

Measurements - Electrical bonding

AMM 24-00-00-761

 **Modified content**

REFERENCE

Documentary Unit	AMM 24-00-00-761
References/Effectivity	Measurements - Electrical bonding
Language	EN(en)
Issue Date	2021.12.10

EFFECTIVITY

Model	EC155
Version	B, B1
Serial Number	,

STATUS

Type of modification	R
Description	I
Reason for update	Information added
Maintenance work affected	No

Additional information from O.R.I.O.N. Work card referenced in Maintenance Program

ELECTRICAL POWER

MSM 05-20-00 ATA 24

B1

ELECTRICAL POWER

MSM 05-20-00 ATA 24

B

A. Special Tools

Commercial measuring cable
 Commercial milliohmmeter, type OM16 or equivalent (milliohmmeter which can deliver 10 A minimum with contact probes)
 Commercial contact probes

B. Materials

None

C. Routine Replacement Parts

None

[AMM 24-00-00-911](#)
[20-02-07-401 MTC](#)
[20-02-07-402 MTC](#)
[20-07-02-201 MTC](#)
[20-07-03-406 MTC](#)
[20-07-03-408 MTC](#)

General Safety Instructions - Electrical Power

E. Preliminary Steps

CAUTION

BEFORE STARTING ANY WORK ON THE ELECTRICAL SYSTEMS, REFER TO [AMM 24-00-00-911](#).

READ THE APPLICABLE INSTRUCTIONS WHEN GROUNDING THE AIRCRAFT PARKED IN A REPAIR SHOP AS PER [20-07-02-201 MTC](#).

READ THE APPLICABLE INSTRUCTIONS WHEN WORKING ON AN AIRCRAFT ELECTRICAL SYSTEM AND DURING GROUND POWER SUPPLY AS PER [20-07-03-406 MTC](#).

- E.1. Install the appropriate access equipment.
- E.2. Disconnect all the electrical power supplies.
- E.3. Open the doors and access hatches necessary to have good access to the work areas.
- E.4. Remove all equipment and furnishings necessary to have good access to the work areas.

F. Procedure

[Figure 1](#)
[Figure 2](#)
[Figure 3](#)
[Figure 4](#)
[Figure 5](#)
[Figure 6](#)

sub-task 24-00-00-761-001

[Figure 1](#) [Figure 2](#) [Figure 3](#) [Figure 4](#) [Figure 5](#) [Figure 6](#) [Figure 7](#) [Figure 8](#) [Figure 9](#) [Figure 10](#)
[Figure 11](#) [Figure 12](#) [Figure 13](#) [Figure 14](#) [Figure 15](#) [Figure 16](#)

- F.1. Measuring the electrical bonding.

NOTE

This inspection is performed to maintain the correct operation of the electromagnetic protections and to provide the safety of the helicopter.

The inspection points result from the identification of the connections participating in the flow of lightning, the equipotential bonding of the aircraft, and the grounding of the structure, which can also cause deterioration of the electrical bonding of systems critical for flight safety.

The monitoring of these electrical bonding connections prevents early aging and provides the electromagnetic safety of the helicopter.

- a. Perform a visual inspection of the electrical bonding connections area by area and equipment item by equipment item:

(1) make sure that there is no corrosion or degradation of the mechanical connection,

(2) perform a check particularly at the junctions of the electrical bonding braids with the airframe (loosening, wear of the braids).

- b. Record the electrical bonding measurements:

(1) unless differently specified, the measurements are taken with respect to the datum point 9N (1) located on the frame near the battery ([Figure 1](#)),

(2) take the measurements with:

(a) a milliohm meter, type OM16 or equivalent (milliohm meter which can deliver 10 A minimum with contact probes),

(b) two contact probes for some measurements,

(c) one contact probes and one measurement cable connected to the datum point 9N for the other measurements ([Figure 1](#)),

(3) measure the electrical bonding value of the different components or equipment items in the following areas:

(a) MGB and MRH upper part ([Figure 2](#)),

(b) DC power generation upper part ([Figure 3](#)),

(c) structure ([Figure 4](#)),

- (d) lower structure ([Figure 4](#) , [Figure 5](#) , [Figure 6](#) , [Figure 7](#) , [Figure 8](#)),
 - (e) nose section ([Figure 9](#) , [Figure 10](#)),
 - (f) luggage compartment ([Figure 11](#) , [Figure 12](#) , [Figure 13](#) , [Figure 14](#)),
 - (g) tail boom-fin ([Figure 14](#)),
 - (h) onboard instruments ([Figure 15](#)),
 - (i) console ([Figure 16](#)).
- c. If the measured value is greater than the tolerance, adjust the contact areas and the type of assembly as per [20-02-07-401 MTC](#) and [20-02-07-402 MTC](#) .
- d. If any part or equipment item is replaced, perform the electrical bonding [20-02-07-401 MTC](#) and [20-02-07-402 MTC](#) .
- e. Record the value of the electrical bonding.

G. Final Steps

- G.1. Perform a check of the aspect and make sure that the work areas and the helicopter are clean as per [20-07-03-408 MTC](#) .
- G.2. Connect all the electrical power supplies.
- G.3. Install the equipment items and furnishings that were removed to access the work areas.
- G.4. Close the open doors and access hatches.
- G.5. Remove the access equipment.

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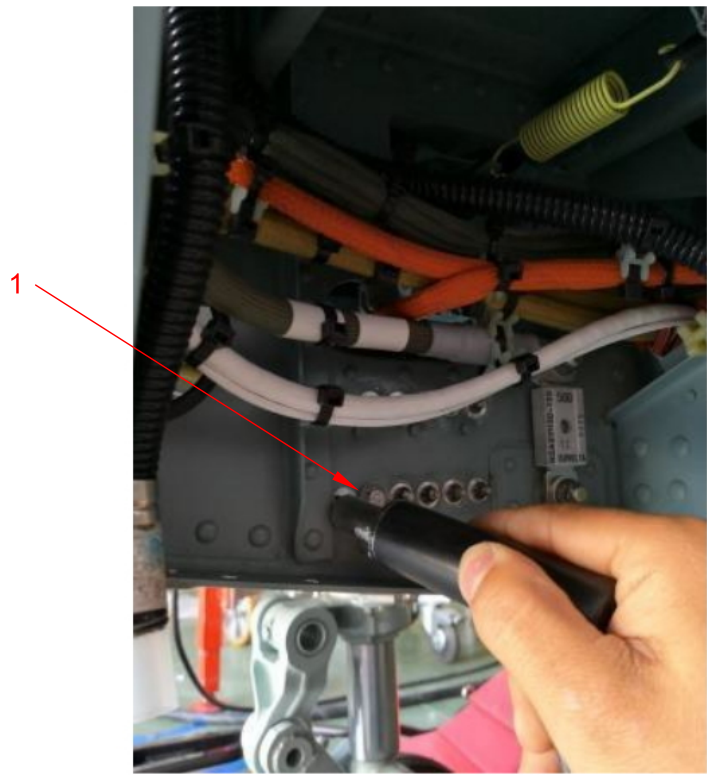
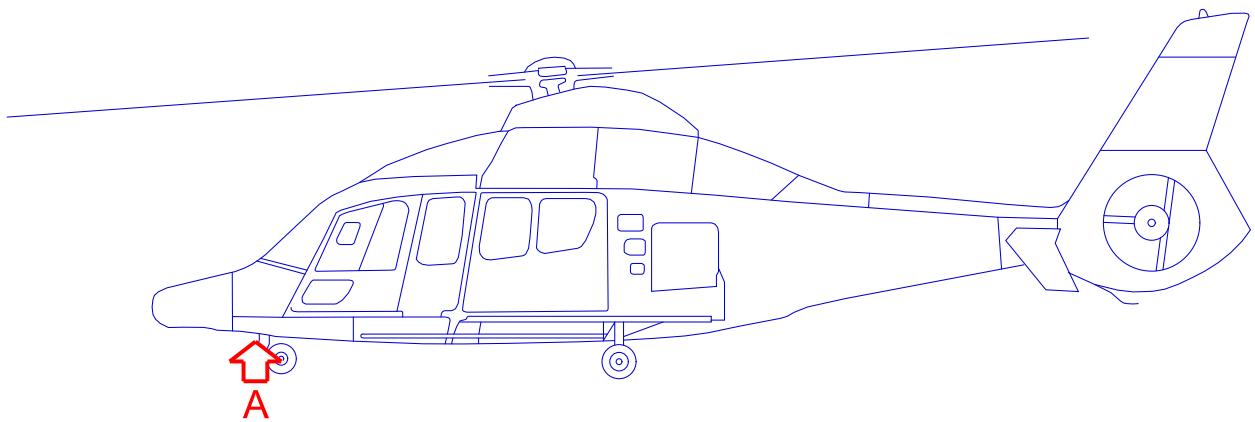
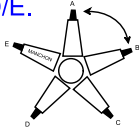

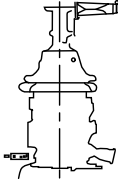









Figure 1/16

Upper Deck Bonding MGB electrical bonding			
	R Max (mΩ)	R mesurée (mΩ) R measured (mΩ)	Figures
<p>BTP: Entre branches A/B Entre branches C/D Entre branches D/E MGB: Between A/B, Between C/D, Between D/E.</p> 	15		
<p>BTP (M3) / masse hélicoptère MGB (M3) / Helicopter Grounding</p> 	1,35		
<p>Tresse carter droit / M3 RH housing electrical bonding / M3</p>	1,5		
<p>Tresse carter gauche / M3 LH housing electrical bonding / M3</p>	1,5		

THE DOCUMENT REFERENCE IS AVAILABLE ONLINE. PLEASE CHECK IF THE ONLINE DOCUMENTATION CORRESPONDS TO THE PRINTED VERSION

Figure 2/16



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Upper Deck DC Power Supply			
	R Max (mΩ)	R mesurée (mΩ) R measured (mΩ)	Figures
Génératrice gauche LH generator	3,75		
Génératrice droite RH generator	3,75		
Turbine droite RH turbine	3,75		
Turbine gauche LH turbine	3,75		

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Figure 3/16

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Structure			
	R Max (mΩ)	R mesurée (mΩ) R measured (mΩ)	Figures
Prise de masse gauche à l'arrière du cadre 4630 LH Grounding Jacks at the back of Frame 4630	0,75		
Prise de masse droite entre cadre 300 et 976 RH grounding jacks between frame 300 and 976	0,75		






Bottom Structure			
	R Max (mΩ)	R mesurée (mΩ) R measured (mΩ)	Figures
Train AV Nose landing gear	15		

Figure 4/16




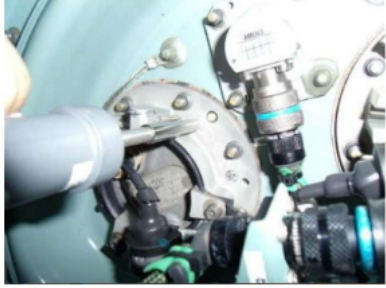
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Bottom Structure			
	R Max (mΩ)	R mesurée (mΩ) R measured (mΩ)	Figures
Train gauche LH landing gear	15		
	5000		
Train droit RH landing gear	15		
	5000		

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Figure 5/16





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Bottom Structure			
	R Max (mΩ)	R mesurée (mΩ) R measured (mΩ)	Figures
Réservoir central droit Pompe droite RH pump RH center fuel tank	3,75		
Réservoir central droit Pompe gauche LH pump RH center fuel tank	3,75		
Réservoir central gauche Pompe droite RH pump LH center fuel tank	3,75		
Réservoir central gauche Pompe gauche LH pump LH center fuel tank	3,75		

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Figure 6/16

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Bottom Structure			
	R Max (mΩ)	R mesurée (mΩ) R measured (mΩ)	Figures
Cadre 976 Frame 976	0,75		
AFCS (APM and SEMA) Vérin de lacet (¼ de coque droite) Yaw Trim Actuator ¼ Right Bottom Structure	6		
AFCS (APM and SEMA) RVDT lacet (Zone ¼ de coque droite) RVDT Yaw Rotary Variable Differential Transducer (¼ RH Bottom Structure)	6		
Pompe de secours (¼ de coque gauche à proximité du train d'atterrissage) Auxiliary Pump (¼ LH bottom Structure near landing gear)	15		

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Figure 7/16

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Bottom Structure			
	R Max (mΩ)	R mesurée (mΩ) R measured (mΩ)	Figures
AFCS (APM and SEMA) Vérin de trim roulis (¼ de coque gauche) Roll Trim Actuator (¼ LH bottom Structure)	6		
AFCS (APM and SEMA) Vérin de trim collectif (¼ de coque gauche) Collective Trim Actuator (¼ LH bottom Structure)	6		
AFCS (APM and SEMA) RVDT collectif (¼ de coque gauche) RVDT collective Rotary Variable Differential Transducer (¼ LH bottom Structure)	6		
AFCS (APM and SEMA) Vérin de TRIM tangage (¼ de coque gauche) Pitch Trim Actuator (¼ LH bottom Structure)	6		

Figure 8/16


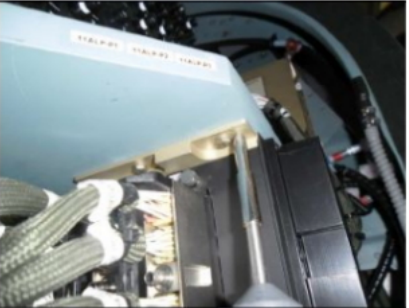


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Nose Bay			
	R Max (mΩ)	R mesurée (mΩ) R measured (mΩ)	Figures
Coeur batterie 3P Battery on Electrical Master Box 3P	3,75		
Coeur droit 2 alpha RH Electrical Master box 2 alpha	3,75		
Coeur gauche 1 alpha LH Electrical Master box 1 alpha	3,75		
ADU 1 (gauche) ADU 1 (LH)	3,75		

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Figure 9/16





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Nose Avionic Bay			
	R Max (mΩ)	R mesurée (mΩ) R measured (mΩ)	Figures
ADU 2 (Droit) ADU 2 (RH)	3,75		
Panier à cartes gauche LH PCB Support	3,75		
Panier à cartes droit RH PCB Support	3,75		
Rack PELICAN 16 alpha PELICAN Rack 16 alpha	3,75		

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Figure 10/16

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Luggage Compartment			
	R Max (mΩ)	R mesurée (mΩ) R measured (mΩ)	Figures
FADEC 1	3,75		
FADEC 2	3,75		
Boîtier interface moteur 1 et 2 (21 alpha) Interface Engine Box 1 and 2 (21 alpha)	3,75		
Poutre de queue cadre 6977 dans compartiment bagage Tail boom Frame 6977 Inside the luggage compartment	0,75		

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Figure 11/16

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Luggage Compartment			
	R Max (mΩ)	R mesurée (mΩ) R measured (mΩ)	Figures
AHRS 1	3,75		
AHRS 2	3,75		
Panier à carte Power LOSS (à proximité du rack VHF) PCB Support Power loss (Near VHF rack) 437	3,75		
Emetteur VHF Pilote / rack VHF Pilot / rack transmitter	3,75		 Given for information - Could be different as per customisation
Rack VHF Pilote Pilot VHF rack	1,5		 Given for information - Could be different as per customisation

Figure 12/16

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Luggage Compartment			
	R Max (mΩ)	R mesurée (mΩ) R measured (mΩ)	Figures
Antenne VHF Pilote / antenne TDR Pilot VHF antenna / TDR Antenna	15		
Emetteur VHF Copilote / rack VHF co-pilot / rack transmitter	3,75		 Given for information - Could be different as per customisation
Rack VHF Copilote Co-pilot VHF Transmitter rack	1,5		 Given for information - Could be different as per customisation
VOR Pilote / rack VOR Pilot / rack	1,5		 Given for information - Could be different as per customisation

Figure 13/16

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Luggage Compartment			
	R Max (mΩ)	R mesurée (mΩ) R measured (mΩ)	Figures
<p>VOR copilote / rack VOR co-pilot / rack</p>	1,5		 Given for information - Could be different as per customisation
<p>Antenne droite VOR VOR RH antenna</p>	1,5		
<p>Antenne VOR gauche VOR LH antenna</p>	1,5		






Tail Boom - Vertical Stabilizer			
	R Max (mΩ)	R mesurée (mΩ) R measured (mΩ)	Figures
<p>Omega en haut de la dérive sur saumon Omega above the fin on tip</p>	52		

Figure 14/16

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Instrument Panel			
	R Max (mΩ)	R mesurée (mΩ) R measured (mΩ)	Figures
FCDS (FCDM SMD45) Ecran ND Copilote Co-pilot ND Display	3,75		
FCDS (FCDM SMD45) Ecran ND pilote Pilot ND Display	3,75		
FCDS (FCDM SMD45) Ecran PFD Copilote Co-pilot PFD Display	3,75		
FCDS (FCDM SMD45) Ecran PFD Pilote Pilot PFD Display	3,75		

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Figure 15/16

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Center Console Panel			
	R Max (mΩ)	R mesurée (mΩ) R measured (mΩ)	Figures
Boite de commande PA AP control unit	15		
Tous les rails du pupitre All center console rails	1,5		

Figure 16/16

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