PRODUCT SPECIFICATION

	No. T-2-54154	Date Issued: September 17, 2013
Customer:	Revised:	Date Revised:
Title Subject: XR Connector		Issued by: Osaka Engineering Center

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This product specification covers the specifications and the performances of the XR Connector.

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1. PART NAME, PART NUMBER & DRAWING NUMBER

Part Name	Part Number	Drawing Number
Socket	*XR-6Y-P	KRD-19570

Note$_1$: Number of circuits in one or two-digit figures is indicated in *.

Applicable header (Product on the market)

Part Name		Part Number
Header (Manufactured by A company)	Dip type	For perpendicular type: □-175487-□ For parallel type: □-175489-□
	Wire-to-wire type	For wire to wire: □-175694-□

2. CONSTRUCTION, DIMENSIONS, MATERIAL & SURFACE FINISH

Construction and dimensions shall be in accordance with the referenced drawing.
Material and surface finish shall be as specified below.

Construction		Material	Surface Finish, etc.
Socket	Contact	Phosphor bronze	Tin-plated
	Housing	PA 66 (Glass-filled)	UL94V-0

3. CHARACTERISTICS

Items		Rated value etc.
Current rating	When AWG#28 applied.	1A (AC, DC)
	When AWG#26 applied.	2A (AC, DC)
Voltage rating		100V (AC, DC)
Temperature range		-25 to +85 °C (Note$_2$)
Applicable wire (Note$_3$)	UL style	UL1061, UL10272
	Conductor size	AWG#28 to AWG#26
	Conductor spec.	Tin-plated annealed copper wire (7-stranded wire)
	Insulation O.D.	ϕ 0.7 to 1.0mm

Note$_2$: Including temperature rise in applying an electrical current.
Note$_3$: The wire to be applied shall be previously confirmed by JST.
Contact JST for other UL style.

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4. PERFORMANCES

(1) When tested in accordance with the test conditions and methods specified in each item, each requirement shall be met.

(2) Unless otherwise specified, tests shall be conducted under the following ambient conditions specified in JIS C 60068-1 (IEC 60068-1) [Basic Environmental Testing Procedures General and Guidance].

Temperature: 15 to 35 °C
Relative humidity: 25 to 75 %

(3) For environmental tests, as a rule, the specimen assembled for actual use and the wire of AWG#26 UL1061 style shall be used.

4.1 Appearance

Requirement: There shall be no crack, deformation or discoloration which may affect the performance specified in the specification.

Test method: Visual inspection.

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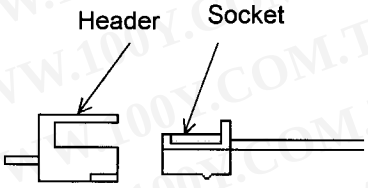
4.2 Mechanical Performance Test

4.2.1 Insertion Force (I.F.) & Withdrawal Force (W.F.)

Requirement:

Header for Dip type Unit: N

No. of circuits	At Initial		At 30th
	I.F. (max.)	W.F. (min.)	W.F. (min.)
3	34.3	4.9	4.9
15	73.5	13.7	13.7

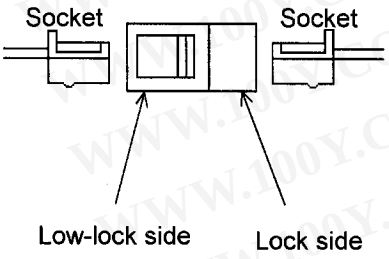


Header for Dip type

Header for Wire-to-Wire type (Low-lock side)

Unit: N

No. of circuits	At Initial		At 30th
	I.F. (max.)	W.F. (min.)	W.F. (min.)
3	34.3	4.9	4.9
15	73.5	13.7	13.7



Header for Wire-to-Wire type

Header for Wire-to-Wire type (Lock side)

Unit: N

No. of circuits	At Initial		At 30th
	I.F. (max.)	W.F. (min.)	W.F. (min.)
3	49.0	7.8	7.8
15	88.2	16.7	16.7

Test method: The socket and a header shall be mated and unmated on the same axis. Initial insertion and withdrawal forces and withdrawal force at 30th shall be measured. (Testing speed: 1 to 5mm/sec.)

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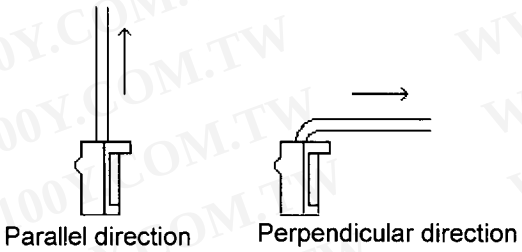
4.2.2 Wire Retention Force

Requirement:

UNIT: N

Wire to be used	Parallel direction	Perpendicular direction
AWG #28, #26	10 min.	8 min.

Test method: Pulling load shall be applied to the correctly terminated wire in the direction as shown in the figure below. The load to pull the wire out of the socket or break the wire shall be measured. (Testing speed: 1 to 5mm/sec.)

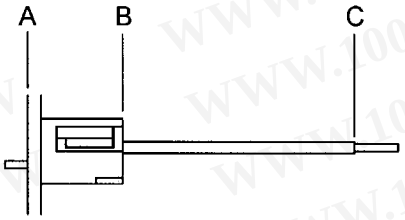


4.3 Electrical Performance Test

4.3.1 Contact Resistance

Requirement: Initial; 20mΩ max.
After tests; 30mΩ max.

Test method: Contact resistance between points A and C of the specimen assembled for actual use shall be measured under the following conditions. Contact resistance between points A and B shall be obtained by subtracting the wire resistance between points B and C from the total resistance.



Test current: 10mA (DC)
Open voltage: 20mV max.
Wire to be used: AWG #26, 28

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4.3.2 Current Continuity

Requirement: There shall be no current discontinuity longer than 1 microsecond during a vibration test.

Test method: Each circuit of the specimen assembled for actual use shall be connected in series and the test current of 10mA (DC) shall be applied to them. Current discontinuity longer than 1 microsecond during the test shall be checked by a continuity meter.

4.3.3 Insulation Resistance

Requirement: Initial; 1000MΩ min.
After tests; 500MΩ min. (Humidity & thermal shock tests)

Test method: 500V DC shall be applied between adjacent contacts of the mated specimen to measure the insulation resistance. (The header shall not be soldered.)

4.3.4 Dielectric Withstanding Voltage

Requirement: There shall be no breakdown or flashover.

Test method: Testing voltage specified below shall be applied between adjacent contacts of the mated specimen for one minute. (The header shall not be soldered.)

Initial: 1000V AC
After tests: 500V AC (Humidity & thermal shock tests)

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4.4 Environmental Test

4.4.1 Durability

Requirement: Contact resistance shall be 30mΩ max. after the test.

Test method: The socket shall be mated and unmated with the header. After repeated 30 cycles, contact resistance shall be measured.

4.4.2 Humidity

Requirement: Contact resistance shall be 30mΩ max. after the test.
Insulation resistance shall be 500MΩ min. after the test.
There shall be no breakdown or flashover on the dielectric withstanding voltage test.

Test method: The specimen shall be placed in a humidity chamber of the following conditions. After the test, contact resistance, insulation resistance and dielectric withstanding voltage shall be measured.

Temperature:	40 ± 2 °C
Relative humidity:	90 to 95 %
Period:	240 hours

4.4.3 Heat Aging

Requirement: Contact resistance shall be 30mΩ max. after the test.

Test method: The specimen shall be placed in a heat oven of the following conditions. After the test, contact resistance shall be measured.

Temperature:	85 ± 2 °C
Period:	250 hours

4.4.4 Thermal Shock

Requirement: Contact resistance shall be 30mΩ max. after the test.
Insulation resistance shall be 500MΩ min. after the test.
There shall be no breakdown or flashover on the dielectric withstanding voltage test.

Test method: The specimen shall be subjected to a thermal shock test of the following conditions. After the test, contact resistance, insulation resistance and dielectric withstanding voltage shall be measured.

1 cycle consists of:
- 55 ± 3 °C for 30 minutes
+85 ± 2 °C for 30 minutes

Total cycles: 25 cycles

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4.4.5 Hydrogen Sulfide Gas

Requirement: Contact resistance shall be 30mΩ max. after the test.

Test method: The specimen shall be subjected to hydrogen sulfide gas of the following conditions. After the test, contact resistance shall be measured.

Concentration:	3 ± 1ppm
Temperature:	40 ± 2 °C
Relative humidity:	80 ± 5 %
Period:	96 hours

4.4.6 Salt Spray

Requirement: Contact resistance shall be 30mΩ max. after the test.

Test method: The specimen shall be subjected to a salt spray test of the following conditions. After the test, it shall be washed with running water and dried naturally before the measurement of contact resistance.

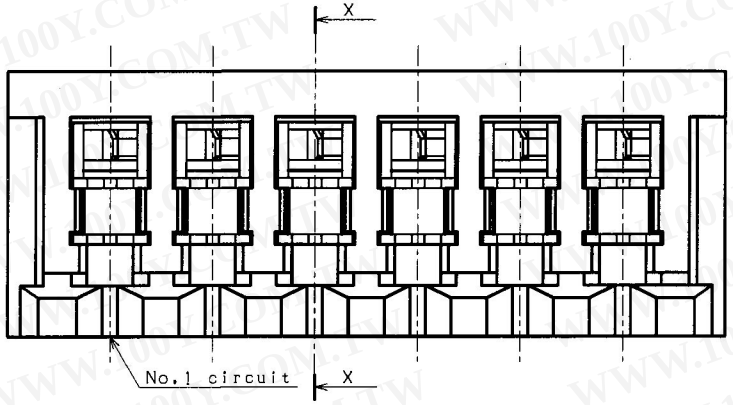
Temperature:	35 ± 2 °C
Concentration:	5 % in weight
Period:	48 hours

4.4.7 Vibration

Requirement: Contact resistance shall be 30mΩ max. after the test.
There shall be no current discontinuity longer than 1 microsecond during the test.

Test method: The specimen shall be mounted on a printed circuit board (PCB) and subjected to a vibration test of the following conditions. During the test, current continuity shall be checked. After the test, contact resistance shall be measured.

Frequency:	10-55-10Hz/minute
Amplitude:	1.52mm
Direction:	Each of X,Y,Z-axis directions *Each axis shall be at right angles to others.
Period:	2 hours for each direction



Cir-cuits	△1 Part No.	Dimensions A	B	C
2	02XR-6()-P	6.0	2.0	4.9
3	03XR-6()-P	8.0	4.0	6.9
4	04XR-6()-P	10.0	6.0	8.9
5	05XR-6()-P	12.0	8.0	10.9
6	06XR-6()-P	14.0	10.0	12.9
7	07XR-6()-P	16.0	12.0	14.9
8	08XR-6()-P	18.0	14.0	16.9
9	09XR-6()-P	20.0	16.0	18.9
10	10XR-6()-P	22.0	18.0	20.9
11	11XR-6()-P	24.0	20.0	22.9
12	12XR-6()-P	26.0	22.0	24.9
13	13XR-6()-P	28.0	24.0	26.9
14	14XR-6()-P	30.0	26.0	28.9
15	15XR-6()-P	32.0	28.0	30.9

REV.	DESCRIPTION	DATE	DESIGNED
△1	Color is added and housing configuration is cahnged.	MAY 27.1997	ASANO
△2	Color is added.	JUL. 1.1997	ASANO
△3	Color is added.	JUN.22.1998	MASAKI
△4	Change of configration	JUL.13.1998	MASAKI
△5	Color is added.	AUG. 5.1999	MASAKI
△6	Change of insulation O.D.	FEB.21.2000	MASAKI

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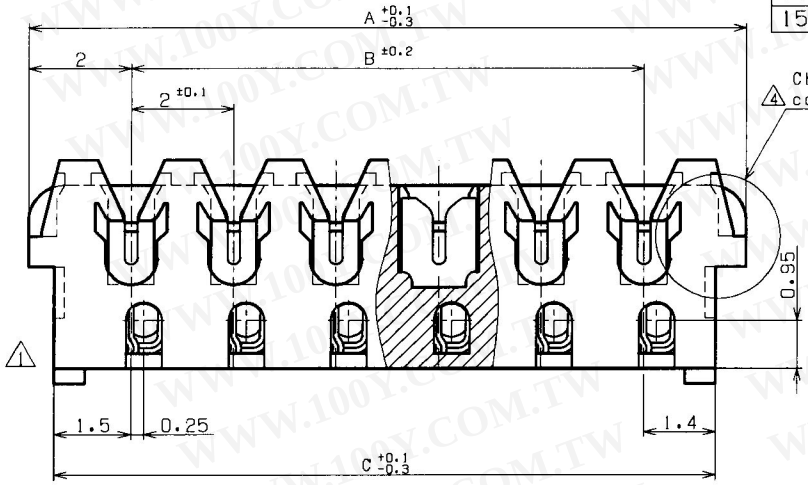

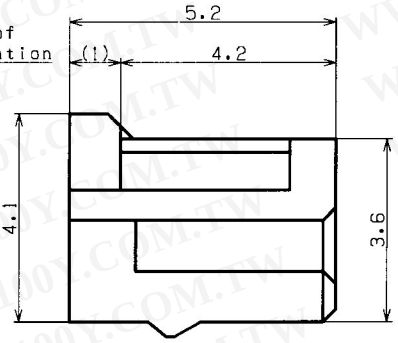

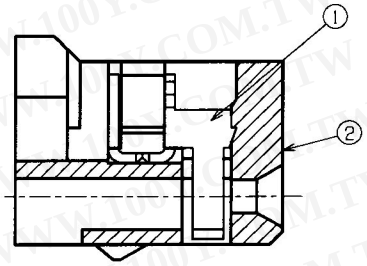

X-X sec.

NOTE
1. Unless otherwise specified,
tolerances are: 0<L≤3.0:±0.3
3.0<L :±0.4
2. Appricable wire: #26AWG, #28AWG, 7 strands
△6 φ0.7
Insuration O.D.: ~~φ0.9~~φ1.0
△1 3. Part No.: ()XR-6()-P
Circuits
Color

	Part No.	Color
△1	()XR-6H-P	Natural(Gray)
△2	()XR-6Y-P	Yellow
△3	()XR-6K-P	Black
△5	()XR-6E-P	Blue

No.	PART NAME	MATERIAL	SURFACE FINISH	REMARKS
2	HOUSING	66NYLON(G.F.)		UL94V-0
1	CONTACT	PHOSPHOR BRONZE	TIN-PLATED	

SIZE	UNIT	SCALE	PROJECTION	DATE
A3	METRIC	10:1		JAN.20.1997

APPROVED	CHECKED	DESIGNED	DRAWN
S.K		K.M	Ma.T

JST J.S.T.MFG.CO, .LTD

CUSTOMER

SERIES NAME	XR CONNECTOR
PART No.	()XR-6()-P △1
DRAWING No.	KRD-19570 R6

EC4109-2

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