







Huwa·San° FOGGER



MANUAL





! IMPORTANT NOTICE!

ALWAYS PAY ATTENTION TO THE FACT THAT YOU ARE WORKING IN VAPOUR PHASE ENVIRONMENT.

DISINFECTION IN VAPOUR PHASE CAN ONLY BE EXCECUTED BY OPERATORS TRAINED BY THE SUPPLIER OR HIS OFFICIAL APPOINTED REPRESENTATIVES.

ALWAYS WEAR APPROPRIATE PERSONAL PROTECTION EQUIPMENT (EG. GLOVES AND ADEQUATE EYE PROTECTION) WHEN HANDLING THE PRODUCT.

ALWAYS WEAR AN APPROPRIATE GAS MASK WHEN ENTERING A ROOM WHERE >2 PPM HYDROGEN PEROXIDE VAPOUR IS STILL PRESENT. THE ROOM CAN ONLY BE RELEASED AFTER DISINFECTION WHEN THE MEASURED HYDROGEN PEROXIDE CONCENTRATION IS < 1 PPM.

General:

This product must be earthed. Environmental operating conditions: 10-35°C Maximum altitude: 2000m Indoor use



Warnings:

Read operating instructions before use of the equipment.

This symbol indicates special attention points to the user

Repair:

Repair shall only be done by the manufacturer's appointed or recognized service technician. For details contact the dealer. Internal fuse is not user replaceable.

Transport:

Remove any liquids before transport.



MANUAL Huwa-San° Fogger

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1 THE HUWA-SAN® FOGGER MANUAL

This user manual provides instructions to disinfect rooms (hospital rooms, hotel rooms, public facilities,...) by nebulization with the Huwa-San® Fogger, including:

- Preparation of the rooms to be disinfected;
- Preparation of the Huwa-San[®] Fogger before disinfection;
- Disinfection process with Huwa-San[®] Fogger;
- Preventive maintenance of the Huwa-San® Fogger;

This manual is exclusively intended for trained staff operating the Huwa-San® Fogger.

The first sections of this manual include the safety guidelines and a functional description of the Huwa-San Fogger. Make sure to read these sections with care to familiarize yourself with the precautions and the function and location of various parts of the Huwa-San® Fogger.





Figure 1: front of the Huwa-San® Fogger

Figure 2: back of the Huwa-San® Fogger

Figure 1 & 2 show the orientation convention. Wherever you stand relative to the Huwa-San® Fogger, the indications 'Front', 'Back', 'Right' and 'Left' are always as shown in these figures. This manual is also available electronically as a PDF-file. Please contact Roam Technology directly to receive the electronic manual. Also for specific information about Huwa-San® Fogger disinfection solutions or for additional information and support, please contact Roam Technology.



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2 DISCLAIMER

- Failure to follow the instructions in this manual and the damage that may result from it, voids the warranty of your Huwa-San® Fogger.
- The warranty does not apply if the defect results from an operational intervention in the device, normal wear and tear, negligence or lack of maintenance.
- The manufacturer will not be held liable for any bodily harm or material damages caused by inappropriate or abnormal use of the devise contrary to the precautions recommended in chapter 3 Safety Guidelines (non-exhaustive list).
- For general terms of sale, visit www.roamtechnology.com



Safety data Sheet



²Safety card



³Huwa-San Fogger checklist

3 SAFETY GUIDELINES



Read and follow the manual, the safety data sheet (SDS) and the safety card carefully before starting to work with the Huwa-San Fogger and Huwa-San TR-12,5.

Make sure the safety data sheet, the manual and safety card are always accessible to the user before and during disinfection.

Make sure the user and supervisor follow and sign the Huwa-San® Fogger checklist® before starting the disinfection procedure.

Precautions before start

During the process the Huwa-San Fogger will distribute hydrogen peroxide vapour:

- 1. This means that **during the process NO PEOPLE are allowed in the room**.
- 2. This means that the vapour is penetrating through cracks and holes.
- 3. In surrounding rooms people shall be protected in such a way that no vapour can penetrate through to other rooms.
- 4. Control that fire alarm indicators are switched off by means of a cap protecting it in the room or by disabling the system centrally if possible.
- 5. Ventilation systems that always provide fresh air do not need to be sealed. However, if the air is re-circulated, both the outlet and the inlet of the air need to be sealed or disabled.
- 6. In rooms that have overpressure the inlet of fresh air needs to be disabled.
- 7. Experience has learned that the disinfection process can be insufficient when bacteria are embedded in a wet substrate.
- 8. Visible dirt, dirty spots and wet spots need to be cleaned and dried prior to starting the process and the towels used for this need to be thrown away and transferred to the laundry service.

General precautions

- 1. Wear the indicated personal protection equipment as specified in the disinfection protocol.
- 2. Use only Huwa-San® TR-12,5 developed for the Huwa-San® Fogger in combination with the device.
- 3. Remove the bottle from the Huwa-San® Fogger, before relocating or transporting the device.
- 4. Follow the steps indicated in the disinfection protocol to assure the bottle containing Huwa-San® TR-12,5 is held vertically at all times.
- 5. Keep children away from the Huwa-San® Fogger and do not let visitors contact the device or power cord.
- 6. Store the Huwa-San® Fogger when not in use in a dry, high, or locked-up place, out of the reach of children. By preference between 10°C and 35°C.
- 7. Use the power cord supplied with the Huwa-San Fogger for safe operation.

- 8. Never carry the Huwa-San® Fogger by the power cord and never pull the power cord to disconnect it. Keep the power cord away from heat, oil and sharp edges.
- Do not put items or liquid in the openings of the Huwa-San® Fogger (nozzle, opening for nozzle head, air inlet).
- 10. Do not pour fluid over the Huwa-San® Fogger.
- 11. Do not open the Huwa-San® Fogger, there are electrical parts under voltage and rotating parts inside.
- 12. Do not use the Huwa-San® Fogger with broken or damaged parts (including power cord).
- Make sure the electric current and voltage match your country's current and voltage standards.
- 14. Guard against electric shock. Prevent body contact with grounded surfaces (e.g. pipes, radiators,...).
- 15. Consider environmental influences. Do not expose electric tools to rain. Do not use electric tools near flammable liquids or gases.
- 16. Follow basic safety precautions when using electric devices to protect yourself against electric shock, danger of injury and fire.
- 17. Keep working area clean. Cluttered areas invite injuries.

The device diffuses a chemical substance, before using the product, read the safety data-sheet carefully. Take necessary precautions and wear appropriate personal protective gear.

Hazard pictograms:



GHS05: corrosion

Hazard warnings:

H318: Causes serious eye damage.

Precautionary warnings:

- Keep out of reach of children.
 Avoid breathing dust/fume/gas/mist/vapours/spray
- Wear protective gloves/protective clothing/eye protection/face protection.
- IN EYES: rinse carefully with water for several minutes. Remove contact lenses, if present and easily done. Continue rinsing.
- Dispose of contents/container according to local regulations.

For more information we refer to the Safety Data Sheet (SDS) of the product.

4 THE HUWA-SAN® FOGGER

4.1 General

Huwa-San® Fogger is a solid, reliable and easy to use whole room disinfection device. It enables users to disinfect surfaces in private, public, industrial areas and other spaces in a quick and efficient fashion.

Huwa-San $^{\circ}$ Fogger uses Huwa-San $^{\circ}$ TR-12,5 (12.5% $\mathrm{H_2O_2}$) as disinfectant, which meets the highest EN disinfection standards for bactericides, fungicides and virucides. The device's excellent disinfection results, its clear digital display and its mobility make Huwa-San $^{\circ}$ Fogger the most intuitive and user-friendly option on the market today.

Huwa-San® Fogger disinfects volumes up to 142 m³ per liter with a max. fogging time of 30 minutes.

Huwa-San® Fogger is not a medical device.

4.2 Intended use

Huwa-San[®] Fogger can be used with Huwa-San[®] TR-12,5, which is a 12.5% hydrogen peroxide solution. For more details, refer to the technical data of Huwa-San[®] TR-12,5.

Huwa-San® Fogger efficiently disinfects surfaces and rooms by nebulization. Huwa-San® Fogger is suited for patient rooms, retirement homes, waiting rooms in private practices, catering industry, hotel rooms, wellness areas, classrooms, gyms, etc.

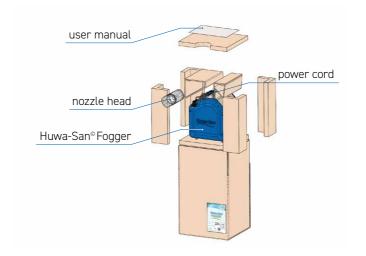
Huwa-San® Fogger is suitable for indoor use only.

4.3 Benefits

- Efficient, fast, simple room disinfection technology
- Room is disinfected high touch, low touch and surfaces that are difficult to reach
- · Can be applied proactive, scheduled or in case of an outbreak
- Excellent material compatibility (Non-corrosive at user-levels)
- Low concentration of ingredient needed in the air
- No harmful residues (only water and oxygen)
- User-friendly design

4.4 Package content

- 1 Huwa-San[®] Fogger
- 1 nozzle head
- 1 power cord
- 1 user manual



4.5 Main components



4.6 Accessories

To check efficient dispersion of Huwa-San® TR-12,5 throughout the room, locate Roam Technology test strips in corners or on closets. These test strips cannot be used to measure the concentration, only to demonstrate the distribution of the product in difficult to reach areas.



5. WORKING WITH THE HUWA-SAN® FOGGER



Always wear gloves and adequate eye protection when handling a hydrogen peroxide solution. Always wear a gas mask and cover-all when entering a room where >2 ppm hydrogen peroxide vapour is still present. The room can only be released after disinfection when the measured hydrogen peroxide concentration is < 1 ppm.

5.1 Training and certification

Disinfection by fogging should only be performed by trained and certified personnel. Use biocides safely. Before use, read the label and product information.

5.2 Personal protection equipment

Personal protection equipment must meet the following standards:

- Respiration: full face mask / gas mask with filter type B, which complies with standard EN 136:1998
- Eves: chemical goggles / safety goggles, meeting standard EN 166:2001.
- Hands: gloves made of natural rubber, nitrile rubber, butyl rubber, polyethylene or PVC, which comply with the standard EN 374-1: 2003
- Body: Cover-all of corrosion-resistant protective clothing









5.3 Room preparation

- During the application, no people can be present in the room or enter the room.
- Screen off surrounding spaces containing people and if needed, seal off in such a way that
 the aerosol cannot penetrate to surrounding spaces.
- Leave no edibles or food in the room during disinfection.
- Assure no pets, birds or other animals are present in the room during disinfection.
- Discard all waste intended for disposal prior to disinfection.
- · Bring textile that needs to be washed outside the room.
- Dry all wet spots and clean real pollution (blood and body liquids) the classic way.
- Switch off or cover fire detectors. Some types of fire detectors perceive peroxide vapour
 as smoke and will set off. Sensitive sensors in the room should be covered or taped to
 prevent damage.

- Effectively seal doors and gaps with tape. In rooms that by definition have overpressure, the supply of fresh air must be switched off.
- Thoroughly clean surfaces, equipment, material and pipes first, rinse any cleaning agent with clean water. Remove all excess water. Make sure visible dirt and wet spots are cleaned and dried before fogging the room.
- Open drawers and cupboards and remove loose materials and packaging materials.
- Make sure the room is at room temperature or temperatures above 10 ° C.

5.4 Preparing the Huwa-San® Fogger for disinfection

- Place the Huwa-San® Fogger on a stable surface. Make sure the inlet airflow is not obstructed.
- Press the latch and take the nozzle out of its cradle.
- Insert the flexible straw into the bottle 'Huwa-San® TR-12,5' and screw the nozzle clockwise
 onto the bottle.
- Put the nozzle back into its cradle and press firmly until it clicks into position.









6. DISINFECTION PROCEDURE

6.1 Start of disinfection procedure

- 1. Connect the power cord to the back of the Huwa-San® Fogger and insert the plug into a wall outlet. Always verify if the voltage indicated on the identification plate (see Figure 4.5 on 10), corresponds to the local mains voltage before you connect the unit. It is only allowed to use the fogger with the original power cord (with ferrite ring) to meet the EMC requirements.
- 2. Check if sufficient product is present in the Huwa-San® bottle to complete the entire disinfection process for the selected room volume!
- 3. Set the ON/OFF switch (B) to the ON position.
- 4. Place the Huwa-San® Fogger in a corner of the room to be disinfected, the nozzle pointing to the center of the room.
- 5. Windows Start-logo is shown.
- 6. Roam Technology splash screen is shown.



7. The start menu will appear. The start menu shows the data of the last disinfection, the system date and time.

To start a disinfection procedure that does not need to be saved in the documentation list, see 6.2 Disinfection without documentation. To start a disinfection procedure that has to be saved in the documentation list, see 6.3 Disinfection with documentation.



6.2 Disinfection without documentation

8. Press "New disinfection".



10. The screen for entering the room size appears with the last value of room size. Enter the room size using the display keyboard. Subsequently press "Next".



12. The RFID-reader successfully identified the tag. Press "Next" to continue.



 Subsequently press "No" for undocumented disinfection. For documented disinfection see 6.3 Disinfection with documentation



11. The device reads the bottle ID.



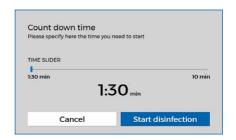
13. If the device indicates the bottle contains insufficient amount of product to disinfect the room, attach new bottle or relocate to smaller room.



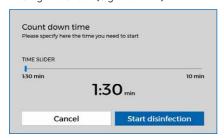
14. If the device cannot read the bottle ID, an error appears. If this screen appears see 7.2 Trouble shooting.



15. The countdown time appears.



16. Adjust the countdown time to the time required for the operator to leave the room using the slider (e.g. 1:30 min).



17. Press "Start disinfection", the countdown starts and the device will produce a discontinuous beep.



18. The frequency of the beep will rise during the countdown. At the end of the countdown, product nebulization starts. For actions after nebulization, see 6.4 After disinfection.



6.3 Disinfection with documentation

19. When choosing for disinfection with documentation, it is recommended to manage the presets. Manage presets by pressing "Managing presets" in start menu.



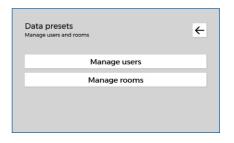
21. Press "Manage users", the user list opens.



23. With "+Add new user", users can be added, edited or deleted



20. Choose "Manage users" or "Manage rooms".



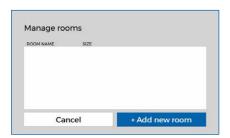
22. Press "+ Add new user". If you touch the input field, a display keyboard is shown to edit the names. After editing, press enter and + "+Add new user".



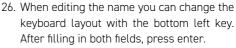
24. After managing all users, press "Cancel".

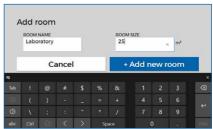


25. Choose "Manage rooms" and the room list is shown. Press " + Add new room"

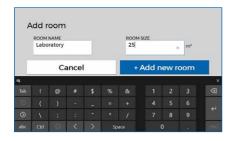


27. Press "+ Add new room", the room is added in the room list.



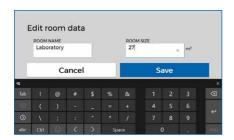


28. Additional rooms can be added, edited or deleted (e.g. Press "Edit")





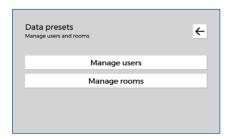
29. Edit room name or size and press "Save".



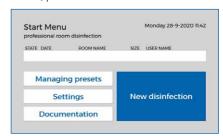
30. The room list appears with adjusted name or room size.



31. Press "Cancel" to return to presets menu.



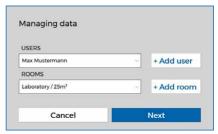
32. Use the left arrow to return to the start menu. A documented disinfection can now start, press "New disinfection".



33. Press "Yes" for a documented disinfection.



34. Now choose a user from the users list and a room from the room list or add a new user and/or room by respectively pressing "+ Add user" and/or "+Add room". Subsequently, press "Next".



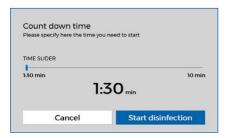
35. Assure enough product is in the bottle to successfully disinfect the room, otherwise attach new bottle. If ID was not recognized see 7.2 Trouble shooting.



36. The RFID reader indicates the ID was successfully recognized.



37. Adjust the countdown time with the slider to the time required for the operator to leave the room.



38. Press "Start disinfection", the countdown starts (identical procedure as non-documented disinfection).



 After countdown time, product nebulization starts.



6.4 After disinfection

40. The device ceases nebulization when 100% is reached and the required volume of Huwa-San $^{\circ}$ TR-12,5 is distributed in the room. After nebulization, respect the contact time. The concentration H_2O_2 after contact time depends on the ambient temperature, room volume, and ventilation with fresh air. Only enter the room if the concentration

 ${\rm H_2O_2}$ < 2 ppm, otherwise wear appropriate personal protection equipment (gas mask). In case of doubt, use a sensor to measure the ${\rm H_2O_2}$ concentration or wear a gas mask. The room can only be released after disinfection when the measured hydrogen peroxide concentration is < 1 ppm.

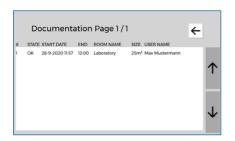
41. If disinfection was successful, the device will show the following screen. Press "OK" to return to the start menu.



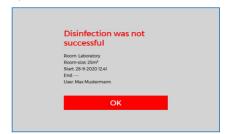
42. In case of disinfection with documentation, the start menu shows the last documented disinfection.



43. Press "Documentation" to obtain a list of documented disinfections. Use the left arrow to return to the start menu.



44. When the disinfection procedure is cancelled by a user or interrupted due to disconnection of the powerline, the following screen is shown. The disinfection was not successful, if necessary, repeat the procedure.



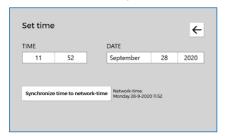
- 45. Set the ON/OFF switch to OFF to power off the unit.
- 46. Remove the Huwa-San® TR-12,5 bottle from the Huwa-San® Fogger for transportation.
- 47. Safely store Huwa-San[©] TR-12,5 and the Huwa-San Fogger.

6.5 Managing settings

48. To change the settings, go to the Start Menu and press "Settings".



- 50. To edit the internal time and date of the Huwa-San Fogger, press "Set time".
- 51. Choose the date by rolling through the calendar and pressing the check mark.
- 52. Adjust the time accordingly and press the arrow to return to the previous screen.



54. Choose the preferred language, the options are "English", "Deutsch", "Français", and "Nederlands".



49. Subsequently, choose the setting you wish to adjust: time, language, service options, network setting or PIN code.



53. To adjust the language, press "Set language".



55. Confirm your choice to change the language by pressing "Yes". Next, press the arrow to go back to the previous screen.



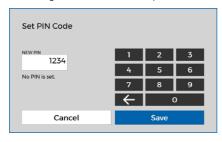
56. When pressing "Service options" in the settings screen, a service code is requested. This screen is only for manufacturing and service (e.g. resetting to factory defaults).



58. To set a PIN code, press "Set PIN Code" in the settings screen.



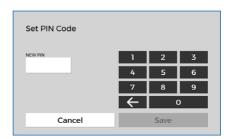
60. After entering the PIN code, press "Save". Make sure to memorize the PIN code, it will be required from now on to switch on the device. PIN code shown here is an example, all 4 digit combinations are possible.



57. When pressing "Network settings", you can activate a separate WLAN-Network for the fogger with the DHCP-Server controlled by the fogger. SSID and Password for this network are shown. This function is for future updates of the firmware. If you leave this screen the WLAN is switched off.



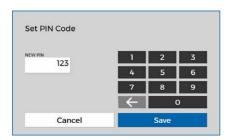
59. Enter the desired four digit PIN code using the numeric keypad shown on the right.



61. Confirm the new PIN code by pressing "Yes".



- 62. When the PIN verification is no longer wanted, delete the PIN code by pressing the arrow on the numeric keypad.
- 63. Next, press the blue "Save" button.





64. Confirm your wish to delete the PIN code by pressing "Yes".



6.6 Emergency stop and restart

1. You can stop the Huwa-San® Fogger at any time by putting the ON/OFF switch at the back of the unit in the OFF position. The Huwa-San® Fogger will stop the disinfection.



Doing so is not recommended since entering the room during disinfection represents a safety hazard!

- 2. To restart the Huwa-San® Fogger, put the ON/OFF switch in the ON position again.
- 3. Confirm and clear the error message by pressing the "Start/Stop" key during 3 seconds to restart the Huwa-San® Fogger

7 MAINTAINING THE HUWA-SAN® FOGGER

7.1 Maintenance

- 1. Store the Huwa-San[®] Fogger in a dry and clean place.
- 2. Check your Huwa-San® Fogger after the 12-month warranty period.
- Regularly check the ventilation grid (see Figure 4.5 on 10) and remove any dust if necessary.

7.2 Troubleshooting

The Huwa-San® fogger does not start

 Check the Huwa-San® Fogger is properly connected electrically to the wall socket and that the ON/OFF switch is set to ON.

The Huwa-San® Fogger does not nebulize the product

- · Check there is enough liquid in the cartridge.
- Check if the jet of the nozzle is not clogged.
- · Check if the cartridge is properly installed.

The display shows an error

- The disinfection cycle was interrupted, e.g. due to a power failure.
- The RFID-tag was not recognized. Make sure to only use Huwa-San® TR-12,5 specifically developed for the Huwa-San Fogger in combination with the device. Additionally check if the RFID-tag is aligned with the RFID-reader.
- Press the Start/Stop key during 3 seconds to clear the error message.

Still not working?

There are no serviceable parts inside the Huwa-San® Fogger. Do not attempt to repair the Huwa-San® Fogger yourself and contact the dealer.

7.3 Disposal



Check the IS014000-guidelines and local regulations for scrapping, disposal and recycling.

8. TECHNICAL DATA

8.1 Technical characteristics

Huwa-San® Fogger						
GENERAL						
Model/Type reference	Huwa-San [©] Fogger	Tank Capacity	11			
Model/ Type reference		Liquid	Huwa-San TR-12,5			
Housing	Mixed materials: plastic case and metal sheets (IP20)	Bottle identification	Yes - RFID tag			
Nozzle type	Venturi	Display	5 Inch Resistive Touch Screen (800x480)			
Connection to mains supply	Detachable power cord	CE-certification	Yes			
SPECIFICATIONS						
Voltage	230V AC	Weight of the equipment	Device without nozzle head,			
Frequency	50Hz		bottle and power cord: 9950g			
Power	approx. 900W		Nozzle head: 540g			
Dimensions of the equipment	376x278x414 mm					
Equipment mobility	Portable device		Power cord: approx. 310g			
OPERATIONS						
Operating conditions	Continuous	Process recordable	No			
Remote control	No	Warranty	Max. 2 years OR 3000 working hours			
Disinfection method	Cold fogging	Communication	No			
Droplet size	20 – 30 μm	Monitoring	Only disinfection time			
Flow rate	30 - 35 ml/min	Garantueed microbiological efficiency	log 5 for bacteria / log 4 for moulds & viruses / log 3 for bacterial spores			
Maximum room size	142 m³					
Cycle times	6,9 - 8s/m³	Disinfection volume	7 ml/m³			
Timer	Countdown	per room size				
Noise level	90 dB (without nozzle)					

8.2 Warranty and service

- Warranty period: 24 months OR 3000 working hours
- The warranty is void if the defect results from an operational intervention in the unit, normal wear and tear, negligence or lack of maintenance by the customer.
- The warranty is void if abnormal corrosion is found on the unit because of use of another product than the one advised in this user manual.
- · For any further information about warranty and service, please contact the dealer.



EC-Declaration of Conformity

In accordance with the EEC machine directive 2006/42/EC of 17 May 2006, appendix II A, we hereby certify that the following described machine in its conception, construction and form put by us into circulation is in accordance with all relevant essential health and safety requirements of the EC machinery directive 2006/42/EC as amended and the national laws and regulations adopting this directive.

This declaration is no longer valid if the machine is modified without our consent.

Manufactures name:

Roam Technology NV Geleenlaan 24 3600 Genk Belgium Tel: +32 (0)89 44 00 42

www.roamtechnology.com

Description of the machine

- · Function: Room Disinfection Device
- Type/Model: 1067-07-0000 / Fogger RT / Huwa-San Fogger
- Year of Construction: 2020

The agreement with further valid guidelines/regulations following for the product is explain:

- EMC Directive 2014/30/EU
- Low Voltage Directive 2014/35/EU
- RoHS Directive 2011/65/EU

Applied one harmonized standards in particular:

- DIN EN 12100:2011 Safety of machinery General principles for design Risk assessment and risk reduction
- DIN EN 60204-1:2007 Safety of machinery Electrical equipment of machines Part 1: General requirements
- DIN EN 61000-6-3:2007+A1:2011 + AC2012 Electromagnetic compatibility (Emission)
- DIN EN 61000-6-1:2007 Electromagnetic compatibility (Susceptibility)

Genk, 16 October 2020

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