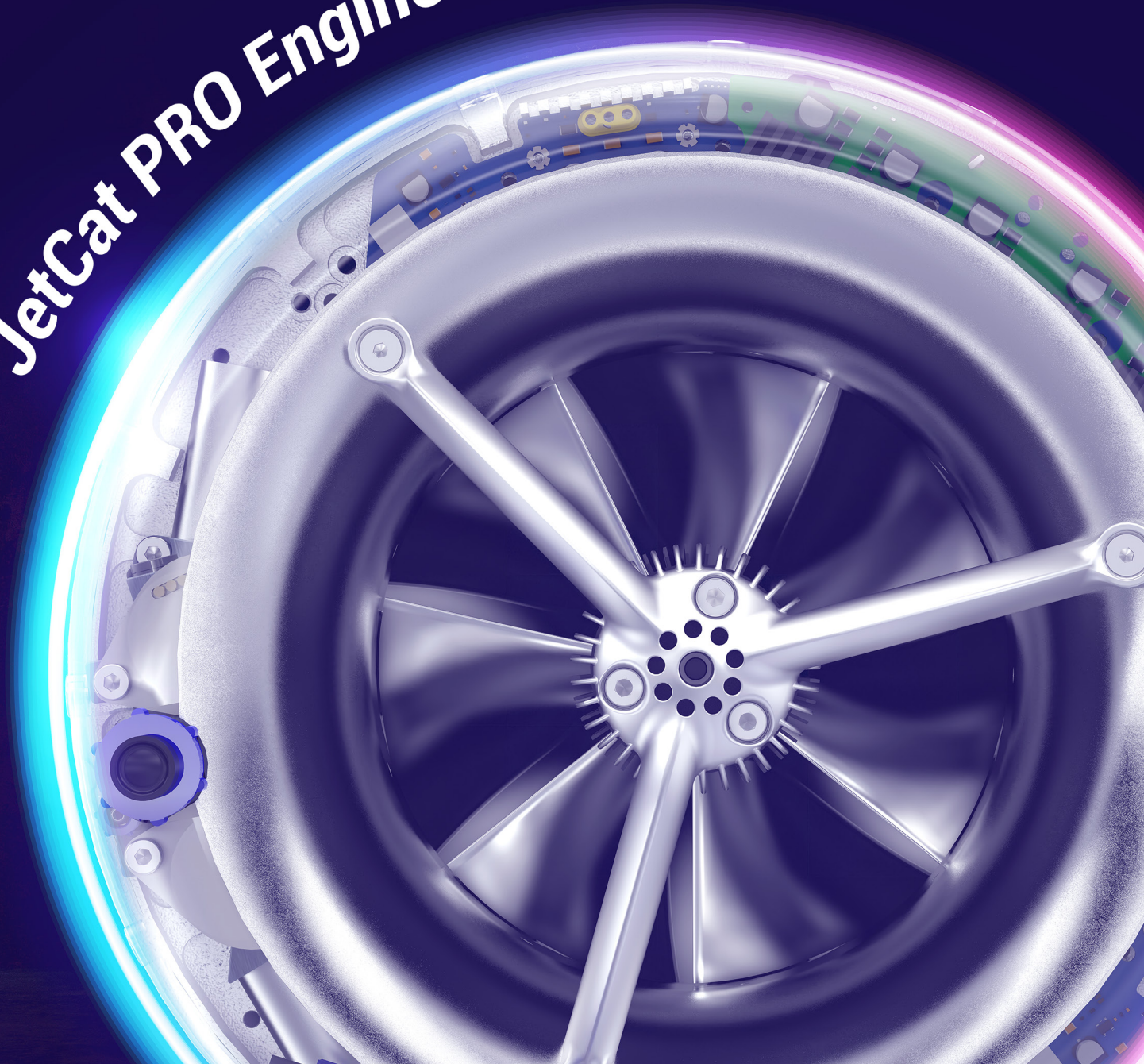




www.JetCat.de

JetCat PRO Engines



20
22

JetCat PRO ENGINES

Functional description

JetCat-PRO engines are comprised of a single-stage radial compressor, an annular combustion chamber, single stage axial engine and a fixed exhaust nozzle. Located at the compressor intake, the engine starting system is mounted, which on some of our engine models, can also be used as an electrical generator. The intake air is compressed in the radial compressor stage, proceeds through the radial and axial diffuser into the combustion chamber where it is mixed with vaporized fuel. Combustion gases generated by fuel burning in the combustion chamber expand through the single stage axial engine and thru the exhaust nozzle to the atmosphere. The gas exiting the exhaust cone produces the required thrust. The engine shaft is mounted on two ceramic ball bearings which are lubricated by the fuel/oil mix, or via an optional oil feeder pump plus oil reservoir which then eliminates the need to mix oil to the fuel. With the external oil feeder pump, the average oil consumption is only at 30-55ml/hour.

Control system

The engine's control system (ECU) is comprised of a 32-bit microprocessor, driver circuitry for pumps/ solenoids, and the optional AC/DC converter. It controls safe operation of the engine including engine starting, maintaining required speed, stopping, and cooling of the engine after shutting down.

The ECU has inputs for:

- Engine RPM,
- Exhaust Gas Temperature (thermocouple),
- optional inlet air temperature sensor (T0),
- Barometric pressure sensor which allows for automatic engine tuning upon reaching operation altitude
- Airspeed sensor
- Engine/ECU power, On/Off via voltage control signal.
- No external power switches are required for instant engine shut down via termination system. This will kill power to fuel pump and shut off safety solenoid valves and stop the engine in any case with multiple redundancy, while the ECU can stay powered on (for continued data reporting and/or engine cool down).

The ECU has outputs to control:

- The brushless starter system
- The brushless fuel pump(s)
- A set of solenoid valves
- Power and driving of the ignition system
- Control of the optional AC/DC converter system on generator type engines

Automatic fuel purge feature for automatic filling/purge of fuel feed lines. As soon as fuel arrives at the engine, purging will automatically terminate. All above functions/devices are installed in the engine's front housing, no external equipment required.

ECU monitoring and control

The ECU supports controlled acceleration and deceleration of the engine under all conditions. Engine operation can be controlled and monitored via a serial bus or CAN bus from a master control system. Through this TBO, statistical data, engine start/stop control, monitoring of real time parameters such as: RPM, EGT, fuel flow, fuel remaining, voltage, currents, etc. can be read out /monitored.

Fuel system Fuel /Oil:

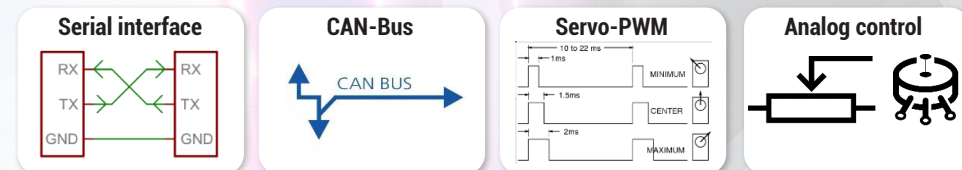
Jet A1 or equivalent, alternatively Diesel or synthetic Diesel based fuels can be used. Fuel purity must comply with class 10-11 as per GOST 17216-71 or 7-8 as per NAS 1638.

Oil types: JetCat engine oil, Mobil Jet Oil II, Aero Shell 500, or Exxon 2388 (or equivalents). Per default, 3-5% oil must be mixed with fuel. Fuel is drawn from the external tank. There is no further external fuel shut-off valve required. From the engine sided fuel inlet port, the fuel is routed directly into the fuel pump and from there through the integrated post filter before going into a set solenoid valves. One of these valves controls the fuel to the main fuel supply ending up in the combustion chamber as well as the bearing lubrication system. The pump/solenoids are controlled by the ECU, depending on the actual operation condition. The front mounted, engine fuel supply manifold comprising of the fuel inlet/fuel pump/ post filter and solenoids, is machined out of a single full metal piece, no further pipes or tubing.

Easy installation / Highest level of integration

The JetCat-PRO engine series provides the highest level of integration and maximum ease of installation. There are no further typical external peripherals required such as: ECU, pump, valves or ignition system. All of these components are integrated in the front section of the engine! This feature tremendously increases the ease of installation of the engine, reduces system complexity and frees up valuable space for user payloads, otherwise occupied by engine peripheral systems. Therefore, besides the supply battery and the fuel tank, there are no further external subsystems required!

Control options / electrical interface for engine control, by default, there are a variety of control interface options already present, such as:



- Via GSU (Ground support unit). GSU is a handheld device used for setup and control of the engine.
- Serial communication interface Rx/Tx (3,3V TTL or +/- 12V RS232). Baud rate: 2.4-115k
- CAN-Bus (2.0A-11bit or 2.0B-19bit. Bitrate: 125K-1Mbit/s adjustable)
- 2x Servo PWM inputs for throttle/engine control
- Analog input for engine control (Start/Stop/Thrust control)

The system allows for use, one of the above-mentioned control sources to be assigned for engine control. It also allows switching between the control sources. Data reporting can be through one or multiple of the digital interfaces.



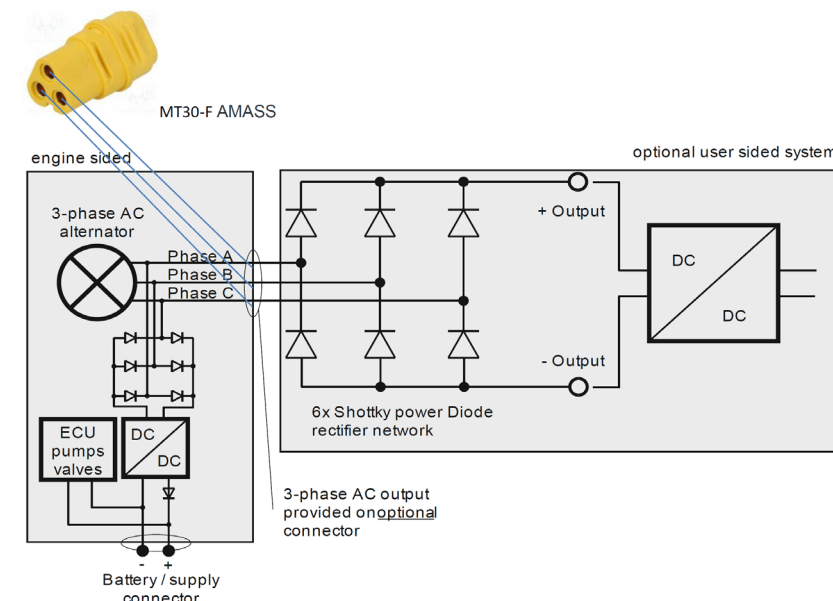
Optional generator function and integrated AC/DC power supply / converter

The optionally integrated power supply unit coming with "Generator type" engines, consists of the integrated three-phase generator, a rectifier, and a switched step up/down DC-DC power converter. This system will provide enough power to all internal consumers of the engine (ECU, pumps, solenoids) once the engine is operating. Excess power is used to automatically re-charge the supply battery. When engine is running, there will be no power taken from the supply battery. The generators output is rectified, and precision regulated to a constant output voltage via the integrated DC/DC converter. The output voltage and current are automatically matched to the selected (programmed) battery type and size. Therefore, the output voltage of the DC/DC converter is adjustable by the system control board with a range from 9 to 30VDC. The DC/DC converter can supply a maximum current of 7,8A (P1000: 15,6A). It can maintain a constant output voltage up to this limit. If the current limit should exceed this or a lower programmable limit, the output voltage will drop.

Output current limiting function: Depending on the selected battery type/size, the system monitors the current flowing in the supply line so to not over current the attached supply battery during charging. Also, because of this feature, current flow back to the supply battery can be limited to a safe charging level.

The generator is installed in the compressor intake; The rectifier and DC/DC converter are integral part of the front mounted ECU.

Optional high power AC-output: Besides the integrated AC/DC converter the 3-phase AC generator output is available on a connector on "GH" type engines for user specific conditioning/usage of the generator power.



Bleed-air port, option for fuel tank pressurization

The optional available bleed-air port can provide compressed air derived from the engine's compressor stage. The pressure on the bleed-air port depends on the engine's operational rpm. On full power a pressure of up to 3,5 bars is reached!

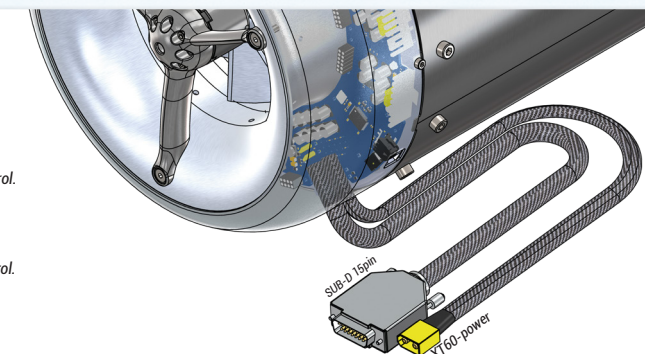
Typically bleed air is used to pressurize the onboard fuel system to avoid degassing/bubbling of the fuel on high altitude operation of the engine (>5000m). For full operation of this feature an additional pressure relief valve needs to be fitted in front of the fuel tank in order not to over pressurize the fuel tank!

Electrical connectors

Power / Data connectors

Connector A:
SUB-D 15pin connector data/control.
Or customer specific connector

Connector B:
XT60-power connector data/control.
Or customer specific connector

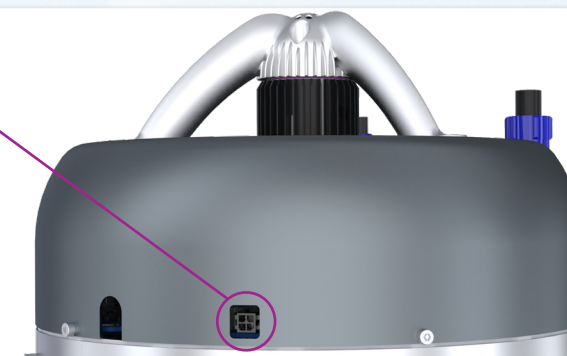


Expansion output (4 pin Molex, data and power) for external devices like smoke/oil pumps / feeder pumps, light control system, GSU etc.

Expansion connector C 4-pin Molex connector.

The 4-pin Molex expansion connector on the front side of the engine provides data and switched power to other optional JetCat accessories like:

- Smoker pump (Bus Type)
- Light control unit (LCU)
- GSU (via special bus adaptor)
- Oil feeder pump



Customer specific modifications:

The engines may be modified based on customer specific requirements and to meet different operating / installation and mounting requirements. Also customer specific connectors for data/power are available on request. The engine can also be modified in terms of their effective nozzle length in case this might be required for best integration into user systems.

JetCat PRO ENGINES

Functional description

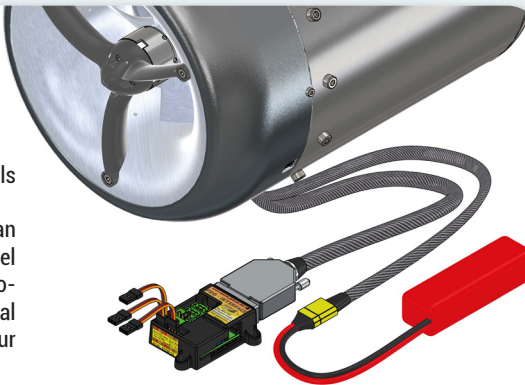
Typical engine control I/O signals:

Description Info	Info
GND	Signal Ground
+5V out, max 200mA	+5V output to GSU
Power On Signal (4-14V)	Apply a positive voltage to power up ECU/engine
Throttle PWM input	RC-PWM Signal (THR)
AUX PWM input	RC-PWM Signal (AUX)
CAN-H/L	CAN-BUS
GSU-Bus-D	GSU bus (do not use!)
GSU-Bus-C	GSU-bus (do not use!)
RXD 3,3V TTL or RS232 (COM1)	Serial interface receive line
TXD 3,3V TTL or RS232 (COM1) (COM1)	Serial interface transmit line
RXD-Cross Check, COM2	Secondary serial interface receive signal
TXD-Cross Check, COM2	Secondary serial interface transmit signal
Safety Shutdown input / engine "kill" signal.	Safety shut down input. This is an input for additional flight termination systems. This input pin should not be used to stop the engine under normal conditions. Needs to be connected to GND to allow engine to run.
Airspeed / Analogue input	0-2,5V Airspeed Sensor or Analog input

Connection chart Option A

JetCat PRO Interface:

The system sided SUB-D15 connector provides all signals required for engine control/operation. By using the JetCat PRO interface adapters, not only can all PRO engines can be quick- and easily deployed in model aircraft applications, but it also provides a complete solution and easy access point for stationary and industrial applications. It also provides the full functionality of our JetCat telemetry adapter.



Fuel inlet, fuel pump is inside of engine!
Do not use a filter in the suction line just an UAT air trap or large felt clunk.

Bleed air output port (OPTIONAL).

Can be used to pressurize fuel tank for high altitude operation. Inside of the engine there is a one-way valve fitted which prevents reverse flow into the engine. If bleed air function is not needed, please block this port by a piece of tubing.

Engine sided ports: Bleedair Overview



NEW

JetCat

P250-PRO-S

The JetCat-P250-PRO-S type turbo-jet engine is designed as a propulsion unit for RC-aircraft/UAVs or other industrial applications. The engine is equipped with a BLDC starter, 1x BLDC fuel pump, 2x fuel solenoids and full integrated ECU. The highlight of the P250-PRO-S is its high speed / low current start system, which gives rocket fast startup times of well below 15 seconds from OFF to engine idle. Besides the supply battery, the fuel tank, there are no further external subsystems required.

P250-PRO-S Highlights

- No pre-glow, no glow plug subject to wear, minimal current requirement for the ignition system (only a few mA)
- Direct quick start on kerosene via integrated high speed / low current ignition system
- Engine ignites within 1.5 seconds from the start command and is at idle after typically 15 seconds (20 seconds max.).
- In air restart capable due to completely new kerosene start system (manual or automatic)
- High altitude, high flight speed in-air restart capability

Video link
Engine Start



JetCat

P250-PRO-S

P250-PRO-S
71152-0270

JetCat PRO Turbinen

P300-PRO/ P400-PRO/ P500-PRO/ P550-PRO

The JetCat PRO engines offer maximum integration and installation. All system equipment required for engine operation are fully integrated under the engine hood. Apart from the supply battery, the fuel tank and the control signals, no further external subsystems are required! The control signals are output via a data cable terminated with a 15-pin SUB-D connector. Power is optionally supplied via the power cable with XT60 plug for direct battery connection.

Standard Version:

The standard P300-PRO engines have a "normal" starter motor, without generator (to save costs, when power generation is not required). With our "JetCat-PRO" interface, the engines can easily be used for RC model applications.

Generator Version PRO-GL:

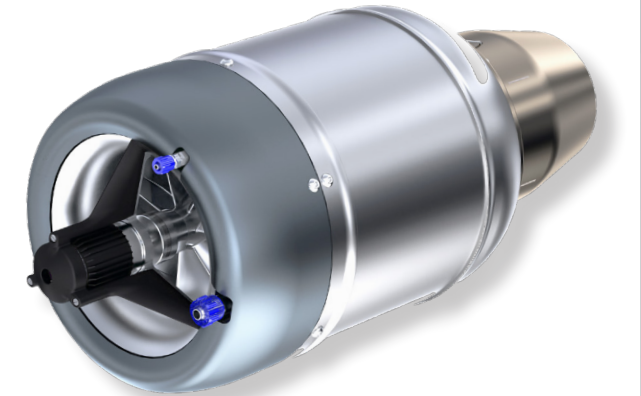
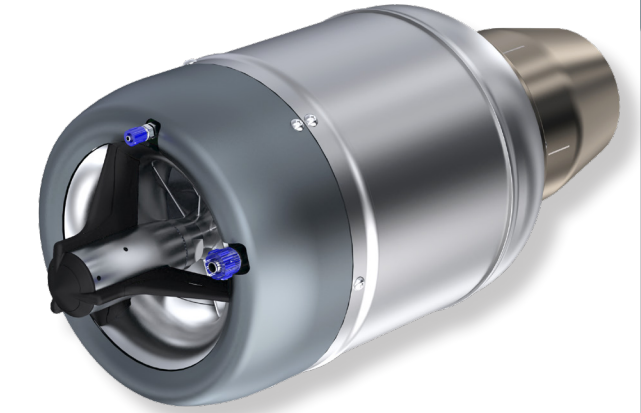
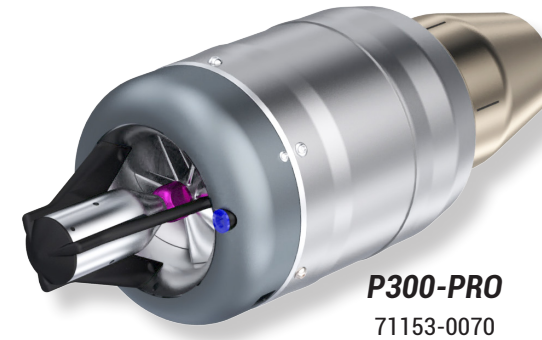
These versions consist of a brushless and non-contact starter/generator system. The generator is "soft coupled", i.e. it rotates at a lower speed than the engine shaft itself (patent pending). A built-in and integrated DC / DC converter with additional charge control enables buffering / recharging of the engine battery. The charging system is able to supply charging energy to the engine battery at idle. The electrical power of this charging system is approx. 85W, when running off a 3-cell LiPo battery. The "soft" coupling of the generator limits the power output capability.

Generator Version PRO-GH:

This version consists of a brushless and non-contact starter/generator. The generator is "hard" coupled to the engine shaft (but there is no mechanical contact), i.e. it rotates at the same speed as the engine. This configuration allows a much higher power output of the generator (900W!). This version in addition is equipped with an unregulated 3-phase AC output. The three-phase AC voltage varies proportionally with the engine speed. Typically, the measured no-load DC voltage is approximately 12V / 7.5A (33,000 1 / min) and 35V / 22A (100,000 1 / min) when loaded with a 1.5 Ohm resistor behind a rectifier network (6x High Power Schottky diodes).

Note:

The JetCat P500/P550-PRO series is only available in PRO-GL or PRO-GH versions.



JetCat P1000-PRO 1100 N

Maximum integration level for professional / industrial use

The JetCat-P1000-PRO offers maximum integration for EASY installation. All necessary peripheral systems necessary for operation are fully under the front cover of the engine. Built in. No further external peripheral devices such as ECU, valves or ignition system are required. Therefore, in addition to the supply battery, the tank and required external control signals, no further external subsystems required! All control signals are transmitted via a cable with 15-pin SUB-D connector. Power is supplied via a second cable with XT60 connector for direct battery connection. (Other connector types available on request)

JetCat-P1000-PRO engines functions:

Engine-side integrated components in the front end of the engines:

- ECU (electronic control unit)
- Brushless starter / generator (contactless to engine shaft)
- 2x integrated brushless fuel pumps
- 3x fuel and kerosene start valves
- Fuel filter
- Barometric height / pressure sensor for automatic adjustment to operating height.
- 4-pole Molex expansion connection (e.g. for smoke pumps / fuel pumps).
- Bleed Air outlet with integrated check valve (e.g. for pressurizing the fuel system)
- In-Flight Restart Capability
- Re-Start possibility in flight
- Automatic cooling cycle after shutdown.
- Direct kerosene start with dual ignition system. The ignition elements can be exchanged by the user.
- Switching on the power supply via external control signal
- Safety shutdown input for immediate shutdown of the engine by means of a suitable flight abort system. This interrupts the fuel pump power supply and closes the safety valves. The ECU can remain switched on (e.g. for continuous data transmission and/or after-cooling of the engine).
- Transmission and logging of all important data such as speed / exhaust temperature / fuel consumption / fuel consumption / current / charging current / voltages etc.
- High-performance ceramic ball bearings

Power supply:

- Supply voltage range: 10-35VDC e.g. via 3-cell LiPo battery / XT60 power connection / capacity 3000mAh or higher
- Programmable supply battery type and cell count. Max. (Peak) electrical starting power : ~ 300W

Generator:

- Max. output power 500W, 3-phase AC output optional. 1600W on GH version, via 3-phase AC output.

Integrated DC/DC converter:

Output voltage: 9-30V, programmable, typically the output voltage is automatically applied to the power supply battery at the required level.

Output power: 180W / 16A max ; Integrated output current limiter.

- Allows charging / buffering of the supply battery. No energy is taken from the battery when the engine is running. the battery is automatically charged / buffered.

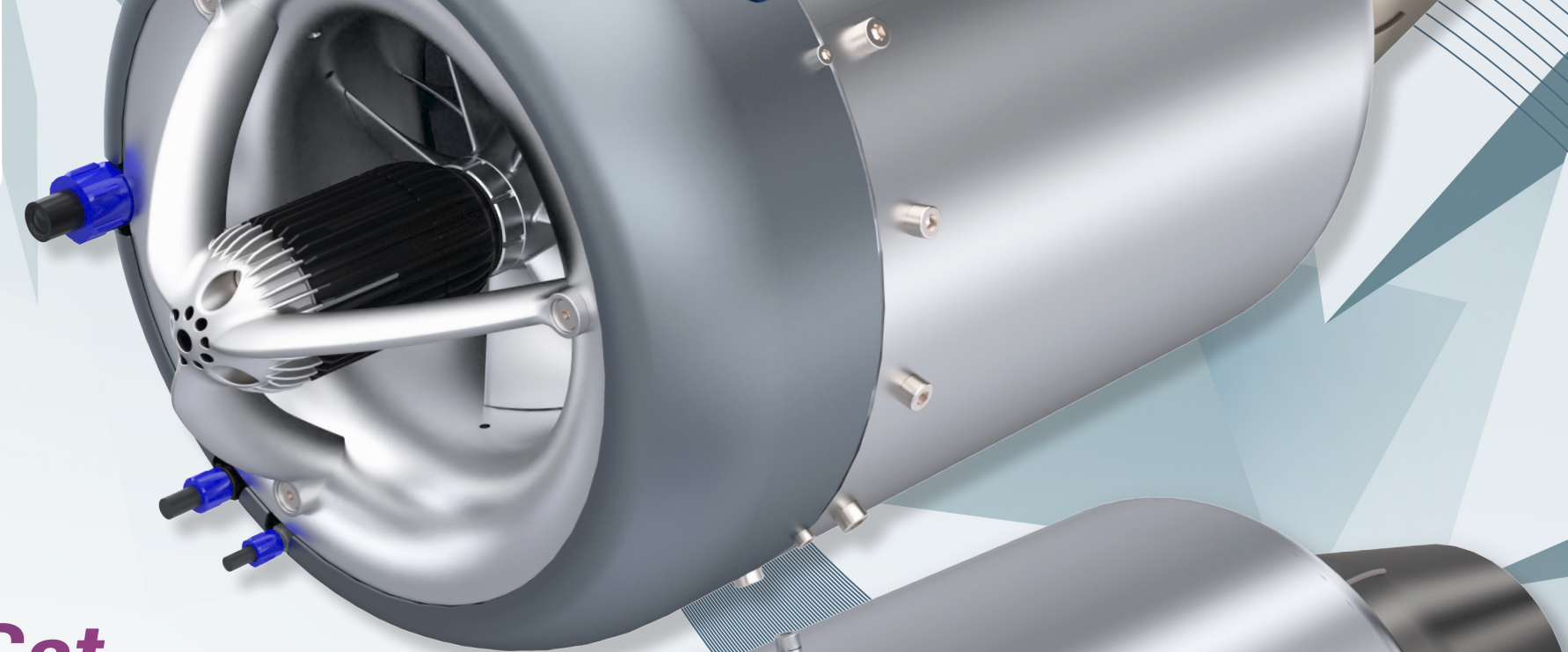
Data connector:

The 15pin SUB-D (male) offers the following control options:

- 1x PowerOn control signal
- 2x PWM input channels (e.g. for RC servo signals; THR / AUX)
- 2x independent serial TTL interfaces (baud rate: 9600 to 115000 bps) for computer control, data reporting and/or connection of several engines, RS232 signal level possible on request. The data protocol allows the addressing/control of several engines via the same serial interface.
- 1x analog input for the speed presetting/engine control or as sensor input for the airspeed.
- 1x JetCat bus interface, for connection of GSU and/ or other JetCat accessories (LCU / Flow Sensor / BMS System etc.)
- CAN bus interface for control and reporting

Customer-specific connectors on request.

NEW



JetCat P1000-PRO-GH

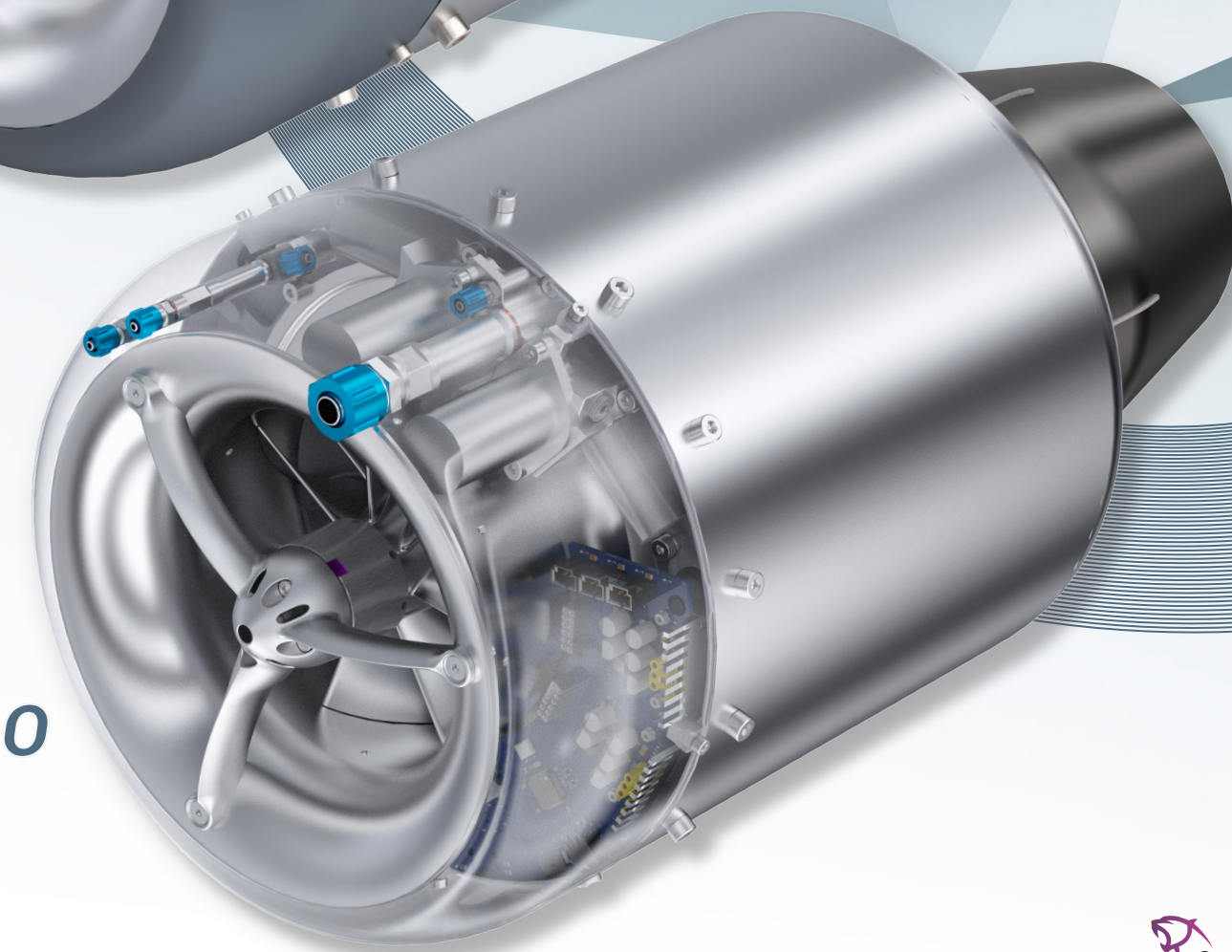
P1000-PRO-GH

71157-0010

JetCat P1000-PRO

P1000-PRO

71157-0000



JetCat SPT15-PRO

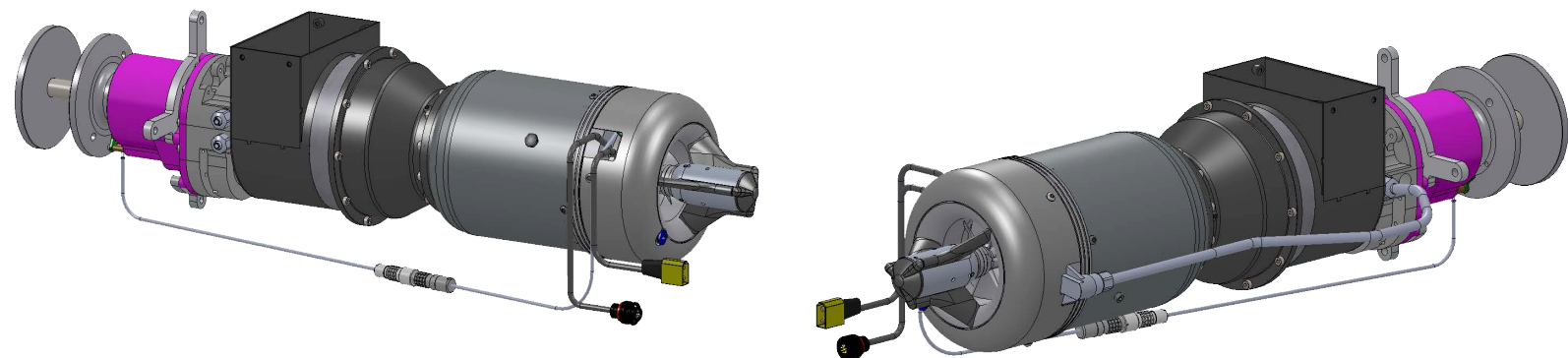
JETCAT SPT15-PRO Prop-driven models do not have to do without the advantages of engine technology. The JetCat SPT turboprop engines have high power reserves in high-tech guise. The basic design and function of the engines are similar to those used in full scale aviation. The principle is easy to understand. It is only necessary to convert the high power of the engine into usable shaft power in a suitable way. However, this is not easily achievable at very high speeds. The necessary reduction takes place in 2 stages. Once in a gas ratio, then through a gear transmission. This means that the gas jet of the "so called" core engine drives the engine wheel in operation, which sits on a second shaft. This second shaft is mechanically independent and absolutely separate from the rotor of the basic engine and receives its drive power only from the kinetic energy of the exhaust gas jet. The second shaft directly drives a gear suitable for high speeds, which reduces the speed to suitable propeller speeds. Also, completely new, is the electronic control which processes and regulates both the speed of the primary and secondary shaft. The pilot can fully concentrate on flying, the complex engine management is fully electronic.

JetCat SPT15-PRO-H

The JetCat SPT15-PRO-H variant is typically used for helicopters where a constant regulated shaft rpm is required. A special ECU software for this application allows free programming of up to three main rotor speeds, which can then be switched on the transmitter side by means of a 3-step switch. The electronic control of both engine shafts ensures that the rotor speed is kept constant even during load changes.

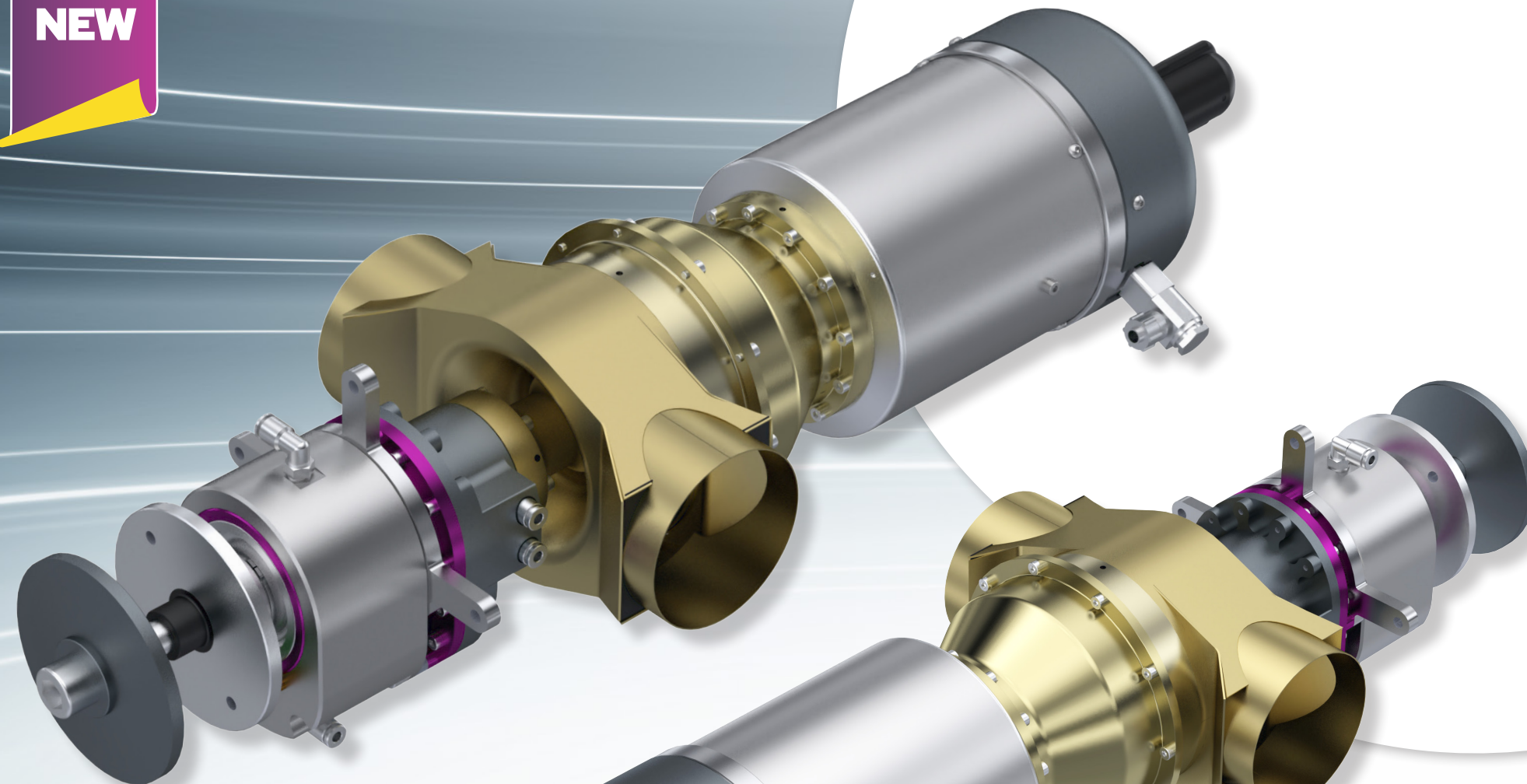
Typ	SPT15-PRO	SPT15-PRO-H
Idle speed 1st shaft (1/min)	32000	32000
Full load speed 1st shaft (1/min)	125000	125000
Maximum speed 1st shaft (1/min)	125000	125000
Gear ratio (2nd shaft)	10,24	4 oder 10,24
Idle speed 2nd shaft (1/min)	depending on propeller	-
Full load speed 2nd shaft (1/min)	5900-7000 ^{*1}	15100 oder 7000 ^{*1}
Exhaust gas temperature (°C)	480-730	480-730
Pressure ratio	3,5	3,5
Mass flow (kg/s)	0,37	0,37
Shaft power (kW)	15,0	15,0
Shaft power (HP)	20,6	20,6
Torque 2nd shaft (Ncm)	2445	2445
Fuel consumption @max rpm (ml/min)	550	550
Fuel consumption @idle (ml/min)	100	100
Weight (g)	4800	4800
Diameter (mm)	520 x 170	520 x 170
Diameter (mm)	108	108
Battery recommendation	LiFePo ₄ 3s >= 2500mAh	LiFePo ₄ 3s >= 2500mAh

All data at STP +/- 3%; STP : Standard temperature and pressure: 15 °C, 1013 mbar
*1 Programmable



Connection chart
Optional: Single Exhaust
SPT15-PRO-H

NEW



JetCat SPT15-PRO

SPT15-PRO
71148-0070

JetCat SPT15-PRO-H

SPT15-PRO-H
71148-0080

JetCat PRO

Accessories



JetCat PRO-Interface
61168-0010

- One or two channel RC control (from receiver)
- Telemetry output for: Jeti, Graupner Hott, Multiplex M-BUS and Futaba SBUS-2RJ12 socket for connection of GSU
- Airspeed sensor connector and 6 / 8-pin ERNI flat cable connectors (e.g. for connection of LCU / Mini GSU)
- RS-232 header for computer control
- CAN-Bus Header
- Header to JetCat BMS (Battery Management System)
- Cross-check communication port (For connecting/synchronizing two engines)
- 3x Status LEDs
- Analog and digital inputs for:
 - Power on/off
 - Engine On/Off control
 - Engine RPM command/control via a connected potentiometer

NEW



OnBoard RC-Charger
61108-0065

The OnBoard RC-Charger allows to charge/buffer up to two RC-receiver batteries from the engines main supply battery. This system is typically usefull in connection with generator type engines. The engine sided generator will make sure that the engines supply battery remains fully charged during engine run, therefore the engine battery is the ideal power source to also keep the receiver batteries at full charged level. The OnBoard RC-Charger will connect to the 4-pin Molex expansion connector of the engine and transferconditioned/regulated electrical energy to the receiver batteries. For this, two independant voltage and current regulated outputs are provided which would directly connect to the receiver batteries. The outputs are optimizes for 2s LiPo or 2s Lilon RC batteries (other setups on request)

- ECU battery voltage range: 9-24V (=input)
- 2x regulated outputs with 8,4V/2500mAh max each.
- Idellay suited for 2s LiPo or 2s Lilon RC batteries (>1500mAh ideal)



BUS-Smokerpumpe (E16)
71167-0000

- Suitable for ECU's from V10.0
- Max. allowed ECU supply voltage: 15V!
- Is looped directly into the BUS pump output
- Automatic supply via ECU battery
- Smoke pump output can be adjusted with GSU
- Flow rate up to 1800ml/min, programmable



JetCat GSU
61101-0010



JetCat Mini-GSU
61161-0000

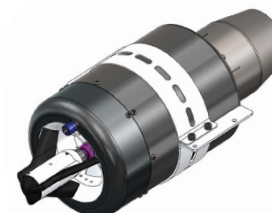
The JetCat Mini-GSU is an optional miniaturized Ground Support Unit (GSU). The Mini-GSU is so small that it can easily remain in the model if desired. The 2-line, backlit, alphanumeric LCD display and the 10 function keys offer the same operations as the "large" GSU. The connection to V6 and lower ECU's is done via an 8-pin ribbon cable and connector directly to the LED-I/O interface. The connection to V10 & up ECU's is made either directly to the ECU or to the standard LED-I/O interface via a 6-pin ribbon cable or via an 8-pin ribbon cable and connector to the JetCat I/O interface with charging input.



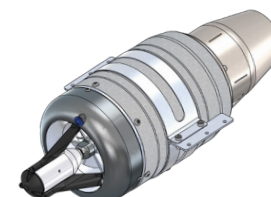
LCU-PRO V2
61162-0031

- 2 independent RC inputs
- All RC - inputs galvanically isolated by optocouplers
- 1 input for control/power supply of the LCU via a JetCat - ECU v6
- 1 input for control/power supply of the LCU via a JetCat ECU v10 and higher
- 12 outputs; 12 multifunction, output 11 and 12 can be set as afterburner
- Automatic switching to the current corresponding to the function
- 10x 1W - emitters connectable
- 2 independent afterburner rings directly connectable (regulated to 6,6V)
- Each (light) output has a control LED
- Switches on and off with RC or ECU, no switch necessary (only for JetCat engines!)
- Battery connection via MOLEX - plug for RC - operation without JetCat- engine
- In ECU - operation the voltage can be taken from the engine battery.
- Each output function can be freely assigned to an RC - input
- Extensive adjustment and combination possibilities with the JatCat GSU
- Software can be updated by the user
- Automatic detection of RC or ECU mode
- In ECU mode the switching on of the flasher, the position lights ect. and the afterburner is controlled by the ECU. Battery undervoltage, empty tank or failsafe is indicated by the lights.

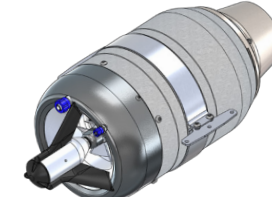
Engine mounting clamps



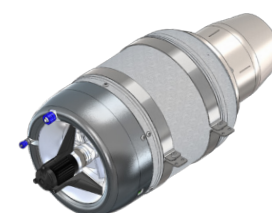
P250-PRO-S
41152-0248



P300 PRO, P300 PRO-GL, P300 PRO-GH
41117-0048



P400 PRO-NL, P400 PRO-GL-NL, P400 PRO-GH-NL
41154-0048

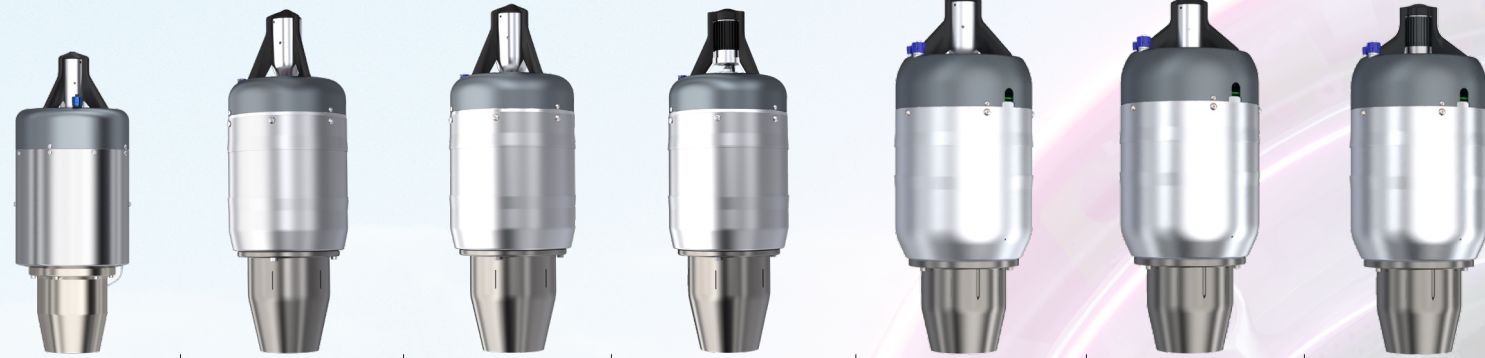


P500 PRO-GL, P500 PRO-GH, P550 PRO-GL, P550 PRO-GH
41155-0048



P1000-PRO, P1000-PRO-GH
41157-0048

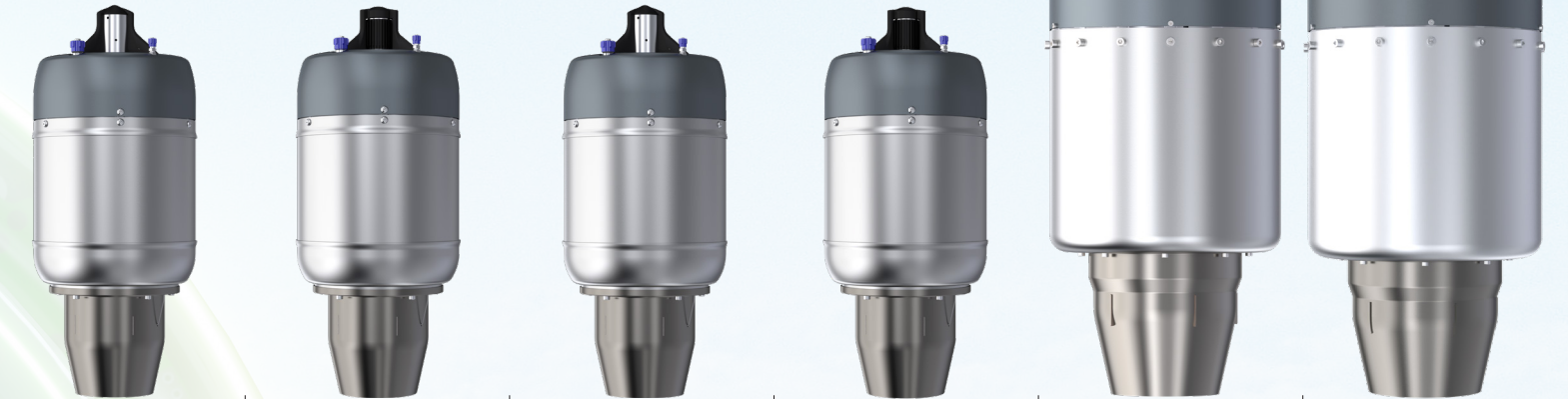
Basic-Technical-Information



Typ	P250-PRO-S	P300-PRO	P300-PRO-GL	P300-PRO-GH	P400-PRO-LN	P400-PRO-GL-LN	P400-PRO-GH-LN
Idle speed (1/min)	35000	35000	35000	35000	30000	30000	30000
Max rpm (1/min)	117000	106000	106000	106000	98000	98000	98000
Thrust at idle (N)	11,8	14	14	14	14	14	14
Maximum thrust (N)	250	300	300	300	425	425	425
Exhaust gas temperature (°C)	480-750	480-750	480-750	480-750	480-750	480-750	480-750
Pressure ratio	3,8	3,55	3,55	3,55	3,8	3,8	3,8
Mass flow (kg/s)	0,47	0,5	0,5	0,5	0,67	0,67	0,67
Exhaust gas velocity (km/h)	1860	2160	2160	2160	2122	2122	2122
Exhaust gas power output (kW)	75	90	90	90	116,4	116,4	116,4
Battery charging power (W)	-	-	85	85	-	85	85
3 Phase AC (W) / Voltage (V)	-	-	(+)	900 (W) / 10 - 36 (V)	-	(+)	900 (W) / 10 - 36 (V)
Consumption idle (ml/min)	138	179	179	179	200	200	200
Consumption Full load @max rpm(ml/min)	820	980	980	980	1392	1392	1392
Fuel consumption idle (kg/min)	0,110	0,143	0,143	0,143	0,16	0,16	0,16
Fuel consumption @max rpm (kg/min)	,656	0,784	0,784	0,784	1,040	1,040	1,040
SFC @max rpm (kg/(N+h))	0,158	0,157	0,157	0,157	0,158	0,158	0,158
Weight (g)	2155	2870	2870	2870	4010	4060	4140
Diameter (mm)	121	132	132	132	148,4	148,4	148,4
Length (mm) inkl. Anlasser	322	381	381	377	390	380	376
Battery recommendation	LiPo 3s >= 1500mAh	LiPo 3s >= 2000mAh	LiPo 3s >= 2000mAh	LiPo 3s >= 2000mAh	LiPo 3s >= 2000mAh	LiPo 3s >= 2000mAh	LiPo 3s >= 2000mAh

Operating conditions	
Maximum start height	6000m (@STP) 2600m (@STP)
Maximum operating height	10000m / 32800ft
Fuel	Jet-A1, Jet TS-1, Premium Diesel Aral Ultimate, with 3% - 5% oil (MIL-L-23 699)
Max. axial (forward-) acceleration	25G

(+) Phase voltage depending on engine speed; approx. 10 - 40VAC , All data at STP +/- 3%; STP : Standard temperature and pressure: 15 °C, 1013 mbar



Typ	P500-PRO-GL	P500-PRO-GH	P550-PRO-GL	P550-PRO-GH	P1000-PRO	P1000-PRO-GH
Idle speed (1/min)	26000	26000	26000	26000	19000	19000
Max rpm (1/min)	80000	80000	83000	83000	61500	61500
Thrust at idle (N)	28	28	28	28	45	45
Maximum thrust (N)	492	492	550	550	1100	1100
Exhaust gas temperature (°C)	480-740	480-740	480-750	480-750	480-720	480-720
Pressure ratio	3,6	3,6	3,8	3,8	4	4
Mass flow (kg/s)	0,9	0,9	0,93	0,93	1,8	1,8
Exhaust gas velocity (km/h)	1968	1968	2129	2129	2200	2200
Exhaust gas power output (kW)	134,5	134,5	162,6	162,6	336,1	336,1
Battery charging power (W)	85	85	85	85	160	160
3 Phase AC (W) / Voltage (V)	-	900 (W) / 10 - 36 (V)	(+)	900 (W) / 10 - 36 (V)	500 (W) / 10 - 36 (V)	1600 (W) / 10 - 36 (V)
Consumption idle (ml/min)	300	300	300	300	550	550
Consumption Full load @max rpm(ml/min)	1550	1550	1650	1650	2900	2900
Fuel consumption idle (kg/min)	0,240	0,240	0,240	0,240	0,440	0,440
Fuel consumption @max rpm (kg/min)	1,188	1,188	1,320	1,320	2,320	2,320
SFC @max rpm (kg/(N+h))	0,151	0,151	0,144	0,144	0,127	0,127
Weight (g)	4900	4900	5305	4900	11350	11570
Diameter (mm)	178,6	178,6	178,6	178,6	234	234
Length (mm) inkl. Anlasser	419	416	419	416	444	505
Battery recommendation	LiPo 3s >= 3000mAh	LiPo 3s >= 3000mAh	LiPo 3s >= 3000mAh	LiPo 3s >= 3000mAh	LiPo 3s >= 3000-5000mAh	LiPo 3s >= 3000-5000mAh

Operating conditions	
Maximum start height	2600m (@STP) 0-6000m
Maximum operating height	10000m / 32800ft
Fuel	Jet-A1, Jet TS-1, Premium Diesel Aral Ultimate, with 3% - 5% oil (MIL-L-23 699)
Max. axial (forward-) acceleration	25G

(+) Phase voltage depending on engine speed; approx. 10 - 40VAC , All data at STP +/- 3%; STP : Standard temperature and pressure: 15 °C, 1013 mbar



Ing.- Büro

CAT

M. Zipperer GmbH



Ingenieurbüro CAT, M. Zipperer GmbH
Wettelbrunner Str. 6
79282 Ballrechten-Dottingen

Tel.: +49 (0)7634 5056-800

Fax: +49 (0)7634 5056-801

Mail: info@cat-ing.de

Web: www.JetCat.de

Subject to change and delivery possibility.
No liability for misprints and mistakes.

3/2022