

- 3W 28i (or 28 CS) engine. Pusher or tractor engine versions are available
- Ignition unit
- Preinstalled 80W onboard generator system
- Generator Power Unit
- Wiring with Fischer push-pull connectors installed
- Two level anti-vibration engine mount (optional)
- Hitec digital throttle servo and linkage (optional)

# 3W 28i / 28CS ENGINE WITH 80W GENERATOR SYSTEM



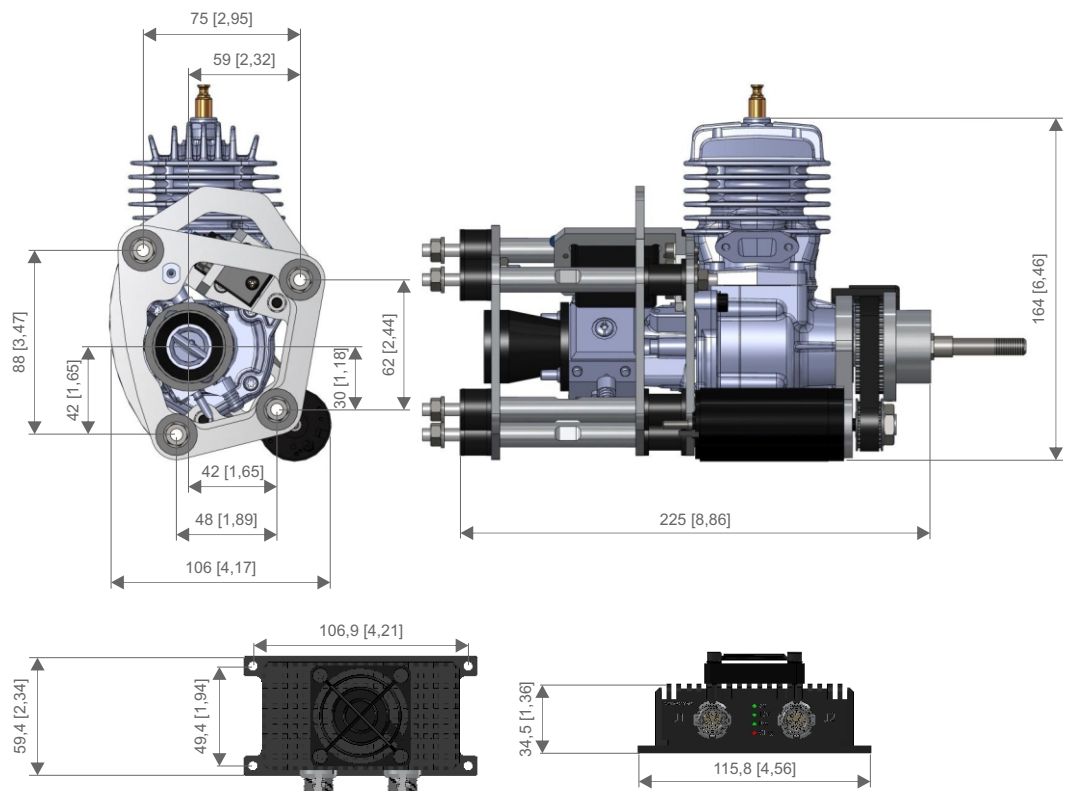
## System Overview:

The 3W 28i engine is supplied together with UAV Factory's proprietary 80W onboard generator system. The generator system is factory installed on the 3W 28i engine and tested before delivery.

The two-stroke 3W 28i engine is a proven choice for unmanned aircraft vehicles due to excellent power-to-weight ratio and reliability. The 28i engine is available in both pusher and tractor versions. It is also possible to order 3W 28 CS engine, which offers higher power output.

The 3W 28i engine and generator system is often used for unmanned aircraft vehicles with the takeoff weight of 8 to 23 kg.

## Dimensions:



### Generator System Key Features:

- Light weight, small and efficient
- Up to 80 W continuous load power
- 6 V and 12 V output
- Peak load current up to 10 A
- Short circuit protection
- Battery backup connection
- 3 cell Li-Poly integrated charger
- External power connection
- Integrated current sensors
- Serial connection
- IP 64 GPU housing

### Generator System Description:

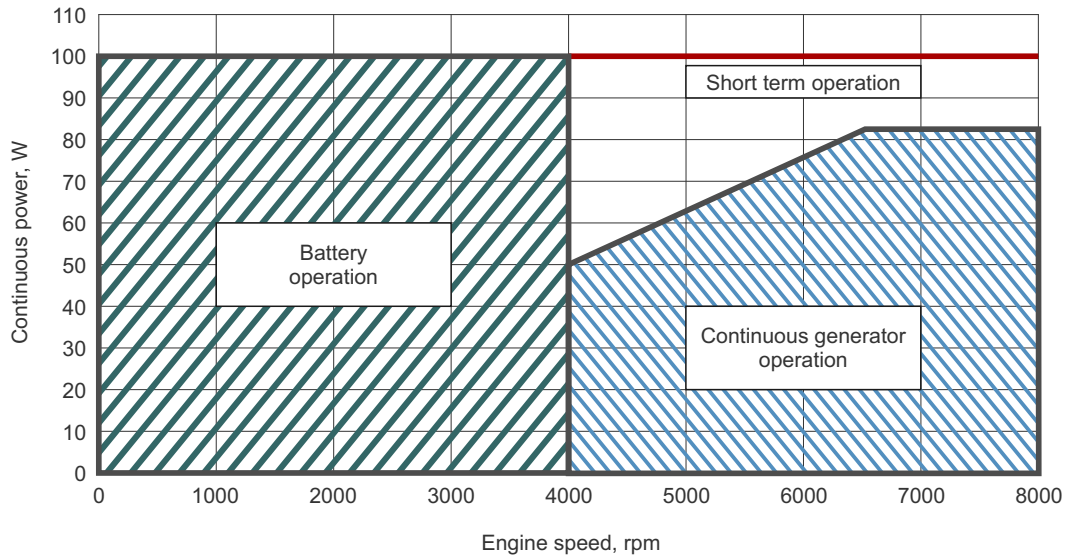
Onboard Generator system consists of a Generator Power Unit (GPU), belt driven industrial-grade coreless generator, mounts and wiring. System is capable of providing up to 80W maximum continuous power to onboard electronics.



GPU is designed to provide onboard dual voltage regulated power supply of 6 and 12 Volts. Despite small size, GPU offers outstanding efficiency as well as unique features such as the ability to monitor load, battery current, engine rpm, generated and battery voltage. All power distribution parameters are sent through serial TTL communication and can be transmitted to the UAV ground control station.

Integrated Lithium Polymer charger is used for the backup battery, which is switched on during the pre-flight checks or low engine speed. GPU is packed in a sealed aluminum enclosure and fitted with the high-end industrial push-pull connectors. Wire harness is included in the package.

### Maximum generator power output:



### Engine Specifications:

Parameter	Value
Engine model	3W 28i or 28 CS, two stroke
Power	3.35 hp (28i) or 3.55 hp (28 CS)
Capacity	28 cc
Speed range	1500-8500 rpm
Oil / Gasoline Ratio	1:50 / 2% mix
Recommended 2-bladed Propellers	16x10, 18x8, 18x10, 20x8
Recommended 3-bladed Propellers	16x8, 16x10
Engine weight (including ignition)	1.2 kg
Muffler	Not included

### Generator System Electrical Specifications:

Parameter	Value
Generator type	Brushed
Generator voltage range	13 – 50 VDC
External power supply voltage range	13 – 50 VDC
Battery Type	3 cells Li-Polymer (not included)
Battery Voltage	12.6 V
Maximum battery charging current	2 A
Maximum continuous generator current	3.5 A
Maximum continuous battery current	8 A
Maximum continuous external power current	8 A
Output voltage	6 V and 12 V
Maximum output voltage ripple	50 mV @6V 50 mV@12V
Continuous load current, 6 Volt output <sup>1,2</sup>	5 A
Continuous load current, 12 Volt output <sup>1,2</sup>	5 A
Maximum GPU efficiency	90%
Maximum total generator system efficiency	75 %
Maximum peak load current	10 A for 10 seconds
No load GPU current	110 mA
Tachometer range	1000-9000 rpm
Tachometer accuracy	200 rpm
Current sensor range	0 to 10 A
Current sensor accuracy	0.2 A
Voltage sensor accuracy	0.1 V
Serial Communication	5V TTL

### Generator System Mechanical Specifications:

Parameter	Value
GPU Dimensions	59.4 x 115.8 x 32.4 mm
GPU Weight	~190 grams
Complete Onboard Generator System weight	~500 grams
Maximum GPU enclosure temperature	70°C
Environmental protection	IP 64 standard, IP 68 on request
Operating temperature	- 40°C to +50°C <sup>2</sup>
Electrical connectors	Fischer 104 Series push-pull connector

<sup>1</sup> Generator continuous current must not exceed 3.5 A.

<sup>2</sup> Enclosure temperature must not exceed 70°C , additional cooling may be required.