

Herstellererklärung Manufacturer`s Declaration of Conformity

Hirschmann Automation and Control GmbH

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

erklärt in alleiniger Verantwortung, dass das/die Produkt(e)
declares in sole responsibility, that the product(s)

Managed Ethernet Switch

(Bezeichnung / Product description)

OCTOPUS OS20 / OS24 / OS30 / OS34

with the following possible product codes:

- OS20-00 [08|12|20|28] [00] 2x[T5|R5|1M|1S|1P|1L|4M|4S|4P|4L|5M|5S|5P|5L]T5-[V|T]
[BB|HH|N9] [US|S9|SY] [nn] [nn] [S|M|P|H|N|D|T] [n] [2S|2A|3S] nn.n.nn-nn,
- OS24-[08|10|11|12|14|15] [12|20|28] [00] 2x[T5|R5|1M|1S|1P|1L|4M|4S|4P|4L|5M|5S|5P|5L]T5-[V|T]
[FF|N9|QQ] [US|S9|SY] [nn] [nn] [S|M|P|H|N|D|T] [n] [2S|2A|3S] nn.n.nn-nn,
- OS30-00 [08|16|24] [02|04] 2x[T6|R6|1A|1B|1C|1D|4A|4B|4C|4D|5A|5B|5C|5D|99]T5-[V|T]
[BB|HH|N9] [US|S9|SY] [nn] [nn] [S|M|P|H|N|D|T] [n] [2S|2A|3S] nn.n.nn-nn
- OS34-[08|10|11|12|14|15] [08|16|24][02|04] 2x[T6|R6|1A|1B|1C|1D|4A|4B|4C|4D|5A|5B|5C|5D|99]
T5- [V|T] [FF|N9|QQ|K9] [US|S9|SY] [nn] [nn] [S|M|P|H|N|D|T] [n] [2S|2A|3S] nn.n.nn-nn
- OS[2|3]4-[08|10|11|12|14|15] [08|12|16|20|24|28][00|02|04]
2x[T5|R5|T6|R6|1M|1S|1P|1L|1A|1B|1C|1D|1E|1F|4M|4S|4P|4L|4A|4B|4C|4D|4E|5M|5S|5P|5L|5A|
5B|5C|5D|5E|99] T5-[V|T]PP[T9|S9] [nn] [nn] [S|M|P|H|N|D|T] [n] [2S|2A|3S] nn.n.nn-nn.)
with Power Supply: PC150/110V/54V , 942 242-001

Optional assembled with Auto-Configuration Adapter: ACA21-M12 (EEC), ACA22-M12 (EEC), ACA22-M12-C (EEC)
(n = any number or letter)

yp, Erzeugnisnummer / Type, reference number)

mit den folgenden Normen oder normativen Dokumenten übereinstimmt
has been designed and manufactured in accordance with the following standards

EN 50155:2021 – Bahnanwendungen – Umweltaforderungen **– Railway Applications – Environmental conditions**

Prüfung <i>Test description</i>	EN 50155 Kapitel / Section	Prüfstandard <i>Test Reference</i>	Anforderungen <i>Requirement</i>
Umgebungstemperatur <i>Operating temperature</i>	4.4.2	EN 60068-2-1, Ad EN 60068-2-2, Bd	Class OT4 -40 °C to +70 °C in rack
Einschalttemperatur <i>Increased operation temperature at switch-on</i>	4.4.3		Class ST1 OT over +15 K, 10 min.
Versorgungsspannung aus Batterie <i>Battery voltage supply system</i>	5.2.1	-	BB HH FF/ N9/ PPwith QQ K9 PC150/110/51V 24V 36V 24V 72V 110V 48V 36V 110V 48 V

Überspannungstest <i>Temporary supply overvoltages test</i>	13.4.3.3	-	1.4 x UN during 0.1 s / 1.0 s
Spannungseinbrüche <i>Temporary supply undervoltage test</i>	13.4.3.4	-	0.6 x UN during 0.1 s
Spannungsunterbrechungen <i>Interruptions of supply voltage</i>	13.4.3.5	-	Class S2 <= 10 ms
Umschalten zwischen Spannungsversorgungen <i>Supply change-over</i>	13.4.3.6	-	Class C1 0.6 x UN during 100 ms
Prüfung <i>Test description</i>	EN 50155 <i>Kapitel / Section</i>	Prüfstandard <i>Test Reference</i>	Anforderungen <i>Requirement</i>
Kälteprüfung <i>Low temperature test</i>	13.4.4	EN 60068-2-1	Test Ad, -40 °C
Trockene Wärme <i>Dry heat test</i>	13.4.5	EN 60068-2-2	Test Be, +70 °C in rack Cycle B: T start-up +15 K, 10 min.
Feuchte Wärme <i>Cyclic damp heat test</i>	13.4.8	EN 60068-2-30	Test Db, 95 %
Lagerung bei Kälte <i>Low Temperature storage</i>	13.4.6	EN 60068-2-1	Test Ab, -40 °C
Stehspannungsprüfung <i>Voltage withstand test</i>	13.4.7.3	-	U _{rated} < 72 VDC: 750 VDC Transient protection allows a max DC-Offset ±(60 V-U _{rated}) U _{rated} ≥ 72 VDC ≤125 VDC: 1500 VDC Transient protection allows a max DC-Offset ±(500 V-U _{rated})
Isolationswiderstand <i>Insulation resistance test</i>	13.4.7.2	-	Test voltage: 500 VDC Insulation resistance: > 20 MΩ *1)
Elektromagnetische Verträglichkeit <i>Electromagnetic compatibility</i>	13.4.9	EN 50121-3-2:2016	
Vibrationsprüfung <i>Vibration test</i>	13.4.10.2/.4	IEC 61373:2010	Category 1, Class B broadband noise 5-150 Hz <i>vertical axis:</i> 1,01 m/s ² , life test: 5,72 m/s ² <i>longitudinal / transverse axis:</i> 0,7 m/s ² , life test: 3,96 m/s ²
Schock <i>Shock</i>	13.4.10.3	IEC 61373:2010	Category 1, Class B <i>vertical axis:</i> 30 m/s ² , 30 ms <i>longitudinal / transverse axis:</i> 50 m/s ² , 30 ms

*1) Falls es hochohmige Ableitwiderstände zwischen den angrenzenden Äquipotenzialbereichen oder zwischen einem Äquipotenzialbereich und der Funktionserde gibt, muss die Wirkung dieser Widerstände herausgerechnet werden.

In case of high-impedance bleeder resistors between adjacent equipotential areas or between an equipotential area and functional earth, the effect of these resistors shall be deducted.


EN 50121-3-2: 2016 – Bahnanwendungen – EMV – Bahnfahrzeuge
– Railway Applications – EMC – Rolling stock

Prüfung Test description	EN 50121-3-2 Kapitel / Section	Prüfstandard Test Reference	Anforderungen Requirement
Elektromagnetisches HF-Feld 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
Statische Entladung Electrostatic discharge	table 5.3	IEC 61000-4-2	±6 kV contact discharge ±8 kV air discharge
Leitungsgeführte HF-Störgrößen Conducted disturbances	table 3.1/ 4.1	IEC 61000-4-6	Signal ports, power ports: 10 V
Schnelle Transienten Fast transient / burst	table 3.2/ 4.2	IEC 61000-4-4	Signal ports, power ports: ±2 kV
Stoßspannungen Surges 1,2/50µs	table 3.3	IEC 61000-4-5	Signal ports, power ports: CM ±2 kV DM ±1 kV
Gestrahlte HF-Störaussendungen 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)
Leitungsgebundene HF-Störaussendungen Conducted Emission	table 2.1	EN 55016-2-1	AC or DC power ports: 150...500 kHz: 99 dBµV qp. 500 kHz...30 MHz: 93 dBµV qp.

EN 50121-4:2016 – Bahnanwendungen / Railway Applications
– EMV – Signal und Telekommunikationseinrichtungen
– EMC – Signalling and telecommunication apparatus

Prüfung Test description	EN 50121-4 Kapitel / Section	Prüfstandard Test Reference	Anforderungen Requirement
Elektromagnetisches HF-Feld 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
Magnetfelder mit energiertechnischen Frequenzen 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
Statische Entladung Electrostatic Discharge	table 2.4	IEC 61000-4-2	±6 kV contact discharge ±8 kV air discharge
Leitungsgeführte HF-Störgrößen Conducted disturbances	table 3.1/ 4.1/ 5.1/ 6.1	IEC 61000-4-6	Signal ports, power ports: 10 V
Schnelle Transiente Burst	table 3.2/ 4.2/ 5.2/ 6.2	IEC 61000-4-4	Signal ports, power ports: ±2kV

Prüfung Test description	EN 50121-4 Kapitel / Section	Prüfstandard Test Reference	Anforderungen Requirement
Stoßspannungen <i>Surges</i> 1,2/50µs	table 3.3/ 4.3/ 5.3	IEC 61000-4-5	Signal ports, power ports: CM ±2kV DM ±1kV
Gestrahlte HF-Störaussendungen <i>Radiated Emission</i>	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)
Leitungsgebundene HF-Störaussendungen <i>Conducted Emission on AC or DC power ports</i>	table 1.1	EN 55016-2-1	Power ports: 150...500 kHz: 79 dBµV qp. 66 dBµV av. 500 kHz...30 MHz: 73 dBµV qp. 60 dBµV av.



(Wolfgang Schenk
VP Business Development
Industrial Automation)



(i.V. Peter Schumacher
Quality Manager)

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