

## Manufacturer`s Declaration of Conformity

**Hirschmann Automation and Control GmbH**

**Stuttgarter Straße 45-51  
D-72654 Neckartenzlingen, Germany**

declares in sole responsibility, that the product(s)

### **OS3**

(Product description)

**OCTOPUS III, 942 258-999,  
OS3-[3|4] [0|4] [00|08|16|24] [00|08|16] [00|08|16|24] [00|08|16] [08|16|24] [00] [T6|R6] [T6|R6]  
[V|T] [BB|HH|PP|QQ|N9|M9] [Z9|Y9|S9] [99|UR|MR] [nn] [S] [E|P|I|B] [2A|3A] nn.n.nn-nn**

(Type, reference number)

has been designed and manufactured in accordance with the following standards

### **EN 50155:2017 – Railway Applications – Environmental conditions**

Test description	EN 50155 Section	Test Reference	Requirement
Operating temperature	4.3.2	EN 60068-2-1, Ad EN 60068-2-2, Bd	Class OT4 -40 °C to +70 °C in rack
Start-up temperature	4.3.3		Class ST1 OT over +15 K, 10 min.
Power supply from battery	5.1.1	-	24 V [BB, QQ] 36 V [HH, QQ] 48 V [HH, QQ, PP] 110 V [N9, M9]
Over voltage test	13.4.3.2	-	1.4 x UN during 1.0 s
Switching between power supplies	13.4.3.3	-	Class C1 0.6 x UN during 100 ms
Power supply interrupts	13.4.3.4	-	Class S2 <= 10 ms
Low air temperature	13.4.4	EN 60068-2-1	Test Ad, -40 °C
High air temperature	13.4.5	EN 60068-2-2	Test Be, +70 °C in rack Cycle B: T start-up +15 K, 10 min.
Humidity	13.4.7	EN 60068-2-30	Test Db, 95 %
Low Temperature storage	13.4.8	EN 60068-2-1	Test Ab, -40 °C
Electromagnetic compatibility	13.4.8	EN 50121-3-2:2016	

Test description	EN 50155 Section	Test Reference	Requirement
Dielectric test	13.4.9	-	U <sub>rated</sub> < 72 VDC: 750 VDC Transient protection allows a max DC-Offset ±(60 V-U <sub>rated</sub> ) U <sub>rated</sub> ≥ 72 VDC ≤125 VDC: 1500 VDC Transient protection allows a max DC-Offset ±(500 V-U <sub>rated</sub> )
Insulation test	13.4.9	-	Test voltage: 500 VDC Insulation resistance: > 20 MΩ
Vibration	13.4.11	IEC 61373	Category 1, Class B broadband noise 5-150 Hz <i>vertical axis:</i> 1,0 m/s <sup>2</sup> , life test: 5,72 m/s <sup>2</sup> <i>longitudinal / transverse axis:</i> 0,7 m/s <sup>2</sup> , life test: 3,96 m/s <sup>2</sup>
Shock	13.4.11	IEC 61373	Category 1, Class B <i>vertical axis:</i> 30 m/s <sup>2</sup> , 30 ms <i>longitudinal / transverse axis:</i> 50 m/s <sup>2</sup> , 30 ms

**EN 50121-3-2: 2016 – Railway Applications – EMC – Rolling stock**

Test description	EN 50121-3-2 Section	Test Reference	Requirement
Radiated electromagnetic field	table 5.1 table 5.2	IEC 61000-4-3 IEC 61000-4-3	80...1000 MHz, 20 V/m 1400...2000 MHz, 10 V/m 2000...2700 MHz, 5 V/m 5100...6000 MHz, 3 V/m
Electrostatic Discharge	table 5.3	IEC 61000-4-2	±6 kV contact discharge ±8 kV air discharge
Conducted disturbances	table 3.1/ 4.1	IEC 61000-4-6	<i>Signal ports, power ports:</i> 10 V
Fast transient / burst	table 3.2/ 4.2	IEC 61000-4-4	<i>Signal ports, power ports:</i> ±2 kV
Surges 1,2/50µs	table 3.3	IEC 61000-4-5	<i>Signal ports, power ports:</i> CM ±2 kV DM ±1 kV
Radiated Emission	7	EN 61000-6-4	30...230 MHz: 40 dBµV/m (10m) 230...1000 MHz: 47 dBµV/m (10m) 1...3 GHz: 76 dBµV/m peak (3m) 56 dBµV/m av. (3m) 3...6 GHz: 80 dBµV/m peak (3m) 60 dBµV/m av. (3m)
Conducted Emission	table 2.1	EN 55016-2-1	AC or DC <i>power ports:</i> 150...500 kHz: 99 dBµV qp. 500 kHz...30 MHz: 93 dBµV qp.


**EN 50121-4:2016 – Railway Applications**  
**– EMC – Signalling and telecommunication apparatus**

Test description	EN 50121-4 Section	Test Reference	Requirement
Radiated electromagnetic field	table 2.1 table 2.2	IEC 61000-4-3 IEC 61000-4-3	80...800 MHz, 10 V/m 800...1000 MHz, 20 V/m 1400...2000 MHz, 10 V/m 2000...2700 MHz, 5 V/m 5100...6000 MHz, 3 V/m
Power frequency magnetic field	table 2.3	IEC 61000-4-8	16,7 Hz, 100 A/m 50 Hz, 100 A/m 0 Hz, 100 A/m No test required
Electrostatic Discharge	table 2.4	IEC 61000-4-2	±6 kV contact discharge ±8 kV air discharge
Conducted disturbances	table 3.1/ 4.1/ 5.1/ 6.1	IEC 61000-4-6	<i>Signal ports, power ports:</i> 10 V
Fast transient / burst	table 3.2/ 4.2/ 5.2/ 6.2	IEC 61000-4-4	<i>Signal ports, power ports:</i> ±2kV
Surges 1,2/50µs	table 3.3/ 4.3/ 5.3	IEC 61000-4-5	<i>Signal ports, power ports:</i> CM ±2kV DM ±1kV
Radiated Emission	5	EN 61000-6-4	30...230 MHz: 40 dBµV/m (10m) 230...1000 MHz: 47 dBµV/m (10m) 1...3 GHz: 76 dBµV/m peak (3m) 56 dBµV/m av. (3m) 3...6 GHz: 80 dBµV/m peak (3m) 60 dBµV/m av. (3m)
Emission – AC or DC power ports	table 1.1	EN 55016-2-1	<i>Power ports:</i> 150...500 kHz: 79 dBµV qp. 66 dBµV av. 500 kHz...30 MHz: 73 dBµV qp. 60 dBµV av.

**DB Regulation EMV 06, Rev. 2.0**  
**– Radio compatibility of railway vehicles with train radio services**

Test description	EMV 06 Section	Test Reference	Requirement
Verification procedure	6.1, method 1		
Protection class:	Annex E		S1
Radiated Emission	Annex E	EN 61000-6-4:2011 - Semi anechoic chamber - Measuring distance: <b>10 m</b> - Detector: Average - Bandwidth: 9 kHz or 10 kHz	
	<b>0,7 m band</b>		<b>Limits (S1)</b>
	419,72 – 419,80 MHz:		9 dBµV
	429,72 – 429,80 MHz:		9 dBµV
	457,4125 – 458,3125 MHz:		9 dBµV
	467,4125 – 468,3125 MHz:		9 dBµV
	<b>0,3 m band</b>		<b>Limits (S1)</b>
	873 – 880 MHz (GSM uplink):		28 dBµV
	918 – 925 MHz (GSM downlink):		12 dBµV

  
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Neckartenzlingen, 2020-02-07  
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(Issue place and date)