METEL.EU
SECURITY & AUTOMATION

Plan of Preventive Inspections and Renewal of Equipment Manufactured by METEL s.r.o.

Date: 7th February 2021

All serial-produced METEL s.r.o. products are designed primarily as maintenance-free. During their operation, however, we recommend performing regular inspections to help:
- prevent failures that lead to the loss of the service provided
- provide a sufficient level of protection against electric shock

Recommended Preventive Inspections

The minimum quantity and frequency requirements vary according to the type of equipment. Details are given in the table below.

Type of Device	Recommended Maintenance and Inspections
OH series cabinets	Before putting the cabinet into operation, and at least once a year, we recommend having it inspected by a qualified technician - seal functionality - targets on surge protectors stage I + II - tightening of glands and screw connections - protective connection resistance - insulation resistance of the internal connection of the cabinet We also recommend regularly checking the earthing of the cabinets. The earth resistance must not exceed 10Ω. If the internal directive of the building does not stipulate a higher frequency, we recommend performing the following checks: - at least once yearly - after lightning strikes - after equipment failure We recommend installing the equipment and checking it in accordance with the requirements of the standards: - ČSN 33 2000-5-54 ed. 3, ČSN EN 332000-6 ed-2, ČSN 33 2000-6 ed. 2. As part of the regular annual inspection, we also recommend an optical inspection of the cabinet casing. In case of signs of corrosion, it is advisable to perform appropriate maintenance. During the inspection, it is also necessary to remove dirt outside and inside the cabinet.
Class III data surge protectors, including protections for LAN	VISUAL INSPECTION The inspection consists of a visual inspection of the surge protector. In the event of obvious damage to the surge protector, it must be replaced with a new one without undue delay. Typical signs of damage to the installed surge protection are, for example: - tanned or oxidized connectors - increasing number of Error packets in switch counters (see predictive fault detection), - „maps" on the printed circuit board caused by the ingress of water into the surge protector. Impurities deposited on the surge protector must also be removed during the inspection. EARTHING INSPECTION It is also necessary to regularly check the grounding of the surge protectors. The earth resistance must not exceed 10Ω. The inspection is performed by a qualified technician: - before putting the surge protector into operation (initial revision) - during regular review If the internal guidelines of the building do not stipulate a higher frequency, we recommend checking the earthing at least once a year and in addition: - after lightning strike - after failure of the protected equipment We recommend installing the equipment and checking it in accordance with the requirements of the standards: - ČSN 33 2000-5-54 ed. 3, ČSN EN 332000-6 ed-2, ČSN 33 2000-6 ed.

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Type of Device	Recommended Maintenance and Inspections
LAN-RING industrial switches Media converters PLC IPLOG IO modules Chargers and other active devices of the LAN-RING & IPLOG system Optoconverters	The devices are designed as maintenance-free. For types that are equipped with a green-yellow ground wire, we recommend that you regularly check the ground resistance, which must not exceed 10Ω. The inspection is performed by a qualified technician: - before putting the equipment into operation (initial inspection) - during regular review If the internal guidelines of the building do not stipulate a higher frequency, we recommend checking the earthing at least once a year. We recommend installing the equipment and checking it in accordance with the requirements of the standards: - ČSN 33 2000-5-54 ed. 3 - ČSN EN 332000-6 ed-2 - ČSN 33 2000-6 ed. 2 Impurities deposited on the device must also be removed during the inspection.
	Predictive Fault Detection Industrial LAN-RING switches support the SNMPv3 protocol enabling the detection of error packets at the input and output of all ports. This detection also serves as a fault prediction. For this reason, we recommend reading the "Ingress Error" and "Egress Error" counter values at hourly intervals. Changing values are a symptom of: - decrease in the quality of connected optical fibers (reflections, attenuation) - decrease in the quality of connected UTP / FTP cables (oxidation of contacts, humidity in the cables) - damage to internal electronics

Renewal of Equipment Manufactured by METEL s.r.o.

Recommendations for the renewal of manufactured equipment vary according to their type. When optimizing recovery costs and ensuring long-term system functionality, we recommend that you consider:

Equipment Warranty Period: All defects covered by the warranty according to the Warranty Conditions are rectified free of charge at this time. During the warranty period, we guarantee the availability of spare parts, in case of their unavailability, the replacement of a defective piece with a functional piece of the same type or equivalent.

Equipment Life (maximum period for which it is expedient to plan the use of the equipment): The service life of the device is determined by its construction. During development, we emphasize the longevity of the device (even after the warranty period has expired) and backward compatibility. The current 3rd generation LAN-RING industrial switches (F series) are therefore backward compatible with even the oldest 1st generation, including support for the SIMULand configuration tool. We also guarantee backward compatibility, including support for unified configuration software, for the upcoming 4th generation of LAN-RING switches (G series).

We recommend starting the renewal of installed devices at the latest at the end of their warranty period and ending at the latest by the end of the equipment's service life. We do not add service material for devices with an expired service life. The possibility of repairing them may therefore be limited.

LAN-RING System Recovery Note

With each new generation (-, E, F, G) we add new functions to the configuration, including security. These features may not always be added to older generations due to limited memory size or computing power. Therefore, we always recommend performing recovery over entire network segments, ie, for example, replacing all devices on the optical ring (not just part of them).

See the table on the other side for more information on device recovery.

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Type of Device	Warranty Period	Equipment Life	Note
OH series cabinets	36 months	10 years	Cabinets meet the requirements of standard ČSN EN 62208 ed. 2 for outdoor operation at ambient air temperatures between -25 and + 40 ° C and relative humidity up to 100% at a maximum temperature of + 25 ° C. The warranty does not cover corrosion caused by damage to Epoxy-polyester varnish, or corrosion caused by aggressive environments. In the event of a failure in a situation where the existing switchboard model is no longer manufactured and a spare part of the same type is not available, we recommend contacting our technical support, which will help you choose a suitable replacement.
Class III data surge protectors (excluding LAN protections)	36 months	10 years	In the event of a breakdown in a situation where the current model of the device is no longer manufactured and a spare part of the same type is not available, we recommend contacting our technical support, which will help you choose a suitable replacement.
Surge protectors for LAN	60 months	10 years	
LAN-RING industrial switches and media converters	60 months ot 5 years from the end of production	10 years	
PLC IPLOG and IO modules		10 years	
Chargers and other active LAN-RING & IPLOG devices	60 months	10 years	
Optoconverters	60 months	10 years	

For METEL s.r.o., Tomáš Metelka - Technical Director
THE DOCUMENT IS ELECTRONICALLY SIGNED

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