



# **PRO-16c**

## **6 CHANNEL**

(AUTRONIC MULTIPLEXER)

## **CAPACITOR DISCHARGE**

## **IGNITION**

PLEASE REPORT ANY ERRORS  
SALES@MWIGNITIONS.COM

### CONTENTS:

1. Installation notes
2. Ignition coil information
3. Mounting dimensions
4. Connections and specifications
5. 5 cylinder direct fire ignition
6. 6 cylinder direct fire ignition
7. Australian EMC compliance

# **CAUTION**

**THIS WIRING DIAGRAM IS  
APPLICABLE ONLY TO IGNITION  
SYSTEMS WITH THE SERIAL  
NUMBER PREFIX STARTING**

**48xxxx**

**USE OF INCORRECT DIAGRAM  
WILL VOID WARRANTY AND  
MAY DAMAGE UNIT**

# INSTALLATION NOTES

## MOUNTING

Do not mount the unit where it will be exposed to water or other liquids and ensure the bottom drain slots are unobstructed. Select a location away from excessive heat and provide a cooling air supply if required. Use soft rubber (40 duro) mounts on all four corners to isolate from strong vibration.

## IGNITION LEADS & SPARKPLUGS

Straight metal wire ignition leads radiate electrical interference which may cause erratic operation of nearby electronic devices including the CDI. Carbon suppressed ignition leads are not capable of conducting the CDI energy without becoming damaged.

For best performance use spiral wound inductively suppressed metal core ignition leads such as those produced by Magnecor<sup>®</sup>. Where possible use non resistor spark plugs to reduce energy loss.

## WIRING & POWER SUPPLY

**FAILURE TO INSTALL THE RECOMMENDED SIZE FUSE WILL VOID WARRANTY**

Trigger input & coil output numbers indicate ignition sequence not cylinder number.

250mJ and larger Pro-Drag CDI systems must not be operated below 13V.

Voltage boosters may limit CDI operation and ignition performance will not increase when operated above 13.8V

Connect the CDI directly to the battery with the recommended gauge wire. All coil negative wires must be joined at or in the connector.

Use twisted pair wire for all power and coil connections. To comply with Australian EMC 'C Tick' standards and for ultimate noise suppression use shielded twisted pair wire.

## TRIGGERING

All M&W CDI systems defaults to falling edge ignition, to select rising edge ignition connect the 'Trigger Edge' pin to the 'Signal Ground' pin. Where the ecu contains an in built igniter or there is an igniter between the ECU and CDI it may be necessary to select rising edge ignition. **The trigger edge on the CDI must be set the same as that in the ECU!**

For Autronic<sup>®</sup> multiplex ignitions set the ecu for –VE Edge (Pulse).

## DWELL

M&W CDI systems are 'edge' triggered which means they are not affected by changes in dwell time. If your ecu requires a dwell time be set then use something small such as 0.5-1mS.

## LED INDICATOR

After initially applying power to the CDI the LED will illuminate for 1 second then extinguish. The LED will then flash briefly with each consecutive trigger event received.

A repeated double flash of the LED indicates a possible faulty ignition coil, faulty wiring, low supply voltage or damage to the CDI.

## TESTING

The CDI may be tested by momentarily grounding the inputs (with the exception of Reluctor trigger cdi's), this will cause the corresponding ignition coil to spark. Do not conduct this test without a grounded sparkplug installed. A comprehensive test procedure document may be found on our web site

[http://www.mwignitions.com/pg\\_data\\_sheets.php](http://www.mwignitions.com/pg_data_sheets.php)

## CAUTION

TO PREVENT IGNITION COIL DAMAGE DO NOT  
FIRE THE CDI WITH AN EXCESSIVE SPARK GAP!

CHECK IGNITION TIMING AFTER COMPLETION

# IGNITION COILS

## COIL SELECTION

Most inductive ignition coils will work satisfactorily with CDI systems however for ultimate ignition energy use a coil specifically designed for CDI applications.

## COP COILS

COP (coil on plug) coils with inbuilt drivers are not suitable for use with CDI ignition. COP coils designed for inductive ignition may overheat when used in cdi applications and some contain an internal blocking diode in the secondary winding which must be taken into account during wiring.

## FERRITE CDI COILS

Ferrite core cdi coils provide a light weight solution for direct fire applications and give high secondary current however they may not be suitable for all applications due to their very short arc duration. The high level of EMI emitted by these coils may require additional wire shielding to prevent electrical interference with the ECU.

**Note!** Ferrite CDI coils are for direct fire ignition only. For high performance distributor applications use a coil similar to a Crane<sup>®</sup> PS92 or MSD<sup>®</sup> HVC2.

## COIL POLARITY

**All diagrams are shown for cdi style coils, for correct operation with inductive ignition coils they should be wired with their primary connections reversed to maintain correct spark plug polarity.**

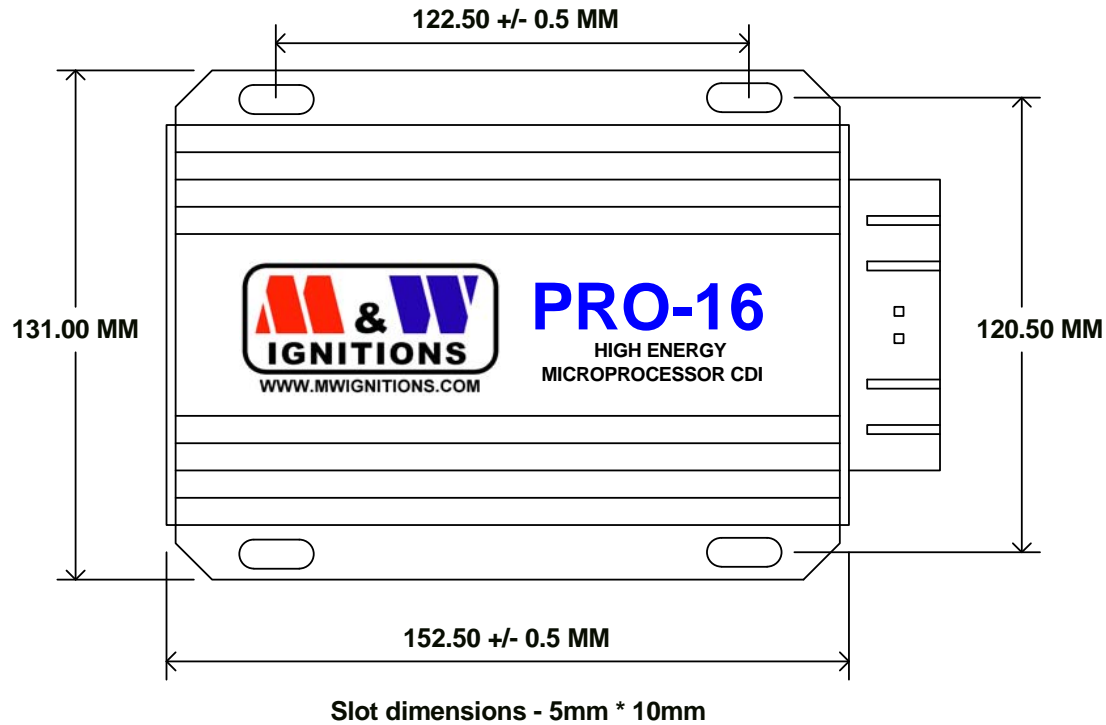
**CAUTION!**

**IGNITION COIL DAMAGE MAY OCCUR IF OPERATED WITH AN EXCESSIVE SPARK GAP.**

**CAUTION!**  
**HIGH VOLTAGE**



DISCONNECT POWER BEFORE  
WORKING ON UNIT



Title		<b>MOUNTING DIMENSIONS</b>	
Size	Number	Revision	
A4	<b>PRO-16c S3</b>	1.0	
Date:	13-Sep-2010	Sheet 1 of 1	
File:	D:\M&W\Pro-16C_S3_Mounting dimensions.dwg		Drawn By: M&W

**CAUTION!  
HIGH VOLTAGE**



DISCONNECT POWER BEFORE  
WORKING ON UNIT

**M & W IGNITIONS**

Performance & Quality since 1996

VIEWED FROM BACK OF CONNECTOR



**KEEP ALL INPUTS WELL SEPARATED FROM COIL OUTPUTS**

1	+12V (Battery)	13	Ground (Battery)	25	IGNITION 2 (*6)
2	+12V (Battery)	14	Ground (Battery)	26	Ignition switch
3	IGNITION 1 (*5)	15		27	
4		16	IGNITION 3 (*19)	28	
5		17		29	IGNITION 4 (*33)
6	Tacho	18	Shield	30	
7		19		31	
8		20		32	
9		21		33	
10	***Coil 5 (**4) +	22	***Coil 5 & 6 -	34	***Coil 6 (**5) +
11	***Coil 3 (**3) +	23	***Coil 3 & 4 -	35	***Coil 4 +
12	***Coil 1 (**1) +	24	***Coil 1 & 2 -	36	***Coil 2 (**2) +

TRIGGER EDGE

Autronic trigger edge must be set to -VE EDGE  
(PULSE)

SPECIFICATIONS

Supply voltage = 13.8V DC negative ground  
 Operating voltage = +5.5V to +15V  
 Maximum supply current = 7.0A  
 Power off current < 700uA  
 Maximum ignition frequency = 1200 Hz  
 Coil primary voltage = 480V  
 Spark energy = 115 millijoules @ 700Hz  
 Trigger = 10mA falling edge  
 Tacho = 12V, 25mA square wave  
 Maximum allowable case temperature = 105°C  
 Dimensions = 152L \* 110W \* 40H  
 Weight = 740gm

\*\*\* FIRING SEQUENCE NOT CYLINDER NUMBER  
 \*\* 5 CYLINDER CONNECTIONS  
 \* SM4 PIN NUMBERS

Title			AUTRONIC MULTIPLEX TRIGGER		
Size	Number	Revision			
A4	PRO-16c S3	1.6			
Date:	13-Sep-2010	Sheet 1 of 1			
File:	D:\M&W\...Pro16C_S3_1.sch	Drawn By: M&W			

**CAUTION!**  
**HIGH VOLTAGE**



DISCONNECT POWER BEFORE  
WORKING ON UNIT

# M & W IGNITIONS

(C)1996 - 2008 M&W IGNITIONS

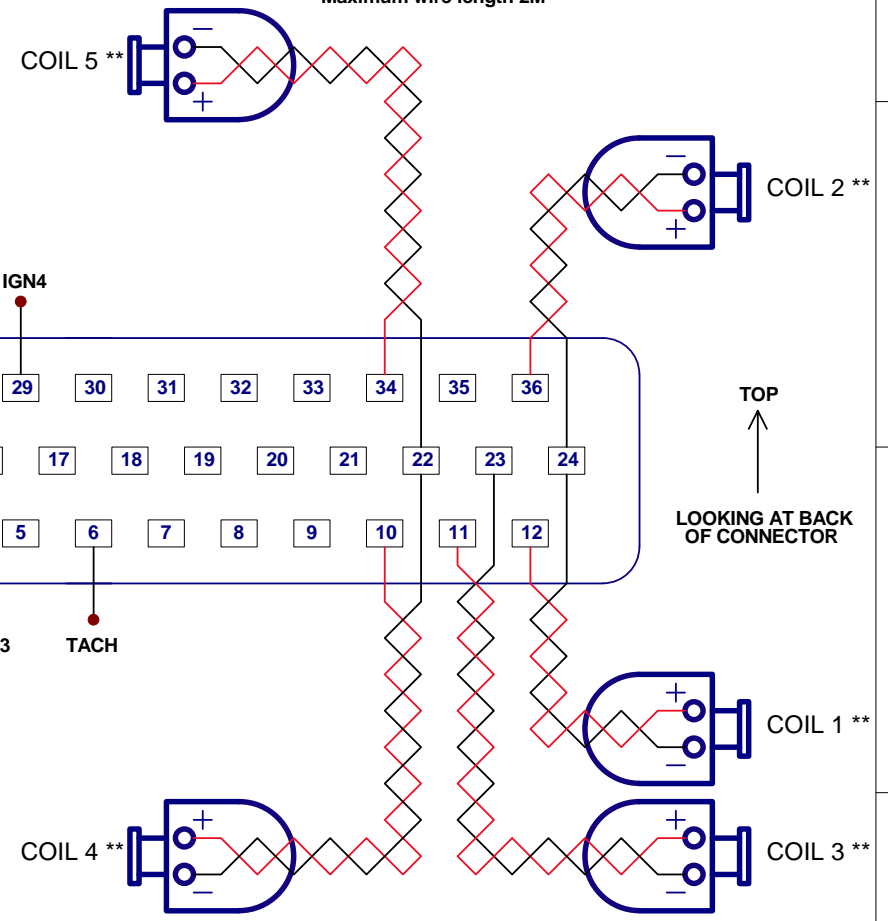
Note!  
Use 20 gauge wire  
Twist wires 1 turn in 20mm  
Maximum wire length 2M

+12V  
BATTERY

15A FUSE

Note!  
Use 20 gauge wire with junction < 100mm  
from connector joined to 14 gauge for run  
to battery  
Twist wires 1 turn in 20mm  
Maximum length 2.5M

\*\* Denotes firing sequence not cylinder number!



↑ TOP  
LOOKING AT BACK  
OF CONNECTOR

Title			FIVE CHANNEL SEQUENTIAL IGNITION		
Size	Number	Revision			
A4	PRO-16c S3	1.4			
Date:	13-Sep-2010	Sheet 1 of 1			
File:	D:\M&W\Pro16C_S3_2.sch	Drawn By: M&W			

**CAUTION!**  
**HIGH VOLTAGE**

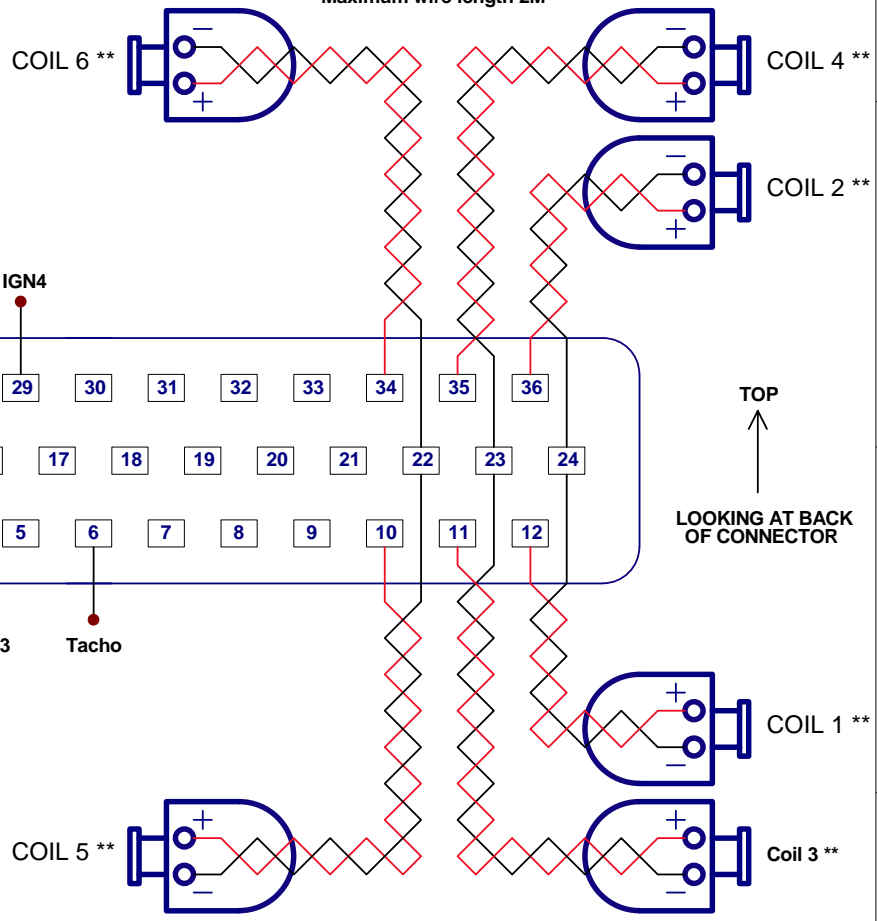


DISCONNECT POWER BEFORE  
WORKING ON UNIT

# M & W IGNITIONS

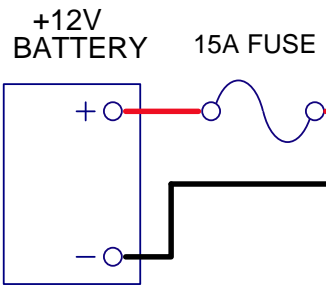
(C)1996 - 2008 M&W IGNITIONS

Note!  
Use 20 gauge wire  
Twist wires 1 turn in 20mm  
Maximum wire length 2M



↑ TOP  
LOOKING AT BACK  
OF CONNECTOR

Note!  
Use 20 gauge wire with junction < 100mm  
from connector joined to 14 gauge for run  
to battery  
Twist wires 1 turn in 20mm  
Maximum length 2.5M



\*\* Denotes firing sequence not cylinder number!

Title			SIX CHANNEL SEQUENTIAL IGNITION		
Size	Number	Revision			
A4	PRO-16c S3	1.4			
Date:	13-Sep-2010	Sheet 1 of 1			
File:	D:\M&W\...Pro16C_S3_3.sch	Drawn By: M&W			

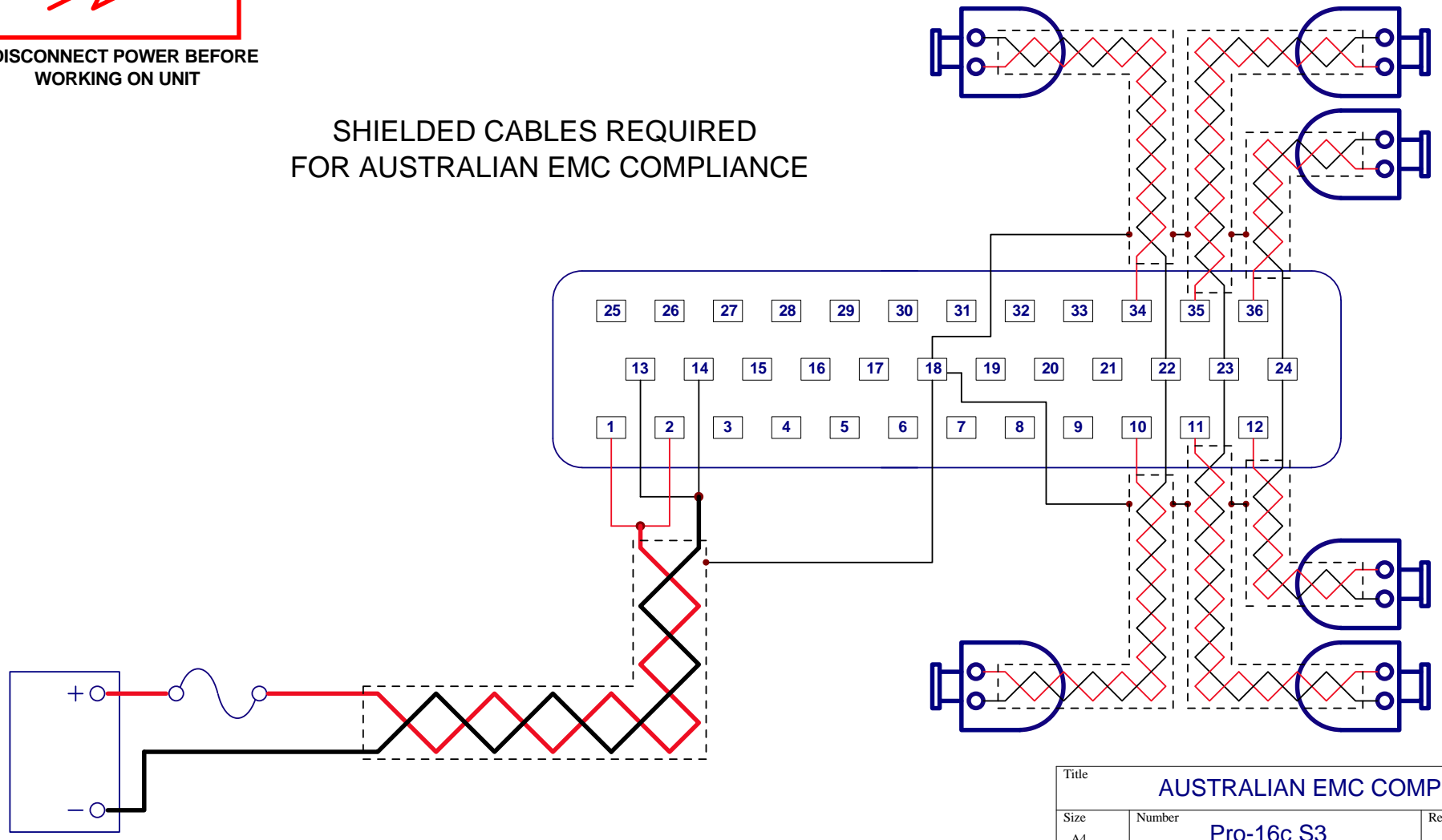
**CAUTION!**  
**HIGH VOLTAGE**



DISCONNECT POWER BEFORE  
WORKING ON UNIT



SHIELDED CABLES REQUIRED  
FOR AUSTRALIAN EMC COMPLIANCE



Title			
<b>AUSTRALIAN EMC COMPLIANCE</b>			
Size	Number	Revision	
A4	Pro-16c S3	1.0	
Date:	13-Sep-2010	Sheet 1 of 1	
File:	D:\M&W\Diagrams\Pro-16c S3\EMC.sch	Drawn By:	M&W