

# WMS-2 HF 2,4 (60X4)RL CUS - Shrink sleeve



0833212

<https://www.phoenixcontact.com/us/products/0833212>

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Shrink sleeve, Roll, white (RAL 9010), cable diameter range: 1.2 ... 2.4 mm: user-defined, Cut, mounting type: slide-on, Number of individual labels: 1, text field height: 4 mm, text field width: 60 mm

## Your advantages

- The hoses are preassembled for optimal use of the material
- The conductor to be marked is simply threaded through the sleeve and fixed by shrinking the sleeve
- WMS ... shrink sleeves provide permanent and captive conductor and cable marking
- The sleeves remain flexible after shrinking
- The shrink sleeves provide additional electrical insulation and mechanical protection for the conductors

## Commercial data

Item number	0833212
Packing unit	1 pc
Minimum order quantity	1 pc
Note	Made to order (non-returnable)
Product key	BG8126
GTIN	4055626044590
Weight per piece (including packing)	99.99 g
Weight per piece (excluding packing)	99.99 g
Country of origin	PL

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## Technical data

### Notes

Material information	<p>The specified minimum wire diameter of the shrink sleeve refers to its use as a marking material and does not guarantee any insulation characteristics once shrunk.</p> <p>Depending on the processed material batch, as well as the storage and processing conditions, the maximum insertable wire diameter may be reduced.</p>
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### Product properties

Product type	Shrink sleeve
Area of application	Railway industry

### Marking

Number of individual labels	1
Number of individual labels per row	1
Printing	user-defined
Slot type	Shrink sleeve
Identification technology	Thermotransfer

### Dimensions

Width	4 mm
Length	60 mm

### Text field

Text field width	60 mm
Text field height	4 mm

### Material specifications

Color	white (RAL 9010)
Material	Polyolefine
Base element material	polyolefine
Shrink rate	2:1
Fire protection for rail vehicles (DIN EN 45545-2) R22	HL 1 - HL 3
Fire protection for rail vehicles (DIN EN 45545-2) R23	HL 1 - HL 3
Fire protection for rail vehicles (DIN EN 45545-2) R24	HL 1 - HL 3
Components	halogen-free
Shrink temperature	> 90 °C

### Cable/line

External cable diameter	1.2 mm ... 2.4 mm
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### Environmental and real-life conditions

#### Ambient conditions

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Ambient temperature (operation)	-30 °C ... 105 °C
Recommended ambient temperature (storage/transport)	10 °C
Recommended humidity (storage/transport)	45 % ... 55 % (Storage in a dry and dark place in the original packaging is recommended)

## Test for substances that would hinder coating with paint or varnish

Testing for paint wetting impairment substances (LABS-conformity)	VW PV 3.10.7:2005-02
Result	Test passed

## Test for substances that would hinder coating with paint or varnish

Testing for paint wetting impairment substances (LABS-conformity)	VDMA 24364:2018-05
Result	Test passed

## Scratch resistance

Specification	EN ISO 1518-1:2023 (following)
Requirements	≥ 5 N
Result	Test passed

## Tesafilm test

Specification	DIN EN ISO 2409:2020-12 (following)
Result	Test passed

## UV resistance

Specification	DIN EN ISO 4892-2:2021-11 (following)
Result	Test passed
Test duration	96 h
Procedure	Artificial irradiation.

## Temperature resistance

Specification	ANSI/UL 969-2018:03 (following)
Test duration	240 h
Rating 125 °C (150 °C)	Test passed

## Wipe resistance of inscriptions

Specification	DIN EN 61010-1 (VDE 0411-01):2020-03 DIN EN 62208 (VDE 0660-511):2012-06 (in parts)
Isopropanol (99%) [67-63-0]	Test passed
n-Hexane [CAS No. 110-54-3]	Test passed
Water + Petroleum ether [CAS No. 64742-82-1]	Test passed
Sodium hydroxide 0.1 mol/l [CAS No. 1310-73-2]	Test passed
Ethanol (99 %) [CAS No. 64-17-5]	Test passed

## Immersion in chemicals, oil & fuel

Specification	ISO 175:2010 (following)
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Test duration	168 h
Sodium hydroxide 0.1 mol/l [CAS No. 1310-73-2]	Test passed
Saltwater (saturated 350 g/l) [CAS No. - ]	Test passed
Ethanol (99 %) [CAS No. 64-17-5]	Test passed
Acetone (99 %) [CAS No. 67-64-1]	Test passed
Methylethylketone (MEK) [CAS No. 78-93-3]	Test passed
Diesel [CAS No. 68476-34-6]	Test passed
IRM 901	Test passed
IRM 902	Test passed
IRM 903	Test passed

## Testing in a condensation changing climate in the presence of sulfur dioxide

Specification	EN ISO 22479:2022-06
Result	Test passed
Procedure	Method B
Cycles	2

## Salt spray test

Specification	DIN EN IEC 60068-2-11 (VDE 0468-2-11):2022-10
Result	Test passed
Test duration	96 h

## Standards and regulations

Wipe resistance	DIN EN 61010-1 (VDE 0411-1)
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## Standards

Standards/regulations	EN 45545-2
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## Mounting

Mounting type	slide-on
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## Classifications

### ECLASS

ECLASS-13.0	27281102
ECLASS-15.0	27281102

### ETIM

ETIM 10.0	EC001530
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### UNSPSC

UNSPSC 21.0	39131500
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## Environmental product compliance

### EU RoHS

Fulfills EU RoHS substance requirements	Yes, No exemptions
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### EU REACH SVHC

REACH candidate substance (CAS No.)	No substance above 0.1 wt%
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