

iMADC-01

Micro Air Data Computer for UAV and OPV

iMADC-01 provides static and dynamic pressure and air data information, which are generated from an integrated micro air data computer. A CAN aerospace interface provides all result data via CANbus. The power supply is fully EMI/EMC protected for aviation applications.



- CANaerospace interface (ARINC825)
- Static pressure and total pressure output
- 4 analog inputs for α and β meas. (option)
- Indicated and True Airspeed, pressure altitude
- High accuracy, large measurement range
- Wide range supply voltage 9...36 V DC, full EMI/EMC protection for aviation applications
- direct supported by INS/GNSS systems of family iNAT / iSULONA / iCOMBANA / iPRENA

The iMADC-01 provides an interface for plug&play operation with iMAR's vertical reference units of type iNAT-M200, iNAT-CFM etc. The iMADC-01 is designed for UAV applications and OPV with the potential to be EASA certified on demand.

Technical Data of iMADC-01:

Value	Performance
Operating Altitude:	up to 10'000 m (optional >10'000 m with reduced accuracy)
Pressure Altitude:	-600 ... +10'000 m (accuracy: +/- 10 m @ 20'000 ft; resolution: < 0.02 m)
Pressure Altitude Rate:	+/- 50 m/s (accuracy: +/- 0.5 m/s; resolution: < 0.01 m/s)
Indicated/True Air Speed:	0 ... 100 m/s [TBD] (accuracy: +/- 1 m/s @ v > 15 m/s; res. 0.01 m/s)
Static Pressure:	0 ... 1'100 hPa (accuracy: +/- 0.06 % full scale; resolution: < 0.02 Pa)
Dynamic Pressure:	0 ... 80 hPa (accuracy: +/- 0.08 % full scale; resolution: < 0.005 Pa)
Outside Air Temperature:	-55 ... +85 °C (resolution: +/- 0.5 K)
Humidity:	< 95 % non-condensing
Data Update Rate:	configurable, 20 Hz default
Digital Interface:	CANaerospace rev. 2.0 (according to ISO 11898, electrically insulated, configurable 125 kBd ... 1 Mbit/s, transceiver with dominant timeout protection.
OAT Interface:	Sensor type: Resistor; IEC-751, 2 mA max; 381 Ω q -60 °C / 711 Ω @ 110 °C
Analog Interface (opt.):	up to 4 analog input channels for angle of attack (α) / sideslip (β) [incl. 5 V supply]
Data Output:	Indicated and True Airspeed, Vertical Airspeed, Pressure Altitude, Static and Total Pressure, Outside Air Temperature (OAT) [OAT sensor to be provided by user]
Connector:	MIL-C-38999-III, type D38999/20FB35PA, 13 pin
Temperature:	-40...+71 °C (case temperature) operational
Power:	9...36 V DC; < 2.5 W
Size / Weight:	90x109x66 mm (metal case, IP68, plus connector), approx. 450 grams
Environmental Prot.:	MIL-STD-810F (sand/dust/water/humidity/temp./shock/vibr.); MIL-STD-461E
Shock, Vibration; MTBF:	50 g, 11 ms ; 5...2'000 Hz 5 g(rms); aviation proofed; > 10'000 hrs

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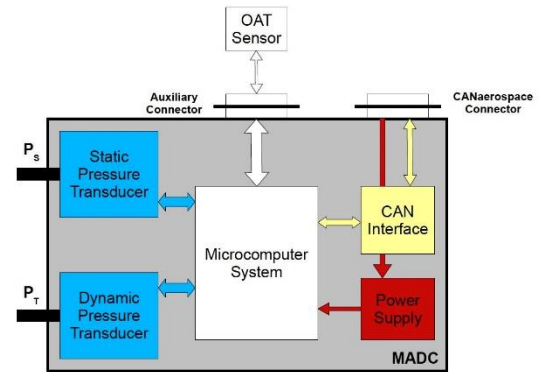
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Connector Pinout and Drawing of iMADC-01:

System Connector: MIL-C-38999 III, Type 20FB35PA (13 pin)

- Pin 1: Power Supply IN (9...36 V DC)
- Pin 2: Power GND IN
- Pin 3: Power Supply OUT (internally connected to PSupply IN)
- Pin 4: Power GND OUT (internally connected to PGND IN)
- Pin 5: CAN-Low IN
- Pin 6: CAN-High IN
- Pin 7: CAN-Low OUT
- Pin 8: CAN-High OUT
- Pin 9: CAN Termination A
- Pin 10: CAN Termination B
- Pin 11: CAN GND IN
- Pin 12: CAN GND OUT
- Pin 13: PE / Case (Protective Earth)



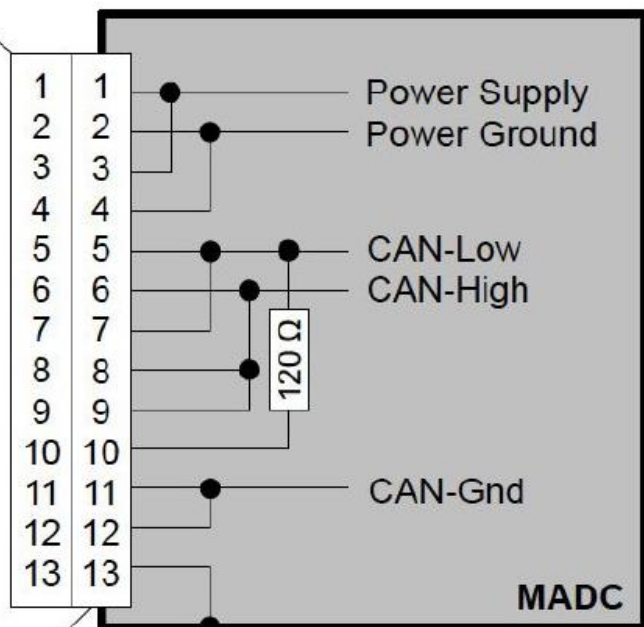
iMADC-01 Auxiliary Connector for Outside Air Temperature and optional α / β Sensor:

MIL-C-38999 III, Type D38999/20FA35PN (6 pin)

- Pin 1: N.C. or +5V Poti supply (for α and β sensors)
- Pin 2: OAT Sig (OAT Sensor input)
- Pin 3: GND for OAT and potis
- Pin 4: N.C. or α (angle of attack) poti output voltage
- Pin 5: N.C. or β (angle of sideslip) poti output voltage
- Pin 6: Chassis-GND

D38999/26FB35SA Plug

- Power Supply In
- Power Ground In
- ← Power Supply Out
- ← Power Ground Out
- CAN-Low In
- CAN-High In
- ← CAN-Low Out
- ← CAN-High Out
- CAN Termination A
- CAN Termination B
- CAN-Gnd In
- ← CAN-Gnd Out
- PE



D38999/20FB35PA Receptacle

Airdata Interface: Input fittings 1/8 inch for P_s and P_T



Technical Drawing of iMADC-01:

