

LED's

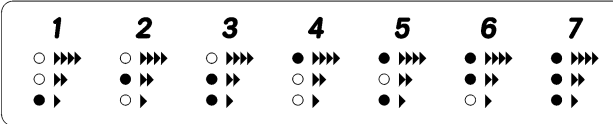
○ OFF ● ON (SOLID) ✨ FLASHING ⚡ FAST FLASH

DYNAMIC THROTTLE PROGRAMS

**PRESS & RELEASE
'SET' BUTTON TO
CHANGE SETTINGS**

(LED SOLID)

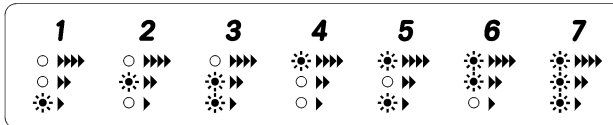
DECREASED RESPONSE



< LESS SMOOTH MORE >

INCREASED RESPONSE

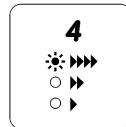
(LED FLASHING)



NORMAL < LESS PUNCHY MORE >

START RESPONSE

**HOLD ON FULL BRAKES
FOR 4 SECONDS TO SET
THE START RESPONSE**



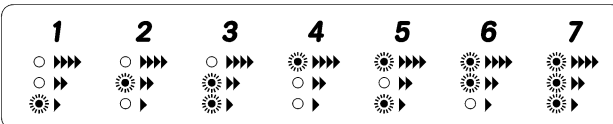
**START RESPONSE
IS THE SAME AS
DYNAMIC THROTTLE
PROG. 4 (FLASHING)**

BRAKE MINIMUM

**PRESS & HOLD
'SET' BUTTON THEN
PRESS & RELEASE
'SET' BUTTON TO
CHANGE SETTINGS**

(LED FAST FLASH)

MINIMUM BRAKE RESPONSE



< MINIMUM BRAKING MAXIMUM >

MCX SPECIFICATIONS

Dimensions	29x26x16mm	Brake On-Resistance	0.0045Ω
Weight (no wires)	Approx. 25g	†Brake Current	75A
Voltage Input	4 - 10 cells	Regenerative Braking	Yes
Drive On-Resistance	0.001125Ω	Brake Minimum Settings	7 Selectable
PWM Frequency	Optimised	Internal Schottky Diode	30A
PWM Resolution	Digital 10-bit	Rx Supply Output Voltage	6.0V
†Drive Current	320A	Rx Supply Output Current	1.0A
Dynamic Throttle Programs	14 Selectable	Rx Supply Protection	Yes
Start Response	Yes	Rx Supply Priority	Yes

†MOSFET Transistor Rating at 25°C Junction Temperature.

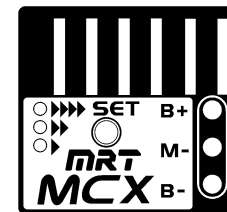
MODEL RACING TECHNOLOGY

MCX

**PRO SERIES
DIGITAL**

ELECTRONIC SPEED CONTROL

INSTRUCTIONS



MODEL RACING TECHNOLOGY

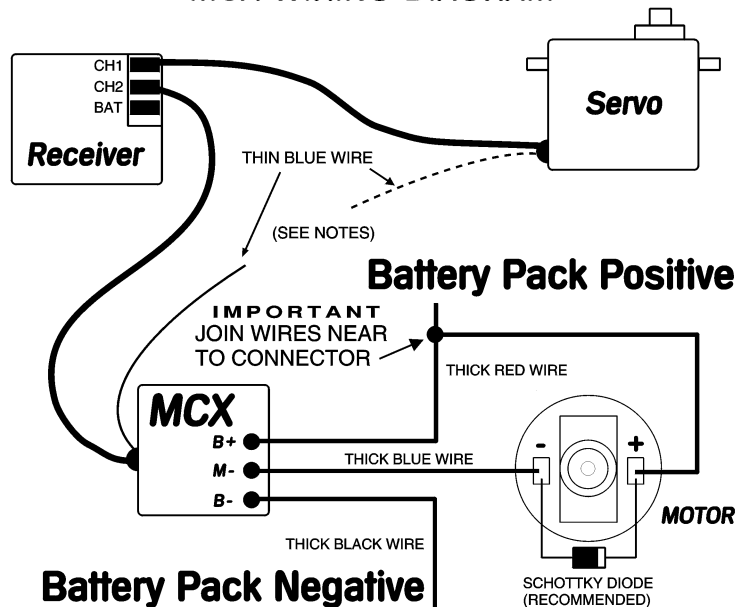
**258 DOVER ROAD, FOLKESTONE, KENT, CT19 6NS, ENGLAND.
TELEPHONE/FAX (UK) 01303 259196**

IMPORTANT Please Read!

BEFORE WIRING UP YOUR MCX PLEASE READ THE INSTRUCTIONS CAREFULLY AND REFER TO THE WIRING DIAGRAM BELOW.

IT IS VERY IMPORTANT THAT YOU DO NOT SHORT OUT OR REVERSE CONNECT ANY OF THE WIRES ON YOUR MCX AS THIS COULD CAUSE DAMAGE TO YOUR SPEED CONTROLLER AND THE EQUIPMENT CONNECTED TO IT. IF YOU DO INCORRECTLY CONNECT THE POWER WIRES AND THE BRAKES STOP WORKING, DO NOT USE YOUR MCX AS FURTHER DAMAGE COULD OCCUR - RETURN TO MRT FOR REPAIR.

MCX WIRING DIAGRAM



- If using a FET servo, connect the thin blue wire from the MCX to the thin blue wire from the servo and wire a 4.7uH choke into the lead. (choke should be supplied with FET servo)
- If using a non-FET servo the thin blue wire from the MCX is not used and should be insulated.

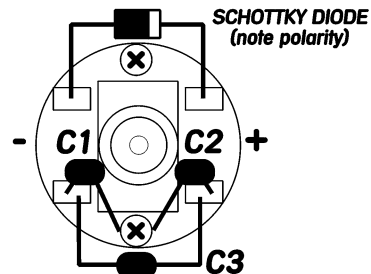
CONNECTION OF WIRES

BLACK WIRE - BATTERY NEGATIVE
 RED WIRE - BATTERY POSITIVE
 BLUE WIRE - MOTOR NEGATIVE
 THIN BLUE WIRE - FET SERVO LEAD

CAPACITORS: C1, C2 AND C3 0.1uF

TIP: SCHOTTKY DIODES ON MOTORS IMPROVE OVERALL EFFICIENCY, SO USE THEM IF POSSIBLE.

INSTALLATION OF CAPACITORS AND SCHOTTKY DIODE



MCX INSTALLATION

WIRE UP YOUR MCX ACCORDING TO THE WIRING DIAGRAM AND REMEMBER TO FOLLOW THE ADVICE BELOW:

- DO NOT ALLOW SOLDER POSTS TO GET TOO HOT WHEN SOLDERING WIRES. USE AT LEAST A 25W SOLDERING IRON AND MAKE SURE A GOOD SOLDER JOINT IS MADE.
- ALWAYS USE A MOTOR WITH CAPACITORS FITTED TO HELP PREVENT ANY POSSIBLE RADIO GLITCHES.
- SCHOTTKY DIODES CAN BE USED ON THE MOTOR TO IMPROVE EFFICIENCY. (SEE DIAGRAM ON OPPOSITE PAGE)
- ALWAYS KEEP THE RECEIVER AND RECEIVER AERIAL AWAY FROM ALL THE POWER WIRES IN YOUR CAR.
- IF USING A SEPARATE RECEIVER BATTERY DISCONNECT RED RX WIRE FROM MCX RX PLUG AND INSULATE.
- INSTALL YOUR MCX SECURELY IN CAR WITH VELCRO OR SERVO TAPE - FIT MCX IN A SAFE DRY POSITION.
- KEEP POWER WIRE LENGTHS AS SHORT AS POSSIBLE TO MAXIMISE PERFORMANCE AND EFFICIENCY.
- KEEP ESC / MOTOR POSITIVE POWER WIRE JOINT AS CLOSE TO POSITIVE BATTERY CONNECTOR AS POSSIBLE TO HELP AVOID THE RISK OF STEERING AND THROTTLE GLITCHES UNDER VERY HARD ACCELERATION.

NOTE: MOTOR MUST BE CONNECTED TO MCX FOR BEEPS TO BE HEARD.

ADJUSTING THE MCX TO YOUR TRANSMITTER

AFTER WIRING UP YOUR MCX, TURN YOUR TRANSMITTER ON AND SET THE THROTTLE TRIM TO NEUTRAL.

- CONNECT YOUR MCX TO THE BATTERY PACK WITH THE MCX SWITCHED OFF.
- PRESS AND HOLD THE MCX 'SET' BUTTON WHILE SWITCHING YOUR MCX ON.
- AFTER 1 SECOND THE MOTOR WILL 'BEEP' AND THE AMBER LED WILL COME ON. THE NEUTRAL POSITION HAS NOW BEEN SET. THE GREEN AND RED LEDs WILL BE FLASHING.
- HOLD THE TRANSMITTER THROTTLE CONTROL AT THE POSITION FULL POWER IS REQUIRED, THEN PRESS AND RELEASE THE 'SET' BUTTON, THE FULL POWER POSITION HAS NOW BEEN SET.
- HOLD THE TRANSMITTER THROTTLE CONTROL AT THE POSITION FULL BRAKES ARE REQUIRED, THEN PRESS AND RELEASE THE 'SET' BUTTON, THE FULL BRAKES POSITION HAS NOW BEEN SET.

THE RADIO SET-UP IS NOW COMPLETE AND YOUR MCX IS READY TO BE USED!!

SETTING AND USING YOUR MCX

SETTING YOUR MCX IS VERY EASY, THE 14 'PRO-RESPONSE' X98 DYNAMIC CONTROL PROGRAMS WILL GIVE YOU PERFECT THROTTLE CONTROL JUST LIKE THE BEST DRIVERS IN THE WORLD, SIMPLY BY THE PRESS OF A BUTTON!!

CONNECT YOUR MCX TO A BATTERY PACK AND SWITCH THE MCX ON, AFTER POWER-UP THE AMBER LED IS ON.

YOUR MCX IS SUPPLIED SET ON DYNAMIC PROGRAM 1 (LED FLASHING) AND IS READY FOR USE RIGHT AWAY.

PROGRAM 1 IS SET AS A 'NORMAL' THROTTLE, THE RESPONSE IS PROPORTIONAL TO THE TX THROTTLE POSITION. IE. IF YOU MOVE THE TX THROTTLE CONTROL THE POWER/BRAKES WILL MATCH YOUR INPUT EXACTLY, THIS IS A SIMPLE METHOD OF CONTROL AVAILABLE ON ALL SPEEDOS. (YOUR MCX CAN DO A LOT MORE THAN THIS)

FIRST TRY A RUN SET ON PROGRAM 1, AFTER THE RUN IF BATTERY DURATION IS OK AND YOU WANT TO IMPROVE YOUR CARS PERFORMANCE TRY A RUN ON PROGRAM 2 UP TO 7 (LED FLASHING). REMEMBER THAT ON PROGRAM 7 THE PERFORMANCE WILL BE A LOT BETTER THAN ON PROGRAM 1 AND BATTERY DURATION WILL BE REDUCED.

IF AFTER THE RUN BATTERY DURATION IS NOT OK THEN TRY A RUN SET FROM PROGRAM 1 UP TO 7 (LED SOLID). PROGRAMS 1 TO 7 (LED SOLID) INCREASE IN 'SMOOTHNESS' WITH PROGRAM 7 (LED SOLID) BEING THE SMOOTHEST. SMOOTH SETTINGS WILL HELP TO MAKE YOUR CAR EASIER TO CONTROL AND WILL IMPROVE BATTERY DURATION.

TO CHANGE THE DYNAMIC THROTTLE PROGRAM ON YOUR MCX, SIMPLY PRESS AND RELEASE THE 'SET' BUTTON. THE LEDs WILL COME ON TO SHOW THE PROGRAM SET. (SEE NEXT PAGE FOR PROGRAMS) PRESS AND RELEASE THE 'SET' BUTTON TO SELECT THE REQUIRED PROGRAM, THEN SWITCH YOUR MCX OFF TO EXIT 'SET-UP' MODE.

TO CHANGE THE BRAKE MINIMUM SETTING PRESS AND HOLD THE 'SET' BUTTON, THE LEDs WILL COME ON TO SHOW THE BRAKE MINIMUM SETTING. (SEE NEXT PAGE FOR SETTINGS AVAILABLE) PRESS AND RELEASE 'SET' BUTTON TO SELECT THE REQUIRED SETTING. SWITCH YOUR MCX OFF TO EXIT 'SET-UP' MODE.

IF YOU WANT A QUICK START OFF OF THE START LINE IN A RACE, YOU CAN USE THE 'START RESPONSE' ON YOUR MCX. IT CAN BE SET BY HOLDING THE TX THROTTLE CONTROL IN THE FULL BRAKE POSITION FOR 4 SECONDS. THE LEDs INDICATING FULL BRAKES (AMBER AND RED LED ON SOLID) WILL THEN TURN OFF AND ON AGAIN TO SHOW START RESPONSE IS SET READY FOR USE. THE THROTTLE RESPONSE WILL BE INCREASED UNTIL FULL POWER HAS BEEN HELD ON FOR 1/2 SECOND. AFTER THIS THE THROTTLE RESPONSE WILL RESET BACK TO ITS PROGRAMMED SETTING. NOTE: IF THE DYNAMIC THROTTLE IS SET ON PROGRAMS 5, 6 OR 7 (LED FLASHING) THE START RESPONSE WILL BE LESS THAN THE PROGRAMMED THROTTLE RESPONSE. IE. YOUR START WILL BE SLOWER BUT SMOOTHER!!