

# The Airbus A320 Procedures Handbook Vol. 1

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## Table of Equipment Powered by Batteries on the Ground

BAT pushbutton-switches AUTO | No other electrical power sources | Below 50 KIAS

Equipment	Bus	Notes
<b>Air Conditioning</b>		
Air Conditioning System Controller (ACSC) 1 Lane 2	DC ESS	Pack 1 + 2 Valve closure not available.
Ram Air Inlet	DC ESS	
<b>Pressurization</b>		
Cabin Pressurization Controller (CPC) 1	DC ESS	
Outflow Valve Manual Control	DC BAT	
FWD/AFT Cargo Ventilation and Heat Controls (if installed)	DC BAT	
<b>Communication</b>		
VHF Communication Radio 1	DC ESS	
Radio Management Panel (RMP) 1	DC ESS	
Audio Control Panel (ACP) 1 + 2	DC ESS	
Flight Interphone	DC ESS	
CAPT Loudspeaker	DC ESS	F/O Loudspeaker inop. CAPT + F/O headsets and hand mics available.
External Horn	HOT 2	
CIDS 1 or 2, or (some aircraft) 1 + 2	DC ESS	Cabin interphone and PA available. Signs and passenger calls inop to save power. <i>Some aircraft:</i> Only CIDS 1 supplied unless CIDS 1 inop, then CIDS 2 supplied. <i>Other aircraft:</i> Both CIDS 1 + 2 supplied.
CVR and FDR Control	DC ESS	Applicable to most aircraft. On some older aircraft, CVR not supplied (powered by SHED busses).

Equipment	Bus	Notes
<b>Fire Protection</b>		
ENG 1 + 2 Detection Loop A	DC ESS	Only ENG Detection Loop A available.
APU Detection Loop A + B	DC BAT	Both APU Detection Loops available.
ENG 1 + 2 Fire Extinguishing Bottle 1 Squib A	HOT 1	ENG 1 + 2 Bottle 2 not available unless Single Engine Taxi Without APU (SETWA) modification installed.
ENG 1 + 2 Fire Extinguishing Bottle 1 Squib B	HOT 2	
APU Fire Extinguishing Bottle Squib A	HOT 1	
APU Fire Extinguishing Bottle Squib B	DC BAT	
APU Automatic Fire Extinguishing	DC BAT	
Cargo Fire Detection CIDS Channel 1	DC ESS	
FWD/AFT Cargo Extinguishing Bottle(s)	DC BAT	
<b>Flight Controls</b>		
ELAC 1	DC ESS or HOT 1	HOT 1 is standby supply if DC ESS Bus lost. HOT 1 supply lost 30 sec after hydraulic pressure low on all systems.
SEC 1		
ELAC 2	HOT 2	HOT 2 is standby supply if DC Bus 2 lost. HOT 2 supply lost 30 sec after hydraulic pressure low on all systems. 30 sec time limit on HOT 2 supply unless: nose L/G not uplocked or blue hydraulic system pressure low, then no time limit.
Pitch Trim Motor 1	HOT 2	
Pitch Trim Motor 2	DC ESS	Used by ELAC 1 or SEC 1. Still requires G or Y hydraulics.
Rudder Travel Limiter Motor 1	DC ESS	FAC 1 inop due to loss of DC ESS SHED. Rudder trim electrically supplied by DC ESS (despite no indication) but inop due to loss of FAC 1.
Slat Flap Control Computer (SFCC) 1	DC ESS	
<b>Fuel</b>		
Fuel Quantity Indication Channel 1 and 2	HOT 1 or 2	Supply for refueling on battery only when BATT POWER toggle switch on Refueling Control Panel is activated. Electrical power is automatically cut off after 10 minutes (if no refuel operation is selected) or at the end of refueling.
ENG 1 + 2 LP Fuel Valves Motor 1	DC ESS	If DC ESS Bus is lost, HP valve closure is inop and LP valve closure is only possible using ENG FIRE pushbutton-switches (via Motor 2 on DC Bus 2).
ENG 1 + 2 HP Fuel Valves	DC ESS	
APU Fuel Pump	AC STAT INV and HOT 1	AC STAT INV powers the motor, and HOT 1 powers the control relay.
APU LP Fuel Valve	DC BAT or HOT 1	HOT 1 permits closure if DC BAT Bus is lost.
Refuel Valves	HOT 1 or 2	Supply for refueling on battery only.
ACT (if installed) Valves	HOT 1 or 2	

Equipment	Bus	Notes
<b>Hydraulics</b>		
ENG 1 + 2 FIRE hydraulic shutoff valve	DC ESS	Controlled by ENG FIRE pushbutton-switches.
RAT Manual Control	HOT 2	Blue ELEC Pump motor is lost due to loss of AC Bus 1. Its control relay is supplied by DC ESS.
RAT Automatic Control	HOT 1	
<b>Ice and Rain Protection</b>		
CAPT Probe Heat Computer	DC ESS	Computer only. Heaters supplied by busses inop in this configuration.
PW1100G ENG 1 Anti-Ice Valve 1	DC ESS	Closure and regulation. IAE ENG anti-ice closure inop. On all aircraft, the engine anti-ice valves open if the engines are running in the emergency electrical configuration.
PW1100G ENG 1 Anti-Ice Valve 2	DC BAT	
PW1100G ENG 2 Anti-Ice Valve 1	DC ESS	
CAPT Rain Repellant	DC ESS	Inhibited on the ground with engines stopped.
<b>Indicating/Recording Systems</b>		
ECAM Control Panel	DC ESS	SDACs, FWCs, and ECAM DUs not powered.
Clock	DC ESS and HOT 1 or 2	DC ESS power required for display and operation. HOT power for timekeeping only.
<b>Landing Gear</b>		
LGCIU 1	DC ESS	
Safety Valve	DC ESS	Extension overspeed protection.
L/G Indicator Panel	DC ESS and AC STAT INV	AC power supply switches to AC ESS SHED when that bus is available. Panel connected to LGCIU 1 and its proximity sensors, but available as long as LGCIU 1 is electrically supplied, even in case of LGCIU 1 fault.
Alternate Braking Control Unit (ABCU)	DC ESS and HOT 1 or 2	Alternate braking by pedals without antiskid and parking brake available if Y hydraulic or brake accumulator pressure available. BRAKES and ACCU PRESS indicator operative.
Parking Brake Control	HOT 1	
BRAKES and ACCU PRESS Indicator	DC ESS	
<b>Lights</b>		
Right Dome Light	DC ESS	
Left Main Instrument Panel Lights	DC ESS	Far left and center left bulbs.
Standby Compass/Ice Indicator Light	DC ESS	
Annunciator and Pushbutton Lights	AC STAT INV	Most annunciator lights require AC power. However, BAT <b>OFF</b> lights require DC BAT Bus power. Four identical 115V/5V transformers supply annunciator lights with 5VAC/400Hz. With normal electrical power, AC Bus 1 and 2 also supply annunciator light transformers.
Emergency Lighting System	Internal Batteries	See Cockpit Preparation chapter, "SIGNS" SOP, " <b>What are the components of the emergency lighting system?</b> " for more information.
Lavatory Auxiliary Lights	DC ESS	

Equipment	Bus	Notes
<b>Navigation</b>		
ADIRU 1	HOT 2	Permanent backup supply. Will continue draining battery even below cut-off logic voltage.
ADIRU 2	HOT 2	Backup supply for 5 min to prevent loss of alignment during temporary power interruption.
ADIRU 3	HOT 1	If ATT HDG SWITCHING in NORM: backup supply for 5 min. If ATT HDG SWITCHING in CAPT 3: permanent backup supply.
ISIS (if installed)	DC ESS or HOT 1	DC ESS is normal supply. If DC ESS lost above 50 KIAS, HOT 1 provides power.
Standby Horizon (if ISIS not installed)	DC ESS or HOT 1	DC ESS is normal supply. HOT 1 standby power (if DC ESS lost above 50 KIAS) available only on aircraft with ISIS wiring provision but round dial standby instruments installed at customer option.
<b>APU</b>		
Electronic Control Box	DC BAT	i.e. the APU Computer.
Stater Motor	DC BAT	
<b>Doors</b>		
Doors and Slides Control	DC BAT or HOT 2	Standby supply. Normally supplied by emergency power supply unit.
Air Stairs (if installed)	HOT 2	Standby supply.
<b>Power Plant</b>		
ENG 1 + 2 FADEC Channel A	DC ESS	
ENG 1 FADEC Channel B	DC BAT	
ENG 1 Engine Interface Unit (EIU)	DC BAT or DC ESS	
ENG 2 Engine Interface Unit (EIU)	DC ESS	