Operating Manual

SYNTEL System Power Supply Units

SIMTRONICS Fire & Gas

Doc: NOSP 15256 Revision 16 (03.2019)

The information contained in this manual is, to our knowledge, exact.

Due to our continuous research and development, the specifications for this product may be modified at any time, without forewarning.

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All the steps necessary have been taken to ensure this material gives you complete satisfaction.

It is important to read this document carefully.

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- Modification of the material and use of parts not guaranteed to be original parts will cancel all forms of guarantee.
- Use of the Syntel supply cabinet is planned for applications specified in the technical characteristics. Exceeding the values indicated will under no circumstances be authorised.

Guarantee

- General guarantee of 1 year in normal use conditions and within tolerances specified on parts and labour, returned to our workshops, excluding accessories.

Destruction of the equipment

European Union (and EEE) only. This symbol indicates that in compliance with directive DEEE (2002/96/CE) and the regulations in your country, this product must not be thrown away with household rubbish.

You should dispose of it in a waste area provided for this material, for example, an official collection site for electrical and electronic equipment (EEE) in view of their recycling or to an authorised exchange point which is accessible when you purchase a new product of a similar type to the old one.

Contents

1. INTRODUCTION

1.1. General description

The SYNTEL system is a flame and gas detection system based on a fieldbus network architecture. It is different from other similar systems due to:

- High reliability induced by its peer-to-peer network communication scheme which needs no controller (master) element and thus no single point of failure
- Wide area coverage and high network availability yielded by its patented resilient repeaters self-healing network loop
- Simple design of redundant architectures and high scalability facilitated by its distributed intelligence functioning principle
- Reduced operating costs thanks to detailed diagnostic information centrally available for the network loop and all its elements

The base unit of the SYNTEL system is the SYNTEL loop, forming a "flat" network which connects all system elements:

- Digital gas and flame detectors
- MECH units (gateways used to connect 4-20mA analogue detectors and third party devices to the SYNTEL loop)
- Relay modules having logic solver capabilities for alarm annunciation
- Intelligent redundant power supply units (one of them is called SafeBox and assures the function of self-healing the loop)
- PLC communication interface: MODBUS slave (CML as Coupler MODBUS to LON)
- HMIs (Human-Machine Interfaces operating on PC and based on standard SCADA applications such as Panorama, Intouch, PCVue, ...)

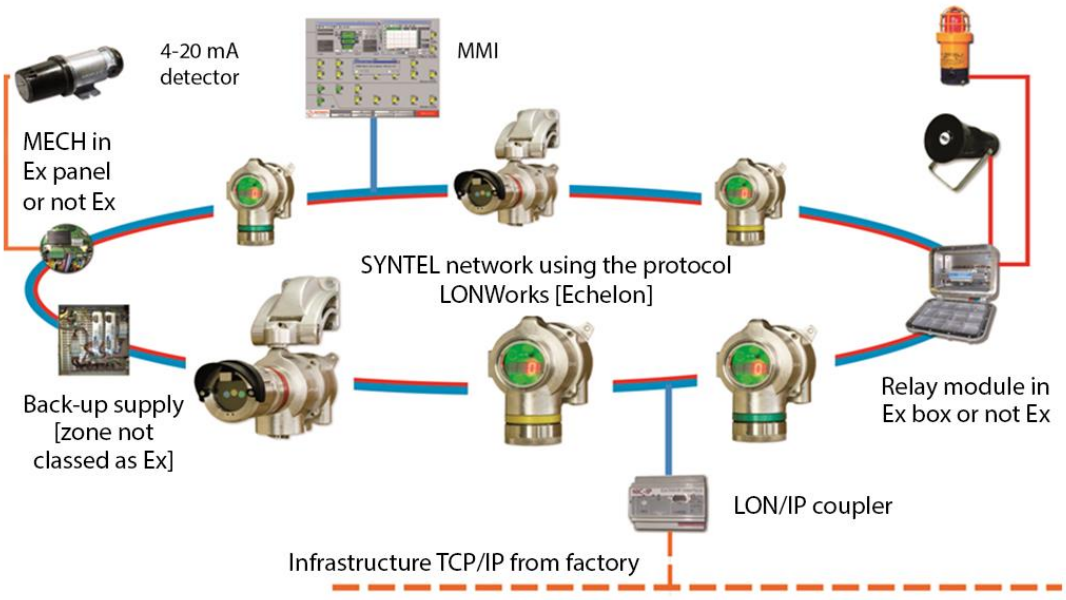


Figure 1: General description of the SYNTEL network

1.2. Typical architecture of the SYNTEL System

The fieldbus technology used by the SYNTEL System is the Lonworks™ technology developed by the ECHELON company.

In a specific and patented architecture, SYNTEL network detectors, in addition to their specific function as detectors, form the basis of a repeaters loop. Power supply units are equally part of this loop; as already said before, the high availability self-healing mechanism is implemented by the Safebox which restores network communication by an alternative path in case of cable damage (communication media and/or detectors power supply) somewhere in the loop.

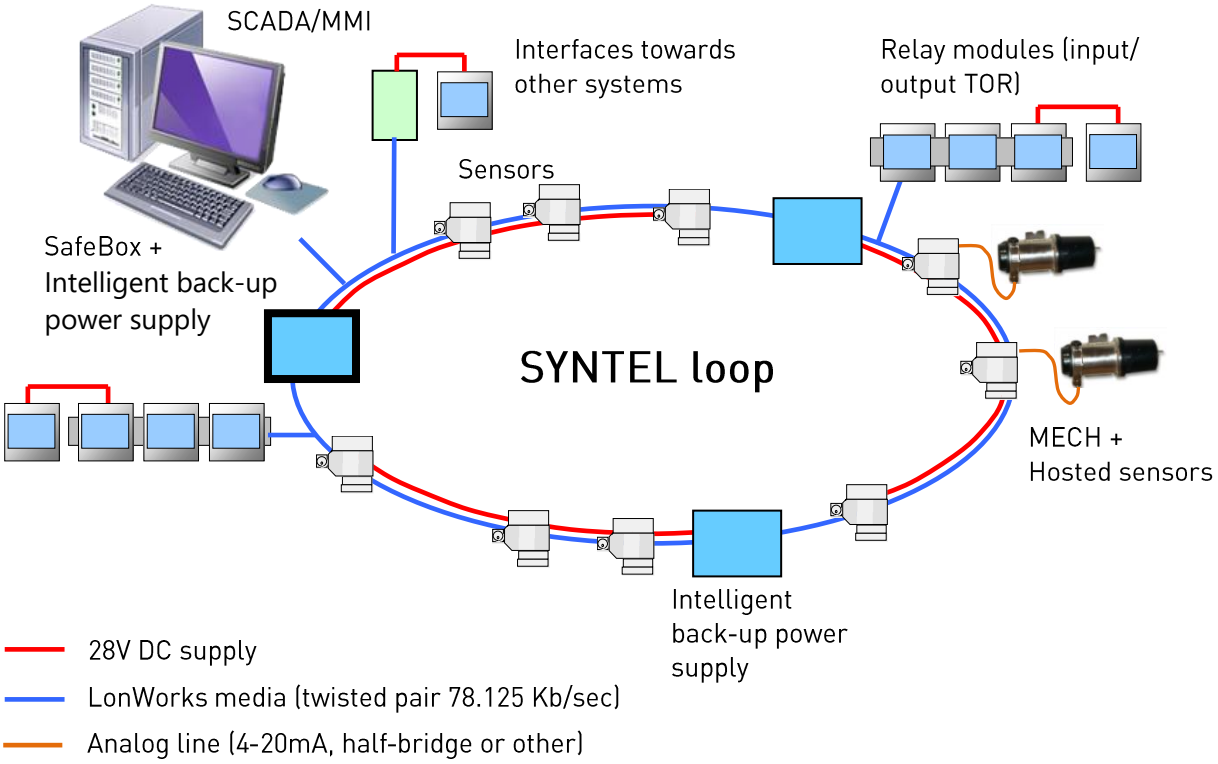


Figure 2: Architecture of a typical SYNTEL loop

Detectors power (28V cc) is supplied by the power supply modules, represented as rectangles on the above scheme. Each power supply provides power to a group of about 30 detectors near it, through redundant power loops represented as red lines. SYNTEL loops with many detectors and/or extended on wide areas need more than one power supply unit to function properly.

Power supply units are connected by SYNTEL media cables (on distances of up to 800m) represented with blue lines to form the global SYNTEL loop.

For a simplified principle scheme of power supply units please see the paragraph 1.7; the complete wiring diagram is given in chapter 4. Global loop wiring schemes in most frequent architectures are given in chapter 9, paragraph 9.3. Also make sure to check out the warnings concerning the 230V ac power supply scheme in the end of paragraph 1.7.

1.3. Description of the power supply units

The main role of power supply units used in the SYNTEL System® is to provide power supply to the SYNTEL network detectors. They also allow connecting various SYNTEL System devices to the communication network, through a dedicated terminal. Thanks to this property, junction boxes are not usually needed.

The power supply units exist in two configurations:

- Wall mounting cabinet,
- Independent mounting plate for integration into industrial control cabinets.

The first configuration uses a standard industrial cabinet to host SYNTEL power units. A large number of cable glands, of different diameters, fit the cable entry lower plate. This enables the cabinet to adapt to different types of cable which can be used on the SYNTEL System.

The wall mounting brackets of the cabinet are located outside the cabinet. Thus the door of the cabinet does not have to be opened before wiring the terminal block.

It is the integrator responsibility to ensure suitable cable paths and mounting points for power units as well as voltage presence indicators in the custom cabinet for the independent mounting plate configuration.

1.4. The different versions of the power supply units

In addition, there are 2 versions for each configuration above:

a. SafeBox
b. Secondary power supply unit

a. SafeBox *version*

- Supervise the network loop status (open, closed).
- Supervise the presence (network link) of the network elements.
- Monitor switching power converters located in the cabinet.
- Supervise switching power converters of the other units, via the network.
- Indicate faults on 2 relays (Detection fault / System fault).
- Distribute 28V power supply to detectors.
- Protect the switching power converters against cable short-circuit via software reaction and, as a last resort, by fuses.

b. *Secondary power supply unit version*

- Monitor switching power converters located in the cabinet and send status information to the network.
- Indicate the fault of at least one of the switching power converters on the local system fault relay.
- Distribute 28V power supply to detectors.
- Protect the switching power converters against cable short-circuit via software reaction and, as a last resort, by fuses.

Each SYNTEL network has at least one power supply unit in Safebox version. Depending on their architecture, some installations may use secondary power supply units described above.

1.5. SYNTEL System versions compatibility issues

The SYNTEL System exists in 2 versions: SYNTEL Classique and SYNTEL XXI.

The SYNTEL XXI is an evolution of the SYNTEL Classique, bringing new functionality. Generally, backward compatibility is ensured by SYNTEL XXI for SYNTEL Classique elements, but this is generally not true in the opposite direction.

Thus the SYNTEL Classique does not support intelligent power units other than those in Safebox configuration, while the SYNTEL XXI supports all versions.

Simplified power units are available for use in non Safebox version with SYNTEL Classique (see next paragraph for the corresponding reference).

Since 2017 new analog input devices (MultiMECH) were developed and integrated in the SYNTEL XXI System. Installations using these devices need the SYNTEL XXI 2.0 or superior software kit and specific power supply units (see next paragraph). Existing power supply units can also be upgraded on site by a qualified Simtronics technician.

1.6. Power unit references:

SYN	-PB0	-DA00	-D00	-00
	Type			
	P00	Generic		
	PA0	Syntel Classique		
	PB0	Syntel XXI		
	PB1	Syntel XXI kit 2.0 or later		
		CA 00	SafeBox	
		DA 00	Auxiliary power supply	
			C00	Mounting plate
			D00	Wall mounting control cabinet
				00 Reserved (not used)

Examples:

- SYN-PB0-DA00-D00-00: Auxiliary power supply cabinet for Syntel XXI
- SYN-PB1-CA00-C00-00: SafeBox mounting plate for Syntel XXI Kit 2.0

1.7. Simplified outline diagram of the power supply units

A power supply and its depending detectors group linked by the red power line in the typical SYNTEL loop architecture can be further detailed as shown in the figure below:

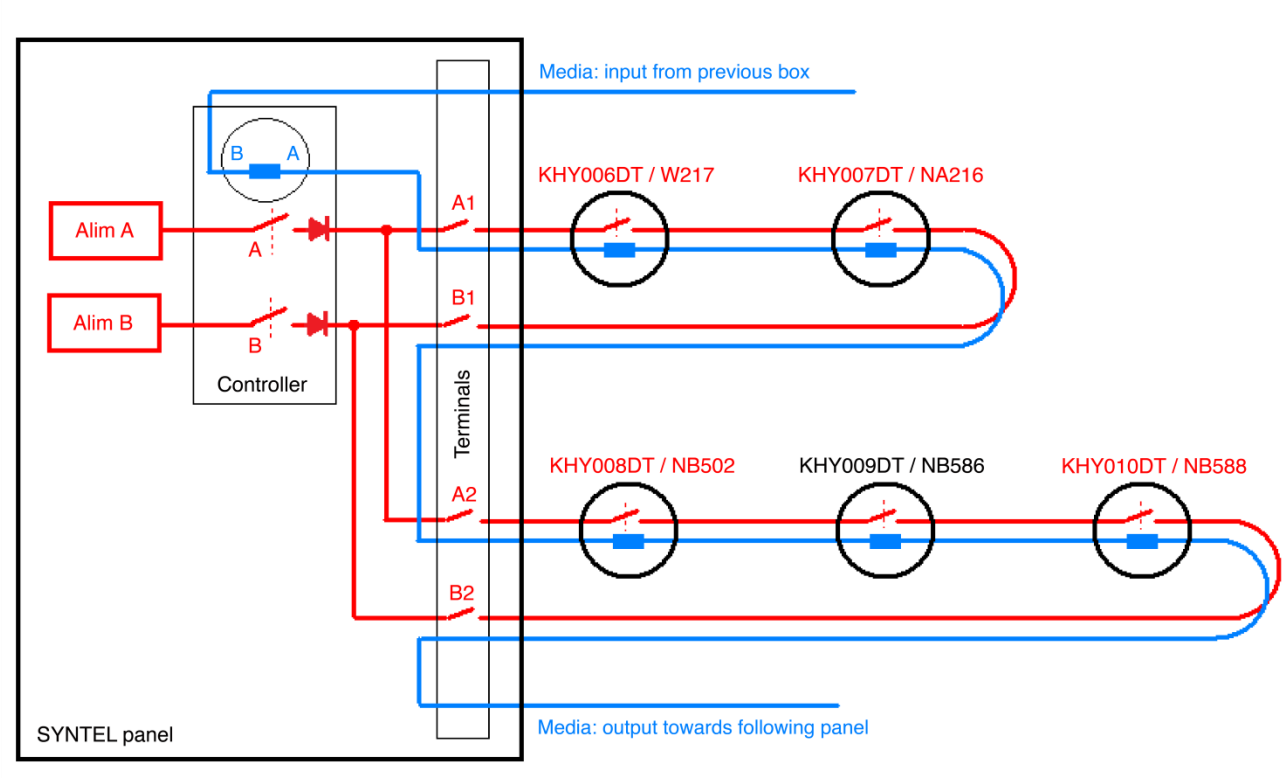


Figure 3: Simplified outline diagram of a SYNTEL cabinet

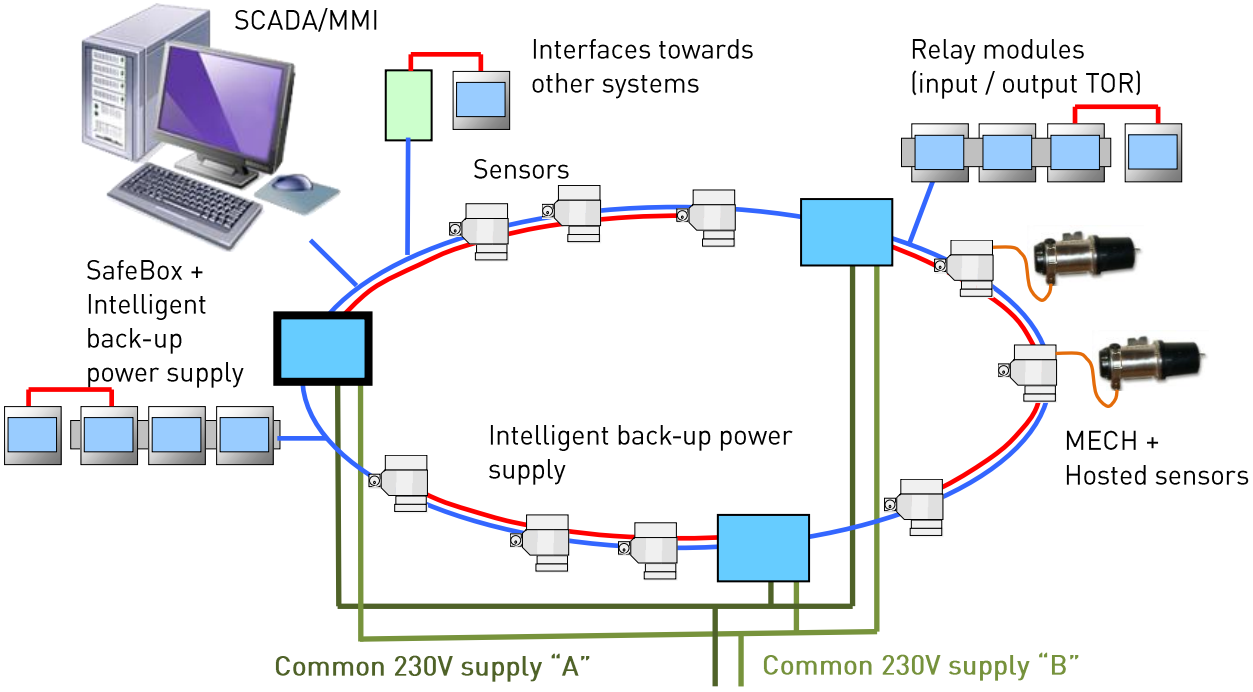
One can see that power is distributed to detectors from the two power converters through several redundant loops (up to three for each power supply).

Power supply loops are connected in parallel; the number of detectors and the loop length on each one is limited by the constraint of voltage drop on the line; the total number of detectors on all loops is limited by the converters power delivery capability. As one power converter failure tolerance is required, one should consider the most unfavourable power converter failure case when verifying power supply architecture design.

Media loops are connected in series to form a unique path from power supply cabinet entry to the power supply cabinet exit; as stated in the previous paragraph all power supplies are connected by media segments and form the global SYNTEL communication loop.

The redundant power supply architecture mentioned above is meant to compensate for one power converter failure (which is immediately signaled to SYNTEL supervisors) or for one power loop interruption but **does not compensate for 230V ac power failures**. Obviously, if one powers up both converters on a single 230V ac supply, depending detectors will lose power when this supply breaks down.

When using independent power supplies for "A" and "B" power converters in order to extend redundancy to the 230V ac supply system, one should avoid creating the following architecture:



Do not use this architecture !!

In this case a common failure cause is introduced for all "A" converters in the loop and the same is done for all "B" ones. Or, **a converter failure equally introduces power failure and therefore network communications interruption** on the corresponding side of the power supply intelligent card. Thus, in the above case, **a failure of the common "A" 230V supply will trigger three simultaneous network interruptions and the loss of communication for the majority of detectors**, and the same goes for the common "B" power supply.

If one needs particularly high availability system performance then :

- Either uses an uninterruptible 230V ac power supply
- Or uses independent power supplies connected to converters through a device capable of powering both by using the only remaining valid power supply in case of failure ('H' redundancy scheme)

2. IDENTIFICATION AND MARKING

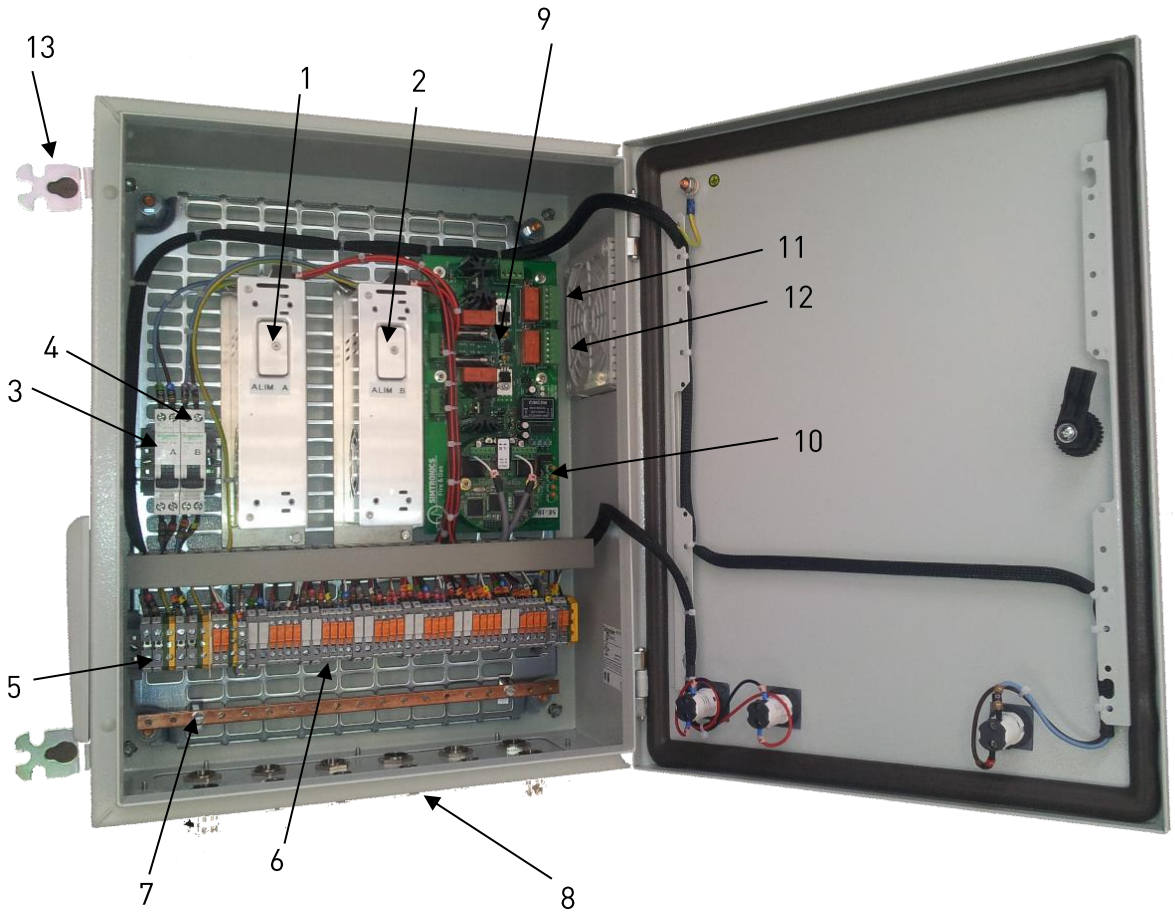


Figure 4: Presentation of the mounting plate inside the cabinet

Figure 5: Front face of cabinet

Marks	Identification	Use
1	ALIM A (Supply A)	AC/DC switched power converter. Converts mains voltage to 28Vdc used to supply the detectors loop, side A.
2	ALIM B (Supply B)	AC/DC switched power converter. Converts mains voltage to 28Vdc used to supply the detectors loop, side B
3	Q1	Circuit breaker allowing supply ALIM A to be isolated
4	Q2	Circuit breaker allowing supply ALIM B to be isolated
5	Terminal XP	Mains arrival terminal N°1 (ALIM A) and N°2 (ALIM B). ⇨ See paragraph 4.4
6	Terminal XB	Connection terminal for the power supply and media connection of the LON network detectors. ⇨ See paragraph 4.5
7	Earth bar	Connection for the detector loop cable shield
8	Cable glands	Cable glands ensure passage and attachment of the cables
9	PCB cards 3539 + fuses	The supply PCB, 3539 (large rectangular card) ensures the management of the detector supply. It carries 2 fuses which cut the 28V side A and side B: see paragraph 6.3.
10	PCB card 3505	The PCB 3505 is plugged into card 3539. It ensures communication with the other elements of the SYNTEL network.
11	System failure relay connector	See paragraphs 4.6 and 0
12	Fault detection relay connector	See paragraphs 4.6 and 0
13	Fixing brackets	Allows cabinet to be fixed to wall
14	Mains present lamp	Signals presence of No.1 mains supply only
15	ALIM A lamp	Presence of 28V supply A
16	ALIM B lamp	Presence of 28V supply B

Identification:

A label fixed to the right side of the control cabinet indicates its designation, Serial No. as well as supply voltage and maximum consumption.

- Manufacturer: OLDHAM SIMTRONICS
- Model:
  SafeBox version : SYN-P00-CA00-D00-00
  Auxiliary supply version : SYN-PB0-DA00-D00-00
- Serial no.: S/N: xxxxxxxxx (xxxxaamm)
- Approval type: CE
- Protection: IP54
- Nominal voltage range: 110 -230 Vac
- Frequency range: 47-63 Hz
- Power consumption: 210 VA

3. TECHNICAL SPECIFICATIONS

3.1. Certification and reference norms

See paragraph 10 at the end of this notice.

The degree of protection for the cabinet is IP54 according to the EN 60529 (2013) norm.

3.2. Climatic environment when in use

Cabinet reference:

Temperature:	between -10°C and +40°C,
Humidity:	20 - 90% RH without condensation

Mounting plate reference:

Temperature:	between -10°C and +55°C,
Humidity:	20 - 90% RH without condensation

This apparatus is designed for indoor use, in dry surroundings, at an altitude less than 2000 meters.

3.3. Storage

Temperature:	between -20°C and +70°C,
Pressure:	1013 hPa ± 10%,
Humidity:	10 - 95% RH without condensation

3.4. Weight

Weight in cabinet version:	14 Kg
Weight of mounting plate only:	5 Kg

3.5. Electrical parameters

3.5.1. Main supply

Nominal input voltage: 110 to 230Vac ±10% (99 - 253Vac)

Frequency in use from: 47Hz to 63Hz

Consumption: 210 VA max.

Max. short-circuit current (Icu): 6 kA

This apparatus is designed to:

- Accept transitory overvoltage up to Category II.
- Accept temporary overvoltage occurring in the supply network.

3.5.2. Supply to detector loops

Output voltage: 28 VDC nominal, 35Vmax (SELV[1])

Output current: 5A max for all the loop starting points

5A max for all the loop returns

3.5.3. Relays

The 2 fault relays are found on card 3539.

Able to break: 35 VDC / 2 amps (SELV[1])

33 VAC / 2 amps (SELV[1])

[1] Safety Extra Low Voltage: This applies to all secondary circuits (28V supply, LON network, relays)

4. INSTALLATION

The cabinets described in this notice are safety equipment. We emphasize on the care to be provided during the commissioning of this equipment on site. A breach of good practice could cause a malfunction of SIMTRONICS equipment and thus the safety level for which it was designed could no longer be ensured.

Reminder to the installer: we remind that the intervention on some sites may be subject to restrictions that we ask you to respect for your safety and that of others.

4.1. Fixing the cabinet to the wall

- The size of the cabinet and fixing points are given in paragraph 9.1.
- The cabinet must be mounted vertically, and should not interfere with the passage of persons.
- To facilitate maintenance, preferably it should be fixed at man height.
- The ventilation slots must be obstructed: respect a clearance of at least 20cm on each side.
- Use the fixing kit already mounted on the cabinet.
- Ensure that the support to which it is fixed is not friable and is sufficiently resistant, (concrete, metal, ...).
- Use plugs and screws suitable for the support and weight of the cabinet.
  - Metal support: 4 x M8 screws
  - Concrete support: 4 x Plugs + screws 10mm diameter = min 80mm long.

4.2. Fixation of the mounting plate inside a cabinet

- The mounting plate is designed to be housed at the bottom of a 19 inch rack.
- The size of the mounting plate as well as the fixing points are given in paragraph 9.2.
- Fix the plate by means of the 4 holes provided.
- We recommend using 4 screws, M5, M6 or M8 to fix the plate in the bottom of the control cabinet.

4.3. Electrical connections

Recommendations

- Never make connections whilst power is on.
- Respect the connection specification applicable to the different materials included in the installation.
- The wiring for the electrical circuits of the detector loops, the Syntel network and the relays must respect the rules for SELV circuits[2].

[2] Safety Extra Low Voltage: This applies to all secondary circuits (28V supply, LON network, relays)

- Use the cables recommended in the following paragraphs.
- Pass the cables through the support whilst respecting the mounting information.
- Use appropriate cable lugs/terminals.
- Connect the different cable shields to the cabinet earth bar and connect the mains supply cables (230V) with their earth wires to the terminals provided for this effect.
- The unused cable glands must retain their membrane intact in order to prevent ingress of dust and insects.
- Fit two isolating switches, one for each incoming mains supply, which can be operated from outside the cabinet (main switch or circuit breaker). These isolating switches must be accessible, positioned close to the cabinet and identified as isolating switches.

Cable glands:

Small cable glands (PG13.5): admissible cable diameter is 8.5mm → 13.5mm.

Large cable glands (PG16): admissible cable diameter is 12.5mm → 18mm.

The electrical installation must comply with the state-of-the-art. Particular attention should be paid to personnel safety and to electromagnetic compatibility. Please refer to the current standards and regulations.

4.4. 230V Terminal block "XP"

Suggested cable:

- 3 wire (2 conductors + earth), minimum section = 1mm², conform to norm IEC 60227 or IEC 60245.

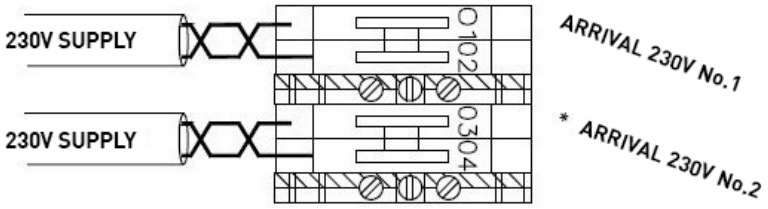


Figure 6: Terminal 230Vac "XP"

Terminal No.	Signal
1	Supply neutral 230Vac No.1 (ALIM A)
2	Supply phase 230Vac No.1 (ALIM A)
⏚	Earth protection
3	Supply neutral 230Vac No.2 (ALIM B)
4	Supply phase 230Vac No.2 (ALIM B)
⏚	Earth protection

Note:

- Mains supply characteristics: see paragraph 3.5.1.
- In cabinet version, the 230 V lamp shows the presence of mains supply to No. 1 only.

4.5. Detector loops terminal block "XB"

Connecting the detector loops:

We advise the use of the following cable references:

Manufacturer	Reference	Conditions for use	Comments
GORSE	03-IP-09-EI-SF	Zone non classified	Secondary cable to norm M87-202 (*)
or other	Cable with 3 twisted pairs, 0.9mm² with individual and general screening		
GORSE	03-IP-09-EI-FA	Zone classified ATEX	Secondary cable to norm M87-202 (*)
or other	Cable with 3 twisted pairs, 0.9mm² with individual and general screening and armoured		

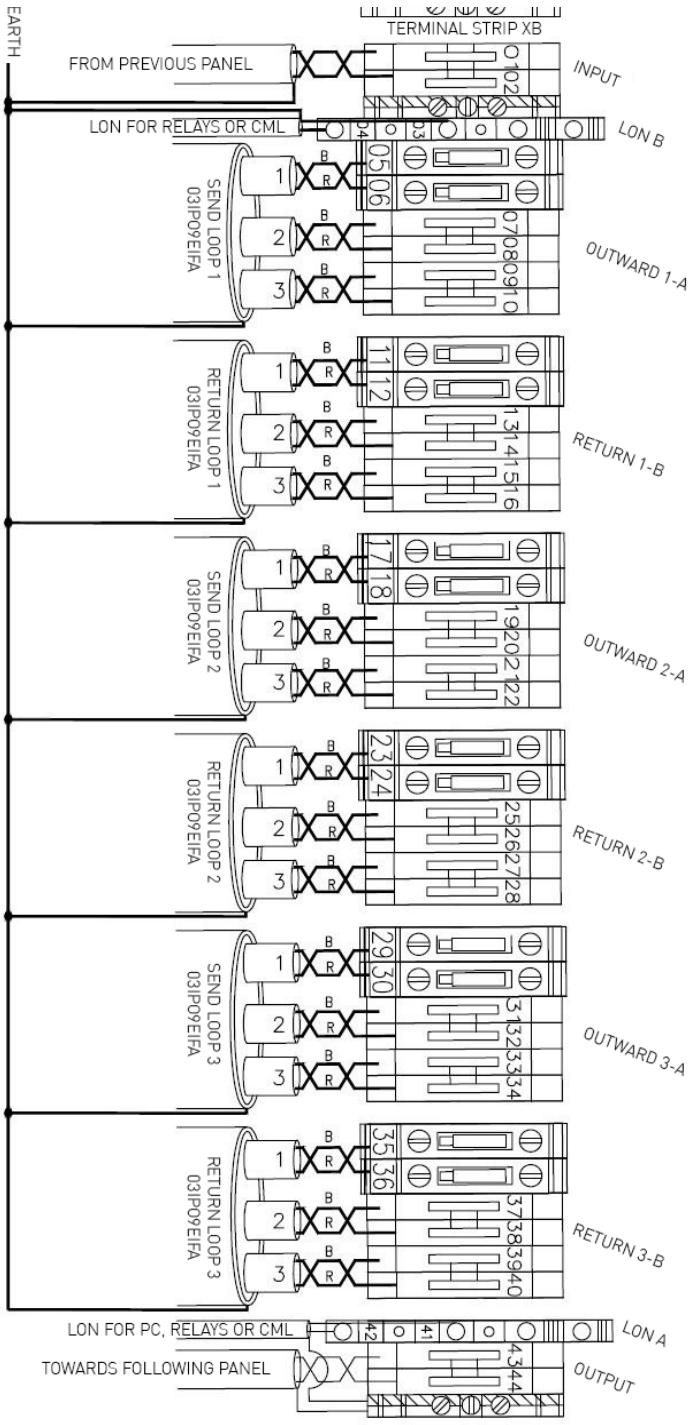


Figure 7: Detector loops terminal block "XB"

Terminal No.	Signal	Terminal No.	Signal
1	LON network input side B (previous box)	29	Power loop 3 OUTWARD – 28V (6mm²)
2	LON network input side B (previous box)	30	Power loop 3 OUTWARD – 0V (6mm²)
⏚	Operational earth (cable shield)	31	Power loop 3 OUTWARD – 28V
3	LON network side B (for relay or CML)	32	Power loop OUTWARD – 0V
4	LON network side B (for relay or CML)	33	Loop 3 – LON network OUTWARD
5	Power loop 1 OUTWARD – 28V (6mm²)	34	Loop 3 – LON network OUTWARD
6	Power loop 1 OUTWARD – 0V (6mm²)	35	Power loop 3 RETURN – 28V (6mm²)
7	Power loop 1 OUTWARD – 28V	36	Power loop 3 RETURN – 0V (6mm²)
8	Power loop 1 OUTWARD – 0V	37	Power loop 3 RETURN – 28V
9	Loop 1 – LON network OUTWARD	38	Power loop 3 RETURN – 0V
10	Loop 1 – LON network OUTWARD	39	Loop 3 – LON network RETURN
11	Power loop 1 RETURN – 28V (6mm²)	40	Loop 3 – LON network RETURN
12	Power loop 1 RETURN – 0V (6mm²)	41	LON network side A (for PC, relay or CML)
13	Power loop 1 RETURN – 28V	42	LON network side A (for PC, relay or CML)
14	Power loop 1 RETURN – 0V	43	LON network output side A (next box)
15	Loop 1 – LON network RETURN	44	LON network output side A (next box)
16	Loop 1 – LON network RETURN	⏚	Operational earth (cable shield)
17	Power loop 2 OUTWARD – 28V (6mm²)		
18	Power loop 2 OUTWARD – 0V (6mm²)		
19	Power loop 2 OUTWARD – 28V		
20	Power loop 2 OUTWARD – 0V		
21	Loop 2 – LON network OUTWARD		
22	Loop 2 – LON network OUTWARD		
23	Power Loop 2 RETURN – 28V (6mm²)		
24	Power Loop 2 RETURN – 0V (6mm²)		
25	Power Loop 2 RETURN – 28V		
26	Power Loop 2 RETURN – 0V		
27	Loop 2 – LON network RETURN		
28	Loop 2 – LON network RETURN		

Note:

- The LON media cables as well as the power supply for the detector loops must be connected exclusively with detectors or apparatus from SIMTRONICS.
- The LON network signals are not polarity sensitive.
- Characteristics of the detectors loop power supply: see paragraph 3.5.2.
- LON network characteristics: Voltage < 5V AC, Current < 10mA

Insulation related to electrical safety:

Any apparatus which may eventually be connected to the loop low voltage supply (28V) or to the LON network must not be able to carry a dangerous voltage to these signals. They must meet their own electrical safety standards and respect the SELV regulations[3] (ex: norm 60950...).

4.6. Relay output connections

Use of the 2 fault relays is described in paragraph 0.
The connections are made directly to the green terminals J8 and J9 on card 3539.
Contact characteristics: see paragraph 3.5.3

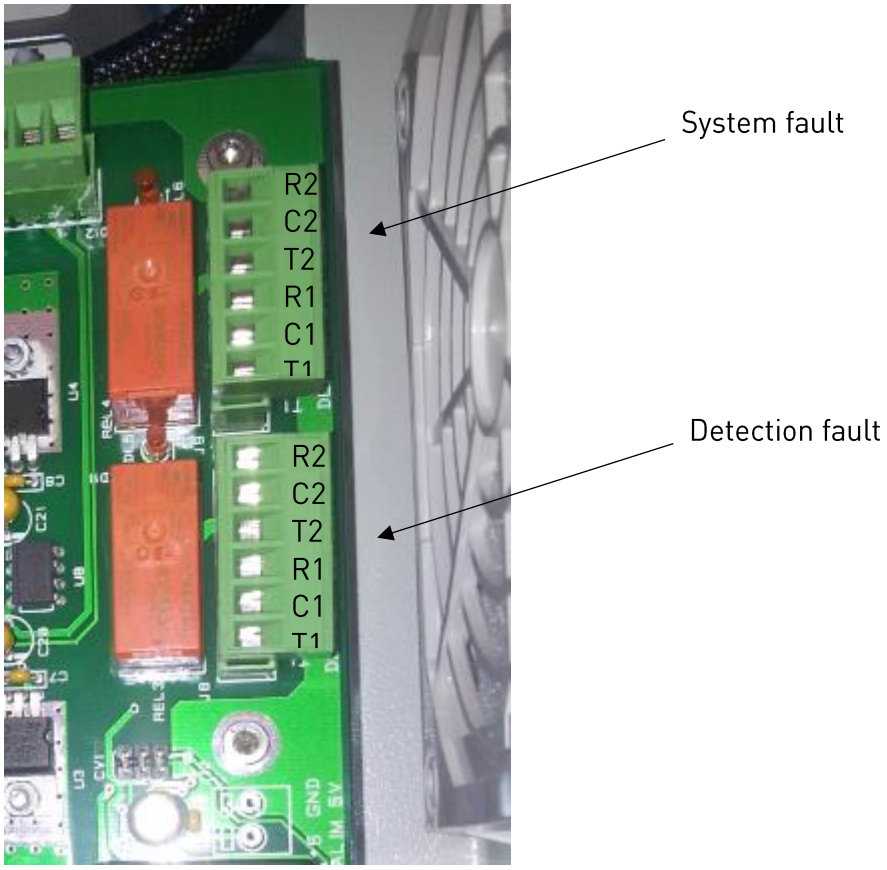


Figure 8: Relay connection terminals

Insulation related to electrical safety:

Any apparatus which may eventually be connected to the loop low voltage supply (28V) or to the LON network must not be able to carry a dangerous voltage to these signals. They must meet their own electrical safety standards and respect the SELV regulations[4] (ex: norm 60950...).

[3] Safety Extra low Voltage: This applies to all secondary circuits (28V supply, LON network, relays)
[4] Safety Extra low Voltage: This applies to all secondary circuits (28V supply, LON network, relays)

5. USE

The supply cabinets have several lamps on the front face. They indicate:

- Presence of mains voltage No.1
- Presence of low voltage output from power supply A.
- Presence of low voltage output from power supply B.

For the mounting plates configuration, corresponding warning lamps should be provided on the main control cabinet door. The supply card, PIE 3539 has in the lower part, two 24V outputs reserved for this and are marked *WARNING LAMPS*.

If no mains power is present please check the circuit breakers.

5.1. Usage precautions

- The Syntel cabinet must remain locked. It`s access must be limited to maintenance personnel. There are dangerous voltages inside, and may only be repaired by qualified personnel.
- Avoid placing heavy objects on the cabinet which may damage it, or cause it to fall.
- Avoid blocking ventilation holes.

5.2. Commissioning

The SYNTEL system has a configuration tool which automatically identifies the network elements and thus constitutes a configuration database. This tool also enables the operator to modify network elements configurations in order to adapt it to the particular functionality required for a given system.

The power supply units, in Safebox version or not, are supported by the configurator. The Safebox is automatically configured in the SYNTEL network commissioning process; no changes are required or permitted to the user. The secondary power supply units do not require any specific configuration.

Please refer to the SYNTEL configurator specific documentation (*+NOSP 15278 : Online help* available by pressing F1 while using the configurator HMI) for more information.

5.3. Control

The configurator can supervise the power supply units state (Safebox or not) and control the distribution of 28V supply to detectors loop on both departures and returns.

Please refer to the SYNTEL configurator specific documentation for more information.

The SYNTEL system can be supplied with either a standard or a customized supervision application. The standard supervision application allows the control of power supply switches to detectors by *Administrator* access level users. Please refer to the documentation delivered with your specific supervision application for more information.

Warning! For internal electrical circuits protection in case of short-circuit, the power supply controller does not automatically return to the nominal state (power supply relays to detectors loops closed) after the fault repair. The user must send the command from a PC station, using the configurator or the supervision application.

5.4. Fault relays usage

The 2 relays and their connectors are to be found on 3539 card (see Figure 4).

- System fault relay:

  Normally closed (= no system fault)

  It is tripped on:

  - Absence of system element (relay, CML, secondary supply)
  - Invalid configuration of a system element
  - Hardware failure of a relay module
  - Power supply fault (AC/DC converter, lack of voltage),
  - Failure of one of the MultiMECH redundant power supplies
  - Detector internal switch open
  - Open communication loop (LON network)

- Detection fault relay:

  Normally closed (= all detectors present)

  It is tripped on the absence of at least one detector or MultiMech.

6. MAINTENANCE

6.1. Electrical symbols used

Symbol	Name	Use
	Earth protection	On the mains connections
	Functional Earth	Connection of cable shield
	Risk of electric shock	Danger - Mains voltage present

6.2. Precautions to be taken before any intervention

During the intervention:

- Opening the cabinet leads to the exposure to dangerous voltages, in particular the XP terminal rail and the supply terminals.
- In the case where your cabinet has two separate mains supplies, before any intervention it is essential to open the two breakers upstream of this installation.
- Only trained and accredited personnel should work on this cabinet.
- Turning off the power supply to the cabinet will lead to loss of all detectors connected to the cabinet and may lead to certain warnings being triggered: inform the appropriate service (control room) before starting...

After the intervention

The personnel working on the cabinet must ensure that the cabinet is in a safe status before putting back into service. Especially, they should check:

- That all disconnected terminal blocks have been returned to their original status.
- That the cabinet is closed and locked.
- That the monitoring software indicates that it has returned to its operational state.

6.3. Maintenance operations

Before and after any intervention, take account of the recommendations in paragraph 6.2.

6.3.1. Preventive maintenance

Periodicity: annual

Operations to be carried out:

- Check the general status of the cabinet, absence of rust, presence of membranes covering the unused cable glands. Pull on all the cables to ensure that they are properly held by the cable gland.
- From the outside, open the aeration vents and check the filters. Replace if necessary.
- Open the cabinet, check the general state of the cables, wires and other components.

Cleaning:
The cabinet exterior can be cleaned with a cloth wetted with water and soap.
If necessary, remove dust from inside (blowing).

6.3.2. Replace defective elements

Defective elements must be replaced by spare parts having an identical reference.
Certain elements must only be replaced by those ordered from Simtronics (cf. §7).

6.3.3. Mains circuit breakers

Each mains supply is independently protected by a circuit breaker (2A curve C).

- Q1 interrupts supply A.
- Q2 interrupts supply B.

In cases when a breaker opens, find the fault before re-arming.

6.3.4. Power loop supply fuses

The power supplies to the detector loops are protected by 2 fuses mounted on the controller card 3539. They ensure that no excessive current flows in the power loop cables.

Replacement procedure:

- With the appropriate circuit breaker, isolate the cabinet from the mains.
- Replace the damaged fuse only with one with the recommended reference (cf. §7).
- Re-arm the circuit breaker.

It is imperative to replace fuses with ones supplied by SIMTRONICS (see § 7). A different model is not suitable, even if the indications written on the fuse appear to be identical.

6.3.5. LEDs and jumpers on the supply card

The PIE3539 power supply card allows for the 28V power supply to detectors and the TOR fault signaling relays forcing via three jumpers located near its center. This degraded mode enables the plate / cabinet to unconditionally provide power supply to the network without a PIE3505 card.

The PIE3539 power supply card is equipped with LEDs which enables visual check of its state. Their meaning is described in the following figure (the quoted state corresponds to the LED lit on):

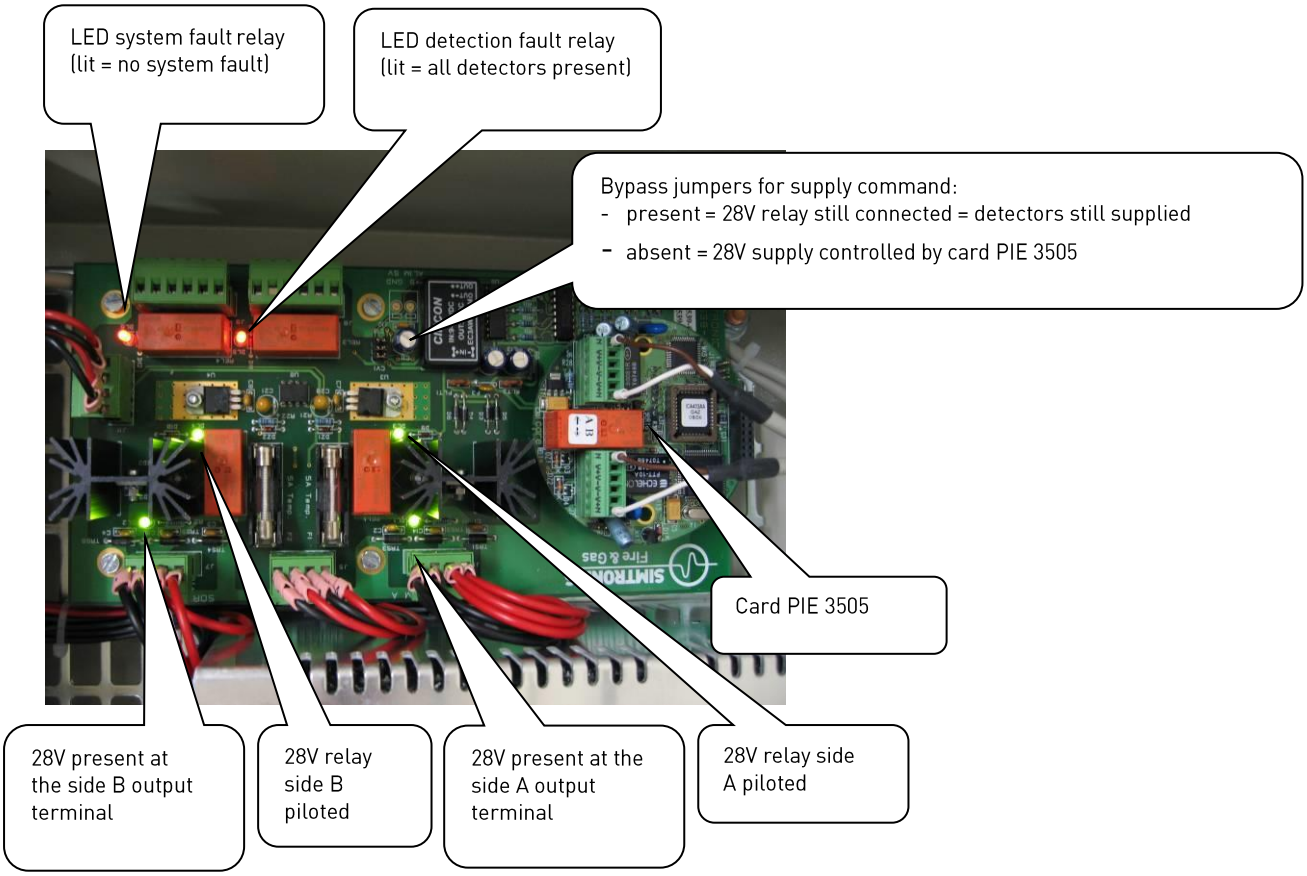


Figure 4: LEDs and jumpers on the supply card

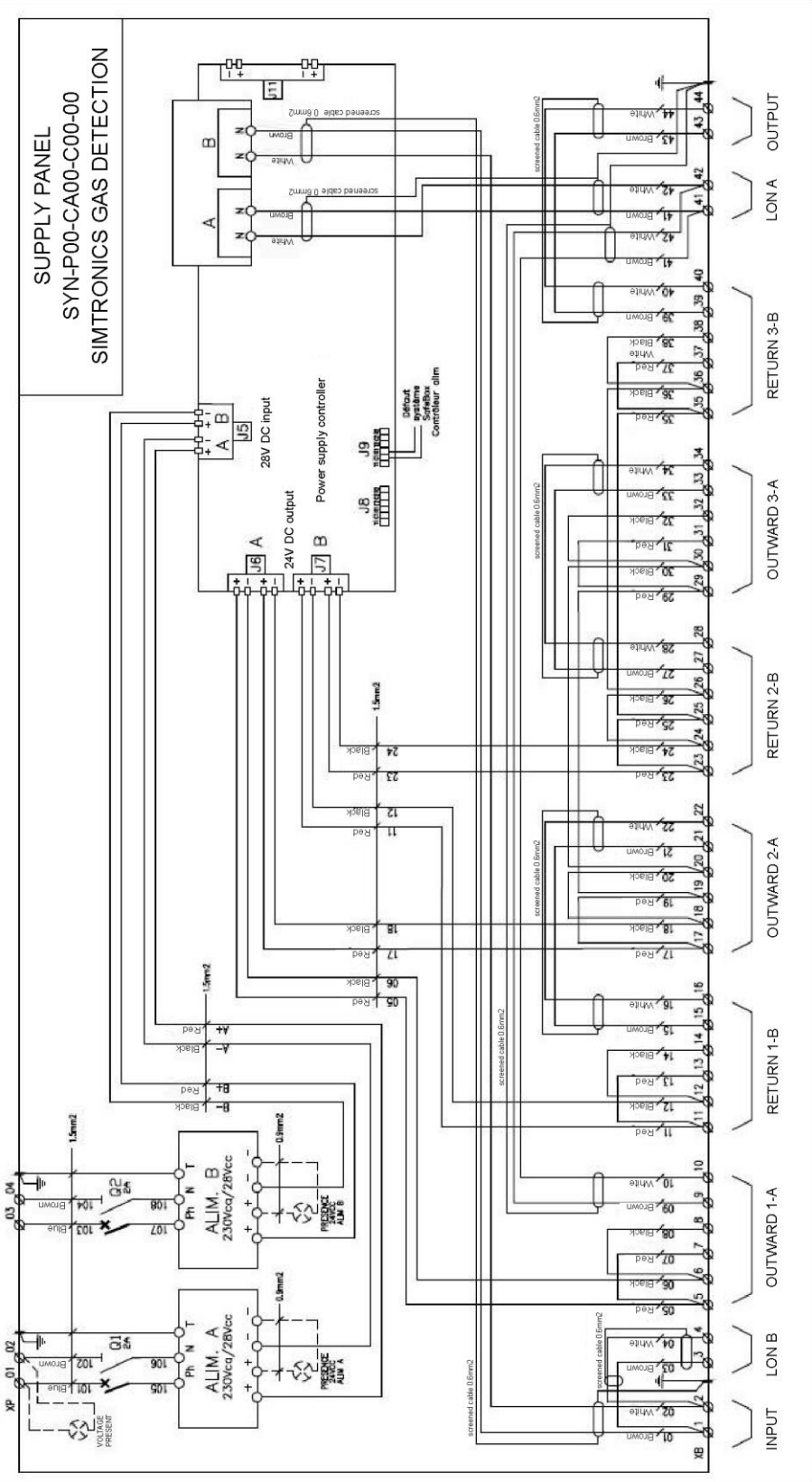
7. SPARE PARTS

- Green warning lamp kit for mains supply (230VAC): Reference 96011687
- Green warning lamp kit for A and B supplies (28VDC): Reference 96011686

It is imperative that the following elements be ordered direct from Simtronics:

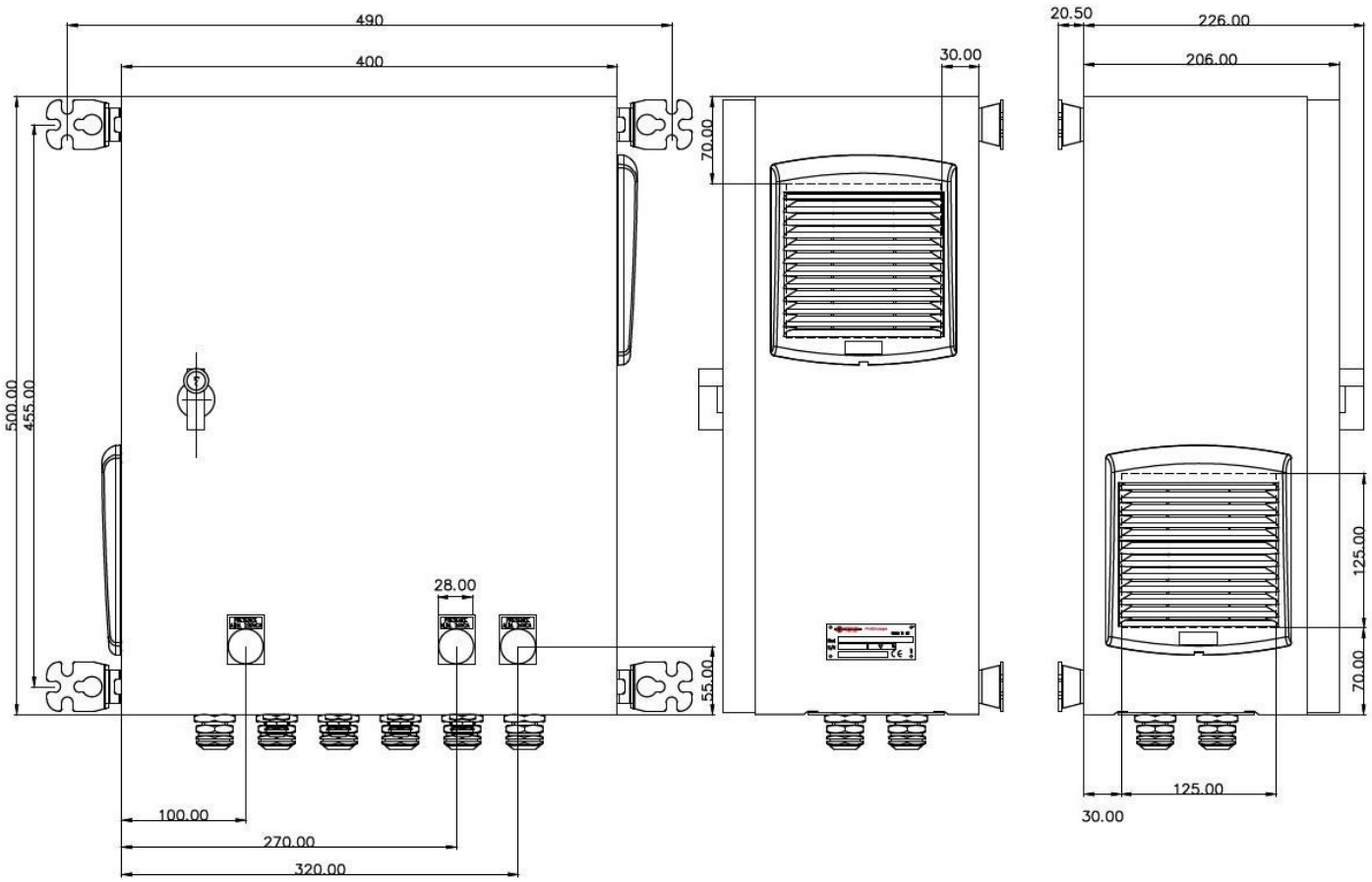
- Mains supply 28V / 8A max: Reference 96011519
- Power supply control card PIE3539: 32510272
- SYNTEL network card PIE3505: 32510313
- Kit of 10 Fuses FST 6.3 x 32 (UL) 5A used on card PIE 3539: Reference 30500273

8. OUTLINE DIAGRAM OF CABINET



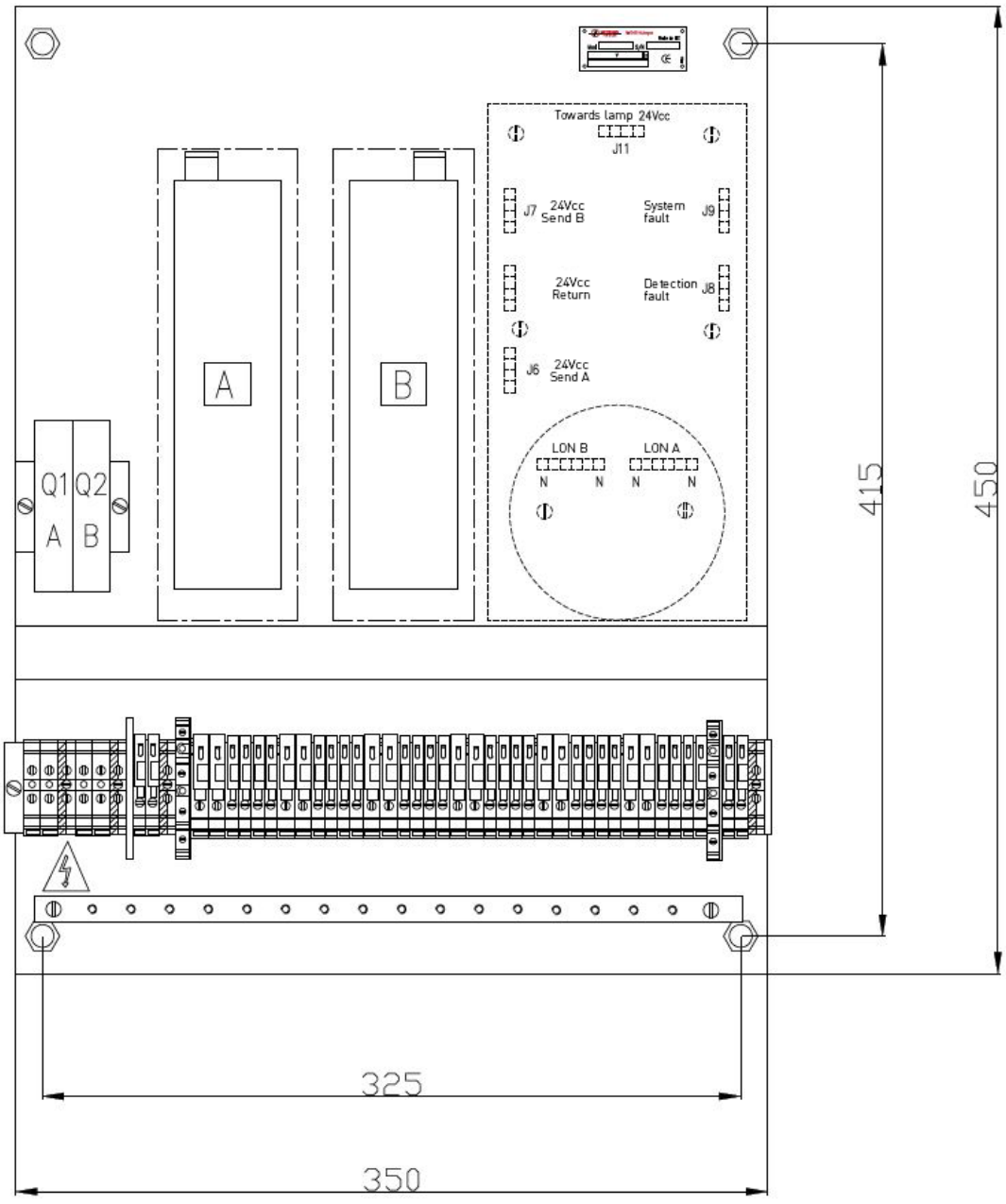
9. APPENDICES

9.1. Cabinet - presentation of external dimensions



Note: The dimensions are in mm.

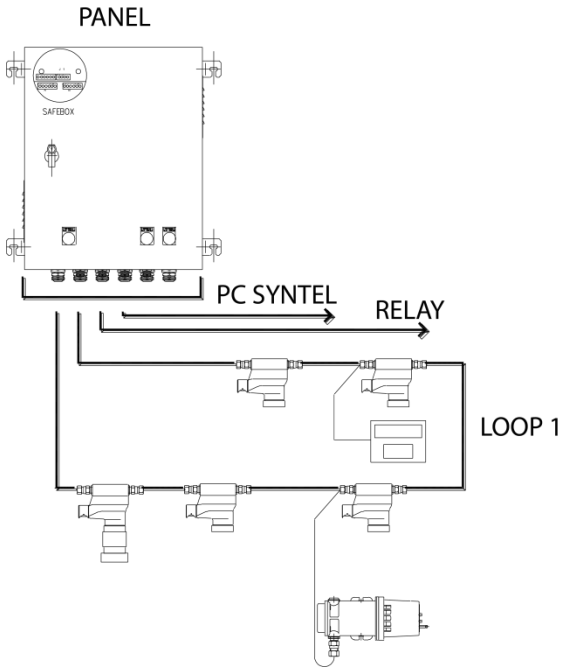
9.2. Mounting– plate presentation, external dimensions and fixing pads



Note: The dimensions are in mm.
Maximum depth with reference to mounting surface: 150mm.

9.3. Connections for units depending on configuration

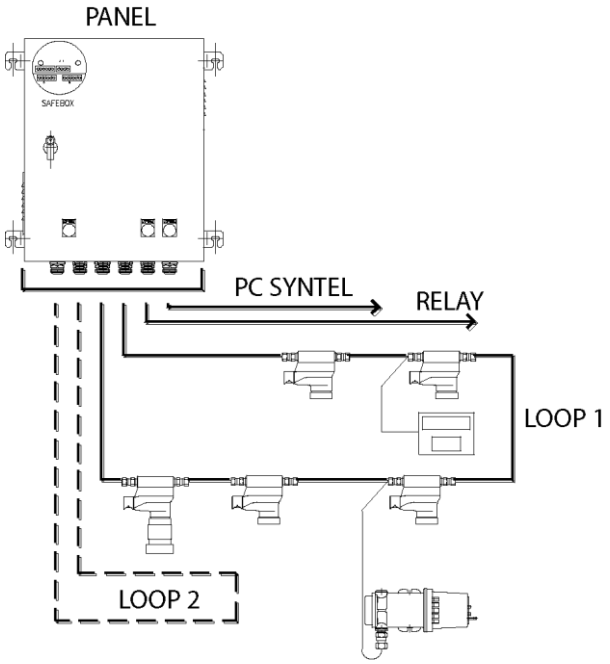
Configuration No.1 “1 single cabinet, 1 power supply loop”



SUPPLY CABINET IN SafeBox VERSION									
INPUT	LON B	OUTWARD 1-A	RETURN 1-B	OUTWARD 2-A	RETURN 2-B	OUTWARD 3-A	RETURN 3-B	LON A	OUTPUT
⇑	⇑	⇓	⇑	⇓	⇑	⇓	⇑	⇓	⇓
BRIDGE towards OUTPUT	**CML RELAY**	**LOOP No.1**		*BRIDGE between 2-A and 2-B*		*BRIDGE between 3-A and 3-B*		**SYNTEL CML RELAY**	*BRIDGE towards INPUT*

01IP09EISF 0.9mm² shielded cable

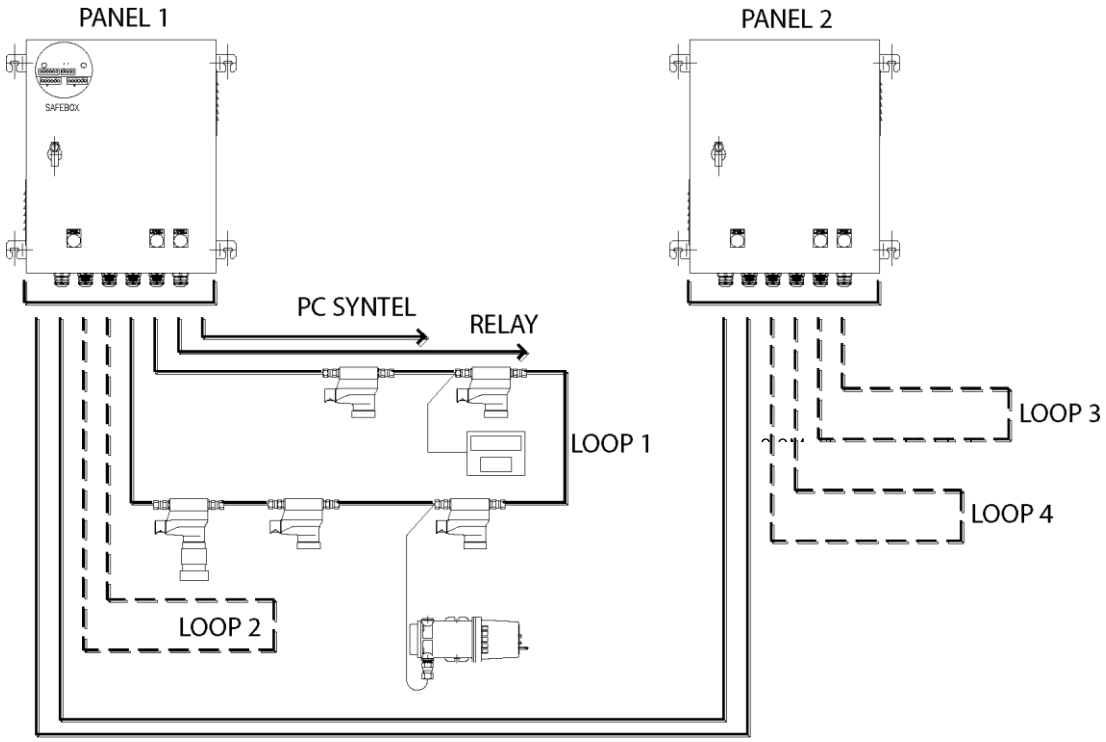
Configuration No.2 “1 single cabinet, 2 power supply loops”



SUPPLY CABINET IN SafeBox VERSION									
INPUT	LON B	OUTWARD 1-A	RETURN 1-B	OUTWARD 2-A	RETURN 2-B	OUTWARD 3-A	RETURN 3-B	LON A	OUTPUT
⇑	⇑	⇓	⇑	⇓	⇑	⇓	⇑	⇓	⇓
BRIDGE towards OUTPUT	**CML RELAY**	**LOOP No.1**		**LOOP No.2**		*BRIDGE between 3-A et 3-B*		**SYNTEL CML RELAY**	*BRIDGE towards INPUT*

01IP09EISF 0.9mm² shielded cable

Configuration No.3 "2 Units, 4 power supply loops"



SUPPLY CABINET IN SafeBox VERSION									
INPUT	LON B	OUTWARD 1-A	RETURN 1-B	OUTWARD 2-A	RETURN 2-B	OUTWARD 3-A	RETURN 3-B	LON A	OUTPUT
⇑	⇑	⇓	⇑	⇓	⇑	⇓	⇑	⇓	⇓
From last CABINET	**CML RELAY**	**LOOP No.1**		**LOOP No.2**		*BRIDGE between 3-A and 3-B*		**SYNTEL CML RELAY**	*Towards following CABINET*

01IP09EISF 0.9mm² shielded cable

SUPPLY CABINET									
INPUT	LON B	OUTWARD 1-A	RETURN 1-B	OUTWARD 2-A	RETURN 2-B	OUTWARD 3-A	RETURN 3-B	LON A	OUTPUT
⇑	⇑	⇓	⇑	⇓	⇑	⇓	⇑	⇓	⇓
From previous CABINET	**RELAY CML**	**LOOP No.3**		**LOOP No.4**		*BRIDGE between 3-A and 3-B*		**RELAY CML**	*Towards the first CABINET*

10. DECLARATION OF CONFORMITY

SIMTRONICS Fire & Gas	**DECLARATION UE DE CONFORMITÉ** ***EU CONFORMITY DECLARATION***	Réf : **+NOSP0017781** *Rév. 0*

Nous, **SIMTRONICS**
We, **792, Avenue de la Fleuride**
13400 AUBAGNE

Déclarons, sous notre seule responsabilité, que le matériel suivant :
Declare, under our sole responsibility that the following equipment:

Type . *Type*	Alimentation / *Supply*
Modèle / *Models*	Système SYNTEL / *SYNTEL System*

Est conçu et fabriqué en conformité avec les Directives applicables et les normes harmonisées suivantes :
Is designed and manufactured in compliance with the following applicable Directives and standards:

DBT / LVD	Directive 2014/35/UE *Directive 2014/35/EU*	EN 61010 : 2010
CEM /EMC	Directive 2014/30/UE *Directive 2014/30/EU*	EN 50270 : 2015 for Type 2

Ce matériel ne doit être utilisé qu'à ce pour quoi il a été conçu et doit être installé en conformité avec les règles applicables et suivant les recommandations du fabricant.
This equipment shall be used for the purpose for which it has been designed and be installed in accordance with relevant standards and with manufacturer's recommendations.

Nous, soussignés SIMTRONICS, déclarons par la présente que le produit spécifié ci-dessus est conforme aux Directives et aux Normes listées.
We, undersigned SIMTRONICS, declare that the product specified above conforms to the listed Directives and standards.

A Aubagne le 10 décembre 2018/ *Aubagne, December 10th, 2018*

Michael Mobley
Responsable Certification
Certification Manager

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