

ISO 6858:2017-11 (E)

Aircraft - Ground support electrical supplies - General requirements

Contents		Page
Foreword		v
Introduction		vi
1	Scope	1
2	Normative references	1
3	Terms and definitions	1
4	Technical basis	4
5	Electrical characteristics	4
5.1	General	4
5.1.1	Overview	4
5.1.2	Alternating current (AC) power sources	5
5.1.3	Direct current (DC) power sources	5
5.2	Interface connector	6
5.3	Electromagnetic interference	6
5.3.1	Utility interface	6
5.3.2	Aircraft interface	6
5.4	AC steady-state output characteristics	6
5.4.1	General	6
5.4.2	Steady-state AC load characteristics	6
5.4.3	Steady-state AC voltage performance	7
5.5	AC transient characteristics	8
5.5.1	General	8
5.5.2	Transient AC load characteristics	8
5.5.3	Transient AC voltage	8
5.5.4	Transient frequency	9
5.6	DC steady-state output characteristics	9
5.6.1	Steady-state DC load characteristics	9
5.6.2	Steady-state voltage	9
5.6.3	Voltage ripple	9
5.7	DC transient characteristics	9
5.7.1	Transient DC load characteristics (other than engine start-related)	9
5.7.2	Transient DC voltage	9
5.7.3	Engine starting output characteristics	10
6	Electrical protection	10
6.1	General	10
6.2	AC system protection	10
6.2.1	Overvoltage	10
6.2.2	Undervoltage	10
6.2.3	Frequency	10
6.2.4	Overcurrent and short circuits	10
6.2.5	Phase sequence	11
6.2.6	DC content	11
6.2.7	Open neutral/phase conductors	11
6.2.8	Earth/Ground fault	11
6.3	DC system protection	11
6.3.1	Overvoltage	11

6.3.2	Undervoltage	11
6.3.3	Reverse polarity	11
6.3.4	Reverse current	11
6.3.5	Overcurrent and short circuits	12
7	Control circuit and supply	12
7.1	Control circuits	12
7.2	Aircraft interlock supply for AC facilities	12
7.2.1	General	12
7.2.2	Interlock signal characteristics	12
7.2.3	Maintenance mode	12
8	Test requirements	12
9	Safety requirements	13
9.1	General	13
9.2	Mechanical safety features	13
9.2.1	Hot temperatures	13
9.2.2	Fuel tank	13
9.2.3	Exhaust	13
9.2.4	Foreign object ingestion	13
9.2.5	Control panel	13
9.2.6	Ergonomics	13
9.2.7	Fire fighting	13
9.3	Electrical safety features	14
9.3.1	Overload	14
9.3.2	Fault conditions	14
9.3.3	Trip switch	14
9.3.4	Earthing	14
9.3.5	Facility with electrical supply	14
9.4	Features to safeguard personnel	14
9.4.1	General	14
9.4.2	Electrical contact	14
9.4.3	Anti-arcing protection	15
9.4.4	Noise	15
9.4.5	Vibration	15
10	General design features	15
10.1	Environmental conditions	15
10.2	Life expectancy	15
10.3	Manufacturing, service and support features	15
10.3.1	General	15
10.3.2	Material, parts and processes	15
10.3.3	Moisture and fungus resistance	16
10.3.4	Corrosion of metal parts	16
10.3.5	Workmanship	16
10.3.6	Product enclosures	16
10.3.7	Service access for adjustments and repairs	16
10.3.8	Interchangeability and replaceability	16
11	Installation, operation and maintenance	16
12	Labelling	17
Annex A (normative) Acceptable test listing for AC facilities		26
Annex B (normative) Acceptable test listing for DC facilities		32
Bibliography		35