

# SIEMENS

*Ingenuity for life*

## SGT-A65 gas turbine

For power generation and mechanical drive applications

Designed for industrial power generation and mechanical drive applications, the SGT-A65 (Industrial Trent 60) is a proven benchmark for power output, fuel economy, and cost savings. Based on Rolls-Royce Aero Engine technology, it also offers outstanding operating flexibility for a variety of demanding applications.

### High flexibility

- Available with WLE and DLE combustion systems
- Fast start up (5 mins) and fast ramp rate
- High cycling capability

### Important features

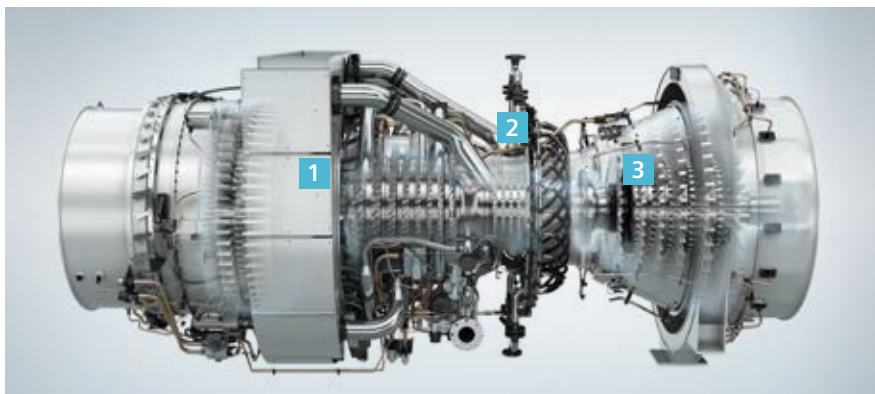
- Low emissions maintained on different fuels
- Maximized uptime
- Robust industrial design
- Small environmental footprint

### Customer service and maintenance

- 24-hour gas generator swap
- Maximized serviceability – on-site maintenance or gas generator removal for off-site maintenance
- Modular design allows for exchange of entire modules for repairs
- Minimized load-to-load downtime
- Tailored service options, from installation and commissioning to upgrades and retrofits
- 24-hour global help desk

### Key benefits

- 60 to 71 MW(e)/58 to 62 MW gas turbine
- 41.3 to 43.8% simple cycle efficiency
- Highest simple cycle efficiency
- Designed for high operational flexibility including fast start and stop
- Modular and single-lift design for ease of maintenance
- Robust, reliable technology
- Well-proven dry low emission (DLE) combustion system < 25 ppmvd
- On-load fuel changeover (gas to liquid fuel and liquid fuel to gas) with wet low emission (WLE) version
- Low lifecycle costs
- Minimal efficiency drop-off at part-load and reduce speed conditions



- 1 Compressor**  
Multi-shaft design requires minimal variable guide vanes.
- 2 DLE combustion system**  
WLE or DLE combustion systems to suit your applications that meet or exceed your permitting requirements.
- 3 Power turbine**  
Integrated low pressure turbine and compressor tailored to match your speed requirements in industrial power generation or mechanical drive applications.

The SGT-A65 can cold-start to full power in under 5 minutes and is the most powerful, proven aero-derivative gas turbine in its class



### Power generation package

The SGT-A65 package is built from fully assembled and tested modules to allow quick installation, reliable operation, and ease of maintenance in the field.

- Fast installation and commissioning
- Modular and flexible package design
- Single-lift capability

### Mechanical drive package

The SGT-A65 is ideally suited to meet the high power and variable-speed demands of natural gas liquefaction, gas transportation, and gas induction for oil recovery applications.

- Variable power turbine speed: 70 to 105%
- Full train starting with power as low as 350 kW
- Direct drive or gearbox operation

	Simple cycle power generation			
	50 Hz DLE with ISI	60 Hz DLE with ISI	50 Hz WLE with ISI	60 Hz WLE with ISI
<b>Power output</b>	65.9 MW(e)	64.9 MW(e)	67.4 MW(e)	70.8 MW(e)
<b>Fuel</b>	Natural gas only; other fuels on request		Natural gas, liquid fuel, dual fuel; other fuels on request	
<b>Frequency</b>	50 Hz	60 Hz	50 Hz	60 Hz
<b>Gross efficiency</b>	43.8%	43.3%	41.3%	41.4%
<b>Heat rate</b>	8,228 kJ/kWh	8,311 kJ/kWh	8,724 kJ/kWh	8,696 kJ/kWh
<b>Turbine speed</b>	3,000 rpm	3,600 rpm	3,000 rpm	3,600 rpm
<b>Pressure ratio</b>	39.6 : 1	38.0 : 1	39.9 : 1	39.3 : 1
<b>Exhaust gas flow</b>	178 kg/s	171 kg/s	178 kg/s	176 kg/s
<b>Exhaust temperature</b>	431° C (808° F)	437° C (819° F)	431° C (808° F)	447° C (837° F)
<b>NO<sub>x</sub> emissions</b>	≤ 25 ppmvd at 15% O <sub>2</sub> on fuel gas (with WLE and DLE)			

	Combined cycle power generation			
	DLE 1x1	DLE 2x1	DLE with ISI 1x1	DLE with ISI 2x1
<b>50/60 Hz</b>				
<b>Net power output</b>	73.0 MW(e)	147.0 MW(e)	83.0 MW(e)	166.8 MW(e)
<b>Net plant efficiency</b>	54.6%	55.0%	54.2%	54.4%
<b>Net plant heat rate</b>	6,593 kJ/kWh	6,546 kJ/kWh	6,648 kJ/kWh	6,617 kJ/kWh
<b>Pressure/reheat</b>	Dual/No			

	Mechanical drive application	
	DLE	DLE with ISI
<b>Power output</b>	57.9 MW	62.3 MW
<b>Fuel</b>	Natural gas only; other fuels on request	
<b>Efficiency</b>	43.6%	43.4%
<b>Heat rate</b>	8,250 kJ/kWh	8,290 kJ/kWh
<b>Drive shaft speed</b>	2,380 – 3,400 – 3,570 rpm	2,380 – 3,400 – 3,570 rpm
<b>Pressure ratio</b>	34.3 : 1	34.3 : 1
<b>Exhaust mass flow</b>	157.7 kg/s	162.8 kg/s
<b>Exhaust temperature</b>	447° C (837° F)	441° C (826° F)
<b>NO<sub>x</sub> emission</b>	≤ 25 ppmvd at 15% O <sub>2</sub> on fuel gas	

	Physical dimensions	
	Power generation package	Mechanical drive package
<b>Approx. weight</b>	190,512 kg (420,007 lb)	106,000 kg (233,690 lb)
<b>Length</b>	26.0 m (87 ft)	12.4 m (40.7 ft)
<b>Width</b>	4.6 m (15 ft)	4.7 m (15.4 ft)
<b>Height</b>	5.0 m (17 ft)	6.4 m (21.0 ft)

50 Hz	SGT5-9000HL	567 MW
	SGT5-8000HL	481 MW
	SGT5-8000H	450 MW
	SGT5-4000F	329 MW
	SGT5-2000E	187 MW
60 Hz	SGT6-9000HL	388 MW
	SGT6-8000H	310 MW
	SGT6-5000F	250 MW
	SGT6-2000E	117 MW
50 or 60 Hz	SGT-A65	60 to 71 / 58 to 62
	SGT-800	48 to 57 MW
	SGT-A45	41 to 44 MW
	SGT-750	40 / 41 MW
	SGT-700	33 / 34 MW
	SGT-A35	27 to 38 MW
	SGT-600	24 / 25 MW
	SGT-400	13 to 14 / 13 to 15 MW
	SGT-300	8 / 8 to 9 MW
	SGT-100	5 / 6 MW4
SGT-A05	4 to 7 MW	

Gas turbines from 4 to 567 MW

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The information given in this document only contains general descriptions and/or performance features which may not always specifically reflect those described, or which may undergo modification in the course of further development of the products. The requested performance features are binding only when they are expressly agreed upon in the concluded contract.

Note:  
For power generation, AC generator is included, dimensions include inlet filter housing, exclude exhaust stack. For mechanical drive, driven equipment is excluded, dimensions exclude inlet filter housing and exhaust stack.  
All performance is at ISO ambient conditions, natural gas fuel.  
ISI – Inlet Spray Intercooling (wet compression water to the compressor inlet)  
WLE performance for power generation (without ISI) and Mechanical drive (with and without ISI) available upon request.