OBE Transmitters

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Appendix :

General safety rules

A radio remote control is considered as a machine control device . All applicable rules must therefore be observed to ensure safe, correct operation of such devices.

For maximum safety when using the radio remote control, we recommend that the operator carefully follows the instructions provided in this manual.

- **Before use, it is indispensable to modify and the setting of the transmitter (see chapter 3).**

- **The operator must be appropriately trained and certified** to operate machines by radio remote control.

- **The operator must have uninterrupted visibility of the manoeuvre which he is performing.** When the operator's direct field of view is inadequate, the controlled equipment must be equipped with auxiliary devices to improve visibility.
  When several machines are being moved simultaneously, the equipment must be fitted out to limit the consequences of a possible collision.

- **Do not forget** to replace batteries or recharge accus when discharged.

- **Service your equipment** and perform all periodic checks as may be required by the intensity with which your equipment is used.

1- Presentation of OBE transmitters

The **OBE** transmitters are intended for use as a replacement for a defective **UBE** transmitter.

These transmitters can only be used with receivers of the UB Series (use with **UBRS**, **UBRA** and **UBRD** receivers).

☞ For any reference, installation or utilisation questions concerning the **OBE** transmitters, contact our customer technical support department:

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1.1- Delivery configuration

The **OBE** transmitters are pre-set on delivery to allow you to immediately use the product.

However, in most cases, you may need to reconfigure the settings in order to use the corresponding **UBR** receiver.

Configuration of OBE transmitters on delivery :

Identity code	 ON - ON - ON - ON - ON - ON - ON - ON (equal to ID code : 0 0 0 0 0 0 0 0 for UB DIP switch)

1.2- Product references

1.2.1- OBE transmitters

	Standard (1)	Industrial (1)	Multifunctions (2)	Multifunctions (2) with "On/Off" button
1	OBET11SL1			
2	OBET21SL1	OBEi21SL1		
4	OBET41SL1			OBEL42SL1
8			OBEL81SL1	OBEL82SL1

(1) = Delivered with 2 AAA batteries.

(2) = Delivered with 3 AAA batteries, can be used with 3 AAA accumulators. These transmitters, when they are equipped with AAA accus, can be directly reloaded on a **ORCL•** charger support. The charger support must be ordered separately.

1.2.2- Transmitter accessories

Reference	Description
OWE10	Carrying clip (on support OWE01, belt, pocket ..) **(see installation in appendix C) (3)**
OWE20	Neck strap
OWE13	Case for standard (OBET) or industrial (OBEi) transmitter
UBWE34	Case for multifunction (OBEL) transmitter
OWE01	Mounting support for standard and industrial transmitter with carrying clip
ORCL	Mounting support for multifunction (OBEL) transmitter
ORCL1	12-24 VDC (vehicle connector) / 9 VDC charger support unit + 3 accumulators AAA type, for multifunction transmitters (OBEL) with accumulators
ORCLU	230 VAC (european plug) / 9 VDC charger support unit + 3 accumulators AAA type, for multifunction transmitters (OBEL) with accumulators
ORCLW	230 VAC (english plug) / 9 VDC charger support unit + 3 accumulators AAA type, for multifunction transmitters (OBEL) with accumulators
OWE301	45 black/white rectangular function labels for standard (OBET), industrial (OBEi) and multifunction (OBEL) transmitters **(4)**

(3) = 1 clip (not mounted) is supplied with transmitters.

(4) = 1 kit is supplied with transmitters.

2- Technical characteristics

2.1- Transmitters **OBE**

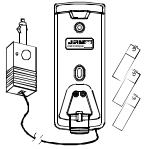
	 **standard (OBET)**	 **industrial (OBEI)**	 **multifunction (OBEL)**
Housing	ABS		
Housing color	black	yellow / black	yellow
Degree of protection	IP40	IP67	IP65
Weight (with batteries or accu.)	65 g	75 g	160 g
Number of function buttons	1, 2 or 4	2	4+1 **(1)** or 8 or 8+1 **(1)**
Power supply	2 batteries 1,5V type AAA		3 batteries 1,5V AAA or 3 accumulators AAA
Autonomy	**All versions with batteries :** 1 year (used 50 times per day with impulses of 2 seconds) **Multifunction transmitters with accumulators :** 42 h for 50 % use time		
Charging time (supplied with accus.)			< 3 hours
Safety			1 "On/Off" button (depending on model)
Mechanical protection		Built-in protected foam	
Storage	Case, reference : **OWE13** (optional accessory)		Case, reference : **UBWE34** (optional accessory)
Operating mode	Simultaneous commands		
Radio link	Momentary (when command button pressed)		
Transmission frequ. (2)	UHF 433,92 - FM		
Transmission power (2)	< 1 mW		
Identity code	256 codes, programmable by microswitches on transmitter		
Average range (3)	150 m in unobstructed area 50 m in typical industrial environment		
Temperature ranges	Operating : -20° C to + 50° C Storage : -30° C to + 70° C Charging (OBEL with accumulators) : 0°C to +40°C		
Battery or accumulator charge level indication	2 indication levels by a red indicator light : **Red indicator light off** = batteries or accumulators charge is > 10% **Red ind. light flashes** = batteries must be replaced or accu. must be charged		
Other indication	**Model without "On/Off" button :** A green indicator light comes on and flashes while the function button is pressed. **Model with "On/Off" button :** A green indicator light come on and flashes when the transmitter keypad is active		

(1) = "On/Off" button.
(2) = No licence required.
(3) = The range varies according to environment conditions, the reception antenna and its position (the range is decreased in case of metal obstacles such as: metal frameworks, walls etc.)

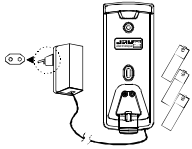
2.2- Charger supports
(for **OBEL** Multifunction transmitters with accumulators)

The chargers are supplied with 3 storage batteries. Be sure to replace the standard batteries supplied with the Multifunction transmitters with the storage batteries before using the charger.

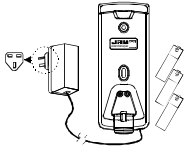
	 **Charger support (ORCL•)**
Material, housing color and tightness	ABS, Yellow, IP20
Weight	400 g
Power supply	
Vehicle plug	12 to 24 VDC
"European" or "English" plug type	230 VAC
Output voltage and current	9 VDC, 300mA
Temperature ranges	Storage : -30°C to +70°C Charging : 0°C to +40°C
Length of cable between voltage adapter and charger support	1,70 m approximately



ORCL1 , vehicle plug (12 - 24VDC / 9VDC) delivered with 3 accus.



ORCLU , european plug (230VAC / 9VDC) delivered with 3 accus



ORCLW , english plug (230VAC / 9VDC) delivered with 3 accus

To recharge the OBEL Multifunction transmitter with accumulators :
1. Switch off the transmitter (red and green indicator lights are OFF) (push on «On/Off» button if present).
2. Place the transmitter on the charger support.

During the charging operation, the green indicator light on the transmitter ( ) comes on steady and the red indicator light shows the charge level ( ) :

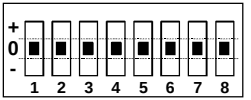
Red indicator light flashing : fast charge
Red indicator light on steady : slow or up-keep charge (transmitter accumulator charge level is > or = 60%)

3- Configuring the products

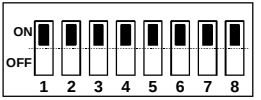
3.1- Programming the identity code of the **OBE** transmitter in accordance with the identity code of the **UBR** receivers.

The transmitter and receiver are linked by a **radio frequency** and an **identity code**. The identity code can be programmed on the transmitter and the receiver by a DIP switch with 8 cursors. This code can be freely chosen to customise your installation (256 possibilities).

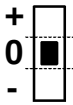
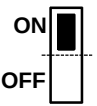
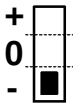
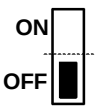
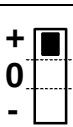
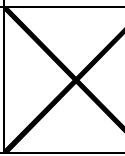
The **UBRS**, **UBRA** and **UBRD** (1st generation) receivers have a DIP switch with 8 cursors each comprising 3 states (+, 0 and -).



The **OBE** transmitter has a DIP switch with 8 cursors comprising 2 states (“ON” or “OFF”).



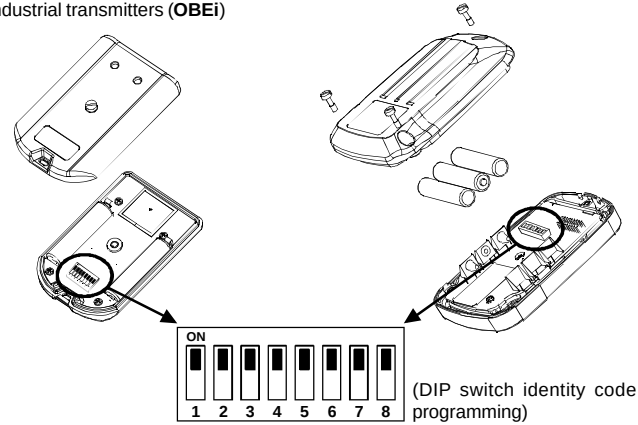
☞ You must therefore program the same identity code between the transmitter and receiver keeping in mind these differences.

"Position of cursors on **UBR** receiver"	"Position of corresponding cursors on **OBE** transmitter"	Remarks
		The "0" position of a cursor, **UBR** receiver side, corresponds to the "ON" position **OBE** transmitter side.
		The "1" position of a cursor, **UBR** receiver side, corresponds to the "OFF" position **OBE** transmitter side.
		The "**+**" position of a cursor, **UBR** receiver side, does not correspond to any cursor position on the **OBE** transmitter side; you **must** therefore re-program the identity code on the receiver if it has cursors in the "**+**" position.

Location of DIP switch used to program transmitter identity code

Standard transmitters (**OBET**) and industrial transmitters (**OBEi**)

Multifunction transmitters (**OBEL**)



(DIP switch identity code programming)

By default (on delivery),
the identity code of the transmitters is : .. **ON-ON-ON-ON-ON-ON-ON-ON**
(corresponds to code 0 0 0 0 0 0 0 0 on receiver)

3.2- Configuration of UBR receiver

Refer to the installation manual for the **UBR** receivers to program the identity code (if receiver code contains «**+**»), operating mode and interlocking definitions.

4- Installation and use recommendations

4.1- «Multifunction» transmitters equipped with accumulators and charger support (ORCL•)

When transmitters are equipped with accumulators, please charge them for approximately 3 hours before a first use.

5- Servicing

BEFORE STARTING ANY SERVICING OPERATION, SWITCH OFF THE MAIN POWER SUPPLY FOR THE SYSTEM CONTROLLED.

- **Housing of the OBE transmitter must not be opened.** Except to modify the identity code or to change batteries, in that case, open the transmitter housing in a clean place, dry and exempt from dust.

- **If one of the function buttons or the seal of the transmitter is damaged (or in an incorrect position), the transmitter must not be any more used until replacement of these tightness spare parts.**
  In opposite case, any liquid, any dust or any foreign body can damage the transmitter.

- The attention of the user is attracted to the risks of the use of the remote control in an environment containing solvents of polymers or glues which can degrade the good functioning of transmitter mechanical parts.

- Verify regularly the good state of the transmitter, paying a special attention on the function buttons, batteries / accumulators, the tightening of housing screws the seal (multifunction transmitter OBEL).

- Clean the transmitter by eliminating any foreign matter.
  Only use non aggressive cleaning product on base of soapy solution.

6- Warranty

All of our units are guaranteed **ONE YEAR** starting from the day of shipment. Repair, modification or replacement of a unit during the warranty period will not give rise to extension of the period.

Limits of warranty :

The warranty does not cover defects resulting from :

- transport
- false manoeuver or non-observance of connection diagrams when setting the equipment into service
- insufficient supervision or servicing, utilization not complying with the specifications detailed in the technical manual and, as a general rule, storage, operation or environment conditions (atmospheric, chemical, electrical or other conditions).
- Conditions not specified on order of the equipment

The warranty shall not apply subsequent to any modifications or additions to the equipment performed by the customer without written approval by JAYElectronique.

The JAY Electronique responsability during the warranty period is limited to material and construction defects. This warranty comprises repair in the JAY workshops or replacement, free of charge, of parts recognized to be defective following expert inspection by the Jay Technical Department.

The warranty shall not give rise to any compensation for damage claims.

Any disputes relative to a supply or settlement thereof shall be ruled by the COURT OF COMMERCE OF GRENOBLE, solely competent, even in the event of an Appeal or a plurality of defendants.

Installation and user technical manual

Receivers OBR

Appendix :

General safety rules

A radio remote control is considered as a machine control device . All applicable rules must therefore be observed to ensure safe, correct operation of such devices.

For maximum safety when using the radio remote control, we recommend that the operator carefully follows the instructions provided in this manual.

- **Before use, it is indispensable to modify and the setting of the receiver (see chapter 3).**

- **The operator must be appropriately trained and certified** to operate machines by radio remote control.

- **The operator must have uninterrupted visibility of the manoeuvre which he is performing.** When the operator's direct field of view is inadequate, the controlled equipment must be equipped with auxiliary devices to improve visibility.
  When several machines are being moved simultaneously, the equipment must be fitted out to limit the consequences of a possible collision.

- **Do not forget** to replace batteries or recharge accus when discharged.

- **Service your equipment** and perform all periodic checks as may be required by the intensity with which your equipment is used.

1- Description of receiver OBR

The **OBR** receivers are intended for use as a replacement for a defective **UBR** receiver.
These receivers can only be used with transmitters of the UB Series.

☞ For any reference or installation questions concerning the **OBR** receivers, contact our customer technical support department :

Tel : +33.(0)4.76.41.44.00 - Fax: +33.(0)4.76.41.44.44
support.technique.client@jay-electronique.fr

1.1- Delivery configuration

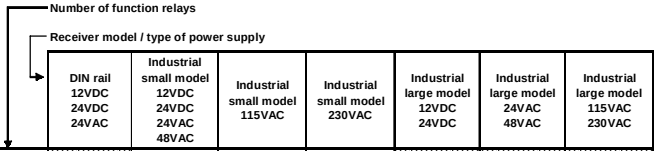
The **OBR** receivers are pre-set on delivery to allow you to immediately use the product.
However, in most cases, you may need to reconfigure the settings in order to use the corresponding **UBE** transmitter.

Configuration of OBR receivers on delivery :

Transmitter buttons / receiver relays association	Receiver on DIN rail **OBRD22L1C** (2+1 or 3 relays) : - Transmitter buttons B1 to B3 assigned to relays R1 to R3 - "Common/R3" relay set for "R3" relay Industrial receiver (Small model) **OBRS21L1•** (2 relays) : - Transmitter buttons B1 and B2 assigned to relays R1 and R2 Industrial receiver (Small model) **OBRS42L1•** (4+1 relays) : - Transmitter buttons B1 to B4 assigned to relays R1 to R4 Industrial receiver (Large model) **OBRA82L1•** (8+1 relays) : - Transmitter buttons B1 to B8 assigned to relays R1 to R8 (All the default assignments have been defined using the identity code: "0 - 0 - 0 - 0 - 0 - 0 - 0 - 0")
Radio channel	433,92 MHz
Relay operating mode	**«Continuous make contact»** mode (After having realized a transmitter button / receiver relay association, when transmitter button is pressed, relay in the receiver is activated, when button is no longer pressed, the relay is deactivated)
Interlocking of conflicting commands	No interlocking programmed

1.2- Product references

1.2.1- OBR receivers



Number of function relays \ Receiver model / type of power supply	DIN rail 12VDC 24VDC 24VAC	Industrial small model 12VDC 24VDC 24VAC 48VAC	Industrial small model 115VAC	Industrial small model 230VAC	Industrial large model 12VDC 24VDC	Industrial large model 24VAC 48VAC	Industrial large model 115VAC 230VAC
2		OBRS21L1F	OBRS21L1T	OBRS21L1U			
2 + 1 (1)	OBRD22L1C						
3							
4 + 1 (1)		OBRS42L1F	OBRS42L1T	OBRS42L1U			
8 + 1 (1)					OBRA82L14	OBRA82L1A	OBRA82L1B

(1) = 1 «Common» relay

1.2.2- Receiver accessories

Reference	Description
OWR01	BNC plug-in antenna kit **(see installation kit in appendix D) (2)**
OWR02	Internal antenna kit **(see installation kit in appendix E) (3)**
VUB084	1/4 wave antenna straight, band BNC **(4)**
VUB086	1/2 wave antenna straight, band BNC **(4)**
VUB060	90 ° BNC elbow for antenna VUB084 or BNC antenna extension **(4) (5)**
VUB170	0,5m extension for BNC antenna **(4)**
VUB105	2m extension for BNC antenna + non insulated bracket **(4)**
VUB125	5m extension for BNC antenna + non insulated bracket **(4)**
VUB131	10m extension for BNC antenna + non insulated bracket **(4)**

(2) = BNC antenna and BNC extension to be ordered separately.
(3) = 1 kit is supplied with industrial receivers.
(4) = Except for the DIN rail model which comes with a BNC antenna connector as a standard feature, the other receiver models require the plug-in antenna kit **OWR01** for use of an antenna or a plug-in antenna extension.
(5) = Not suitable for direct connection to antenna **VUB086** ; in this case, use an intermediate extension type **VUB1··**.

2- Technical characteristics

	 **DIN rail (OBRD)**	 **Industrial "small model" (OBRS)**	 **Industrial "large model" (OBRA)**
Housing material	PC-GF	ABS	
Housing color	Grey	Yellow	Grey
Tightness	IP 20	IP 65	
Number of command outputs	3 or 2+1 **(1)**	2 or 4+1 **(1)**	8+1 **(1)**
Number of relay outputs simultaneously controllable	3	4	9
Maximum weight	220 g	350 g	1200 g
Power supply			
Voltage	12 VDC (-25%/+25%) 24 VDC (-10%/+30%) 24 VAC (+10%/-15%)	**OBRS••L1F model** 12 VDC (9 to 20VDC) 24 VDC (20 to 75VDC) 24 VAC (+10%/-15%) 48 VAC (+10%/-15%) **OBRS••L1T model** 115 VAC (+10%/-15%) **OBRS••L1U model** 230 VAC (+10%/-15%)	**OBRA82L14 model** 12 VDC (9 to 20VDC) 24 VDC (20 to 28VDC) **OBRA82L1A model** 24 VAC (+10%/-15%) 48 VAC (+10%/-15%) **OBRA82L1B model** 115 VAC (+10%/-15%) 230 VAC (+10%/-15%)
Max. consumption	75 mA for DC / 3,5 VA for AC	180 mA for DC / 5 VA for AC	260 mA for DC / 11 VA for AC
Min. consumption	320mW for 12/24 VDC	23 mA for 12VDC / 350mW for 24VDC	
Mounting	Snap-on fastener on symetrical DIN rail EN 50 022	2 holes M4 exterior	4 holes M4 interior
Cable entry		1 plastic cable gland : PG 13,5 (ø 8 to 12 mm)	1 plastic cap : PG M16 (ø 5 to 7 mm) 1 plastic cable gland : PG M32 (ø 20 to 26 mm)
Connection to equipment	Junction blocks (for cable 2,5 mm^2)		
Indications			
Power supply	1 green indicator light	1 green indicator light	
Radio reception	1 yellow indicator light	1 green indicator light	
"programming" mode	1 red indicator light	1 red indicator light	
Per relay output	no indication	1 red indicator light	
Antenna	External by BNC plug	1/4 wave fixed antenna **(2)** or internal **(3)**	
Tuner, Sensitivity	UHF 433,92 MHz , < 2µV		
Temperature ranges	Operating : -20°C to +50°C - Storage : -30°C to +70°C		
Identity code	6581 identity codes possible, programmable by teaching on associated transmitter. With maximum per relay of : - 10 identification codes for different transmitters on Rail DIN (OBRD) and industrial "small model" (OBRS) receivers - 4 identification codes for different transmitters on industrial "large model" (OBRA) receivers		
Outputs			
Command type	by relay with 1 NO contact (1 NC contact or 1 bistable contact possible by programming)		
Response time	50 ms		
Operating mode	Continuous or bistable (by programming jumper or microswitch)		
Interlocking	Programmable by jumper or microswitch		
Additional function	1 "Common" relay on some receiver models		

(1) = "Common" relay

(2) = Plug-in feature possible by BNC plug on industrial receivers, with kit ref : **OWR01** (see installation in appendix **D**).

(3) = Antenna integration possible in industrial receiver housings, with kit ref : **OWR02** (delivered with the receivers). Beware, the range is divided by 2 in this case. (see installation in appendix **E**).

2.1- Connection to output relays

On receivers, the connections are made on spring terminals with connection points identified by numbers.

Flexible wires with wire section of between 0.08mm² and 2.5mm² can be used.

No common line is provided on the printed circuits (all contacts are potential-free).

2.2- Relay characteristics
(«Common» relay and function relays)

- Contacts : AgNi 0,15
- Maximum power at cosphi=1 : 2000 VA
- Maximum current switching : 8 A
- Maximum voltage switching : 400 VAC
- Minimum current / voltage advised switching : 100 mA / 12 VDC
- 100 000 switching cycles at 250 VAC, 8 A, cosphi=1
- 50 000 switching cycles at 24 VDC, 8 A
- Tests per EN 60947-5-1 :
  DC13 at 0,5 A / 24 VDC
  AC15 at 3 A / 250VAC

- Number of switching cycles on various contactors

Contactor	Physical unit switched by relay	Number of switching cycles for "Common" relay and function "relays"
CA2DN LC1D09 LC1D18 LC2D09	Switching at 230VAC (70VA,cosphi=0,75)	2×10^6
	Switching at 110VAC, (70VA,cosphi=0,75)	1×10^6
	Switching at 48VAC (70VA,cosphi=0,75)	$0,5 \times 10^6$

The maximum number of relays activated at the same time is limited to :

- **4** for **OBRS** (industrial small model receiver)**,** 4 function relays actuated at the same time or 3 function relays + the "Common" relay activated at the same time.
- **9** for **OBRA** (industrial large model receiver), 9 function relays actuated at the same time or 8 function relays + the "Common" relay activated at the same time.

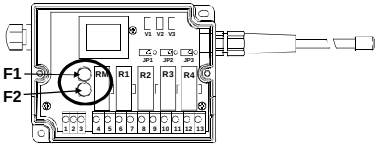
2.3- Protection of receiver board and relays

- Protection of power supply

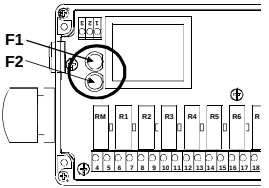
- Against overcurrents : 1 fuse on phase (**OBRS** and **OBRA**)
- Against polarity inversions in the case of 12VDC power supply.

- Fuse characteristics

Industrial receiver
«small model»
OBRS



Industrial receiver
«large model»
OBRA



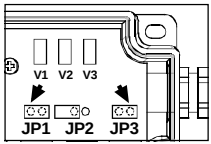
Component	Characteristics of fuse and location to be used for OBRS Receiver	Characteristics of fuse and location to be used for OBRA Receiver
Board supplied with 12 VDC	250 mA / 250 VAC / T - **F2**	315 mA / 250 VAC / T - **F2**
Board supplied with 24 VDC	500 mA / 250 VAC / T - **F1**	250 mA / 250 VAC / T - **F1**
Board supplied with 24 VAC	500 mA / 250 VAC / T - **F1**	1,6 A / 250 VAC / T - **F2**
Board supplied with 48 VAC	500 mA / 250 VAC / T - **F1**	800 mA / 250 VAC / T - **F1**
Board supplied with 115VAC	100 mA / 250 VAC / T - **F1**	315 mA / 250 VAC / T - **F2**
Board supplied with 230VAC	62 mA / 250 VAC / T - **F1**	160 mA / 250 VAC / T - **F1**
- Function relays - "Common" relay	No protection	No protection

2.4.1- «Common» relay on OBRS and OBRA receivers

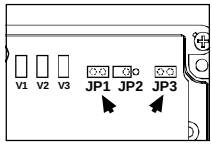
The «Common relay» function is used to double a command by activating a «Common» relay in the receiver at the same time as the function relay.

This relay is only available for product references : **OBRS•2L1•** and **OBRA82L1•**
To activate the "common" relay function, programming jumpers **JP1** and **JP3** must be short-circuited (**JP2** not short-circuited).

Switch off the receiver before any manipulation of the programming jumpers !



OBRS receiver

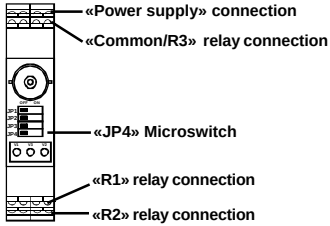


OBRA receiver

2.4.2- «Common» relay on OBRD receiver (DIN rail)

The **OBRD** receiver mounted on DIN rail has an «**Common/R3**» relay whose function is selected using the programming microswitch **« JP4 »**.

This relay can ensure the «**Common**» relay function (activated by transmitter function button) or the control relay No. 3 «**R3**» function



Position of JP4 and function of «Common/R3» relay :

When microswitch **JP4** is set to the «**OFF**» position, the «Common/R3» relay becomes the third function relay «R3» with operation and programming similar to that of relays R1 and R2.

When microswitch **JP4** is set to the «**ON**» position, the «Common/R3» relay is considered as an «Common» relay and will be actuated at same time as function relay associated to transmitter function button.

Note :
The program settings for relay R3 are saved in the event that microswitch **JP4** is set to the «ON» position.

3- Receiver OBR configuration

The receiver is equipped with 3 programming jumpers/microswitches **JP1**, **JP2** **and** **JP3** and three LEDs with -(V1)-, -(V2)- and -(V3)- which give indication to the user during programming procedures (-(V1)- is switched ON continuously when receiver is powered).

3.1- Configuration steps to be respected (~ 10mn)

Before final installation and use, we recommend that you configure the units with customized settings as detailed in steps 1 to 5.
These steps must be performed on an insulated work surface in the workshop.

Step nb.1 — Erasing the receiver factory settings (default settings provided on delivery) > see **§3.2**

▼

Step nb.2 — Transmitter button(s) / receiver relay(s) association(s) > see **§3.3**

▼

Step nb.3 (Optional) — Operating mode programming procedure for function relays > see **§3.4**

▼

Step nb.4 (Optional) — Interlocking of conflicting commands programming procedure > see **§3.5**

▼

Step nb.5 — Proceed to the installation on site by respecting the installation recommendations described in **§4**

3.2- Receiver parameter erasing procedure

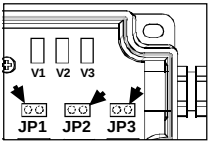
This procedure has the following effects :

- Erasing of all programmed transmitter(s) / receiver(s) associations,
- Erasing of all programmed interlockings,
- All relays operating mode turn by default mode : «Continuous make contact»

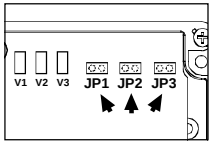
- The receiver parameter erasing procedure is done from the receiver by **JP1**, **JP2** and **JP3** jumpers/microswitches.

1- **Switch off** industrial receiver (OBRA or OBRS), the receiver on DIN rail (OBRD) can remain power supplied during all the procedure.

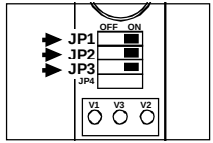
2- For the OBRS and OBRA industrial receivers, place jumpers **JP1**, **JP2** and **JP3** in the short-circuit position, for the OBRD receiver, set microswitches **JP1**, **JP2** and **JP3** to the «ON» position.



OBRS receiver



OBRA receiver



OBRD receiver

3- Switch ON «industrial» type receiver (OBRS and OBRA).

4- - V2 - and - V3 - LEDs flash 5 times during the parameter erasing, then go off (except on OBRD DIN rail receiver, indicator lights stop to blink for a few time and re-start to blink 5 times etc...).
All the receiver parameters are erased.

5- Switch off the receiver and remove jumpers **JP1**, **JP2** and **JP3** (OBRS and OBRA) , or set microswitches **JP1**, **JP2** and **JP3** to the «OFF» position (OBRD) and proceed to a new programming.

3.3- Association of transmitter(s) and receiver(s)

This step is carried out to associate one or several receiver relays to each function button of the transmitter.

REMARK : each receiver relay can learn a maximum of :

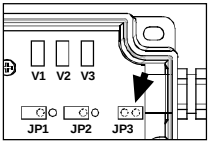
- 10 different «button numbers + identity codes» for DIN Rail receivers (OBRD) and «small model» industrial receivers (OBRS)
- 4 different «button numbers + identity codes» for the industrial «large model» receivers (OBRA)

☞ In case of association programming error, the receiver memory can be erased by following the procedure described in § 3.2

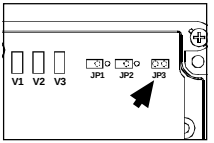
The programming association procedure needs the **JP3** jumper/microswitch.

1- Switch off industrial receiver (OBRA or OBRS), the receiver on DIN rail (OBRD) can remain power supplied during all the procedure.

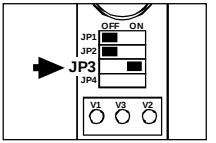
2- For the OBRS and OBRA industrial receivers, place jumper **JP3** in the short-circuit position (**JP1** and **JP2** not short-circuited), for the OBRD receiver, set microswitch **JP3** to the «ON» position.



JP3 jumper
OBRS receiver

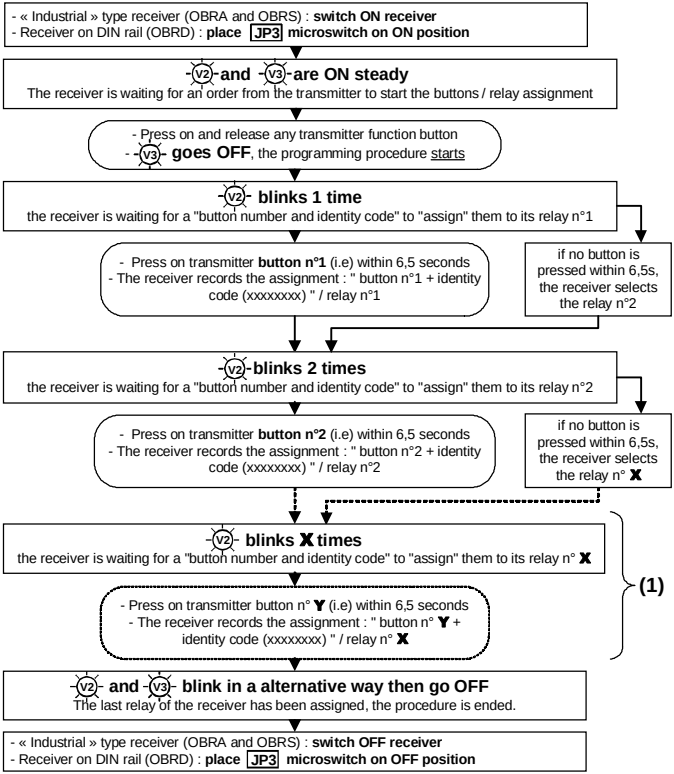


JP3 jumper
OBRA receiver



JP3 microswitch
OBRD receiver

3- Follow the procedure described by the algorithm in following page.



4- If other associations must be realized, repeat the algorithm above.

5- Once all the associations have been completed, switch off industrial receiver (OBRA and OBRS) and remove jumper **JP3** , or set the **JP3** microswitch to the "OFF" position (OBRD).

3.4- Programming of relay operating modes

There are three operating modes for receiver function relays :

- **Mode 1 : «Continuous make contact»**
  The receiver relay remains closed so long as the corresponding control button on the transmitter remains pressed.

- **Mode 2 : «Continuous break contact»**
  The receiver relay remains open so long as the corresponding control button on the transmitter remains pressed

- **Mode 3 : «Bistable» (on/off)**
  The receiver relay is closed the first time the corresponding control button on the transmitter is pressed, and maintained until the second time the control button is pressed (when the receiver is switched OFF, the relay state is not saved).

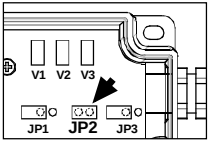
Remark :
The relay contacts are «opened» when the receiver is switched OFF.
Once the receiver is switched ON, relays adopt the previously programmed operating mode.

Requirements :
- A transmitter / receiver association must have been realized.
- This procedure requires transmitter and receiver.

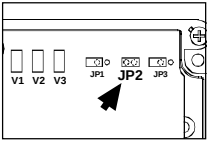
This programming procedure uses the receiver **JP2** jumper/microswitch, the display of the operating modes is done with V2 and V3 LEDs.

1- **Switch off industrial receiver (OBRA or OBRS)**, the receiver on DIN rail (OBRD) can remain power supplied during all the procedure.

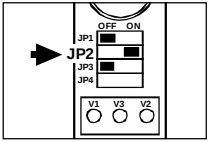
2- For the OBRS and OBRA industrial receivers, place jumper **JP2** in the short-circuit position (**JP1** and **JP3** not short-circuited), for the OBRD receiver, set microswitch **JP2** to the «ON» position.



JP2 jumper
OBRS receiver



JP2 jumper
OBRA receiver

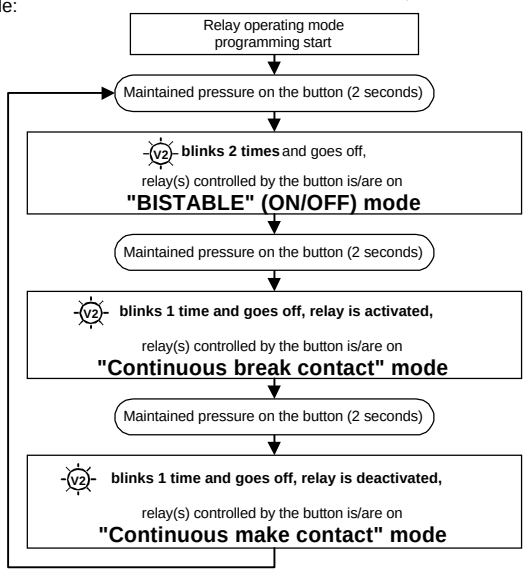


JP2 microswitch
OBRD receiver

3- "Industrial" type receivers (OBRA and OBRS): switch ON receivers.

4- - V2 and V3 LEDs blink 3 times then go off.

5- Press and maintain the pressure (approximately 2 seconds) before releasing the transmitter button wich associated relays must have a personalized operating mode.
Each maintained pressure (2 seconds) then loosened on the button will change the current operating mode of associated relay(s), V2 indicates the current mode:



Remark :
If the pressure on the transmitter button is not maintained for a long time (approximately 2 seconds) before being loosened, V3 remains switched on, indicating that the order of modification did not correctly take place.

6- Once the programming procedure is finished, switch off industrial receiver (OBRS and OBRA) and remove jumper **JP2** , or set the **JP2** microswitch to the "OFF" position (OBRD).

3.5- Programming of conflicting command interlocking

This procedure allows to forbid conflicting actions activated by the simultaneous pressure of two transmitter function buttons.

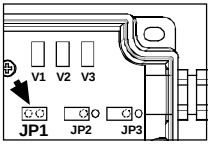
Relays concerned by the interlocking will be deactivated (**OFF state**) if an interlocking is detected.

> Every time **JP1** jumper (OBRS and OBRA) is put in short circuit, or **JP1** microswitch (OBRD) is set on «ON» position, previously programmed interlockings are erased.

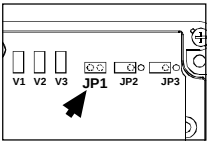
Requirements :

- A transmitter / receiver association must have been realized.
- This procedure requires transmitter and receiver.

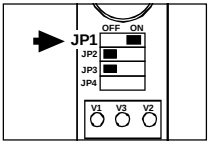
This programming procedure uses the receiver **JP1** jumper/microswitch.



JP1 jumper
OBRS receiver



JP1 jumper
OBRA receiver



JP1 microswitch
OBRD receiver

1- **Switch off industrial receiver (OBRA or OBRS)**, the receiver on DIN rail (OBRD) can remain power supplied during all the procedure.

2- For the OBRS and OBRA industrial receivers, place jumper **JP1** in the short-circuit position (**JP2** and **JP3** not short-circuited), for the OBRD receiver, set microswitch **JP1** to the «ON» position.

3- "Industrial" type receivers (OBRA and OBRS): switch ON receivers.

4- - (V2) and (V3) LEDs blink 2 times then go off.

5- Press simultaneously on both transmitter buttons controlling relays that must be interlocked.

- V2 and V3 LEDs blink alternatively, then go off.
The receiver recorded the interlocking of two relays.

6- Repeat point n°5 if other interlocking must be realized.

7- Once the programming procedure is finished, switch off the receiver and remove jumper JP1 (OBRS on OBRA) , or set the JP1 microswitch to the "OFF" position (OBRD).

3.5.1- Particularity of the «bistable ON/OFF» relay operating mode

In the «**bistable**» relay operating mode, the conflicting commands are not necessarily simultaneously emitted, in that case a priority is given to the last pressed button.

Example: interlocking between the button no.1 and the button no.2 in «bistable» relay operating mode.
An impulse on the button no.1 activates the relay no.1 (and remains activated), an impulse on the button no.2 deactivates the relay no.1 and activates the relay no.2.

3.5.2- Particularity of OBRA industrial receiver, «large model»

The interlocking functions are distributed among 4 relay groups :
Group 1 : relay nb.1 (R1) to relay nb.4 (R4),
Group 2 : relay nb.5 (R5) to relay nb.8 (R8).

☞ The interlocking functions can only be programmed for this receiver on relays belonging to a **same group**.

Example : interlocking is possible between relay R1 and relay R3 but not possible between relays R1 and R6.

4- Installation and use recommendations

Experience shows that the functional efficiency of the system basically depends on the quality of the installation:

- Interference suppression,
- «Continuous NC or NO» relay operating mode,
- Minimum and maximum current of relay outputs,
- Location of the controlled equipment
- Position of receiver and antenna,
- Quality of wiring of receiver and associated systems,
- Electrical power supply protection.

4.1- Interference suppression

In the event of inductive loads on the receiver relay outputs (contactor coils, solenoid valves or electro-brakes), interference suppression devices such as capacitors, RC circuits, diodes, etc. must be placed directly at the terminals of the controlled components using the shortest possible connections.

4.2- «Continuous NC or NO» relay operating mode

If a system is used in continuous mode with the control buttons maintained pressed and the operator moving about, transmission interruptions can occur due to the dispersion and propagation of radiowaves which must be taken into account in accordance with the application.

4.3- Minimum and maximum current of relay outputs

Be sure not to exceed the minimum and maximum characteristics specified in § 2 by installing, if necessary, an additional load or intermediate relays (auxiliary contacts in electrical cabinet for power control, for example).

4.4- Receiver and antenna positions

The industrial receivers OBRS - OBRA should be mounted as close as possible to the control cabinet and should be sheltered from shocks and weather.

As a general rule :

- Since the UHF waves will go through metal barriers, the antenna must not be placed in an enclosure forming a shield (metal cabinet, wall made of reinforced concrete, metal framework or wall, etc.).
- Any obstacle located between the transmitter and the antenna will result in a loss of range.
- Insofar as possible, the antenna should :
  - be placed as near as possible to the point of transmission,
  - be steered downward if it is placed above the operator and upward in the other cases,
  - be oriented to have a direct line of sight or a minimum number of obstacles between the transmission and reception points.

It must never cross through a wall, not even an insulating wall.

If the above requirements cannot be observed (case of OBRD receiver installed in cabinet), an external antenna must be used with extension (BNC connection). External antenna and extension must be ordered separately.

For the OBRS and OBRA receivers, use of an external antenna requires that the user purchases and installs the plug-in antenna kit, reference : **OWR01.**

Type of receiver installation with plug-in antenna	Reference suggestion of antenna and extension to be used
Outside installation	Antenna **VUB084** or antenna **VUB086** (possible use of extension with support **VUB105/VUB125/VUB131**)
Installation on vehicle	Antenna **VUB084** + extension with support **VUB105/VUB125/VUB131** or antenna **VUB086** + extension with support **VUB105/VUB125/VUB131**
Installation in plastic cabinet	OBRA and OBRS : antenna **VUB084** or antenna **VUB086** OBRD : antenna **VUB084** + 90° BNC bend **VUB060**
Installation in metal cabinet	Antenna **VUB084** + extension 0,5m **VUB170** or antenna **VUB086** + extension 0,5m **VUB170**

☞ see kit **OWR01** installation in appendix **D**.

4.5- Wiring recommendations

Generalities :

Do not place cables of different classes side by side.
A minimum space (20 cm) should be observed between the different classes:
- Class 1 : Radio, antenna cable (case of an antenna extension)
- Class 2 : Mains for power supply of various units
- Class 3 : Power control for motors, variable speed drive, etc....
Ideally, each cable class should be run through a cable path specific to the class. If only one cable path is available, cables of different classes should be separated as much as possible.

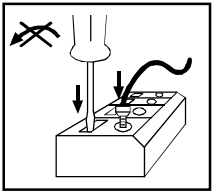
4.5.1- Wiring the receiver OBR

WARNING

To avoid any risks of electrocution, do not open the receiver housing when receiver is power supplied.

If flexible stranded wire is used, crimped terminations should be used to avoid false contacts and short circuits.

To open connection terminal strips:
- Vertically insert the screwdriver (flat tip screwdriver of 1.5 to 3 mm width) in the slot located opposite the wire,
- Insert the wire,
- Remove the screwdriver.



Do not apply any lever movement to the screwdriver as this can result in damaging the terminal strip and the printed circuit on the motherboard of the receiver OBR.

4.5.2- Wiring the power supply of receiver OBR

Caution: The electrical connections should be made such that when the main switch is off, the OBR receiver is also deactivated.

See appendix **A** for connection of the power supply according to receiver version.

5- OBR receiver servicing

BEFORE STARTING ANY SERVICING OPERATION, SWITCH OFF THE MAIN POWER SUPPLY FOR THE SYSTEM CONTROLLED.

Verify regularly the following points:

- Wiring of receiver to electrical unit on machine.
- Control relay contacts.
- Condition of cover seal and its correct position,
- tightening of screws and cable glands (OBRS and OBRA) and tightness of antenna.
- If accessory **OWR01** (external BNC antenna connector for OBRA and OBRS receiver) is used, check the antenna connection and check that it is clean and free of any oxidation.

- Clean the receiver by eliminating any foreign matter.
  Only use non aggressive cleaning product on base of soapy solution.

6- Warranty

All of our units are guaranteed **ONE YEAR** starting from the day of shipment. Repair, modification or replacement of a unit during the warranty period will not give rise to extension of the period.

Limits of warranty :
The warranty does not cover defects resulting from :

- transport
- false manoeuver or non-observance of connection diagrams when setting the equipment into service
- insufficient supervision or servicing, utilization not complying with the specifications detailed in the technical manual and, as a general rule, storage, operation or environment conditions (atmospheric, chemical, electrical or other conditions).
- Conditions not specified on order of the equipment

The warranty shall not apply subsequent to any modifications or additions to the equipment performed by the customer without written approval by JAY Electronique. The JAY Electronique responsability during the warranty period is limited to material and construction defects. This warranty comprises repair in the JAY workshops or replacement, free of charge, of parts recognized to be defective following expert inspection by the Jay Technical Department.
The warranty shall not give rise to any compensation for damage claims.
Any disputes relative to a supply or settlement thereof shall be ruled by the COURT OF COMMERCE OF GRENOBLE, solely competent, even in the event of an Appeal or a plurality of defendants.

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