

# IP54 HB Protect Cover Series

## 1. INTRODUCTION

### 1.1 Purpose

This document provides the qualification test summary of TE Connectivity IP54 HB protect cover series of HDC connector.

### 1.2 Scope

This specification covers the electrical, mechanical and environmental performance of IP54 HB protect cover series.

### 1.3 Conclusion

Based on the test results, all meet the requirements according to TE Connectivity Design Objectives 108-137461.

### 1.4 Product Description

#### 1.4.1 Hood protect cover

Name	Remarks
HXXB-KDTP-NR	HXXB hood plastic single locking protect cover --- without sealing, nylon rope
HXXB-KDTP/ KDTP-LB	HXXB hood plastic single locking protect cover --- with sealing, nylon rope
HXXB-KDTPM-NR	HXXB hood metal single locking protect cover --- without sealing, nylon rope
HXXB-KDTPM	HXXB hood metal single locking protect cover ---with sealing, nylon rope
HXXB-KDTP-NR	HXXB hood plastic double locking protect cover --- without sealing, nylon rope
HXXB-KDTP	HXXB hood plastic double locking protect cover --- with sealing, nylon rope
HXXB-KDTP-SS	HXXB hood plastic double locking protect cover --- with sealing, SUS rope, without loop
HXXB-KDTP-BO	HXXB hood plastic, 4 ear protect cover --- with sealing, nylon rope

#### 1.4.2 Housing protect cover

Name	Remarks
HXXB-KDBP/ KDBP-R HXXB-KDBP-SS	HXXB housing plastic protect cover, 2 ear/ 4 ear HXXB-KDBP/ KDBP-R --- with nylon rope; HXXB-KDBP-SS --- with stainless steel rope
HXXB-KDBM	HXXB housing metal protect cover, 2 ear/ 4 ear --- with nylon rope

H16B-KDBM-DW/-CW/-G/-DG	H16B housing metal protect cover, 4 ear --- with nylon rope;
HXXB-KDBP	HXXB housing plastic protect cover, screw locking --- without nylon rope;
H32B-KDBP-BOM	H32B housing plastic protect cover --- with nylon rope
H32B-KDBP-BOM-NA	H32B housing plastic protect cover --- without nylon rope

1.5 Qualification Test Sequence

Test or Examination	Test Group				
	A	B	C	D	E
	Test Sequence <sup>1)</sup>				
Visual and dimensional examination	1,3	1,3	1,5	1,5	1,3
Mechanical strength impact	2				
Mechanical Operation (Durability)		2			
Cold			3	3	
Dry Heat			4	4	
Salt Mist Cyclic Test					2
Degree of protection IP5X			2		
Degree of protection IPX4				2	

**\*Notes:**

1) Numbers indicate the sequence in which the tests are performed.

2. TEST PROCEDURE

General			
No.	Test Items	Requirements	Condition according to
2.1	Visual and dimensional examination	Meets requirements of product drawing	Visual and dimensional examination IEC 60512-1-1/-2, Test 1a and 1b

<b>Mechanical</b>			
2.2	Mechanical strength impact	No damage likely to impair function	Dropping height: - 750mm for specimens of mass $\leq$ 250g - 500mm for specimens of mass $>$ 250g Dropping cycles:8 positions in 45° step, one cycles per position IEC 60512-7-2 Test 7b
2.3	Mechanical Operation (Durability)	1) 100 operation cycles 2) No damage likely to impair normal use	Shall operate to open /close the locking system by means of A) a device simulating normal use B) manual open/close 200 Max. cycle per hour

<b>Environmental</b>			
2.4	Cold	No damage likely to impair function	Subject mated specimen to -40°C Duration time:16h, Test Ab Per IEC 60512-11-10 Test 11j (IEC 60068-2-1)
2.5	Dry Heat	No damage likely to impair function	Subject mated specimen to +125°C Duration time:168h Test Bb Per IEC 60512-11-9 Test 11i (IEC 60068-2-2)
2.6	Salt Mist Cyclic Test	No damage likely to impair function	Mated connector and expose to the following salt mist condition. Atmosphere: salt spray from a 5±1% concentration solution; PH value: 6.5~7.2 per IEC60068-2-52, Severity 1, 1 Cycle a. plastic or metal cover with steel locking with color zinc plated, test time: 24H b. metal cover with steel locking with stainless steel, test time: 72H c. plastic locking not applicable

<b>Protection</b>			
2.7	Degree of protection IP5X	IP 5X, No ingress of dust	Test IP 5X according to IEC 60529
2.8	Degree of protection IPX4	IP X4, No ingress of water	Test IP X4 (water jetting) according to IEC 60529 7.3.6.3&7.3.7 of EN61984

3. SUMMARY OF TEST RESULTS:

Examination of product – all test group

Test Group	Test Item	Test Result	Requirement	Judgment
Group A	Visual and dimensional examination	No physical damage	Meets requirements of product drawing	passed
	Mechanical strength impact	No physical damage	No damage likely to impair function	passed
	Visual and dimensional examination	No physical damage	Meets requirements of product drawing	passed
Group B	Visual and dimensional examination	No physical damage	Meets requirements of product drawing	passed
	Mechanical Operation (Durability)	No damage likely to impair function	After 100 operation cycles, No damage likely to impair normal use	passed
	Visual and dimensional examination	No physical damage	Meets requirements of product drawing	passed
Group C	Visual and dimensional examination	No physical damage	Meets requirements of product drawing	passed
	Degree of protection IP5X	No ingress of dust	No ingress of dust	passed
	Cold	No physical damage	No damage likely to impair function	passed
	Dry Heat	No physical damage	No damage likely to impair function	passed
	Visual and dimensional examination	No physical damage	Meets requirements of product drawing	passed
Group D	Visual and dimensional examination	No physical damage	Meets requirements of product drawing	passed
	Degree of protection IPX4	No ingress of water	No ingress of water	passed
	Cold	No physical damage	No damage likely to impair function	passed
	Dry Heat	No physical damage	No damage likely to impair function	passed
	Visual and dimensional examination	No physical damage	Meets requirements of product drawing	passed
Group E	Visual and dimensional examination	No physical damage	Meets requirements of product drawing	passed
	Salt Spray Test	No physical damage	No damage likely to impair function	passed
	Visual and dimensional examination	No physical damage	Meets requirements of product drawing	passed