R500URC

Engine ref.	TAD1641GE
Kohler Alternator description	KH02450T
Canopy	M3228
Performance class	G3

GENERAL CHARACTERISTICS

Frequency (Hz)	60 Hz
Voltage (V)	480/277
Standard Control Panel	APM403

Voltage	ESP		PRP		Standby Amps
	kWe	kVA	kWe	kVA	
480/277	504	630	458	573	758
220/127	503	629	458	572	1651
208/120	484	605	440	550	1679
380/220	496	620	451	564	942

DESCRIPTIVE

- Connection terminal box rental type
- Containment fuel tank and large autonomy
- Forks and frame protection pads
- Battery isolating switch
- Heavy duty air filter with interchangeable cartridge
- Access door to the radiator

SMALL AUTONOMY DIMENSIONS

Length (mm)	5000
Width (mm)	1611
Height (mm)	2600
Dry weight (kg)	5990,00
Tank capacity (L)	1481,00

SOUND LEVELS

Acoustic pressure level @1m in dB(A) 60Hz (100% PRP) (Associated uncertainty)	83 (0,70)
Acoustic pressure level @7m in dB(A) 60Hz (100% PRP) (Associated uncertainty)	73

POWER DEFINITION

PRP : Prime Power is available for an unlimited number of annual operating hours in variable load applications, in accordance with ISO 8528-1. ESP : The standby power rating is applicable for supplying emergency power in variable load applications in accordance with ISO 8528-1. Overload is not allowed.

TERMS OF USE

According to the standard, the nominal power assigned by the genset is given for 25°C Air Intlet Temperature, of a barometric pressure of 100 kPA (100 m A.S.L), and 30 % relative humidity. For particular conditions in your installation, refer to the derating table.

ASSOCIATED UNCERTAINTY

For the generating sets used indoor, where the acoustic pressure levels depends on the installation conditions, it is not possible to specify the ambient noise level in the exploitation and maintenance instructions . You will also find in our exploitation and maintenance instructions a warning concerning the air noise dangers and the need to implement appropriated preventive measures.

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ENGINE CHARACTERISTICS

GENERAL ENGINE DATAS

Engine brand	VOLVO
Engine ref.	TAD1641GE
Air inlet system	Turbo
Cylinder configuration	L
Number of cylinders	6
Displacement (l)	16,12
Charge Air coolant	Air/Air
Bore (mm) x Stroke (mm)	144,00 x 165,0
Compression ratio	16.5 : 1
Speed (RPM)	1800
Pistons speed 60Hz (m/s)	9,90
Maximum stand-by power at rated RPM 60Hz (kW)	565,0
Frequency regulation, steady state (%)	+/- 0.25%
BMEP @ PRP 60Hz (bar)	21,2
Governor type	Electronic

COOLING SYSTEM

Radiator & Engine capacity (l)	60,00
Fan power 60Hz (kW)	19,00
Fan air flow w/o restriction (m3/s)	9,80
Available restriction on air flow (mm H2O)	25,00
Type of coolant	Glycol-Ethylene

EMISSIONS

Emission PM 60Hz (g/kWh)	0,110
Emission CO 60HZ (g/kW.h)	0,690
Emission HC+NOx (g/kWh)	5,350
Emission HC 60Hz (g/kW.h)	0,160

EXHAUST

Exhaust gas temperature @ ESP 60Hz (°C)	479
Exhaust gas flow @ ESP 60Hz (l/s)	1840,00
Max. exhaust back pressure (mm H2O)	1000

FUEL

Fuel consumption @ ESP Max Power 60Hz (l/h)	138,0
Fuel consumption @ PRP Max Power 60Hz (l/h)	120,7
Fuel consumption @ 75% of PRP Power 60Hz (l/h)	88,8
Fuel consumption @ 50% of PRP Power 60Hz (l/h)	59,8
Maximum fuel pump flow 60Hz (l/h)	190,0

OIL

Oil system capacity including filters (l)	48,00
Min. oil pressure (bar)	0,7
Max. oil pressure (bar)	6,5
Oil consumption 100% ESP 60Hz (l/h)	0,110
Oil sump capacity (l)	42,00

HEAT BALANCE

Heat rejection to exhaust (kW)	442
Radiated heat to ambiant (kW)	24,0
Heat rejection to coolant HT (kW)	231

AIR INTAKE

Max. intake restriction (mm H2O)	500
Combustion air flow (l/s)	763,00

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ALTERNATOR CHARACTERISTICS

Kohler Alternator description	KH02450T
Number of Phase	Three phase
Power factor (Cos Phi)	0,8
Altitude (m)	0 à 1000
Overspeed (rpm)	2250
Number of pole	4
Capacity for maintaining short circuit at 300% of rated current for 10 s	Yes
Insulation class	H
T° class (H/125K), continuous 40°C	H / 125°K
T° class (H/163K), standby 27°C	H / 163°K
AVR Regulation	Yes
Total Harmonic Distortion in no-load DHT (%)	<2
Total Harmonic Distortion, on linear load DHT (%)	<2
Wave form : NEMA=TIF	<50
Wave form : CEI=FHT	<2
Number of bearing	Single Bearing
Coupling	Direct
Voltage regulation at established rating (+/- %)	0,50
Recovery time (Delta U = 20% transcient) (ms)	500
Indication of protection	IP 23
Technology	Brushless

Continuous Nominal Rating 40°C (kVA)	625,0
Standby Rating 27°C (kVA)	700,0
Efficiencies 100% of load (%)	94,5
Air flow (m3/s)	1,100
Short circuit ratio (Kcc)	0,395
Direct axis synchro reactance unsaturated (Xd) (%)	319,0
Quadra axis synchro reactance unsaturated (Xq) (%)	163,0
Open circuit time constant (T'do) (ms)	1930,00
Direct axis transcient reactance saturated (X'd) (%)	16,5
Short circuit transcient time constant (T'd) (ms)	100,000
Direct axis subtranscient reactance saturated (X"d) (%)	11,5
Subtranscient time constant (T"d) (ms)	10,000
Quadra axis subtranscient reactance saturated (X"q) (%)	15,30
Subtranscient time constant (T"q) (ms)	10,0
Zero sequence reactance unsaturated (Xo) (%)	0,60
Negative sequence reactance saturated (X2) (%)	13,49
Armature time constant (Ta) (ms)	15,000
No load excitation current (io) (A)	0,99
Full load excitation current (ic) (A)	3,66
Full load excitation voltage (uc) (V)	62,7
Engine start (Delta U = 20% perm. or 30% trans.) (kVA)	1192,59
Transcient dip (4/4 load) - PF : 0,8 AR (%)	13,00
No load losses (W)	10094,55
Heat rejected to ambient air (kW)	28,75
Unbalanced load acceptance ratio (%)	8

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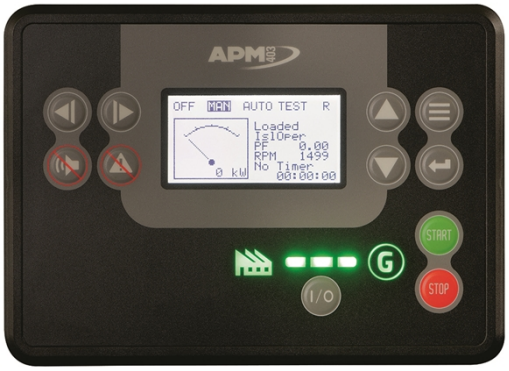
CONTROL PANEL

APM403, basic generating set and power plant control



The APM403 is a versatile control unit which allows operation in manual or automatic mode
Measurements : voltage and current
kW/kWh/kVA power meters
Standard specifications: Voltmeter, Frequency meter.
Optional : Battery ammeter.
J1939 CAN ECU engine control
Alarms and faults: Oil pressure, Coolant temperature, Overspeed, Start-up failure, alternator min/max, Emergency stop button.
Engine parameters: Fuel level, hour counter, battery voltage.
Optional (standard at 24V): Oil pressure, water temperature.
Event log/ Management of the last 300 genset events.
Mains and genset protection
Clock management
USB connections, USB Host and PC,
Communications : RS485 INTERFACE
ModBUS protocol /SNMP
Optional : Ethernet, GPRS, remote control, 3G, 4G, Websupervisor, SMS, E-mails