



**Compliance Testing Report for
Australian/New Zealand Standard
AS/NZS 3133:2013
Approval and Test Specification – Air-break Switches**

Client:	CCG Australia P/L
Address:	2/8 Langar Way, Landsdale, WA, 6065, Australia.
Report Number:	0619CCGA1202_3133
Date of Testing:	3-18 June 2015
File Number:	CCG150428
Equipment Name:	Rotary Switch TypeA12-02 16Amp
Equipment Model No.:	A12-02
Equipment Description:	Rotary Switch 16Amp
Test Standards Specification:	AS/NZS 3133:2013
Result:	COMPLIES*
Tested by:	Alex Yang 
Approved by:	Wing Ming Yeung 
Date of Issue:	19 June 2015

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*** Refer to Summary Page for Clarification**

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SUMMARY OF COMPLIANCE WITH AUSTRALIAN AND NEW ZEALAND STANDARD AS/NZS 3133:2013

The EUT (Equipment Under Test) known as a Rotary Switch 16Amp, Model number: A12-02, was supplied for Australian/New Zealand Standard AS/NZS 3133:2013 testing by CCG Australia P/L of 2/8 Langar Way, Landsdale, WA, 6065, Australia.

The EUT was rated 240VAC, 16Amps and consisted of a double-pole single-way rotary switch with 90° of rotation, designed to be fitted into industrial lighting boxes used in above ground non-hazardous area mine sites.

The Rotary Switch 16Amp, Model number: A12-02 **COMPLIES** with the tested clauses of AS/NZS 3133:2013.

Method

Testing was performed in accordance with the standard and test procedure:

ASNZS3133:2013man Issue 1

Possible Test Case Verdicts:

- test case does not apply to the test object.....N(.A)
- test object does meet the requirementsP(ass)
- test object does not meet the requirements.....F(ail)
- testing was not performedNT
- noted.....ND

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AS/NZS 3133:2013			
Clause	Relevant Test Data	Result - Remark	Verdict
4	ENCLOSURE		P
5	INSULATING MATERIALS		P
6	FORM AND ACTION OF CONTACTS		P
7	SEQUENCE OF OPERATION		P
8	ACTUATING MECHANISM		P
9	EARTHING FACILITIES		N
10	PROHIBITED ARRANGEMENTS		N
11	FLUORESCENT LAMP LOAD RATING		N
12	MARKING		P
12.1	Information required		P
(a)	The name, or registered trade name, or mark, of the manufacturer or responsible vendor.	CCG	P
(b)	The operating voltage.	240V	P
(c)	Current ratings, in amperes, corresponding to the marked voltage.	16A	P
(d)	If a switch is suitable only for operation on either alternating current or direct current, the appropriate marking or symbol.	AC	P
(e)	If it is not the only type of switch marketed by the manufacturer or responsible vendor, the switch shall be marked with a catalogue number, type number or name, or other marking that will distinguish it from any other type marketed by the manufacturer or responsible vendor.	Model number: A12-02	P

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AS/NZS 3133:2013			
Clause	Relevant Test Data	Result - Remark	Verdict
(f)	Where the manufacturer or responsible vendor indicates that a switch is suitable for use with fluorescent lamp loads, such switches shall be marked with the rated fluorescent lamp load current corresponding to the marked voltage.		N
(g)	Where the manufacturer or responsible vendor indicates that a switch is suitable for control of motors, such a switch shall be marked 'M' together with the nominated locked rotor current in amperes, for example 'M.30'.		N
(h)	Where a switch may be construed as a circuit-breaker and such a switch does not provide overcurrent protection, it shall be suitably marked to indicate— (i) the function of the device; or (ii) that overcurrent protection is not provided.		N
(i)	The symbols for any neutral switching pole and earthing terminal.		N
(j)	Designation of degree of protection (if greater than IP 2X).		N
(k)	Instructions to be provided to ensure that field-installed insulation is fitted correctly where this insulation is required for the switch to comply with the requirements for IP protection, insulation resistance and high voltage.		N
12.3	Method of marking		P
12.4	Switches in equipment		P

13	TESTS		P
13.1	General		P
13.1.1	Compliance		P
13.1.2	Containing cases		P
13.1.3	Switches in equipment		P
13.1.4	Auxiliary contacts		N
13.1.5	a.c. and d.c. switches		N
13.1.6	Earthing		N
13.1.7	Switches for special purposes		N
13.1.8	Screws		N
13.1.9	Test voltage	240VAC	P

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AS/NZS 3133:2013			
Clause	Relevant Test Data	Result - Remark	Verdict
13.1.10	Conditioning	22.5°C, 93%, 48h	P
13.2	Mounting of switches for tests		P
13.3	Insulation resistance test	See appended table	P
13.3.1	Preparation		P
13.3.2	Test		P
13.4	High voltage test no. 1	See appended table	P
13.5	Endurance test		P
13.5.1	General		P
13.5.2	Test conditions	16A load, PF=0.77	P
13.5.3	Number of operating cycles		P
13.5.3.1	Test cycles	9800 cycles	P
13.5.3.2	Single-way switches		N
13.5.3.3	Rotary switches	single-way, double pole, 90° of rotation	P
13.5.3.4	Two-way switches		N
13.5.3.5	Intermediate switches		N
13.5.3.6	Multiple push-button switches		N
13.5.3.7	Other switches		N
13.5.4	Rate of operation	10 cycles/min period make: 3s	P
13.5.5	Criteria	Switch passed electrically and mechanically	P
13.6	Temperature test	See appended table	P
13.7	High voltage test no. 2	See appended table	P
13.8	Earthing facilities		N
13.9	Inspection of switch		P
13.10	Determination of ignitability and combustion propagation	See flammability results	P
13.11	Resistance to heat test	See appended table	P
13.12	Tests of IP ratings		N
13.12.1	General		N
13.12.2	Tests		N

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AS/NZS 3133:2013			
Clause	Relevant Test Data	Result - Remark	Verdict
13.13	Motor control test		N
13.13.1	General		N
13.13.2	Test		N
13.13.3	Criteria		N
13.14	Endurance test for switches intended for fluorescent lamp loads		N
13.14.1	General		N
13.14.2	Test load details		N
13.14.3	Test		N
APPENDIX A	ADDITIONAL REQUIREMENTS FOR ISOLATING SWITCHES		N

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AS/NZS 3133:2013			
Clause	Relevant Test Data	Result - Remark	Verdict
13.3	Table: Insulation Resistance Test		P
Location		Limit Value (MΩ)	Measured Value (MΩ)
With the switch in the 'ON' position(s)			
between all terminals connected together and the body		5	>100
between each pole in turn and all other terminals connected together and to the body		2	>100
With switch in the 'OFF' position(s)			
Between all incoming terminals connected together and each outgoing terminal in turn, with other outgoing terminals bonded together and connected to the body		2	>100
Between all outgoing terminals connected together and each incoming terminal in turn, with other incoming terminals bonded together and connected to the body		2	>100
Supplementary information: Mega-ohm setting: 500V			

13.4	Table: High Voltage Test no.1		P
Location		Test Voltage (AC RMS for 60 secs)	Verdict
With the switch in the 'ON' position(s)			
between all terminals connected together and the body		2000	P
between each pole in turn and all other terminals connected together and to the body		2000	P
With switch in the 'OFF' position(s)			
Between all incoming terminals connected together and each outgoing terminal in turn, with other outgoing terminals bonded together and connected to the body		2000	P
Between all outgoing terminals connected together and each incoming terminal in turn, with other incoming terminals bonded together and connected to the body		2000	P
Between live parts and metal knobs, push-buttons and metal foil in contact with the outer surface of accessible external parts and operating keys of insulating material		3000	P

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AS/NZS 3133:2013			
Clause	Relevant Test Data	Result - Remark	Verdict
13.6	Table: Temperature test		P
	Test voltage (V).....:	240VAC	—
	Test current A)..... :	16A	—
	t1(°C) :	21.3	—
	t2(°C) :	21.7	—
temperature rise dT of part/at:		dT (K)	Max. dT (K)
Switch body		35.7	100
Switch top surface		38.8	100
Switch L terminal		30.2	40
Switch N terminal		32.5	40

13.7	Table: High Voltage Test no.2		P
Location	Test Voltage (AC RMS for 60 secs)	Verdict	
With the switch in the 'ON' position(s)			
between all terminals connected together and the body	1500	P	
between each pole in turn and all other terminals connected together and to the body	1500	P	
With switch in the 'OFF' position(s)			
Between all incoming terminals connected together and each outgoing terminal in turn, with other outgoing terminals bonded together and connected to the body	1500	P	
Between all outgoing terminals connected together and each incoming terminal in turn, with other incoming terminals bonded together and connected to the body	1500	P	
Between live parts and metal knobs, push-buttons and metal foil in contact with the outer surface of accessible external parts and operating keys of insulating material	2500	P	

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AS/NZS 3133:2013			
Clause	Relevant Test Data	Result - Remark	Verdict

13.11	TABLE: ball pressure test of thermoplastic parts		P
	allowed impression diameter (mm)	≤ 2 mm	—
part	test temperature (°C)	impression diameter (mm)	
Enclosure	125	1.15	
Switch Contact	125	0.95	

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AS/NZS 3133:2013
Flammability Test Result

The following parts were subjected to the appropriate glow-wire/needle flame tests specified in AS/NZS 3100:2009+A1+A2+A3 Annex A

<u>SPECIMEN NO.</u>	<u>PART</u>	<u>MATERIAL</u>	<u>COLOUR</u>
1.	Switch Enclosure	Thermoplastic	Black
2.	Switch Contact	Thermoplastic	White

For results see the following tables

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AS/NZS 3133:2013
Flammability Test Result

Glow-wire tests

The specimens were tested with the test surfaces arranged vertically and the glow-wire tip applied at right angles for 30s at the temperature stated:

AS/NZS 3100 Annex A	SPECIMEN NUMBER ⇒	1	2		
4	How tested	SA	SA		
6	Glow-wire tip temp (°C)	750	750		
11(a)	Time till ignition of specimen (s)	NI	NI		
	Time till ignition of the underlying layer (tissue paper, pinewood board etc.) (s)	NI	NI		
11(b)	Time from tip application till flaming or glowing ceased (s)	NI	NI		
11(c)	Maximum flame height (mm)	NA	NA		
11(d)	Specimen distortion	YES	YES		
	Depth of penetration (mm)	NM	NM		
11(e)	Pinewood board scorching	NO	NO		
12(a)	Flame or glowing	NO	NO		
12(b)	Time of flames or glowing of specimen, surroundings or layer below after removal of tip (maximum allowable: 30 s) (s)	NI	NI		
	Ignition of surrounding parts or layer below (not permitted)	NI	NI		
12	Ignition of wrapping tissue (not allowed)	NI	NI		
12	RESULT	P	P		

Legend: CE-Complete Equipment; SA-Sub-Assembly; C-Component; ME-manually Extinguished; NI-No Ignition; NA-Not Applicable; P-Pass; F-Fail; Sat-Satisfactory; Uns-Unsatisfactory; ø-Ignited Specimen Number; NF-Needle Flame Test Required; NM – Not Measured

* Either 12(a) or 12(b) has to comply. "Yes" does not constitute a point of non-compliance with 12(a) if the requirements of 12(b) are met.

*****END OF REPORT BODY*****

Appendix 1 – Photographic Record of Sample

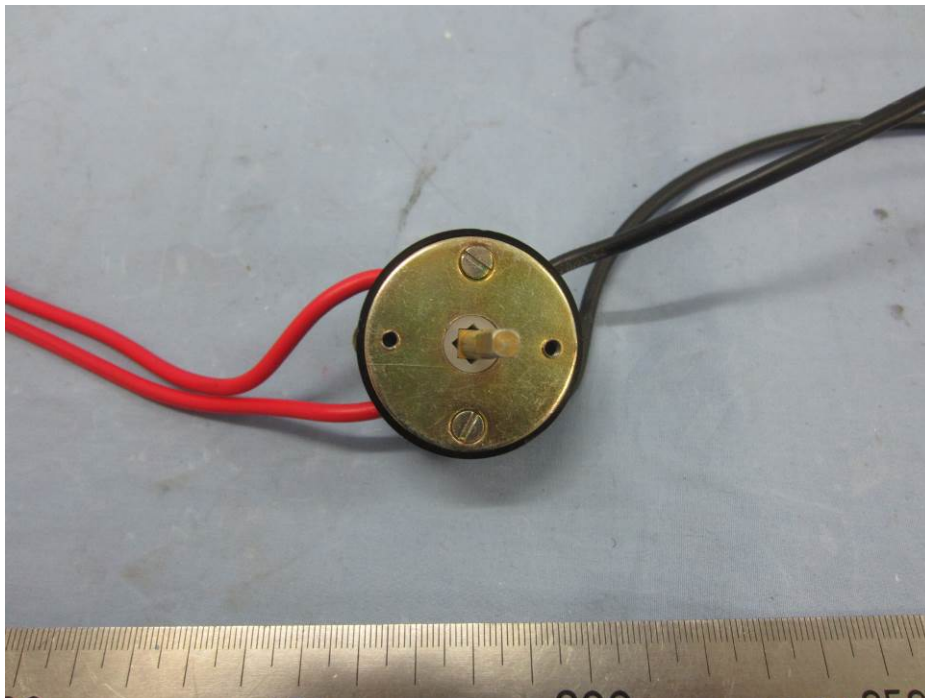
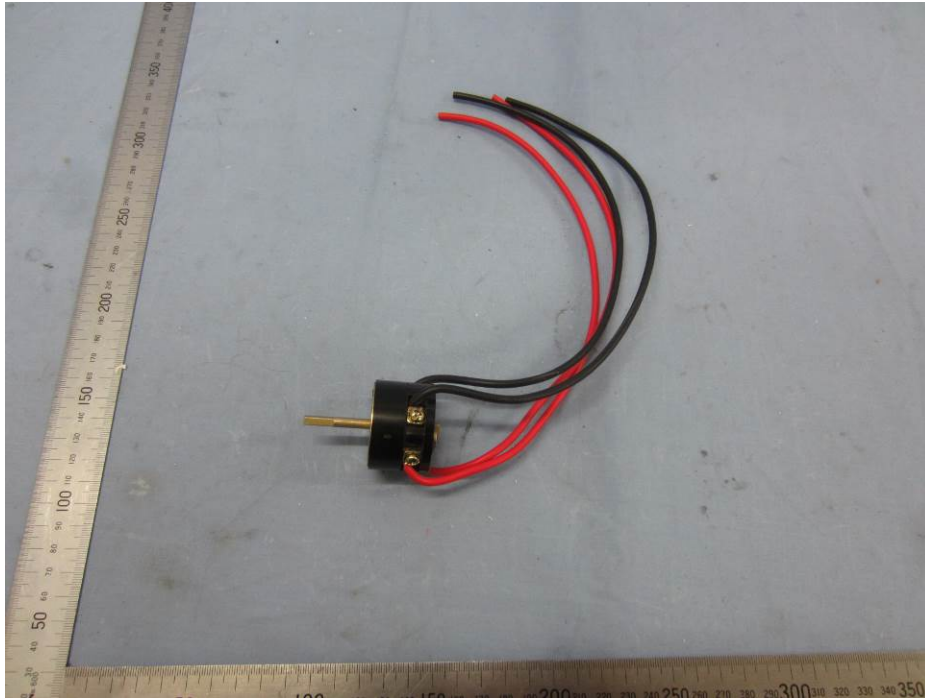
Appendix 2 – Declaration Letter

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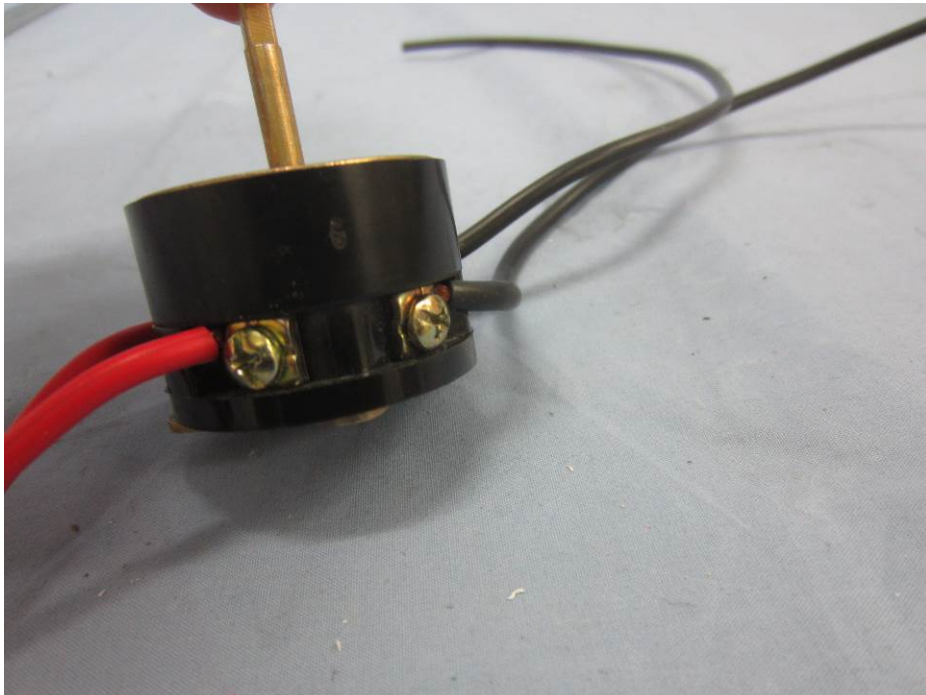
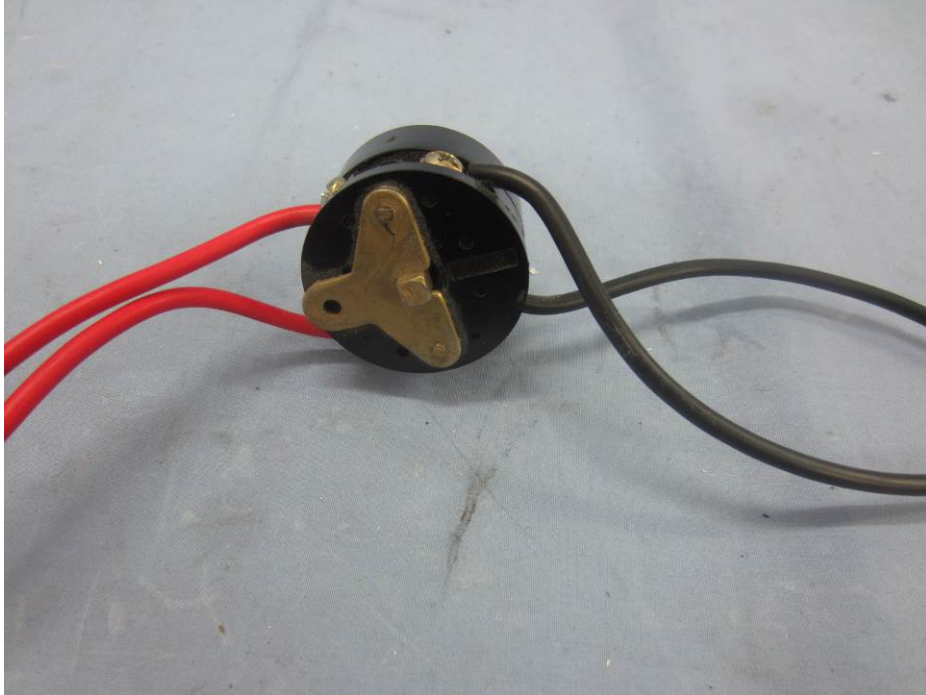


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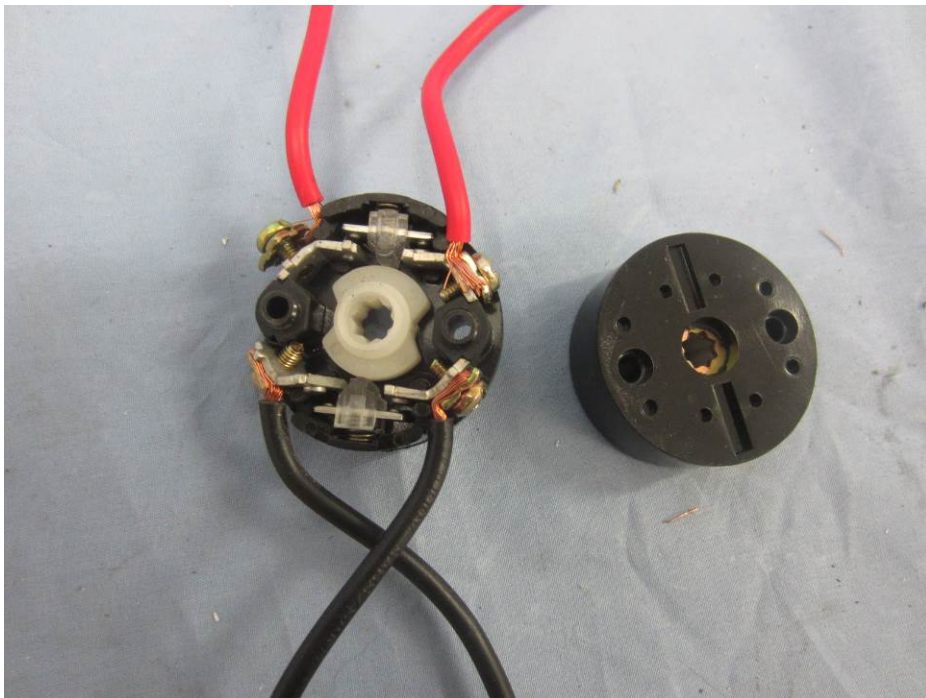
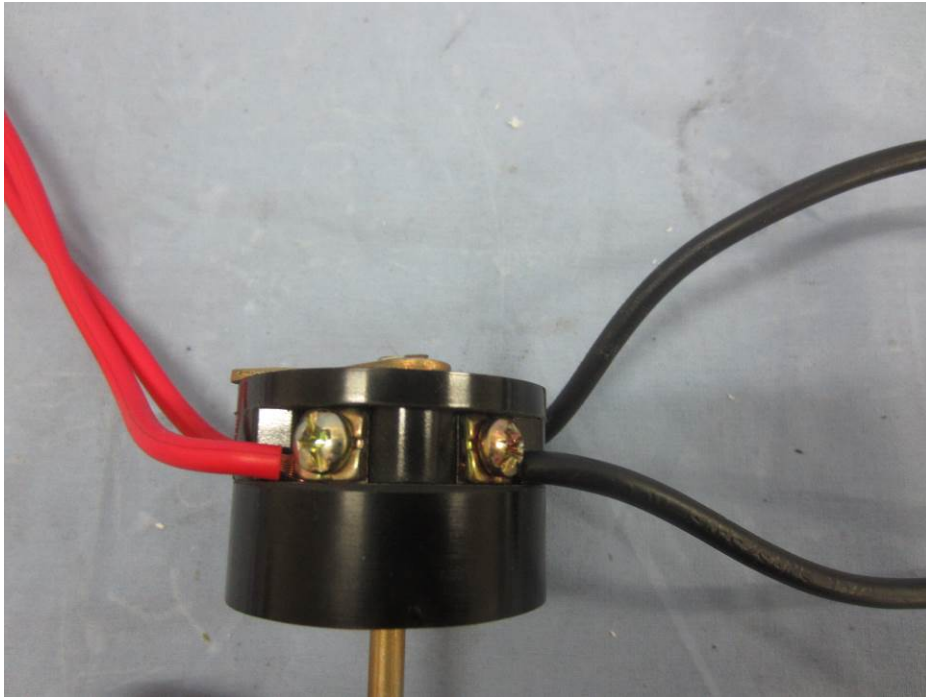


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Appendix 2 – Declaration Letter

OFFICE: Unit 2, 8 Langar Way, Landsdale, Western Australia, 6065
P.O. Box 285 Joondalup Western Australia 6919
Website: www.ccgcableglends.com.au

Tel: + 61 8 9303 9112
Fax: + 61 8 9303 2986
Email: info@cableglends.com.au

A.B.N. 32 078 674 496



Rotary Switch Type A12-02

To Whom It May Concern

18th June 2015

This is to confirm that the above captioned switch will be indelibly marked with an operating voltage of 240v AC and 16 Amperes current rating, trade name of CCG, Model # A12-02

Only for use in CCG junction boxes, having been tested for safe operation by Austest Australia.

Regards



Adrian Wells

MD CCG Australia

CCG AUSTRALIA PTY LTD Trading as: CCG Cable Terminations

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