

WF-EN-17 Engine Test Bench			
Basic Parameters	Operating Temp	0 ~ +40 °C	
	Operating Humidity	≤80% No condensation	
	Storage Temp	-20 ~ +60 °C	
	Storage Humidity	≤ 90% No condensation	
	Max Installed Weight	10KG	
	Recommended Engine	30-170CC	
Equipment Power Supply UPS system	Max Propeller	40 in	12V, 24V systems must be confirmed before ordering The test bench can operate without an external power supply. Long-term operation requires power from the engine's own power generation system (generator connected to the test bench)
	AC Power Supply	AC100-277V 2.8A	
	Equipment Power Consumption	DC 24V 0.5A	
	Battery System	12V/24V 20/10AH(CCA≥200A)	
Device Communication	Charging Current	15.4/7.7A MAX	
	Main Serial Port	RS-422@460800	
	Temp Acquisition Serial Port	RS-485@115200	
Wireless Data Transmission	Wired Communication	High-speed 422 via USB module + 485 via USB module	It cannot be used through metal walls.
	Device Type	Dual-channel 422/485 full-duplex wireless transmission	
	Working Frequency Band	2400 MHz	
	Transmitting Power	20 dBm	
Engine Control	Communication Distance	200 m (open environment)	IO1, 5, 6, 7 are general interfaces.
	IO1-ECU Power Supply	15A relay (battery powered)	
	IO2-Electric Starter	300A relay (battery powered)	
	IO3-Ignition 1	15A relay (ground)	
	IO4-Ignition 2	15A relay (ground)	
	IO5-Oil Pump 1	15A relay (battery powered)	
	IO6-Oil Pump 2	15A relay (battery powered)	
	IO7-Servo Power Supply	15A relay (battery powered)	
Thrust	Throttle servo PWM signal output 1	333Hz 800-2200μs	It is strictly forbidden to conduct destructive experiments on this test bench. When resonance occurs between the engine and the test bench, the test should be stopped immediately to prevent accidents.
	Choke servo PWM signal output 2	333Hz 800-2200μs	
	Range	50 kg	
	Resolution	0.01 kg	
	Instantaneous Overload	200%F.S.	
	Destructive Overload	400%F.S.	
	Accuracy	0.2%+0.2%FS	
	Range	50 N·m	
	Resolution	0.01 N·m	
	Instantaneous Overload	200% F.S.	
Torque	Destructive Overload	400% F.S.	
	Sensor Accuracy	0.2%+0.2%F.S.	
	Range	0 ~ 15000 RPM	
	Resolution	1 RPM	
Optical Speed	Accuracy	0.05%+0.05%F.S.	
	Range	0 ~ 60000 RPM	
	Resolution	1 RPM	
Pulse Speed	Accuracy	0.05%+0.05%F.S.	
	Supported Level	1-5V	
Cylinder Head Thermocouple*2	Type	PT100	
	Range	-20~250 °C	
	Accuracy	± 0.3 °C	
Exhaust Thermocouple*2	Type	K Type	
	Range	-20~650 °C	
	Accuracy	0.05%+1°C	
Spare Temperature Interface*4	Type	PT100/K Type	
	Range	-20~650 °C	
	Acquisition Accuracy	0.05%+1°C	
Environmental Module	Barometric Pressure Range	30 ~ 110 kpa	
	Barometric Pressure Resolution	0.01 kpa	
	Barometric Pressure Accuracy	±0.06 kpa	
	Ambient Temperature Range	-40 ~ 85 °C	
	Ambient Temperature Resolution	0.1 °C	
	Ambient Temperature Accuracy	±1 °C	
	Humidity Range	0 ~ 100%RH	
	Humidity Resolution	1 % RH	
	Humidity Accuracy	±3%	
Optionals			
Instantaneous High-precision Fuel Flow Sensor	Type	Ultrasonic measurement by non contact Clamp-type	It is not suitable for engines with built-in fuel return. If there are no bubbles in the fuel return line, two sensors can be used to subtract and test the fuel flow.
	Range	0-3000 ml/min	
	Accuracy	0.3%FS	
	Response time	50ms	
Fuel Flow Sensor	Range	-0.5 ~ 2 bar	
	Accuracy	0.2%+0.2%F.S.	
	Resolution	0.01 bar	
Oil Pressure Sensor	Range	0 ~ 10 bar	
	Accuracy	0.2%+0.2%F.S.	
	Resolution	0.01bar	
DC Voltage Sensor	Voltage Range	5 ~ 65 V (Optional 150V, 200V, 500V, 1000V)	
	Voltage Resolution	0.01 V	
	Voltage Accuracy	0.05%+0.05%FS	
DC Current Sensor	Current Range	0 ~ 200 A	
	Current Resolution	0.01 A	
	Current Accuracy	0.1%+0.1%FS	
Safety Cage	Material	Square Tube Welding +Iron Mesh	
	Dimensions	Outer Diameter 45 inches	
	Protection Method	Ring Protection	
Noise Sensor	Range	30~120dB	
	Accuracy	0.5dB	
	Resolution	0.1dB	
Atmospheric Oxygen Sensor	Range	0-25%	
	Accuracy	0.2%	
	Service Life	1 Year	
Airspeed (Pressure Difference) Module	Difference Pressure Range	1 psi	Airspeed has no fixed accuracy, the higher the airspeed, the higher the accuracy.
	Difference Pressure Resolution	0.84 pa	
	Difference Pressure Accuracy	0.01	
	Airspeed Range (standard atmosphere)	5 ~ 100m/s	
	Airspeed Resolution	0.1 m/s	
	L-type Pitot Tube Height	800 mm	
	L-type Pitot Tube Coefficient	0.99-1.00	