BASE ENGINEERING

INSTALLATION & OPERATION

RADIO REMOTE CONTROL SYSTEM

ProControl
Model RVC400

FCC ID: N8K-4401B

DRAFT COPY

READ THIS FIRST

We all know how painful it is to read equipment manuals. In the interest of satisfying the novelty of "hooking it up and trying it out" without going through the entire manual first, we have provided a short "minimal" connection system to try it out;

1) Connect a 12 volt power supply to the receiver at the power supply pigtail-see picture for what connection is a +12V and what is Gnd. Be sure it's correct before you turn the power on!

2) Hook nothing else up to the receiver.

3) Turn the 12V power on – the led indicator beside the setup button should blink once then go out.

4) Press the set-up button 5 times in a row – not too fast – about 2 times a second. The led should blink 5 times and go out.

5) Take the transmitter and press any button on it – the corresponding led beside the relay channel on the circuit board should light up – the relays are the little white blocks on the circuit board – the red indicator LED's are close to each of them.

THAT'S IT! – You have just taught the receiver to work with the transmitter and can operate the channels in momentary mode. There's a lot more you can do but … you guessed it … you will have to read the manual.

Thanks very much for purchasing this ***BASE*** Engineering remote control system.

Setting Operation Mode for Each Channel

Each channel of the receiver can be programmed to operate in one of four modes;

1) Momentary
2) Latched
3) Emergency Latched
4) Safety Timer Momentary

Momentary

The output channel on the receiver is activated ONLY when the corresponding transmitter button is depressed. This operation is similar to a momentary push-button; push to activate, release to de-activate.

Latched

The output channel on the receiver is changed from deactivated to activated when the corresponding button is pressed on the transmitter. Once the transmitter button is released, the channel remains activated on the receiver. Pressing the button a second time and releasing it on the transmitter causes the receiver channel to change from activated to de-activated. This operation is similar to a push-on, push off switch. Push once to activate, push again to deactivate.

Emergency Latched

The output channel on the receiver is changed from deactivated to activated when the corresponding button on the transmitter is pressed. Pressing the button on the transmitter and releasing it further will have no effect – the channel on the receiver will remain activated. The only way to deactivate the channel on the receiver is to press the reset button on the RECEIVER unit. This operation is similar to a kill button on a piece of machinery – once the button is pressed the machine will be immediately stopped, but releasing and pressing the button again has no effect.

Safety Timer Momentary

The output channel on the receiver operates identically as the momentary operation with one exception – if the transmitter button is pressed continuously for longer than 30 seconds, the receiver unit will automatically deactivate the channel. To activate the channel for longer than 30 seconds, the button on the transmitter must be momentarily released and then re-pressed again at least once every 30 seconds. This operation is commonly used for a “smart dead-man” operation. It allows the unit to be used as a dead-man switch but with the added feature that a bypassed switch (i.e. button permanently forced closed) will not allow the system to operate indefinitely.

Programming Each Channel's Operation Mode

Each channel can be individually set to operate in one of the four modes described earlier. The programming operation involves removing the cover on the receiver unit and pressing a set-up button on the internal circuit board several times while watching the red led indicator.

Steps to program each channel;

1) Turn power off to the receiver unit.

2) Remove the cover of the receiver unit and locate the set-up push button on the internal circuit board as well as the indicator led beside it. This button is used to program all internal settings in the receiver.

3) Turn power on to the receiver unit – watch that the indicator led blinks once – this indicates that the receiver is functioning properly. Once you have started the programming operation if you lose track of your place in the sequence, turn the power off and then on again to start the operation over.

4) Press the set-up button 10 times in a row – not too slow – about 2 times a second. Once the button has been pressed 10 times in a row – watch the led indicator. It should blink 10 times, repeat the 10 presses again.

5) Once the led has blinked 10 times, the receiver unit is now waiting for the channel number. Press the button the number of times corresponding to the channel you wish to set. For example, one press for channel 1, two presses for channel 2.

6) The led will blink the number of times to verify that you have selected the correct channel. If you have not selected the proper channel or lose track of how many times you have pressed the button, turn the power off and then on again and start from the first step above.

7) Now that the channel has been selected, the operating mode for this channel will be set. Press the button the number of times below for the mode of operation desired for the channel – see elsewhere in the manual for a description of these modes of operation;

   1 Press -Channel will be momentary operation
   2 Presses -Channel will be latched operation
   3 Presses -Channel will be emergency latched operation
   4 Presses -Channel will be momentary with 30's safety timer

8) The led will blink the number of times you have pressed the button and then will go out. The programming of the channel operation mode is now complete.

NOTE:
While each channel can be set for emergency latched operation, there is only one reset button that is connected to the receiver. If more than one channel is set for emergency latched operation all will be de-activated when the reset button is pressed.

All programmed settings are not lost when the power is turned off to the unit and will be active the next time the receiver is powered up again.

ID CODES

There are no switches in either the receiver or transmitter units that are set an “ID” code between the pair. All transmitters have a unique signature code of ID that is factory set and cannot be changed. In order for a transmitter to operate a receiver, the receiver has to “learn” the proper code of the transmitter. It is also possible to clear the ID code in the receiver so that any transmitter will operate the receiver.

Teaching the Receiver A Transmitter ID Code

Each transmitter unit contains a unique serial number or “ID Code” that is set at the factory and cannot be altered in the field. In order that a transmitter can operate a particular receiver unit, the receiver unit must first “learn” the transmitter’s ID Code so that it will respond to commands from that transmitter.

If a transmitter is used that has not been “learned” by the receiver, the receiver will not function with that transmitter. To teach a receiver the ID code of a transmitter, follow the steps below;

1) Turn power off to the receiver.

2) Remove the cover of the receiver unit and locate the set-up pushbutton on the internal circuit board as well as the indicator led beside it. This button is used to program all internal settings in the receiver.

3) Turn power on to the receiver – watch that the indicator led blinks once – this indicates that the receiver is functioning properly.

4) Press the set-up button 5 times in a row – not too slow – about 2 times a second. Once the button has been pressed 5 times in a row – watch the led indicator. It should blink 5 times to indicate it is now waiting for a transmitter to learn.

5) Take the transmitter that is to be used with this receiver and press any button on it for 2 seconds or more.

6) This completes the learning process. The ID of this transmitter is stored in memory in the receiver and will not be lost when the power is turned off. The above process can be repeated whenever a new or different transmitter is to be used with the receiver. Only one transmitter at a time can be used with the receiver.

Clearing ID Setting In Receiver

Once the receiver has learned the transmitter, it will not operate with any other transmitters. It is possible to set the receiver to recognize ALL transmitters by clearing the ID settings that has been programmed into it. To clear the ID setting in the receiver;

1) Turn power off to the receiver.

2) Remove the cover of the receiver unit and locate the set-up pushbutton on the internal circuit board as well as the indicator led beside it. This button is used to program all internal settings in the receiver.

3) Turn the power on to the receiver – watch that the indicator led blinks once- this indicates that the receiver is functioning properly.

4) Press the set-up push button 15 times in a row – not too slow – about 2 times a second. Once the button has been pressed 15 times in a row – watch the led indicator. It should blink 15 times to confirm that it is clearing the ID in memory.

5) This completes the clearing ID process – all transmitters will now operate this receiver.

Clearing All Programmed Settings to Factory Settings

To clear all programmed settings in the receiver to the factory-set values, proceed as follows;

1) While pressing and holding the button down, turn the power to the receiver unit on.
2) Wait until the red LED on the circuit board blinks 3 times and then release the button.
3) The receiver settings have now been erased and replaced with the factory values.

Factory Settings

Channel 1 - Momentary
Channel 2 - Momentary
Channel 3 - Momentary
Channel 4 - Momentary

ID - All transmitters will operate this receiver

Programming Operation Summary

Learn New Transmitter ID: Push 5x – wait 5 blinks Press Transmitter for 2 Seconds	**Clear ID Setting:** Push 15x – wait 15 blinks Receiver Accepts All Transmitters
Set Channel Operation Mode: Push 10x – wait 10 blinks Push Channel # - Wait # blinks Push Mode # - Wait # blinks Mode 1 = Momentary Mode 2 = Latched Mode 3 = Emergency Latched Mode 4 = Safety Timer Momentary	**Reset To Factory Settings:** Turn Power Off Press & Hold Learn Button Turn Power On – Wait 3 blinks Release Learn Button ID = Cleared Channel 1/2/3/4 = Momentary

Receiver Connections;

Emergency Latch Reset Button

An emergency latch reset button is used to unlatch all channels that have been programmed as emergency latched operation. The switch should be a normally open, momentary pushbutton type SPST (Single pole single throw). It is wired into the terminal block as shown in the receiver diagram.

Channel Connections

Each channel output is a dry-relay contact capable of 10 amps maximum. Connections provided to the relay on a three position terminal block for each of the four channels. One connection is the common terminal, the other two are normally closed and normally open – these are indicated on the circuit board beside each terminal block.

Fuses for Channels

Each relay output channel has a fuse position for a standard “auto-fuse” to be inserted. Provide a fuse for each channel based on the current expected to operate the devise connected to the relay but under no circumstances – DO EXCEED 10 AMPs ON EACH CHANNEL.

Power Supply

The power supply connections are provided on a two position terminal block shown in the diagram. Note +12 and Gnd carefully – a power supply switch if required must be provided external from the receiver unit.

Fuse for Power Supply

A standard “autofuse” fuse is located on the circuit board for the power that is routed to the electronics (power through the relays is fused separately – see earlier description). This fuse is to be 1 Amp – DO NOT EXCEED THIS VALUE OF FUSE FOR THE POWER SUPPLY.

Important – Information on Fuses

Fuse Information

Fuses used in the receiver are standard “Auto-Fuse” type, commonly available at many auto/truck supply centers.

Example: Manufacturer: **Littlefuse**
Type: **Low Voltage Autofuse Fuse Fast Acting Type ATO 257**

Example P/N: 257 010 (Type 257 Fuse – 10 Amp Rating)

Fuse Sizes:

There are five fuse sockets on the receiver circuit board – one for each of the output circuits of the relays plus one socket for the fuse that protects the electronic circuits.

Electronic Circuits on Receiver Circuit Board: **1 AMP**

Relay Output Circuits Connected to External Equipment: **10 Amp Maximum**

NOTE:
The size of fuse that will be used in these depends on what is being controlled by the relay contacts. Under no circumstances DO NOT EXCEED 10 AMPS PER RELAY CONTACT CIRCUIT.

RVC 400R Receiver

FCC Declaration of Conformity

Compliance Information Statement

Name: Remote Valve Control Receiver

Model : RVC 400R

Manufacturer: Base Engineering
1714 Rothesay Road
Saint John, New Brunswick
Canada, E2H 2J4

Phone (506) 847-2273
Fax (506) 849-6559

Testing Laboratory: MPB Technologies Inc.
Unit 100
302 Legget Drive
Kanata, Ontario
Canada, K2K 1Y5

Phone (613) 599-6800

MPBT Report No. B20R1972

Compliance Statement:

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.