
PDCU

■ Power Distribution Control Unit (PDCU)

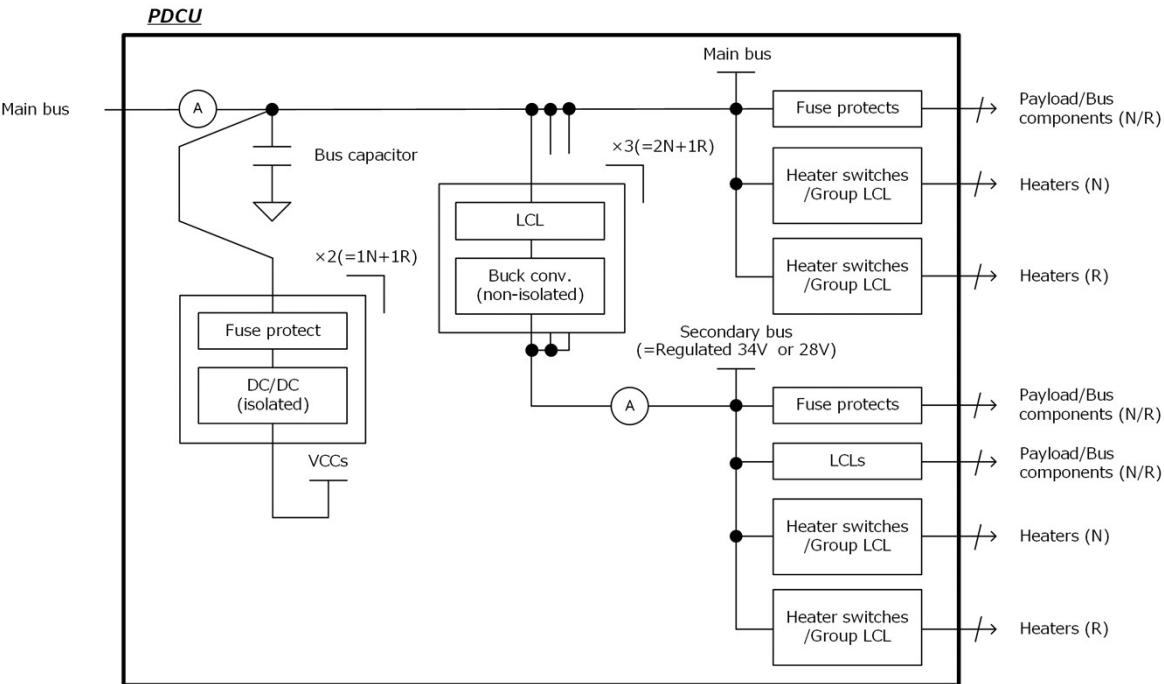
□ Functions and Features

- Providing switches and protection circuits (fuses and current limiters) for power distribution and to generate secondary bus of regulated 34V or 28V
- No single point of failure
- DS2000 PDCU has abundant flight proven heritages
- PDCU can easily expand the handling power for distribution (with minimum NRE cost) by adding additional modules

Details of DS2000 PDCU are shown as follows:

PDCU

■ Block Diagram of DS2000 PDCU



■ Major Characteristics of DS2000 PDCU

Property	Characteristics
Communication I/F	Serial(EIA422)/Discrete CMD, Active Bi-level/Active Analogue TLM
Power I/F(=Main bus) Input voltage Rated input current	70 to 110VDC (Option 30 to 53VDC) Max. 145A
Secondary bus Output voltage range Power supply	Regulated 34V or 28V Max. 670W
Power distribution Main bus Fuse Heater switch Secondary bus Fuse LCL Heater switch	100ch(Using 3A or 5A fuse) 224ch(112N/112R) 14ch (Using 1A or 2A fuse) 4ch(Limiting current is max.10A) 196ch(98N/98R)
Power Consumption	160W nom. @145A of input current
Operating temperature	-20 to +65 deg C
Dimension (L×W×H)	357×474×232(mm)
Mass	19.4kg nom.
Random vibration Shock	10.2(in plane),13.43(out of plane) Grms 9800m/s ² srs
Radiation	For GEO 15 years
EMI/EMC	MIL-STD-461C compliant
EEE Parts grade	Class 1

PDCU

External View of DS2000 PDCU and Consisting Modules



PDCU consisting of following modules

- FUSE x 2
- CAPBANK x 1
- BUS IF x 1
- HCE1 x 2
- LVC x 3 (2N+1R)
- LVC IF x 1
- SDC x 1
- HCE2 (not included in this design)

Module	Function	Handling	Width	Mass
FUSE	Main bus power distribution via fuse protects	Max. 50 fuse protection circuits per module	25mm	0.9kg
CAPBANK	Bus capacitor	Additional bus capacitor for main bus	25mm	1.1kg
BUS IF	Power & Command & Telemetry I/F	Input power interface Command & Telemetry interface Monitor of input current Redundant auxiliary power supply for internal circuits in PDCU	42mm	1.9kg
HCE1	Heater switches of main bus	Max. 56 heater switches per module 2 LCLs of upstream from group that consist of 28 heater switches	25mm	1.1kg
LVC	Secondary bus power generation	Non-isolated buck converter topology Rated output power 340W per module	30mm	1.3kg
LVC IF	Secondary bus power distribution via fuse protects	Max. 14 fuse protection circuits per module Bus capacitor for secondary bus Monitor of secondary bus output current and voltage	25mm	0.9kg
SDC	Secondary bus power distribution via LCLs	Max. 4 LCLs per module	25mm	1.0kg
HCE2	Heater switches of secondary bus	Max. 98 heater switches per module 2 LCLs of upstream from group that consist of 49 heater switches	25mm	1.0kg