c c c c c } \hline \begin{tabular}{ c c c c c c } \hline \begin{tabular}{ c c c c c c c } \hline \hline \begin{tabular}{ c c c c c c c } \hline \hline \begin{tabular}{ c c c c c c c c c c c c c c c c c c c$	tests		2	Response time		3.8.2.5	4.6.5.5			
$ \begin{array}{ c c c c } \hline \begin{tabular}{ c c } \hline \hline \begin{tabular}{ c c } \hline tabua$			3	Self-heating		3.8.2.6	4.6.5.6			
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$			4	Thermoelectromotive force		3.8.2.7	4.6.5.7			
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		А	1	Dynamic pressure		NA	NA			
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		В	1	Sinusoidal vibration (I)		3.8.3.2	4.6.6.2			
$ \begin{array}{ c c c c c } \label{eq:linear} \begin{tabular}{ c c c c c } \hline \mbox{III} & \mb$		С	1	Random vibration		3.8.3.4	4.6.6.4			
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	111	D	1	Shock		3.8.3.5	4.6.6.5	2	0	
F1Sinusoidal vibration (II)NANAG1Pressure \because leNANAH1Humidity \rightarrow sistanceNANAIV Life testsA1Storage life3.8.4.14.6.7.12Operating lifeHigh temperature life3.8.4.2.14.6.7.2.12V Destructive testA1Destructive pressure3.8.5.14.6.8.120V ConstructionA1Construction (DPA)3.6.14.6.3.120-1Parts and materials3.3N/A(2)N/A	Environmental tests	Е	1	Radiatio	on hardness	3.8.3.6	4.6.6.6			
$ \begin{array}{c c c c c c c c } \hline G & 1 & \mbox{Pressure \squareV$} & \mbox{NA} & \mbox{NA}$	10010	F	1	Sinusoid	dal vibration (II)	NA	NA	1		
H1Humidity resistanceNANAIV Life testsA1Storage life $3.8.4.1$ $4.6.7.1$ 20 V Destructive test A 1Storage life $3.8.4.2.1$ $4.6.7.2.1$ 20 V Destructive testA1Destructive pressure $3.8.4.2.2$ $4.6.7.2.2$ 20 V Destructive testA1Destructive pressure $3.8.5.1$ $4.6.8.1$ 20 VI ConstructionA1Construction (DPA) $3.6.1$ $4.6.3.1$ 20 $ -$ 1Parts and materials 3.3 N/A (2) N/A		G	1	Pressur	e cycle	NA	NA			
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $		Н	1	Humidity	y resistance	NA	NA			
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	N /		1	Storage	life	3.8.4.1	4.6.7.1			
Life tests2lifeTemperature cycling $3.8.4.2.2$ $4.6.7.2.2$ V Destructive testA1Destructive pressure $3.8.5.1$ $4.6.8.1$ 20VI ConstructionA1Construction (DPA) $3.6.1$ $4.6.3.1$ 201Parts and materials 3.3 N/A (2) N/A	IV	А	0	Operatir	ng High temperature life	3.8.4.2.1	4.6.7.2.1	2	0	
V Destructive testA1Destructive pressure3.8.5.14.6.8.120VI ConstructionA1Construction (DPA)3.6.14.6.3.1201Parts and materials3.3N/A(2)N/A	Life tests		2	life	Temperature cycling	3.8.4.2.2	4.6.7.2.2			
VI Construction A 1 Construction (DPA) 3.6.1 4.6.3.1 2 0 - - 1 Parts and materials 3.3 N/A (2) N/A	V Destructive test	А	1	Destruc	tive pressure	3.8.5.1	4.6.8.1	2		0
1 Parts and materials 3.3 N/A ⁽²⁾ N/A	VI Construction	A	1	Constru	ction (DPA)	3.6.1	4.6.3.1	2		0
	-	-	1	Parts ar	nd materials	3.3	N/A	(2)		N/A

Notes: ⁽¹⁾ These tests may be performed during the manufacturing process. (Some items are substituted by the inspection data during manufacturing process) ⁽²⁾ Data to certify compliance with design specifications shall be submitted.

JAXA-QTS-2180/105B	JAXA	Dama	0
6 February 2025	Parts Specification	Page	- 9 -

VET25109

4.3 Quality Conformance Inspection

The quality conformance inspection shall be in accordance with Paragraph 4.5 of JAXA-QTS-2180, and Tables 7 and 8.

Table 7.	Quality Conformance Inspection (Group A)
----------	--

Group	Sub- group	Order	Inspection item	Requirement paragraph	Test method paragraph	Number of samples	Quantity of allowable defects
l (Basic characteristics test)	A	1	Externals, dimensions, marking and others	3.5	4.6.2		0
		2	Proof pressure ⁽¹⁾	3.8.1.1	4.6.4.1		
		3	Leakage	NA	NA		
	В	1	Insulation resistance	3.8.1.3	4.6.4.3	All	
		2	Dielectric withstanding voltage	3.8.1.4	4.6.4.4		
	С	1	Interchangeability ⁽¹⁾	3.8.1.5	4.6.4.5		
	D	1	Humidity resistance	NA	NA		
	E	1	Cleanliness ⁽¹⁾	3.6.2	4.6.3.2		

Note: ⁽¹⁾ These inspections may be performed during the manufacturing process. (Some items are substituted by the inspection data during manufacturing process)

Table 6. Quality Comornance inspection (Group D)	Table 8.	Quality Conformance	Inspection	(Group B)
--	----------	---------------------	------------	-----------

Group	Sub- group	Order	Inspection item		Requirement paragraph	Test method paragraph	Number of samples	Quantity of allowable defects
		1	Strength o connectior	f extension wire	NA	NA		
	A	2	Over curre	ent	3.8.2.2	4.6.5.2		
ll Other		3	Pressure of	lependence	NA	NA		
characteristics		1	Repeatabi	lity	3.8.2.4	4.6.5.4	1	0
tests	D	2	Response	time	3.8.2.5	4.6.5.5		
	В	3	Self-heatir	ıg	3.8.2.6	4.6.5.6		
			4	Thermoele	ectromotive force	3.8.2.7	4.6.5.7	
III Environmental tests	А	1	Random v	ibration	3.8.3.4	4.6.6.4		
	В	1	Shock		3.8.3.5	4.6.6.5	1	0
IV Life tests	A		Operating	High temperature life	3.8.4.2.1	4.6.7.2.1	1	0
				life	Temperature cycling	3.8.4.2.2	4.6.7.2.2	
V Destructive test	A	1	Destructive pressure		3.8.5.1	4.6.8.1	1	0
VI Construction	А	1	Construction (DPA)		3.6.1	4.6.3.1	1	0

			[
J	IAXA-QTS-2180/105B 6 February 2025	J A X A Parts Specification	Page	– 10 –					
	,	•		VET25109					
4.4	Long-term Storage			12120100					
	The long-term storage shall be in accordance with paragraph 4.7 of JAXA-QTS-2180 and as follows.								
4.4.1	Disposition of Products	Stored for a Long Time at Manufac	cturer's Site						
	The shipment of the temperature sensors stored for 12 months or more after quality conformance inspection (group A) shall be in accordance with paragraph 4.7.1 of JAXA-QTS-2180.								
4.4.2	Storage by Purchaser								
	If the package needs to be opened for an incoming inspection, it shall be opened in a clean room or in the area where cleanliness level is well controlled. After the package is opened, the products shall not be touched with bare hands.								
4.5	Changes of Tests and Ins	pections							
	There is no change to the test or inspection from the in-process inspection and quality conformance inspection specified in JAXA-QTS-2180.								
5.	PREPARATION FOR DEL	IVERY							
	The preparation for deliver	y shall be in accordance with parag	graph 5 of JAXA-	QTS-2180.					
6.	NOTE								
	Refer to the paragraph 6 of	f JAXA-QTS-2180.							