

CPSJ, CPSP AND CPSS CONTROL UNITS



CPSJ, CPSP and CPSS are electronic control units family (ECU) for the TJ100, TP100 and TS100 engines produced by the PBS Velka Bites, a.s.

	CPSJ	CPSP	CPSS
Intended for	Jet engine TJ 100	Turbopropeller engine TP 100	Turboshaft engine TS 100

Basic description of engines produced by PBS Velka Bites, a.s.

Engine	TJ100	TP100	TS100
Description	Jet engine	Turbopropeller engine	Turboshaft engine
Power	Max. thrust 1100N	Max output shaft power 180kW	Max. output shaft power 180kW
Intended for	Experimental aircrafts, powered gliders, UAV, UCAV	Experimental aircrafts, ultralights, UAV, UCAV	Experimental aircrafts, ultralights, UAV, UCAV
Dry weight	19.5kg	59kg	55 – 59kg
Outside dimensions	Length 485 mm Diameter 272 mm	Widthxdepth 390 x 330mm Max. length 880 mm	Width xdepth 390 x 330 mm length 870mm

ECU Features:

- Compact design
- Includes 1kW power supply
- Low weight
- Robustness (designed according DO-160D standard)
- Comprehensive functionality

Essential ECU functions

The ECU executes:

- Engine start-up and stop
- Acceleration, deceleration
- Maintenance of rated RPM
- Power supply from the 1kW Power Converter
- Internal diagnostic (hardware ECU)
- Engine monitoring
- Event recording and storage

Communication

Can bus with CANAerospace (Stock Flight Systems CAN based higher layer protocol) is used for control of the ECU, for collection of diagnostic data and for the modification of selected parameters via PC.

Diagnostic data

ECU records these diagnostic data:

- Number of engine start-ups
- Total running time
- Last running duration
- Time between overhaul
- Engine and ECU failures

Technical specification

	CPSJ	CPSP	CPSS
General parameters			
Operating temperature range	-40°C to +70°C	-40°C to +70°C	-40°C to +70°C
Non-operating temperature range	-55°C to +85°C	-55°C to +85°C	-55°C to +85°C
Maximum operating altitude	10700 m	10700 m	10700 m
Outside dimensions	214 x 94 x 80 mm	270 x 140 x 80 mm	270 x 140 x 80 mm
Weight	1.1 kg	1.9 kg	1.9 kg
Input parameters			
Rated voltage	+24 VDC	+24 VDC	+24 VDC
Voltage limits (according to EN2282 standard)	+18 VDC to +31 VDC	+18 VDC to +31 VDC	+18 VDC to +31 VDC
Idle power	9 W	9 W	9 W
Start-up power	1700 W	1700 W	1700 W
Output parameters			
Power	1 kW	1 kW	1 kW
Rated voltage	+28 VDC ±1VDC	+28 VDC ±1VDC	+28 VDC ±1VDC
Maximum current	36A (including power supply of the ECU, centrifuge, fuel pump and fuel valve)	36A (including power supply of the ECU, centrifuge, fuel pump and fuel valve)	36A (including power supply of the ECU, centrifuge, fuel pump and fuel valve)
Overcurrent limiting	Yes – limiting of maximum output current	Yes – limiting of maximum output current	Yes – limiting of maximum output current

Note:

- For the time being this family of electronic control unit has not been certified for civil aviation.
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