Embedded Communications Systems
www.embeddedcomms.com.au

QUICK START GUIDE

MTC - MINI TELEMETRY CONTROLLER
MTC-COB2 HANDHELD REMOTE

LOW POWER, LICENCE EXEMPT WIRELESS REMOTE CONTROL

The MTC Series is a range of low cost Telemetry Controllers providing both unidirectional and bidirectional FM wireless links capable of simple control and monitoring tasks. Their ease of use and numerous features make them ideal for adding wireless control and monitoring to any application requiring wire free operation.

MTC-COB2 : Transmitter
Two Button Hand Held

Features:
- Two pushbutton switch inputs
- Replaceable button labels
- Pendant clip at the top
- Integrated whip/helical antenna
- Visual indication of operation – red LED
- Rain proof and durable ABS enclosure
- Rugged enclosure. 120mm x 65mm x 48mm
- Available on different VHF & UHF frequencies

Technical Specifications:
- Operating current: 10mA
- 2 x AA Alkaline battery
- Easy battery replacement
- Range up to: VHF/1km, UHF/300m

MTC-2DO : Receiver
Dual Digital Output Module

Features:
- User configurable operating modes
- Pluggable screw terminal connectors
- Two relay outputs. NO & NC contacts
- SMA Antenna connector
- Visual indication of output state & operation
- Rugged extruded enclosure. 85mm x 55mm x 25mm
- Can learn up to 50 transmitters per receiver
- Available on different VHF & UHF frequencies

Technical Specifications:
- Operating current: 15mA @ 12VDC
  +20mA per activated relay
- Wide operating voltage: 7 to 28VDC
- Relay contacts: 1A @ 24VDC. 0.5A @ 125VAC

MTC-1DO : Receiver
Single Digital Output Module

Features:
- User configurable operating modes
- Screw terminal connectors
- Single relay output. NO & NC contacts
- SMA Antenna connector
- Visual indication of output state & operation
- DIN Rail Mount. 85mm x 55mm x 25mm
- Available on different VHF & UHF frequencies

Technical Specifications:
- Operating current: 15mA @ 12VDC
  +20mA per activated relay
- Wide operating voltage: 7 to 28VDC
- Relay contacts: 1A @ 24VDC. 0.5A @ 125VAC

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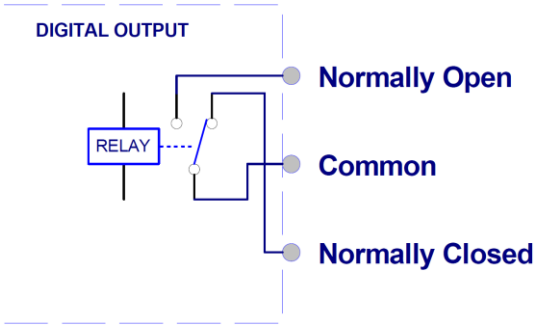
Digital Outputs (Receiver – Relay Outputs)

The digital output relays provide isolated low capacity relay contacts. The relay contacts are not suitable for switching high currents or voltages with a maximum rating of 24VDC @ 3A.

Use an external relay to switch high capacity loads and mains voltages.

Provided relay contacts are Normally Open (NO), Normally Closed (NC) and Common (COM).



Pairing Transmitter to Receivers

All hand held transmitters and MTC receivers are factory programmed with a unique serial number. Once a transmitter is paired to a receiver, the unique serial number is used by a receiver to identify the transmitter, thus preventing any other transmitter from causing an output change on the receiver unit.

The same hand held transmitter can be paired with any number of receivers. A paired receiver (MTC-1DO or MTC-2DO) can be confirmed as receiving valid data by a short double flash on the STATUS LED. A single flash indicates that no valid packet has been received, or the paired link to a remote transmitter has timed out (link fail).

Creating New Pairings

Using a paperclip press the PAIRING button on the *receiver*. The status LED will light.

1. Press either button on the *transmitter* once. The status LED on the *receiver* will turn off.
2. Press either button on the *transmitter* again. The status LED on then *receiver* will flash.
3. Wait for the receiver status LED to stop flashing. The transmitter will now work with the receiver.

Note: Each receiver can learn up to 50 unique transmitters.

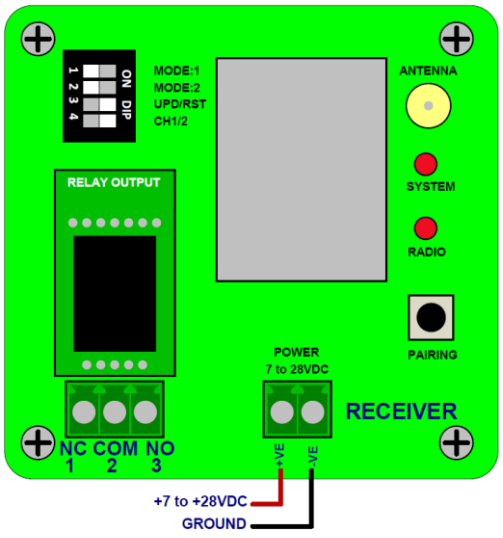
Erase Receiver Pairings

On the MTC-1DO or MTC-2DO (*receiver*), press and hold the PAIRING button for 10 seconds.

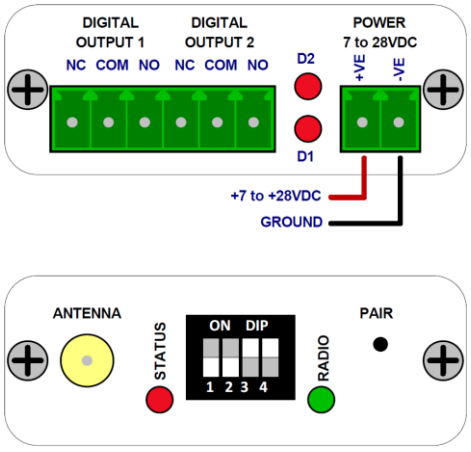
The signal LED will turn off after 10 seconds indicating all registered transmitters has been erased.
Note: Individual transmitter pairings cannot be erased.

End Panel Layout and Connections

MTC-1DO : Receiver



MTC-2DO : Receiver



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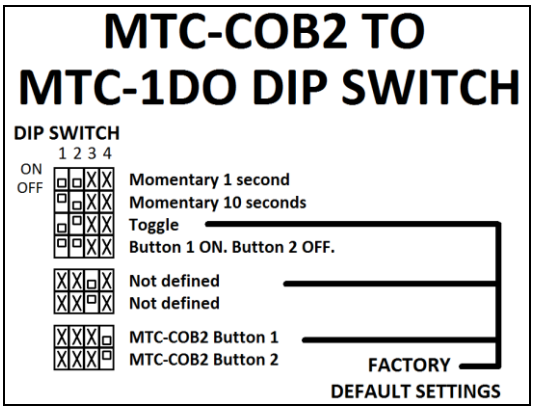
MTC-1DO DIP Switch Options



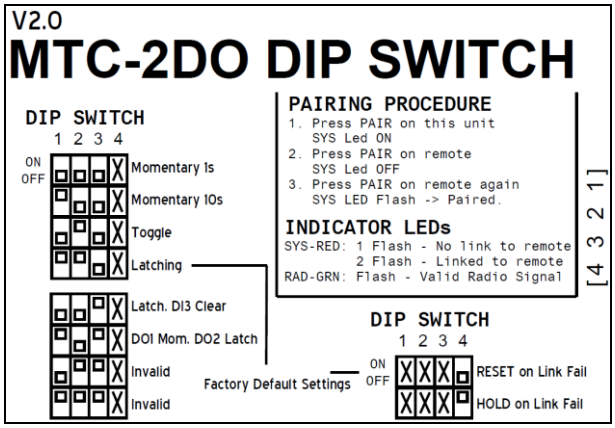
Receiver Modes for use with COB2 transmitter:

- Momentary 1s & 10s:- The output relay is pulsed for a duration of 1 or 10 seconds when triggered from the transmitter.
- Toggle:- The output is toggled for every incoming event from the transmitter. This is the default setting for new units supplied with the COB2 transmitter.
- Button 1 = ON, Button 2 = OFF

MTC-COB2 Button controls which COB2 button is used to activate the output functions.

- Reverses 4th mode to:
  Button 1 = OFF, Button 2 = ON

MTC-2DO DIP Switch Options



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Receiver Modes not suitable for COB2 transmitter:

- Latching:- The relays are latched and follow the state of the input.
- Latch & DI3 Clear:- The outputs are latched to an ON state with the trigger input on the transmitter being used to clear the output relays.
- DO1 Mom, DO2 Latch:- DO1 has is pulsed for 1 second while DO2 provides a latching function.

Link Fail option not used with COB2 transmitter:

➢ **It's strongly recommend to bench test a wireless link prior to installation to ensure your chosen links settings give the desired output results for all combinations of input states/transitions.**

Available Frequencies & Operating Range

Freq (MHz)	TX Power	Country of use	Range (up to): MTC-COB2 to MTC-2DO (small antenna)	Range (up to): MTC-COB2 to MTC-2DO (external antenna)
151.275	10mW	AUS	300m (Helical)	1km+ (1/2 wave)
151.300*	10mW	AUS	300m (Helical)	1km+ (1/2 wave)
151.600	10mW	AUS	300m (Helical)	1km+ (1/2 wave)
173.225	10mW	NZ	300m (Helical)	1km+ (1/2 wave)
173.250	10mW	Europe	300m (Helical)	1km+ (1/2 wave)
173.250*	100mW	NZ	300m (Helical)	1km+ (1/2 wave)
433.920*	10mW	Many	150m (whip)	300m+ (GI dipole)
433.920P*	25mW	AUS/NZ	300m (whip)	800m+ (GI dipole)
869.85	3mW	Europe	80m (whip)	200m (GI whip)
918.525	3mW	AUS	80m (whip)	200m (GI whip)

➢ **Note, these range figures given above are a guide only and actual range obtained may vary significantly depending on environmental conditions, line of sight and antenna choice & placement.**

➢ ***Standard stock frequencies. Other frequencies are available on request but may be subject to higher prices or MOQ's.**

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Ordering Information

The MTC Controller Series is available in a number of operating frequencies to suit specific requirements and countries. Other frequencies are available if required but may be dependant on local regulations for the country of use and/or MOQ's. The MTC Controllers do not include any accessories or antenna. A number of antenna and power supply options are available; please contact your supplier for further information.

Receiver Product Code: **MTC-** **1DO-** **151.300** **R**

Product Code

MTC - Mini Telemetry Controller

Model

1DO - Single Digital Output Receiver

2DO - Dual Digital Output Receiver

Operating frequency

Eg; 151.300MHz

Repeater Option

R = Fitted with a transceiver

HH Transmitter Product Code: **MTC-** **COB2-** **151.300**

Product Code

MTC - Mini Telemetry Controller

Model

COB2 – Hand Held Transmitter

Operating frequency

Eg; 151.300MHz

Options for the MTC-1DO & MTC-2DO Receivers

Antennas

- VHF – Wire wound helical mounted on an SMA
- VHF – Helical, end-fed ground independent with 4m low loss coax + SMA
- VHF – ½ wave dipole, end-fed ground independent with 4m low loss coax + SMA
- UHF – Helical wire wound stubby mounted on an SMA
- UHF – ¼ wave whip mounted on an SMA
- UHF – Dipole, end-fed ground independent with 2m low loss coax
- Lightning arrestor – SMA mount

*Note, mounting hardware is not provided with the external antennas.

Cables, Adapters and Accessories

- DIN Rail Power Supply. 12V or 24V
- TS32 DIN Rail Mounting Bracket

←DIN mount bracket

Specifications are subject to change without notification.

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