

KIT BOXPDS



Manual del Usuario
User Manual
Manuel d'Utilisation
Betriebsanleitung

Manual do Utilizador
Manuale Utente
Käyttöohje
Руководство пользователя

Fig. 1

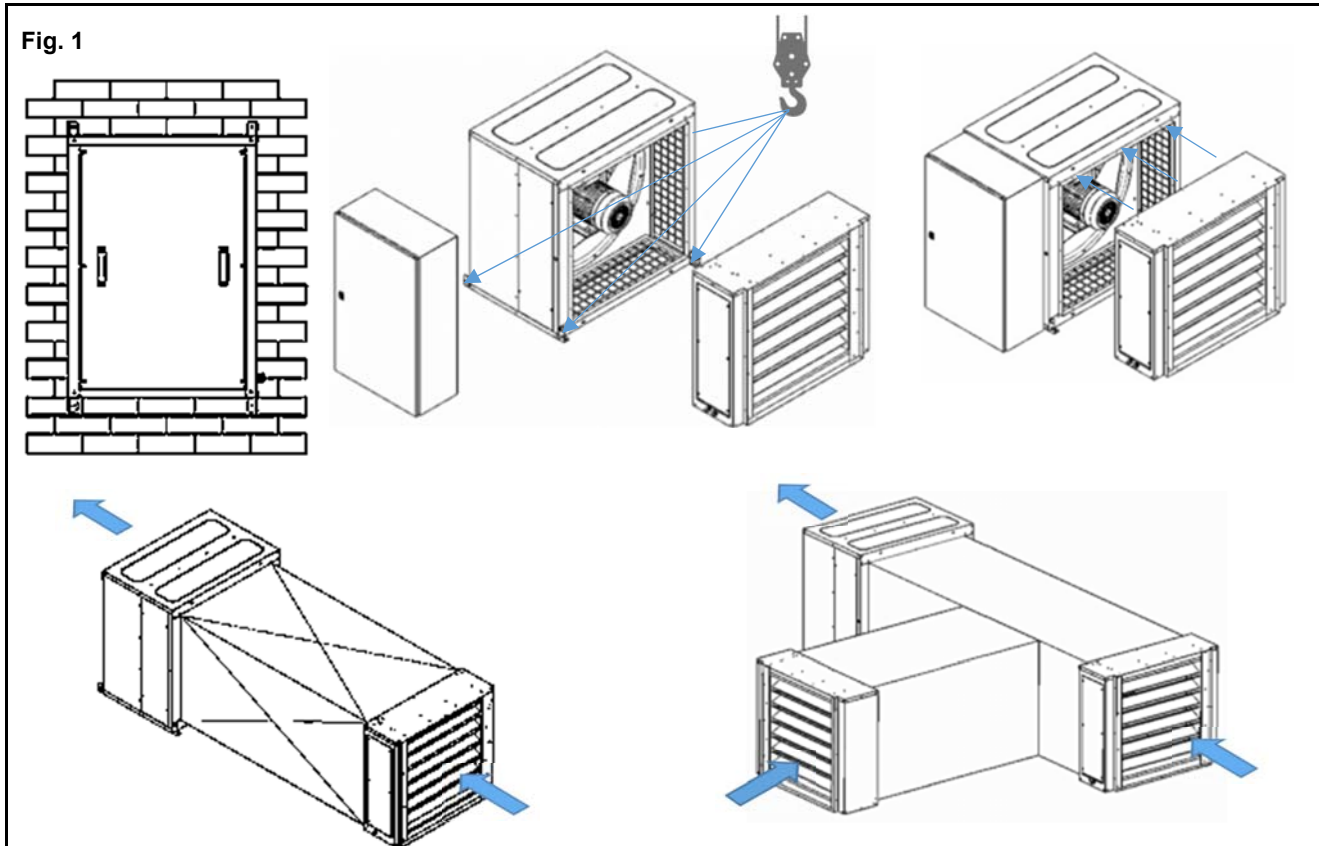


Fig. 2



Fig. 5

CONTROL BOX SCHEME

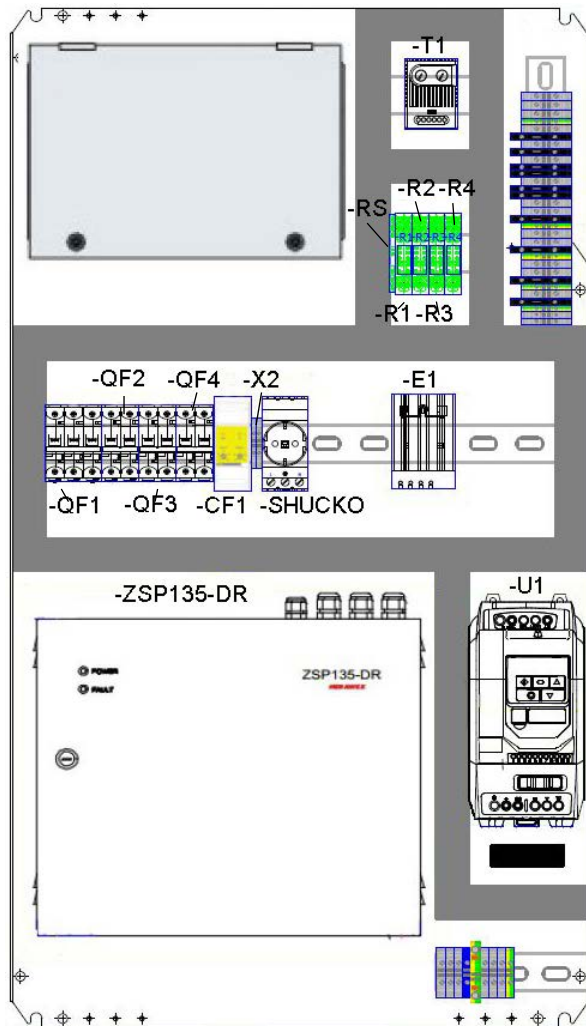


Fig. 6

KIT DAMPER

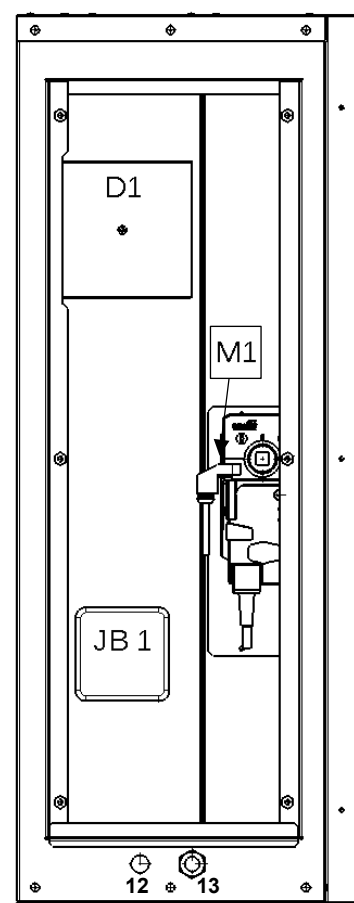


Fig. 7

(See Fig.9)

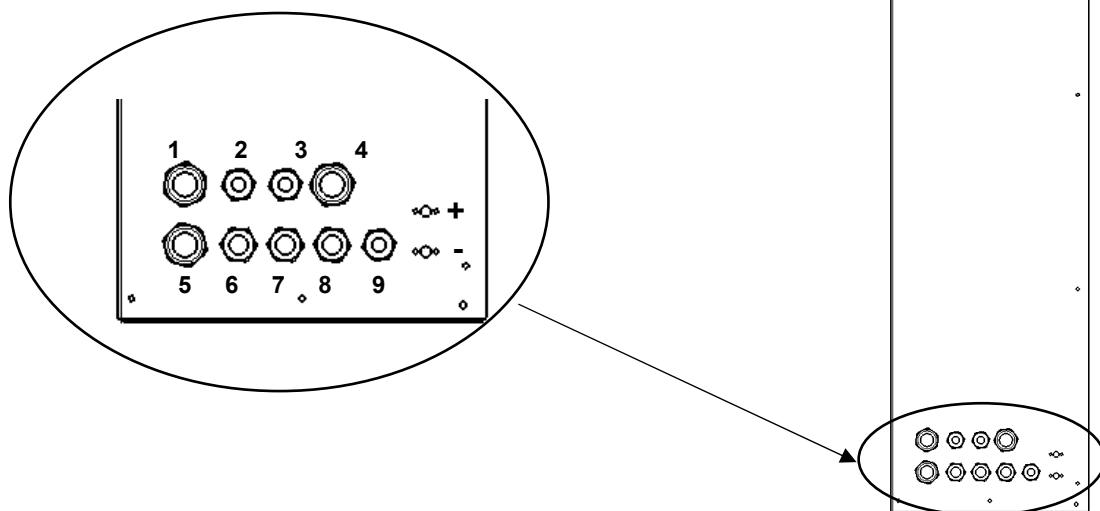


Fig. 8 **EXTERNAL CONTROL PANEL**

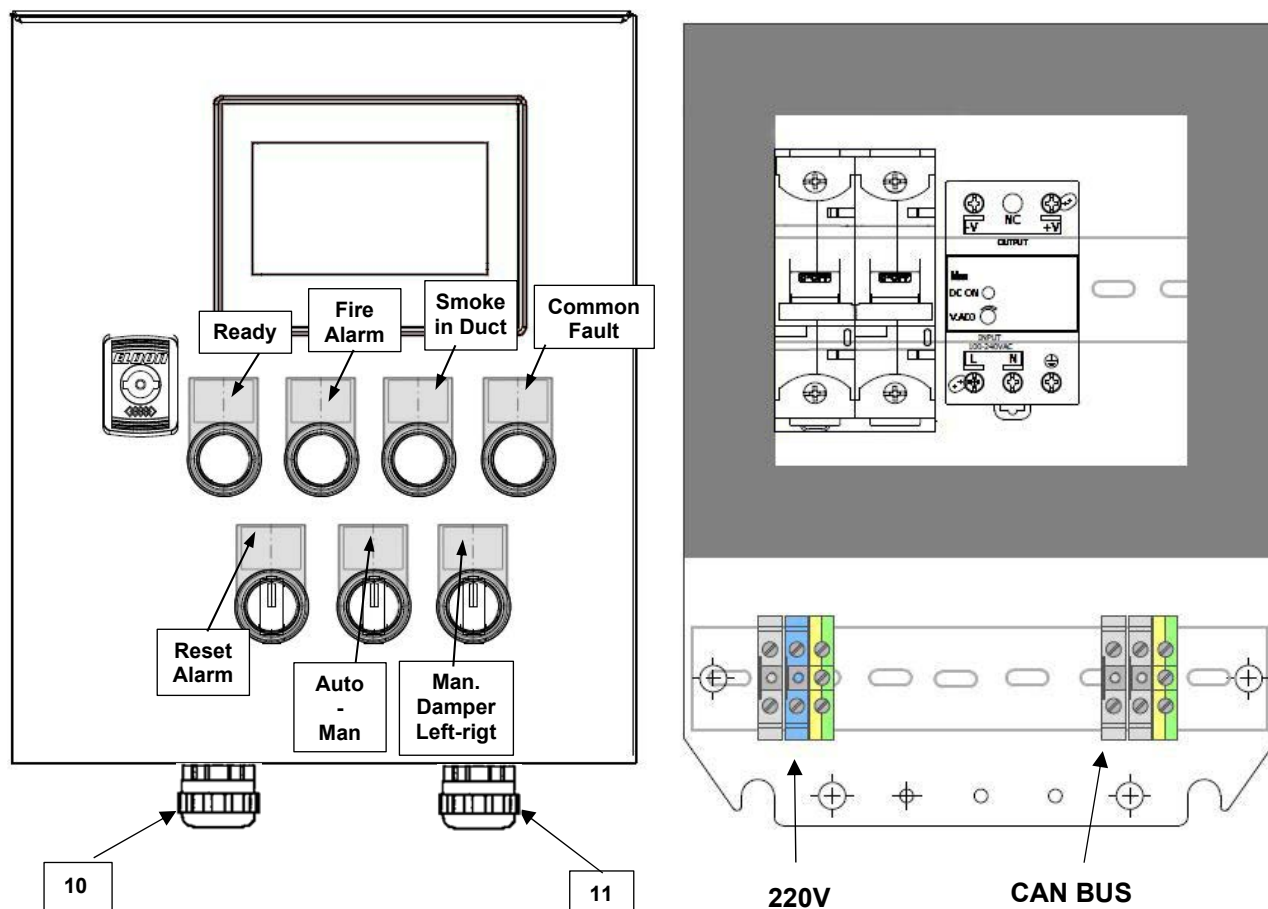
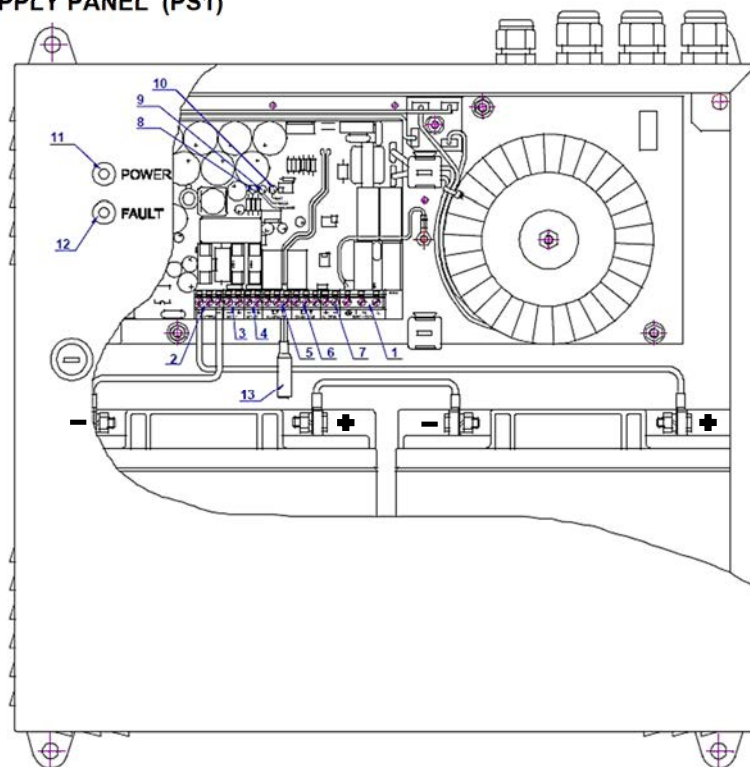


Fig.9

NUM. CABLE GLAND	DESCRIPTION	REFERENCE	CABLE SECTION
5	Main supply cable	RZ1-K Free halogens	5G4
1	Fan motor connection cable	RC4C1-K Shielded halogen free	4G2,5
2-3-12	Smoke detector cable conection	RC4C1-K Shielded halogen free	3G1
6-7-13	Gate actuator cable conection (DAMPER)	Z1Z1-K (AS) 0 6/1kV	6G1
8-11	Communication cable between electrical panel	DEVICENET TRUNK	1x2xAWG18 + 1x2xAWG15
4	Fire alarm signal cable	RC4C1-K Shielded halogen free	3G1,5
10	External control panel supply cable	RC4C1-K Shielded halogen free	3G1,5
9	BMS conection cable	RJ45 cat.6	-

Fig. 10 POWER SUPPLY PANEL (PS1)



Num	Description	Label	Recommended type and crossection of the wire
1	230V 50Hz mains power terminal	1L, N and ground	3-core multi stand cable 0,75 ... 1,5mm ²
2	Battery bank terminal	BATTERY	Wires delivered by the manufacturer. Pay due attention to the right polarity.
3, 4	Output Terminals	OUT 1, OUT 2	Twin core multi stand flame retardant halogen free 1 or 2,5mm ²
5	Battery Fault Output	BAT FLT	Twin cold telecom flame retardant 1x2x0,8mm ²
6	Output of mains fault signal	MAINS FLT	
7	Input of external fault signal	EXT FLT	
8	Visual Indication LED – green	POWER	
9	Visual Indication LED – yellow	OPERATION	
10	Visual Indication LED – red	BAT (BATTERY)	
11	Visual Indication LED – green	POWER	
12	Visual Indication LED – yellow	FAULT	
13	Temperature Probe		

Fig. 11

Model	Speed (rpm)	Total Current (A)	Electric Power (kW)	Maximum Flow (m ³ /h)	Radiated Noise Level dB(A)	Approx. Weight (kg)
BOXPDS-710-1.5	1400	2.32	1.1	19750	75	188
BOXPDS-710-2	1430	3.44	1.5	21100	75	190,5
BOXPDS-710-3	1445	4.83	2.2	23950	78	200
BOXPDS-800-3	1445	4.83	2.2	28000	79	208
BOXPDS-800-4	1445	6.33	3	32700	80	210
BOXPDS-800-5.5	1440	8.12	4	37200	81	215

Fig. 12

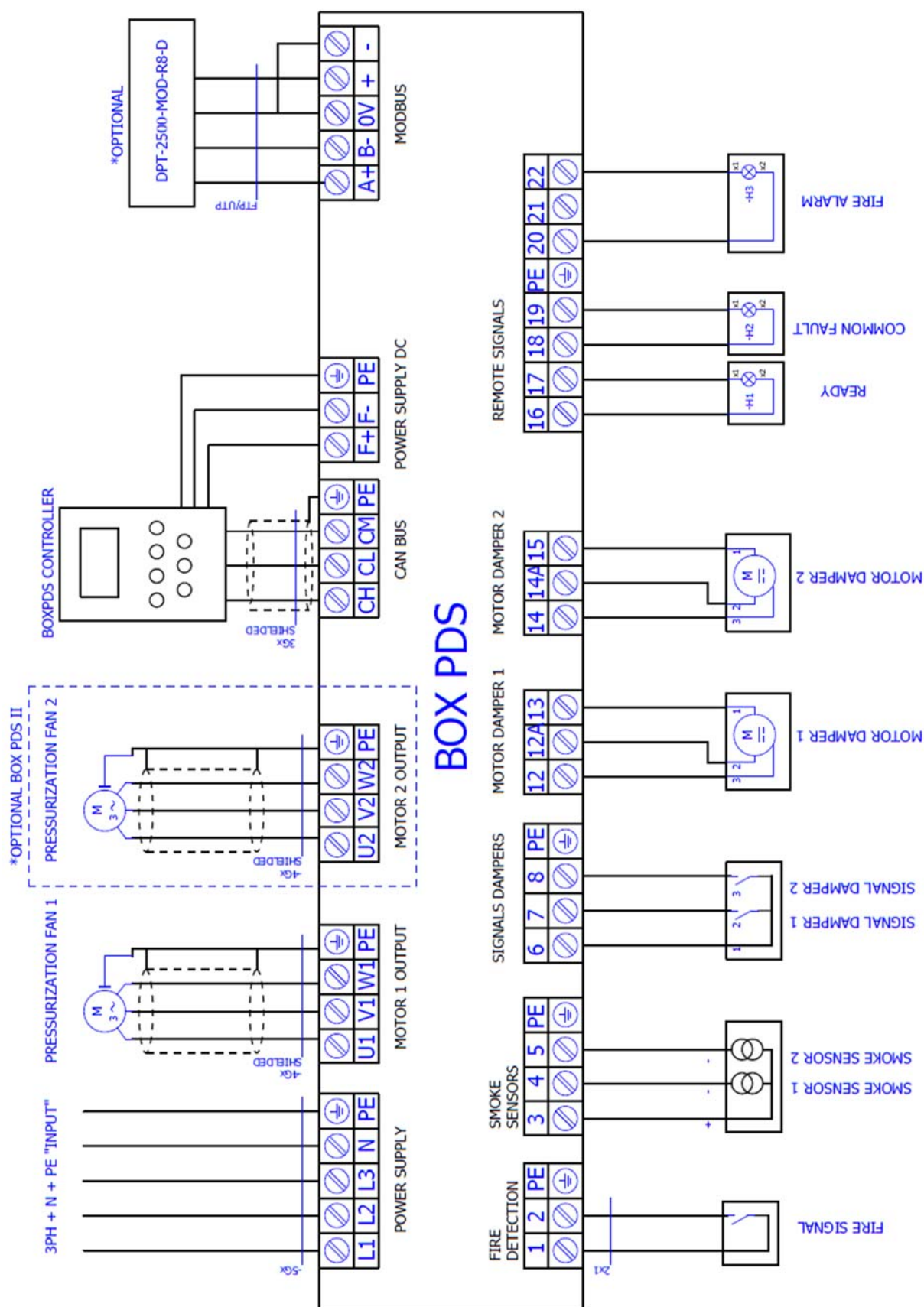
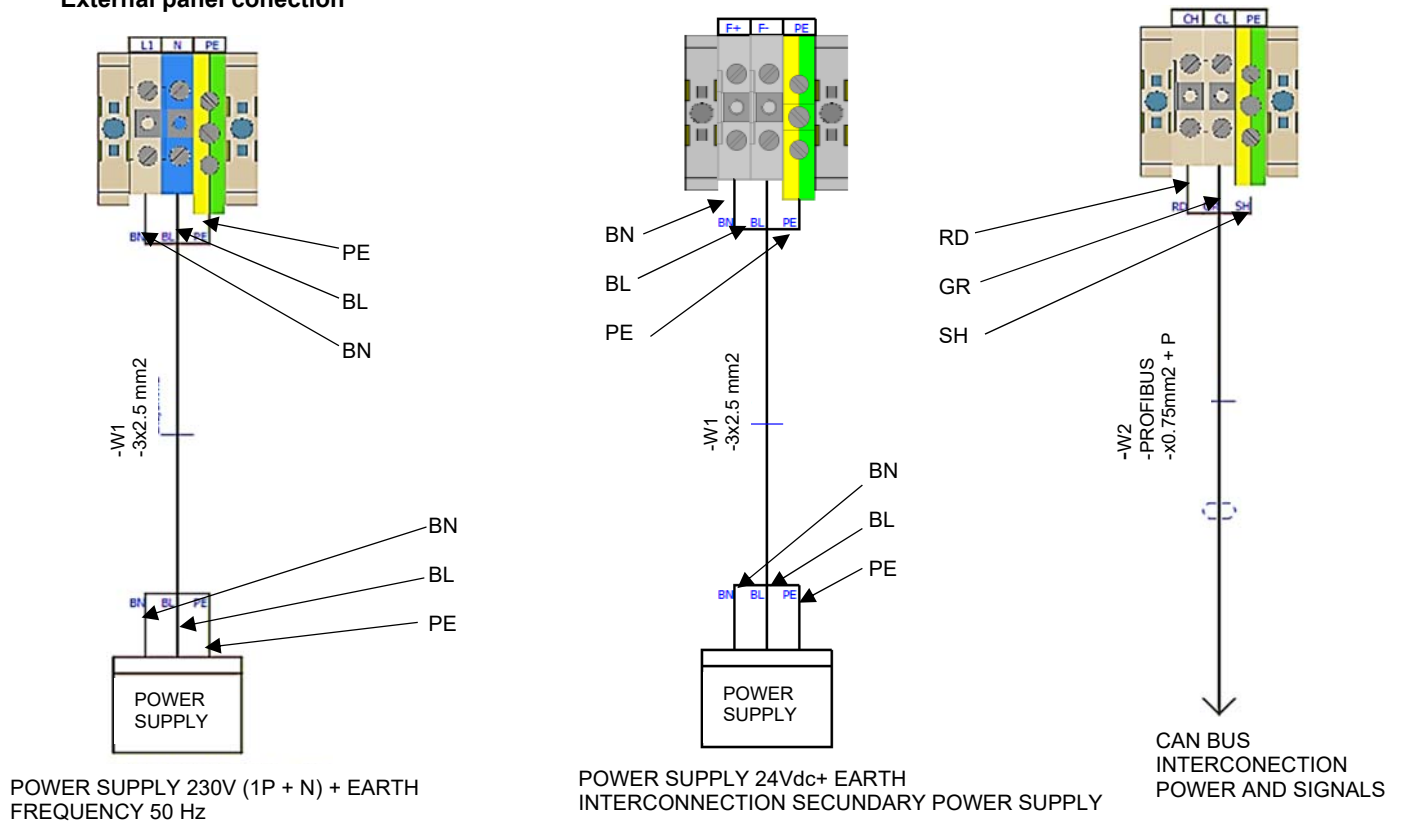
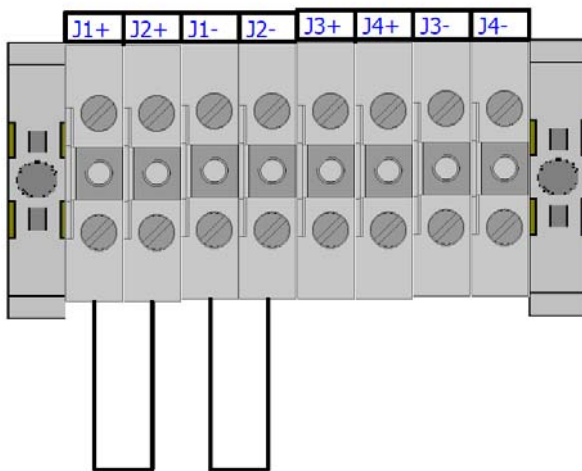


Fig. 13

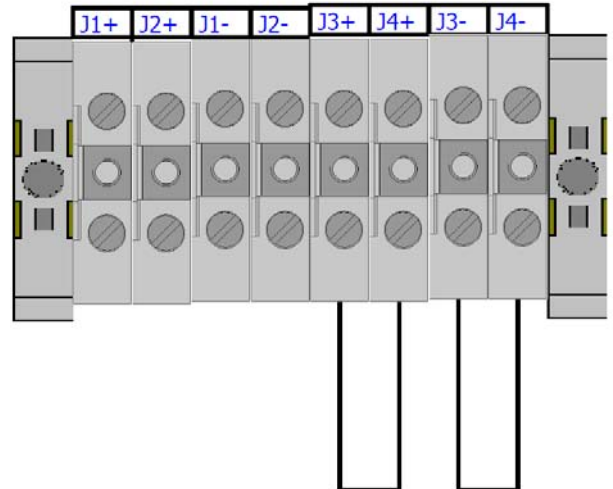
External panel conection



Connection Power Supply OPTIONAL



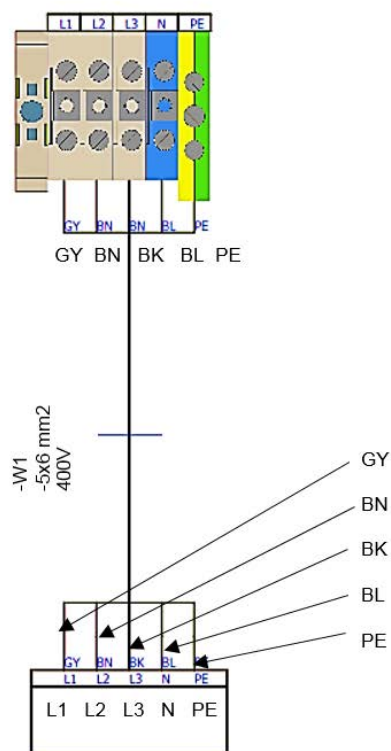
To work with secondary power supply 230Vac
 Make the bridge



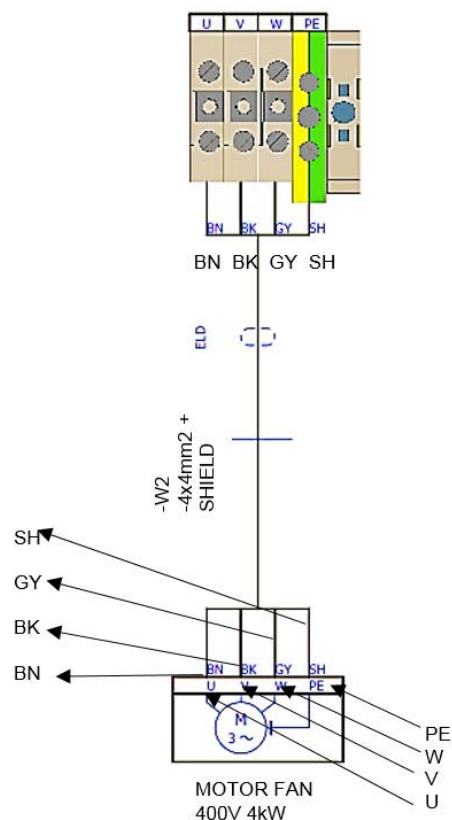
To work with secondary power supply 24Vdc
 Make the bridge

Fig. 14

Power conection, signal and BOXPDS control

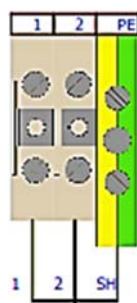


POWER SUPPLY 400V + NEUTRAL (3P+N) + EARTH
FREQUENCY 50Hz



-W3
-2x0.75 mm2 + SHIELD
-PROFIBUS

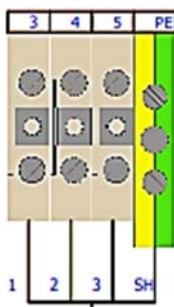
CAN BUS
INTERCONNECTION
REMOTE CONTROL



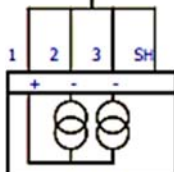
-W4



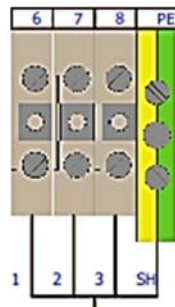
FIRE DETECTION



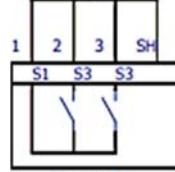
-W5



SMOKE SENSOR 1
SMOKE SENSOR 2



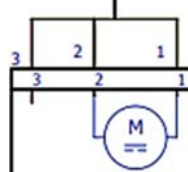
-W6



SIGNAL DAMPER 1
SIGNAL DAMPER 2
SA1



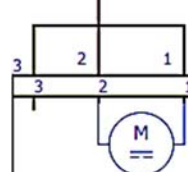
-W7



MOTOR DAMPER 1



-W8



MOTOR DAMPER 2

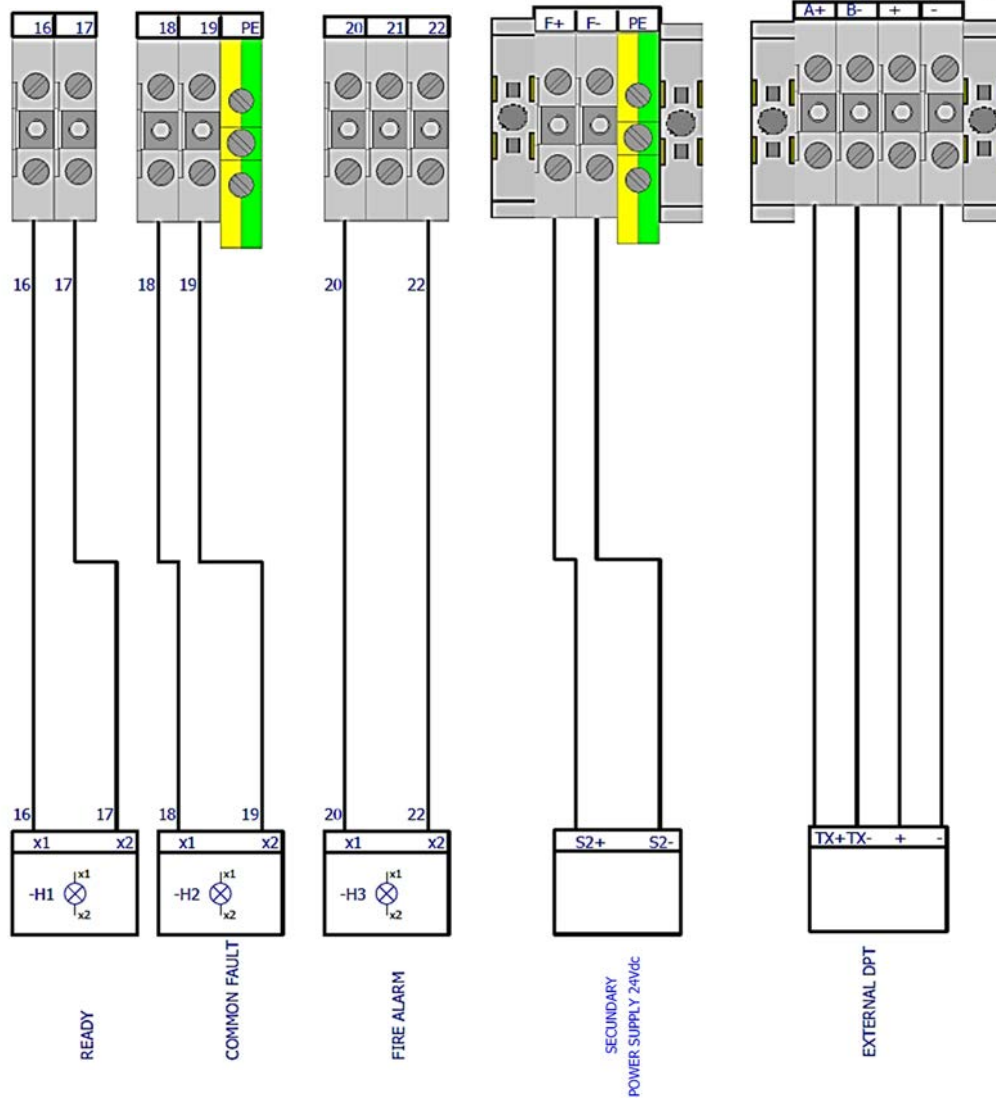
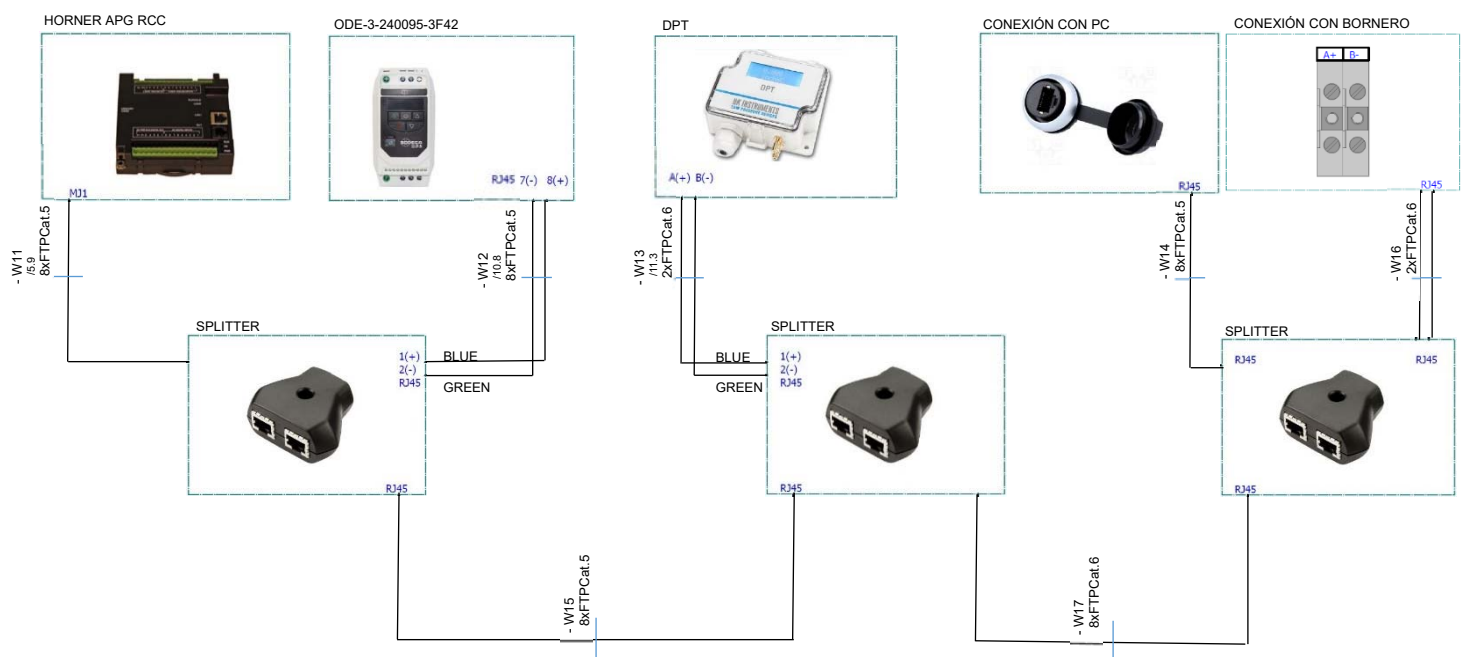


Fig. 15

Connection Modbus



1. Introduction

All fans produced by **SODECA**, hereinafter *the manufacturer*, and the full line of accessories, have been manufactured under the most rigorous standards of quality assurance, systems and production processes.

Their project, testing, manufacture and control structure has been configured in line with EU standards and regulations, especially as regarding current safety standards.

The materials used in our fans, and the standardised components of which they are made meet the same standards and, when so required, are backed up by the corresponding quality certificates.

It is the responsibility of the installer to ensure that the equipment or system into which the product is incorporated complies with the EMC legislation of the country of use, and the relevant category. Within the European Union, equipment into which this product is incorporated must comply with the EMC Directive 2014/30/UE.

The Original Manual was written in Spanish

The manufacturer reserves the right to make modifications without prior notice

All the documentation in this manual is the property of the manufacturer, and its total or partial reproduction is prohibited.

2. Product Definition

KIT BOXPDS: Pressurisation equipment for stairwells, escape routes and lobbies, compliant with European Standard EN 12101-6.

IMPORTANT: This product is not suitable for use in explosive environments.

FEATURES OF THE KITS

Component

Variable Frequency Inverter

High precision differential pressure probe

Electrical switchboard with magneto-thermal circuit-breakers and mains power cut indicator

Certified battery-powered power source to guarantee supply to the control equipment if there is a mains power failure

Electronic control for managing alarms maintenance. ModBUS port for connection to BMS (Building management systems) and Damper based control

External Control panel for displaying pressure in real time. alarm pilot lights and manual system activation

3. General Information

- Always check the products received (**Fig. 2**).
- After unpacking the equipment, it must be checked to make sure that it is not damaged. Damaged products must never be installed.
- This equipment must not be used for purposes other than those for which it was designed; it must only operate under the conditions described in this manual.
- In the event of a defect or malfunction, this must be reported to the authorised representative, with a description of the problem, in order to coordinate its return or possible repair.
- Before starting up the equipment, it is important to ensure that the safety and installation instructions in this document have been read

4. Transportation, storage and handling

- Always hold the equipment at the points provided for this. Do not lift it by the electrical cables, connection boxes, or the air inlets or outlets.
- Before installation, store the equipment in a clean, dry place, protected from inclement weather.



5. Safety

- Do not disassemble or modify the equipment. This could negatively affect the equipment or even cause accidents.
- Do not put fingers or any objects into the protective grilles on ducts, inlets or outlets. If this were to occur, immediately disconnect the equipment's power supply.
- Never use a damaged power cable.
- Do not operate the equipment if it has been forcibly installed on a curved or unstable surface.
- Do not perform equipment inspection or maintenance without first checking the following:
 - o That the equipment has been disconnected from the electrical supply.
 - o That all its components are at rest.
- The equipment must not be operated unless it has been properly installed and the inlets and outlets have been protected, if necessary.

In designing and manufacturing the various Series of *the manufacturer's* Fans and Extractors, Hazard Elimination has been taken into account, in order to meet the conditions for Integrated Safety.

When their configuration and manufacturing processes permit this, *the manufacturer* directly incorporates the most appropriate Safety Devices. If the conditions for installation or use mean that these devices cannot be incorporated at source, all additional safety accessories are available for implementation when the equipment is installed and before it comes into service.

6. Installation and Assembly

This equipment may only be installed by a qualified technician who is familiar with the installation, monitoring and maintenance of this type of equipment, and uses suitable tools.

Mechanical

- To ensure safe operation, the equipment must be firmly fixed.
- The installation must prevent contact with the fan's impeller, through the use of grilles, accessories, or by installing a connecting tube of a suitable length.
- The equipment may be installed in different ways, depending on each need (**Fig. 1**).
- Do not connect the elbows close to the equipment's connecting flanges or clamps.
- Leave sufficient room to be able to open the control panel door.
- The equipment must be installed in such a way that the whole of its surface area is stuck to the surface on which it is installed.
- The installation must be such that the weight of the system of ducts is not supported by the equipment.
- When connecting the ducts, ensure that the direction of airflow is correct in accordance with the arrows indicating flow direction through the equipment.
- The external control panel must be installed in the access inside the area to be pressurised.
- The air connection must be executed with a 4mm diameter tube, and it must be located at the end of each tube in the following position or zone:

 (+) Leave the tube in the zone to be pressurised in the event of a fire.

 (-) Leave the tube in the benchmark pressure zone. Protect it to prevent contact with water.

- Once the mechanical assembly is complete, it is important to check that the impeller turns freely, with no friction or tension

Electrical

- Make sure the equipment is connected to a power supply as per the instructions with the connection diagram at the beginning of this document (**Fig. 7, 8, 12, 13 and 14**).
- For the electrical supply connection for this fan, special cable certified as compliant with fire regulations must be used, of a suitable cross-section for the current the fan uses.
- **IMPORTANT:** When the equipment is controlled by reducing the voltage, the motor's current may be higher than the rated value.
- Check that the electrical characteristics stated on the plate correspond to the power supply.
- The equipment's earth connection must be connected.

Electric battery connection

- The batteries are supplied disconnected to prevent them from running down before operation (**Fig. 10**).
- The connection must be made with the cables provided by the manufacturer. Pay close attention to the correct polarity - carefully observe the symbols next to the terminal.

Start-up

- After installing the equipment, check that there are no alarm signals in the box BOXPDS (**Fig. 5**) inside the control panel. If this is not the case, turn one of the power input phases to ensure the equipment functions correctly.

External pressure sensor connection:

- Install the SI-PRESIÓN external sensor in the desired zone.
- Configure the ID address of the device. Each pressure sensor must have a different address, always starting with address 1.
- Make sure the pressure sensor built into the main equipment control panel is disconnected when not in use.
- Check the correct MODBUS parameter configuration of each sensor as set out in the following chart:

ADDRESS	Between 1 and 20
BAUDRATE	9600
PARITY BIT	NONE

IMPORTANT:

This operation must only be performed by the authorised installer or the manufacturer.

Before start-up, check the correct operation of the equipment in the case of fire. To do this, first verify that there are no failure pilot lamps lit on the control panel. Once this has been done, activate the manual selector switch, after first closing the doors of the area that is to be pressurised. The next step is to check that the necessary 50Pa in the pressurised area have been reached, and then configure the *Safety Speed* parameter, with the frequency value indicated by the Frequency Converter (VSD1) for pressurisation at 50Pa.

After verifying the correct operation of the equipment, change the position of the selector switch from Manual to Automatic to start up the equipment.

- After starting up the motor, it is important to check that the motor is turning correctly, without vibrations, and is not making unusual noises.
- A check must be made to ensure that the motor's actual power consumption does not exceed the level stated on the equipment's label and that it does not heat up excessively.
- The machine must not be switched on and off intermittently, as this could damage the winding of the motor or the insulation, due to overheating.

External control panel parameters (Fig. 8)

- The **"READY"** pilot lamp indicates whether the equipment is ready to operate. The pilot lamp will be on when the main panel is supplied with power and no alarms are activated.
- The **"FIRE ALARM"** pilot lamp is activated when the equipment receives a fire alarm signal.
- The **"SMOKE IN DUCT"** pilot lamp indicates the presence of smoke in the aspiration duct.
- The **"COMMON FAULT"** pilot lamp is activated when an alarm is activated.
- When set to position 1, the **"RESET ALARM"** selector switch will reset the fire alarm.
- For the equipment to function correctly, the **"AUTO-MAN"** selector switch must be on automatic. The manual position activates the equipment without the need for the fire alarm to be activated, either to force the system activation or to perform maintenance checks. In this position, the equipment does not take smoke detection in the aspiration duct into consideration. This function must only be used by authorised personnel. In the event of smoke entering the pressurised zone, the responsibility will be that of the fire fighting staff or the maintenance staff who activate this function.
- The **"MAN.DAMPER"** selector switch must be used when the equipment is in the automatic operation mode. If the system stops due to the presence of smoke in the aspiration duct, the fire brigade may force the manual activation of the equipment, ignoring the alarm indicating the presence of smoke in the duct. This function must only be used by authorised personnel. In the event of smoke entering the pressurised zone, the responsibility will be that of the fire fighting staff or the maintenance staff who activate this function.

7. Maintenance

Maintenance must be performed by qualified technicians.

- Replacing the batteries with different powered batteries is not recommended. They should always be 12V and 18Ah.
- We recommend checking the batteries at least once a year and replace them each 4 years.
- If there is a failure or problem check the operation of the control panel with the indicators.
- The bearings are greased and sealed for life. Nevertheless, changing them about every 25,000 hours effective running time is recommended.
- If the fan is not equipped with an air filter, the only maintenance required is to clean the impeller; this must be carried out at least once every six months.
- Care must be taken when cleaning the impeller, in order not to affect its balance.
- Use of chemical cleaners or aggressive substances is not advisable, as they could damage the equipment.
- If a part must be replaced, consult the distributor.

8. Disposal

Careless or negligent disposal of the equipment may cause contamination. The disposal process must be carried out in compliance with the standards and regulations applicable in that country.

9. Warranty

Incorrect use of the equipment and failure to observe the instructions in this manual may result in cancellation of the warranty.



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