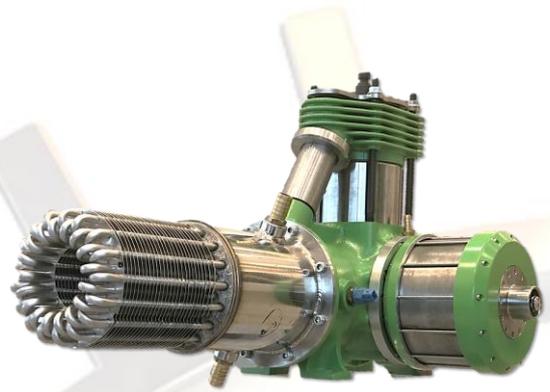


Data sheet: V2-6 Stirling engine



Model: V2-6 (X)
Art.nr.: 167022
Frequency: 50 - 60 Hz
Fuel type: Multifuel; OEM, Gas, Pellets, Waste heat etc

Description

Power generator set with multi fuel capability and high efficiency.

The V2-6 engine can be retro fitted into multiple heat sources from combustion chambers, ovens, gasification processes, even thermal heat storage units that can supply a continuous heat of between 750 – 1150 degrees C. The engine power generator is of permanent magnet torque motor type with long service life. The generator set operates with dry lubrication system and requires no oil, oil pump, oil filter nor any air filter changes. Service of combustion (burner) and engine is done in annual maintenance sequence in combination with weekly inspections.

	Prime				Base			
Fuel consumption	kVA (kW)				kVA (kW)			
Ratings	12.5 (10)				6.25 (5)			
Load	1/4	1/2	3/4	Full	1/4	1/2	3/4	Full
Radiant heat source, kW	6.25	12.5	18.75	25	3.12	6.25	9.37	12.5
Heat supply temperature	900	900	900	900	900	900	900	900

Engine	Prime rating		Base rating
Engine manufacturer	Inresol		
Engine model	V2-6		
Configuration	Crank case in cast nodal steel, 90 ° V2 cylinder		
Aspiration	Radiant heat and/or hot gas flow from heat source		
Gross engine power output, kWe	10	5	
BMEP at set rated load, kPa	7000	4500	
Bore, mm	PP 84	DP 92	
Stroke, mm	PP 75	DP 75	
Rated speed, rpm	1200 (typical range 600-900)		
Piston speed, m/s	3		
Compression ratio	2:1		
Lube oil capacity, L	None, equipped with dry lubrication system		
Overspeed limit, rpm	1500 ±50		
Voltage, 1-phase or 3-phase AC	100, 110, 115, 120, 220, 230, 240, 380, 400, 480		
Governor type	Electronic inverter regenerative VFD		
Starter battery voltage DC (A)	48V (50A)		



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Air	Prime rating	Base rating
Combustion air, m3/h	32	18
Maximum air cleaner restriction, kPa	NA	

Exhaust

Exhaust gas flow at set rated load, m3/h	162	81
Exhaust gas temperature, °C	NA	NA
Maximum exhaust back pressure, Pa	NA	

Standard set-mounted heat exchanger cooling (and radiator with 3-way valve)

CHP (or optional radiator), °C	40-85	
Fan load, kW max	0.140	
Coolant capacity (with radiator), L	4.2	
Cooling system air flow, m3/h @ 12.7 mmH2O	240	
Total heat rejection, kW max (min)	25 (16)	12.5 (8)
Maximum cooling water flow L/m	16	

Weight*

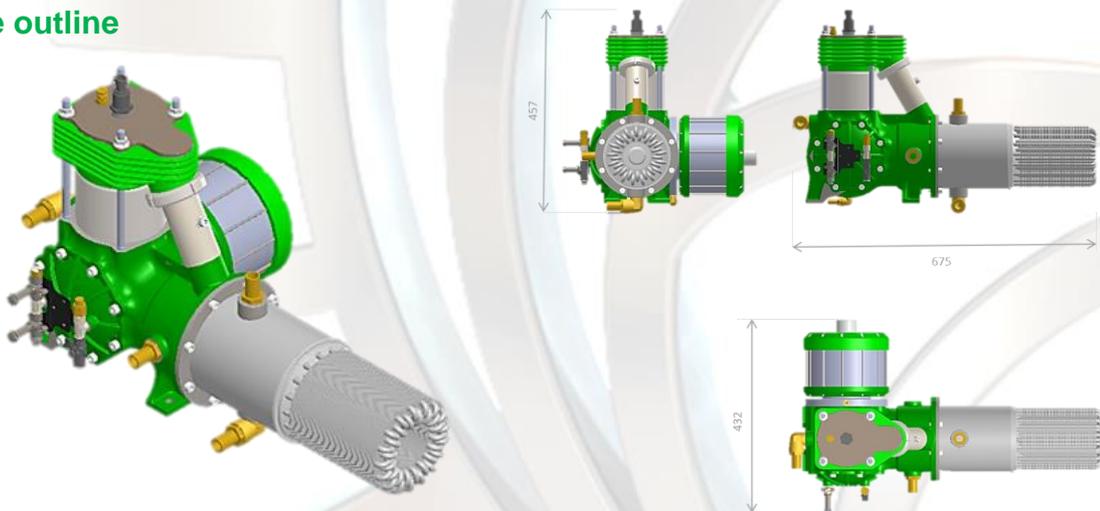
	Open
Unit dry weight, kg	57

* Weights represent a set with standard features. See outline drawing for weights of other configurations.

Dimensions

	Length	Width	Height
Standard open set dimensions, mm	675	432	457

Engine outline



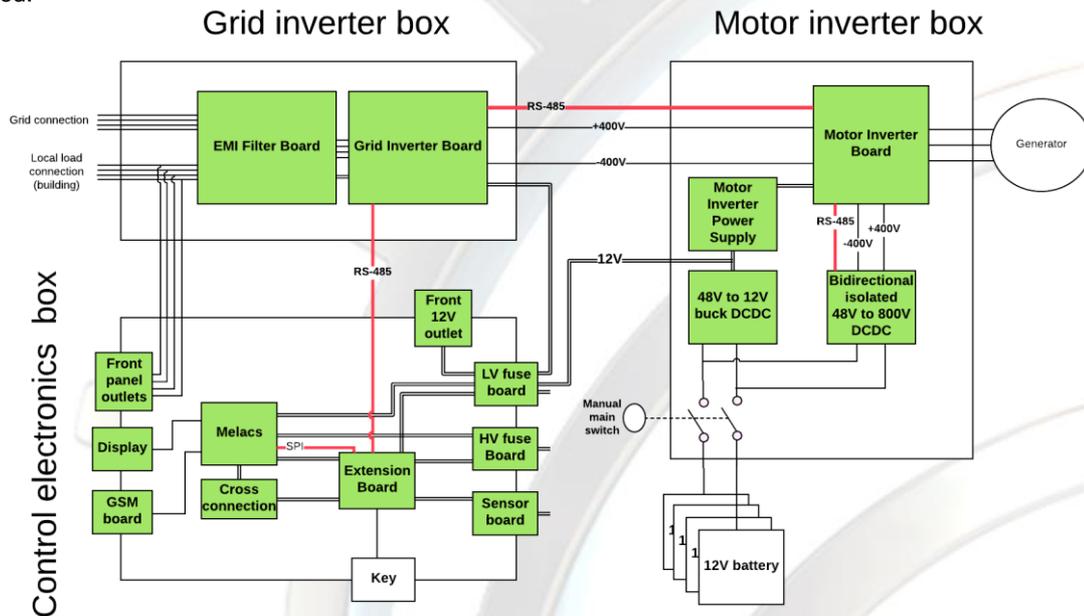
Outlines are for illustrative purposes only. Please refer to the genset outline drawing for an exact representation of this model.



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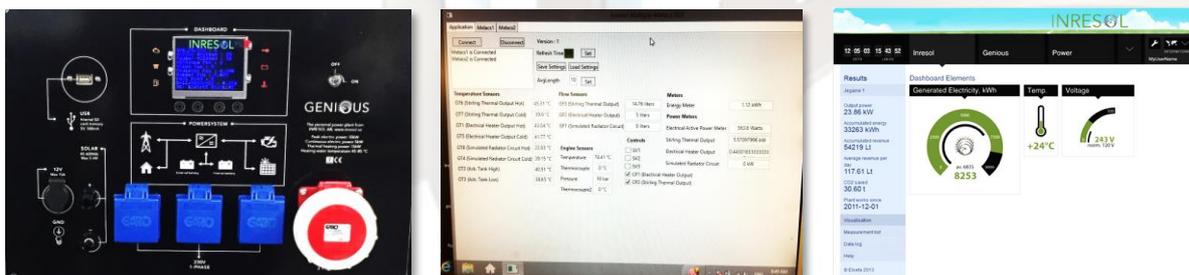
Power inverter system block diagram

The optional Inresol inverter system (available in the V2-6X package), operates the power generator through a motor/generator inverter and acts a starter motor combined with regenerative drive and DC battery charging. The charged battery provides DC power to the inverter where AC voltage is generated. Local loads are connected to a separate Load connection that also acts as UPS function when the Grid is down. The Grid connection is feeding power to the external grid with preselected power level from 1-100% of the inverter capacity. Energy storage batteries can be selected from 50Ah “starter battery” up to 1200Ah “energy battery” connected on the DC side on the engine (or 240kWh/engine of energy storage capacity for a full 10kW power 24 hours cycle). The engine groups are connected in parallel on the AC grid side if larger systems are desired.



System embedded control and remote control

The optional Inresol inverter system (available in the V2-6X package), is controlled locally through a local Ethernet network and remotely via VPN tunnelling or Cloud connection (“internet of things”). A local connection can also be made via the Dashboard panel USB port.

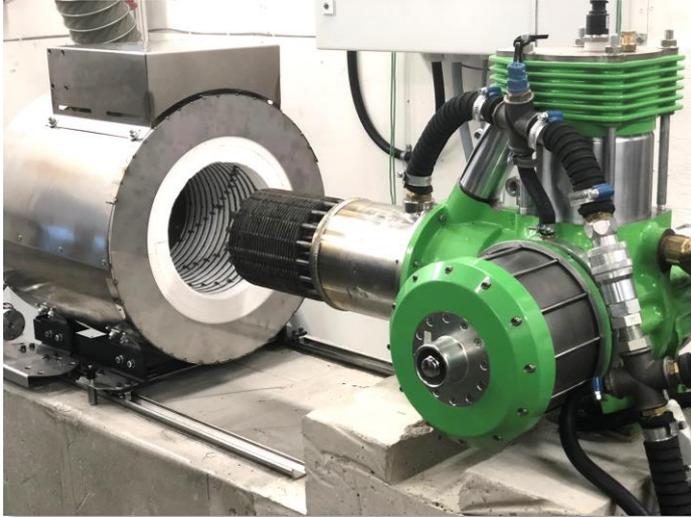


Smart Grid systems

The optional power generator set inverter system (available in the V2-6X package), is designed to be used in Smart Grid applications. In Smart Grid systems, it is possible to provide Prime power on demand of up to the inverter maximum continuous current of 50A or 20-35kW depending on voltage level, as long as there is capacity (SOC) in the battery system. This enables power delivery of short time slots at high value in the power grid during peak load hours.



Applications 5-10kW to multi kW power plants



V2-6 stirling engine operated in a furnace as heat source

The V2-6 engine unit can be inserted into existing heat sources, drawing from the waste heat to create combined heat and power (CHP). The engines' built in heat exchanger is connected to the hot water heater tank to provide DHW and Heating. Hot water tank is not included and optional, as the V2-6 may be operated as power output only.

This arrangement enables a high total power in combination with high capacity factor intended for local energy power plants. Up to several kW's is possible with parallel, modular connected units. The power is connected via inverters in single or multiple parallel layout. This simplifies the grid connection and enables power on demand with renewable fuels.

Ratings definitions

Emergency standby power (ESP):	Limited-time running power (LTP):	Prime power (PRP):	Base load power (COP):
Applicable for supplying power to varying electrical load for the duration of power interruption of a reliable utility source. Emergency Standby Power (ESP) is in accordance with ISO 8528. Fuel Stop power in accordance with ISO 3046, AS 2789, DIN 6271 and BS 5514.	Applicable for supplying power to a constant electrical load for limited hours. Limited Time Running Power (LTP) is in accordance with ISO 8528.	Applicable for supplying power to varying electrical load for unlimited hours. Prime Power (PRP) is in accordance with ISO 8528. Ten percent overload capability is available in accordance with ISO 3046, AS 2789, DIN 6271 and BS 5514.	Applicable for supplying power continuously to a constant electrical load for unlimited hours. Continuous Power (COP) is in accordance with ISO 8528, ISO 3046, AS 2789, DIN 6271 and BS 5514.

For more information contact your local Inresol distributor or visit www.inresol.se



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