

Traco Power

Model: TOP 100-105

EMC – Test Report

Amendment to EMC-Report: EMC_TOP100_105_19.12.08

EUT: Traco Power Model: TOP 100-105

Serial No.: 51217052685

Manufacturer No.: 100HPP181

Manufacturer: Convertec Ltd.
Whitemill Industrial Estate
Wexford
Republic of Ireland

Tester: Gunnar Tapper, Convertec Ltd

Date: 17/06/2014

It should be noted, that combining two or more CE compliant finished appliances does not automatically produce a compliant system. The manufacturer of an apparatus or a fixed installation as defined in the “Guide for the EMC Directive 2004/108EC, 21. May 2007” is responsible for the EMC-compliance of the final apparatus.

Table of Contents

1. Conducted RF Immunity Test at AC Mains Terminals 3

1.1. Test Setup 3

1.2. Conducted RF Immunity Test Results..... 4

2. Conducted RF Immunity Test at DC Output Terminals 5

2.1. Test Setup: 5

2.2. Conducted RF Immunity Test Results..... 6

3. Radiated RF Immunity Test 7

3.1. Test Setup 7

3.2. Radiated RF Immunity Test Results..... 8

4. Power Frequency Magnetic Field Immunity Test 9

4.1. Test Setup 9

4.2. Power Frequency Magnetic Field Immunity Test Results 10

5. Summary 12

6. List of Equipment Used: 13

1. Conducted RF Immunity Test at AC Mains Terminals

Equipment under Test: TOP 100-105
EUT Serial No.: 51217092685
Customer Spec: CS-100HPPseries.doc
Date: 17/06/2014
Standard: IEC61000-6-2: 2005 referring to IEC 61000-4-6:2004

Notes:

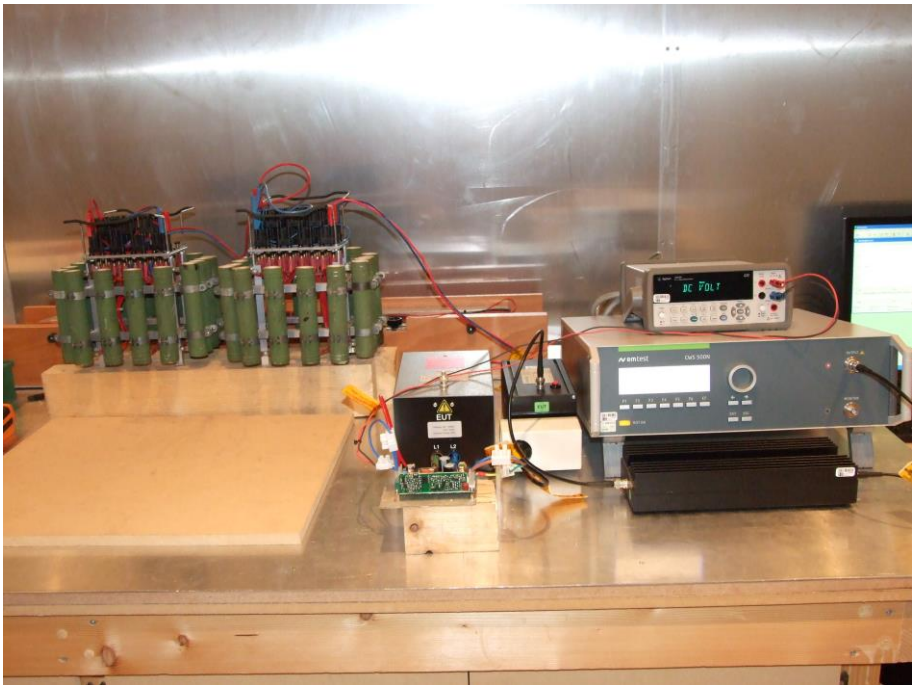
- EUT tested under normal operating conditions of 230V 50Hz input at nominal load (3.3V/20A Resistive).
- Test carried out using test generator “EM Test CWS 500N”, Coupling/Decoupling network “EM Test CDN M2/M3”, an attenuator “EM Test ATT6/75” and measurement instrument “Agilent 34410A”.
- Unit tested to IEC61000-4-6 test level 3.

1.1. Test Setup

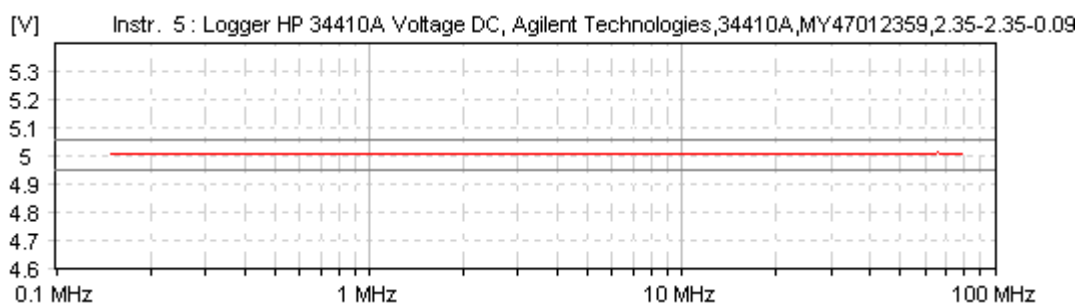
Test Equipment Settings:

Frq. start [MHz]	Level start [V]	Frq. stop [MHz]	Level stop [V]	Frq. step	td [s]	tp [s]	Modulation
0.150	10.0	80.000	10.0	1.0 %	0.5	0.0	AM 1kHz 80%

Test Setup:



1.2. Conducted RF Immunity Test Results



Conclusion:

The EUT meets Classification A (Ref. Section 9, IEC 61000-4-3).

The test results were evaluated in relation to the Customer Specification

CS-100HPPseries.doc and the output did not change by more than $\pm 50\text{mV}$ therefore the EUT was considered to have PASSED the tests.

PASS

2. Conducted RF Immunity Test at DC Output Terminals

Equipment under Test: TOP 100-105
EUT Serial No.: 51217092685
Customer Spec: CS-100HPPseries.doc
Date: 17/06/2014
Standard: IEC61000-6-2: 2005 referring to IEC 61000-4-6:2004

Notes:

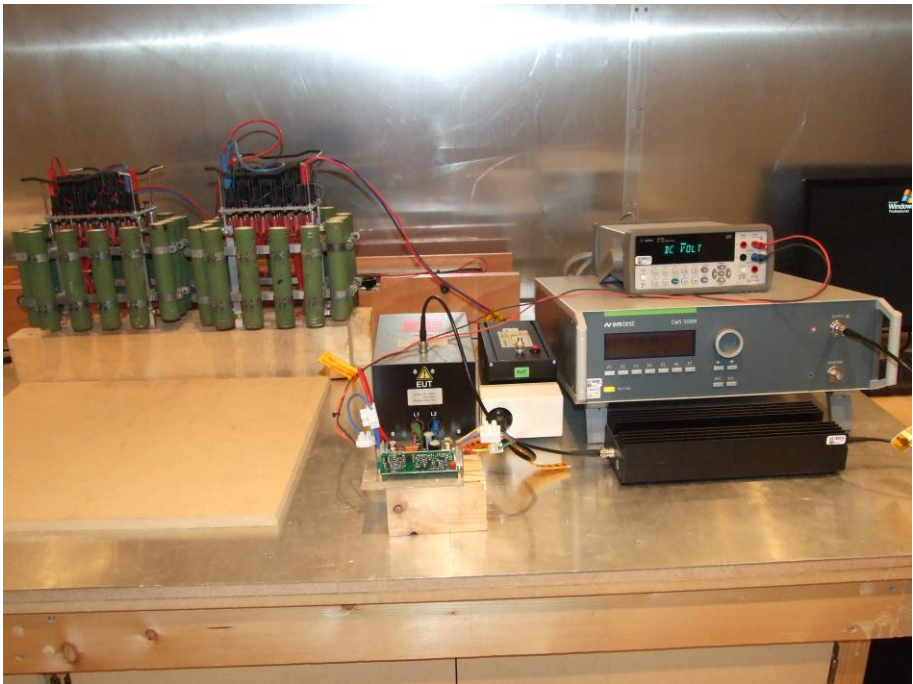
- EUT tested under normal operating conditions of 230V 50Hz input at nominal load (5.0V/20A Resistive).
- Test carried out using test generator “EM Test CWS 500N”, Coupling/Decoupling network “EM Test CDN M2/M3”, an attenuator “EM Test ATT6/75”, measurement instrument “Agilent 34410A” and FCC-801-M2-50A Coupling/Decoupling network.
- Unit tested to IEC61000-4-6 test level 3.

2.1. Test Setup:

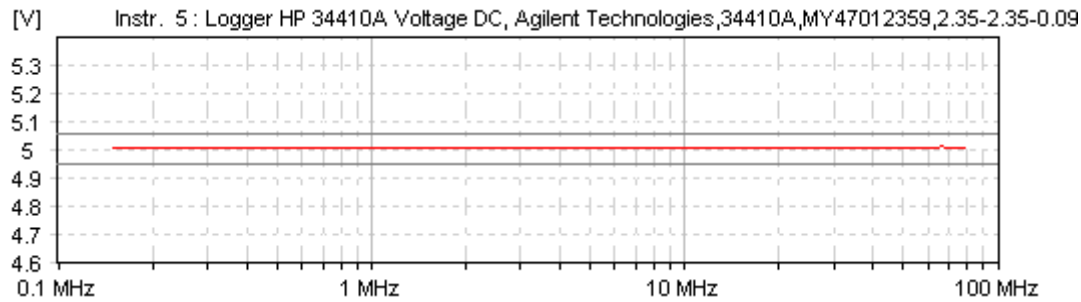
Test Equipment Settings:

Frq. start [MHz]	Level start [V]	Frq. stop [MHz]	Level stop [V]	Frq. step	td [s]	tp [s]	Modulation
0.150	10.0	80.000	10.0	1.0 %	0.5	0.0	AM 1kHz 80%

Test Setup:



2.2. Conducted RF Immunity Test Results



Conclusion:
Meets Classification A (Ref. Section 9, IEC 61000-4-3)
Test Results were evaluated in relation to the Customer Specification
CS-100HPPseries.doc and the output did not change by more than +/-50mV therefore the
EUT was considered to have PASSED the tests.

PASS

3. Radiated RF Immunity Test

Equipment under Test: TOP 100-105
EUT Serial No.: 51217092685
Customer Spec: CS-100HPPseries.doc
Date: 17/06/2014
Standard: IEC61000-6-2: 2005 referring to IEC61000-4-3: 2004

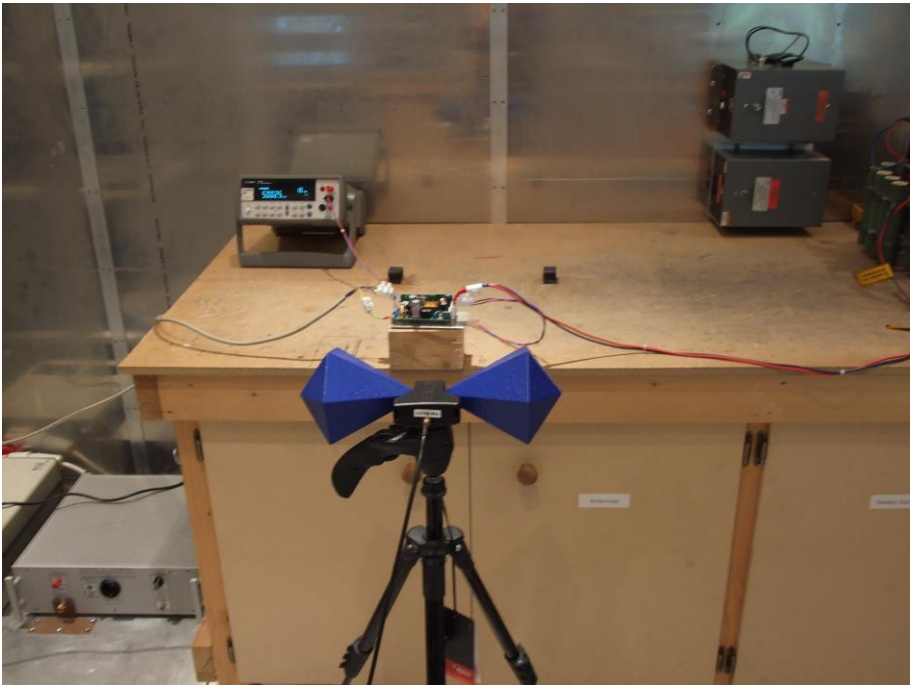
- Notes:**
- EUT tested under normal operating conditions of 230V 50Hz input at nominal load (5.0V/20A Resistive).
 - Test carried out using test generator “EM Test CWS 500N”, Antenna BicoLOG 30100 X and Digitizing Multi Meter “Agilent 34405A”
 - Measurement was carried out in a shielded room
 - The input power port of the EUT was connected to mains via a 1.5m 3-core cable
 - The output power port of the EUT was connected to the resistor bank via 1.5m long single core wires –wire size 14AWG

3.1. Test Setup

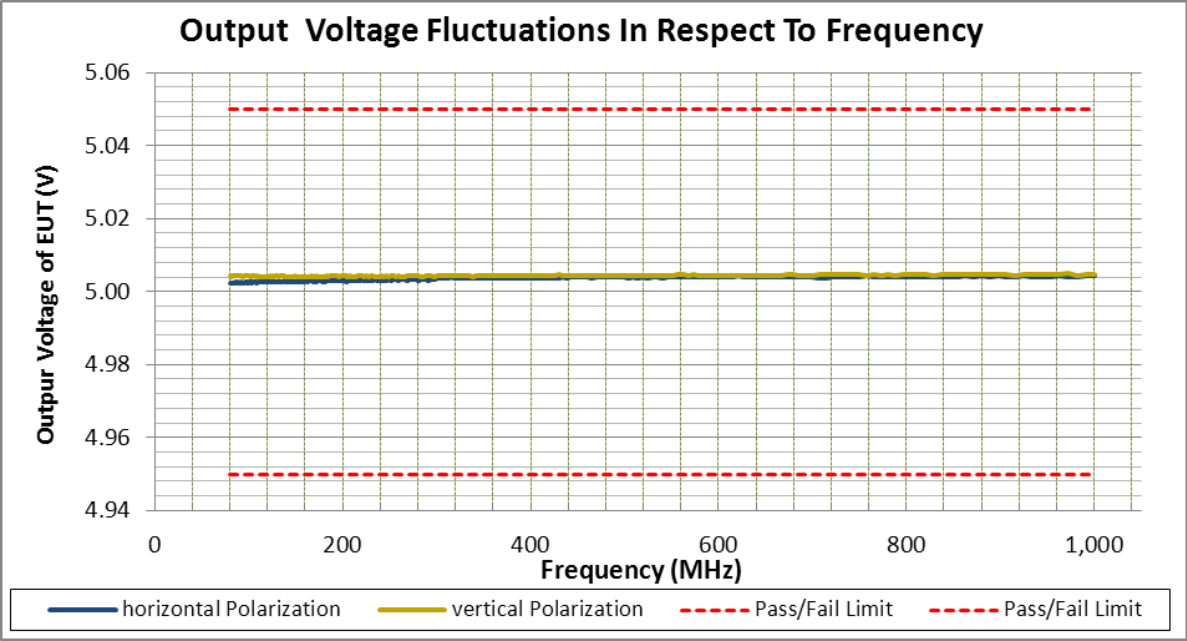
Test Equipment Settings:

Frq. start [MHz]	Level start [V/m]	Frq. stop [MHz]	Level stop [V/m]	Frq. step	td [s]
80.0	10.0	1000.0	10.0	1.0 %	1

Test Setup:



3.2. Radiated RF Immunity Test Results



Conclusion:
The EUT meets classification A (Ref. Section 9, IEC 61000-4-3). The test results were evaluated in relation to the Customer Specification CS-100HPPseries.doc and the output did not change by more than +/-50mV therefore the EUT was considered to have PASSED the tests.

PASS

4. Power Frequency Magnetic Field Immunity Test

Equipment under Test: TOP 100-105
EUT Serial No.: 51217092685
Customer Spec: CS-100HPPseries.doc
Date: 17/06/2014
Standard: IEC61000-6-2: 2005 referring to IEC61000-4-8: 2001

Notes:

- EUT tested under normal operating conditions of 230V 50Hz input at nominal load (5.0V/20A Resistive).
- Test carried out using test generator “Chroma Programmable AC Source”, “1meter x 1meter 100 turn Induction Coil” and measurement instrument “Agilent 34405A”.
- Unit only required to meet test level 4 but tested to IEC61000-4-8 test levels 5.

4.1. Test Setup

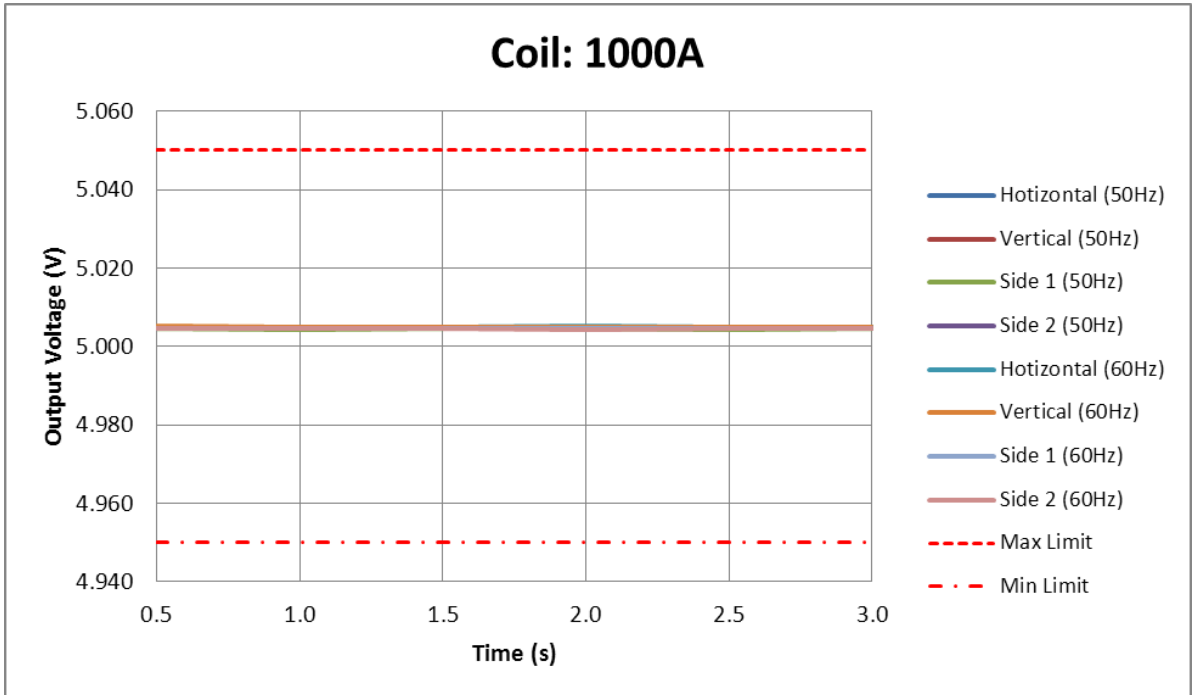
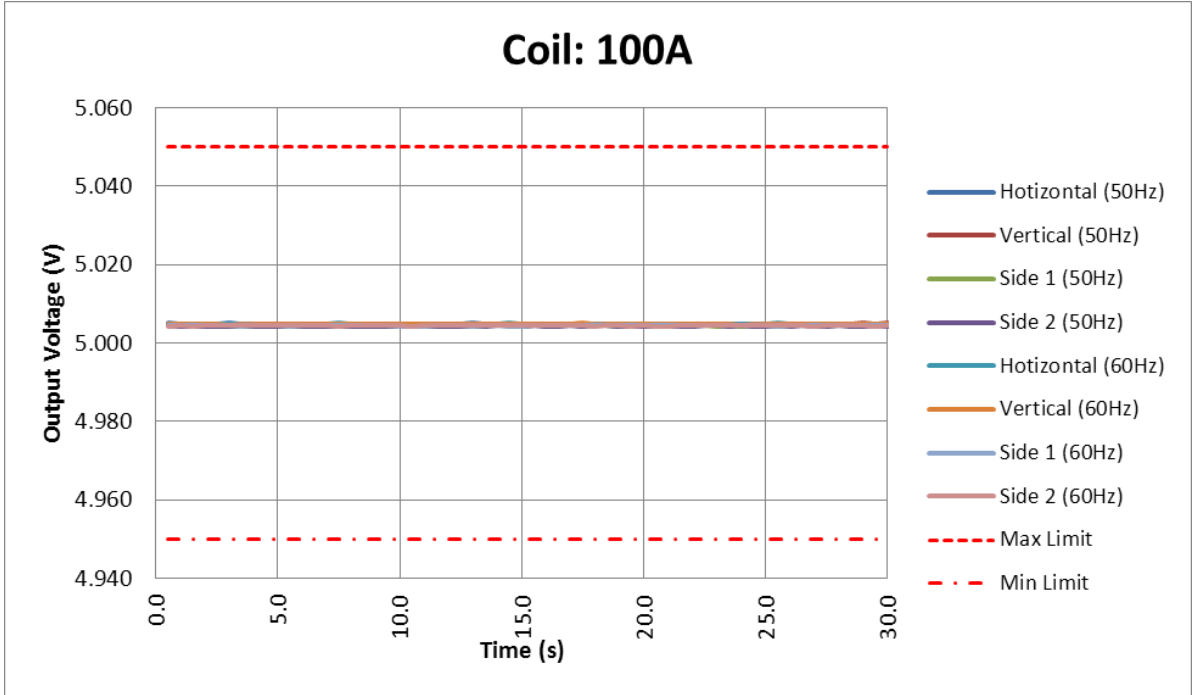
Test Equipment Settings:

Test generator settings			
Frequency	AC Current through Induction Coil (Arms)	Magnetic Field Strength (A/m)	Applied Field duration [s]
50Hz	1	100	Continuous
60Hz	1	100	Continuous
50Hz	10	1000	3
60Hz	10	1000	3

Test Setup:



4.2. Power Frequency Magnetic Field Immunity Test Results



Conclusion:

The EUT meets classification A (Ref. Section 9, IEC 61000-4-8). The test results were evaluated in relation to the Customer Specification CS-100HPPseries.doc and the output did not change by more than +/-50mV therefore the EUT was considered to have PASSED the tests.

PASS

Environmental conditions

5. Summary

Regulation	Class/Test Level	Result	Comments
IEC61000-6-2: 2005 + IEC61000-4-6:2004			
Conducted Input RF Immunity	Level III 10V (Class A)	PASS	
Conducted Output RF Immunity	Level III 10V (Class A)	PASS	
IEC61000-6-2: 2005 + IEC61000-4-3:2004			
Radiated RF Immunity	Level III 10V (Class A)	PASS	
IEC61000-6-2: 2005 + IEC61000-4-8: 2001			
Power Frequency Magnetic Field Immunity	Level 5 (Class A)	PASS	

6. List of Equipment Used:

Description	Model No.	Manufacturer	Serial No.
EMC Analyzer	E7402A	Agilent	MY45119210
LISN 1	PMM L2-16	PMM	1230L00301
LISN 2	FCC-801-M2-50A	FCC	3035
LISN 3	NSLK 8127	Schwarzbeck	8127683
RF Current Probe	F-33-1	FCC	759
Transient Limiter	11947A	Agilent	3107A03645
Precision Power Meter	LMG95	Zimmer	10790709
ESD Gun	SESD 200	Schloder	142261
Surge Generator	PSURGE 4010	Haefely	583 334-63
Burst generator	PEFT 4010	Haefely	080 981-08
Coupling Capacitor	IP4A	Haefely	171241
Electronic Load	ELA 500	Zentro-Electrik	63145803
High Power Resistors	n/a	n/a	n/a
Multimeter	34405A	Agilent	TW46290007
Multimeter	34405A	Agilent	TW46290015
Multimeter	34410A	Agilent	MY47012359
Multimeter	1906	TTI	n/a
High frequency generator	CWS 500N	EM Test	V0847104427
Coupling/Decoupling Network	CDN M2/M3	EM Test	1108-34
Attenuator	ATT6/75	EM Test	1107-53
Oscilloscope	TDS1002	Tektronix	C016388
Oscilloscope	TDS2014C	Tektronix	C010602
Programmable AC Source	61604	Chroma	ABR000000672
DC power supply	SM 7020 - D	Delta electronika	014604000011
DC power supply	SM 7020 - D	Delta electronika	014604000024
Pulse Generator	33220A	AGILENT	MY44044002
Biconical Antenna	BicoLOG 30100 X	AARONIA	79479
Cables	Type	Length	Comments
Mains Supply Cable	3-wire	1m	Unshielded
Mains Supply Cable	3-wire	1.5m	Unshielded
DC Lines Cable	2-wire	1m	Unshielded
DC Lines Cable	2-wire	1.5m	Unshielded