

Bonderite® - Upgrades Your Standards

# *BONDERITE* E-AP APNR Compact Unit

Installation and Use  
Rev.2.4 - 20/10/2017



THIS MANUAL SHOWS THE INSTRUMENT'S MAIN FEATURES. IT INCLUDES IMPORTANT INDICATION AND INSTRUCTIONS ON THE SAFETY OF USE AND MAINTENANCE, THEREFORE IT MUST BE KEPT WITH CARE NEAR THE INSTRUMENT, INSIDE A PROPER HOLDER, HOWEVER WELL PROTECTED FROM LIQUIDS AND OTHER THAT COULD COMPROMISE THE READING CONDITION.

THE MANUAL IS ADDRESSED TO THE OPERATOR AND TO QUALIFIED TECHNICIANS FOR MAINTENANCE; USERS MUST NOT CARRY OUT OPERATIONS INTENDED FOR SERVICE MEN OR QUALIFIED TECHNICIANS. PRIOR TO PERFORMING ANY OPERATION ON THE UNIT, THE OPERATORS AND THE QUALIFIED TECHNICIANS MUST CAREFULLY READ THE INSTRUCTIONS CONTAINED IN THIS ISSUE.

HENKEL DECLINES ALL RESPONSABILITY OF ANY DAMAGE THAT MAY OCCUR BY A NON-CONFORMING USE OF THE EQUIPMENT, BY THE MISSED RESPECT OF THE DESTINATION OF USE AND INDICATED INSTRUCTIONS.

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This manual is intended for staff specifically in charge of the installation and / or management and / or repair the system. Interventions by unauthorized personnel, or do not comply with the manual instructions, will void any liability on the consequences that may ensue.

## IMPORTANT INFORMATION

**CAUTION:** Read these instructions carefully and become familiar with the equipment before proceeding with installation, use or maintenance operations. The following messages appear throughout the documentation or on the equipment itself to warn the user of potential hazards or to highlight information which may clarify or simplify a procedure.



When this symbol accompanies a Danger or Warning safety label, it means that there is an electrical hazard which could lead to injury if the instructions are not followed.

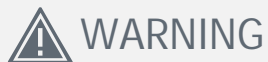


This symbol is a safety warning. It warns the user of potential hazards which could lead to injury. Follow all the safety indications which follow this symbol to avoid possible injuries and even death.



**DANGER**

**DANGER:** indicates a situation of immediate danger which, if not avoided, may result in serious injury and even death.



**WARNING**

**WARNING:** indicates a situation of potential danger which, if not avoided, may result in serious injury and even death or damage to the appliance.



## CAUTION

CAUTION: indicates a situation of potential danger which, if not avoided, may result in injury or damage to the equipment.



## CAUTION

CAUTION: used with no warning symbol, indicates a situation of potential danger which, if not avoided, may result in damage to the appliance.

## ALLOWED USE, INTENDED USE, PROHIBITED USE

This machine has been designed for industrial applications and for professional and not general use.

### WARNING

Maximum inlet pressure H2O: 4 bar

### WARNING

Do not close the overflow outlet of the demi water tank

### CAUTION

Henkel wishes to remind the user that special prescriptions established by the relative governing bodies have been put into force to safeguard the health and safety of operators in the workplace. Access to the equipment's operating area may be subject to the use of adequate safeguards and be limited to adequately trained personnel who are acquainted with the various risks they may be exposed to or potentially subjected to both during time spent in close proximity to the equipment, when using it or performing maintenance operations on it. Always observe the legal prescriptions in force in the country of appliance use.

Henkel cannot foresee all possible circumstances which may entail, even if only remotely, potential risks in real conditions of appliance operation and use. Consequently, the warnings given in this text and indicated on the equipment itself cannot cover all possible situations of potential danger. The equipment has been designed to indicate specific measurement values in particular conditions and consequently is not suitable for any other purpose. All other uses of the equipment are to be considered improper. Use the equipment based on its technical features. For operating specifications, please refer to the indications provided. Henkel advises you to strictly follow all the indications provided in this use and maintenance manual and to adhere to all the safety prescriptions described herein.

Before starting the appliance, make sure that all the electrical connections have been executed up to the required standards.



## CAUTION

ALWAYS KEEP the equipment and the work area clean and tidy.

ALWAYS WEAR suitable clothing to avoid impediments and/or prevent dangerous entanglement with the equipment.

ALWAYS WEAR the personal protective equipment prescribed in the Instruction Manual depending on the operations being executed.

NEVER REMOVE the data plates attached to the equipment by the manufacturer.

## PERSONNEL

The equipment has been designed to be used by a number of Operators.

All personnel employed to use the equipment must possess (or acquire through suitable training and instruction) the requirements indicated below and must know and understand the contents of this Manual in full and all relative Safety information:

1. Sufficient general and technical knowledge to be able to understand the contents of the Instruction Manual and correctly comprehend the drawing and diagrams.
2. Knowledge of the main health and safety regulations and technological standards in force.
3. General knowledge of the production line and the plant in which the equipment has been installed.
4. Knowledge on what to do in the event of an emergency, where to find personal protective equipment and how to use it correctly.

Maintenance technicians, as well as the aforementioned characteristics, must possess adequate technical and electrical skills.

## EMERGENCY MEASURES TO BE TAKEN IN THE EVENT OF EXPLOSION



**DANGER:** This system is not suitable for use in potentially explosive environments. In the event of an explosion, adhere to the Health and Safety Regulations in force in the work place. Please note that there are no pressurized components in the system except for the water circuit, which, when connected to the supply is subjected to operating pressure.

## EMERGENCY MEASURES TO BE TAKEN IN THE EVENT OF FIRE

The causes which could result in a fire in the Bonderite E-AP APNR Compact Unit are limited to the electrical devices only. The risk of fire is extremely remote as the operating voltage and current are very low. In the event of fire, whenever possible, turn off the mains power switch, which must be located upstream from the appliance, and put out the flames with a powder fire extinguisher. All electrical devices installed in the system are fireproof and self-extinguishing.



### CAUTION

CAUTION: The customer must provide an adequate fire prevention system based on internal factory conditions and in compliance with the relative legislation in force.

CAUTION: In the event of fire turn off the main power switch immediately in order to cut off the power supply.



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# 1. Front equipment

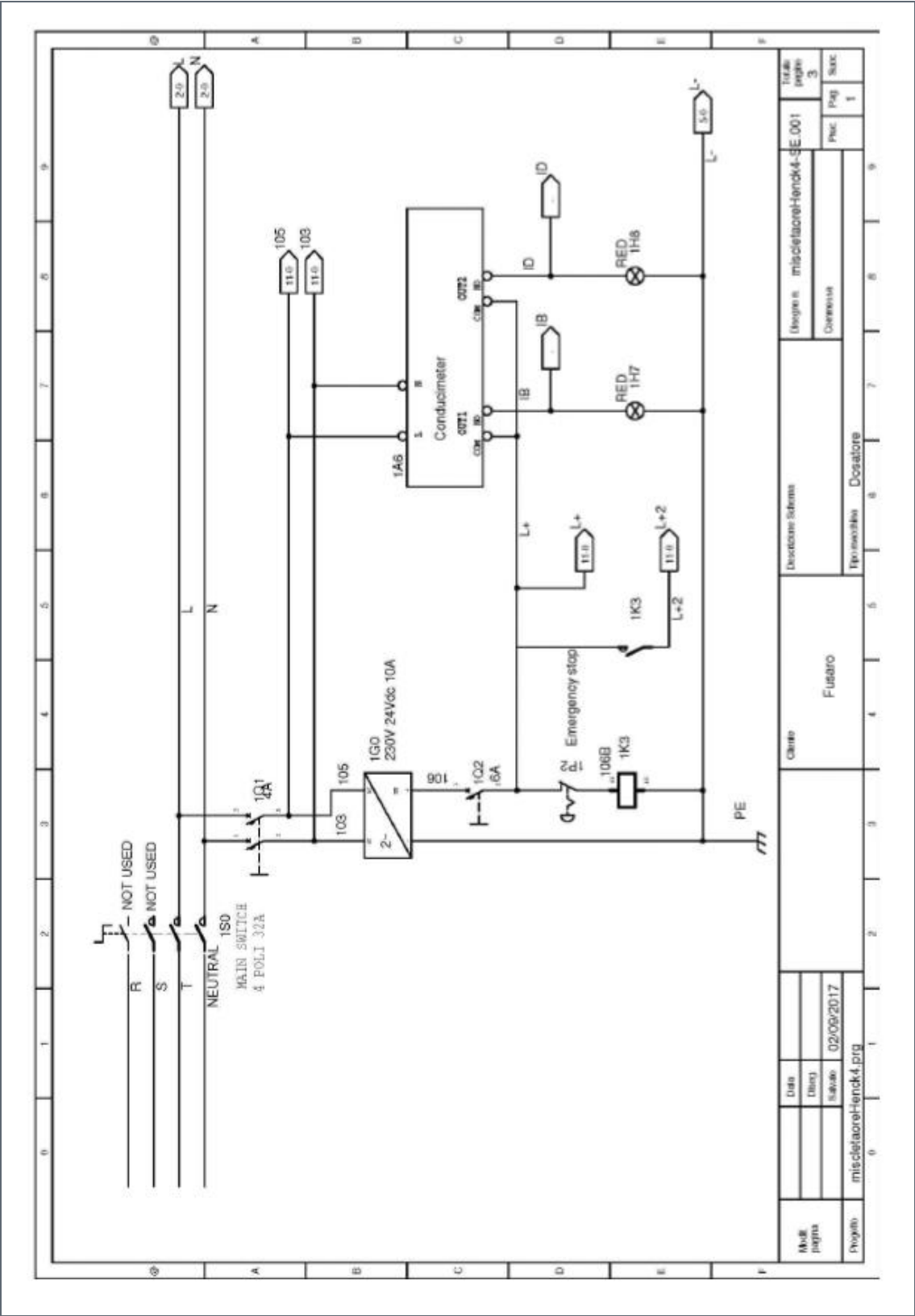
Bonderite E-AP APNR Compact Unit – idh: 2084147

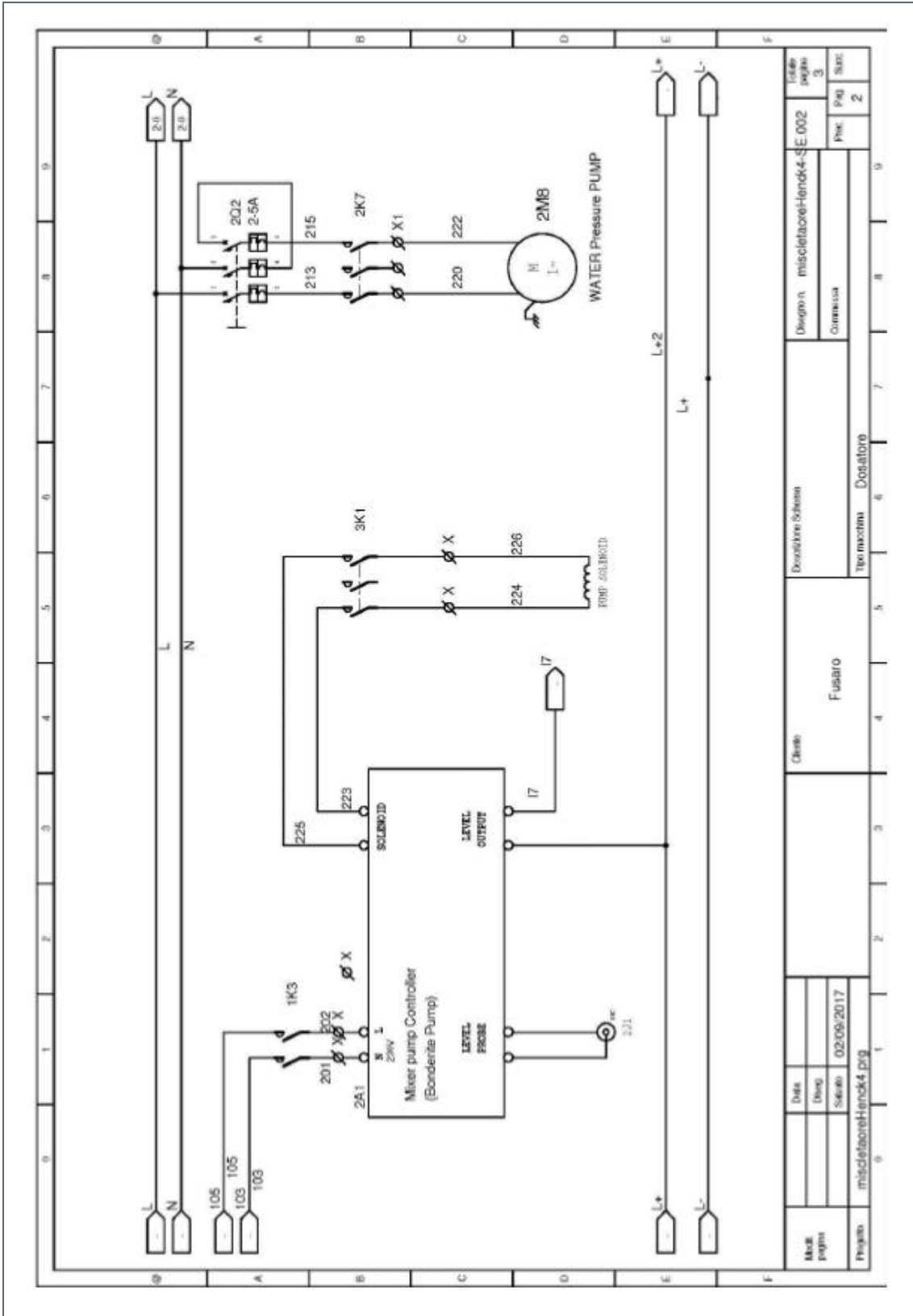


APNR complete ramp nozzle – idh: 2091228

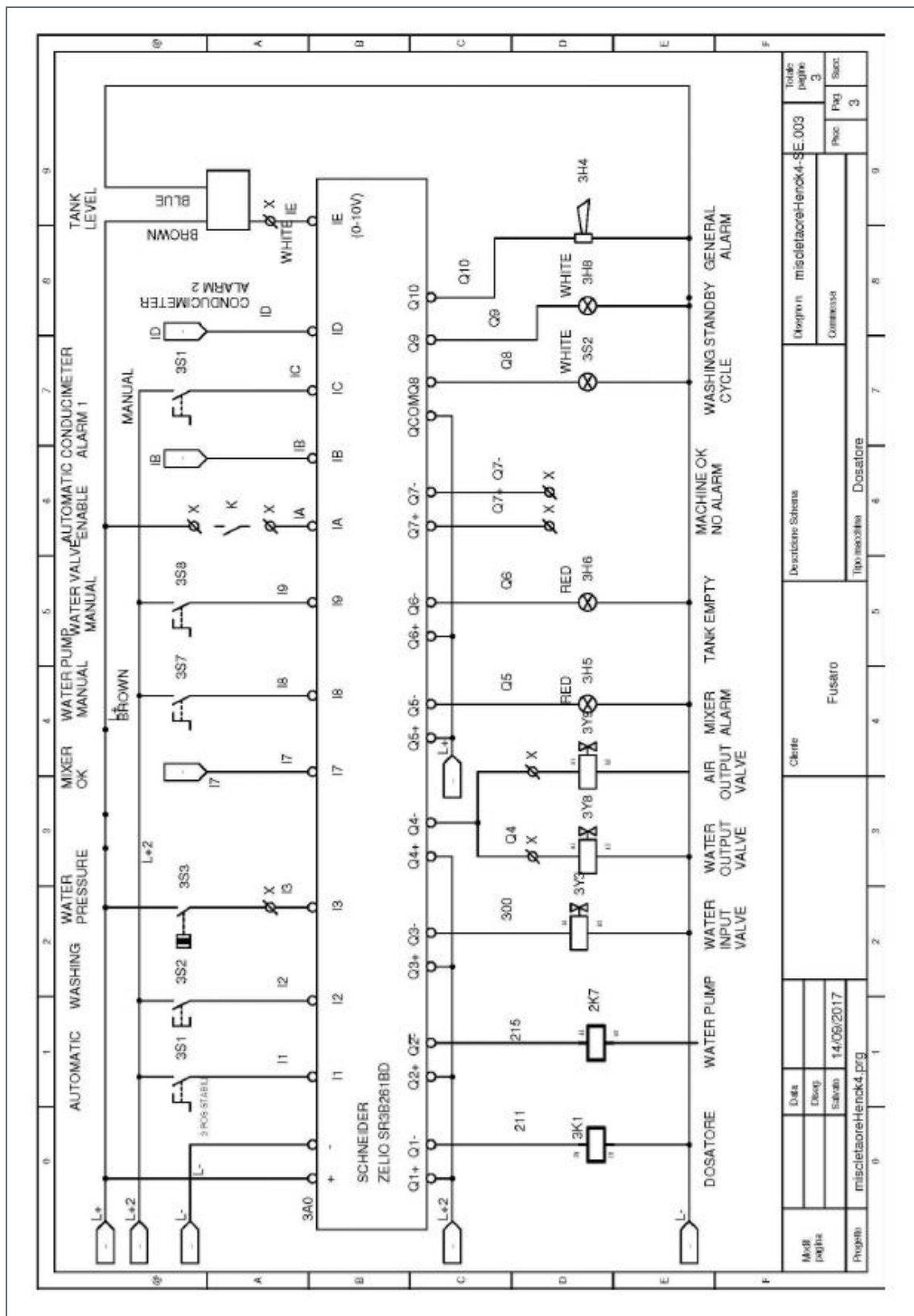


# 2. Electrical Drawing





### 3. Terminal Box



## 4. CE declaration Bonderite E-AP APNR Compact unit



**FUSARO MARIO**  
COSTRUZIONI IN FERRO PER L'INDUSTRIA E L'EDILIZIA

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R.E.A. MI 1742564 - Reg. Imp. MI 04366770966

### DECLARATION OF CONFORMITY CE

Fusaro Mario, the undersigned, being the legal representative of the company FUSARO MARIO srl, with headquarters in Via Mare, 87-20822 MB Seveso Italy,

**DECLARES, under its own responsibility, that the system: Bonderite E-AP APNR Compact unit with registration number 340/15 complies with the conditions laid down in the following directives:**

- - 2006/42 / EC Machinery Directive
- - 2006/95 / EC, Low Voltage Directive
- - 89/336, Directive Electromagnetic compatibility

and national legislation that transposes, because it complies with the essential health and safety requirements that concern.

It also declares conformity with reference to the following harmonized standards

- - EN 12100 Safety at work
- EN 60204-1 Electrical equipment of machines
- EN 418 emergency stop device

We hereby declare that, as required by Directive 2006/42 / EC was prepared appropriate technical dossier.

**FUSARO MARIO SRL**  
L' Amministratore  
FUSARO MARIO





ISO 9001:2008  
ISO 3834 - 2  
CENTRO TRASFORMAZIONE n. 2867/13

[www.fusaromario.com](http://www.fusaromario.com)

## 5. CE declaration Conductivimeter J Digital CD




## 6. CE declaration dosing pump VMS MF

	<b>NORME CE</b> <b>EC RULES (STANDARD EC)</b> <b>NORMAS DE LA CE</b>	
	Direttiva Basso Voltaggio Low Voltage Directive Directiva de baja tensión	} <b>2006/95/CE</b>
	Direttiva EMC Compatibilità Elettromagnetica EMC electromagnetic compatibility directive EMC directiva de compatibilidad electromagnética	} <b>2004/108/CE</b>
	Norme armonizzate europee nell'ambito della direttiva European harmonized standards underdirective Las normas europeas armonizadas conforme a la directiva	} <b>2006/42/CE</b>
	<b>LE POMPE VMS SONO TESTATE E CERTIFICATE DA WQA NSF/ANSI 50 E 61 PER LA SICUREZZA DEI MATERIALI.</b>	



## 7. CE declaration Pressure sphere unit

<b>en</b>	<b>EC DECLARATION OF CONFORMITY</b>	<b>« TRANSLATION »</b>
LOWARA SRL UNIPERSONALE, WITH HEADQUARTERS IN VIA VITTORIO LOMBARDI 14 - 36075 MONTECCHIO MAGGIORE VI - ITALIA, HEREBY DECLARES THAT THE FOLLOWING PRODUCTS		
ELECTRIC PUMP (1~, 3~, 50 HZ, 60 HZ)		
# 1	BG..., BGM..GARDEN, CEA., CEA..V, CEA..N, CA., CA..V, CA..N, CO., CO..K, CEF., COF., DIWA., DIWA..SG., DIWA..GT., DL., DL..CG., DLC., DLG., DLS., DLV., DLV..CG., DN., DN..CG., DOC., DOC..VX., DOC..GT., DOC..SG., DOMO., DOMO..VX., DOMO..GT., DOMO..SG., DOMO GRI., DOMO GRI..SG., FCE., FCS., FCTE., FCTS., FHE., FHBE., FHS., FHBS., FHF., FHBF., HM., HM..Z, HMS., MINIVX., MINIVX..CG., P., PSA., SC., SC..C., SC..CG., SHE., SHS., SHF., SHOE., SHOS., SHOD., SP., SV..F., SV..N., SV..R., SV..T., SV..C., SV..V., VORTEX., VORTEX..CG..	
# 2	..GS., ..GSL., SVI..E, SVI..S, SVI..N, TDB..DF., TDB..DN., TDB..F., TDB..FB., TDB..FN., TDB..GF., TDB..GN., TDB..N., TDV..DF., TDV..DN., TDV..F., TDV..FB., TDV..FN., TDV..GF., TDV..GN., TDV..N., Z6., Z6..D., ZN6., ZN6..D.,	
GRUPPISFERA & BLOCK (1~, 50 HZ, 60 HZ)		
# 1	BLOCK BG., BLOCK CEA., BLOCK CA., GRUPPISFERA BG., GRUPPISFERA CEA., GRUPPISFERA CA., GRUPPISFERA HM., GRUPPISFERA P..	
CIRCULATORS (1~, 3~, 50 HZ)		
# 3	ECOCIRC EA., EV., EB., EBV., TLC., TLCB., TLCH., TLCHB., TLCK., TLCSOL..	
# 4	FLC., FLCG., EFLC., EFLCG..	
FULFILS THE RELEVANT PROVISIONS OF THE FOLLOWING EUROPEAN DIRECTIVES		
• MACHINERY 98/37/EC (⇒ 28.12.2009), 2006/42/EC (29.12.2009 ⇒) • ELECTROMAGNETIC COMPATIBILITY 2004/108/EC		
AND THE FOLLOWING TECHNICAL STANDARDS		
# 1	EN 809, EN 60335-1, EN 60335-2-41, EN 61000-6-1:2007, EN 61000-6-3:2007	
# 2	EN 809, EN 60204-1, EN 61000-6-1:2007, EN 61000-6-3:2007	
# 3	EN 60335-1, EN 60335-2-51, EN 55014-1:2006+A1:2009, EN 55014-2:1997+A1:2001+A2:2008	
# 4	EN 60335-1, EN 60335-2-51, EN 61000-6-1:2007, EN 61000-6-3:2007	
THE TECHNICAL FILE IS AVAILABLE FROM LOWARA SRL UNIPERSONALE.		
# 1	EN 809, EN 60335-1, EN 60335-2-41, EN 61000-6-1:2007, EN 61000-6-3:2007	
# 2	EN 809, EN 60204-1, EN 61000-6-1:2007, EN 61000-6-3:2007	
# 3	EN 60335-1, EN 60335-2-51, EN 55014-1:2006+A1:2009, EN 55014-2:1997+A1:2001+A2:2008	
# 4	EN 60335-1, EN 60335-2-51, EN 61000-6-1:2007, EN 61000-6-3:2007	
THE TECHNICAL FILE IS AVAILABLE FROM LOWARA SRL UNIPERSONALE.		
<b>en</b>	<b>EC DECLARATION OF CONFORMITY</b>	<b>« TRANSLATION »</b>
LOWARA SRL UNIPERSONALE, WITH HEADQUARTERS IN VIA VITTORIO LOMBARDI 14 - 36075 MONTECCHIO MAGGIORE VI - ITALIA, HEREBY DECLARES THAT THE FOLLOWING PRODUCTS		
PUMP		
CEF., COF., FHF., FHBF., ..GS., ..GSL., SHF., SV..F., SV..N., SV..R., SV..T., SV..C., SV..V., SVI..S, SVI..N, TDB..DF., TDB..DN., TDB..F., TDB..FB., TDB..FN., TDB..GF., TDB..GN., TDB..N., TDV..DF., TDV..DN., TDV..F., TDV..FB., TDV..FN., TDV..GF., TDV..GN., TDV..N., Z6., Z6..D., ZN6., ZN6..D.,		
FULFILS THE RELEVANT PROVISIONS OF THE FOLLOWING EUROPEAN DIRECTIVES		
• MACHINERY 98/37/EC (⇒ 28.12.2009), 2006/42/EC (29.12.2009 ⇒)		
AND THE FOLLOWING TECHNICAL STANDARDS		
EN 809		
THE TECHNICAL FILE IS AVAILABLE FROM LOWARA SRL UNIPERSONALE.		
MONTECCHIO MAGGIORE, 21.12.2009 AMEDEO VALENTE (DIRECTOR OF R&D AND ENGINEERING) rev.04		
		

## 8. Control Console



### OPERATIVE BUTTON

"1" selector : SYSTEM CYCLE MANUAL / AUTOMATIC

"2" button: DRIVE PUMP CYCLE SYSTEM SET TO MANUAL

"3" button: DRIVE ELECTROVALVE FOR MANUAL WATER

"7" button: START WASHING CYCLE (With selector 1 in manual position)

"12" Emergency button; block the system immediately.

"13" ON/OFF button

### INDICATORS

"4" ALARM MAX Conductivity

"5" ALARM LOW LEVEL Bonderite product (min level dosing pump)

"6" ALARM MIN Conductivity

"8" ALARM LOW LEVEL STEEL DEMI WATER TANK

"9" BUZZER

## INSTRUMENT ON BOARD

"11" METERING PUMP = Remote Control Panel of the metering pump; for Its use see accompanying manual.

"10" CONDUCTIVITY-METER = Remote Control Panel conductivity; for Its use see accompanying manual

## 9. Installation

### Installation rules **Lineguard APNR Compact Unit**

- Be sure to place the Lineguard APNR Compact Unit away from heat / humidity and however near the exit of the treatment tunnel.
- Supply the Lineguard APNR Compact Unit with 220 VAC
- The product should be handled with care and with suitable lifting equipment, falls and shocks can cause damage without any visible external signs.
- Fill the body pump completely of water and also the suction pipe through the lateral filling plug to the outlet. Perform the operation carefully to prevent air pockets remain in the pump body and the suction pipe. Start the pump with the outlet shut-off valve. After some working time, control the pressure indicated by the gauge. If the pressure increases, let the pump run until his arrest will happen to the pressure switch. If the pressure does not increase stop the pump, repeat the filling operation and restart. The pressure switch is factory-calibrated. Calibration can be modified following the instructions of the pressure switch manufacturer. In this case refresh the air pre charge the tank to a value of 20 kPa (= 0.2 bar) lower than the new minimum calibration pressure.



## Installation rules APNR complete ramp nozzle

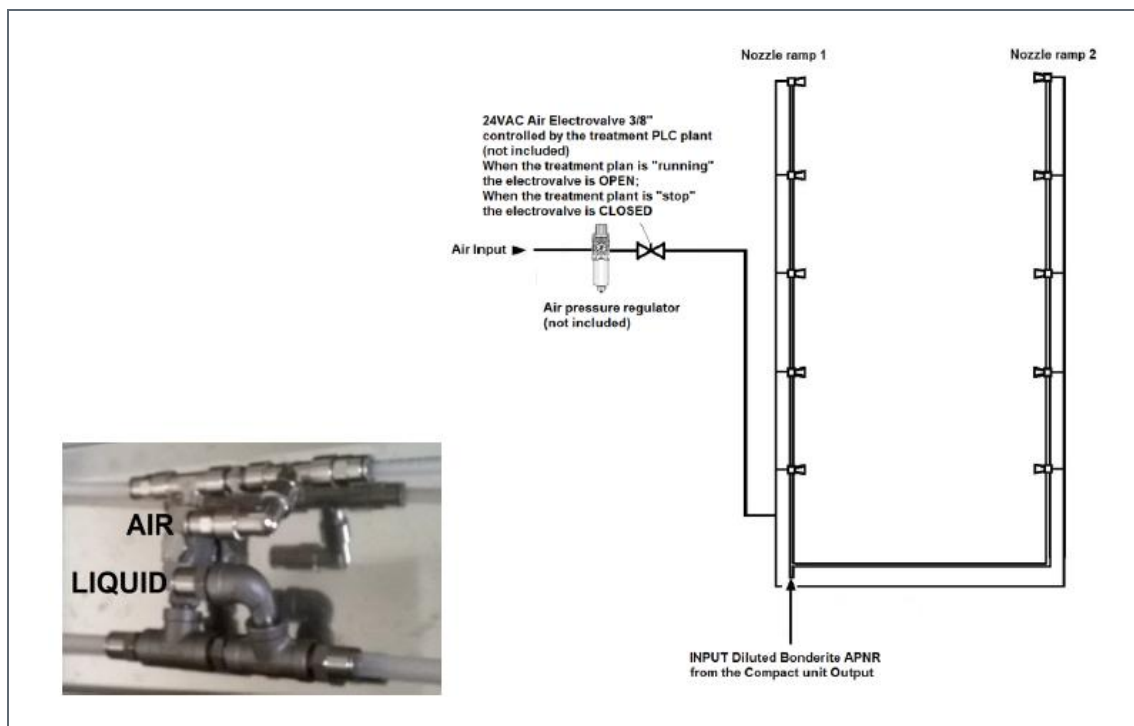
### Installation rules APNR complete ramp nozzle

The system application of APNR technology generates, thanks to suitable spray systems, a nebulized cloud containing water and specific chemical product.

This cloud of mist, depending on the installation location into the processing tunnel, the existing ventilation systems and / or suction and the air currents present, could also leak out from the tunnel.

Rests with the installer and the customer to make sure that environmental conditions are suitable and in accordance with the application. Appropriate extraction systems should also be installed or existing. Compliance with the rules relating to the health and safety of workers related to the application are also the sole responsibility of the customer.

- Be sure to place the two ramps APNR complete ramp nozzle output of the treatment tunnel. Each ramp must be fixed laterally and vertically (with appropriate screws, using the predisposed slots). The distance from the piece to be treated must not be greater than 30 cm. Refer to the lay-out of Fig. 1
- Supply the Stainless steel nozzle support via the hydraulic output of the Bonderite E-AP APNR Compact Unit (to adjust the flow of liquid from 180 lt/h to 600 lt/h). Use a polyethylene pipe 10x8 or 12x10.
- Supply the Stainless steel nozzle support with compressed air; from 2,5bar to 6bar (normally 4,5 bar). Prepare a pressure regulator (not supplied). Use a polyethylene pipe 8x6 or 10x8.



## 10. Operation overview

1. The DEMI WATER (max 10  $\mu$ S) is pumped through the pressure sphere unit at the entrance of the Compact unit.
2. After adjusting the water flow (from 200 lt/h to 500 lt/h) the water meter transmits the signal (ie how many liters-are now passing at that moment) to the dosing pump.
3. The metering pump is regulated in the proper range, (for exemple from 0,5% to 1,2%) according to customer requirements and injects APNR in the static mixer
4. From the static mixer out the product appropriately diluted unit sent to the spraying ramps.
5. The spray ramps, thanks to the special nozzles, also receive the pressurized air and create a cloud of nebulized water and containing specific chemical product.

This cloud of mist, depending on the installation location into the processing tunnel, the existing ventilation systems and / or suction and the air currents present, could also leak out from the tunnel.

Rests with the installer and the customer to make sure that environmental conditions are suitable and in accordance with the application. Appropriate extraction systems should also be installed or existing. Compliance with the rules relating to the health and safety of workers related to the application are also the sole responsibility of the customer.

# 11. Maintenance

Every 2 to 3 months, it is good to take a static mixer cleaning:



Every 4 to 6 months, it is good to take a cleaning spray nozzles:



## WASHING THE UNIT

It is possible and advisable to change products or before a period of inoperative use of the machine to carry out internal washing.

This smooth operation will allow you to drain the internal tank, pressure group and piping from any residual product inside, avoiding product stagnations that may become worse after a period of inoperability and prolong your unit's life.

## HOW DO I DO A WASHING?

To carry out a washing cycle proceed as follows.

1. SELECT "MANUAL POSITION"
2. PRESS THE CLEAN KEY ON THE PANEL
3. WAIT THE CYCLE WASHING ENDING

At the end of the cycle washing, will be possible to empty the tank with the under manual valve

## 12. Enclosed manuals

- VMF dosing pump
- Conductivity meter J-CD series