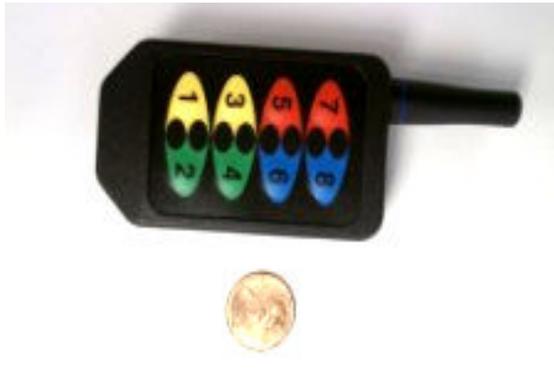


UX8P WIRELESS REMOTE CONTROL
COMPONENT LIST AND OPERATING MANUAL

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X8 Universal Controls Component List



X8T-0001 Transmitter



UX8P Receiver



X8T-0002 HD Aluminum, Rechargeable Transmitter with Standard Overlay (optional)



Lanyard



Left:
X8T-0001 Transmitter with
Optional Protective Boot

Wiring the UX8P Wireless Receiver

All 12 volt power sources used to power the receiver should be fused with a maximum 15 A fuse. If using the receiver to start/kill gasoline engines please consult factory for proper connectivity in order to protect the board and keep from voiding warranty. Use proper automotive type connection techniques to assure proper sealing/conductivity. Use the below charts for color codes depending on the application. There are two holes in the mounting flanges of the case of the receiver to use during mounting. Be careful not to over torque mounting fasteners and destroy plastic casing. Do not pierce the casing or destroy the seals with alternate mounting methods.

Receiver Wiring Codes for Feedbodies

Color Name	Function/Connection
Red	+12V
Black	Ground
Pink	Boom Up
Purple	Boom Down
Tan	Boom Left
Gray	Boom Right
White	Vertical & Boom
Green	Floor Trough
Blue	Not Used
Brown	Not Used

Receiver Wiring Codes for all others

Color Name	Function / Connection
Red	+12 V
Black	Ground
White	Button # 1
Green	Button # 2
Brown	Button # 3
Blue	Button # 4
Tan	Button # 5
Gray	Button # 6
Pink	Button # 7
Purple	Button # 8

UNIVERSAL CONTROLS X8T REMOTE CONTROL SETUP PROCEDURE

The X8T-0002 Heavy Duty Aluminum Transmitter does not require any set-up or programming, simply charge the unit and operate.

The X8T-0001 remote control is very versatile and can be set up for many different tasks. First, here are the key features to note for the discussion on setup:

- * For the transmitter and receiver to communicate they must “know” each other by a unique code stored in both units.
- * The transmitter code is one of millions which is generated randomly during setup. The probability of two or more transmitters having the same code is virtually zero.
- * The receiver “learns” up to 40 codes so up to 40 transmitters can work with one receiver. After the 41st code is learned the first one learned is discarded.
- * The transmitter can be set up to enable some or all of its 8 functions, so one transmitter may be able to operate all functions on a receiver and another transmitter only some functions on the same receiver.

Transmitter setup:

First make sure that the receiver has no power to it. Locate a small hole on the back of the transmitter. Insert the tip of a paper clip into the hole and depress the switch inside, then release. An LED near the hole will start blinking for about 20 seconds. During that time, press in any order the buttons for each function that you want to authorize for this transmitter. When the 20 seconds have elapsed the LED will stop blinking. The transmitter now has a new code and has stored the button authorizations.



Receiver setup:

The receiver goes into “learn” mode for 20 seconds every time power is applied. To set up a receiver for a new transmitter, disconnect power and then reconnect. Within 20 seconds, press any authorized button on the transmitter for about one second and then release. The receiver has now “learned” the transmitter code and is ready for operation after the 20 seconds have elapsed. Repeat the process (disconnect/reconnect power) for each additional transmitter that needs to work with this receiver.

Note: You will have to determine how to disconnect power (red wire) to the receiver. Since a fuse should be installed in this wire, simply removing and replacing the fuse will work well.

As an example of the versatility of the X8 consider the following practical situation:

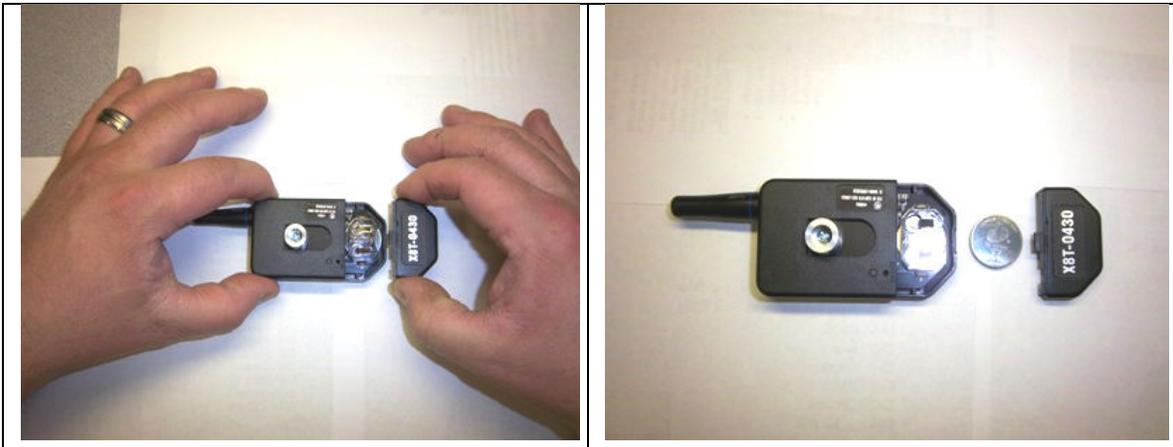
You set up five transmitters to each work with five different receivers. They can all work in radio range of each other without interfering with each other. You now set up a sixth transmitter to work as a “master” by having all five receivers “learn” the code for the new transmitter.

Problem: Two of the receivers are working close to each other. The “master” is operating both and you want it to only operate one of these two, but still operate the remaining three.

Solution: Set up the “master” again so that it has a new code. Have one of the two receivers learn the new code. When the master needs to be used with the other three receivers, have these also “learn” the new code as one of the 40 codes they can hold. The old “master” code still exists in the receivers but will never be used again because of the huge number of possible codes.

Changing the Battery

1. The Battery is located on the back side of the transmitter.
2. To remove the cover, place the transmitter button side down on a flat surface, gently press in the center of the cover to release, then pull the cover off with your thumb and forefinger.
3. Remove the battery by sliding it out in the same direction the cover came off
4. The battery is a part # CR2032
5. After the battery has been replaced the remote will have to be reprogrammed



X8PRO 8 CHANNEL FULLY PROPORTIONAL REMOTE CONTROL

Overview:

- Operates on 413 Mhz ISM Band (Industrial, Scientific, Medical)
- 300 feet line-of-sight range

Transmitters:

- Two types of transmitters - inexpensive disposable or Industrial strength rechargeable.
- Industrial transmitter good for days of heavy use before charging.
- Custom keyboard overlays are available even for small quantities.

Receiver:

- 12 volt operation.
- All 8 function outputs and unloader output use solid state drivers capable of 4 Amps.
- Outputs are overload and short circuit protected.
- Circuitry is totally encapsulated in epoxy for protection from the elements.
- Can operate in wet, dirty and high vibration environments.
- Optional output for forward/reverse control of a DC motor.

Proportional control:

The X8PRO uses a unique method of proportional control. Any function including the unloader can be programmed to be proportional. When a function is selected the output starts outputting a Pulse-Width-Modulated (PWM) signal at a preset minimum and then ramps up at a preset rate to a preset maximum.

Each function has its own set of values. This feature allows the operator to use just one button on the transmitter to, for example, swing a boom quickly close to where it needs to be and then by just tapping the button gently move the boom into precise position.

All of the 8 functions are programmable from a laptop or PC using the free X8PRO programming utility. (See X8PRO configuration utility guide)

Any of the 8 functions can be programmed as:

ESTOP
MOMENTARY
MOMENTARY - UNLOADER FULL ON
MOMENTARY - UNLOADER RAMPED
MOMENTARY - FUNCTION RAMPED
LATCHED
LATCHED TOGGLE
LATCHED TOGGLE - UNLOADER RAMPED (START MIN)
LATCHED TOGGLE - UNLOADER RAMPED (START LAST)
LATCHED TOGGLE - FUNCTION RAMPED (START MIN)
LATCHED TOGGLE - FUNCTION RAMPED (START LAST)

ESTOP:

Emergency stop. This function will turn off all latched outputs. Note that this is not a "true" Emergency Stop. Only killing power to the receiver and solenoids can insure no activation of any function. A main power switch MUST be installed.

MOMENTARY:

The function output is on while the function button is pressed and held. It turns off when the function button is released.

MOMENTARY - UNLOADER FULL ON:

The function output is on and the unloader is fully on when the function button is pressed and held. Both turn off when the button is released.

MOMENTARY - UNLOADER RAMPED:

The function output is on and the unloader output is ramped while the function button is pressed and held. Both turn off when the function button is released. Note that if a second MOMENTARY function is selected, whether programmed to RAMP or not, it will ramp at the same rate as the first function.

MOMENTARY FUNCTION RAMPED:

The function output and the unloader output are ramped while the function button is pressed and held. Both turn off when the function button is released. Note that if a second MOMENTARY function is selected, whether programmed to RAMP or not, it will ramp at the same rate as the first.

LATCHED:

The function output is on after a momentary press of the function button. The output will remain on until an ESTOP function button is pressed.

LATCHED TOGGLE:

The function output is on after a momentary press of the function button. The function will remain on until the same function button is pressed again, or an ESTOP function button is pressed.

LATCHED TOGGLE - UNLOADER RAMPED (START MIN):

The function output is on after a momentary press of the function button. The function will remain on until the same function button is pressed again, or an ESTOP function button is pressed, or another LATCHED TOGGLE function button is pressed. Once latched the #7 function will ramp the unloader UP and the #8 function will ramp the unloader DOWN. The ramping starts at the MIN set in the X8PRO File Utility.

LATCHED TOGGLE - UNLOADER RAMPED (START LAST):

The function output is on after a momentary press of the function button. The function will remain on until the same function button is pressed again, or an ESTOP function button is pressed, or another LATCHED TOGGLE function button is pressed. Once latched the #7 function will ramp the unloader UP and the #8 function will ramp the unloader DOWN. The ramping starts at the LAST speed set when the function was last toggled off.

NOTE: Turning off a TOGGLE RAMP FUNCTION with an ESTOP will NOT save the last setting.

LATCHED TOGGLE - FUNCTION RAMPED (START MIN):

The function is immediately ramped to the MIN set in the X8PRO File Utility after a momentary press of the function button. The function will remain active until the same function button is pressed again, or an ESTOP function button is pressed, or another LATCHED TOGGLE function button is pressed. Once latched the # 7 function will ramp the toggle function UP and the #8 function will ramp the toggle function DOWN. The unloader output will ramp along with the function.

LATCHED TOGGLE - FUNCTION RAMPED (START LAST):

The function is immediately ramped to the LAST speed set when the function was toggled off after a momentary press of the function button. The function will remain active until the same function button is pressed again, or an ESTOP function button is pressed, or another LATCHED TOGGLE function button is pressed.

Once latched the # 7 function will ramp the toggle function UP and the #8 function will ramp the toggle function DOWN. The unloader output will ramp along with the function.

NOTES ON USING TOGGLE RAMP FUNCTIONS:

1. Any function other than 7 or 8 can be used for a TOGGLE RAMP function, however only one TOGGLE RAMP function can be on at one time. Selecting another while one is on will result in turning it off. The button must then be released and pressed again to turn on the next function.
2. When a TOGGLE RAMP function is on, functions 7 and 8 are dedicated to ramping UP and DOWN respectively. However they can be programmed with the file utility to be used for any other function when a TOGGLE RAMPED function is not on.
3. While a TOGGLE RAMP function is on MOMENTARY, LATCHED, AND LATCHED TOGGLE functions can be turned on and off with normal operation. If a MOMENTARY RAMPED or MOMENTARY FULLON function is selected, the function will act as if it was programmed for MOMENTARY only and will simply turn on the function with no ramping or effect on the unloader.

DC MOTOR CONTROL:

The X8PRO receiver must be ordered with the optional output control. When installed, functions 7 and 8 need to be configured for MOMENTARY. When function 7 button is pressed the output will be 12 volts plus-to-minus and the opposite when the function 8 button is pressed. An example application would be a throttle control on an engine.