Installation and user technical manual

UR Series
Industrial radio remote control

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General safety rules

A radio remote control is considered as a machine control device and as a safety component used to stop a machine as specified by the EEC Machinery Directive. 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.

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

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

- **To avoid any risks of electrocution, do not open the receiver case when powered.**

- **Never leave the transmitter** lying around anywhere, in particular when it is powered up.

- **Never leave** the radio control transmitter on the ground. If doing so becomes indispensable, press the stop palmswitch on the radio control.

- **If several radio controls are used on the same site**, different radio frequencies should be used, spaced by at least two channels (for example, channels 5, 7, 9, etc.). The more space there is between the chosen radio channels, the less the risks of disturbance are.

- **When not in use,** remove the electronic key. Store it in a safe and tracked down place.

- **Do not forget to recharge the battery** when discharged.

- **In the event of a malfunction**, immediately shut down the installation by pressing the stop palmswitch on the transmitter and remove the electronic key.

- **Service your equipment** and perform all the periodic checks as may be required by the intensity with which your equipment is used. Follow necessarily the cleaning instructions described in the chapter "Maintenance".

1- Description of UR radio remote control

Thank you for choosing our UR Series ULTRA-COMPACT industrial enhanced-safety radio remote control.

The UR radio remote control is designed for radio remote control applications on handling machines and for industrial equipment applications.
The radio remote control enables the operator to better focus on his work as it allows him to choose his observation position which is only limited by safety considerations (example: no one should be standing under a load).
The radio remote control completes and enhances the classic safety circuits (emergency stop circuits).

With the UR radio remote controls, Jay Electronique provides solutions to the broad range of enhanced-safety industrial applications implementing button controls. By its modular design, Jay electronique's UR system integrates a number of features in terms of :

- Number of function buttons
- Type of function buttons
- Position of function buttons
- Number of output relays
- Programming of relay / buttons assignments

Special attention has been given to ensure operator comfort through the following features :

- Ergonomic transmitters enabling one-hand control
- Control button accessibility
- Button touch sensitivity
- Identification of functions controlled
- Light-weight, ultra-compact transmitter
- Transmitter endurance, and fast charging battery
- Adaptability to all radio configurations of the environment by possibility for changing frequency by a trained operator
- Mechanical protection of function buttons to avoid any unintentional action
- Transmitter carrying strap which hooks onto belt when unit is idle, or removable shoulder strap (optional accessories)

The receiver is also very easy to install :

- Compact receiver
- Spring-type connection terminals

To further enhance safety when using this equipment, technical solutions and innovative options are also proposed :

- Radio remote control shutdown category 3 per EN954-1 and Hamming distance superior or equal to 4 for each transmitted message
- Access is enabled by electronic key to an authorised operator only
- Infrared startup validation (option) to limit startup in a given area and ensure identification of equipment started up
- Memorisation of use of remote control by recording number of operations and durations for each movement (option)
- Support charger of industrial type for the transmitter

Easy maintenance :

- Customization entirely stored in electronic key
- Parameter definition software
- Diagnostic aid indicator lights

Finally, the UR radio remote controls fully satisfy the safety requirements of the current applicable and draft standards and comply with the following European directives:

- Machinery Directive, shutdown category 3 per EN954-1
- RTTE : microwave equipment and telecommunication terminals (low voltage, electromagnetic compatibility, radio-electric spectrum)

For any recommendations or questions concerning installation of the UR remote control system, contact us at our customer service department :

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

The UR comprises :

- A radio transmitter **URE**
- An electronic key for the transmitter
- A battery charger **URCi-B** and a power supply adapter **UCC***
- A radio receiver **URR** which decodes the information generated by the remote control and controls movements of the machines.

Besides, if option "starting up by infrared validation" chosen:

- An infrared module «**UDF**» which is going to allow to bound a zone of starting up of the equipment.

1.1- Unpacking the products

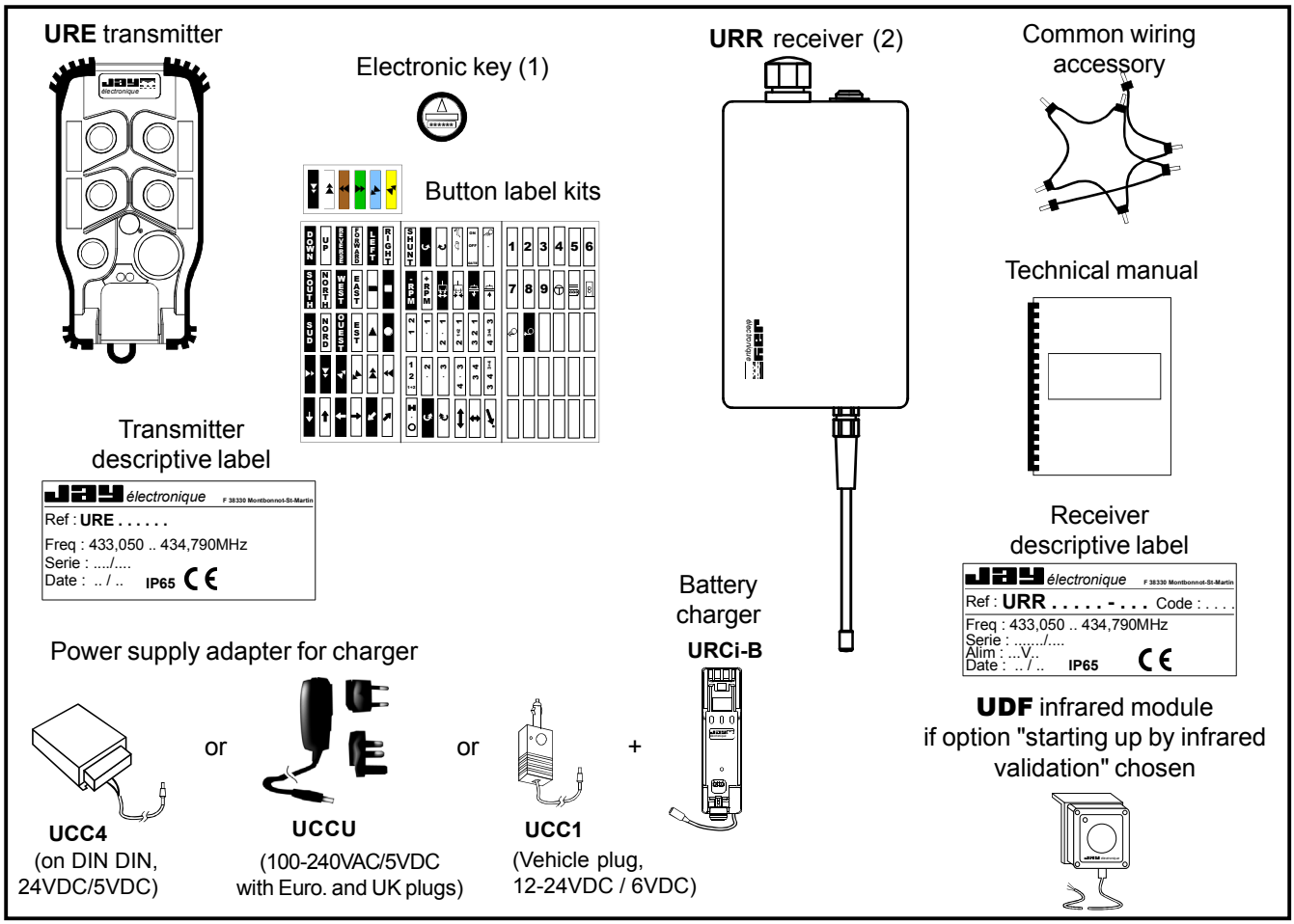
IMPORTANT

When unpacking the products, be sure to :

- Write down the electronic key number on the cover page of this manual.
  This number will allow you to order a new, identical electronic key defined with your parameters.

- Put the transmitter on load for 2 hours minimum before a first use.

- Assemble the receiver antenna following procedure described at § "Installation and recommendations"



(1) = The electronic key is delivered with the receiver.
(2) = The receiver antenna must be assembled following procedure described at § "Installation and recommendations"

1.2- Delivery configuration

- **Radio channel number :** Channel 01 : 433.100 MHz.
- **Duration of the temporization for the "Dead Man" function (automatic shutdown of remote control in case of prolonged non-use) :**
  - Programmed for 4mn. as standard timing
- **Button / relay configuration and button interlocking:**
  - Complies with definition of equipment on order, standard or special (customisation sheet).
- **Locking of the URE transmitter programming access :**
  - The transmitter is supplied "unlocked", the "Dead man" duration and "Frequency" configurations can be directly modified by a trained operator (see chapter "configuring the UR radio remote control").

2- Type and specification of function buttons on URE transmitter

Various types of button can be used on the URE transmitter :

- One-step pushbuttons (single speed) «**BPSV**» :

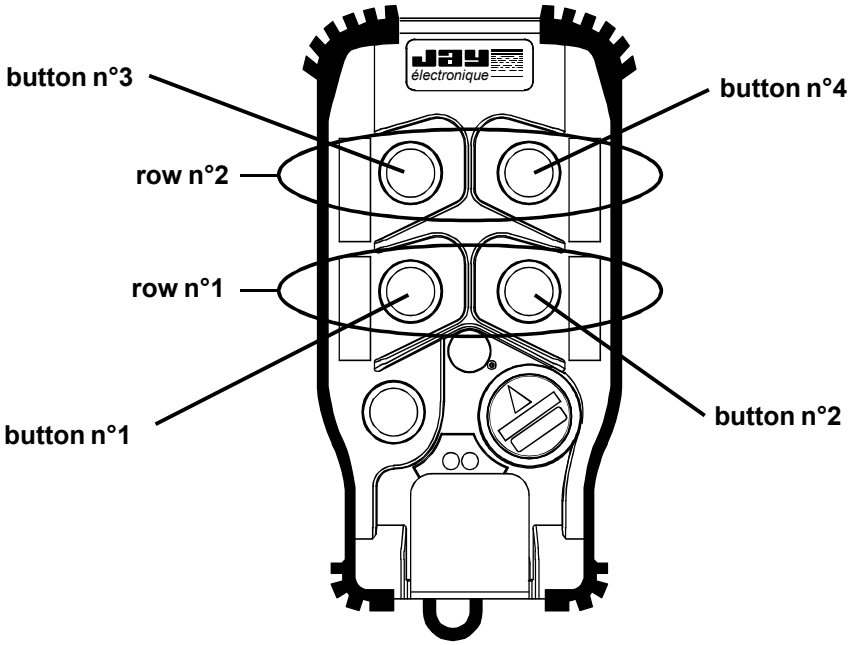
- Two-step pushbuttons (double speed) «**BPDV**» :

- Rotary switches with 2 fixed positions «**COM2**» :

- Rotary switches with 3 fixed positions «**COM3**» :

- Rotary switches with 3 positions with automatic return «**COM3R**» :

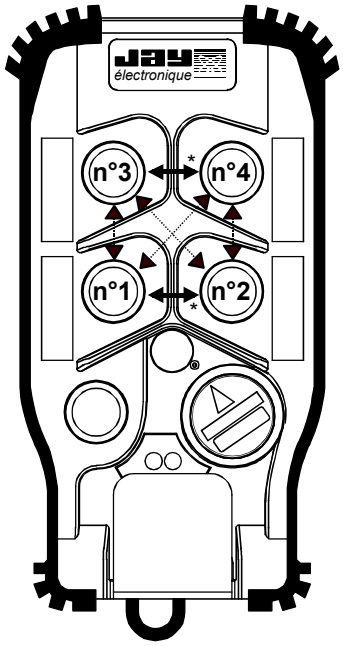
The function buttons are grouped by "couples" and form two "rows" on the transmitter :



The possible button configurations are listed in a table in §3.1.

2.1- Function button interlocking

The following function button interlocking configurations are possible:



(URE front panel)

1st button of interlocked pair	2nd button of interlocked pair	Abbreviation	
Button no.1	Button no.2	B1-B2	*
Button no.1	Button no.3	B1-B3	
Button no.1	Button no.4	B1-B4	
Button no.2	Button no.3	B2-B3	
Button no.2	Button no.4	B2-B4	
Button no.3	Button no.4	B3-B4	*

*= Standard interlocking configurations defined in sales reference for URR product (see § 3.2).

For each of the desired interlocking configurations, simultaneous action on the two buttons will result in three operating modes which depend on the programs defined:

- program n°1 : By pressing the 2 button pair, the two commands are deactivated (corresponding relays set to OFF).

- program n°2 : The first button of the interlocked pair has priority.
(ex.: B1-B2 interlocked: when these two buttons are pressed simultaneously, only button B1 is acknowledged).

- program n°3 : The 2nd button of the interlocked pair has priority.
(ex.: B2-B4 interlocked: when these two buttons are pressed simultaneously, only button B4 is acknowledged).

2.2- Correspondence between function buttons and relays

☞ In its standard configuration, the "buttons-relays" are assigned naturally by the increasing order of the button numbers and relay numbers:

- Each "**BPSV**" button type is assigned 1 relay.
- Each "**BPDV**" button type pair is assigned either 3 relays (2 movement relays and a third relay for high speed), or 4 relays. This information is contained in the URR product reference data.
- Each "**COM2**" button type is assigned 1 relay.
- Each "**COM3**" or "**COM3R**" button type is assigned 2 relays with the possibility to have both relays either OFF or ON when the switch is in the center position. This information is contained in the URR product data.

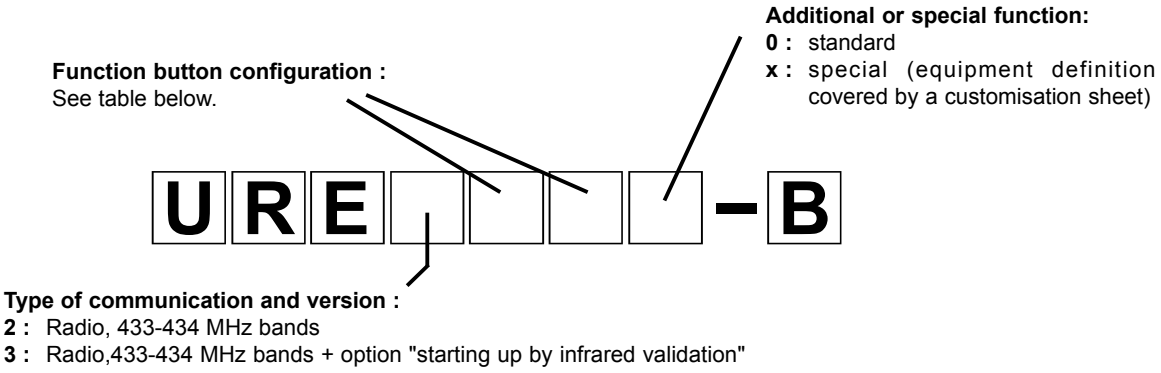
☞ For non-standard "button-relay" configurations, be sure to properly fill in the configuration sheet located in the URR cover.

3- Product identification

3.1- URE transmitter

The transmitter reference is encoded on 8 digits.
The transmitter is delivered with label kits referenced **UWE202** and **UWE207**.
The electronic key is to be ordered separately.

Main reference :



The possible button couple combinations by rows are the following ones:

	Row n°1		Row n°2		Button configuration code	
	Button n°1	Button n°2	Button n°3	Button n°4		
Possible button configurations	BPSV	BPSV	BPSV	BPSV	**11**	*
	BPSV	BPSV	BPSV	COM2	**13**	
	BPSV	BPSV	BPSV	COM3	**14**	
	BPSV	BPSV	COM2	COM2	**15**	
	BPSV	BPSV	COM2	COM3	**16**	
	BPSV	BPSV	COM3	COM3	**17**	
	BPSV	BPSV	BPSV	COM3R	**18**	
	BPSV	BPSV	COM2	COM3R	**19**	
	BPSV	BPSV	COM3	COM3R	**1A**	
	BPSV	BPSV	COM3R	COM3R	**1B**	
	BPDV	BPDV	Cover	Cover	**2C**	*
	BPDV	BPDV	BPDV	BPDV	**22**	*
	BPDV	BPDV	BPSV	COM2	**23**	
	BPDV	BPDV	BPSV	COM3	**24**	
	BPDV	BPDV	COM2	COM2	**25**	
	BPDV	BPDV	COM2	COM3	**26**	
	BPDV	BPDV	BPSV	COM3R	**28**	
	BPDV	BPDV	COM2	COM3R	**29**	

* = Existing configuration (see § "standard units")
BPSV = One-step pushbutton (single speed)
BPDV = Two-step pushbutton (double speed)
COM2 = rotary switch with 2 fixed positions
COM3 = rotary switch with 3 fixed positions
COM3R = rotary switch with 3 positions with automatic return

Example : URE2150-B

= URE radio transmitter (433-434 MHz bands),
- without option,
- without additional or special function,
- type of buttons in 1st row : BPSV-BPSV,
- type of buttons in 2nd row : COM2-COM2.

Delivered with 2 label kits (ref: **UWE202** and **UWE207**)

3.2- URR receiver

- The complete reference of the receiver is given by a main reference encoded on 9 digits and a complementary reference encoded on 3 digits.
- The receiver comes with 6 function relays + 2 safety relays + 1 "On/Horn" relay
- The receiver is delivered with an electronic key (the transmitter button configuration must be supplied during the receiver order)

Main reference :

Type of communication and version :
0 : Radio, 433-434 MHz bands
1 : Radio, 433-434 MHz bands + option "starting up by infrared validation"

Power supply :
4 : 12 - 24 VDC
A : 24 - 48 VAC
B : 115 - 230 VAC

Additional or special function:
0 : standard
x : special (equipment definition covered by a customisation sheet)

(1) = This only includes the required programming for the receiver, the **UDF** IR module must be ordered separately.

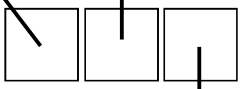
3 additional reference digits :

Programming of transmitter pushbuttons (BPSV and BPDV type) interlocking, between button n°1/ n°2 and button n°3/n°4 :

0 : no interlocking
1 : interlocking with output relays set to OFF state
2 : interlocking with priority on left button (n°1, n°3)
3 : interlocking with priority on right button (n°2, n°4)

Programming of button - relay correspondence : Number of relays controlled by BPDV button pairs

1 : 3 relays / or no BPDV
2 : 4 relays
X : special (equipment definition covered by a customisation sheet)



Programming of button - relay correspondence : Type of control for COM3 and COM3R

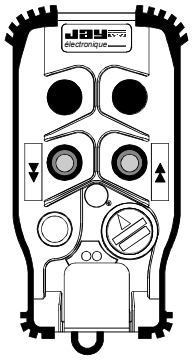
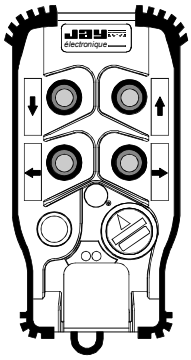
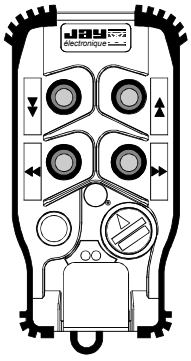
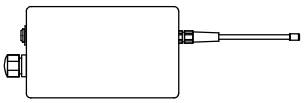
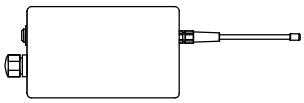
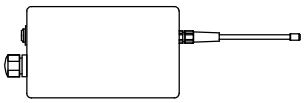
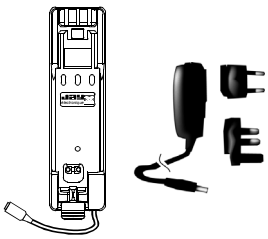
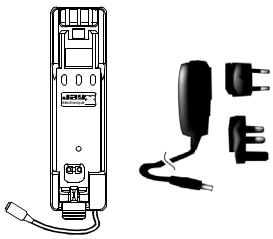
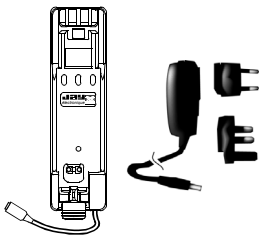
1 : 1, 1+2, 2 or no COM3, COM3R
2 : 1, OFF, 2
X : special (equipment definition covered by a customisation sheet)

Example : URR0C40-B - 012

= URR radio receiver (433-434 MHz bands) 3+6 relays,
- without option,
- Power supply = 12-24VDC,
- without additional or special function,
- no interlocking,
- if exist on transmitter, "BPDV" button type, control 3 relays,
- if exist on transmitter, "COM3" and "COM3R" button type are of the 1-OFF-2 type.

Delivered with an electronic key containing the receiver identity code and the associated transmitter button configuration.

3.3- Standard unit references

Standard unit reference	UR21-B	UR31-B	UR41-B
Application example	Winches	Transpallets	Hoists / Monorails / Jib cranes
Transmitter	 reference : **URE22C0-B** - without option, - 2 "BPDV" button type + 1 "On/Horn" button + 1 stop palmswitch button - 433-434MHz, channel 01 - delivered with label kits	 reference : **URE2110-B** - without option, - 4 "BPSV" button type + 1 "On/Horn" button + 1 stop palmswitch button - 433-434MHz, channel 01 - delivered with label kits	 reference : **URE2220-B** - without option, - 4 "BPDV" button type + 1 "On/Horn" button + 1 stop palmswitch button - 433-434MHz, channel 01 - delivered with label kits
Receiver	 reference : **URR0C40-B - 111** - without option, - 6 function relays + 2 safety relays + 1 "On/Horn" relays - power supply 12-24VDC - button n°1-n°2 interlocked with output relays set to OFF state - 433-434MHz , canal 01 - delivered with an elec. key	 reference : **URR0C40-B - 111** - without option, - 6 function relays + 2 safety relays + 1 "On/Horn" relays - power supply 12-24VDC - button n°1-n°2 and n°3-n°4 interlocked with output relays set to OFF state - 433-434MHz , canal 01 - delivered with an elec. key	 reference : **URR0CA0-111** - without option, - 6 function relays + 2 safety relays + 1 "On/Horn" relays - power supply 24-48VAC - button n°1-n°2 and n°3-n°4 interlocked with output relays set to OFF state - 433-434MHz , canal 01 - delivered with an elec. key
Charger and adapter	 references : **URCi-B** + **UCCU** Charger support with voltage adapter 230VAC / 5VDC	 references : **URCi-B** + **UCCU** Charger support with voltage adapter 230VAC / 5VDC	 references : **URCi-B** + **UCCU** Charger support with voltage adapter 230VAC / 5VDC

A unit comprises :

- 1 transmitter with 2 label kits (ref. : UWE202 and UWE207)
- 1 receiver with fixed antenna + 1 electronic key + common wiring accessory
- 1 charger support and its power supply adapter (for battery charging)
- 1 technical installation manual

3.4- Accessoires

Transmitter URE

Reference **Description**

URCi-B ..... Charger support (power supply adapter to be ordered separately)
UCCU ..... Power supply adapter 100-240VAC (Euro. and UK plugs) / 5VDC
UCC4 ..... Power supply adapter on DIN rail 24VDC / 5VDC
UCC1 ..... Power supply adapter 12-24VDC (Vehicle plug) / 6VDC
OWE20 ..... Neck strap
UWE103 ..... Holster
UWE104 ..... 3 points carrying strap
UWE202 ..... Label kit of 6 colored labels "movements" for double speed pushbuttons (2 steps) (1)
UWE205 ..... Label kit of 48 white blank labels, «customization» + 48 transparent protecting labels
UWE207 ..... Label kit of 90 white/black labels "movements, special functions and customization" for switches and pushbuttons (1)

Receiver URR

Reference **Description**

URWE21-B ... Programmed electronic key (1)
Important : Be sure to specify the following on order :
- Electronic key number (6-digit number written on cover page)

or, if you do not have the key number :
- the associated receiver identity code and transmitter button configuration

OWR01 ..... BNC plug kit for plug-in/deported antenna (2) (see installation in Appendices)
VUB084 ..... 1/4 wave straight antenna - BNC (3)
VUB086 ..... 1/2 wave straight antenna - BNC (3)
VUB060 ..... 90° BNC elbow for **VUB084** antenna or BNC antenna extension (3) (4)
VUB105 ..... 2 m extension for antenna + bracket - BNC (3)
VUB125 ..... 5 m extension for antenna + bracket - BNC (3)
VUB131 ..... 10 m extension for antenna + bracket - BNC (3)
UWE001 ..... 2 ways directional self-adhesive color arrows
UWE002 ..... 4 ways directional self-adhesive color arrows
UDF1 ..... 1 **UDF** IR module (10 m cable and one M16 cable gland included) for option "start-up with IR validation"
UDWR10 ..... 10 m cable extension + connector for **UDF** IR module
UDWR12 ..... Common wiring accessory (1)
UDWR38 ..... Fastening Kit for receivers by magnetic contacts

(1) = 1 accessory supplied with product.
(2) = BNC antenna and BNC extension to be ordered separately.
(3) = Require BNC tuner connector kit ref.: **OWR01**
(4) = Not suitable for direct connection to antenna ref.: **VUB086**

4- Technical characterisitcs

4.1- URE transmitter

Housing		
	Material	ABS, yellow
	Tightness	IP65
Radio		complies with ETS 300 220
	Carrier	UHF, frequency modulated (FM)
	Frequencies	64 programmable frequencies
	Frequency band	433.1 to 434.675 MHz
	HF power	< 10 mW (license not required) , built-in antenna
	Average range	230 m in typical industrial environment *
		600 m in unobstructed area
Battery		
	Type	Lithium
	Charge / discharge cycles	500 cycles min,
	Complete charging time	2h30, at +20°C (if battery totally discharged)
Endurance		
	For typical use of function buttons	50 H at 50% utilisation at +20°C 40 H at 50% utilisation at -20°C
	Endurance after a 10 min. charge when battery is discharged	around 1 h transmission time available
Storage temperature range		-20°C to +50°C
Charging temperature range		0°C to +40°C
Caution : charging outside this temperature range can be dangerous for the battery		
Operating temperature range		-20°C to +50°C
Attachment when idle		Wall (fastening hook, support charger) or on belt by fastening clip
Weight (with battery)		240 g
Dimensions		46 x 78 x 143 mm
Indicator lights		1 orange LED "Battery low" and "Diagnostic" 1 green LED "ON", "Battery charging" and "Diagnostic"

* = Range will vary according to environment conditions of transmitter and reception antenna (metal frameworks, walls …).

4.1.1- Identity code

The transmitter and receiver are linked by an **identity code.**
A receiver can only recognise and execute commands generated by the associated transmitter (with electronic key containing the receiver identity code).

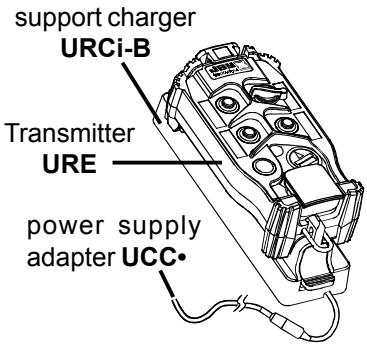
- The receiver identity code is a unique, fixed code (it can't be reprogrammed). This identity code is contained in the electronic key and can be copied to a transmitter by a trained and authorized user (see 6.3.4)

Identity codes have 65536 different combinations.

4.1.2- Charging the battery

To recharge a transmitter :
- Do not remove the electronic key from the transmitter,
- Stop the transmitter by pressing its stop plamswitch button **(1)**,
- Install the transmitter on the support charger (the power supply adapter **UCC•** must be connected to the support charger).

During the charging operation, the orange indicator light on the transmitter comes on steady and the green indicator light shows the charge level :
Green LED flashing : fast charge
Green LED on steady : slow or up-keep charge (battery charging > or = 60%)



Only JAY Electronique support charger **URCi-B** equipped with a power supply adapter (**UCCU, UCC4** or **UCC1**) from JAY Electronique are perfectly suited to charge the URE battery.

(1) = If the transmitter is placed on the charger when powered ON :
The transmitter will be automatically switched OFF. However, when the transmitter is taken back again, it will indicate an error type "5 blinkings" (stop or start-up error), the stop palmswitch button must be locked then unlocked.

4.1.3- Display of battery charge states

Two battery charge status display functions are provided on the transmitter :

- When the remote control is powered up (stop palmswitch button out), its orange LED is on during 2 seconds (phase of transmitter initialization), then this orange LED shows the accumulator charge level :

  Orange indicator light off : ..... battery charge is > at 50%

  Orange indicator light flashes slowly : ..... battery charge is between 50% and 10 %

  Orange indicator light flashes quickly : ..... The battery must absolutely be recharged (battery charge < 10%)

- During operation of the remote control (radio transmission), a **LOW BATT** (battery low level, charge < 10%) indication is given by the orange indicator light which flashes quickly. This indication is used to inform the operator that the remote control will soon be unavailable (within around 15 minutes).

4.1.4- Electronic key

The electronic key used on the UR radio remote control system has a dual function :

- It enables start-up of the transmitter by limiting access to the remote control to trained and authorized persons only.

- It contains all the information required for operation of the product, including :
  - the system identity code
  - the last frequency programmed (reprogrammable by a trained operator, see §6.3.)
  - the "dead man" function duration (reprogrammable by a trained operator, see §6.3.)
  - the configuration of the function buttons mounted on the transmitter and the type of button used (push or rotary type)
  - the button mask (special function)
  - and the option register (IR start-up, micro-speed, etc.)

- When the key is removed, it prevents unauthorized use of the transmitter.

  Preferably, the electronic key should be removed after pressing the stop palmswitch button. Removal of the key before the stop palmswitch button button is pressed will result in a fault indication (4 flashes) and passive shutdown of the receiver.

> **The transmitter cannot be started up without its electronic key.**

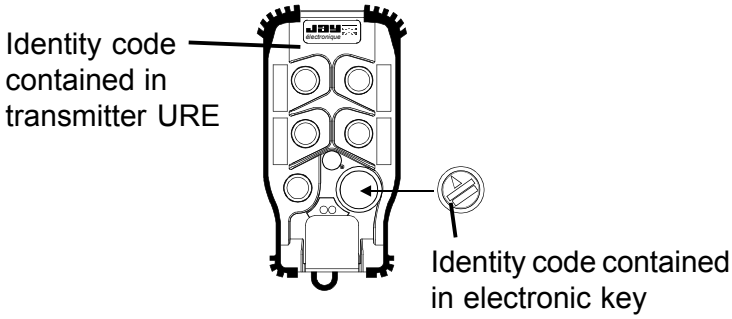
The transmitter URE also has an internal memory containing an identity code.

- If the identity code of the electronic key matches the identity code stored in the URE, the transmitter can be started up.

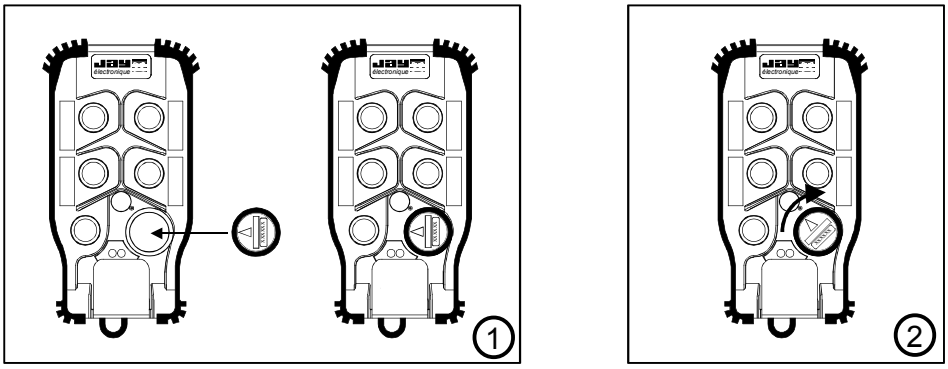
- If the identity code of the electronic key and that of the URE do not match, the transmitter indicates the problem by its two indicator lights (3 flashes). In this case, perform the programming procedure described in § 6.3.4.

URE can be started up provided :

Transmitter identity code = Electronic key identity code



Implementation of the electronic key in the transmitter housing :



1- Set up the electronic key in the place foreseen for that purpose on the transmitter

2- With screwdriver with flat blade or with a coin, turn the electronic key of 1/4 of clockwise turn until blocking.

In the event of a transmitter failure :

You can recover the electronic key and connect it on a maintenance transmitter (button configuration should be the same as that of the failed transmitter, otherwise, buttons that are different will be ineffective.).

To perform this operation, you must reprogram the key identity code in the new transmitter URE as described in the procedure in § 6.3.4.

If your electronic key is lost :

You can order another electronic key (reference **URWE21-B**) **making sure to specify the following information on the order** :

- The unique 6-digit number of the old key (written on the cover page of this manual when you unpacked your product).

or, if you do not have the key number :

- the associated receiver identity code (on receiver descriptive label) and transmitter button configuration

This information will allow you to receive an electronic key identical to the old one containing all the parameters indicated above for your radio remote control.

4.1.5- "Dead man" function

The "dead man" safety function deactivates the URE transmitter (radio transmission cut off) when the pushbuttons (BPSV, BPDV and "On/Horn") have not been actuated for a duration of ***N*** minutes or seconds.

The ***N*** parameter is user-configurable and can take the values **01** to **98** minutes or seconds.

In the standard configuration, the time unit is in minutes. On delivery, the duration is defined for 4 minutes.
The temporization unit can be modified by following the procedure described in §6.3.3

- If the time unit is in **minutes** and the ***N*** value configured is **99 minutes**, the transmitter considers that the dead man duration is infinite (until the battery is entirely discharged).

- If the time unit is in **seconds** and the ***N*** value configured is **99 seconds**, the transmitter will be deactivated after 99 seconds if no action has been performed on the transmitter.

Restarting the transmitter after the "Dead man" function has been activated:

- Press the stop palmswitch button on the transmitter.
- Unlock the stop palmswitch button on the transmitter.
- Press the green "On/Horn" button (If option "starting up by IR validation" chosen, the operator has to aim at the infrared UDF module).

Changing the dead man duration or temporization unit :

The dead man duration or unit ***N*** can be modified by a trained operator by performing the procedure described in § 6.3.3.

NB : Rotary switches **COM2**, **COM3**, and **COM3R** do not act on the "Dead man" function The manipulation of these types of buttons does not rearm the temporization).
If the operator has to use switches during a long period, the temporization must be lengthened or removed by programming, or the operator will have to rearm the temporization by pressing regularly on the "On/Horn" button or another pushbutton type.

4.2- URR receiver

Housing	
Material	ABS, Grey
Tightness	IP65
Radio	complies with ETS 300 220
Antenna	¼ wave, integrated in housing, can be unplugged as an accessory with ref : **OWR01**.
Frequencies	64 programmable 433.1 to 434.675MHz
Sensitivity	< -100dBm
Power supply and maximum consumption (with 2 safety relays, 1 "Horn" relay and 6 function relays activated)	
DC	12VDC -5% to +30% , 550 mA
	24VDC -20% to +20% , 430 mA
AC	24VAC -15% to +10% , 1 A
	48VAC -15% to +10% , 475 mA
	115VAC -15% to +10% , 200 mA
	230VAC -15% to +10% , 90 mA
Output response time	
Passive stop	1,15 s max.
Active stop	0,16 s max.
On startup	0,50 s max.
On control	0,07 s max.
Cable lead-out	
Power supply and IR option	1 M16 cap (cable diameter : 5mm to 7mm) (1)
Outputs	1 M25 plastic cable gland (cable dia. : 14mm to 20mm)
Protection class	reinforced insulation
Rated impulse voltage strength	6kV at 2000 m altitude
Pollution degree	2 internal, 3 external
Storage temperature range	-30° to +70°C
Operating temperature range	-20°C to +50°C
Weight	1,1 Kg approx,
Indicator light	1 green LED = Power ON 1 red LED + 1 green LED for diagnostic 1 red LED per relay
Protection of power supply	- Against polarity inversions for DC versions - Against overcurrents by fuse

(1)= The cover can be replaced by a plastic cable gland (standard PE) type M16 mounted in its place. The **UDF** infrared module is systematically delivered with one plastic M16 cable gland.

A large label in the housing cover gives the following information to facilitate configuration and maintenance of the system:

- connection point numbers
- wiring indication
- fuse characteristics
- indicator light functions
- table showing the "Buttons/Relays/Functions" configurations for the application and the interlocking configuration.

4.2.1- Connection to relays

Connections are made on spring terminals with connection points identified by numbers.
The flexible wire section (without end-fitting) is between 0.08 mm square and 2.5 mm square.
No common line is provided on the printed circuits (all contacts are potential-free).
An accessory (reference **UDWR12**) enables easy connection of the common lines desired (supplied as a standard feature with the product).

4.2.2- Relay characteristics

Summary table of relays available on receiver

Relay function	Number of relays	Number of connection points per relay
Safety	2	2 (1 T contact)
"On" control (Horn)	1	2 (1 T contact)
Movement or selection control	6	2 (1 T contact)

- Characteristics of safety relays :

- Contacts : AgNi10+Au5µm
- 150 000 switching cycles at 230VAC, 6A, cosphi=1
- 100 000 switching cycles at 24VDC, 6A
- 50 000 000 switching cycles at 12VDC, 10mA (min. current)
- Tests per EN 60947-5-1 : DC13 at 24V / 0,5A
  AC15 at 230V / 2A

- Characteristics of control relays :

- Contacts : AgNi 0,15
- 120 000 switching cycles at 250VAC, 8A, cosphi=1
- 50 000 switching cycles at 24VDC, 8A
- 10 000 000 switching cycles at 12VDC, 10mA (min. current)
- Tests per EN 60947-5-1 : DC13 at 24V / 0,5A
  AC15 at 230V / 2A

- Number of switching cycles on various contactors :

Contactor	Physical unit switched by relay	Number of switching cycles	
		Safety relay	Control relay
CA2DN LC1D09 LC1D18 LC2D09	Switching at 230VAC (70VA,cosphi=0,75)	$4,5x10^6$	$3x10^6$
	Switching at 110VAC, (70VA,cosphi=0,75)	$4,5x10^6$	$2,5x10^6$
	Switching at 48VAC (70VA,cosphi=0,75)	$4,5x10^6$	$1,2x10^6$

4.2.3- Protection of receiver board and relays

- Protection of power supplies :

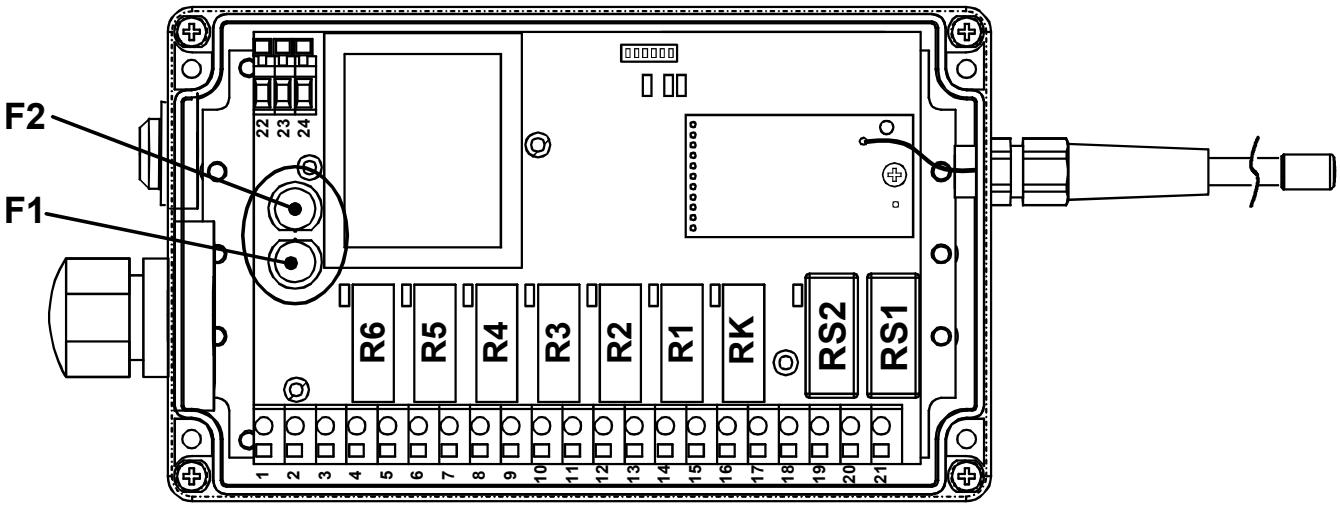
- AC version :

- Against overcurrents: 1 fuse on phase.
- Non-reversible thermal protection of transformer (in the event of overloads at secondary).

- DC version :

- Against overcurrents: 1 fuse on +V
- Against polarity inversions: 1 diode on +V.

- Fuse characteristics :



Component	Fuse characteristics (5x20)	Item
Board supplied with 12 VDC	1 A / 250 VAC / T	F1
Board supplied with 24VDC	1 A / 250 VAC / T	F2
Board supplied with 24VAC	1.6 A / 250 VAC / T	F2
Board supplied with 48VAC	800 mA / 250 VAC / T	F1
Board supplied with 115VAC	315 mA /250 VAC / T	F2
Board supplied with 230VAC	160 mA / 250 VAC / T	F1
Safety relays	No protection	/
"On/Horn" relay	No protection	/
function relays	No protection	/

The kit **PR0123** contains all the fuses required for all the possible board configurations.

4.3- Infrared startup option (IR)

As a complementary function to startup in normal mode, the infrared startup function requires the operator to point the transmitter toward an IR module located under the equipment to be controlled.

When this option is used, the receiver waits for a double condition to be satisfied prior to activating the safety and function relays :

1st condition :

- Radio reception of a startup request message sent by the URE transmitter to the URR receiver.

2nd condition :

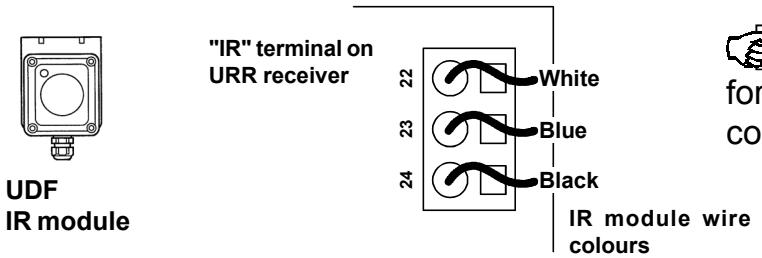
- Infrared reception of the same startup of message simultaneously sent by the URE to the URR via the UDF IR module.
  The IR transmission takes place when the "On/Horn" pushbutton is pressed.

Following this startup procedure, only reception of the radio message is required to operate.

4.3.1- Electrical connection of UDF infrared module

The UDF infrared module is supplied with a 10m shielded cable to be connected to connector Nos. 22 to 24 of the URR receiver.
The link can be extended by an extra 2x10m (i.e. 30m) using accessory **UDWR10** comprising a shielded cable and associated connector.

- Connection of UDF IR module to receiver URR :

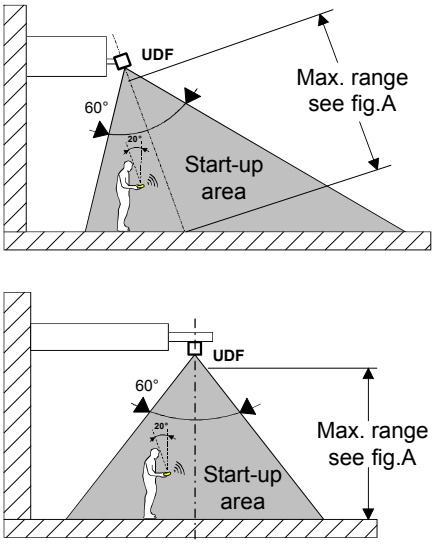


See **appendix B** for location of IR module connection terminal strip

- Wiring precaution :

The IR module must be wired separately from the power cables and all sources of interference (power converter, for example).

4.3.2- UDF IR module position



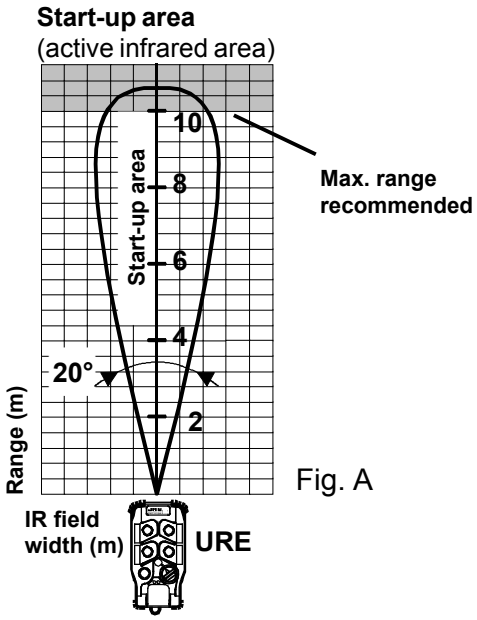


Fig. A

5- Installation and recommendations

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

- **Interference suppression,**
- **Choice of operating frequency,**
- **Movement control arrows,**
- **Position of receiver and antenna,**
- **Quality of wiring of receiver and associated systems,**
- **Electrical power supply protection,**
- **Minimum and maximum current of relay outputs.**

5.1- Interference suppression

In the event of inductive loads on the 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.

5.2- Choice of operating frequency

The 64 radio channels of the UR provide a broad range of choices among the available frequencies. To ensure good operating quality, it is important that the radio channel used, the previous and following be free throughout the area in which the machine will be controlled.

If several radio remote controls are operating on the same site, frequencies spaced by at least two channels (for example: 5, 7, 9 …) should be used and, if necessary, a frequency plan should be drawn up, specifying the various machines controlled and their working frequency.

5.3- Movement control arrows

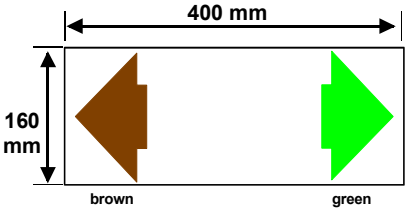
If there are several equipment fitted with similar radio remote control systems working in the same neighbourhood (e.g. in a plant), each transmitter shall carry a clear indication which tells the equipment driver which equipment is controlled by the transmitter in question.

In this respect, signalling arrows are available as an accessory.
Place the different arrows on the equipment to be controlled so that each arrow colour corresponds to that on the associated transmitter control button.

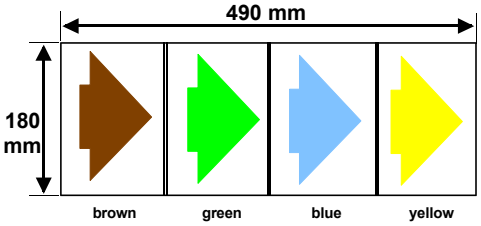
The direction of movement of control buttons shall whenever possible be consistent with equipment motion. Symbols shall be fixed in such positions that there is a clear and unambiguous relationship between the action on buttons in the control station and the corresponding direction of motion.

The arrows are available in the following versions :

Reference : **UWE001** **2 ways directional self-adhesive color arrows**

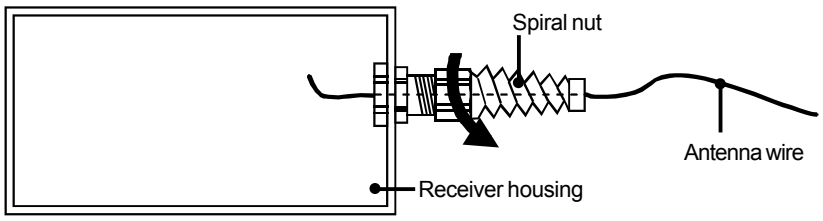


Reference : **UWE002** **4 ways directional self-adhesive color arrows (independent arrows)**

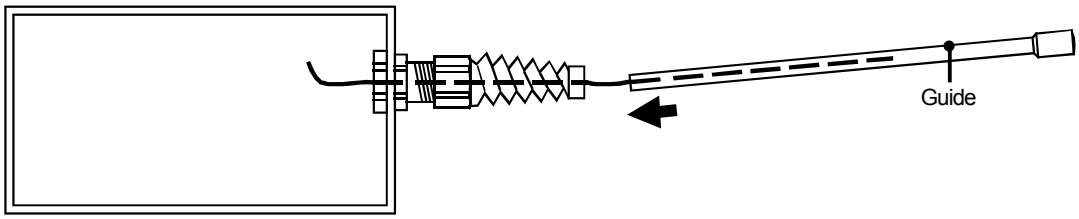


5.4- Installation of receiver antenna before comissioning

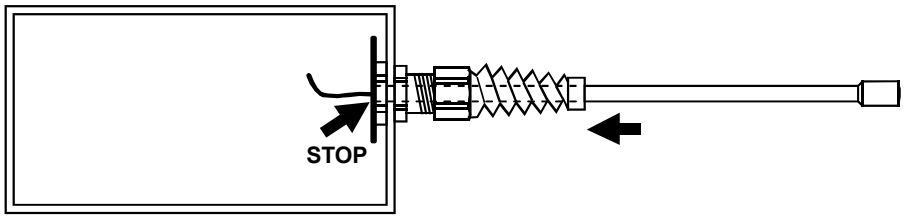
1- Open the receiver housing and unscrew the spiral nut used to secure the antenna.



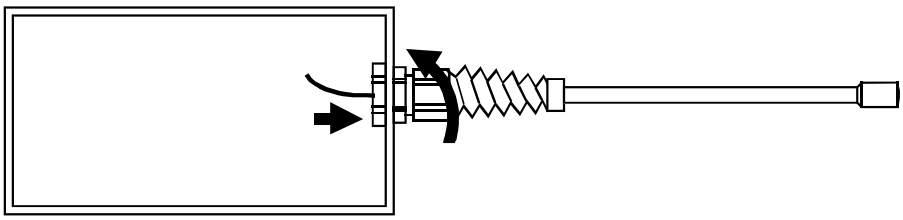
2- Insert the antenna wire in the guide.



3- Slide the guide into the spiral nut, then fully into the cable gland base upto the limit in the base.



4- Tighten the spiral nut to the sticking point, then add a quarter turn to lock the antenna guide and ensure tightness of the assembly. Check that the guide is securely mounted. Check that the antenna entered at most the guide to allow an optimal reception.



5.5- Receiver and antenna positions

The remote control receiver **URR** should be mounted as close as possible to the control cabinet, and should be sheltered from shocks and weather.

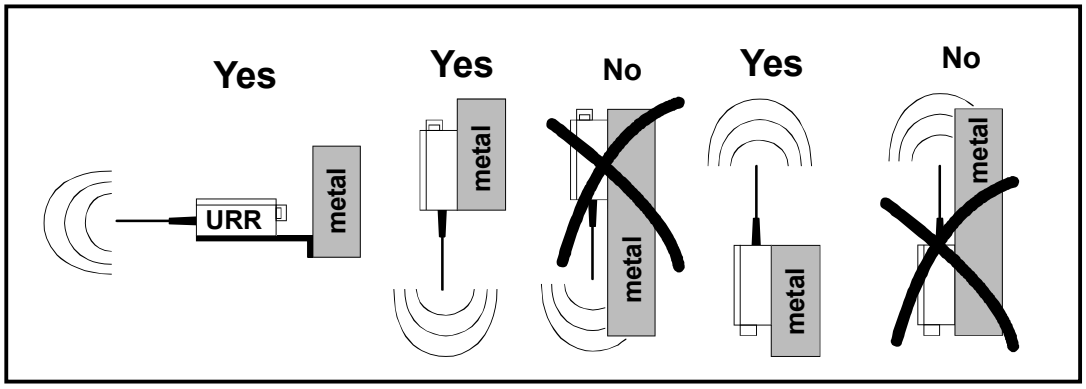
As a general rule :

- 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 as far as possible from the class 3 cables and power components (power supply, motor, variable speed drive, etc.) while remaining within an area favorable to radio reception (and connection of the **UDF** infrared module, if the remote control is equipped with the option "starting up by infrared validation"),
  - 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.

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

If the above requirements cannot be observed, an external antenna must be used with extension (BNC connection). External antenna and extension must be ordered separately.

For the **URR** receiver, use of an external antenna requires that the user purchases and installs the plug-in antenna kit, reference : **OWR01** (see installation in Appendices).



Unless a special connector such as the plug-in antenna adapter ref. **OWR01** (see installation in Appendices) is used, the receiver antenna should not be modified.

5.6- Wiring

WARNING

To avoid any risks of electrocution, do not open the receiver case when powered.

Important :

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), connection of the **UDF** infrared module, if the remote control is equipped with the option "starting up by infrared validation".

- Class 2 : Mains for power supply of various units

- Class 3 : Power control for motors, variable speed drive, etc...

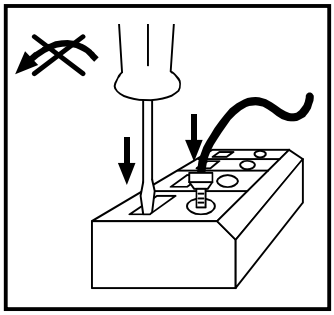
Ideally, each cable class should be run through a cable path specific to the class. If only one cable path is available, cables of different classes should be separated as much as possible.

5.6.1- Wiring the receiver URR

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

To open the 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.



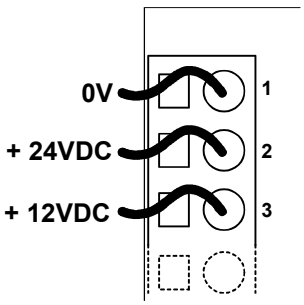
Do not apply any lever movement to the screwdriver as this can result in damage to the terminal strip and the printed circuit on the motherboard of the receiver URR.

5.6.2- Wiring the electrical power supply of receiver URR

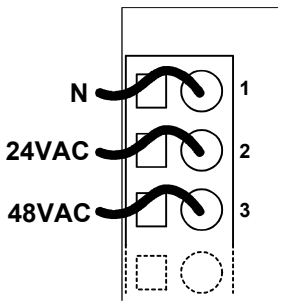
Caution: The electrical connections should be made such that when the main switch is off, the UR remote control receiver is also deactivated.

Receiver reference =

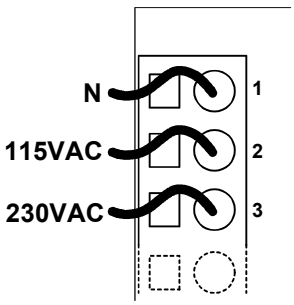
URR*C4*-B - ***
12 - 24 VDC



URR*CA*-B - ***
24/48 VAC



URR*CB*-B - ***
115/230 VAC



See **Annexe B** for location of power supply connection terminal

For the wiring and to determine the correspondence between the action on a function button or switch and the relay controlled, refer to the configuration table supplied with the receiver (label on housing cover) and **Appendix B**.

See wiring example in **appendix D** for standard unit

5.7- Electrical power supply protection

Protection against overcurrents (EN60204-1 § 7.2) resulting from overvoltages.
A fuse or other protection device should be provided in the power supply circuit of the receiver (see wiring diagram for standard assemblies, item F in **Appendix D**). The assigned current is defined in the table in § 4.2.3).

5.8- Minimum and maximum current of relay outputs

Be sure not to exceed the minimum and maximum characteristics specified in § 4.2.2 by installing, if necessary, an additional load or intermediate relays (auxiliary contacts in electrical cabinet for power control, for example).

5.9- Auxiliary control

Measures should be taken to ensure, that when the radio control is not in service, another control system can be used to ensure the safety of the operator and the manipulated load.

6- Commissioning and operation

6.1- Precautions when commissioning

- **The installer must :**
  - ensure that the transmitter and receiver identity and radio channel match correctly,
  - ensure that the radio channel chosen corresponds to the frequency plan set up for the site,
  - perform a final check to verify that the desired Button-Relay correspondence is in place.
- During the previous check, the installer must check that when the "On/Horn" button is pressed on startup, only the function relays assigned to the rotary button selections are in the "ON" state.
- **Verify the priority general shutdown mode** (remote control in operation) :

Active stop: When the stop palmswitch button on the transmitter is pressed, the receiver safety relays (RS1 and RS2) should instantaneously change state.

Passive stop: When the electronic key is removed from the transmitter in operation, the receiver safety relays (RS1 and RS2) should change state within two seconds max.

- **"Dead man" function duration :**
  Check the effective duration of the "Dead man" function (automatic shutdown of transmitter) :
  Start up the remote control and leave it without activating any control. Record the time after which the receiver safety relays are deenergized and check that this duration corresponds to the standard duration supplied (4min.) **or** the duration specified on order (special programming, see customisation sheet), **or** to the new duration defined by a trained and authorized operator in accordance with the procedure described in § 6.3.3.

- **IR start-up option :**
  If the IR start-up mode is used, evaluate the limit of its area of action and check that the area is limited to that defined for the application.

- **Radio range limits and option "start up with IR validation" if chosen :**
  Evaluate the range limit of the transmitter/receiver assembly (by moving up to the range limit). Make sure of the good infrared area covering by the IR module.

- **Special function: masking of certain function buttons**
  If button masks are included in the electronic key, check that they properly correspond to the application for which they have been provided.

6.1.1- Periodic checks and checks performed following maintenance operations

In addition to the commissioning checks which should be performed, also check :

- That the ergonomic features of the transmitter unit have been preserved, such as: pressure on function buttons, correct rotation of rotary switches, correct functioning of emergency stop button, etc...

- Response time of commands between transmission of a command and resulting movement.

6.2- Startup the radio remote control

1- Switch ON the URR receiver
2- Install the electronic key on the URE transmitter
3- Copy the receiver identity code contained in the electronic to the URE transmitter following procedure described in §6.3.4.
4- Unlock the transmitter stop palmswitch button
5- Wait until the orange indicator goes off (transmitter initialization - 2 seconds)
6- Press the "On/Horn" button until the receiver is started up.

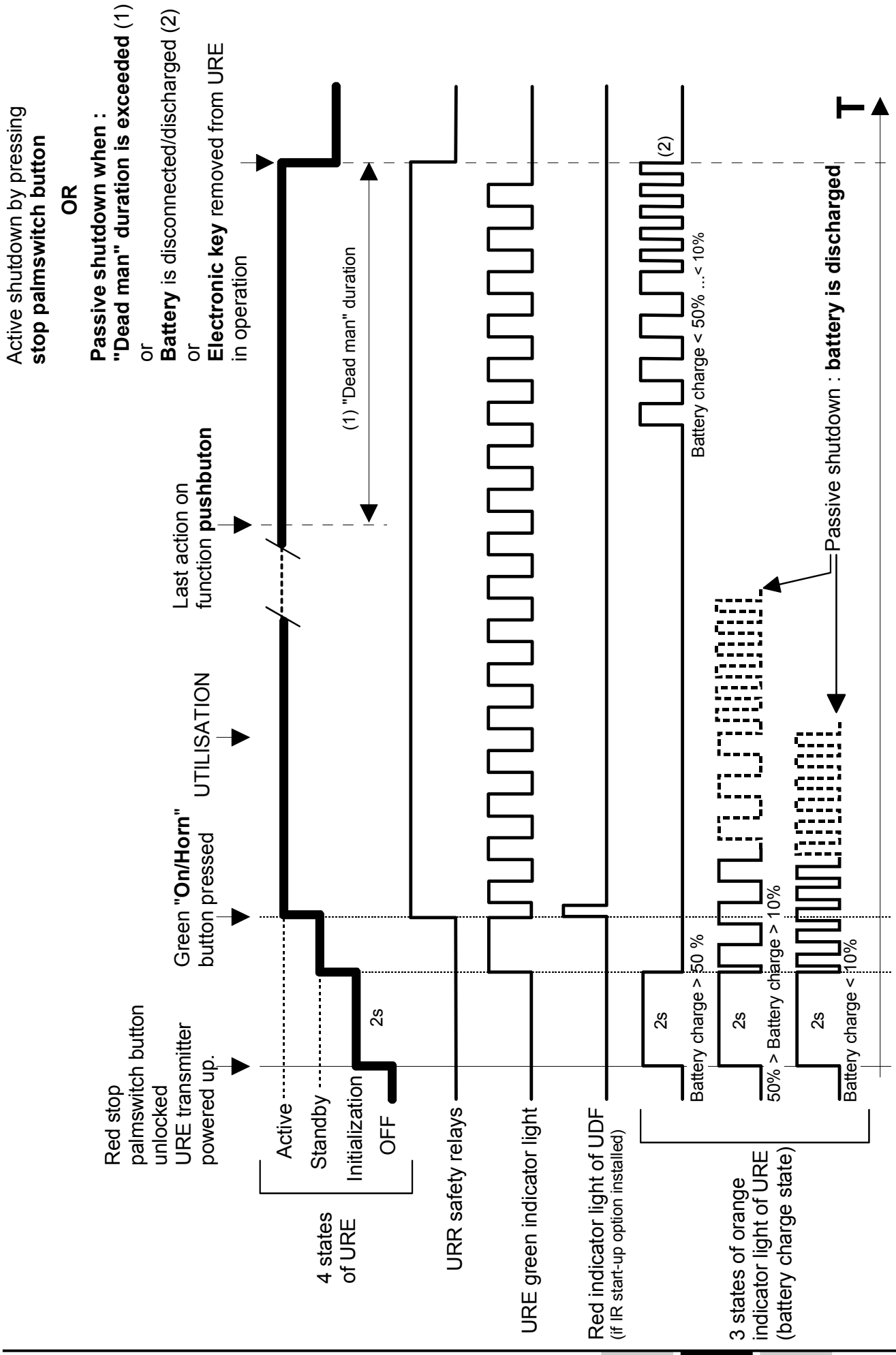
If the remote control is equipped with the option " start up by infrared validation ": with the transmitter, aim at the infrared UDF module bounding the zone of starting up while pressing on the green "On / Horn" button.

To stop the radio remote control : press the stop palmswitch button

NB : If this procedure is not observed, the transmitter will indicate an error (red and green indicator lights will flash 5 times).

See startup block diagram on next page

6.2.1- Startup block diagram



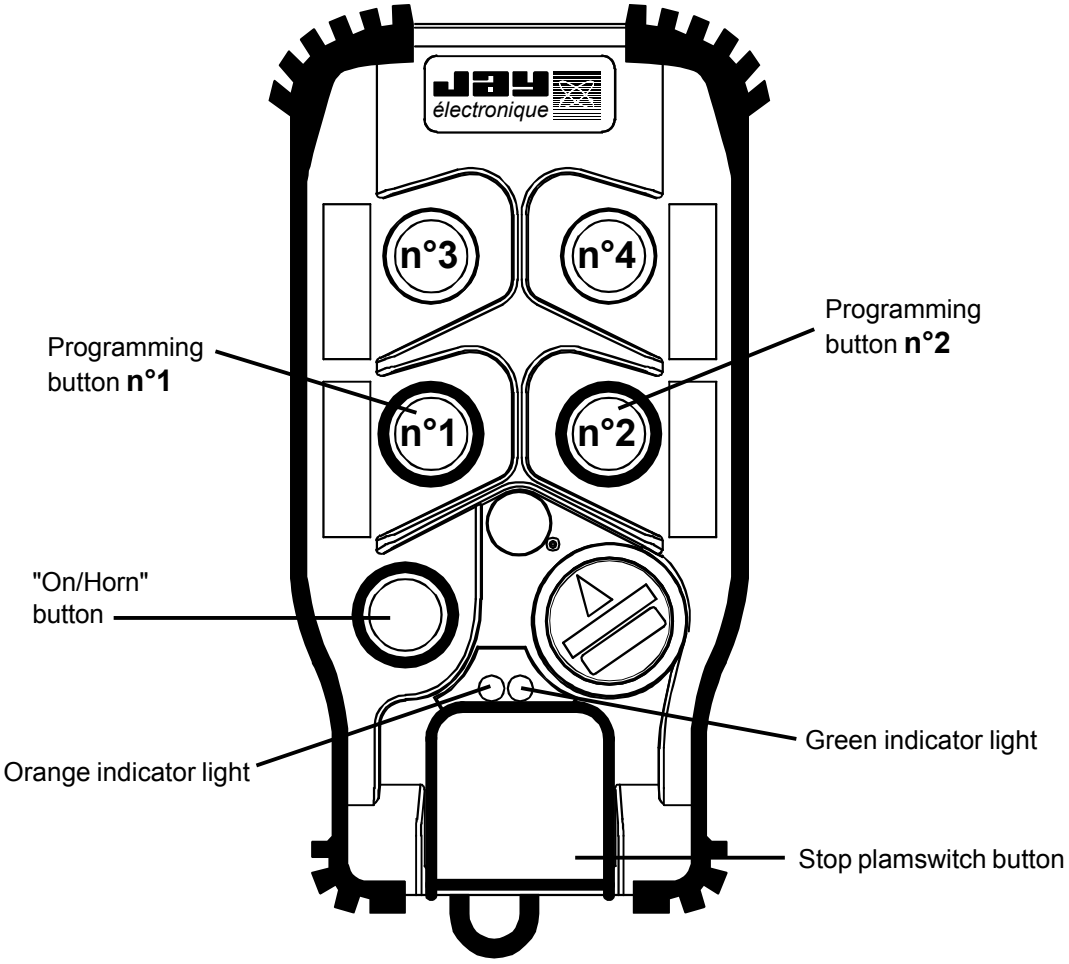
6.3- Configuring the transmitter

The following parameters are configurable from the transmitter unit :

- Transmit frequency, channel number from 01 to 64,
- The "Dead man" function duration and the unit from 01s to 98mn and infinite if the counting unit is in minutes (standard) and duration adjusted to "99".
- Copy of electronic key identity code to transmitter memory.

These configuration operations use procedures implementing buttons n°1, n°2, stop plamswitch and "On/Horn" without having to open the transmitter or the receiver.

By a specific operating mode, the person in charge of the equipment can lock or unlock the access to the programming (see §6.3.1).



See next pages for configuration procedures

6.3.1 Procedure: "Locking-unlocking" access to programming of transmitter URE

1- Switch off the receiver.
2- Insert the electronic key in the transmitter unit.
3- - Hold buttons n°1, n°2 and "On/Horn" pressed while unlocking the stop palmswitch button (fig.1).
4- Wait until the orange indicator goes off before releasing buttons n°1, n°2 and "On/Horn".
Indicator lights statuses:
- transmitter **locked** : orange indicator light on, green indicator light off
- transmitter **unlocked** : orange and green indicator lights on.
5- Select "locked" or "unlocked" by pressing button n°2; the selected mode is shown by the indicator lights (fig.2&3).
6- Validate the selected mode by pressing the "On/Horn" button (fig.4).
7- The transmitter saves the new mode in the electronic key and switches off the indicator lights.
8- Exit the "locking - unlocking" configuration mode by pressing the stop palmswitch button (fig.6).

Caution: If an operator attempts to program the frequency or the "dead man" function time or an electronic key identity code copy, with the transmitter locked, the transmitter will indicate an error by its indicator lights which will flash in alternation.

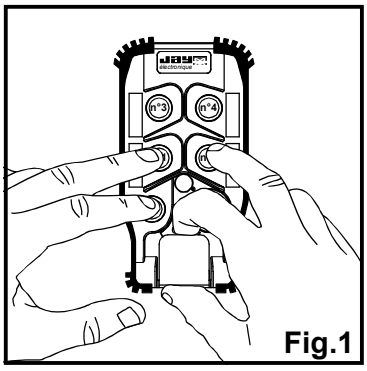


Fig.1

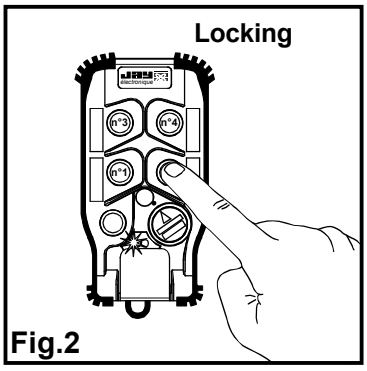


Fig.2

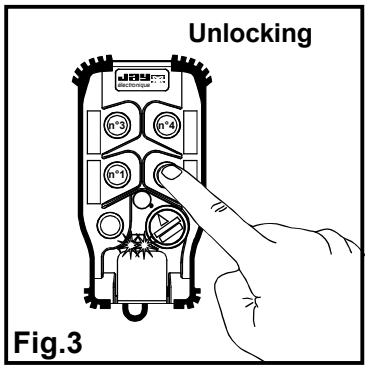


Fig.3

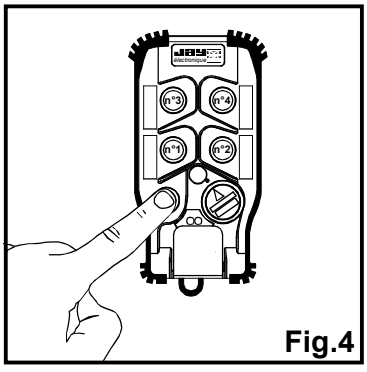


Fig.4

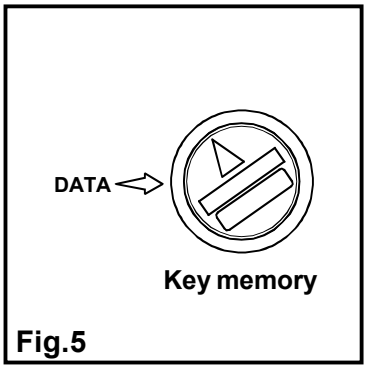


Fig.5

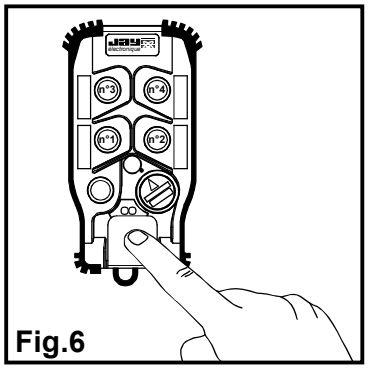


Fig.6

6.3.2 Procedure : working frequency programming

1- Switch on the URR receiver

2- Insert the electronic key in the transmitter unit.

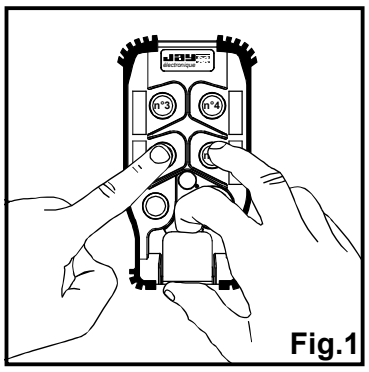
3- - Hold buttons n°1 and n°2 pressed, while unlocking the stop palmswitch button (fig.1).
- Wait until the orange indicator goes off before releasing buttons n°1 and n°2.
The channel already selected is indicated by two flashing indicator lights on the transmitter which represent the tens (orange) and units (green).

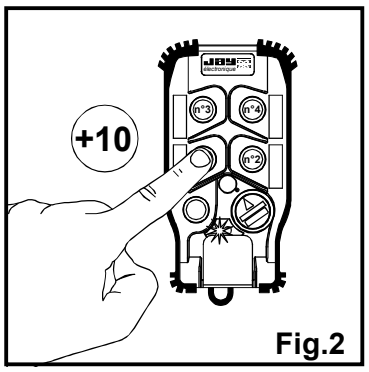
4- Select the new channel using buttons n°1 and n°2 (fig.2&3).
Press button n°1 to increment the tens and button n°2 to increment the units.
During these operations, the newly selected channel is displayed by the 2 indicator lights on the transmitter which flash accordingly.

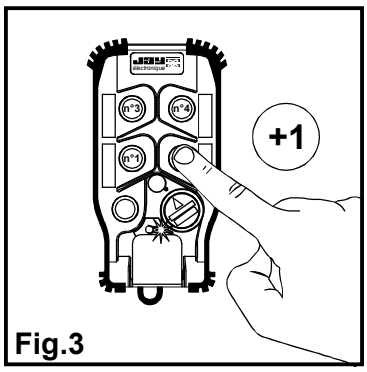
5- Once the desired channel is selected (between 01 and 64), press the "On/Horn" button to validate your selection (fig.4) :
Briefly pressing "On" :
the transmitter sends the selected channel number to the receiver and saves its new working channel (fig. 5).
By pressing and holding the "On" button (3 seconds):
the transmitter sends the selected channel number to the receiver (on each of the radio link channels) and saves its new working channel. Wait until the transmitter indicator lights no longer flash (around 30 seconds) (fig. 5) *(this longer procedure is preferable and should be performed when you are not familiar with the initial working channel of the receiver)*.

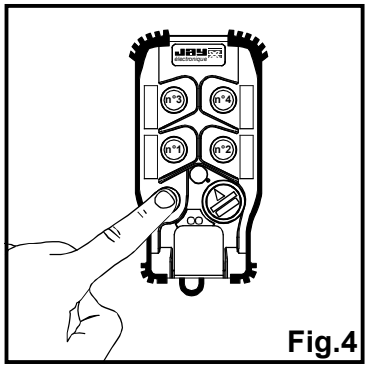
6- Exit the "frequency" programming mode by pressing the stop palmswitch button (fig.6).

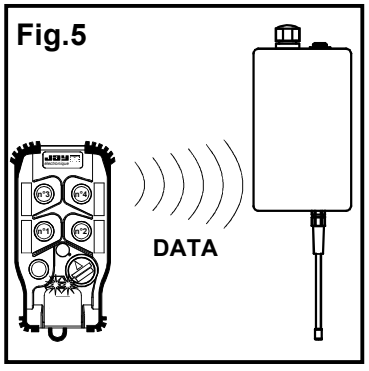
7- Check that the receiver has changed channel by performing the startup procedure detailed in § 6.2.

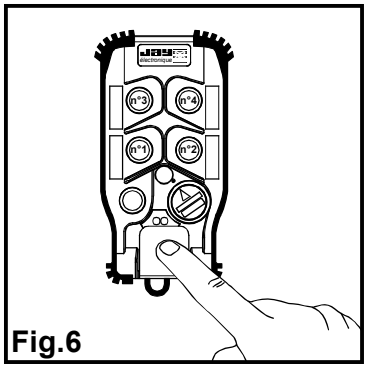












6.3.3- Procedure for programming the automatic shutdown function of the transmitter ("Dead man" function)

6.3.3.1- Modification of the time unit used by the «Dead man» function duration

If you need to change the time unit of the «Dead man» function duration (transmitter delivered with time unit «in minute», can be modified «in second») please follow the procedure described below.

1- **Switch off the receiver**
2- Insert the electronic key in the transmitter unit
3- - Hold button n°1 while unlocking the stop palmswitch button (fig.1).
- Wait until the orange indicator goes off before releasing button n°1.
The unit already selected is indicated by the transmitter indicator lights :
- unit is in "MINUTE" : orange indicator light on, green indicator light off
- unit is in "SECOND" : orange indicator light off, green indicator light on
4- Select "MINUTE" or "SECOND" by pressing button n°2; the selected unit is shown by the indicator lights.
5- Once the desired unit is selected, press the "On/Horn" button to validate your selection (fig.4) :
6- Exit the programming mode by pressing the stop palmswitch button (fig.6).

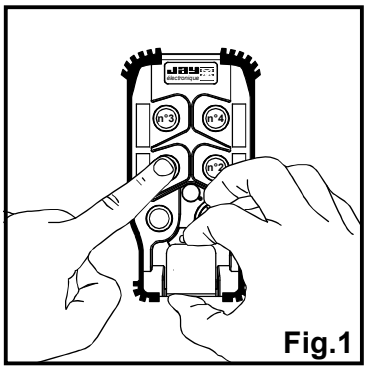


Fig.1

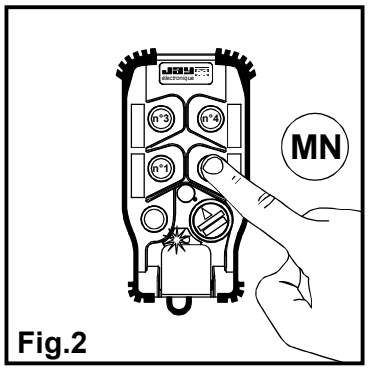


Fig.2

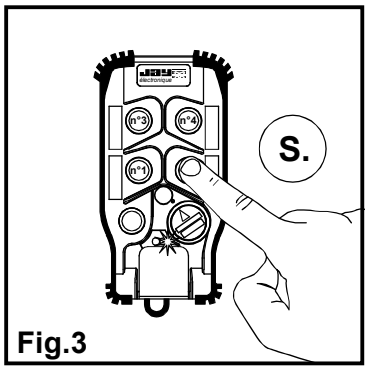


Fig.3

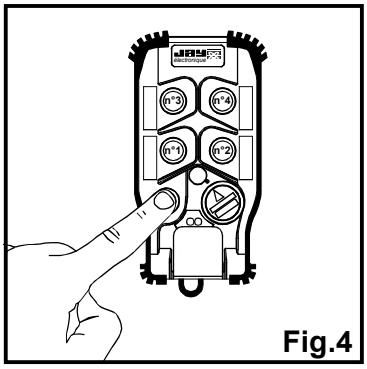


Fig.4

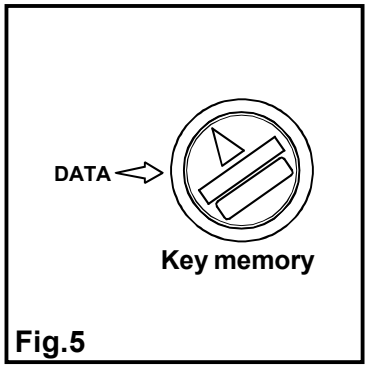


Fig.5

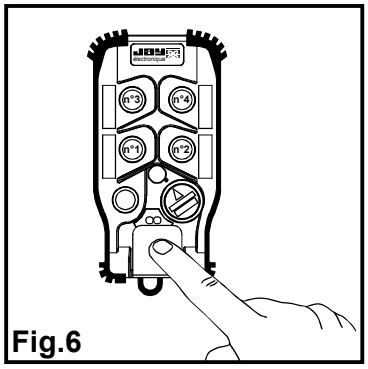


Fig.6

6.3.3.2- Modification of the duration before transmitter shutdown

1- Switch off the receiver

2- Insert the electronic key in the transmitter unit.

3- - Hold buttons n°1 and "On/Horn" pressed, while unlocking the stop palmswitch button (fig.1).
- Wait until the orange indicator goes off before releasing buttons n°1, and "On/Horn".
The "dead man" time is displayed by two flashing indicator lights on the transmitter representing the tens (orange) and the units (green) of the number of minutes or seconds.

4- Select the new time using buttons n°1 and n°2 (fig.2&3).
Press button n°1 to increment the tens and button n°2 to increment the units.
During these operations, the new time selected is displayed by the two indicator lights on the transmitter.

5- Once you have selected the desired "dead man" time (between 01 and 99), press the "On/Horn" button to validate your selection (fig.4).

Caution: No. 99 corresponds to an infinite "dead man" time when the counting unit is in "minutes"
> This function is then deactivated and forgetting to switch off the transmitter will result in complete discharge of the transmitter.

6- Exit the "dead man" time programming mode by pressing the stop palmswitch button (fig.6).

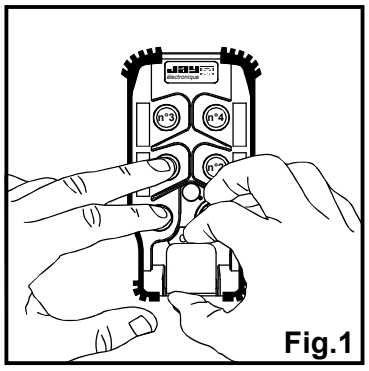


Fig.1

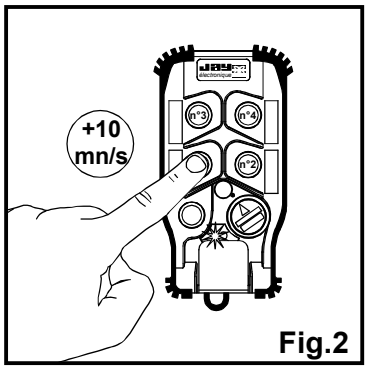


Fig.2

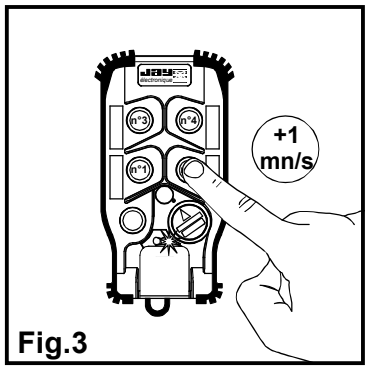


Fig.3

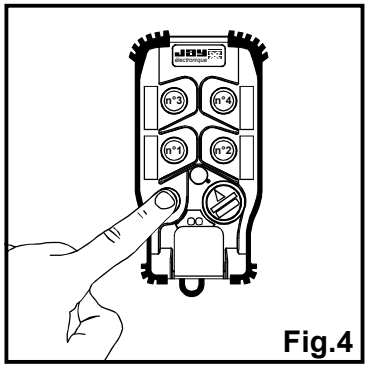


Fig.4

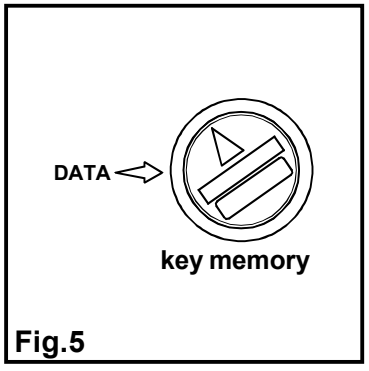


Fig.5

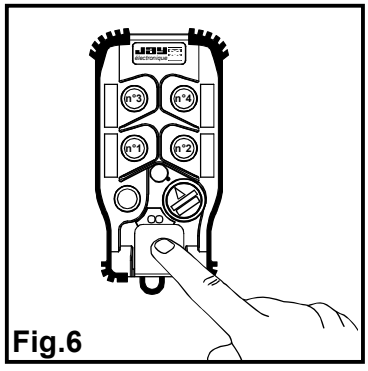


Fig.6

6.3.4 Procedure: Validation of an electronic key

Apply this procedure when using a maintenance transmitter or when changing electronic key

Reminder :
To use the UR radio remote control system, the identity code contained in the transmitter memory must match the identity code in the electronic key which is itself identical to that of the receiver.

If a maintenance transmitter is used or if you change electronic key, the information contained in the electronic key must be copied in the memory of the transmitter URE.

Conditions for using this procedure :
The configuration of the backup transmitter buttons must be identical to that described in the electronic key (or the original transmitter).

1- Switch off the receiver

2- Insert the electronic key in the transmitter unit.

3- - Hold buttons n°2 and "On/Horn" pressed, while unlocking the stop palmswitch button (fig.1).
- Wait until the orange indicator goes off before releasing buttons n°2 and "On/Horn".

The 2 indicator lights on the transmitter URE will flash rapidly.

4- Press the "On/Horn" button to perform automatic programming of the identity code: the two indicator lights on the transmitter URE go off (fig. 2).

5- The "identity code" information is copied from the electronic key to the transmitter memory (fig. 3).

6- Exit the programming mode by pressing the stop palmswitch button (fig.4).

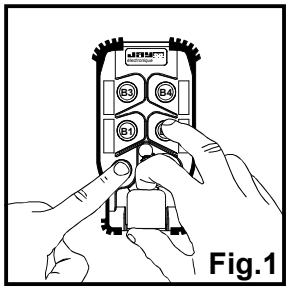


Fig.1

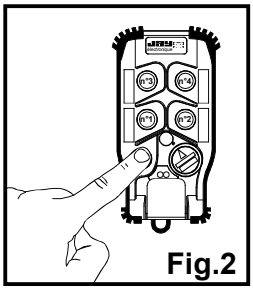


Fig.2

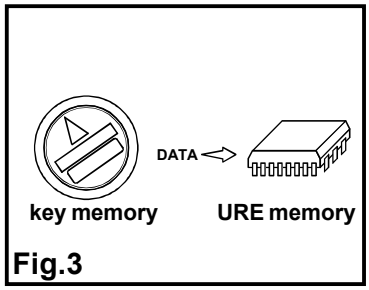


Fig.3

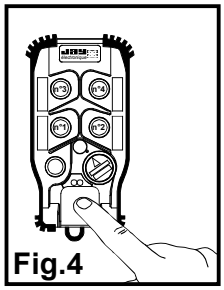


Fig.4

The working frequency may need to be programmed (for example, if the new electronic key is programmed on another frequency).
Perform the procedure described in § 6.3.2.

6.3.5- Transmitter indicator light functions

Transmitter state	Orange ind. light	Green ind. light	Function
Before or after "On/Horn" bt. pressed	OFF	OFF	Shut down **or** "Dead man" time exceeded **or** RESET for discharged battery
Before "On/Horn" bt. pressed	ON 2 seconds	OFF	The orange led is ON during 2 seconds when the transmitter is initialized
Before "On/Horn" bt. pressed	OFF	ON	battery charge > 50%
Before "On/Horn" bt. Pressed	Flashes SLOW	ON	50% > battery charge > 10%
Before "On/Horn" bt. Pressed	Flashes FAST	ON	battery charge <10%
Before "On/Horn" bt. Pressed	ON	ON	Electronic key reading error
After "On/Horn" bt. pressed	OFF	Flash	Radio transmission
After "On/Horn" bt. pressed	Flashes FAST	Flash	Radio transmission + battery charge below 10%
Before "On/Horn" bt. Pressed	Flashes 3 times	Flashes 3 times	Error, mismatch detected between electronic key and URE memory., **Reprogramming is required, see procedure in § 6.3.4.**
Before or after "On/Horn" bt. Pressed	Flashes 4 times	Flashes 4 times	Faulty button(s)
Before "On/Horn" bt. Pressed	Flashes 5 times	Flashes 5 times	Stop or start-up error detected. Be sure to observe start-up conditions specified in § 6.2.
Before "On/Horn" bt. Pressed	Flashes 6 times	Flashes 6 times	Stop or start-up error detected. Be sure to observe start-up conditions specified in § 6.2.
Before "On/Horn" bt. Pressed	Flashes 7 times	Flashes 7 times	Internal error, electronic key or transmitter URE
Before "On/Horn" bt. pressed	Flashes 8 times	Flashes 8 times	Internal URE transmitter errror
Prog, mode : frequency, "dead man" time	Flashes according to number of **tens** of parameter configured	Flashes according to number of **units** of parameter configured	Indicates tens and units
Procedure : Locking-unlocking access to programming	ON	OFF	Transmitter is locked
Procedure : Locking-unlocking access to programming	ON	ON	Transmitter is unlocked
Battery charging	ON	Flashes	Fast charging (managed by URE microprocessor)
Battery charging	ON	ON	Slow or up-keep charging (managed by URE microprocessor)
Battery charging	Flashes 2 times	Flashes 2 times	Charger error

6.4- Configuring the URR receiver

Receiver parameters :

- **Button interlocking :**
  Factory-configured on order; cannot be changed by user.
- **Button/function relay correspondence :**
  Factory-configured on order; cannot be changed by user.
- **Radio reception frequency :**
  Factory-configured on order, can be programmed by a trained, authorized user:

  By transmitter paired to receiver, applying working radio channel programming procedure (see § 6.3.2).

6.4.1- Receiver indicator light functions :

Name and color of LED	Mode	Indication	Message	State
Safety micro 1 LED (RED)	*Normal*	Indicates validity of identity code	No message reception	OFF
			Message reception with correct identity code	OFF
			Message reception with incorrect identity code	Regular flashes
	Serial link			ON
	In case of fault	Indicates a fault	Internal electronic failure	3, 4, 5, 6 or 7 flashes
Safety micro 2 LED (GREEN)	*Normal*	Indicates radio reception quality	No message reception	OFF
			Poor radio reception	Flashing
			Good radio reception	ON
	Serial link			OFF
	In case of fault	Indicates a fault	Internal electronic failure	2, 3, 4, 5, 6 or 7 flashes
Horn LED (RED)	All	State of horn relay (ON)	Relay state = OFF	OFF
			Relay state = ON	ON
LED Power ON (GREEN)	All	Indicates power supply state	Receiver switched OFF	OFF
			Receiver switched ON	ON
Safety relay LED (RED)	All	Indicates safety relay state	Relay state = OFF	OFF
			Relay state = ON	ON
Function relays LEDs (RED)	All	State of function relay N	Relay state = OFF	OFF
			Relay state = ON	ON

7- Available frequencies

If several radio controls are used on the same site, different radio frequencies should be used, spaced by at least two channels (for example, channels 5, 7, 9, etc.).

433 - 434MHz band with adjacent channel intervals of 0,025MHz

Channel	Frequency MHz	
01	433,100	
02	433,125	
03	433,150	
04	433,175	
05	433,200	
06	433,225	
07	433,250	
08	433,275	
09	433,300	
10	433,325	
11	433,350	
12	433,375	
13	433,400	
14	433,425	
15	433,450	
16	433,475	
17	433,500	
18	433,525	
19	433,550	
20	433,575	(1)
21	433,600	
22	433,625	(1)

Channel	Frequency MHz	
23	433,650	
24	433,675	(1)
25	433,700	
26	433,725	(1)
27	433,750	
28	433,775	(1)
29	433,800	(2)
30	433,825	(1) (2)
31	433,850	(2)
32	433,875	(1) (2)
33	433,900	(2)
34	433,925	(1) (2)
35	433,950	(2)
36	433,975	(1) (2)
37	434,000	(2)
38	434,025	(1) (2)
39	434,050	(2)
40	434,075	(2)
41	434,100	(2)
42	434,125	(2)
43	434,150	(2)
44	434,175	(2)

Channel	Frequency MHz	
45	434,200	(2)
46	434,225	(2)
47	434,250	(2)
48	434,275	(2)
49	434,300	(2)
50	434,325	(2)
51	434,350	(2)
52	434,375	(2)
53	434,400	(2)
54	434,425	(2)
55	434,450	(2)
56	434,475	(2)
57	434,500	(2)
58	434,525	(2)
59	434,550	(2)
60	434,575	(2)
61	434,600	(2)
62	434,625	(2)
63	434,650	(2)
64	434,675	(2)

(1) List of frequencies available for Denmark
(2) List of frequencies available for Singapore

8- URE transmitter function button labels

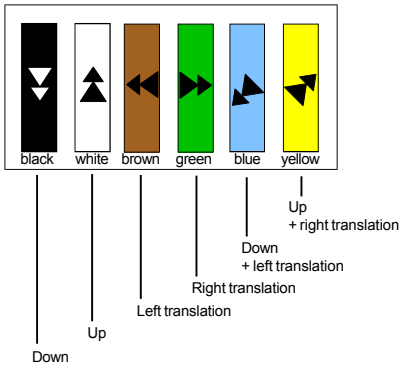
The various button functions are identified by means of adhesive labels placed in he recesses provided in the transmitter unit envelope at each button location.

The labels are supplied in the form of sheets with the various labels you will need for your application. Simply choose the labels corresponding to your configuration.

Reference :

UWE202 *

Kit of 6 colored labels, «movements», for two-step pushbuttons (double speed)

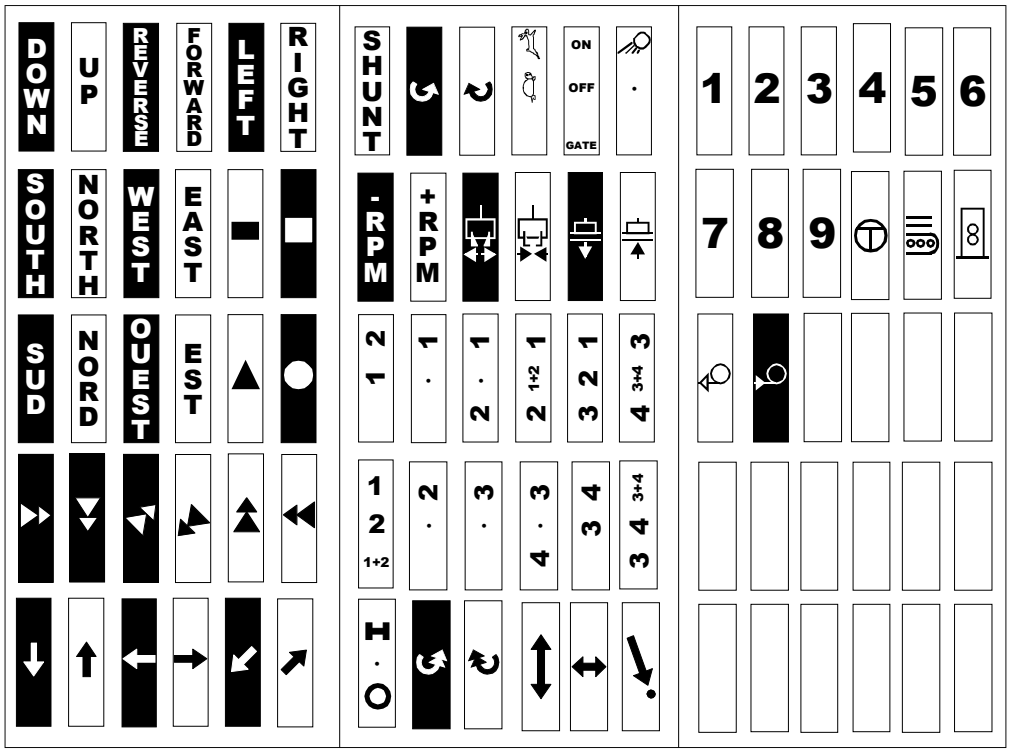


* = Label sheets provided as standard supply with **URE** transmitter

Reference : *

UWE207

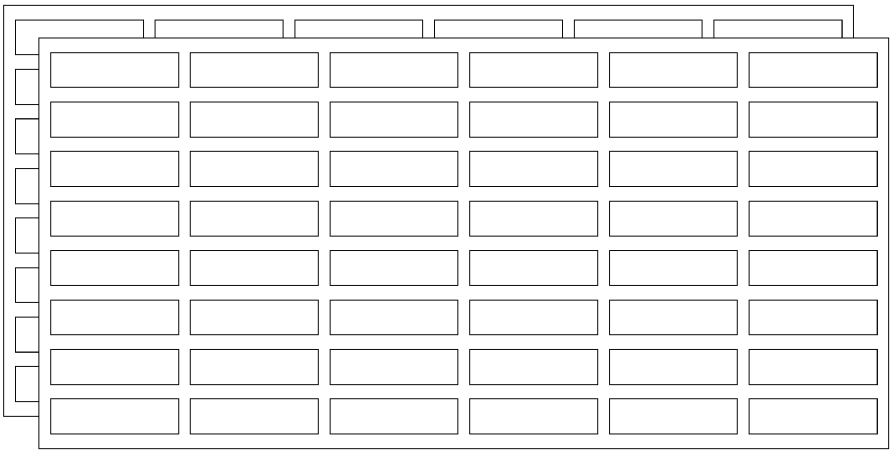
Kit of 90 white/black labels, «movements, special functions and customization» for switches and pushbuttons (with 16 labels for personalized marking with indelible felt-tip)



Reference :

UWE205

Kit of 48 white blank labels, «customization» + 48 transparent protecting labels.



***** = Label sheets provided as standard supply with **URE** transmitter

9- Servicing

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

Servicing the URE transmitter:

The remote control requires minimum servicing.

- Regularly, visually inspect the transmitter paying special attention to the function button seals and to the electronic key connector.
- Clean the transmitter by eliminating any foreign body.
  Only use non aggressive cleaning product on base of soapy solution.

IMMEDIATELY REPLACE ANY DAMAGED SEAL. FAILURE TO DO SO CAN RESULT IN WATER PENETRATING AND DAMAGING THE TRANSMITTER

Servicing the URR receiver :

The receiver is serviced in the same way as the transmitter. Check the following points:

- Wiring of receiver to electrical unit on machine.
- Control relay contacts.
- Correct operation of stop circuits, active and passive.
- Condition of cover seal, tightening of screws and cable glands and tightness of antenna.
- If accessory **OWR01** (BNC antenna connector - see installation in Appendices) is used, check the antenna connection and check that it is clean and free of any oxidation.

To check operation of the active shutdown function, simply press the emergency stop button. The receiver safety relays should immediately de-energise.

To check operation of the passive shutdown function, simply remove the electronic key from the transmitter; the receiver safety relays should de-energise within 2 seconds.

10- Maintenance

Accessibility to the replacement parts depends on the training level of the end user:

Level 1 : Replacement parts requiring no special tools or training

List of parts which can be replaced by user:

URE transmitter

Rerence	Description
PR0248	Battery (Lithium) for transmitter URE
PR0231	Mechanical part of the industrial charger (this part can be used as wall support for URE transmitter or can be used to repair the URCi industrial charger.)

See **Appendix E** Changing URE battery

URR receiver

Reference	Description
PR0123	Fuse kit

Level 2 : Replacement parts requiring a repair data package, special training and tools. These parts are only accessible to end users having successfully completed a level 2 training course.

- The UR structure limits level 1 interventions for the end user.
- The level 2 interventions are performed in a technical center approved by JAY Electronique

11- Special functions

By its high degree of adaptability, the UR series remote control is able to satisfy all the needs for non-standard functions described in this manual.

Following consultation and validation of a customer request, our customer service will print out a customisation sheet for the remote control.

The "non-standard" functions which can be covered by a customisation sheet are:

- Masking of certain function buttons by electronic key.
- Other function button interlocking
- Other button/relay match-ups.
- Possibility for mixing between *UR* and *UD* remote controls.

If your remote control is covered by a customisation sheet, we strongly recommend that you set it aside in a safe location for information which may be needed for subsequent commissioning and maintenance operations.

12- Warranty

All our devices are guarantied 2 years as of the date of manufacture indicated on the product, wear parts not included. 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.

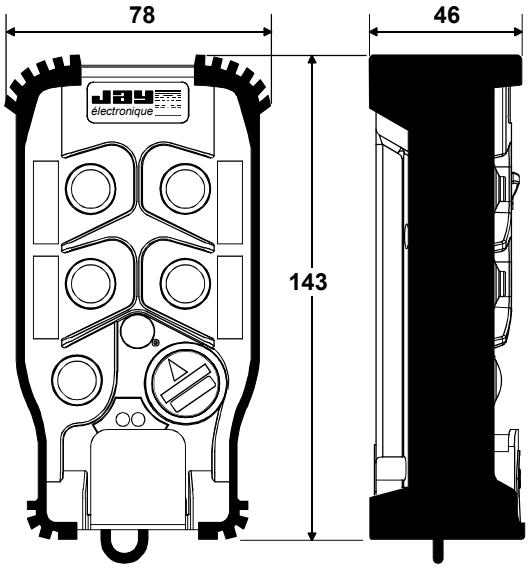
The warranty shall not give rise to any compensation for damage claims.

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.

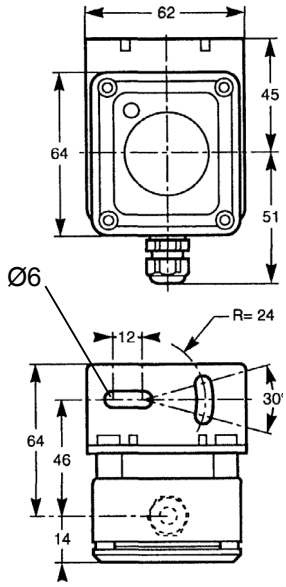
• Annexes
• Appendix
• Anhang

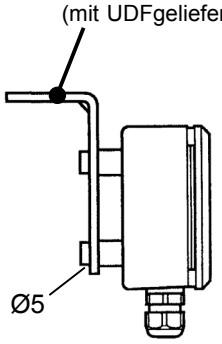
Dimensions / Maße

- Emetteur / Transmitter / Sender *URE*



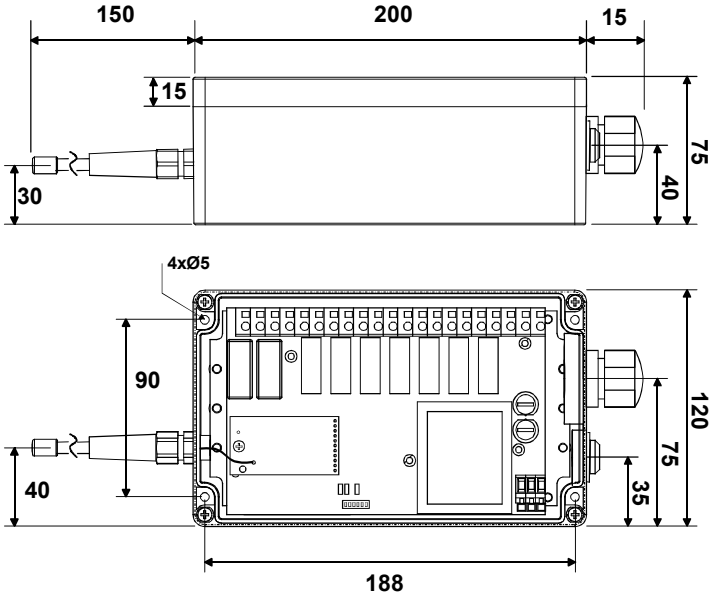
- Module IR / IR module / IR-Modul *UDF*





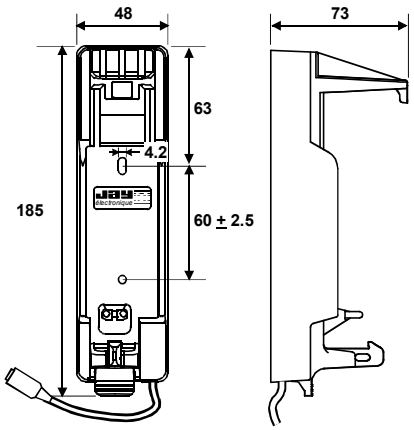
- Equerre de fixation (livrée avec le Module UDF)
- Mounting bracket (supplied with module UDF)
- Befestigungswinkel (mit UDFgeliefert)

- Récepteur / Receiver / Empfänger *URR*



- Support chargeur industriel/Industrial charger support/Industrielles Ladegerät *URCI-B*

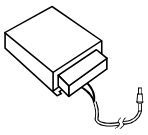
- Adaptateurs/power supply adapter/Spannungsadapter *UCC•*



UCCU

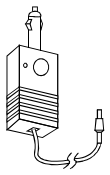
(100-240VAC/5VDC prises euro. UK/ euro.UK plugs / Euro.UK Steckern)

UCC4

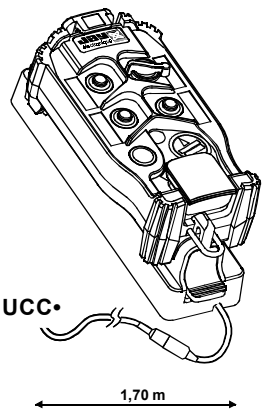


(24VDC/5VDC rail DIN / DIN rail / DIN Schiene)

UCC1

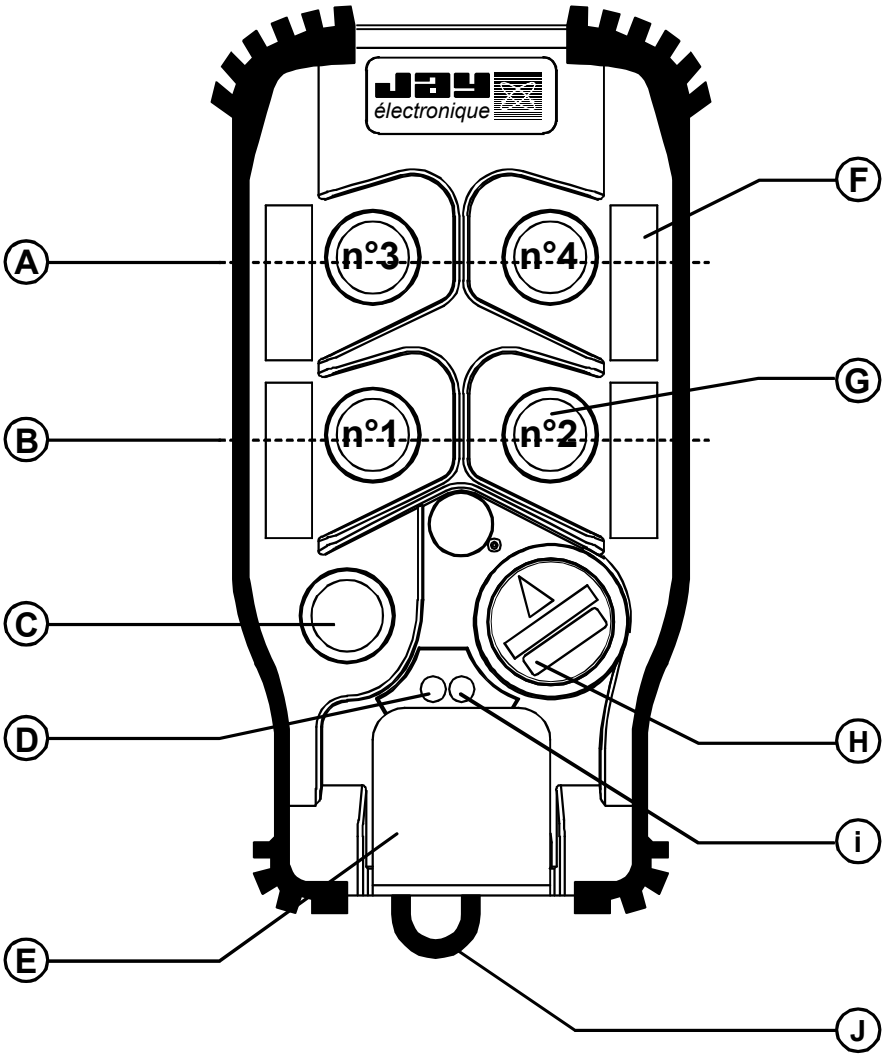


(12-24VDC/6VDC prise véhicule / vehicle plug / Fahrzeugsteckdose)



Annexe / Appendix / Anhang B

Emetteur URE
URE transmitter
Sender URE



Français

- **A-** Rangée de bouton n°2
- **B-** Rangée de bouton n°1
- **C-** Bouton poussoir vert "Marche/ Klaxon"
- **D-** Voyant orange "phase initialisation émetteur (2s)" / "niveau batterie" / "diagnostic"
- **E-** Bouton d'arrêt coup de poing
- **F-** Etiquette de fonction
- **G-** Boutons de fonction (n°1 à n°4)
- **H-** Clé électronique
- **i-** Voyant vert "marche" / "diagnostic"
- **J-** Anse pour sangle bandoulière ou clip de portage

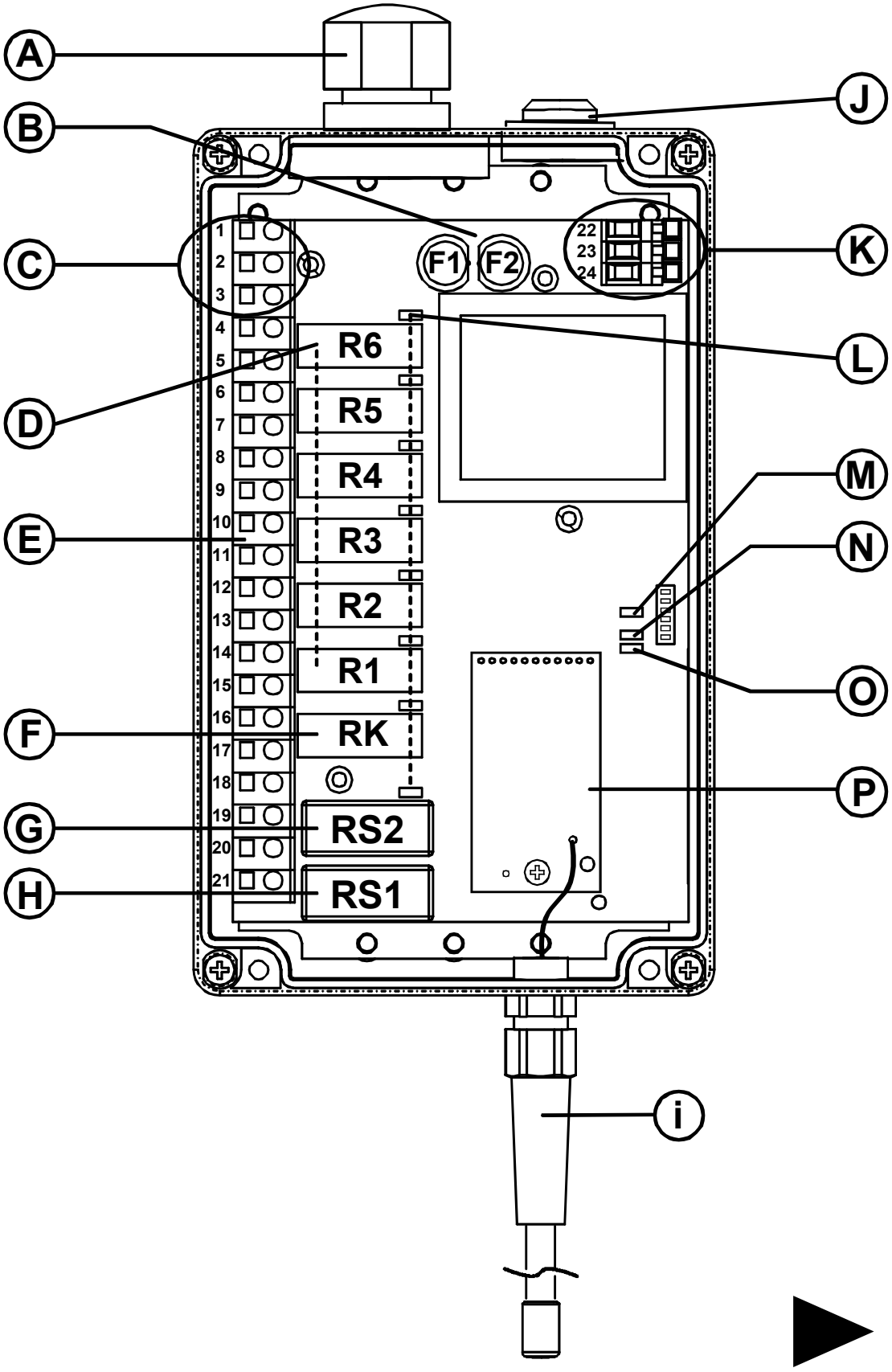
English

- **A-** Button row n°2
- **B-** Button row n°1
- **C-** "On/Horn" green button
- **D-** Orange indicator light (battery charge level + diagnostic)
- **E-** Stop palmswitch button
- **F-** Function label
- **G-** Function buttons (n°1 à n°4)
- **H-** Electronic key
- **i-** Green indicator light (ON + diagnostic)
- **J-** Ring for shoulder strap or carrying clip

Deutsch

- **A-** Tastenreihe Nr. 2
- **B-** Tastenreihe Nr. 1
- **C-** Grüne Drucktaste "Ein/Hupe"
- **D-** Orange Kontrolleuchte "Initialisierungsphase des Senders 2 sekunden"/"Batteriezustand"/ "Diagnose"
- **E-** Notaustaste
- **F-** Funktionsetikett
- **G-** Funktionstasten (Nr.1 bis Nr.4)
- **H-** Elektronischer Schlüssel
- **i-** Grüne Kontrolleuchte "Ein"/ "Diagnose"
- **J-** Öse für Tragegürtel oder Gürtelclip

Récepteur URR
URR receiver
Empfänger URR



Annexe / Appendix / Anhang C

Français

A- Presse étoupe "Commande"
B- Fusibles
C- Bornier "Alimentation"
D- Relais de commande
E- Bornier des relais "commande", "RK" et "Sécurité"
F- Relais "Marche/Klaxon" RK
G- Relais sécurité n°2 RS2
H- Relais sécurité n°1 RS1
i- Antenne (à monter à la livraison voir chapitre installation et recommandations)
J- Passage "Alimentation+Module IR"
K- Bornier "Module IR"
L- Voyants rouges états des relais
M- Voyant vert "Alimentation URR"
N- Voyant rouge "Code d'identité erroné"
O- Voyant vert "Liaison radio"
P- Tuner radio

Borniers du récepteur URR	
Numéro de borne	**Fonction**
1	Neutre ou 0 v
2	115 VAC ou 24 VAC ou 24 VDC *
3	230 VAC ou 48 VAC ou 12 VDC *
4 - 5	Relais de fonction R6
6 - 7	Relais de fonction R5
8 - 9	Relais de fonction R4
10 - 11	Relais de fonction R3
12 - 13	Relais de fonction R2
14 - 15	Relais de fonction R1
16 - 17	Relais "Marche/Klaxon" RK
18 - 19	Relais de sécurité n°2 RS2
20 - 21	Relais de sécurité n°1 RS1
22	Bornier pour option démarrage par validation IR, Module UDF - Fil blanc
23	Bornier pour option démarrage par validation IR, Module UDF - Fil bleu
24	Bornier pour option démarrage par validation IR, Module UDF - Fil noir

* = suivant version du récepteur URR

English

A- Cable gland "Control"
B- Fuses
C- Power supply terminal strips
D- Control relay
E- "Control" relay terminal strip, "RK-Horn" and "Safety"
F- "On/Horn" RK relay
G- Safety relay n°2 RS2
H- Safety relay n°1 RS1
i- Antenna (to be assembled at delivery - see chapter "Installation and recommendations")
J- "Power supply + IR module" path
K- "IR module" terminal strips
L- Red indicator light (relay states)
M- Green indicator light (Power)
N- Red indicator light (wrong identity code + diagnostic)
O- Green indicator light (Radio link established + diagnostic)
P- Radio tuner

URR Terminal strips	
Terminal number	**Function**
1	Neutral or 0V
2	115 VAC or 24 VAC or 24 VDC *
3	230 VAC or 48 VAC or 12 VDC *
4 - 5	Function relay R6
6 - 7	Function relay R5
8 - 9	Function relay R4
10 - 11	Function relay R3
12 - 13	Function relay R2
14 - 15	Function relay R1
16 - 17	"On/Horn" relay RK
18 - 19	Safety relay n°2 RS2
20 - 21	Safety relay n°1 RS1
22	Terminal strips for Infrared startup option (IR), UDF Module - White wire
23	Terminal strips for Infrared startup option (IR), UDF Module - Blue wire
24	Terminal strips for Infrared startup option (IR), UDF Module - Black wire

* = depending on URR version

Deutsch

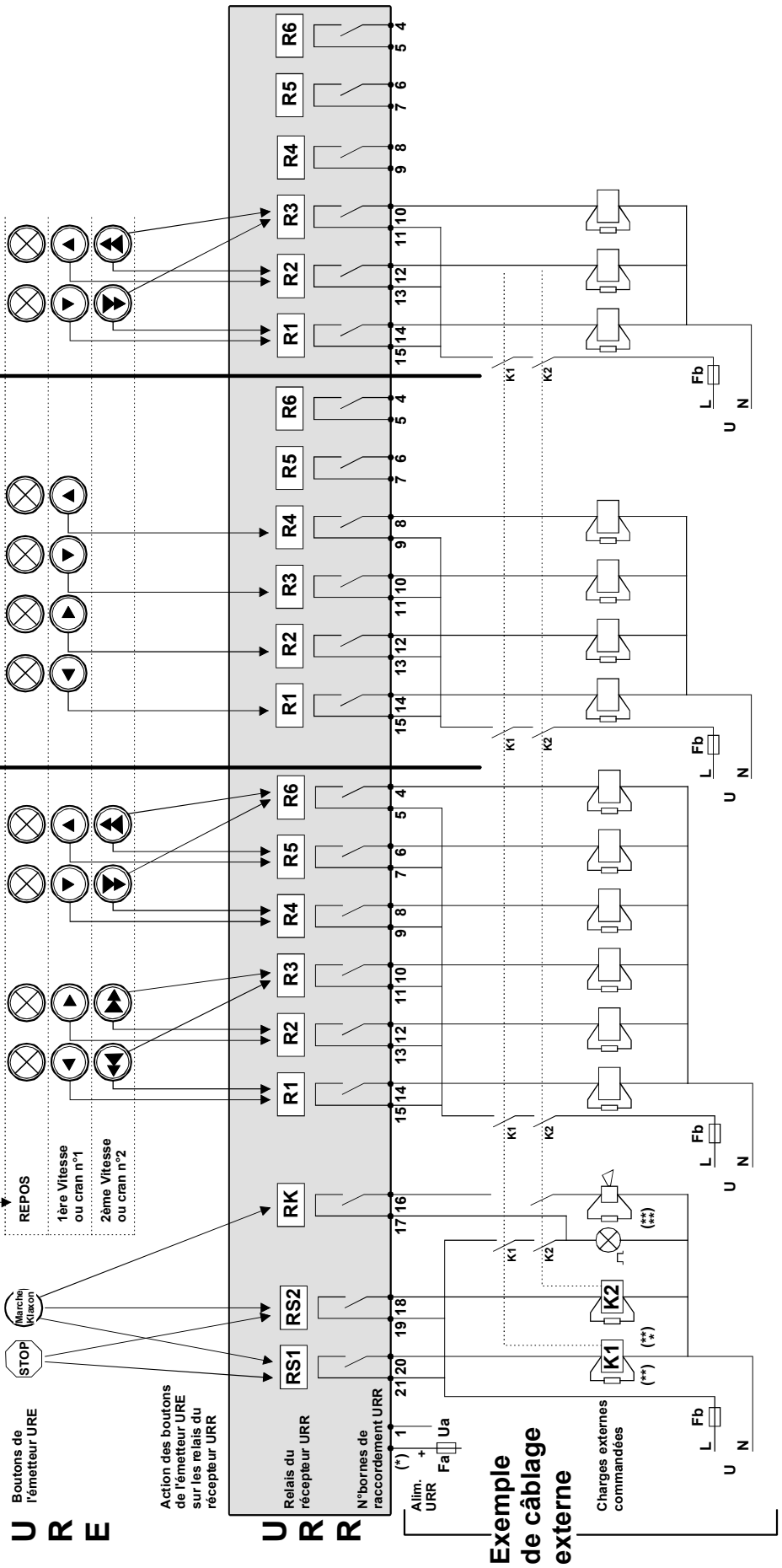
A- PG-Verschraubung "Steuerung"
B- Sicherungen
C- Anschlussklemmen "Stromversorgung"
D- Steuerrelais
E- Anschlussklemmen "Steuerung", "RK" und "Sicherheit"
F- Relais «Ein / Hupe» RK
G- Sicherheitsrelais n°2 RS2
H- Sicherheitsrelais n°1 RS1
i- Antenne (bei der Lieferung einzubauen. Siehe Kapitel “Installationsempfehlungen”)
J- PG-Verschraubung "Stromversorgung oder IR modul"
K- Anschlussklemmen des "Moduls IR"
L- Rote Kontrolleuchten "Relaiszustand"
M- Grüne Kontrolleuchte "Stromversorgung"
N- Rote Kontrolleuchte "Falscher Identitätscode"
O- Grüne Kontrolleuchte "Funkverbindung hergestellt"
P- Tuner Radio

Anschlussklemmen Empfänger URR	
Ansch. Nr-	**Funktion**
1	Nulleiter oder 0 v
2	115 VAC oder 24 VAC oder 24 VDC *
3	230 VAC oder 48 VAC oder 12 VDC *
4 - 5	Steuerrelais R6
6 - 7	Steuerrelais R5
8 - 9	Steuerrelais R4
10 - 11	Steuerrelais R3
12 - 13	Steuerrelais R2
14 - 15	Steuerrelais R1
16 - 17	"Ein/Hupe" Relais RK
18 - 19	Sicherheitsrelais Nr.2 RS2
20 - 21	Sicherheitsrelais Nr.1 RS1
22	Anschlussklemmen option "IR-Startfreigabe", Module UDF - Weißes Kabel
23	Anschlussklemmen option "IR-Startfreigabe", Module UDF - Blaues Kabel
24	Anschlussklemmen option "IR-Startfreigabe", Module UDF - Schwarzes Kabel

* = je nach Empfängermodell

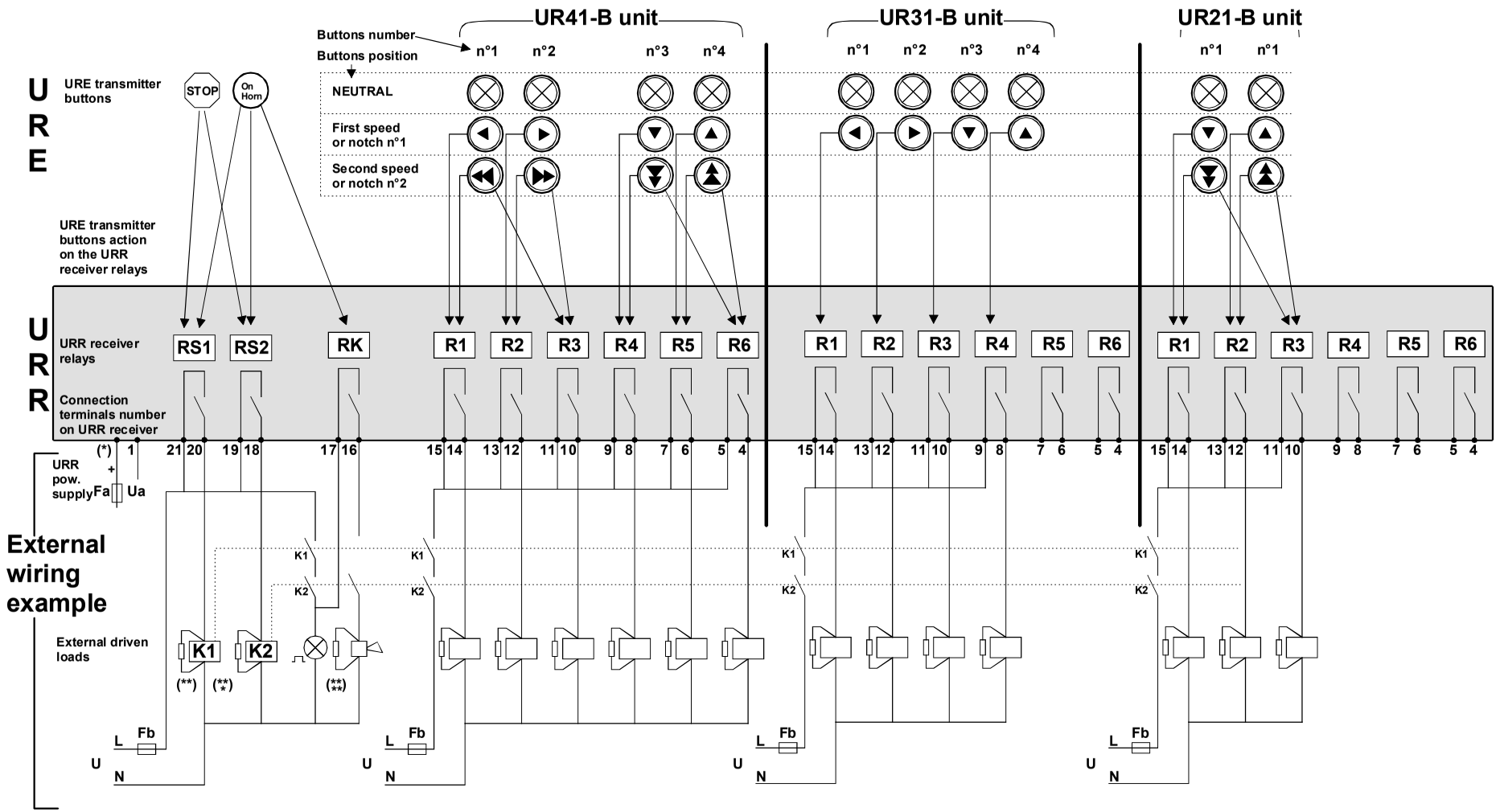
Français

Schéma de câblage pour ensembles standards



(*)= Le raccordement de l'alimentation dépend du modèle de récepteur et de l'alimentation souhaitée.
(bornes 2 - 1 pour les alimentations 24VDC, 24VAC, 115VAC ou 3 - 1 pour les alimentations 12VDC, 48VAC, 230VAC)
(**)= L'utilisation de circuits limiteurs de surtension augmente la durée de vie des contacts des relais (ex: circuits RC en AC, diodes+Zener en DC etc...)
(**)= K1 et K2 sont des contacteurs à contacts guidés
(**)= Eléments signalant le démarrage de l'équipement radiocommandé (Ex: Klaxon, feu tournant / flash, etc...)

Les relais de sécurité RS1 et RS2 sont enclenchés par le bouton "Marche/Klaxon", puis auto-maintenus jusqu'à appui sur le bouton d'arrêt coup de poing "STOP" (arrêt actif) ou déclenchement par perte de réception radio (arrêt passif).

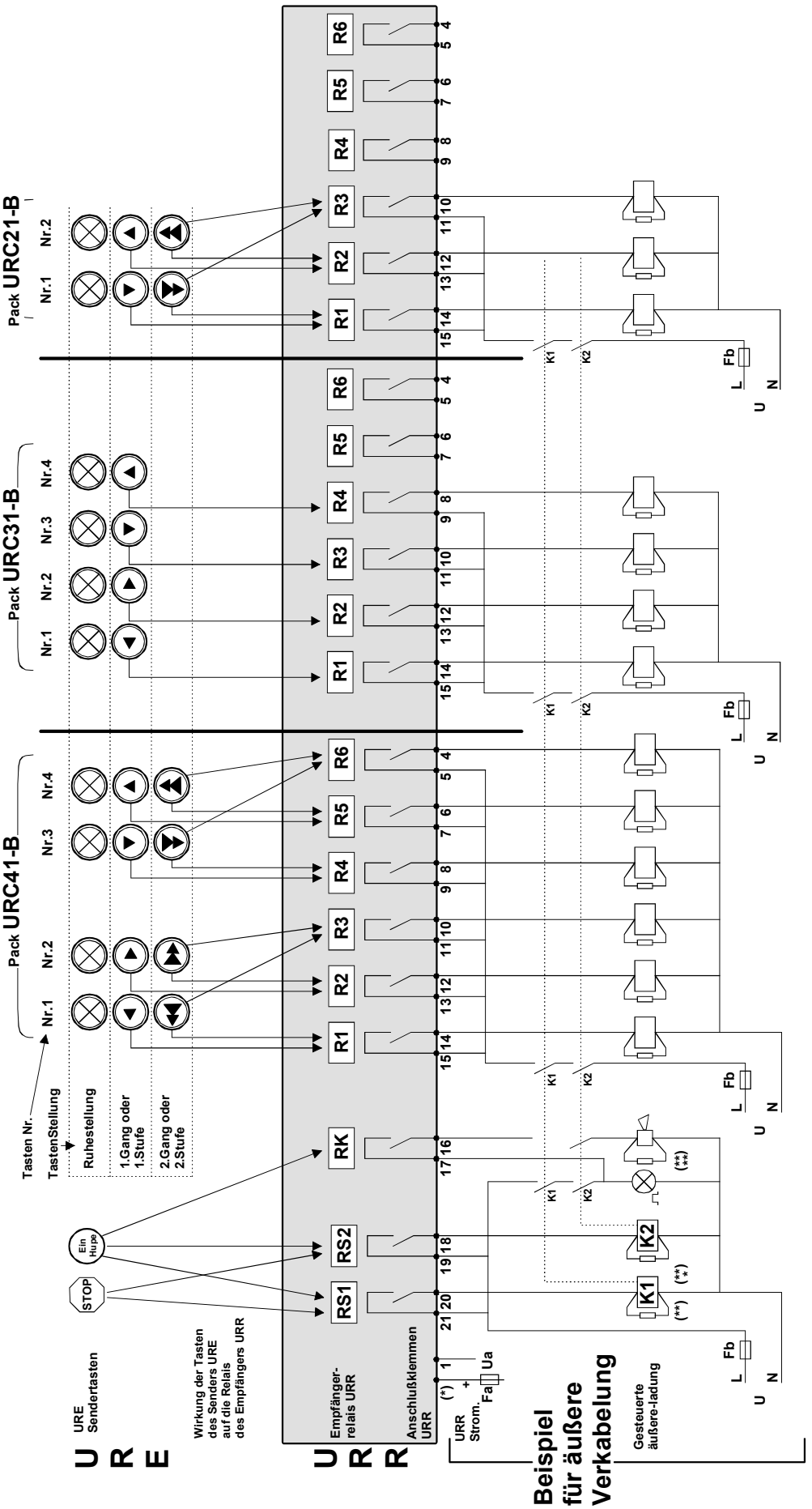


(*)= The power supply connection depends on the type of receiver and the power supply required
(terminals 2 - 1 for power supplies 24VDC, 24VAC, 115VAC or 3 - 1 for power supplies 12VDC, 48VAC, 230VAC)
(**)= Relay life is increased by the use of surge limiters (ex: RC network for AC, Zener + diodes for DC etc...)
(***)= K1 and K2 contactors must have guided contacts
(****)= Elements wich indicate start of remote controlled machines (ex: horn, rotating / flashing light etc...)

Safety relays RS1 and RS2 are switched "on" by the pushbutton "ON / Horn", and hold in position until the stop palmswitch is pressed (active shutdown) or until the loss of the radio transmission (passive shutdown).

Deutsch

Verkabelungsplan für den Standardpack



(*) = Der Anschluß der Stromversorgung hängt vom Empfängermodell und der gewünschten Stromversorgung ab.
(Anschlußklemmen 2 - 1 für die Versorgungsspannungen 24VDC, 24VAC, 115VAC oder 3 - 1 für 12VDC, 48VAC, 230VAC)

(**)= Die Benutzung von Überspannungsschutzkreisen erhöht die Lebensdauer der Relaiskontakte (Bsp. : RC-Kreise mit AC, Dioden + Zener mit DC, etc.

(**)= K1 und K2 sind Schütze mit Leitkontakten

(**)= Elemente, die das Starten der funkfergesteuerten Ausrüstung anzeigen (Bsp. : Hupe, Blitzlampe, usw.)

Die Sicherheitsrelais RS1 und RS2 werden mit dem Schalter "Ein/Hupe" ausgelöst und selbstständig bis zu Betätigen des Notausknopfs "stop" (aktive Abschaltung) beibehalten oder Auslösen durch Sendeverlust (passives Abschalten).

Annexe / Appendix / Anhang E

- Changement de la batterie URE
- Changing URE battery
- Austausch der Batterie URE

Ref. : **PR0248**

•**Boitier URE ouvert**
•**URE housing opened**
•**Geöffnetes URE-Gehäuse**

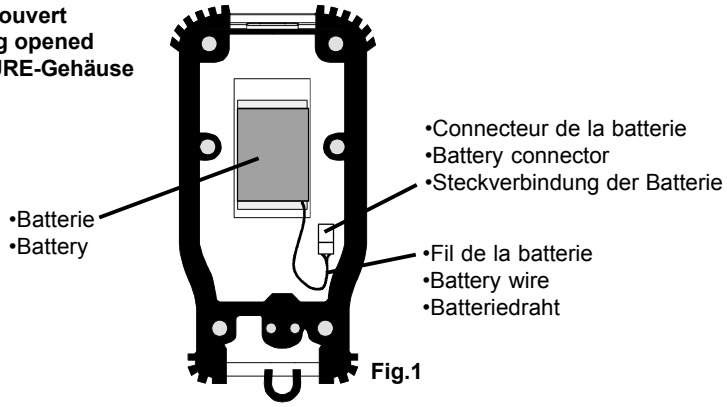


Fig.1

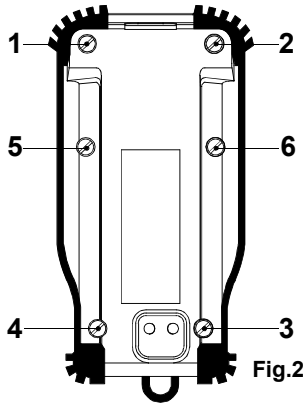


Fig.2

Français

Veuiller procéder au changement de la batterie sur un poste de travail comportant des protections vis à vis des décharges électrostatiques (conducteur+bracelets) afin d'éviter d'endommager l'electronique interne de l'émetteur.

1. Mettre hors tension le récepteur URR associé à l'émetteur URE.
2. Appuyer sur le bouton d'arrêt coup de poing de l'émetteur.
3. Oter la clé électronique du boitier de l'émetteur.
4. Retourner l'émetteur et dévisser les 6 vis de son boitier en utilisant un tournevis à lame plate 5mm.
5. Ouvrir le boitier de l'émetteur (Fig.1)
6. Déconnecter la batterie usagée.
7. Connecter la nouvelle batterie.
8. Observer la position correcte de la batterie qui doit se loger dans le renforcement du couvercle.
9. Refermer le boitier en prenant soin de ne pas pincer les fils de la batterie.
10. Visser les vis du couvercle dans l'ordre (Fig.2), afin d'assurer une bonne étancheité.
11. Remettre en place la clé électronique sur l'émetteur.
12. Lors des essais, la protection des personnes doit être assurée.

English

This procedure should be performed at a workstation equipped with electrostatic discharge protection equipment (conductor + bracelets) to avoid damage to the internal electronics of the transmitter.

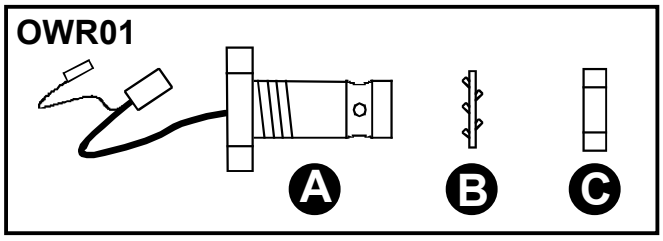
1. Switch off the receiver URR associated to the transmitter URE.
2. Press the stop palmswitch button on the transmitter.
3. Remove the electronic key from the transmitter unit.
4. Turn over the transmitter and remove the 6 screws from its housing using a 5mm flat tip screwdriver.
5. Open the transmitter housing (Fig.1).
6. Disconnect the old battery.
7. Connect the new battery.
8. Ensure the battery is correctly positioned; the battery should engage in the recess in the cover.
9. Ensure the seal and its bearing surface are clean and close the housing taking care not to pinch the battery wires.
10. Secure the covers with its screws in order (Fig.2) to ensure proper tightness.
11. Reinstall the electronic key on the transmitter.
12. When performing tests, ensure safety of all persons.

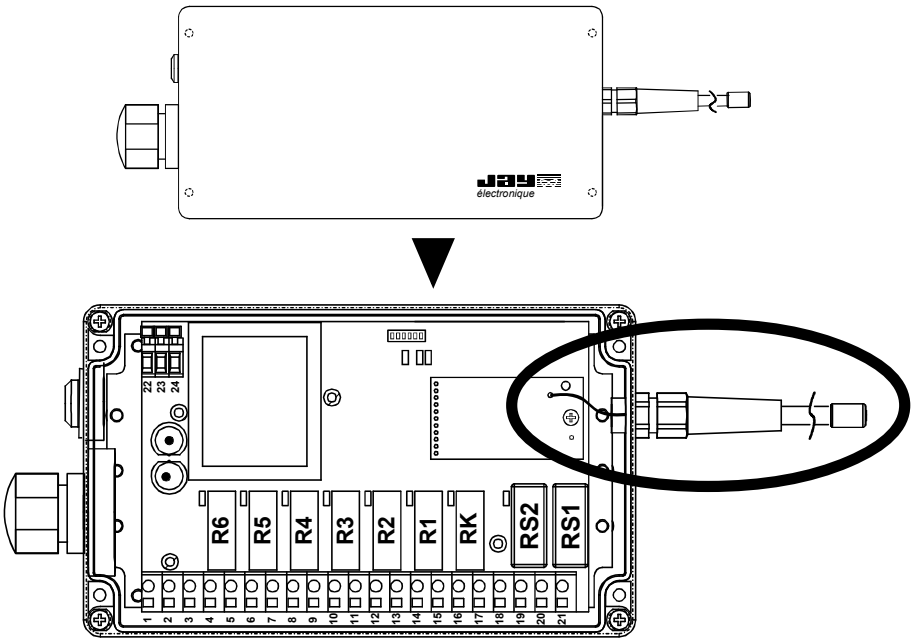
Deutsch

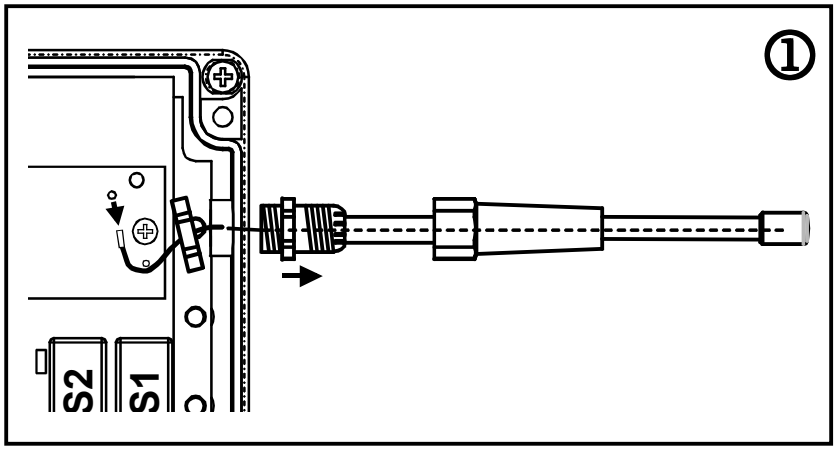
Die Batterie nur an einem Arbeitsplatz austauschen, der gegen elektrostatische Entladungen (Leiter + antistatische Armbänder) geschützt ist, um die Beschädigung der elektronischen Bestandteile des Senders zu vermeiden.

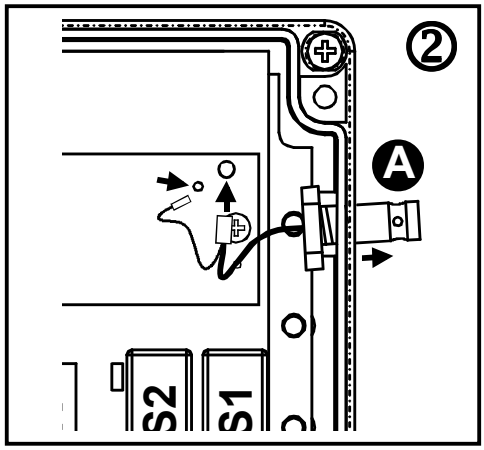
1. Den zum Sender URE gehörigen Empfänger URR ausschalten.
2. Auf die Notaustaste des Senders drücken.
3. Den elektronischen Schlüssel vom Sendergehäuse abnehmen.
4. Den Sender umdrehen und die 6 Schrauben des Gehäuses mit einem flachen Schraubenzieher 5 mm lösen.
5. Das Sendergehäuse öffnen (Fig.1).
6. Die verbrauchte Batterie abnehmen.
7. Die neue Batterie anschließen.
8. Auf den richtigen Sitz der Batterie achten, die in die Deckelverstärkung passen muss.
9. Auf die Sauberkeit der Dichtung und der Auflagefläche achten und das Gehäuse schließen. Darauf achten, dass der Batteriedraht nicht gequetscht wird.
10. Die Deckelschrauben in folgender Reihenfolge zum Gewährleisten einer guten Dichtigkeit festziehen (Fig.2).
11. Den elektronischen Schlüssel wieder auf dem Sender anbringen.
12. Bei Versuchen muss der Personenschutz gewährleistet sein.

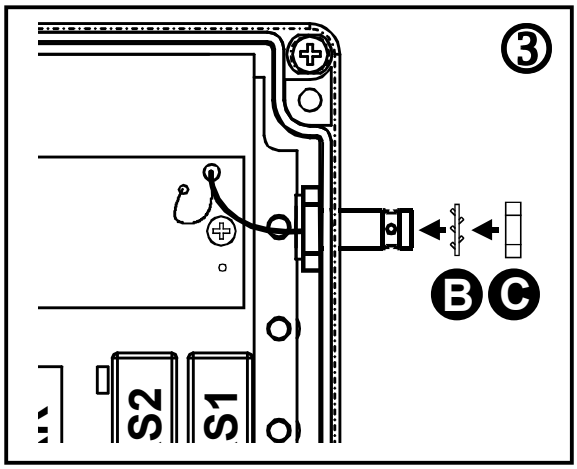
Ref. : OWR01
Kit antenne externe
External antenna kit
Abnehmbare Antenne BNC Kit

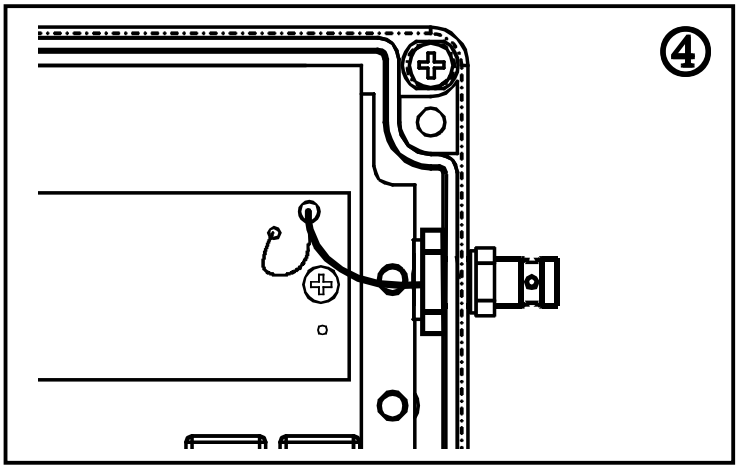












Déclaration de conformité CE
Declaration of conformity CE
Konformitätserklärung CE

(Available in English at :
Verfügbar auf deutscher Sprache :
www.jay-electronique.fr)

DECLARATION CE DE CONFORMITE

Le fabricant :

JAY électronique
176 rue Lavoisier
MONTBONNOT SAINT MARTIN
38334 ST ISMIER Cedex
FRANCE

Déclare que la télécommande décrite dans sa notice d'instructions et désignée ci-dessous :

URE / URR

est conforme

- Aux dispositions de la Directive Européenne du conseil du 22 Juin 1998, concernant le rapprochement des législations des états membres, relatives aux machines (98/37/CE du 22 Juin 1998) avec référence particulière à l'annexe I de la Directive 98/37/CE concernant les exigences essentielles de sécurité et de santé, relatives à la conception et à la construction des machines et des composants de sécurité.
    - A la Norme EN 954-1 (1995) concernant les exigences essentielles de santé et de sécurité dans la conception et la fabrication des machines pour la catégorie 3.
    - A la Norme EN 60204-32 (1999) concernant la sécurité des machines; équipement électrique des machines; Part 32 : exigences pour les équipements de levage.

Pour sa fonction « arrêt prioritaire de sécurité »

- Aux dispositions de la Directive européenne du conseil du 9 Mars 1999, concernant le rapprochement des législations des états membres, relatives aux équipements hertziens et terminaux de télécommunications (99/5/CE du 9 Mars 1999) avec référence particulière à:

  - l'article 3.1 a concernant les exigences de protection de la santé et de la sécurité, avec référence à la norme EN60947-5-1 (05/1999)

  - l'article 3.1 b concernant les exigences de protection en ce qui concerne la compatibilité électromagnétique, avec référence à la norme ETS EN 301 489-1/3(2002-08).

- - l'article 3.2, concernant les exigences en matière de bonne utilisation du spectre radioélectrique de façon à éviter les interférences dommageables avec référence à la norme. EN 300 220-1 (2000-09).

A ce titre, l'organisme notifié n°0573:

AEMC Lab
19, rue François Blumet
ZI de l'Argentière
38330 SASSENAGE

a examiné le dispositif Emetteur Récepteur susmentionné selon l'examen CE de type n° R0302034C1-E et l'examen R0302034C2-E pour la conformité à la norme EN 301 489-1/3, et les examens CE n° N#R0302034R1-E-C et N#R0302034R-E-C pour la conformité à la norme EN 300 220-1.

Signataire :

Nom	:	M.Givois
Fonction	:	Responsable Technique
Lieu et Date	:	Grenoble, le 17/06/2003

Signature

318291

Améliorons ensemble ce manuel d'installation et d'utilisation !

We can improve this manual with your assistance !

Helfen Sie uns bei der Verbesserung des Installations- und Benutzerhandbuchs !

Informations personnelles / Personal information / Persönliche Angaben:

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Société **Company** **Gesellschaft**	
Adresse **Address** **Adresse**	
Ville **City** **Stadt**	
Code postale **Post code** **Postleitzahl**	
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•Please send us this form completed either by post or by fax at:
•Bitte schicken Sie uns diese Seite per Fax oder per Post an folgende Adresse:

JAY Electronique
Service documentation - ***Eric DECHAME***
ZAC la Bâtie, rue Champrond
F38334 SAINT ISMIER cedex

Fax : +33.(0)4.76.41.44.44

«MERCI ! / THANKS ! / DANKE !»

NOTES :

NOTES :

Realisation JAY 323245H-revision02-FR-EN-DE.P65 11.02.10 E.D.

ZAC la Bâtie, rue Champrond
F38334 SAINT ISMIER cedex
✆ +33 (0)4 76 41 44 00 - 🖷 +33 (0)4 76 41 44 44
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