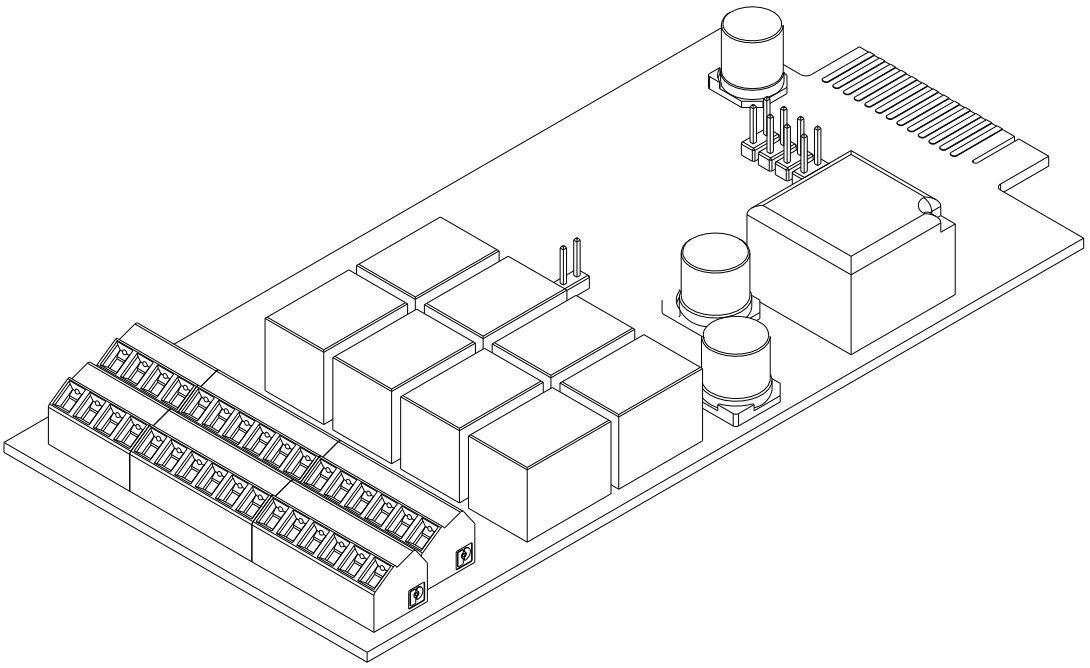
MultiCOM 392

I/O Expansion Card



User manual

INTRODUCTION

Thank you for choosing our product.

The accessories described in this manual are of the highest quality, carefully designed and built in order to ensure excellent performance.

This manual contains detailed instructions on how to install and use the product.

This manual must be stored in a safe place and CONSULTED BEFORE USING THE DEVICE for proper usage instructions as well as maximum performance from the device itself.

NOTE: Some images contained in this document are for informational purposes only and may not faithfully demonstrate the parts of the product they represent.

Symbols used in this manual:

Danger Indicates the possible presence of dangerous voltages and the risk of electric shock.

Warning Indicates important information that must not be ignored.

Information Provides notes and useful suggestions for the User.

ENGLISH

SAFETY

This part of the manual contains SAFETY precautions that must be followed scrupulously.

Ensure that the connectors subjected to high voltages are correctly isolated.

- The device has been designed for professional use and is therefore not suitable for use in the home.
- The device has been designed to operate only in closed environments. It should be installed in rooms where there are no inflammable liquids, gas or other harmful substances.
- Take care that no water or liquids and/or foreign bodies fall into the device.
- In the event of a fault and/or impaired operation of the device, do not attempt to repair it but contact the authorized service centre.
- The device must be used exclusively for the purpose for which it was designed. Any other use is to be considered improper and as such dangerous. The manufacturer declines all responsibility for damage caused by improper, wrong and unreasonable use.

ENVIRONMENTAL PROTECTION

Our company devotes abundant resources to analysing environmental aspects in the development of its products. All our products pursue the objectives defined in the environmental management system developed by the company in compliance with applicable standards.

Hazardous materials such as CFCs, HCFCs or asbestos have not been used in this product.

When evaluating packaging, the choice of material has been made favouring recyclable materials.
Please separate the different material of which the packaging is made and dispose of all material in compliance with applicable standards in the country in which the product is used.

DISPOSING OF THE PRODUCT

The device contains internal material which (in case of dismantling/disposal) are considered TOXIC, such as electronic circuit boards. Treat these materials according to the laws in force, contacting qualified centres. Proper disposal contributes to respect for the environment and human health.

CONTENTS

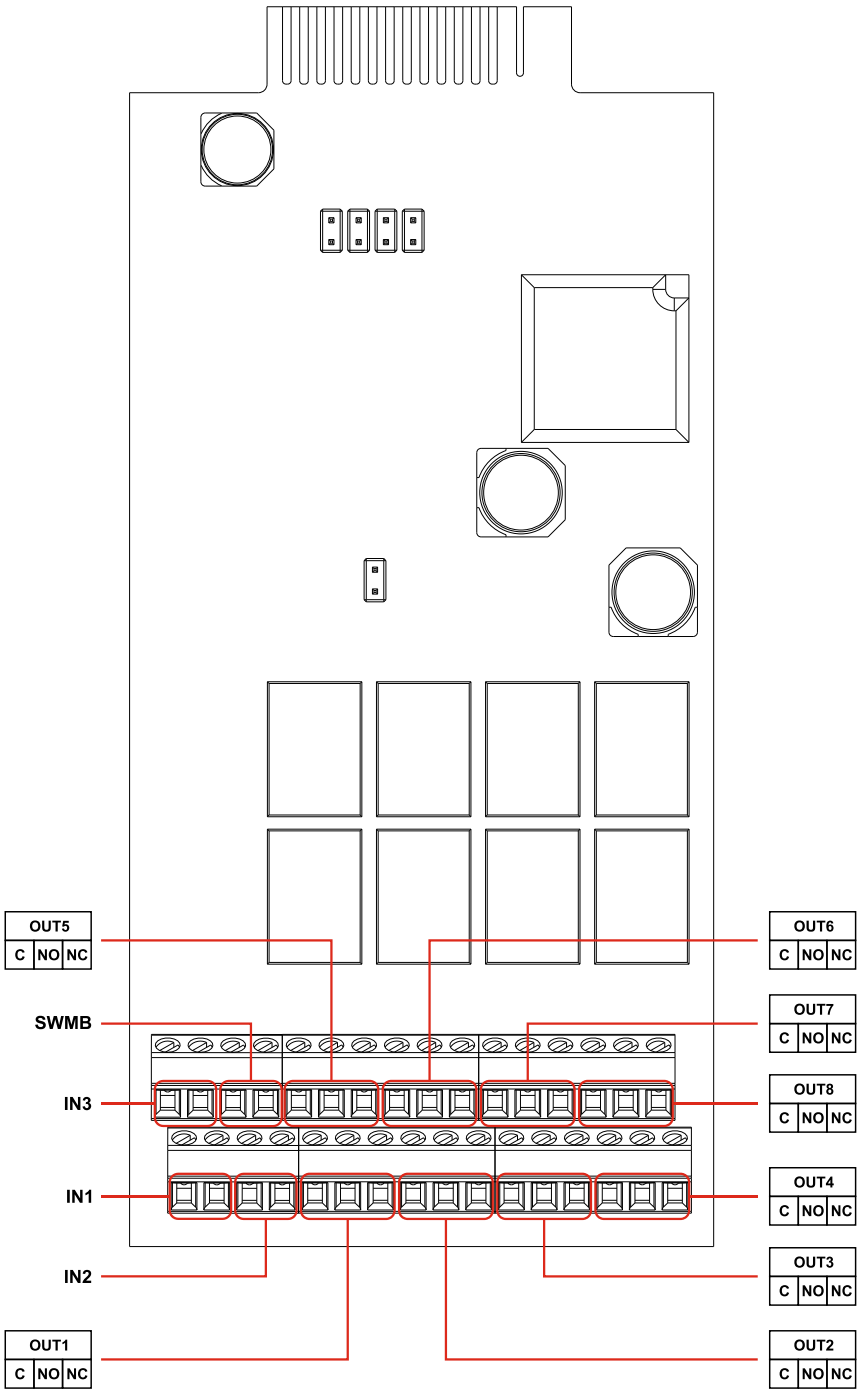
DESCRIPTION

MultiCOM 392 is a device that, inserted in the proper slot of the UPS, provides 8 configurable dry contact outputs and up to four inputs for the control and monitoring of the UPS.

The device is compatible with the following UPS series:

- MST / MSM / MCT / MCM
- C1T / C1M
- GMI
- S3T / S3M / S3U
- MPW

Refer to the code on the UPS data plate to trace back to the UPS model you own (ex. P/N: DS3TK10...).



INPUTS

The four inputs, IN1 / IN2 / IN3 / SWMB, can be configurable or not according to different UPS series. Check the features that are compatible and the default configuration in the chapter dedicated to your UPS model.

Some UPS may not handle all inputs.

OUTPUTS

For all UPS series, each of the eight outputs (OUT1 – OUT8) can be associated with an event such as an operating state or a UPS alarm condition. You can also configure the function logic of the relay and set a delay for the event signalling.
The outputs can be configured via the configuration software of the UPS.

Check the default configuration of the outputs in the chapter dedicated to your UPS model.

In order to know the events that can be associated with the outputs, refer to the configuration software of the UPS.

Maximum ratings for each output	
Maximun load current	**1 A**
Maximun voltage AC	**25 V_{ac}**
Maximun voltage DC	**30 V_{dc}**

SERIES MST / MSM / MCT / MCM

For series MST / MSM / MCT / MCM, MultiCOM 392 is compatible only if the UPS is provided with the interface board mounted **B0056 Rev.01C / B0056 Rev.02C or higher**.

JUMPER SETTINGS ON INTERFACE BOARD OF THE UPS

CAUTION

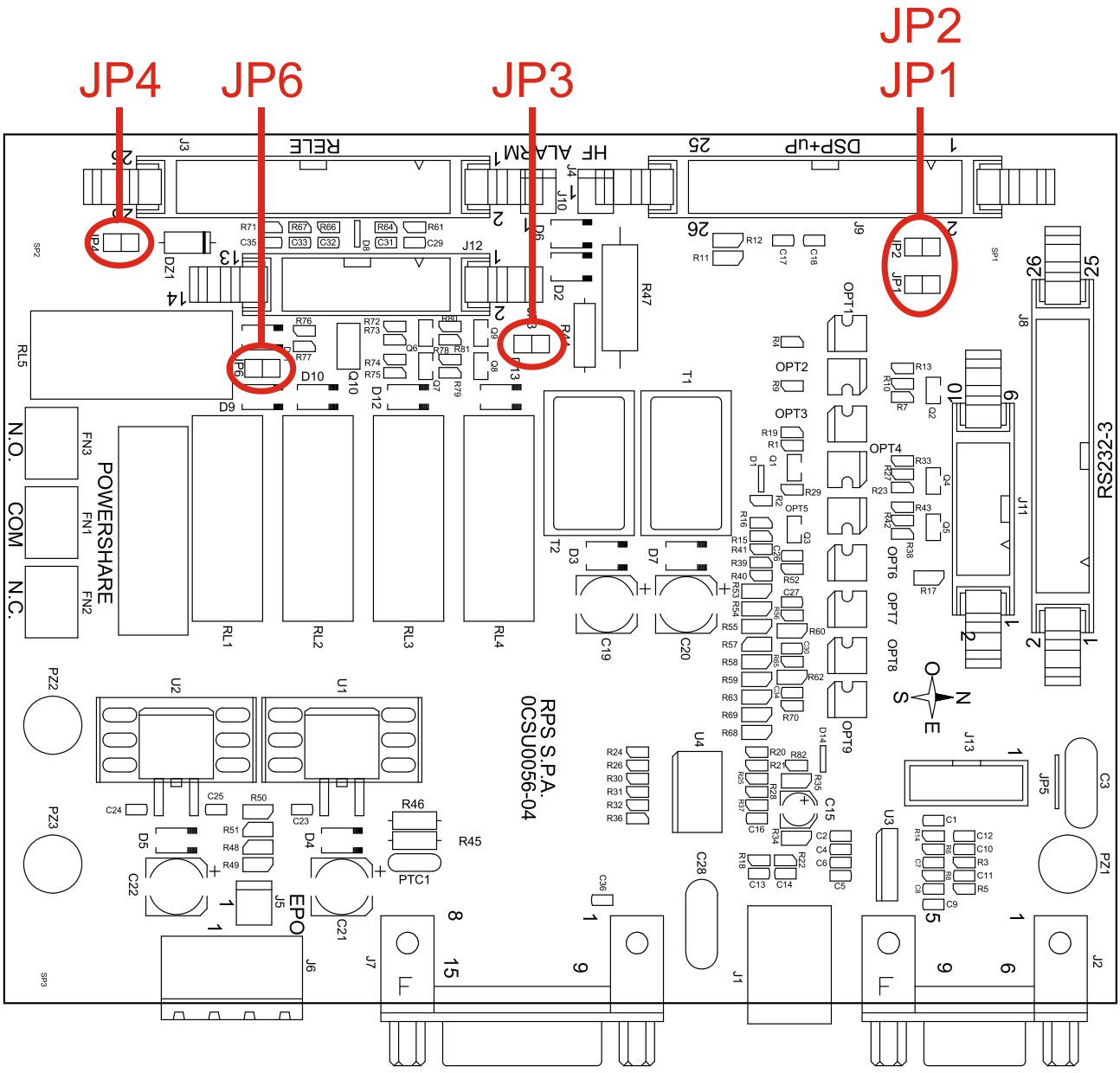
ALL OPERATIONS DESCRIBED IN THIS CHAPTER MUST ONLY BE CARRIED OUT BY PERSONNEL WHO ARE QUALIFIED AND PROPERLY TRAINED

All the operations listed below must be carried out while the UPS is completely disconnected from the mains and from the batteries and with all disconnectors and fuse holders open.

Refer to the relative user manual to turn off the UPS. Then wait about 15 minutes to allow the internal capacitors to discharge.

- Remove the top UPS panel in order to access to the interface board of the UPS.
- Set the jumpers JP3 and JP4 of the interface board referring to the following table and image.
- Replace the top panel of the UPS.
- Perform the safety tests (see following pages).

JP1	OPEN
JP2	OPEN
JP3	**CLOSED** (DEFAULT) for using the REMOTE OFF function through the AS400 port of the UPS **OPEN** for using the REMOTE OFF function through IN2 of the MultiCOM 392
JP4	**OPEN**
JP6	CLOSED



SAFETY TESTS

CAUTION

ALL OPERATIONS DESCRIBED IN THIS CHAPTER MUST ONLY BE CARRIED OUT BY PERSONNEL WHO ARE QUALIFIED AND PROPERLY TRAINED

The tests described below should be performed after the UPS is completely closed with the wrapping and all the panels. In addition, all operations must be carried out with the UPS off and completely disconnected from the mains, batteries and any other equipment.

- **Equipment required**

1. Earth resistance meter, fitted with RS28 ELEKTROTECHN Laboratorium electrodes (or similar).
2. UH28 .. ELEKTROTECHN LABORATORIUM strength test instrument complete with high voltage rectifier BRIDGE adapter (or similar).

- **Measurement of contact resistance to earth (CRITICAL FOR SAFETY)**

Connect one electrode from the “RS 28” generator to the earth terminal. Inject the test current through the other electrode (tip) in all the different parts that make up the metal frame. In the test on painted frames, before the test, pierce the painted layer with the tip.
The test is passed if all the metal parts of the equipment are earthed.
The earth resistance reading on the instrument should be ≤0.1 Ohm.

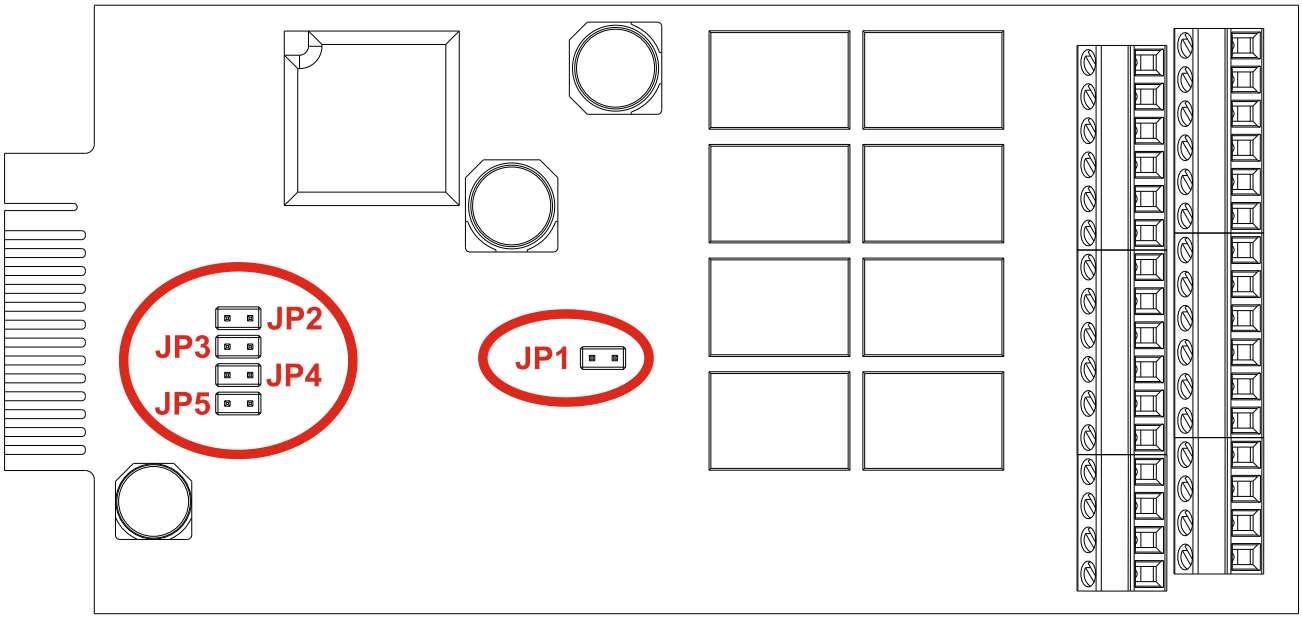
- **Strength test (CRITICAL FOR SAFETY)**

With the UPS off and disconnected from the mains, batteries and any other equipment, short circuit the mains input terminals (L1, L2, L3, N) (and bypass input terminals if present).
Close all the disconnectors SWIN, SWOUT, SWBATT (if present on the UPS), and SWMB and SWBYP (if present). With the machine for the strength test and relative rectifier bridge, set at 1500Vac with a 10mA limit, apply a voltage of about 2100Vdc for at least 2 seconds between the short circuit created beforehand and an earth terminal.
The test is passed if the test equipment gives no indication of an anomaly.
Remove the short circuit between the phases and the neutral. Open all the disconnectors.

JUMPER SETTINGS AND INSTALLATION OF THE MULTICOM 392

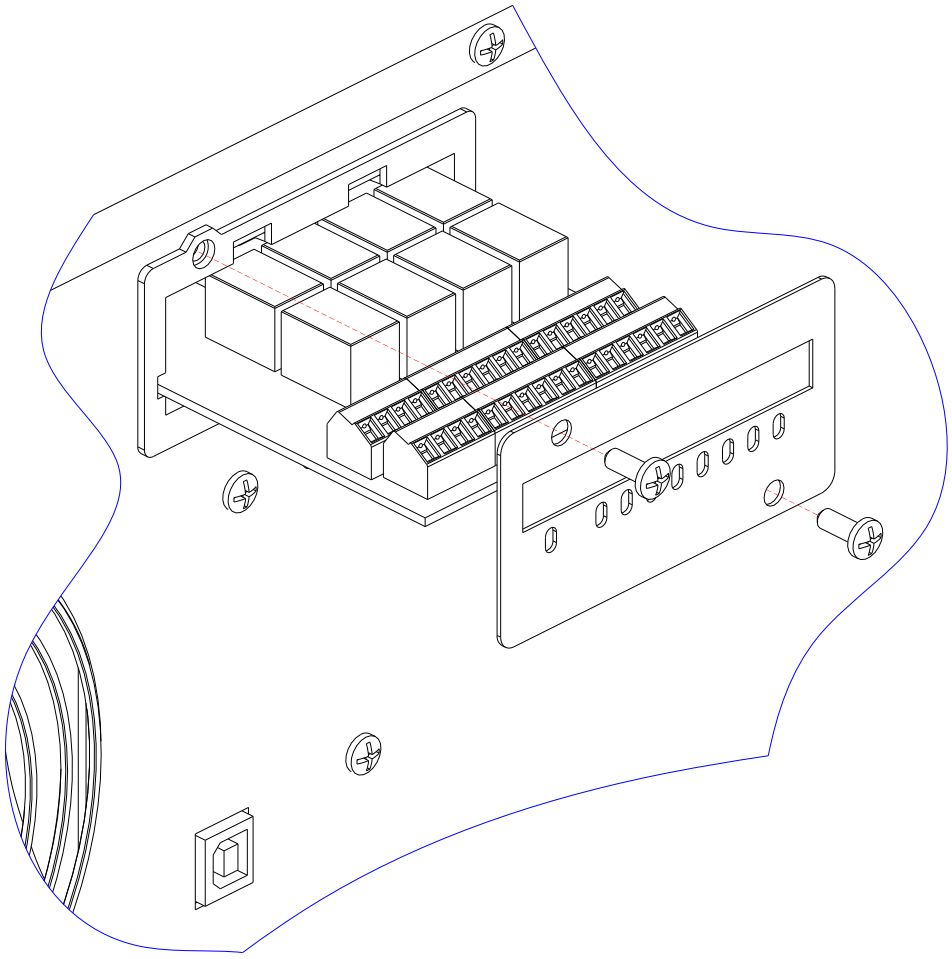
Set the jumper of the MultiCOM 392 referring to the following table and image.

JP1	**OPEN** (DEFAULT) **CLOSED**	for using the REMOTE OFF function through the AS400 port of the UPS for using the REMOTE OFF function through IN2 of the MultiCOM 392
JP2	OPEN	
JP3	OPEN	
JP4	OPEN	
JP5	OPEN	



MultiCOM 392 must be inserted only in the UPS slot dedicated to the contacts boards: "**AUX RELAY SLOT**".

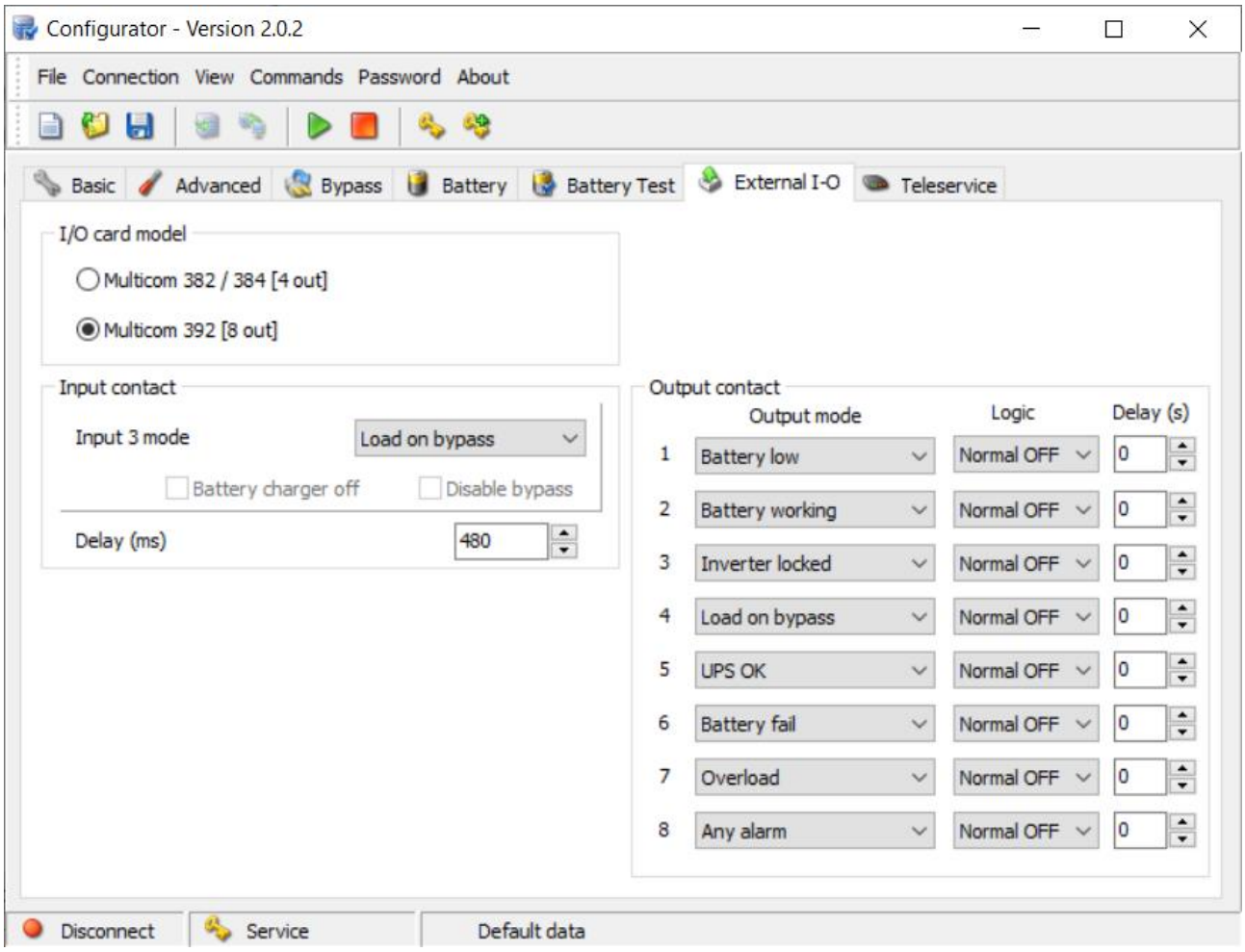
- Remove the cover of the UPS slot dedicated to the contacts boards (AUX RELAY SLOT) by removing the two retaining screws.
- Wire appropriately MultiCOM 392.
- Insert MultiCOM 392 in the slot dedicated to the contacts card (AUX RELAY SLOT).
- Fix the cover provided with the MultiCOM 392 using the screws previously removed.



CONFIGURATION

MultiCOM 392 can be configured using the configuration software of the UPS.

Before setting the input/output, you must select “Multicom 392 [8out]” for I/O card model.



INPUT	DESCRIPTION
IN1	**REMOTE ON**: By closing the contact for at least 3 seconds, the UPS will switch on.
IN2	REMOTE OFF: By closing the contact, the UPS will immediately switch off. **This feature is disabled by default**. To use it you must disable the corresponding feature available on the AS400 port of the UPS (see “Jumper settings on interface board of the UPS” and “Jumper settings and installation of the MultiCOM 392”).
IN3	**CONFIGURABLE INPUT**: use the UPS configuration software to select the function that has to be associated with IN3 (Input 3 mode **default: Load on bypass**).
SWMB	**Manual bypass auxiliary contact** (for the management of an auxiliary contact of a possible remote bypass). The auxiliary contact must be anticipated type, normally open. The transition takes place regardless of the status of the bypass line and of the bypass/inverter sync.

The inputs IN1 / IN2 / IN3 have to be used as alternative to the corresponding inputs on the AS400 port of the UPS.

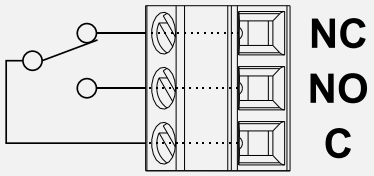
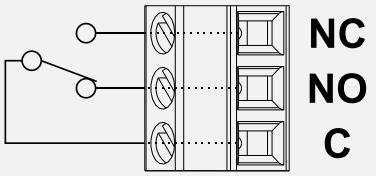
For each of the eight outputs can be selected: the associated event (Output mode), the operating logic of the relay (Logic) and a delay (in seconds) in reporting the event.

OUTPUT CONTACTS DEFAULT CONFIGURATION			
Output	**Output mode**	**Logic**	**Delay (s)**
OUT 1	Battery low	Normal OFF	0
OUT 2	Battery working	Normal OFF	0
OUT 3	Inverter locked	Normal OFF	0
OUT 4	Load on bypass	Normal OFF	0
OUT 5	UPS OK	Normal OFF	0
OUT 6	Battery fail	Normal OFF	0
OUT 7	Overload	Normal OFF	0
OUT 8	Any alarm	Normal OFF	0

EXAMPLE 1 - if you set an output in this way:

Output mode	Logic	Delay (s)
Battery working	**Normal OFF**	**0**

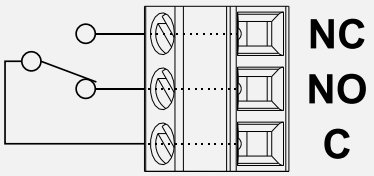
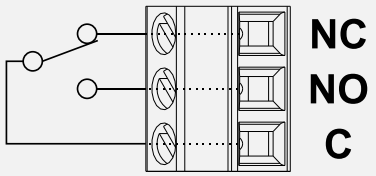
the relative contact will be:

UPS working by mains	UPS in battery working mode
	

EXAMPLE 2 - if you set an output in this way:

Output mode	Logic	Delay (s)
Battery working	**Normal ON**	**10**

the relative contact will be:

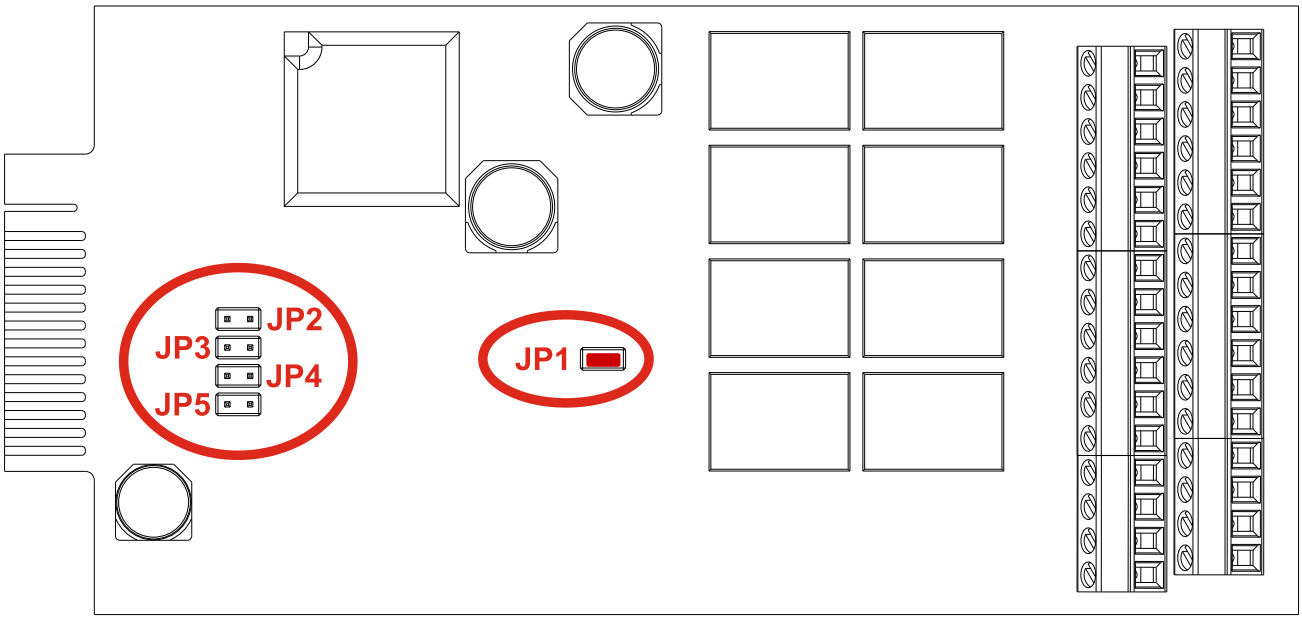
UPS working by mains	UPS in battery working mode for at least 10 seconds
	

SERIES C1T / C1M

JUMPER SETTINGS AND INSTALLATION

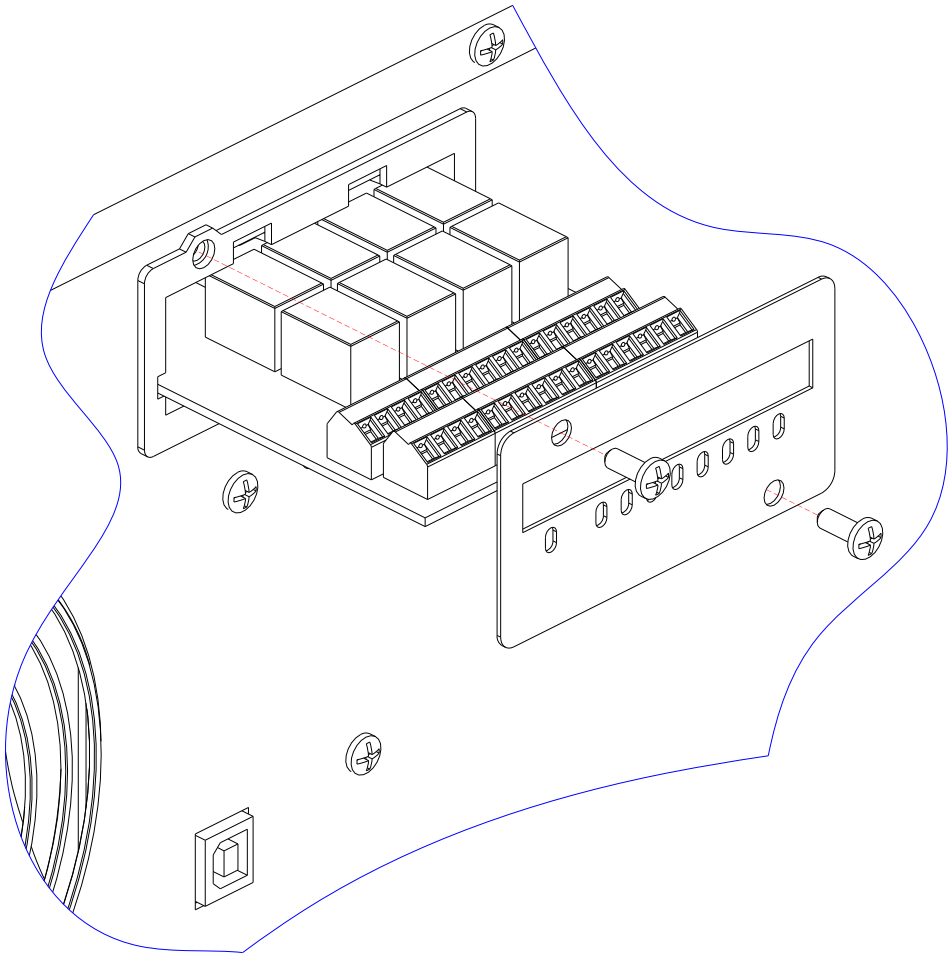
Set the jumpers of the MultiCOM 392 referring to the following table and image.

JP1	**CLOSED**
JP2	OPEN
JP3	OPEN
JP4	OPEN
JP5	OPEN



MultiCOM 392 must be inserted only in the CSS slot dedicated to the contacts boards: "**AUX RELAY SLOT**".

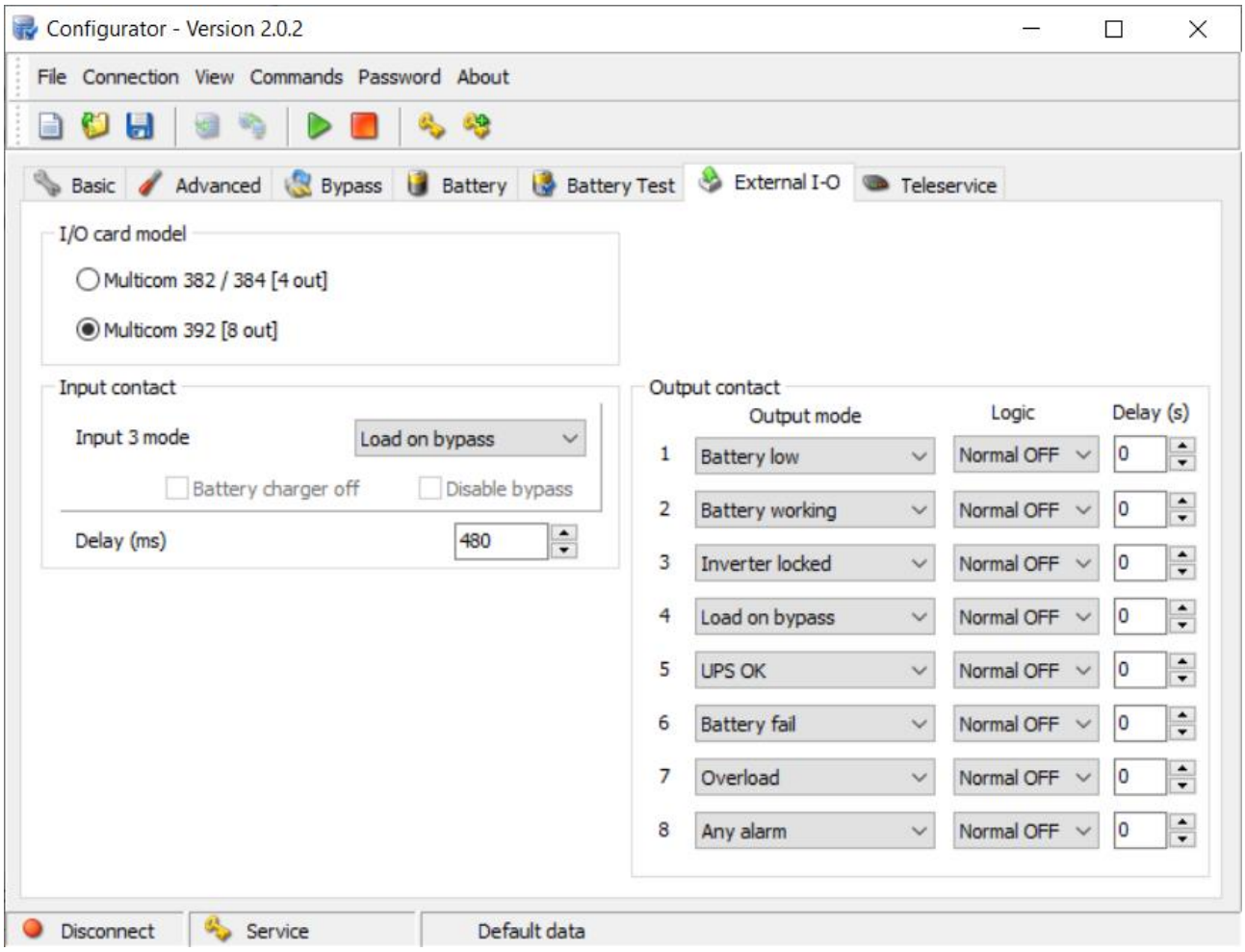
- Remove the cover of the CSS slot dedicated to the contacts boards (AUX RELAY SLOT) by removing the two retaining screws.
- Wire appropriately MultiCOM 392.
- Insert MultiCOM 392 in the slot dedicated to the contacts card (AUX RELAY SLOT).
- Fix the cover provided with the MultiCOM 392 using the screws previously removed.



CONFIGURATION

MultiCOM 392 can be configured using the configuration software of the CSS.

Before setting the input/output, you must select “Multicom 392 [8out]” for I/O card model.



INPUT	DESCRIPTION
IN1	**REMOTE ON**: By closing the contact for at least 3 seconds, the UPS will switch on.
IN2	**REMOTE OFF**: By closing the contact, the UPS will immediately switch off.
IN3	**CONFIGURABLE INPUT**: use the UPS configuration software to select the function that has to be associated with IN3 (Input 3 mode **default: Load on bypass**).
SWMB	**Manual bypass auxiliary contact** (for the management of an auxiliary contact of a possible remote bypass). The auxiliary contact must be anticipated type, normally open. The transition takes place regardless of the status of the bypass line and of the bypass/inverter sync.

The inputs IN1 / IN2 / IN3 have to be used as alternative to the corresponding inputs on the AS400 port of the UPS.

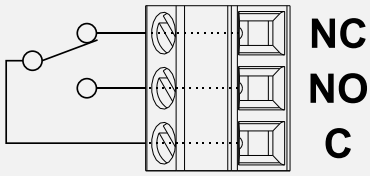
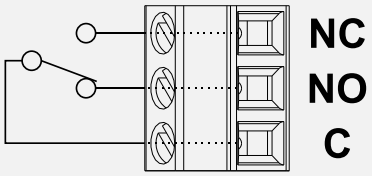
For each of the eight outputs can be selected: the associated event (Output mode), the operating logic of the relay (Logic) and a delay (in seconds) in reporting the event.

OUTPUT CONTACTS DEFAULT CONFIGURATION			
Output	**Output mode**	**Logic**	**Delay (s)**
OUT 1	Battery low	Normal OFF	0
OUT 2	Battery working	Normal OFF	0
OUT 3	Inverter locked	Normal OFF	0
OUT 4	Load on bypass	Normal OFF	0
OUT 5	UPS OK	Normal OFF	0
OUT 6	Battery fail	Normal OFF	0
OUT 7	Overload	Normal OFF	0
OUT 8	Any alarm	Normal OFF	0

EXAMPLE 1 - if you set an output in this way:

Output mode	Logic	Delay (s)
Battery working	**Normal OFF**	**0**

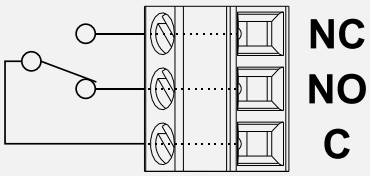
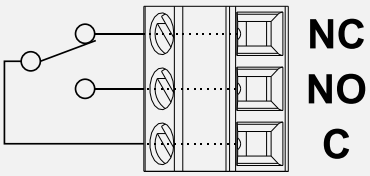
the relative contact will be:

UPS working by mains	UPS in battery working mode
	

EXAMPLE 2 - if you set an output in this way:

Output mode	Logic	Delay (s)
Battery working	**Normal ON**	**10**

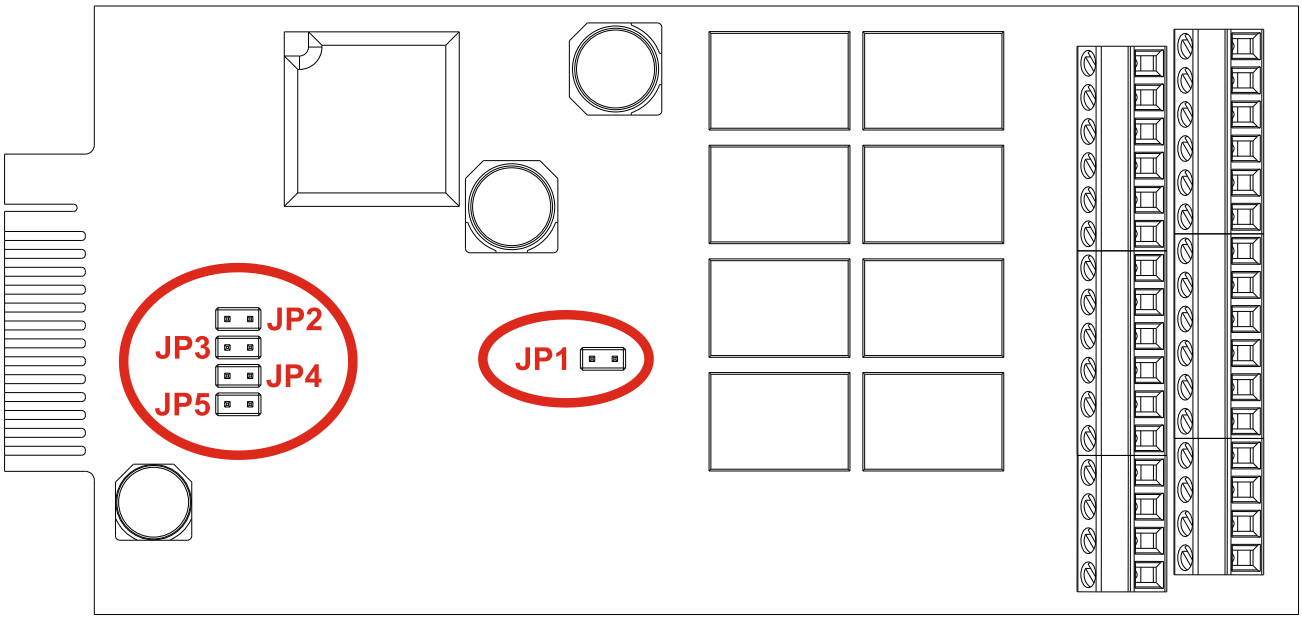
the relative contact will be:

UPS working by mains	UPS in battery working mode for at least 10 seconds
	

JUMPER SETTINGS AND INSTALLATION

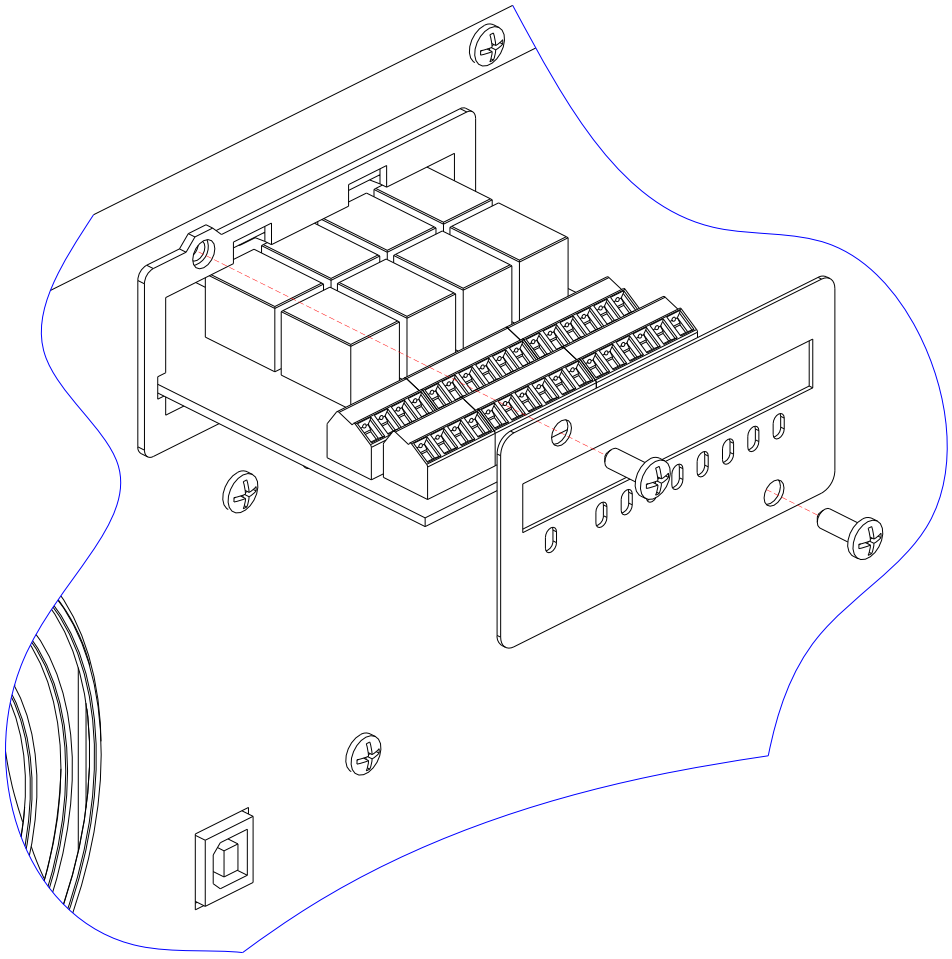
Set the jumpers of the MultiCOM 392 referring to the following table and image.

JP1	OPEN
JP2	OPEN
JP3	OPEN
JP4	OPEN
JP5	OPEN



MultiCOM 392 must be inserted only in the UPS slot dedicated to the contacts boards: "**AUX RELAY SLOT**".

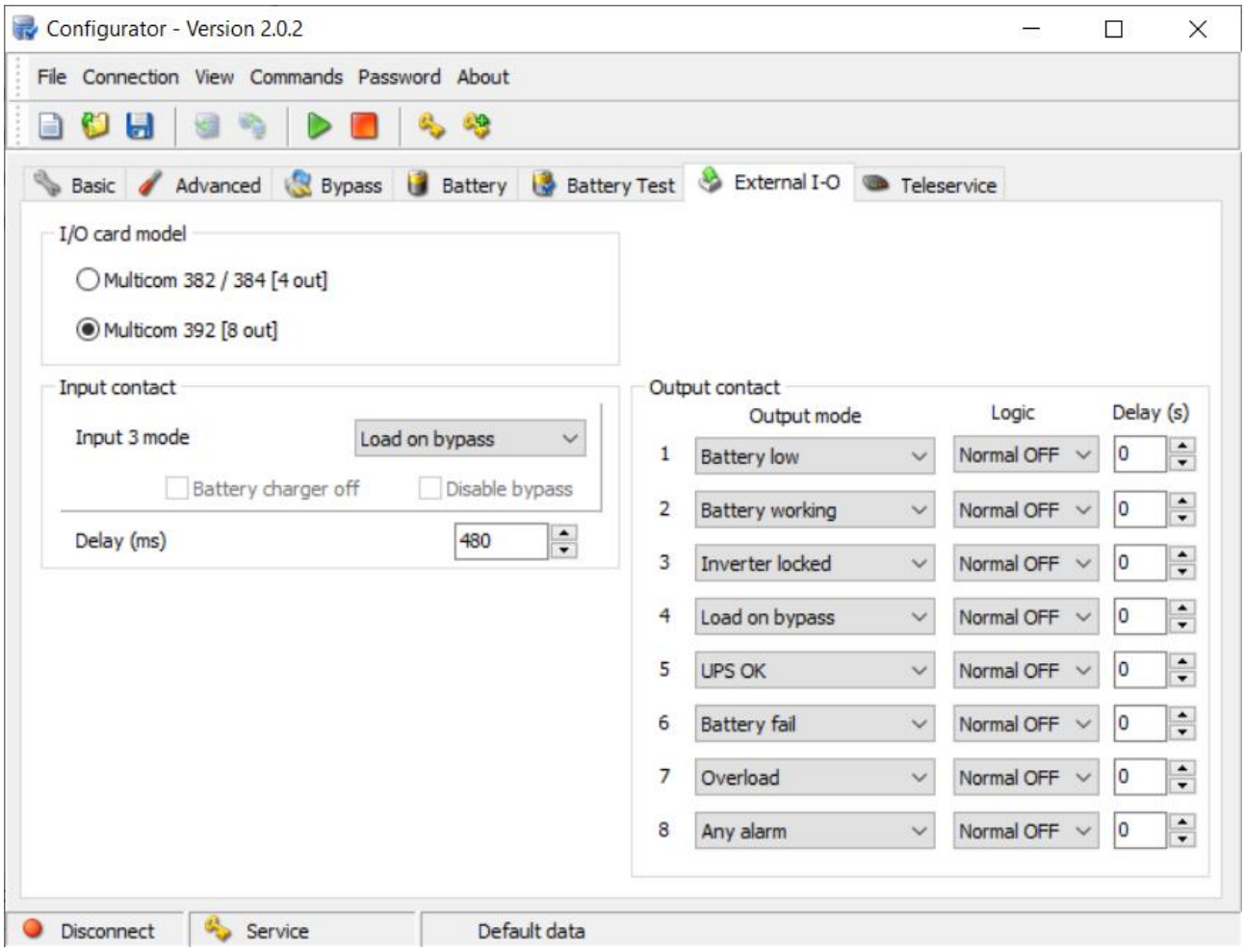
- Remove the cover of the UPS slot dedicated to the contacts boards (AUX RELAY SLOT) by removing the two retaining screws.
- Wire appropriately MultiCOM 392.
- Insert MultiCOM 392 in the slot dedicated to the contacts card (AUX RELAY SLOT).
- Fix the cover provided with the MultiCOM 392 using the screws previously removed.



CONFIGURATION

MultiCOM 392 can be configured using the configuration software of the UPS.

Before setting the input/output, you must select “Multicom 392 [8out]” for I/O card model.



INPUT	DESCRIPTION
IN1	**REMOTE ON**: By closing the contact for at least 3 seconds, the UPS will switch on.
IN2	**NO FUNCTION**
IN3	**CONFIGURABLE INPUT**: use the UPS configuration software to select the function that has to be associated with IN3 (Input 3 mode **default: Load on bypass**).
SWMB	**Manual bypass auxiliary contact** (for the management of an auxiliary contact of a possible remote bypass). The auxiliary contact must be anticipated type, normally open. The transition takes place regardless of the status of the bypass line and of the bypass/inverter sync.

The inputs IN1 / IN3 have to be used as alternative to the corresponding inputs on the AS400 port of the UPS.

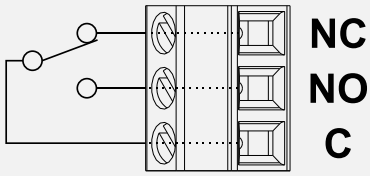
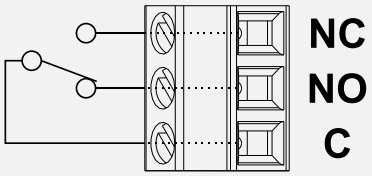
For each of the eight outputs can be selected: the associated event (Output mode), the operating logic of the relay (Logic) and a delay (in seconds) in reporting the event.

OUTPUT CONTACTS DEFAULT CONFIGURATION			
Output	**Output mode**	**Logic**	**Delay (s)**
OUT 1	Battery low	Normal OFF	0
OUT 2	Battery working	Normal OFF	0
OUT 3	Inverter locked	Normal OFF	0
OUT 4	Load on bypass	Normal OFF	0
OUT 5	UPS OK	Normal OFF	0
OUT 6	Battery fail	Normal OFF	0
OUT 7	Overload	Normal OFF	0
OUT 8	Any alarm	Normal OFF	0

EXAMPLE 1 - if you set an output in this way:

Output mode	Logic	Delay (s)
Battery working	**Normal OFF**	**0**

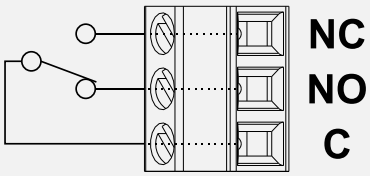
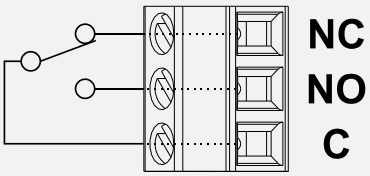
the relative contact will be:

UPS working by mains	UPS in battery working mode
	

EXAMPLE 2 - if you set an output in this way:

Output mode	Logic	Delay (s)
Battery working	**Normal ON**	**10**

the relative contact will be:

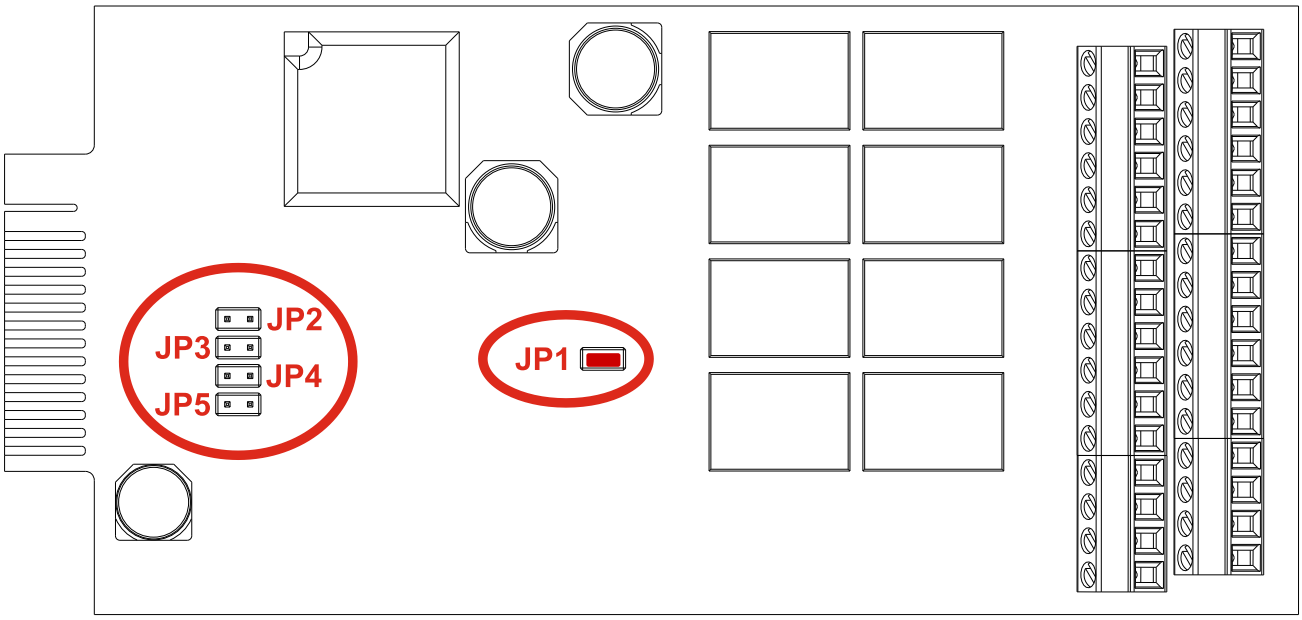
UPS working by mains	UPS in battery working mode for at least 10 seconds
	

SERIES S3T / S3M / S3U

JUMPER SETTINGS AND INSTALLATION

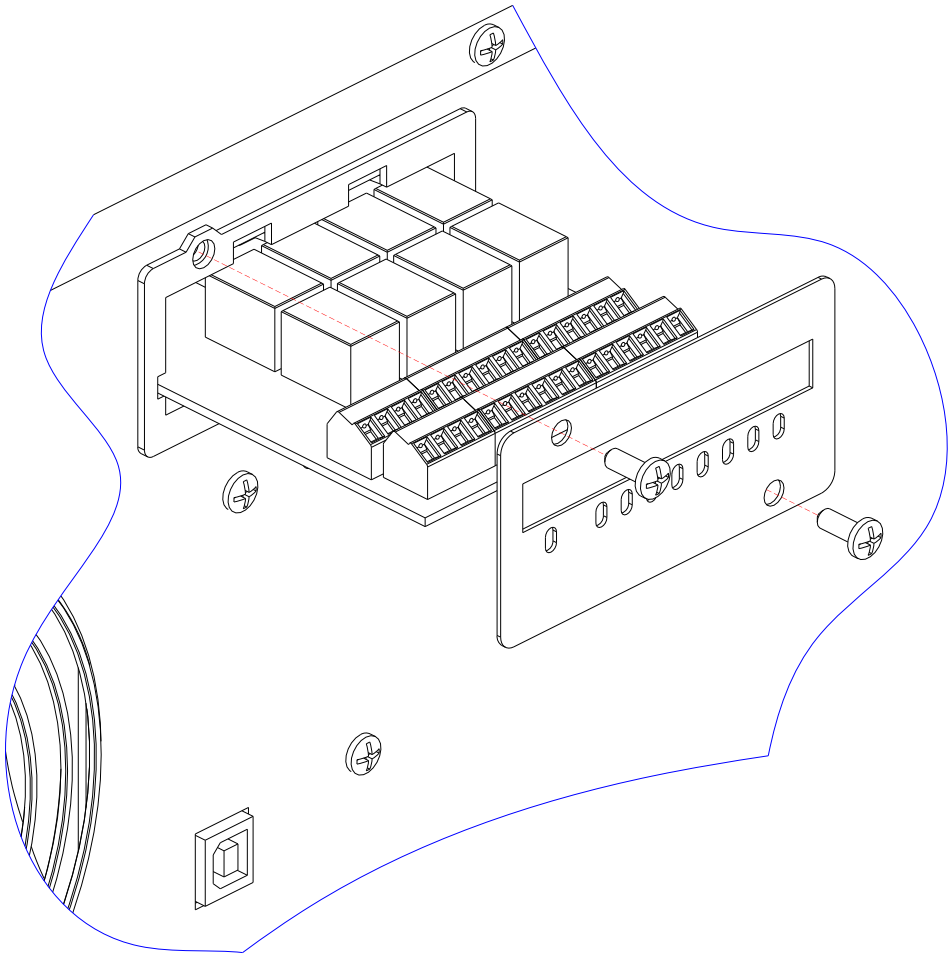
Set the jumpers of the MultiCOM 392 referring to the following table and image.

JP1	**CLOSED**
JP2	OPEN
JP3	OPEN
JP4	OPEN
JP5	OPEN



MultiCOM 392 must be inserted only in the UPS slot named "**COMMUNICATION SLOT 2**".

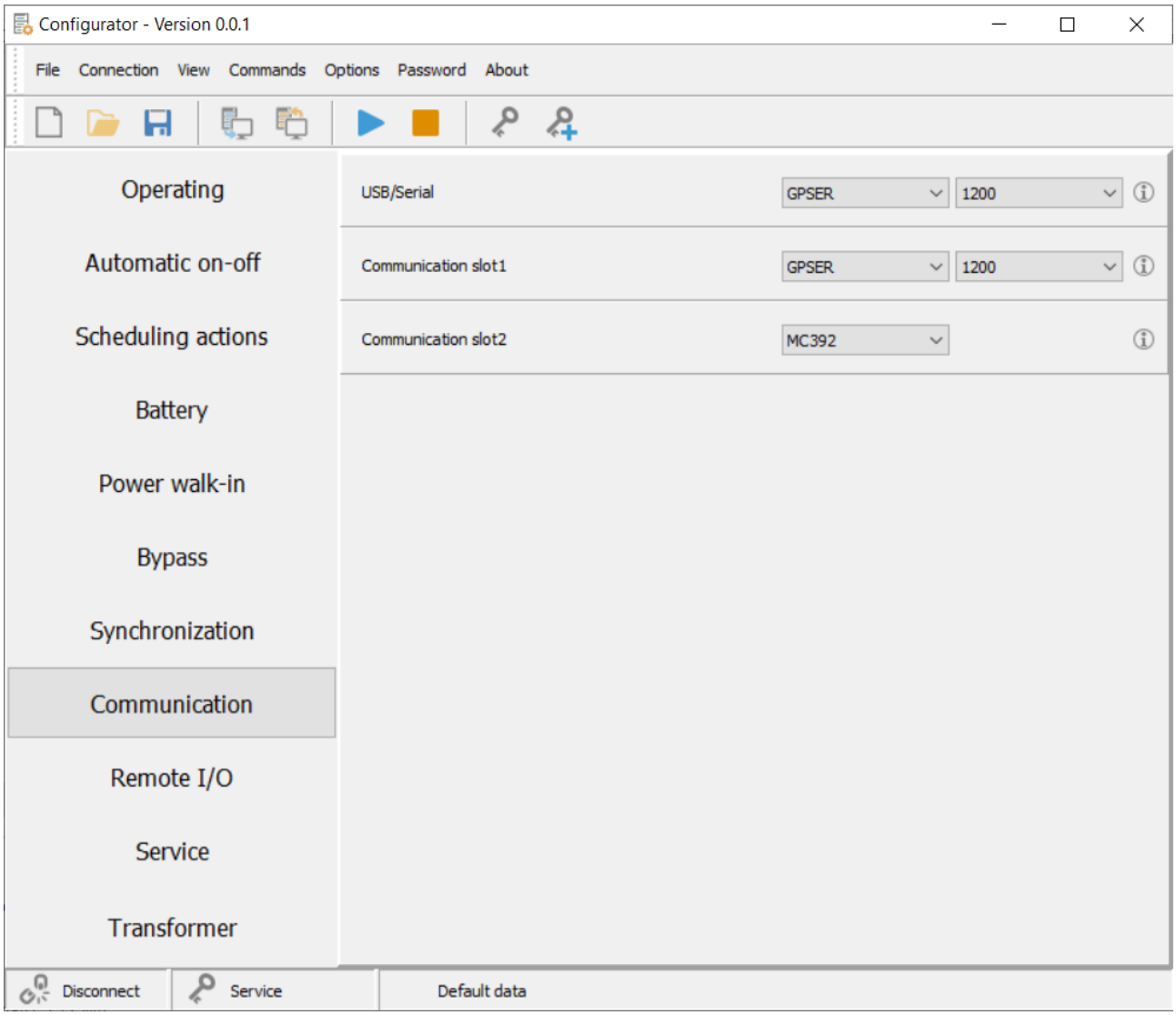
- Remove the cover of the UPS slot dedicated to the contacts boards (COMMUNICATION SLOT 2) by removing the two retaining screws.
- Wire appropriately MultiCOM 392.
- Insert MultiCOM 392 in the slot dedicated to the contacts card (COMMUNICATION SLOT 2).
- Fix the cover provided with the MultiCOM 392 using the screws previously removed.



CONFIGURATION

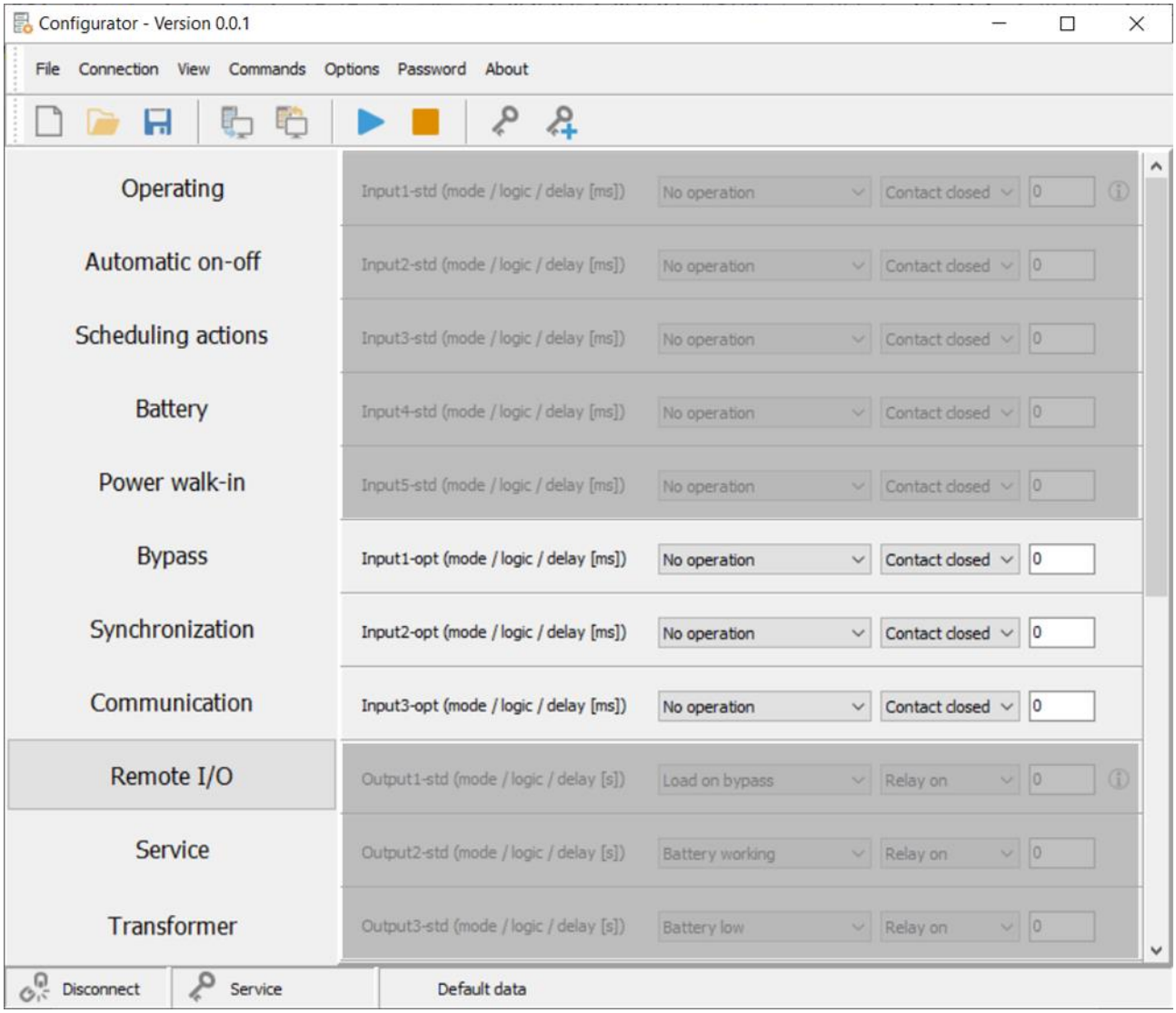
MultiCOM 392 must be configured using the configuration software of the UPS.

By default no function is associated to input/output and they have to be configured via the UPS configuration software. Before setting the input/output, you must select MC392 (MultiCOM 392) for Communication slot 2.



IN 1, IN 2 and IN 3 are named “Input1-opt”, “Input2-opt” and “Input3-opt” in configuration software.

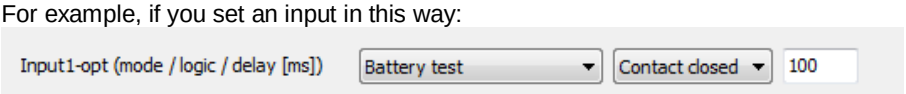
SWMB is not managed in S3T / S3M / S3U.



For each input can be selected: the associated function (Mode) and the operating logic of the contact (Logic).

INPUT CONTACTS DEFAULT CONFIGURATION					
INPUT	**CONFIGURABLE**	**Configurator**	**Mode**	**Logic**	**Delay (ms)**
IN 1	YES	Input 1-opt	NO OPERATION	Contact closed	0
IN 2	YES	Input 2-opt	NO OPERATION	Contact closed	0
IN 3	YES	Input 3-opt	NO OPERATION	Contact closed	0
SWMB	**NO FUNCTION**				

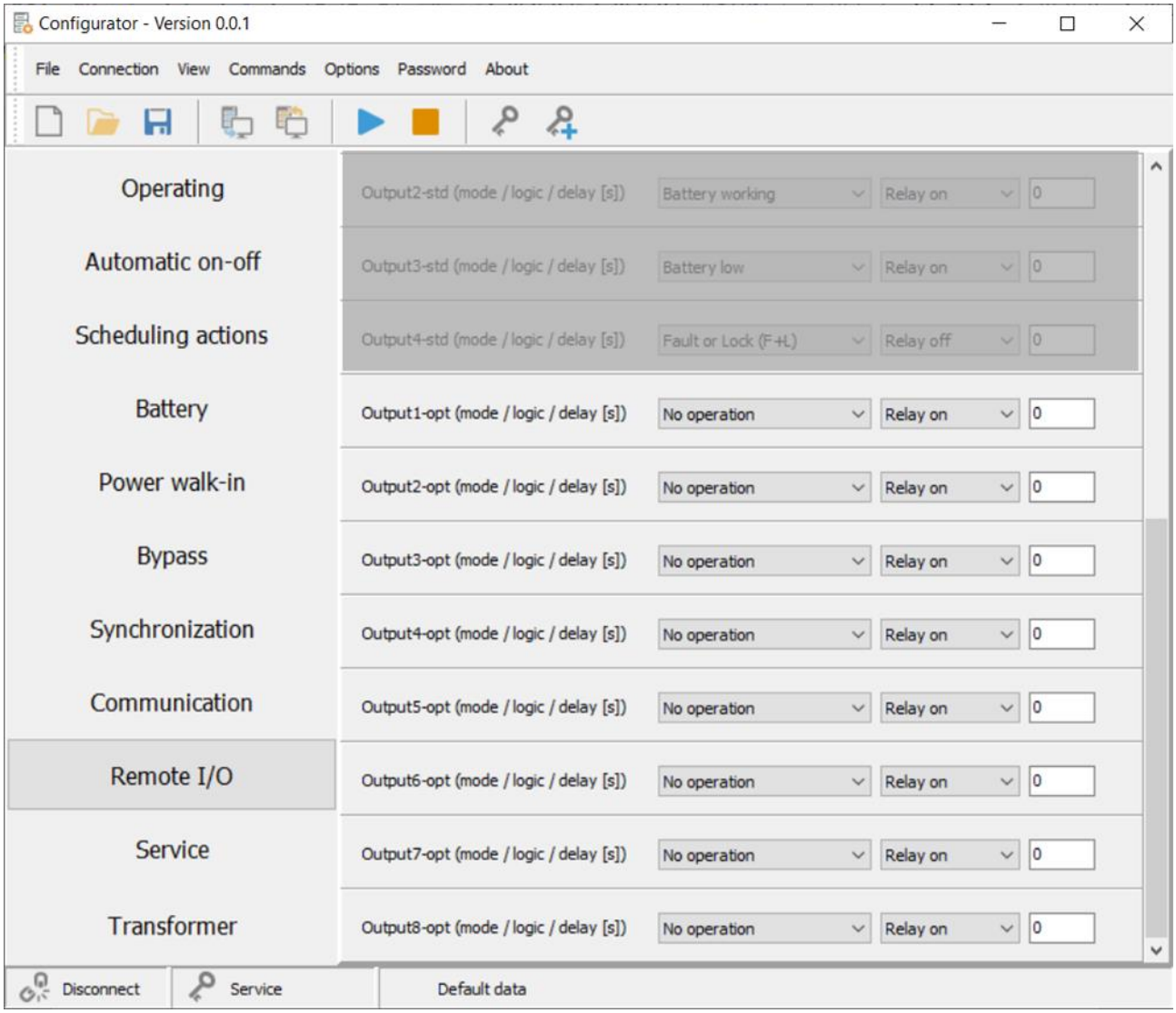
For example, if you set an input in this way:



a battery test will be executed 100ms after the contact is closed

OUT 1, … ,OUT8 are named “Output1-opt”, … ,“Output8-opt” in configuration software.

For each of the eight outputs can be selected: the associated event (Output mode), the operating logic of the relay (Logic) and a delay (in seconds) in reporting the event.

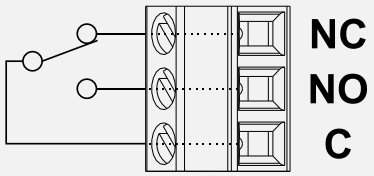
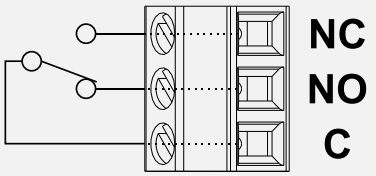


OUTPUT CONTACTS DEFAULT CONFIGURATION					
OUTPUT	**CONFIGURABLE**	**Configurator**	**Mode**	**Logic**	**Delay (s)**
OUT 1	YES	Output 1-opt	NO OPERATION	Relay ON	0
OUT 2	YES	Output 2-opt	NO OPERATION	Relay ON	0
OUT 3	YES	Output 3-opt	NO OPERATION	Relay ON	0
OUT 4	YES	Output 4-opt	NO OPERATION	Relay ON	0
OUT 5	YES	Output 5-opt	NO OPERATION	Relay ON	0
OUT 6	YES	Output 6-opt	NO OPERATION	Relay ON	0
OUT 7	YES	Output 7-opt	NO OPERATION	Relay ON	0
OUT 8	YES	Output 8-opt	NO OPERATION	Relay ON	0

EXAMPLE 1 - if you set an output in this way:

Output mode	Logic	Delay (s)
Battery working	Relay ON	0

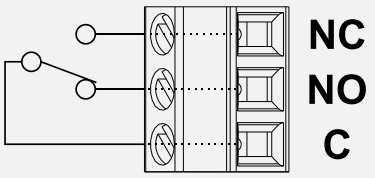
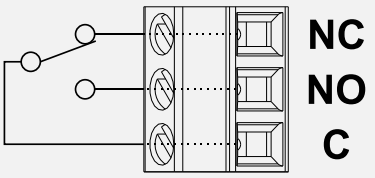
the relative contact will be:

UPS working by mains	UPS in battery working mode
	

EXAMPLE 2 - if you set an output in this way:

Output mode	Logic	Delay (s)
Battery working	Relay OFF	10

the relative contact will be:

UPS working by mains	UPS in battery working mode for at least 10 seconds
	

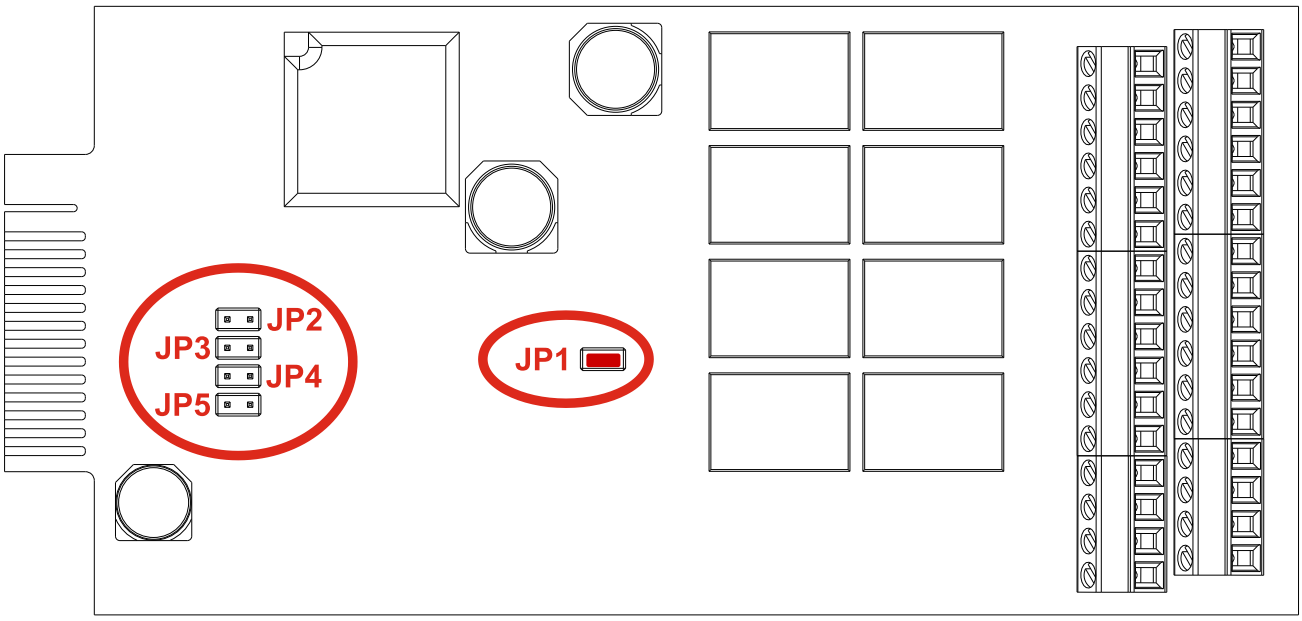
SERIES MPW / MPX

NOTE: refer also to the MPW /MPX *Advanced configuration manual* for further information.

JUMPER SETTINGS AND INSTALLATION

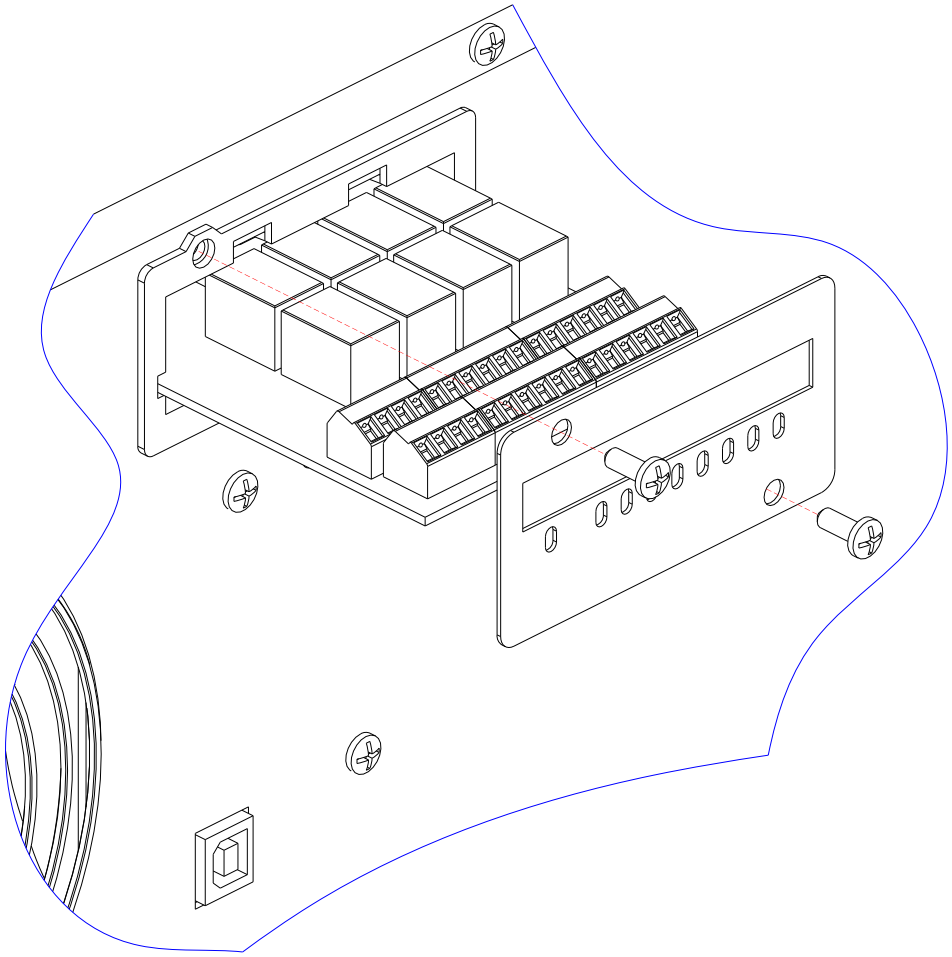
Set the jumpers of the MultiCOM 392 referring to the following table and image.

JP1	**CLOSED**
JP2	OPEN
JP3	OPEN
JP4	OPEN
JP5	OPEN



MultiCOM 392 must be inserted only in the slot named “**RELAY SLOT**”.

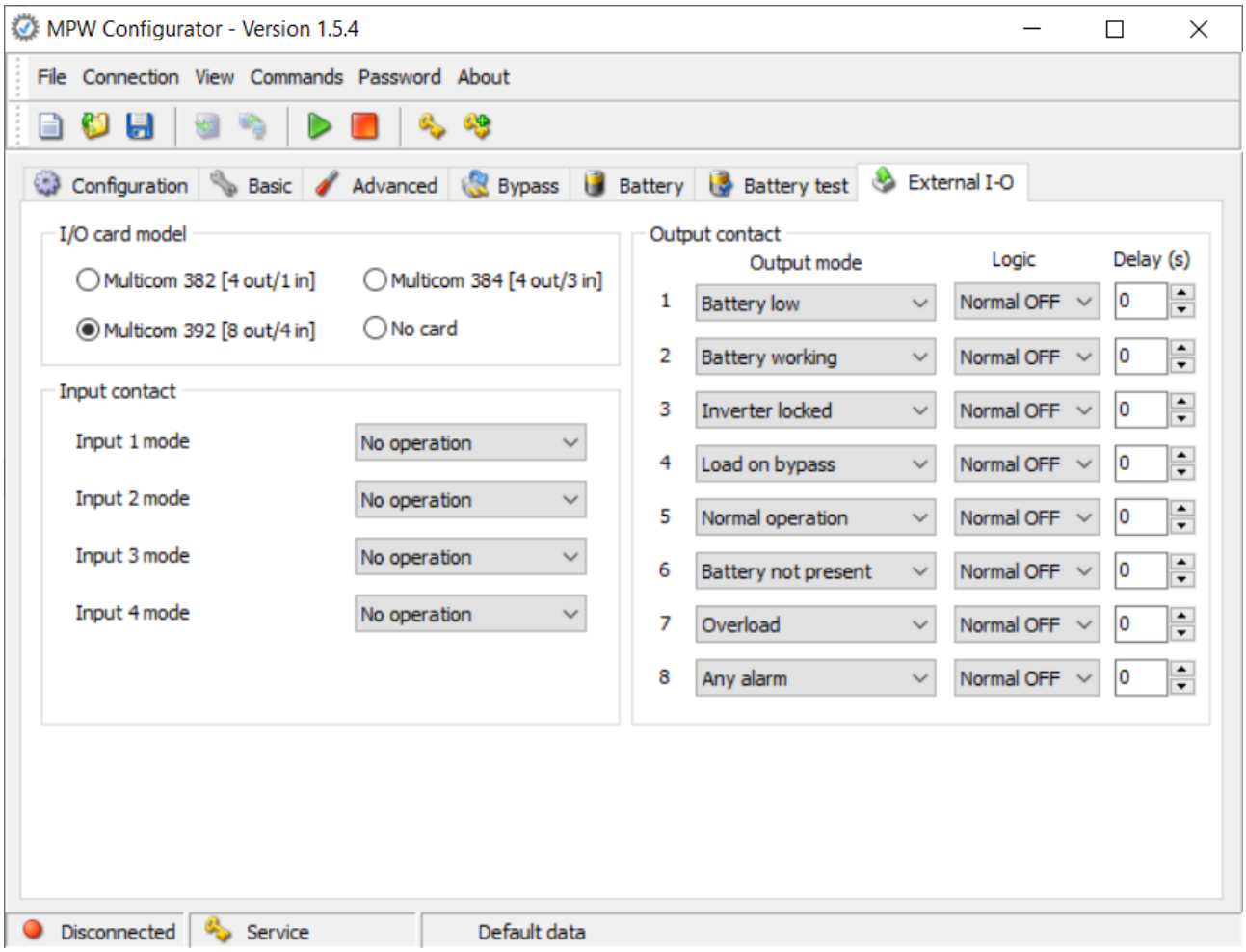
- Remove the cover of the slot dedicated to the contacts boards (RELAY SLOT) by removing the two retaining screws.
- Wire appropriately MultiCOM 392.
- Insert MultiCOM 392 in the slot dedicated to the contacts card (RELAY SLOT).
- Fix the cover provided with the MultiCOM 392 using the screws previously removed.



CONFIGURATION

MultiCOM 392 can be configured using the configuration software of the MPW.

By default no function is associated to input/output and they have to be configured via the UPS configuration software. Before setting the input/output, you must select “Multicom 392 [8out/4in]” for I/O card model.



For each input can be selected: the associated function (Input mode).

INPUT CONTACTS DEFAULT CONFIGURATION			
INPUT	**CONFIGURABLE**	**Configurator**	**Mode**
IN 1	YES	Input 1 mode	NO OPERATION
IN 2	YES	Input 2 mode	NO OPERATION
IN 3	YES	Input 3 mode	NO OPERATION
SWMB	YES	Input 4 mode	NO OPERATION

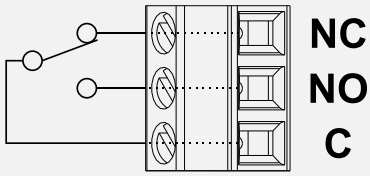
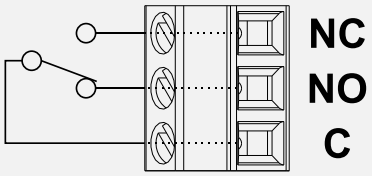
For each of the eight outputs can be selected: the associated event (Output mode), the operating logic of the relay (Logic) and a delay (in seconds) in reporting the event.

OUTPUT CONTACTS DEFAULT CONFIGURATION			
Output	**Output mode**	**Logic**	**Delay (s)**
OUT 1	Battery low	Normal OFF	0
OUT 2	Battery working	Normal OFF	0
OUT 3	Inverter locked	Normal OFF	0
OUT 4	Load on bypass	Normal OFF	0
OUT 5	Normal operation	Normal OFF	0
OUT 6	Battery not present	Normal OFF	0
OUT 7	Overload	Normal OFF	0
OUT 8	Any alarm	Normal OFF	0

EXAMPLE 1 - if you set an output in this way:

Output mode	Logic	Delay (s)
Battery working	**Normal OFF**	**0**

the relative contact will be:

UPS working by mains	UPS in battery working mode
	

EXAMPLE 2 - if you set an output in this way:

Output mode	Logic	Delay (s)
Battery working	**Normal ON**	**10**

the relative contact will be:

UPS working by mains	UPS in battery working mode for at least 10 seconds