PRODUCT SPECIFICATION

HPS40-1 2+2
Male Connector 180° / 90° Wire

EPS-100042

HIRSCHMANN
AUTOMOTIVE

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1 General

1.1 Introduction

This product specification is valid for the HPS40-1 2+2 male connector, assembled according to the process specification listed below, and contains the product design and the condition upon delivery, the technical characteristics as well as the qualification inspections performed. In the case of improper application or deviation from specification that results in quality issues, the right of complaint is void.

1.2 Other valid documents

A	Hirschmann product drawing	806-029-…00
B	Interface drawing	805-972-…00
C	Product specification female	EPS-100043-00
D	Working committee directive LV214 (cf. TLF 0214)	Working committee test specification for motor vehicle plug-in connector – version March 2010
E	Working committee directive LV215 (cf. TLF 0214)	Electrics/ electronic requirements of HV-plug-in connectors – Feb.2009
F	German norm DIN EN 60352-2	Solderless electric connections Part 2: crimp connections
G	DIN EN 60664-1	Insulation coordination for electronic equipment in low voltage systems. Part 1: principles, requirement, and tests
H	2000/53/EG	Directive of the European Parliament and of the council on end-of life vehicles incl. attachments; European Union
I	ISO 6469-3	Electric road vehicles – safety specifications Part 3: protection of persons against electric hazards
J	ISO 26053	Road vehicles; degrees of protection (IP-Code); protection against foreign objects, water, and access; electrical equipment;

1.3 Product design

1.3.1 Description

The HPS40-1 2+2 MALE CONNECTOR can only be ordered assembled.

2 Technical product information

The connector can be placed in the entire vehicle if the specified characteristics will not be exceeded. The characteristics are determined by tests (see verification plan) and material datasheets.

2.1 Current class

The connector system fulfills the class 1 and 2.

2.2 Operating condition

Nominal voltage	750 VDC
Maximum altitude	4,000 m
Equipment class:	1
Degree of pollution:	2
Overvoltage category:	1

2.3 Voltage class

class B according to ISO 6469-3
60 VDC < U ≤ 1,000 VDC
25 VAC < Ueff ≤ 707 VAC (15-150 Hz)

2.4 Ambient condition

Permissible temperature range for the plastic used:
-40° C to +140° C according to “temperature collective 4” for 8,000 h
The details of the changes in the properties of the plastics can be found in the plastics data sheets.

“Temperature collective 4” of MBN 10306, 2020-06 or GS 95024-3-1, 2013-07)

Temperature in ° C	Distribution in %
-40	6
23	20
85	65
135	8
140	1

2.5 EMC performance

2.5 mm²	4.0 mm²	6.0 mm²
> 70 dB (10 kHz to 5 MHz) > 65 dB (5 MHz to 500 MHz)		

2.6 Shield area

Shield transfer: 360° circumferential

2.7 IP-Degree of protection

IPxxD (plugged socket plug)
IPxxB (unplugged socket plug)

2.8 Integrated HVIL system

Min. 1.00 mm leading HV Interlock contacts to HV load contact at unmating (nominal 2.00 mm)

2.9 Assembling/ Disassembling (male plug to device)

The HPS40-1 2+2 male connector is designed to mount it one time to the device. At multiple unmating of the HV plug socket from the device, the sealing (O-Ring) must be substituted. Before re-assembling, the plug socket must be checked for damages from the unmating.

2.10 Ampacity/ Derating

Cat. 1 40 A (6.0 mm²)

Further details you can see on HPS40-1 female connector product specification EPS-100043 and EPS-100180!

3 Result of performed tests

3.1 Shield contact resistance

Shield contact resistance R < 10 mΩ (Complete from sheathed cable to the device.)
Imin = 10A; leakage current 60s, 25A

3.2 Watertightness

IP6K9K and IPx8
PG23 acc. to working group inspection guideline LV214 and LV215 (cf. TLF 0214)

3.3 Amount of mating cycles

Max. 50 cycles (Ag)

3.4 Others

Further details you can see on HPS40-1 female connector product specification EPS-100043 and EPS-100180!

4 Table of change

Change description	Change date	Editor
First version		Weiss M.
2.13 Assembling/ Disassembling added		Rümmele M.
Updated picture on the cover sheet		Rümmele M.
Added reference for male connector		Hoor R.
Updated design specifications	06/ 2023	Jussel E-M.
Adjusting data of the bottom line	07/ 2023	Jussel E-M.
Adjusting data of Ambient Condition	10/ 2023	Jussel E-M.