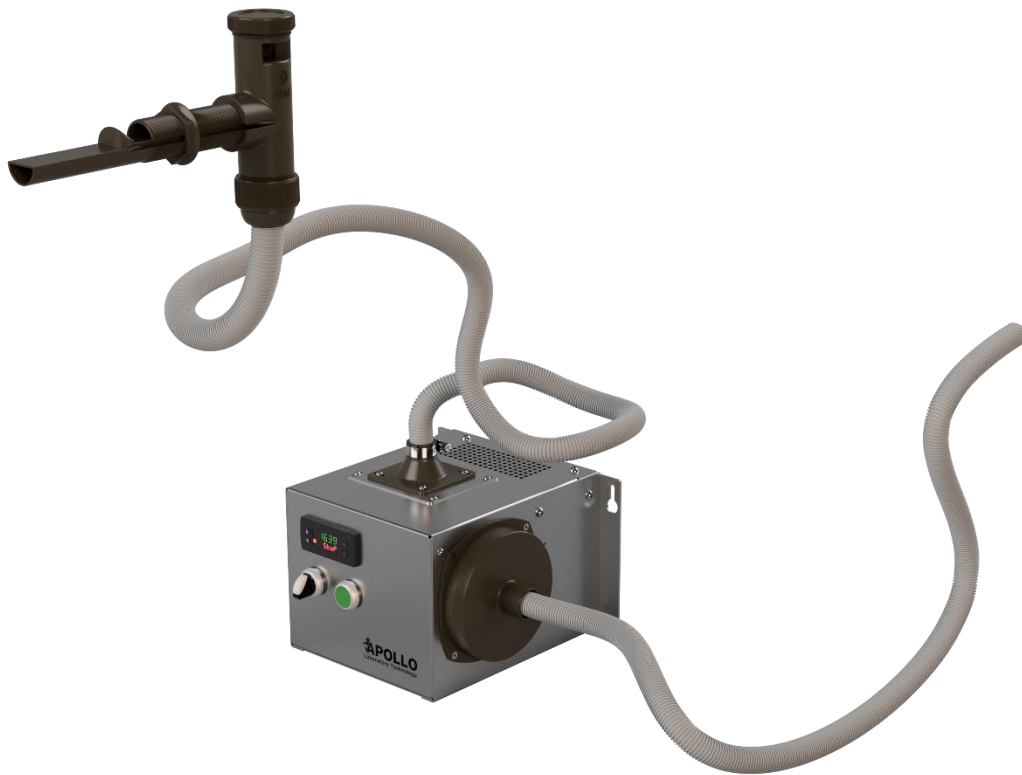


Instruction manual

SYN



The photo above is for reference only and may show options not included in the standard equipment. The real appearance, colour and structure of the material may differ from the ones presented in the photo.

TIMER TI327401



Timer TI327401 can be set in 5 different modes: Timer-ON, Timer-OFF, Pause-Work, Oscillator, PWM (time-proportioned output), all options with independent setting of ON-OFF time.

3 digital inputs are available (NPN/PNP) for external commands like Start, Stop, Reset; one input is also analogic in order to allow the modification of working times by external potentiometer.

5 different time bases (hundredths, tenths, seconds, minutes, hours).
Counting can be incremental or decremental.

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EXPLODED VIEW SCHEMETICS

2.1 Exploded view of spare components

The partial exploded schematic (figure 2.1) shows the components in the appliance that, when necessary, may be replaced by qualified personnel using the spare components that come with the appliance.

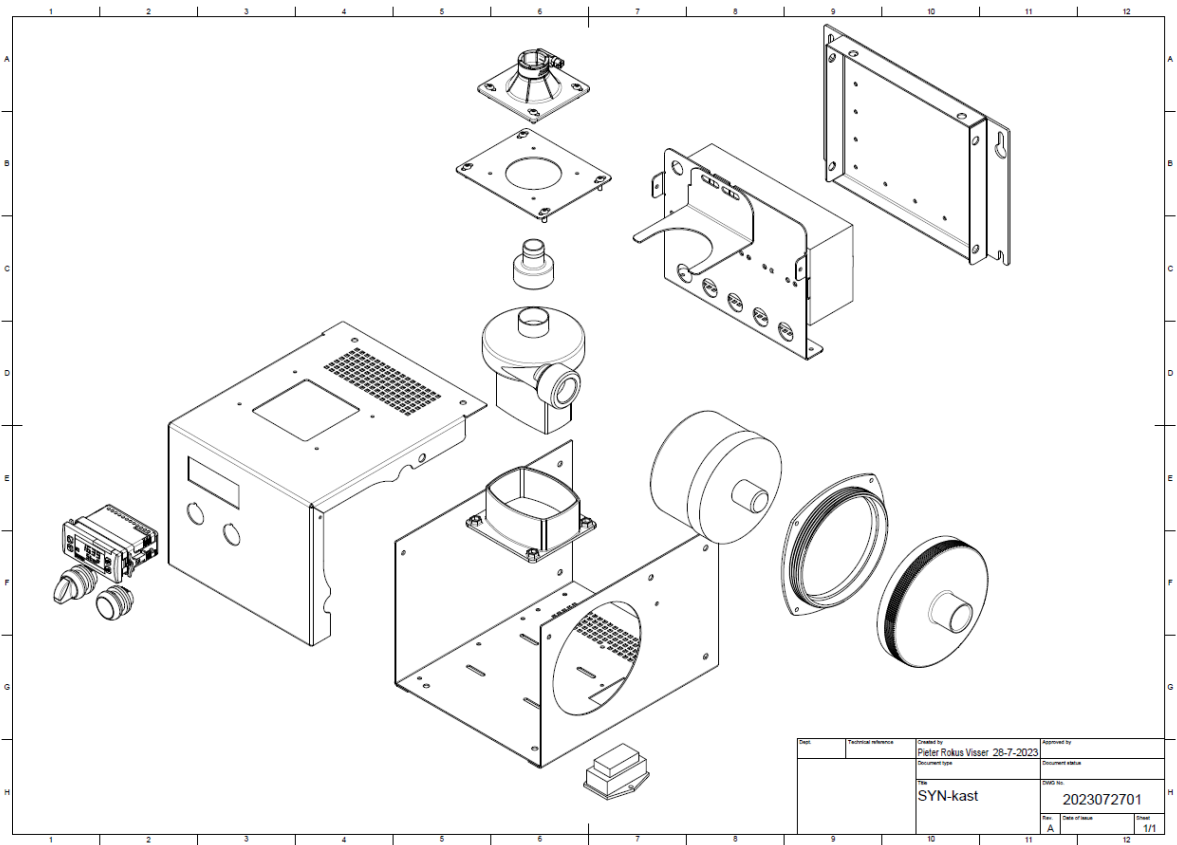


Figure 2.1: Exploded view of spare components in the appliance

SAFETY

It is recommended to carefully read the instructions and warnings contained in this manual before using the appliance. The information contained in the manual is fundamental for the safety of use and for machine maintenance.

3.1 Safety

- ⚠ Keep this manual carefully so that it can be consulted when necessary.
- ⚠ Keep ventilation openings in the appliance casing or in the built-in structure free from all obstructions.
- ⚠ Do not use mechanical devices or other means to accelerate the process in the oven, other than recommended by the manufacturer.
- ⚠ Do not damage the system.
- ⚠ If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified personnel in order to avoid hazards.
- ⚠ If the stationary appliance is not fitted with a supply cord and a plug, it means that the disconnection must be incorporated in the fixed wiring in accordance with the wiring rules.

The appliance has been designed and tested as a class 2.0 in accordance with DIN 12880.

In the design and construction phase the manufacturer has paid attention to the elements that could cause potential risks to safety and health of the personnel that uses the appliance.

Carefully read the instructions stated in the manual and those applied directly to the machine. In particular the instructions regarding health and safety.

Do not tamper with, evade, eliminate or bypass the installed safety devices. Failure to comply with the afore mentioned requisites can lead to serious risks to health and safety.

It is recommended to simulate some tests to identify the controls, in particular those in relation to switching on or off the main functions.

The appliance is only destined for the use for which it has been designed; any other use will be considered improper by the manufacturer.

The manufacturer declines all liability for any damages to the appliance or persons in regards to improper or incorrect usage of the appliance.

- All maintenance interventions that require precise technical skill or a particular ability must be performed exclusively by qualified personnel.

In order to guarantee hygiene and protect the product from contamination, the elements that come in direct or indirect contact with the product must be cleaned thoroughly along with the surrounding areas. These operations should only be performed using detergents that can be used with the product, avoiding inflammable substances or substances that are hazardous for personal health.

In the case of prolonged inactivity, as well as disconnecting of all the supply lines, it is necessary to thoroughly clean all internal and external parts of the appliance.

3.2 Qualified personnel

Units from the controller series UR must only be operated in accordance with the technical specifications by qualified personnel. Personnel regarded qualified is familiar with the installation, assembly, putting into operation and operation of the units. They also possess adequate professional qualification for the task.

3.3 CE conformity TI327401Controller

The CE certificate for the **TI327401** controller is available at Wachendorff Prozesstechnik GmbH & co. KG. If necessary they will be able to provide a copy of the certificate. Please feel free and contact them to get a copy.

REGULATIONS AND GENERAL INSTRUCTIONS

4.1 General Information

This manual has been designed by the manufacturer to provide the necessary information to those who are authorized to interact with the appliance.

It is advisable for the authorized person to read the information carefully and apply it strictly.

Reading the information contained in this document will allow the user to prevent risks to health and safety.

Keep this manual for the continued operating life of the appliance in a place which is well-known and easily accessible. This way it will always be available for consultation when necessary.

Particular symbols have been used to highlight some parts of the text that are very important or indicate some important specifications. Their meanings are displayed below:



Indicates important information regarding safety. Take this information into account when using the appliance as to not risk the health and safety of the personnel using the appliance or damaging the appliance.



Indicates particularly important technical information that must not be ignored.

4.2 Warranty

The warranty of the appliance and its components that were produced by Apollo Service Handelsonderneming B.V. have a duration of 2 years, starting from the day of delivery. The warranty translates into the supply of the parts that Apollo Service Handelsonderneming B.V. would consider to be faulty.

These faults must be independent from incorrect use of the appliance in compliance with the indications stated in the manual.

Fees derived from labour, journeys and transport are excluded from the warranty. The materials replaced under warranty are the property of Apollo Service Handelsonderneming B.V. and must therefore be returned under the responsibility and expense of the customer.

4.3 Description of the appliance

The drying oven, henceforth defined as appliance, has been designed and built to dry any product, provided that the product is not corrosive or otherwise damaging to SAE 304 stainless steel.

4.4 Replacement of Parts

- ⚠ Before carrying out any replacement intervention, activate all envisioned safety devices.
- ⓘ Be sure to deactivate the electrical power supply using the differential disconnecting switch.
When worn components must be replaced, only use original spare parts.
- ⓘ All responsibility is declined for injuries to personnel or damage to the components deriving from the use of non-original spare parts and interventions which would modify the safety requisites without authorization of the manufacturer.

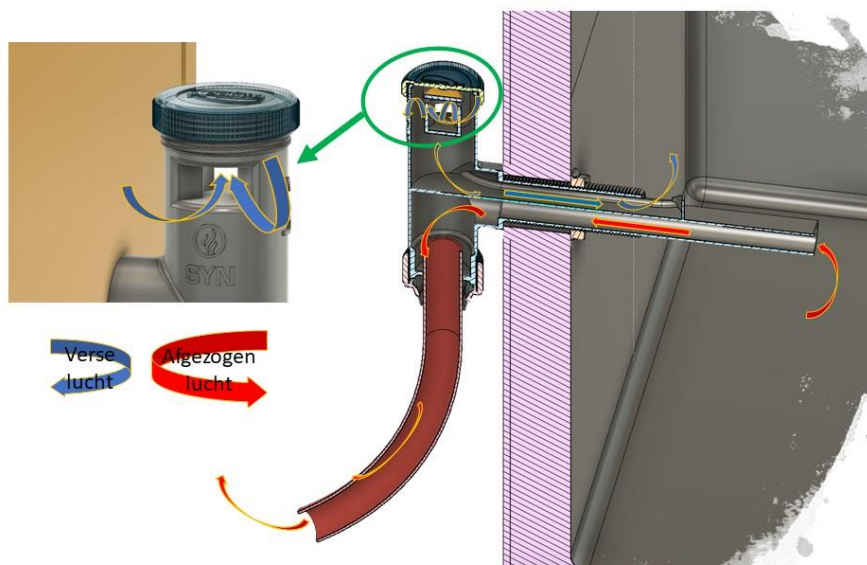
INTRODUCTION

5.0 device operation

The system, called Syn, was designed by Apollo S&H and provides many features. Syn provides air exchange in your refrigerator or incubator, eliminating unpleasant or dangerous odors and/or gases from your cabinet. Virtually silently and imperceptibly, Syn pumps the contents of your cabinet with a maximum distance of 25 meters to the outside, an extraction point or in a fume cupboard, with a hose that has only 25 mm outside diameter. The Syn therefore has many applications, including within ATEX.

USE AND FUNCTIONING

5.1 Description of operation.



The Syn can be built into virtually any incubator or refrigerator. By default, the Syn has two timers. The first timer divides the number of extraction times into a standard time format, spread throughout the day and week. For example, the timer can be programmed to refresh the incubator or refrigerator just before the end of lunch or coffee break. The timer can be entered at the day level, reads

itself summer and winter time and can also be programmed for weekend energy saving. A second timer, is that for the extraction time. Both values are easily entered by the respective user and its application on the controller in the front.

5.2 Viewing of the LED display

Front panel cut out 28.5 x 70.5 mm

2 to 8 mm suggested thickness

Gasket

Memory card (optional) with battery (SFUR0KIT)

35 mm

77 mm

7

53 mm

MODIFY SETPOINT		
	PRESS	EFFECT
1		Display SETPOINT 1 / 2
2	OR	Modify selected SETPOINT
2a		Select the chosen digit
3a	O	Modify the flashing digit of the selected setpoint

5.4 Controlling the SYN

On the front there are two controllers next to the main power switch. They are positioned as shown in the picture below.



The top controller is for high temperatures during the drying process.

The lower controller is to control the relative humidity in the oven.

When the relative humidity reaches its desired value, the oven will adjust the temperature to match the setpoint of a third controller. This controller is positioned in a hidden compartment at the top of the oven.

The setpoints for both the temperature and humidity controller can easily be adjusted and operated by an operator.

CLEANING AND MAINTENANCE

7.1 Recommendations for cleaning and maintenance

- ⚠ Before carrying out any maintenance intervention, activate all envisioned safety devices. Be sure to deactivate the electrical power supply using the automatic disconnecting switch.

7.2 Routine maintenance

Routine maintenance consists of daily cleaning, during inactivity, of all parts which can come into contact with the product inside the appliance and the periodic maintenance of the active components.

Correct maintenance allows the user to maximize performance levels, operating life and constantly maintain safety requirements.

Do not spray the appliance with direct jets of water or high pressure appliances.

When cleaning SAE 304 SS, do not use iron wool, brushes or scrapers as ferrous particles could be deposited which, when oxidizing, could lead to rust.

To remove hardened residues, use wooden or plastic spatulas or abrasive rubber pads.

During long periods of inactivity, spread a protective layer on all stainless steel surfaces by wiping them with a cloth soaked in Vaseline oil and airing the rooms periodically.

- ⚠ Do not use products which contain substances which are harmful and dangerous for personal health (e.g. solvents, petrol).

Periodically have the following operations carried out by specialized personnel:

- Cleaning the condenser using suitable tools (e.g. suction device or soft brushes).
- Check the sealing on the door gaskets and replace them if necessary.
- Clean the condensation off of the evaporation tray.
- Check that the electrical connections have not loosened.
- Check the efficiency of the heating element.
- Check the efficiency of the electrical system

FAULTS

8.1 Faults

The information shown below aims to help with the identification and correction of any anomalies and malfunctions which could occur during use. Some of these problems can be resolved by the user, however some problems may require precise competency and are only to be resolved by qualified personnel.

TABLE of ERROR MESSAGES

E-01 ERROR in WRITING of EEPROM Memory (Note 1)

E-02 ERROR in READING of EEPROM Memory

E-03 Incorrect parameters (Note 1)

E-04 Incorrect calibration data (Note 1)

E-05 Incorrect status data (Note 1)

E-06 Incorrect BACKUP registersl (Note 2)

Note 1: Switch the device off and restart it; if error is still notified, contact technical service

Note 2:


















Discharged battery: keep the device connected to power supply in order to recharge the battery.

⚠ In PWM mode, the only option available on parameters 16 **Ea51** and 17 **Ea52** for format of SET1 and SET2 is **5555** (seconds). Low and upper limits for SET1 (related to percentage of work or Duty Cycle) are allowed in the range 0 ... 100 (%).

SUMMARY OF CONFIGURATION PARAMETERS

9.1 Summary of the most important configuration parameters

For a full summary of all parameters, please check the **TI327401 Controller User**

LOADING DEFAULT SETTINGS		
PRESS	EFFECT	OPERATION
1  for 3 seconds	Display 1 shows 0000 and 1st digit flashes, Display 2 shows PASS	
2  Or 	Modify the flashing digit, press  to reach the next digit	Enter password 9999
3  to confirm	The device loads default values (factory settings)	Switch-off and restart the device
MODIFY PARAMETERS		
PRESS	EFFECT	OPERATION
1  for 3 seconds	Display 1 shows 0000 and 1st digit flashes, display 2 shows PASS	
2  Or 	Modify flashing digit, press  to reach the following digit	Enter password 1234
3  to confirm	Display shows first parameter of configuration table Func	
4  Or 	Scroll the parameters	
5  +  Or 	Increase or decrease value on display by pressing  and one of the arrow keys at same time	Enter new data which will be stored releasing the keys
6 	End of configuration, the device exits programming mode.	

INSTALLATION

10.1 Packaging and unpacking

Move and install the appliance while respecting the information provided by the manufacturer, as shown directly on the packaging, the appliance and in this manual.

The lifting and transportation system of the packaged appliance envisions the use of a fork-lift truck or a pallet stacker. While using these machines particular attention must be paid to balancing the weight in order to prevent the risk of overturning. Please avoid excessive tilting.

- ⚠ **ATTENTION:** When inserting the lifting device, pay attention to the supply pipes as well as the positions
- ⚠ **ATTENTION:** Given the presence of concentrated weight in the upper part of the appliance, do not drag the appliance during movement as it may result in a tipping hazard and damage to both the appliance and personnel.

The packaging is made of cardboard and the pallet of wood. A series of symbols is printed on the cardboard packaging which highlights, in accordance with international standards, the provisions which the appliance must be subject to during loading, unloading, transportation and storage.

On delivery, check that the packaging is intact and has not suffered any damage during transportation.

Any damage must be notified to the transportation company immediately.

The appliance must be unpacked as soon as possible to verify that it is intact and undamaged.

Do not cut the cardboard with sharp tools in order to prevent damage to the steel panels underneath.

Pull the cardboard packaging upwards.

Remove the protective PVC film from the internal and external walls, avoiding the use of metal tools.

After having unpacked the appliance, check that the features correspond to those requested in the order.

For any anomalies, contact the dealer immediately.

Packaging elements (e.g. nylon bags, polystyrene foam, staples) must not be left within reach of children.

10.2 Installation

All the installation phases must be considered from the moment of creation of the general plan. The installation area must be equipped with all power supplies and production residue drainage connections as well as being suitably lit and respecting the current laws regarding hygiene and sanitary requirements.

To optimize consumption and reduce wear of the machine, do not position it within the vicinity of heat sources or environments where the environmental temperatures exceed the environmental temperatures as shown on the features plate.

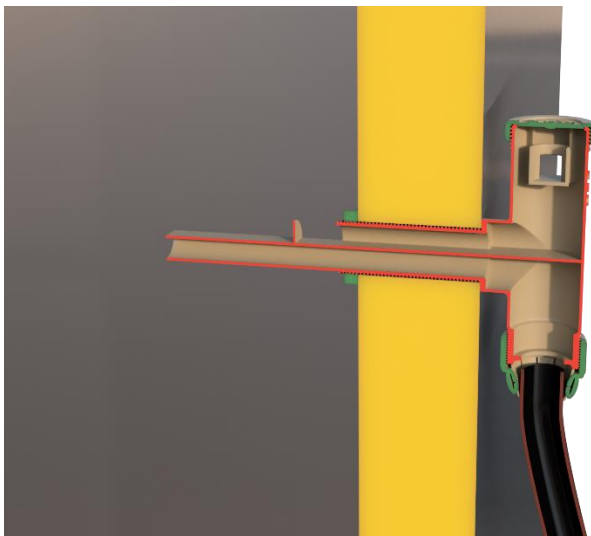
Proceed with machine levelling, adjusting the individual feet.

- ⚠ In order to guarantee that the machine operates correctly, it may only be installed in rooms that are permanently ventilated.

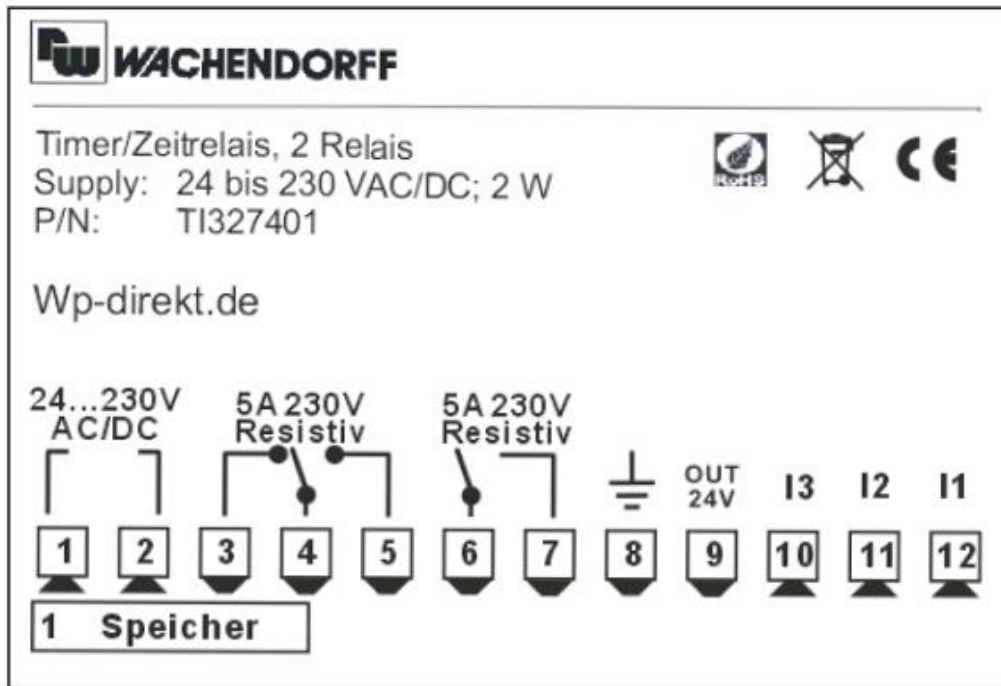
10.3 Electric Power Supply Connection

Connection must be carried out by authorized and qualified personnel, respecting the current laws regarding the safety of both the personnel and using the appropriate prescribed material.

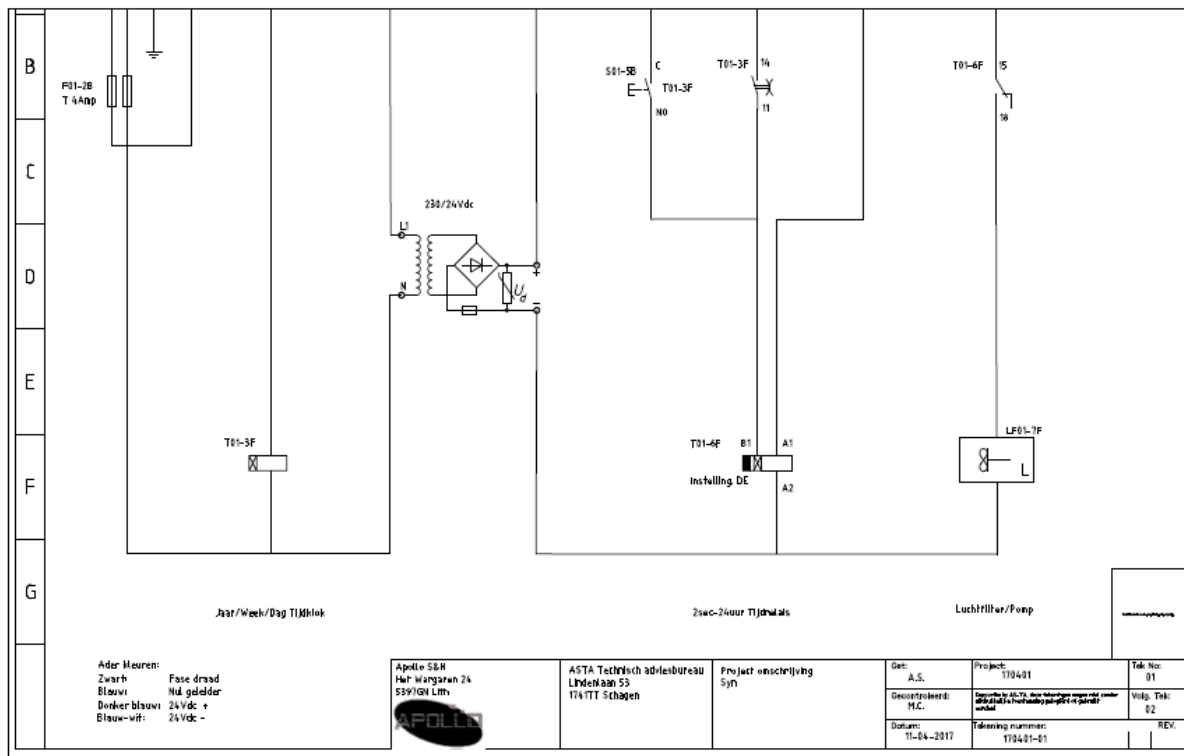
- ⓘ Before connecting the appliance to the electric mains check that the voltage and frequency of the network correspond to the data stated on the registration plate applied on the rear of the appliance.
- ⓘ The equipment is supplied with one of the following operating voltages:
 - 230V 1~ 50Hz
 - 220V 1~ 60Hz
- ⚠ Before connecting, please ensure the presence of a relevant differential switch with adequate power in the main power supply, upstream of the appliance, in order to protect the appliance from overloads and short circuits.



10.4 Electrical Diagram



TI327401



10.5 Inspection

The appliance is delivered in operating condition. It can be started-up by the user.

This functionality is guaranteed by relative certification through the specific attachments as well as passing the following inspections:

- Electric inspection
- Functional inspection
- Appearance inspection

LIST OF SPARE PARTS COMPONENTS

11.1 List of spare components

Item	Amount
Wachendorff controller	1
Solid state relay	1
Flush pump	1
Print parts	4
Flush button	1
On/Off switch	1

Table 10.1: List of spare components




DISPOSAL OF THE APPLIANCE

12.1 Disposal of the appliance

- ① The appliance is marked in compliance with the 2002/96/EC European Directive, WASTE AND ELECTRICAL EQUIPMENT (WEEE).
- ⚠ By assuring that this product is correctly disposed of, the user contributes to preventing the potential negative consequences on the environment and health of the general public.



The  symbol found on the product or on the accompanying documentation indicates that this product must not be treated as domestic waste but must be taken to the suitable collection points for the recycling of electric and electronic appliances.

Dispose of it following local regulations regarding waste disposal.

For further information regarding the treatment, recovery and recycling of this product, contact the relevant local office, the domestic waste collection service or the store where the product was purchased.



SYN