

TECHNICAL DATA CHEET

A-TRON E20/43 - Performance: natural gas

01 Performance data and components:

Performance and efficiency

Electric power	5 – 20 kW (modulierend)
Thermal power	18 – 42 kW (modulierend)
Gas connection power	24 – 60 kW
Power to heat ratio	0,48
Electrical efficiency	33 %
Thermal efficiency	70 %
Overall efficiency	103 %
Primary energy savings	23 %
Primary energy factor	0,34



Gas engine

Manufacturer	Volkswagen (VW)
Type	4-cylinder industrial gasoline engine, electronically controlled (knock control)
Displacement	2.0 liters
Rated speed approx.	1535 rpm.
Compression ratio	13.5: 1
fuel	natural gas
Oil supply	automatic oil refill and oil change function
Oil pan contents	approx. 4 l
Content of fresh oil tank	
For autom. oil change	25 l
Sound power (LWA)	<72 dB (A)
Sound pressure level (LAFeq)	<49 dB (A) at a distance of 1 m according to DIN 45635-01-KL2

Generator

Type	asynchronous machine, 4-pole, water-cooled
Rated voltage	400 V
Rated current	42,3 A

Measurements and weight

length x width X height	1300 mm x 800 mm x 1300 mm (disassembled introduction possible)
weight	app.700 kg

Control

The microprocessor control ATROMATIC 7.0 allows operation via a multilingual graphic display. There is a choice between the current-optimized mode of operation of 5 to 20 kWel power (modulation) and the heat-controlled mode of operation of 18 to 43 kWth with power modulation.

The ATROMATIC 7.0 can be monitored remotely and allows diagnostics via event memory. Messages and status updates are automatically forwarded via email when connected to the monitoring system, as desired.

02 Connections:

Heating system

Heating flow

Temperature	max. 90 °C, with optional high temperature up max. 95 C
Connection	DN 25, 1" – inner thread DIN 228-1

Heating return

Temperature	max. 75 °C, with optional high temperature up max. 80 C
Connection	DN 25, 1" – inner thread DIN 228-1
Flow	Min. 1,8 m ³ / h
Residual head	High temperature pump: 4,0 m
Water pressure	max. 4,0 bar
Heating water quality	acc. to VDI 2035 (pH-value ≥ 8,2; ≤ 8,9; temper ≤ 0,1° dH Electr. conductivity ≤ 100 µS/cm)

Please note: The use of a dirt separator is necessary for the smooth functioning of our systems. Otherwise we do not accept any liability for damage to the heating circuit system in the CHP unit.

Fuel System

Gas-connection	DN 20, 3/4"-external thread, conical sealing
Flow pressure	18 to 60 mbar

Electric

Connections	5 x 16 mm ² , H07RN-F
Fuse	3 x 63 A type NH00 or SLS switch Cat. C
Power connection	3/N/PE 400 V / 50 Hz
Rated voltage	400 V 3~
Rated power	20 kW at Cos phi = 0,95
Rated current	at 20 kW max. 30,5 A

Compensations

Compensation power	12,5 kVA
Frequency	50 Hz mains-guided
Power factor	Cos phi = 0,95

Exhaust system (air dependent or independent)

Connection	DN 80 PPs, type B
Temperature class	max. 120 °C
Back pressure	max. 10 mbar at the measuring socket of the exhaust system
Exhaust gas mass flow	max. 82,5 m ³ /h
Exhaust emissions NOx	max. 125 mg/Nm ³ acc. 1/2 TA-air (<40 mg/Nm ³)
Exhaust emissions CO	max. 150 mg/Nm ³ acc. 1/2 TA-air (<100 mg/Nm ³)
Operating temperature	max. 95 °C
Catalyst	3-way catalyst

Maintenance interval	6000 oh
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03 Standard equipment:

Standard equipment of the ATROMATIC 7.0

- Controllable power characteristic (modulation) for the individual adjustment of the energy requirement
- Controllable time control via operating timetable (daily / weekly)
- Boiler lock
- 4 x binary outputs for connecting a control system (SmartGrid or BMS)
- Heat load connection (emergency cooling for sewage gas and biogas modules)
- Temperature Configuration
- Chimney sweep function (Maximum output 10 minutes)
- Electricity meter (calibrated)
- Cascade control for efficient control of cascades
- Data history
- E-Mail function
- Modbus

Standard equipment CHP

- Power factor correction
- Integrated condensing boiler
- Integrated exhaust silencer
- Vibration isolation
- Initial filling of coolant & lubricants
- Exhaust back pressure monitor
- Speed-controlled pump

04 Options:

Available options

- High-temperature control
- Balance reference control for power-optimized operation
- External power modulation for external power specification
- Storage management for regulating the heat storage
- M-Bus interface for recording digital data from gas and heat meters in kWh
- CO monitor
- Extended exhaust gas cleaning CO and NO_x <83mg / Nm³ at 0% O₂
- Communication system for system monitoring
- BACnet integration

All power and efficiency data are valid when optimal conditions and natural gas operation are used (calorific value $H_i = 8.8 \text{ kWh} / \text{m}^3 \text{ i. n.}$). The values refer to a return temperature of 35 degrees celsius, a relative humidity of 30%, an air pressure of 1013.25 mbar, a room temperature of 25 ° C in 2 m room height and a temperature of the intake air of 25 ° C. Deviations are possible for other gas quality and other air values.

The technical data are given to standard reference conditions according to ISO 3046-1 (DIN 6271) with a tolerance of +/- 5%.