

Starcom Incorporated

COM

TTRC10

TOUCH TONE
REMOTE CONTROL



TTRC10

Description

The TTRC10 is a touch tone remote control with 10 polarized outputs. It is built on a type 10 card with a 56-pin edge connector for wiring and is powered by 24vdc at 100ma max. It can connect to a PBX station line to activate visual or audible devices. It also supports a direct 600 ohm connection to its AUX port to eliminate the dial up process. If the remote control is used in the dial-up mode, the AUX direct connect is disabled.

The TTRC10 is equipped with 11 LED indicators. The 10 output indicators turn on when the associated output is activated. The "Active" indicator blinks when its station line circuit is idle. The LED turns on solid when the line is seized.

The output "contacts" are solid state power FET devices that provide a 10 ohm polarized short. They can operate a power device consuming maximum current and voltage of 100ma and 300vdc. Each output is protected by a self-resetting fuse.

Outputs can be turned on or off, toggled momentarily, or queried for status from any touch tone phone. The TTRC10 is password protected, preventing unauthorized use.

Installation

Power

The TTRC10 requires 24vdc at a maximum current of 100ma. Power connects to pins 55 and 56, refer to the wiring chart.

Mounting

The TTRC10 mounts in a standard Type 10 shelf equipped with a 56-pin card edge connector (.156" pin spacing). There are no jumpers or dip switches to set on the TTRC10.

Wiring pinout

Refer to the wiring chart for the card edge pin-out. Note the pins for the tip and ring line are common to the jack on the front panel. You may connect the station line using the front panel jack, or the pins on the card edge.

Outputs

Each output is independant. Refer to the last page for wiring examples.

Wiring chart

This table shows the pin connections for the PBX station line, input power, direct power, direct connect, and the 10 outputs.

PIN		DESCRIPTION	
55		Power common	
56		+24vdc power	
43*		PBX tip station line connection	
44*		PBX ring station line connection	
49		AUX tip direct connect	
50		AUX ring direct connect	
OUTPUTS			
PIN	CIRCUIT	PIN	CIRCUIT
51	Output 1 negative	31	Output 6 negative
52	Output 1 positive	32	Output 6 positive
47	Output 2 negative	37	Output 7 negative
48	Output 2 positive	38	Output 7 positive
53	Output 3 negative	33	Output 8 negative
54	Output 3 positive	34	Output 8 positive
29	Output 4 negative	39	Output 9 negative
30	Output 4 positive	40	Output 9 positive
35	Output 5 negative	15	Output 10 negative
36	Output 5 positive	16	Output 10 positive
* Common to the front panel line jack.			

Dial up operation

Accessing

Dial the station line number that the TTRC10 is connected to. After one ring it will answer with 3 ascending tones. The factory password is set to “12345”. Therefore, to activate any output you must first dial 12345#. Enter the password. It will reply with 3 ascending tones.

The TTRC10 will disconnect if:

- 1- the password is not entered correctly.
- 2- 32 seconds have elapsed since the answer tone was sent.
- 3- you, the calling party, disconnects.

You can now turn on or off any and as many outputs as needed. To turn output 7 on dial 17. To turn output 10 on for 5 seconds dial 305. To turn off output 7 dial 27.

Commands

There are six operating commands and two programmable features used by the TTRC10.

The commands are:

- 1 for on (close)
- 2 for off (open)
- 3 for variable momentary operation
- 4 for fixed momentary operation
- 5 for query
- 0 to open (or shut off) all outputs at once.

The programmable features are:

- *1 to set the password
- *2 to set the fixed timing

Single digits of any numeric string must be entered within 8 seconds of each other or a long beep tone is returned and the receive buffer cleared.

The TTRC10 will disconnect if:

- 1 there are no input tones detected for 60 seconds.
- 2 you dial “#”.
- 3 the caller hangs up; the TTRC10 will disconnect on the PBX open loop interval.

Set output on

The first digit entered must be a 1 followed by the circuit number 1 thru 0 (where zero =10). Therefore, to set output 3 on, dial 13. The TTRC10 responds with 2 short tones to indicate the output is on (closed).

Set output off

The first digit entered must be a 2 followed by the circuit number 1 thru 0 (where zero =10). Therefore, to set output 4 off, dial 24. The TTRC10 responds with 2 long tones to indicate the output is off (open).

Momentary:

Variable toggle

In momentary operation, the output changes state for

the time duration that is entered. If a circuit is on, it will turn off for the time entered and then turn back on. The first digit entered must be a 3 followed by the circuit number 1 thru 0 (where zero =10), followed by the time 1 thru 0, for 1 to 10 seconds. Therefore, to toggle output 5 for 7 seconds, dial 357. The TTRC10 responds with a confirmation tone after the toggle completes. 2 long tones indicate the output is off (open), and 2 short tones indicate the output is on (closed).

Momentary:***Fixed toggle***

The fixed toggle operation obtains its timing from memory, therefore it is only necessary to enter 2 digits instead of 3. The first digit entered must be a 4 followed by the circuit number 1 thru 0 (where zero =10). The fixed timing must be preset and is the same for all 10 outputs. Refer to the "Fixed timing" section.

Query outputs

Each output may be checked to see if it is on or off. The first digit entered must be a 5 followed by the circuit number 1 thru 0 (where zero =10). The TTRC10 responds with 2 long tones to indicate the output is off (open), or 2 short tones indicating the output is on (closed).

Reset all outputs

All 10 outputs may be set off (open) by entering 0. Any outputs already off will remain off. A confirmation of 2 long tones will be heard.

Password change

The password may be 1 to 20 digits long. Passwords can contain any digits including "A,B,C,D" but not a "#" or "**".

To change the factory password, place a station to station call and enter the old password. 3 ascending tones will be heard. Enter *1 followed by the new password and end with a #.

For example, to change the factory default to "67890":

- 1- Dial the station line number for the TTRC10.
- 2- Dial 12345#; listen for 3 ascending tones.
- 3- Dial *1 67890 #.

Fixed timing

The fixed timing is used by command 4 to toggle an output for a specified time. The fixed timing may be set from 1 to 10 seconds, and is the same for all 10 outputs. To set the fixed timing, enter *2 followed by 1 thru 0 for 1 to 10 seconds, and end with a #.

For example, to change the factory default to 8 seconds:

- 1- Dial the station line number for the TTRC10.
- 2- Dial 12345#; listen for 3 ascending tones.
- 3- Dial *28#.

The fixed toggle is now set to 8 seconds for all 10 outputs.

AUX direct connect operation

A 600 ohm dry direct connection is provided to eliminate the dialing process. This auxiliary input does not use password protection. It can not be used for programming purposes and it has no audible feedback tones. Output circuits are operated or released in exactly the same manner as with the dial up sequence. The active indicator blinks until the first tone is detected. It remains on solid until the sequence is completed. The AUX port is disabled when the detector answers a call. This eliminates conflicting receive tones. The query feature is not available in the direct connect mode.

Specifications

GENERAL

Size 5.6"H x 6.06"D x 1.4"W
Weight 6.0 oz
Operating power 24vdc
Power consumption 20ma minimum, 100ma maximum

INDICATORS

1 Active status LED (green).
10 Output status LED's (yellow).

I/O

1 front panel RJ-11 modular line jack.
1 56-pin edge connector.

FACTORY DEFAULTS

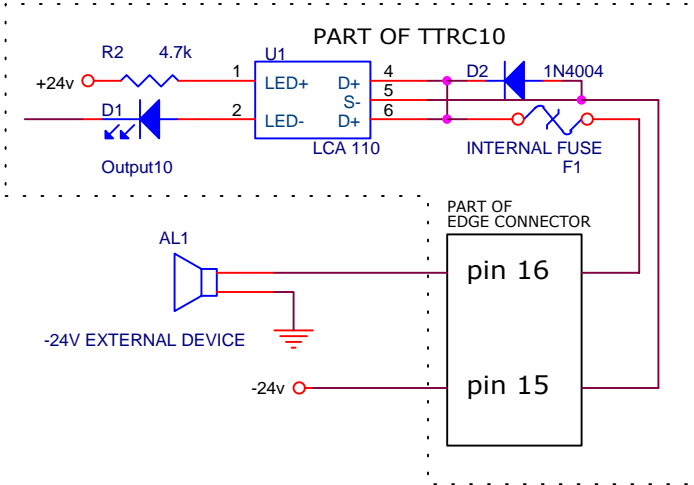
Password: 12345
 Fixed timing: 3 seconds

Table of commands

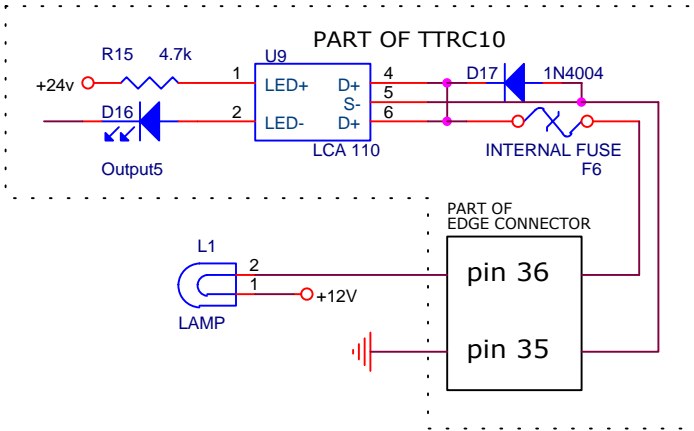
The following table is a summary of commands for the TTRC10. You must dial the line number and enter the password before entering a command, unless you are connected directly to the AUX input. The feedback tones will not be heard if you are connected to the AUX input.

TTRC10 COMMANDS		
COMMAND	NUMBER(S) TO DIAL	RESPONSE
CIRCUIT ON	1 + circuit number example: 13 turns circuit 3 on	2 short tones
CIRCUIT OFF	2 + circuit number example: 23 turns circuit 3 off	2 long tones
MOMENTARY VARIABLE TOGGLE T=time, in seconds. Valid digits are 1 thru 9 or zero for 10.	3 + circuit number + T example: 316 toggles circuit 1 for six seconds	After time T: 2 short tones=ON 2 long tones=OFF
MOMENTARY FIXED TOGGLE	4 + circuit number example: 42 toggles circuit 2 for the preset time.	After preset time: 2 short tones=ON 2 long tones=OFF
CIRCUIT STATUS	5 + circuit number example: 53 reports the status of circuit 3	2 short tones=ON 2 long tones=OFF
ALL CIRCUITS OFF	0	2 long tones
CHANGE PASSWORD 1 to 20 digits long. # and * are not valid.	*1 + password + # example: *1 123 # sets the password to 123	3 ascending tones
SET FIXED TIME T=time, in seconds. Valid digits are 1 thru 9 or zero for 10.	*2 + T + # example: *2 8 # sets the fixed time for eight seconds.	3 ascending tones
DISCONNECT	#	1 low tone, TTRC10 disconnects

EXAMPLE: POSITIVE GROUND DEVICE ON CIRCUIT 10



EXAMPLE: 12 VOLT LAMP ON CIRCUIT 5



Starcom Incorporated

3303 North Dixie Highway
Boca Raton, FL. 33431

phone: (561) 392-7001 ★ fax: (561) 392-7003 ★ email: sales@starcom-inc.com ★ internet: www.starcom-inc.com