# RF DC MOTOR THROTTLE - HC03

- wireless control of a DC motor (analog locomotive) for a long-distance (up to 1,5 km)
- suitable for garden layout, H0, OO or bigger gauges

## Transmitter:

- speed and direction control with joystick
- loco address selection with rotary encoder
- Stop with joystick push button
- Emergency Stop with rotary encoders push button
- the 1st button controls 2 universal outputs (lights, smoke generator, horn, coupler, etc.)
- the 2nd button controls 1 universal output and a servo between 0 and 90 degrees (coupler, pantograph, door, etc.)
- direction change protection (direction change is allowed only if loco stopped)
- 10 locomotives simultaneously with one Transmitter
- OLED display - shows locomotive direction, speed, and address
- 9V battery power supply

## Transmitter control:

Select address:
- turn knob to clockwise or counter-clockwise to select the loco address
- read the address on display (Loc)
Direction:
- press down shortly the joystick to stop the loco
- move the joystick left side or right side to change direction (Dir)
Speed:
- move the joystick upward to increase or move downward to decrease the loco speed (Spd)
- moving the joystick gently the speed increases/decreases slowly, pressing full upward or downward changes the speed rapidly
- value 50 = max speed
Outputs:
- press button 1 to activate/deactivate Out 1
- press button 1 and hold for 2 seconds to activate/deactivate Out 2
- press button 2 to move the servo and press once again to move back
- press button 2 and hold for 2 seconds to activate/deactivate Out 3
- Out 4 goes on if the loco moves on and goes off if the loco stopped
Stop loco:
- press down the joystick shortly to stop the selected loco
- press down the joystick for 2 seconds long or press shortly the rotary's button to stop all locos (Emergency Stop)

## Receiver:

- 1,5A output (2,3A peak for 10 seconds)
- power supply between 8 - 20V **(DC only!)**
- address selectable between 1 - 10 with integrated push button
- 4x LEDs to display the address in binary code
- front/rear lights outputs (each 100 mA) - depends on direction
- 3 universal outputs (each 100 mA)
- pinhead to connect a servo
- on startup, the servo moves to the basic position (0 degrees)
- 4th output is active if the loco moves on (smoke generator, warning flasher, sound)
- size: 40 x 20 mm (1,6" x 0,8")


## Select address (Receiver):

- hold the on-board button on startup. When LEDs go on, press the button repeatedly to select the address
- read address using LEDs (see table below)
- select the address within 2 seconds. After this time the address will be saved to the memory

| Receiver address | |
|---|---|
| *from left to right; 1 - lit, 0 - doesn't lit* | |
| 1000 | address 1 |
| 0100 | address 2 |
| 1100 | address 3 |
| 0010 | address 4 |
| 1010 | address 5 |
| 0110 | address 6 |
| 1110 | address 7 |
| 0001 | address 8 |
| 1001 | address 9 |
| 0101 | address 10 |

**Address selector** →

**On/Off Switch** ↓

**LCD Screen:**
**Dir** Direction
**Spd** Speed
**Loc** Loco address

DirSpdLoc
>> 0    1

**Joystick:**
⇧ speed up
⇩ speed down
⇨ forward
⇦ backward
**push** stop

**Out 1 / Out 2**

**Servo / Out 3**

**Power supply**

**GND**   **+**

**Receiver address**

**Motor**

**Common (+)**

**out4**

**out3**

**out2**

**out1**   **Common (+)**

**Servo out:**
1 - signal
2 - +5V
3 - GND

**Back light**

**Front light**