

Project-ID: **95313016****Report for fire performance according to EN 45545-2
Fire protection on railway vehicles****Product:**OCTOPUS OS20 / OS30 / OS24 / OS34
with the following possible product codes:

OS

[2|3]

[0|4]

-

[00|08|10|11|12|14|15]

[08|12|16|20|24|28]

[00|02|04]

[T5|R5|T6|R6|1M|1S|1P|1L|1A|1B|1C|1D|4M|4S|4P|4L|4A|4B|4C|4D|5M|5S|5P|5L|5A|5B|5C|5D|99]

[T5|R5|T6|R6|1M|1S|1P|1L|1A|1B|1C|1D|4M|4S|4P|4L|4A|4B|4C|4D|5M|5S|5P|5L|5A|5B|5C|5D|99]

T5

-

[V|T]

[BB|HH|FF|N9|M9|QQ|PP]

[Z9|Y9|U9|UY|UT|US|T9|TY|S9|SY|R9]

nn nn n n nn nn.n.nn

(n = any number or letter)

AGILE Doc-ID:

000185510DNR

Date

07.02.2019

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Releases

Date:

Approved by: Simone Kiesel

Date: 07. Feb 19

Conclusion

The total combustible mass of the components that must be verified is < 100gr.

The device is compliant to the requirements of EN 45545 – 2 Hazard Level HL3.



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1. History

Rel.	Date	Released	Author	Changes
1v0	25.03.2015	yes	Sebastian Mayer	Document created
2v0	06.05.2015	yes	Sebastian Mayer	Glow Wire Test 837-718-x01 and 837-719-x01 passed
3v0	20.05.2015	yes	Sebastian Mayer	Product - Product Code more detailed
4v0	07.02.2019	yes	Simone Kiesel	New issue date of standard; additional product code

2. Scope

This report describes the procedure and the tests that are done to evaluate whether the device meets the requirements according to EN 45545-2: 2013 + A1:2015.

3. Equipment under test

Product Code	Order Number	Serial Number
OCTOPUS tested in single parts - this tests covers all possible product codes.	942-133-999	-

4.1 Essential fire safety objectives

The design of rolling stock and the products used shall incorporate the aim of limiting fire development should an ignition event occur so that an acceptable level of safety is achieved.

4.2 Hazard level

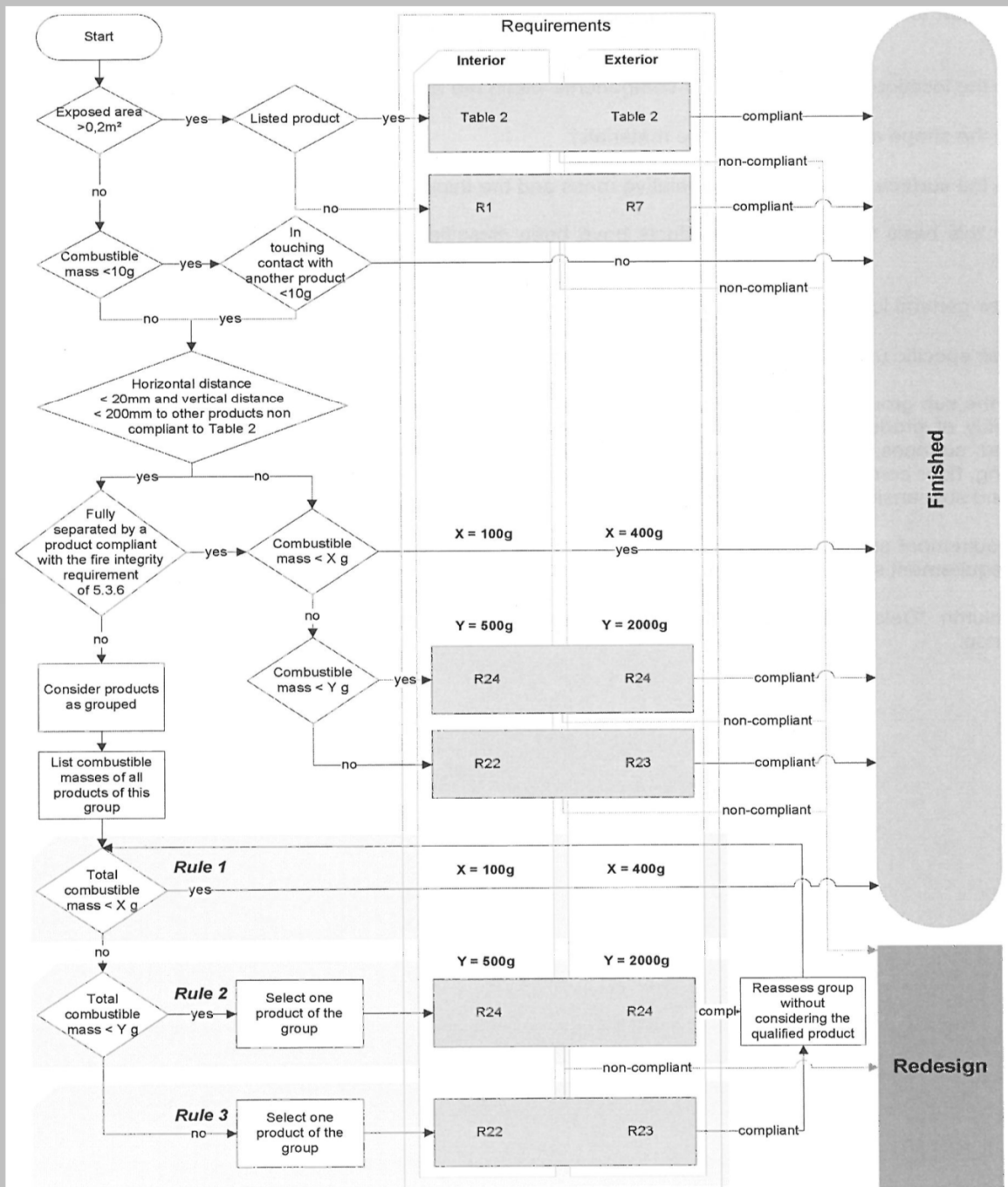
The Hazard level for the device under test is: HL3

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5. Test procedure

According to EN 45545-2 capture 4.3 there are no requirements to products with a combustible mass of < 10 g not in touching contact with another unclassified product and the exposed area is < 0,2m². For grouped products no requirements apply to the products if the combustible mass is < 100 g. The assessment process for all parts of the device is visualized in the following flow chart (Figure 1).

Figure 1:



**HIRSCHMANN**

A BELDEN BRAND

Hirschmann Automation and Control GmbH
Stuttgarter Str. 45-51
72654 Neckartenzlingen, Germany

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5.1 Evaluation of components

SAP BOM Pos.	Hirschmann Part number	Hirschmann part description	max. quantity	combustible mass per unit [gr]	comments	total combustible mass [gr]
0001	Z14551 942133999					
0019	Gehäuse:				pos. 0020 to pos. 0050: only one is installed, 0050 ist worst case	
0020	742632001	OS2, Gehäuse 8/16TX mit FX	1	0,0000	metal part, powder coated (10)	
0030	742632002	OS2, Gehäuse 8/16TX ohne FX	1	0,0000	metal part, powder coated (10)	
0031	742632003	OS2, Gehäuse 8/16TX ohne FX (2 xPower)	1	0,0000	metal part, powder coated	
0040	742633001	OS2, Gehäuse 24TX mit FX	1	0,0000	metal part, powder coated (11)	
0050	742633002	OS2, Gehäuse 24TX ohne FX	1	13,0000	metal part, powder coated	13,000
0060	737763001	OCTOPUS 8M, Light-Pipe	47	0,0939		4,414
0070	737893002	OCTOPUS 16M, Gehäuse Rückwand (neu)	1	0,0000	metal part	
0080	737894002	OS2 16TX, Dichtung leitfähig	1	0,0000	9,8 g, either pos. 0080 or 0100. 0100 is worst case.	
0085	737894003	OS2 16TX, Dichtung (EMV06)	1	0,0000		
0090	737899002	OCTOPUS 24M, Gehäuse Rückwand (neu)	1	0,0000	metal part	
0100	737900002	OS2 24TX, Dichtung leitfähig	1	11,2000		11,200
0110	255962000	ZYL-SCHR.M 4X16 NRST	10	0,0000	metal part	
0120	742643001	OS2, M12 Verschluss versenkt	1	0,0000	metal part	
0130	211740000	Gew.-Schutzkappe M12X1 rot	1	0,0000	only used for shipping	
0135	742405100	OpenBAT-F,Verschlusschr.M12 Stiffflansch	1	0,0000	metal part	
0136	219368000	O-RING 9,25X1,78 (NBR-LABSFREI -40 GRAD)	1	0,1224	density 1,42 g/cm ³	0,122
0140	211801000	Laschenstopfen Ø12 x 1,5 natur-PE-LD	1	0,0000	not used in approvals/ declarations "S9" or "US"	
0150	742276001	OCTOPUS, Verschlusschraube	1	0,0000	metal part	
0160	219379000	O-RING 7X1 (FKM-LABSFREI -40 GRAD) GRUEN	1	0,0444		0,044
0170	742785001	Verschlusschraube fuer M12x1 Aussengew.	2	0,0000	UL94 V0, see 000190075DNR	
0199	Kühlbleche:					
0200	742624002	OS2, Kuehlblech Baseboard EMV	1	0,0000	metal part	
0205	742624003	OS2, Kuehlblech Baseboard (EMV06)	1	0,0000	metal part	
0210	742625001	OS2, Kuehlblech SFP Cage	1	0,0000	metal part	
0220	742626001	OS2, Halteblech Kühlbleche	1	0,0000	metal part	
0230	742640001	OS2, Haltewinkel PWR-LP	1	0,0000	metal part	
0235	742640002	OS2, Haltewinkel PWR-LP (EMV06)	1	0,0000	metal part	
0240	742646001	OS2, Kühlblech PWR-UWE	1	0,0000	metal part	
0299	Wärmeleitpads:					
0300	742657001	OS2, Wärmeleitpad 25x25x2,0	1	0,0000	UL94 V0, see 000185867DNR	
0310	742657002	OS2, Wärmeleitpad 25x38x1,0	1	0,0000	UL94 V0, see 000185867DNR	
0320	742657003	OS2, Wärmeleitpad 33x38x1,0	1	0,0000	UL94 V0, see 000185867DNR	
0330	742657004	OS2, Wärmeleitpad 51x38x1,0	1	0,0000	UL94 V0, see 000185867DNR	
0340	742657005	OS2, Wärmeleitpad 43x58x2,0	1	0,0000	UL94 V0, see 000185867DNR	
0350	742657007	OS2, Wärmeleitpad 29x31x1,0	2	0,0000	UL94 V0, see 000185867DNR	
0360	742658001	OS2, Wärmeleitpad 23x23x2,5	4	0,0000	UL94 V0, see 000185867DNR	
0370	742659001	OS2, Wärmeleitpad 11x11x3,0	2	0,0000	UL94 V0, see 000185867DNR	
0380	742660001	OS2, Wärmeleitpad 27x59x0,5	1	0,0000	UL94 V0, see 000185867DNR	
0390	742481002	OS20/24, Wärmeleitpad 38x31x2,5	3	0,0000	UL94 V0, see 000185867DNR	
0400	737746003	MS4128-5, Wärmeleitpad (20x20x2)	2	0,0000	UL94 V0, see 000185867DNR	
0449	Leiterplatten Baseboard:					
					All PCBs fulfill the requirements of table 2 EN45545 - R25, Glow wire test @ 850°C If suitable products, which achieve the requirements are not available on the market, the electronics devices on printed boards are approved on functional necessity. According to Capture 4.7 of EN 45545-2.	
0450	837713005	OS2, LP bestückt (Baseboard 0 FPGA)	1	0,0000	PCB 742-623-001 glow wire tested @ 960°C; test report see 000185505DNR	
0455	837713105	OS2, LP bestückt (Baseboard 0 FPGA) CC	1	0,0000	PCB 742-623-001 glow wire tested @ 960°C; test report see 000185505DNR	

0460	837713205	OS2, LP bestückt (Baseboard 1 FPGA)	1	0,0000	PCB 742-623-001 glow wire tested @ 960°C; test report see 000185505DNR
0465	837713305	OS2, LP bestückt (Baseboard 1 FPGA) CC	1	0,0000	PCB 742-623-001 glow wire tested @ 960°C; test report see 000185505DNR
0470	837713405	OS2, LP bestückt (Baseboard 2 FPGA)	1	0,0000	PCB 742-623-001 glow wire tested @ 960°C; test report see 000185505DNR
0475	837713505	OS2, LP bestückt (Baseboard 2 FPGA) CC	1	0,0000	PCB 742-623-001 glow wire tested @ 960°C; test report see 000185505DNR
0499	Leiterplatten Power Supply:				
0500	837712005	OS2, LP bestückt PWR LV 30W (24V)	1	0,0000	PCB 742-620-001 glow wire tested @ 960°C; test report see 000185506DNR
0505	837712105	OS2, LP bestückt PWR LV 30W (24V) CC	1	0,0000	PCB 742-620-001 glow wire tested @ 960°C; test report see 000185506DNR
0510	837712205	OS2, LP bestückt PWR LV 30W (36V 48V)	1	0,0000	PCB 742-620-001 glow wire tested @ 960°C; test report see 000185506DNR
0515	837712305	OS2, LP bestückt PWR LV 30W (36V 48V) CC	1	0,0000	PCB 742-620-001 glow wire tested @ 960°C; test report see 000185506DNR
0520	837647001	RSPE, Power Supply-LP best. H/H 30Watt	1	0,0000	PCB glow wire tested @ 960°C; test report see 000185507DNR
0525	837647101	RSPE,Power Supply-LP best. H/H 30Watt CC	1	0,0000	PCB glow wire tested @ 960°C; test report see 000185507DNR
0535	837718101	OS2, PWR Supply L/L 30W+ 60W PoE CC	1	0,0000	PCB glow wire tested @ 960°C; test report see 000186798DNR
0545	837719101	OS2, PWR Supply HV 30W+ 60W PoE CC	1	0,0000	PCB glow wire tested @ 960°C; test report see 000186799DNR
0546	837648005	RSPE, Power Supply-LP bestückt PoE (L/L)	1	0,0000	PCB 742-563-001
0547	837648105	RSPE, Power Supply-LP best. PoE (L/L) CC	1	0,0000	PCB 742-563-001
0549	Leiterplatten Mediamodule 4:				
0550	837715925	OS2, LP best. (Media.) 4FE 4FE (neu)	1	0,0000	PCB 742-622-003 glow wire tested @ 850°C; test report see 000209657DNR
0555	837715935	OS2, LP best. (Media.) 4FE 4FE CC (neu)	1	0,0000	PCB 742-622-003 glow wire tested @ 850°C; test report see 000209657DNR
0599	Leiterplatten Mediamodule 8:				
0600	837-714-405	Media 4GE Tx+ 8FE	1		unused
0605	837-714-415	Media 4GE Tx+ 8FE CC	1		unused
0610	837714525	OS2, LP best. (Media.) 4GE 8FE PoE (neu)	1	0,0000	PCB 742-621-003 glow wire tested @ 850°C; test report see 000209656DNR
0615	837714535	OS2, LP best. (Media.) 4GE 8FE PoE CC neu	1	0,0000	PCB 742-621-003 glow wire tested @ 850°C; test report see 000209656DNR
0620	837-714-605	4GE Tx+ 8FE Relay	1		unused
0625	837-714-615	4GE Tx+ 8FE Relay CC	1		unused
0630	837-714-705	4GE Tx+ 8FE PoE Relay	1		unused
0635	837-714-715	4GE Tx+ 8FE PoE Relay CC	1		unused
0640	837-715-405	Media 4FE Tx+ 8FE	1		unused
0645	837-715-415	Media 4FE Tx+ 8FE CC	1		unused
0650	837715525	OS2, LP best. (Media.) 4FE 8FE PoE (neu)	1	0,0000	PCB 742-622-003 glow wire tested @ 850°C; test report see 000209657DNR
0655	837715535	OS2, LP best. (Media.) 4FE 8FE PoE CC (neu)	1	0,0000	PCB 742-622-003 glow wire tested @ 850°C; test report see 000209657DNR
0660	837-715-605	Media 4FE Tx+ 8FE Relay	1		unused
0665	837-715-615	Media 4FE Tx+ 8FE Relay CC	1		unused
0670	837-715-705	Media 4FE Tx+ 8FE PoE Rel.	1		unused
0675	837-715-715	Media 4FE Tx+ 8FE PoE Rel. CC	1		unused
0680	837714805	OS2, LP best. 4GE 8FE PoE Rel. ICOMERA	1	0,0000	PCB 742-621-001 glow wire tested @ 850°C; test report see 000197187DNR
0685	837714815	OS2, LP best. 4GE 8FE PoE Rel. IM CC	1	0,0000	PCB 742-621-001 glow wire tested @ 850°C; test report see 000197187DNR
0699	Leiterplatten Mediamodule 16:				
0700	837-714-005	Media.4GE Tx+ 16FE	1		unused
0705	837-714-015	Media 4GE Tx+ 16FE CC	1		unused
0710	837714125	OS2, LP best. (Media.) 4GE 16FE PoE (neu)	1	0,0000	PCB 742-621-003 glow wire tested @ 850°C; test report see 000209656DNR
0715	837714135	OS2, LP best. (Media.) 4GE 16FE PoE CC (neu)	1	0,0000	PCB 742-621-003 glow wire tested @ 850°C; test report see 000209656DNR
0720	837-714-205	Media 4GE Tx+ 16FE Relay	1		unused
0725	837-714-215	Media 4GE Tx+ 16FE Relay CC	1		unused
0730	837714325	OS2, LP best. (Media.) 4GE 16FE PoE Rel.	1	0,0000	PCB 742-621-003 glow wire tested @ 850°C; test report see 000209656DNR
0735	837714335	OS2, LP best. (Med.)4GE 16FE PoE Rel. CC	1	0,0000	PCB 742-621-003 glow wire tested @ 850°C; test report see 000209656DNR
0740	837-715-025	Media 4FE Tx+ 16FE (neu)	1	0,0000	PCB 742-622-003 glow wire tested @ 850°C; test report see 000209657DNR
0745	837-715-035	Media 4FE Tx+ 16FE CC (neu)	1	0,0000	PCB 742-622-003 glow wire tested @ 850°C; test report see 000209657DNR
0750	837715105	OS2, LP best. (Media.) 4FE 16FE PoE	1	0,0000	PCB 742-622-001 glow wire tested @ 960°C; test report see 000185508DNR
0755	837715135	OS2, LP best. (Media.) 4FE 16FE PoE CC (neu)	1	0,0000	PCB 742-622-003 glow wire tested @ 850°C; test report see 000209657DNR
0760	837-715-205	Media 4FE Tx+ 16FE Relay	1		unused
0765	837-715-215	Media 4FE Tx+ 16FE Relay CC	1		unused
0770	837715325	OS2, LP best. (Media.) 4FE 16FE PoE Rel.	1	0,0000	PCB 742-622-003 glow wire tested @ 850°C; test report see 000209657DNR
0775	837715335	OS2, LP best. (Med.)4FE 16FE PoE Rel. CC	1	0,0000	PCB 742-622-003 glow wire tested @ 850°C; test report see 000209657DNR
0780	837714925	OS2, LP best. 4GE 16FE PoE REL. IM (neu)	1	0,0000	PCB 742-621-003 glow wire tested @ 850°C; test report see 000209656DNR
0785	837714935	OS2, LP best. 4GE 16FE PoE Rel. IM CC neu	1	0,0000	PCB 742-621-003 glow wire tested @ 850°C; test report see 000209656DNR
0799	Leiterplatten Mediamodule 24:				
0800	837-716-025	OS2, LP best. (Media.) 4GE 24FE (neu)	1	0,0000	PCB 742-634-003 glow wire tested @ 960°C; test report see 000185508DNR
0805	837-716-035	OS2, LP best. (Media.) 4GE 24FE CC (neu)	1	0,0000	PCB 742-634-003 glow wire tested @ 960°C; test report see 000185508DNR

0810	837716125	OS2, LP best. (Media.) 4GE 24FE PoE	1	0,0000	PCB 742-634-003 glow wire tested @ 960°C; test report see 000185508DNR	
0815	837716135	OS2, LP best. (Media.) 4GE 24FE PoE CC	1	0,0000	PCB 742-634-003 glow wire tested @ 960°C; test report see 000185508DNR	
0820	837-716-205	Media 4GE Tx+ 24FE Relay	1		unused	
0825	837-716-215	Media 4GE Tx+ 24FE Relay CC	1		unused	
0830	837716305	OS2, LP best. (Media.) 4GE 24FE PoE Rel.	1	0,0000	PCB 742-634-001 glow wire tested @ 960°C; test report see 000185508DNR	
0831	837716325	OS2, LP best. (Media.) 4GE 24FE PoE Rel.	1	0,0000	PCB 742-634-003 glow wire tested @ 960°C; test report see 000185508DNR	
0835	837716315	OS2, LP best. (Med.)4GE 24FE PoE Rel. CC	1	0,0000	PCB 742-634-001 glow wire tested @ 960°C; test report see 000185508DNR	
0836	837716335	OS2, LP best. (Med.)4GE 24FE PoE Rel. CC	1	0,0000	PCB 742-634-003 glow wire tested @ 960°C; test report see 000185508DNR	
0840	837-717-025	OS2, LP best. (Media.) 4FE 24FE (neu)	1	0,0000	PCB 742-635-003 glow wire tested @ 960°C; test report see 000185508DNR	
0845	837-717-035	OS2, LP best. (Media.) 4FE 24FE CC (neu)	1	0,0000	PCB 742-635-003 glow wire tested @ 960°C; test report see 000185508DNR	
0850	837717125	OS2, LP best. (Media.) 4FE 24FE PoE (neu)	1	0,0000	PCB 742-635-003 glow wire tested @ 960°C; test report see 000185508DNR	
0855	837717135	OS2, LP best. (Media.) 4FE 24FE PoE CC neu	1	0,0000	PCB 742-635-003 glow wire tested @ 960°C; test report see 000185508DNR	
0860	837-717-205	Media 4FE Tx+ 24FE Relay	1		unused	
0865	837-717-215	Media 4FE Tx+ 24FE Relay CC	1		unused	
0870	837717325	OS2, LP best. (Media.) 4FE 24FE PoE Rel.	1	0,0000	PCB 742-635-003 glow wire tested @ 960°C; test report see 000185508DNR	
0875	837717335	OS2, LP best. (Med.)4FE 24FE PoE Rel. CC	1	0,0000	PCB 742-635-003 glow wire tested @ 960°C; test report see 000185508DNR	
0880	837716425	OS2, LP best. 4GE 24FE PoE REL. IM (neu)	1	0,0000	PCB 742-634-003 glow wire tested @ 960°C; test report see 000185508DNR	
0885	837716435	OS2, LP best. 4GE 24FE PoE REL. IM CC neu	1	0,0000	PCB 742-634-003 glow wire tested @ 960°C; test report see 000185508DNR	
0899	SFPs:				All SFPs are not detachable or exchangeable. Contact to the PCBA is only via metal or UL94V-0 parts. According to DIN EN 45545-2:2013, Chapter 4.2, listed components can be handled as non-listed components, when used in an application which is below the limit values for mass and surface, defined in 4.3. Components with combustible mass < 10 g according to 4.3.1 and not touched to other not classified components. If there is any combustible mass in an SFP, it is far below 10 g.	
0900	943945001	M-FAST SFP-MM/LC EEC, SFP Transceiver	4	0,0000		
0905	943946001	M-FAST SFP-SM/LC EEC, SFP Transceiver	4	0,0000		
0910	943947001	M-FAST SFP-SM+/LC EEC, SFP Transceiver	4	0,0000		
0915	943948001	M-FAST SFP-LH/LC EEC, SFP Transceiver	4	0,0000		
0920	943896001	M-SFP-SX/LC EEC	4	0,0000		
0925	943897001	M-SFP-LX/LC EEC	4	0,0000		
0930	943898001	M-SFP-LH/LC-EEC	4	0,0000		
0935	M-SFP für 1D/4D		4	0,0000		
0949	Adapterplatten:				pos. 0950 to pos. 0975: only one is installed, all < 1 g	
0950	742636001	OS2, Adapterplatte (4 x V1)	1	0,0000	metal part, powder coated	
0955	742636002	OS2, Adapterplatte (2 x V1)	1	0,0000	metal part, powder coated	
0960	742637001	OS2, Adapterplatte (4 x V4)	1	0,0000	metal part, powder coated	
0965	742637002	OS2, Adapterplatte (2 x V4)	1	0,0000	metal part, powder coated	
0970	742638001	OS2, Adapterplatte (4 x QODC)	1	0,0000	metal part, powder coated	
0975	742638002	OS2, Adapterplatte (2 x QODC)	1	1,0000	metal part, powder coated	1,000
0980	742639001	OS2, Dichtung Adapterplatte	1	3,7500		3,750
1099	Aufkleber links:				pos. 1100 to pos. 1275: only one is installed (all 3,5 g)	
1100	742691001	OS2, Frontaufkl. li. OS20 F (TX/TX)	1	0,0000		
1105	742691101	OS2, Frontaufkl. li. OS20 F (TX/TX) TSN	1	0,0000		
1110	742691002	OS2, Frontaufkl. li. OS20 H (FX/FX)	1	0,0000		
1115	742691102	OS2, Frontaufkl. li. OS20 H (FX/FX) TSN	1	0,0000		
1120	742691003	OS2, Frontaufkl. li. OS20 G (FX/TX)	1	0,0000		
1125	742691103	OS2, Frontaufkl. li. OS20 G (FX/TX) TSN	1	0,0000		
1130	742691004	OS2, Frontaufkl. li. OS20 O (TX/TX)-BP	1	0,0000		
1135	742691104	OS2, Frontaufkl. li. OS20 O (TX/TX)-BP TSN	1	0,0000		
1140	742692001	OS2, Frontaufkl. li. OS24 L (TX/TX)	1	0,0000		
1145	742692101	OS2, Frontaufkl. li. OS24 L (TX/TX) TSN	1	0,0000		
1150	742692002	OS2, Frontaufkl. li. OS24 N (FX/FX)	1	0,0000		
1155	742692102	OS2, Frontaufkl. li. OS24 N (FX/FX) TSN	1	0,0000		
1160	742692003	OS2, Frontaufkl. li. OS24 M (FX/TX)	1	0,0000		
1165	742692103	OS2, Frontaufkl. li. OS24 M (FX/TX) TSN	1	0,0000		
1170	742692004	OS2, Frontaufkl. li. OS24 P (TX/TX)-BP	1	0,0000		
1175	742692104	OS2, Frontaufkl. li. OS24 P (TX/TX)-BP TSN	1	0,0000		
1180	742694001	OS2, Frontaufkl. li. OS30 I (TX/TX)	1	0,0000		
1185	742694101	OS2, Frontaufkl. li. OS30 I (TX/TX) TSN	1	0,0000		

1190	742694002	OS2, Frontaufkl. li. OS30 K (FX/FX)	1	0,0000		
1195	742694102	OS2, Frontaufkl. li. OS30 K (FX/FX) TSN	1	0,0000		
1200	742694003	OS2, Frontaufkl. li. OS30 J (FX/TX)	1	0,0000		
1205	742694103	OS2, Frontaufkl. li. OS30 J (FX/TX) TSN	1	0,0000		
1210	742694004	OS2, Frontaufkl. li. OS30 O1 (TX/TX)-BP	1	0,0000		
1215	742694104	OS2, Frontaufkl. li. OS30 O1 (TX/TX)-BP TSN	1	0,0000		
1220	742694005	OS2, Frontaufkl. li. OS30 V (99/TX)	1	0,0000		
1230	742695001	OS2, Frontaufkl. li. OS34 Q (TX/TX)	1	0,0000		
1235	742695101	OS2, Frontaufkl. li. OS34 Q (TX/TX) TSN	1	0,0000		
1240	742695002	OS2, Frontaufkl. li. OS34 S (FX/FX)	1	0,0000		
1245	742695102	OS2, Frontaufkl. li. OS34 S (FX/FX) TSN	1	0,0000		
1250	742695003	OS2, Frontaufkl. li. OS34 R (FX/TX)	1	0,0000		
1255	742695103	OS2, Frontaufkl. li. OS34 R (FX/TX) TSN	1	0,0000		
1260	742695004	OS2, Frontaufkl. li. OS34 P1 (TX/TX)-BP	1	3,5000		3,500
1265	742695104	OS2, Frontaufkl. li. OS34 P1 (TX/TX)-BP TSN	1	0,0000		
1270	742695005	OS2, Frontaufkl. li. OS34 V (TX/TX)BP	1	0,0000		
1275	742695105	OS2, Frontaufkl. li. OS34 V (TX/TX)BP TSN	1	0,0000		
1299	Aufkleber rechts:				pos. 1300 to pos. 1360: only one is installed	
1300	742705001	OS2, Frontaufkl. re. T (4/100Mbit-Ports)	1	0,0000	9 g	
1310	742705002	OS2, Frontaufkl. re. A (8/100Mbit-Ports)	1	0,0000	9 g	
1320	742706001	OS2, Frontaufkl. re. B(16/100Mbit-Ports)	1	0,0000	9 g	
1330	742707001	OS2, Frontaufkl. re. C(24/100Mbit-Ports)	1	0,0000	14 g	
1340	742708001	OS2, Frontaufkl. re. A1(8PoE/8/100Mbit)	1	0,0000	9 g	
1350	742709001	OS2, Frontaufkl. re. D(12PoE/16/100Mbit)	1	0,0000	9 g	
1360	742710001	OS2, Frontaufkl. re. E(12PoE/24/100Mbit)	1	14,0000	worst case of pos. 1300 to pos. 1360	14,000
1399	Sonstige Aufkleber:					
1400	737432500	Klebeemarke roh, 73x43, Bedr. n. Zeichnung	2	0,3556	density 1,1 g/cm ³	0,711
1410	742719001	OS2, Seitenaufkleber U1 (4FX)	1	0,7000	pos. 1410 to pos. 1440: only one is installed, all same weight	0,700
1420	742719002	OS2, Seitenaufkleber U3 (4FX-GE)	1	0,0000	0,7 g	
1430	742722001	OS2, Seitenaufkleber U2 (2FX)	2	0,0000	0,35 g	
1440	742722002	OS2, Seitenaufkleber U4 (2FX-GE)	2	0,0000	0,35 g	
1450	743887001	HAFTETIKETT 38,1 x 6,35 PS WS	1	0,0203	density 1,1 g/cm ³	0,020
1460	742237001	Hafteticket 57x30 3M7818 silbermatt bedruckt nach Doc-ID: 000185509DNR	1	0,0000	pos. 1460 and 1461: only one is installed	
1461	742237001	Hafteticket 57x30 3M7818 silbermatt bedruckt nach Doc-ID: 000187655DNR	1	0,4000	calculated, density 1,1 mg/mm ³	0,400
1499	Sonstiges:					
1500	250251000	L-Schr. M3x6 St/Ni Torx Tufflokbesch.	20	0,0000	metal part	
1510	253405000	L-SCHR.AM 2X5 ST/NI	2	0,0000	metal part	
1520	251667000	DISTANZBOLZEN M3X12 MS/NI	10	0,0000	metal part	
1530	250252000	FL-K-Schr. M2,5x6 St/Ni Torx Tufflokbesch	2	0,0000	metal part	
1540	251664000	DISTANZBLZ.M 3X8 MS/NI	1	0,0000	metal part	
1550	257307000	ZAHNSCHEIBE A 3,2 ST/ZN	3	0,0000	metal part	
1570	269230000	KABELSCHUH RING 1,5-2,5 / M4	1	0,1700		0,170
1580	253379000	L-SCHR.AM 4X8 ST/NI	1	0,0000	metal part	
1590	257305000	ZAHNSCHEIBE A 4,3 ST/ZN	1	0,0000	metal part	
1600	742321001	Aufkleber bedruckt, Schutzzerde	1	0,0048	55 g/m ² , Ø=10 mm; 000171955DNR	0,005
1610	742663500	OS2, 7/8" Einbaufansch 5-pol	1	0,0000	either pos. 1610 or 1611 or 1620 or 1630 (1630 is worst case)	
1611	742663501	OS2, 7/8" Einbaufansch 5-pol LV PoE	1	0,0000	either pos. 1610 or 1611 or 1620 or 1630 (1630 is worst case)	
1620	742663400	OS2, 7/8" Einbaufansch 4-pol	1	0,0000	either pos. 1610 or 1611 or 1620 or 1630 (1630 is worst case)	
1630	742485300	OpenBAT-F, 7/8" Einbaufansch 3-pol	1	5,3600	o-ring and compound are UL94 V-0, see 000176570DNR	5,360
1640	210909000	Flanschgehaeuse f. IP67 Variante1	4	0,0000	metal part	
1650	210910000	Flanschgehaeuse f. IP67 Variante4	4	0,0000	UL94 V0	
1660	219012000	EINBAUFLANSCH, KONFEKT. Multimode 0,5m	2	5,6200	either pos. 1720, 1730, 1660 or 1670, Pos. 1660 is worst case	11,240
1670	219017000	EINBAUFLANSCH, LC-Duplex Singlemode 0,5m	2	0,0000	5,62 g - see pos. 1660 (total 9 g, 2 x 3 g plug is UL94-V0, see 000185867DNR)	
1680	742281002	OpenBAT-F, V1 Flanschdichtung	4	0,8500		3,400
1690	210912000	Verschlusskape f. IP67 Variante 4	4	0,0000	either pos. 1690 or 1700. 1700 is worst case. Cap is UL94 V0, mass of line is 1,0 g.	
1700	210911000	Verschlusskape f. IP67 Variante 1	4	2,3464	Cap is UL94 V0, mass of line and gasket is 2,3464 g.	9,386
1710	210908000	Durchführungskuppl. LC-D	4	0,0000	UL94 V0	
1720	219015000	LWL-LEITUNG 9 my GELB	2	0,0000	3 g - see pos. 1660 (total 9 g, 2 x 3g plug is UL94-V0)	
1730	219016000	LWL-LEITUNG 62,5 my ORANGE	2	0,0000	3 g - see pos. 1660 (total 9 g, 2 x 3g plug is UL94-V0)	

1740	742729001	OS2, EMV-Leitung	1	0,3600	max. length 98,5 mm, isolation 3,65 mg/mm (stripped and weighed)	0,360
1750	742730001	OS2, PE-EMV Leitung	1	0,7370	max. length 202 mm, isolation 3,65 mg/mm (stripped and weighed)	0,737
1755	742730002	OS2, PE-EMV Leitung L=42	1	0,0000	pos. 1750 and 1755: only one is installed	
1760	210234000	Buchsenleiste 3-POLIG,SCHRAUBANSCHL.	1	0,0000	UL94 V0	
1770	210235000	Federleiste 2-polig,RM5, schraubanschl.	2	0,0000	UL94 V0	
1780	742561001	OpenBAT-F, Verschlusschraube Spgsvers.	1	0,0000	metal part	
1790	219343000	O-RING 22X1,5 (NBR BIS -40 GRAD)	1	0,1853	density 1,42 g/cm ³	0,185
1800	742558001	OpenBAT-F, 6-Kantmutter f. 7/8" Gewinde	1	0,0000	metal part	
1810	742557001	7/8" Stecker,Verschl.kappe Kunstst. H111	1	0,0000	only used for shipping	
1820	742772001	OS2, Abstanbolzen M3x3,5	3	0,0000	metal part	
1830	268990000	Ferrithülse 14,2mmx6,35mmx28,5mm	1	0,0000		
1840	268991000	Ferrithülse 28mmx16mmx13mm	1	0,0000		
1850	219063000	Kabelbinder 99x2,5	1			
1860	742561002	OS2, M12-Power Adapter	1	0,0000	metal part	
1870	742876001	OS2, M12-Power Stecker 4-pol. T-codiert	1	0,0000	metal part	
1880	268993000	Ferrithülse 16mm x 8mm x 28,5mm	1	0,0000		
1890	742772002	Abstanbolzen L=3.5,2x aussen M3x6	8	0,0000	metal part	
1900	254044000	Kombi-6KT-MUTTER M 3 ST/ZN	8	0,0000	metal part	
1910	742987002	OS2, Clip-On Gasket (single)	3	0,0000	metal part	
3899	Lizenzen:					
3900	836223001	PLATFORM for PNE License Layer 3 Router	1	0,0000	software license	
3910	836430001	LVL7 License FE (Switching , Mgmt)	8	0,0000	software license	
3920	836430002	LVL7 License GE (Switching , Mgmt)	2	0,0000	software license	
3930	836431001	LVL7 License FE L2 Main	8	0,0000	software license	
3940	836431002	LVL7 License GE Main	2	0,0000	software license	
3950	836563001	LVL7 License FE Upgrade L3 red.	8	0,0000	software license	
3960	836563002	LVL7 License GE Upgrade L3 red.	2	0,0000	software license	
3999	Software:					
4010	836751001	OS2, Confid.file (ANNAX)	1	0,0000	software	
4100	836590001	OS2, MGMT-SW Rel. 04.1.02	1	0,0000	software	
4200	836591001	OS2, MRP (1FPGA) MGMT-SW Rel. 04.1.02	1	0,0000	software	
4300	836592001	OS2, PRP (1FPGA) MGMT-SW Rel. 04.1.02	1	0,0000	software	
4400	836594001	OS2, HSR (1FPGA) MGMT-SW Rel. 04.1.02	1	0,0000	software	
4500	836691001	RSP (S/E)/RED/OS2, DLR Konfig.file	1	0,0000	software	
4550	836719001	HiOS, Diagnostic User (BDEW) Konfig.file	1	0,0000	software	
4600	836721001	HiOS, Profinet Konfig. File	1	0,0000	software	
4650	836720001	HiOS, Ethernet / IP Konfig. File	1	0,0000	software	
5000	Verpackung:					
5010	040121001	Allgemeine Sicherheitshinweise (DIN A5)	1	0,0000	only used for shipping	
5200	291208001	WF-SCHACHTEL 390X273X150 MM,VDW 2.30EB	1	0,0000	only used for shipping	
5205	291211001	WF-SCHACHTEL 465x270x150mm	1	0,0000	only used for shipping	
5206	438037000	KLEBEBAND A. PAPIER, BRAUN, 60MM BREIT	1	0,0000	only used for shipping	
5207	291209001	WP-ZUSCHNITT 561X147, GERILLT VDW 2.70BC	1	0,0000	only used for shipping	
5210	742734002	OS2, PE-Schaumteil neu	2	0,0000	only used for shipping	
5230	295133000	HAFTETIKETTE 100X29 MM, HIMA BLAU	1	0,0000	only used for shipping	
5231	742271001	Haftetikette 100x29mm, unbedruckt	1	0,0000	only used for shipping	
5232	742271001	Haftetikette 100x29mm, unbedruckt	1	0,0000	only used for shipping	
5235	742271001	Haftetikette 100x29mm, unbedruckt	1	0,0000	only used for shipping	
5240	223863000	Klappferrit 300kHz 1 turn =10 Ohm	1	0,0000	plastic housing is UL94 V0	
5250	268999000	Schlüssel für Klappferrite Würth - rot	1	0,0000	only for installation, not for operation	
5260	298264000	PE-FLACHBEUTEL 85X140X0,05 MM, O.AUFDR.	1	0,0000	only used for shipping	
5270	943944001	OCTOPUS, M12-MiniPower Adapter	1	0,0000	accessories	
5280	933175100	ELWIKA 5012 PG7	1	0,0000	accessories	
5290	942086003	RKC30/9, 7/8" Buchse 3-pol konfekt.	1	0,0000	accessories	
5300	942086004	RKC40/9, 7/8" Buchse 4-pol konfekt.	1	0,0000	accessories	
5310	942086005	RKC50/9, 7/8" Buchse 5-pol konfekt.	1	0,0000	accessories	
5320	742872401	Power Connector, 4 pin con. 110V	1	0,0000	accessories	
5330	742872501	Power Connector, 5 pin con. 24V	1	0,0000	accessories	
5340	742908001	Buchse M12.5-pol., A-cod., geschirmt, gew.	1	0,0000	accessories	

5350	742877001	OS2, M12-Power Buchse 4-pol. T-codiert	1	0,0000	accessories	
5360	742875001	TSN-ready Verpackungsaufkleber	1	0,0000	only used for shipping	
5370	942242001	PC150/110V/54V Netzteil	1	0,0000	accessories	
					Total:	83,7