ENVIRONMENTAL CONTROL SYSTEM

The Environmental control system (ECS) is identified for aircraft cockpit conditioning at all ground and flight modes. There is also possibility of canopy de-fog by hot air.
ECS consist ECS block and other devices necessary for temperature input air regulation – temperature selector, thermostats, non return valve, electromagnetic valves, de-fog valve, compensator, water separator and turbocooler speed limiter.
The ECS is supplied from high and low pressure compressor of main engine through closing valve and flow limiter. Air cooling is proceeded in air-air heat exchanger and turbocooler turbine. The cooling efficiency increasing is possible by ram air during flight.
Controlling of air temperature is provided by mixing of cold and hot air. The air humidity is decreased by water separator.
Whole system is pneumatic and assuring the up keeping of pre-set temperature inside cockpit at all ambient conditions changes.

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Technical data

Working medium	air
ECS Air input overpressure range	50 ÷1400 kPa
ECS Air input temperature range	50 ÷ 430°C
Air flow quantity to cockpit	min. 500 kg/h
Temperature range in cockpit	12 ÷ 32 °C
Air temperature at de-fog	max. 90 °C
Speed of turbocooler	max. 70 000 rpm
Oil type	Mobil Jet Oil 254
Oil quantity	150 ml
Operation altitude range	0 ÷ 12 000 m
Ambient temperature range	-55 ÷ +85 °C
Total weight	max. 42,0 kg
ECS block weight	32,5 kg

Dimensions of ECS block (in mm)