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PRO-16d

6 CHANNEL

(MOTEC® IGNITION EXPANDER)

CAPACITOR DISCHARGE IGNITION

PLEASE REPORT ANY ERRORS
SALES@MWIGNITIONS.COM

CONTENTS:

CAUTION

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

54xxxx

USE OF INCORRECT DIAGRAM WILL VOID WARRANTY AND MAY DAMAGE UNIT

INSTALLATION NOTES

(APPLICABLE TO MOTEC® IEX INSTALLATIONS ONLY)

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®. Where possible use non resistor spark plugs to reduce energy loss.

POWER SUPPLY

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

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.

MODE SELECTION

When using M&W IEX cdi's with Motec® M4/M48 ecu's join the Mode and Signal ground terminals on the main connector. See applicable diagram for specific terminal numbers.

LED INDICATOR

After initially applying power to the CDI the LED will illuminate for approximately 1 second then extinguish to indicate normal operation. The LED will then flash briefly with each correctly decoded trigger event.

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

TESTING

Due to the complexity of the Motec® Ignition Expander signal a self test mode has been built into the software. By grounding Self test terminal before powering the unit it will sequentially fire all the outputs and flash the LED in sync. To exit the test mode disconnect power from the unit and remove connection to terminal #29. Do not conduct this test without a grounded spark plugs installed and don't touch any of the coil wires.

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® PS92 or MSD® 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!

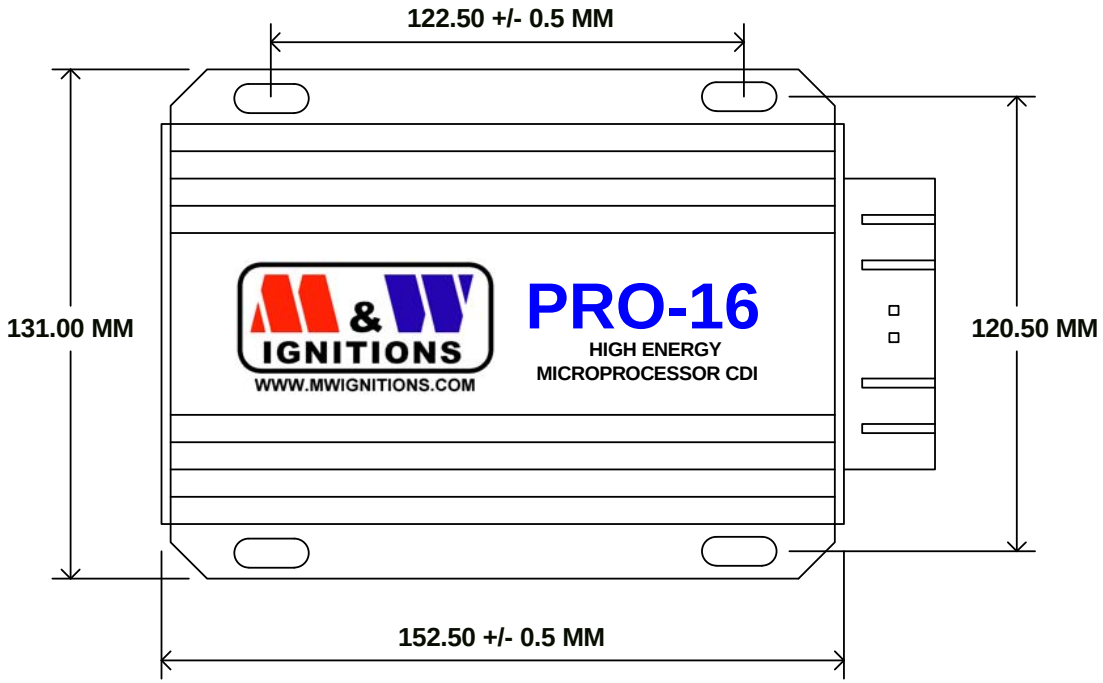
IGNITION COIL DAMAGE MAY OCCUR IF OPERATED WITH AN EXCESSIVE SPARK GAP.

CAUTION!
HIGH VOLTAGE

DISCONNECT POWER BEFORE WORKING ON UNIT

M&W IGNITIONS

Performance & Quality since 1996



Slot dimensions - 5mm * 10mm

Title: MOUNTING DIMENSIONS		
Size: A4	Number: PRO-16d S3	Revision: 1.0
Date: 13-Sep-2010	Sheet 1 of 1	
File: D:\M&W\..\Pro-16d_S3_Mounting dimensions.svg	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
2 +12V (Battery)	14 Ground (Battery)	26 Ignition switch
3	15 IEX input	27
4	16	28
5 Mode	17 Signal ground	29 Self test
6 Tacho	18 Shield	30
7	19	31
8	20	32
9	21	33
10 Coil 5** +	22 Coil 5 & 6 -	34 Coil 6** +
11 Coil 3** +	23 Coil 3 & 4 -	35 Coil 4** +
12 Coil 1** +	24 Coil 1 & 2 -	36 Coil 2** +

**** FIRING SEQUENCE NOT CYLINDER NUMBER**

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 = 1000 Hz
Coil primary voltage = 480V
Spark energy = 115 millijoules @ 700Hz
Trigger = Motec IEX input
Tacho = 12V symmetric square wave
Maximum allowable case temperature = 105°C
Dimensions = 152L * 110W * 40H
Weight = 740gm

Title	PRO-16 SIX CHANNEL CDI IGNITION		
Size A4	Number Pro-16d S3		Revision 1.2
Date:	13-Sep-2010	Sheet 1 of 1	
File:	D:\M&W\..\Pro16d_S3_1.sch	Drawn By: M&W	

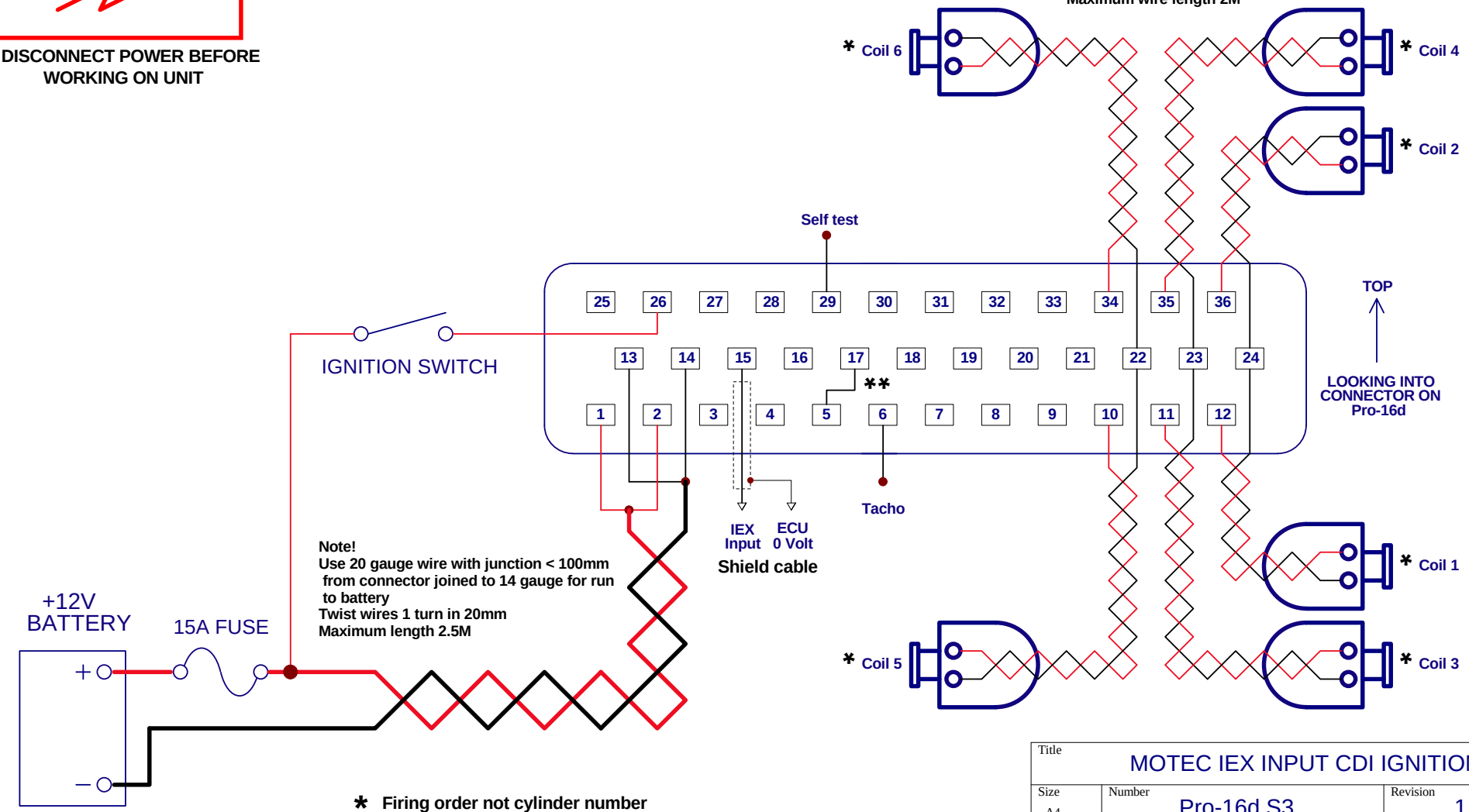
CAUTION!
HIGH VOLTAGE

DISCONNECT POWER BEFORE WORKING ON UNIT

M&W IGNITIONS

Performance & Quality since 1996

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



* Firing order not cylinder number

** Join terminals 5 & 17 for M4 / M48 mode

Title	MOTEC IEX INPUT CDI IGNITION	
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Date: 13-Sep-2010		Sheet 1 of 1
File: D:\M&W\..\Pro16d_S3_2.sch		Drawn By: M&W

CAUTION!
HIGH VOLTAGE

DISCONNECT POWER BEFORE WORKING ON UNIT

M&W IGNITIONS

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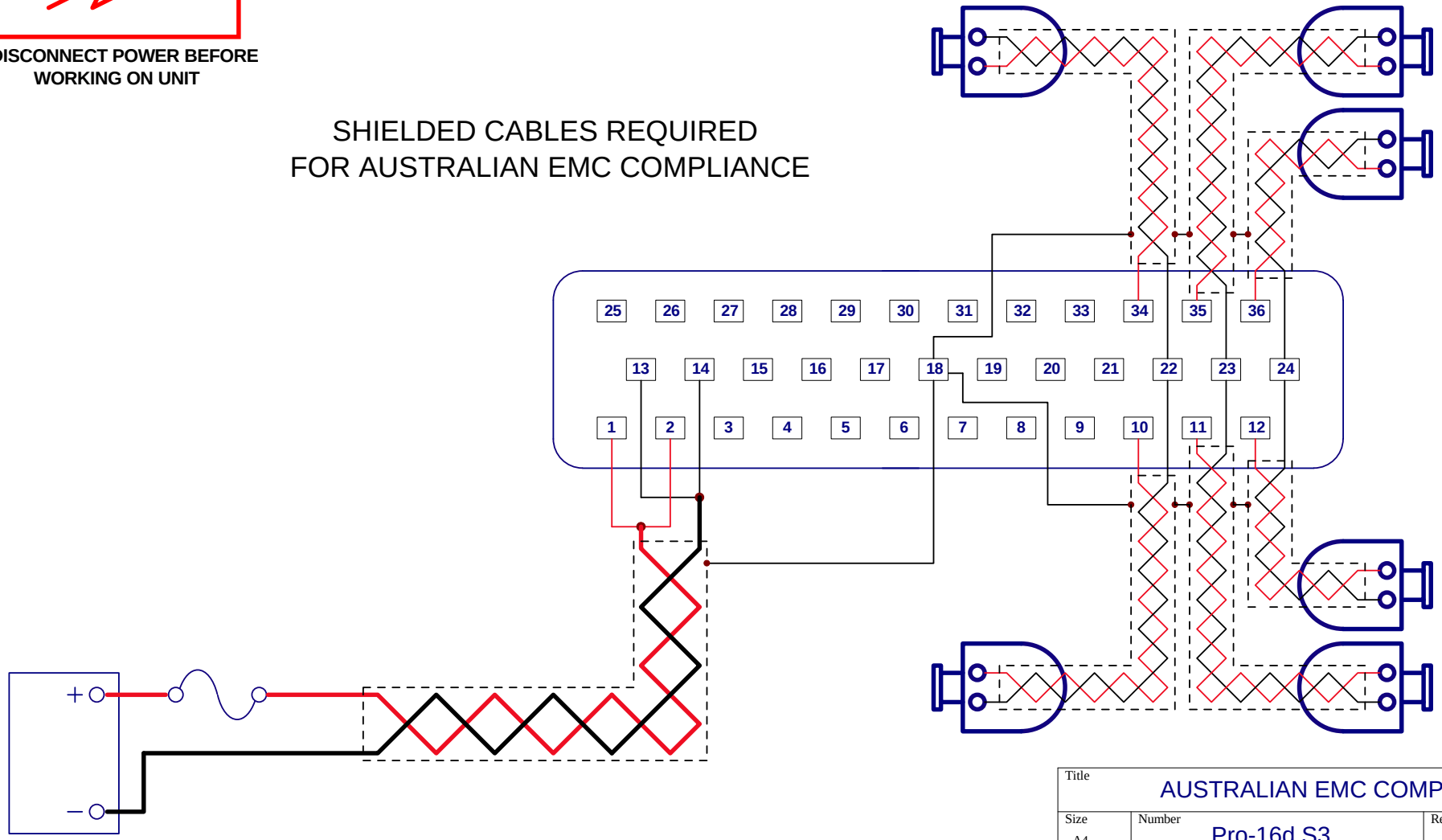
SHIELDED CABLES REQUIRED FOR AUSTRALIAN EMC COMPLIANCE



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Date: 13-Sep-2010		Sheet 1 of 1
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