



DESCRIPTIVE

- Electronic governor
- Mechanically welded chassis with antivibration suspension
- Main line circuit breaker
- Radiator for core temperature of 48/50°C max with mechanical fan
- Protective grille for fan and rotating parts (CE option)
- 9 dB(A) silencer supplied separately
- Charger DC starting battery with electrolyte
- 24 V charge alternator and starter
- Delivered with oil and coolant -30°C
- Manual for use and installation

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 Inlet 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.

V400U

Engine ref.	TAD1344GE
Alternator ref.	KH01630T
Performance class	G3

GENERAL CHARACTERISTICS

Frequency (Hz)	60 Hz
Voltage (V)	480/277
Standard Control Panel	APM403
Optional control panel	APM802
Optional Control Panel	M80
Optional control panel	NA

POWER

Voltage	ESP		PRP		Standby Amps
	kWe	kVA	kWe	kVA	
480/277	400	500	364	455	601
440/254	400	500	364	455	656
220/127	400	500	364	455	1312
208/120	400	500	364	455	1388

DIMENSIONS COMPACT VERSION

Length (mm)	3160
Width (mm)	1340
Height (mm)	1805
Dry weight (kg)	3078
Tank capacity (L)	470

DIMENSIONS SOUNDPROOFED VERSION

Type soundproofing	M228
Length (mm)	4475
Width (mm)	1410
Height (mm)	2430
Dry weight (kg)	4178
Tank capacity (L)	470
Acoustic pressure level @1m in dB(A)	86
Guaranteed acoustic power level (Lwa)	105
Acoustic pressure level @7m in dB(A)	76

GENERAL ENGINE DATA

Engine brand	VOLVO
Engine ref.	TAD1344GE
Air inlet system	Turbo
Cylinders configuration	L
Number of cylinders	6
Displacement (L)	12,78
Charge Air coolant	Air/Air DC
Bore (mm) x Stroke (mm)	131 x 158
Compression ratio	18.1 : 1
Speed (RPM)	1800
Pistons speed (m/s)	9,48
Maximum stand-by power at rated RPM (kW)	449
Frequency regulation, steady state (%) +/- 0.25%	
BMEP @ PRP 60 Hz (bar)	21,30
Governor type	Electronic

COOLING SYSTEM

Radiator & Engine capacity (L)	44
Fan power (kW)	18
Fan air flow w/o restriction (m3/s)	9,50
Available restriction on air flow (mm H2O)	25
Type of coolant	Glycol-Ethylene

EMISSIONS

Emission PM (g/kWh)	
Emission CO (g/kW.h)	
Emission HC+NOx (g/kWh)	0
Emission HC (g/kW.h)	0,14

EXHAUST

Exhaust gas temperature @ ESP 60Hz (°C)	490
Exhaust gas flow @ ESP 60Hz (L/s)	1367
Max. exhaust back pressure (mm H2O)	1000

FUEL

Fuel consumption 100% ESP load (L/hr)	106,70
Fuel consumption 100% load (L/hr)	96,50
Fuel consumption 75% PRP load (L/h)	72
Fuel consumption 50% PRP load (L/h)	49,20
Maximum fuel pump flow (L/h)	130

OIL

Oil system capacity including filters (L)	36
Min. oil pressure (bar)	
Max. oil pressure (bar)	
Oil consumption 100% ESP 60Hz (L/h)	0,05
Oil sump capacity (L)	30

HEAT BALANCE

Heat rejection to exhaust (kW)	324
Radiated heat to ambient (kW)	23
Heat rejection to coolant HT (kW)	180

AIR INTAKE

Max. intake restriction (mm H2O)	510
Intake air flow (L/s)	550

GENERAL DATA

Alternator ref.	KH01630T
Number of Phase	Three phase
Power factor (Cos Phi)	0,80
Altitude (m)	0 à 1000
Overspeed (rpm)	2250
Number of pole	4
Capacity for maintaining short circuit at 3 In for 10 s	No
Insulation class	H
T° class (H/125°), continuous 40°C	H / 125°K
T° class (H/163°C), standby 27°C	H / 163°K
Total Harmonic Distortion in no-load DHT (%)	<2
AVR Regulation	Yes
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% transient) (ms)	500
Indication of protection	IP 23
Technology	Brushless

OTHER DATA

Continuous Nominal Rating 40°C (kVA)	456
Standby Rating 27°C (kVA)	530
Efficiencies 100% of load (%)	93,30
Air flow (m3/s)	1,10
Short circuit ratio (Kcc)	0,3610
Direct axis synchro reactance unsaturated (Xd) (%)	349
Quadra axis synchro reactance unsaturated (Xq) (%)	178
Open circuit time constant (T'do) (ms)	1738
Direct axis transient reactance saturated (X'd) (%)	20,10
Short circuit transient time constant (T'd) (ms)	100
Direct axis subtransient reactance saturated (X"d) (%)	14
Subtransient time constant (T"d) (ms)	10
Quadra axis subtransient reactance saturated (X"q) (%)	19,10
Subtransient time constant (T"q) (ms)	10
Zero sequence reactance unsaturated (Xo) (%)	0,80
Negative sequence reactance saturated (X2) (%)	16,61
Armature time constant (Ta) (ms)	15
No load excitation current (io) (A)	0,99
Full load excitation current (ic) (A)	3,93
Full load excitation voltage (uc) (V)	67,50
Engine start (Delta U = 20% perm. or 30% trans.) (kVA)	718,09
Transient dip (4/4 load) - PF : 0,8 AR (%)	18
No load losses (W)	8553,31
Heat rejection (W)	25782
Unbalanced load acceptance ratio (%)	70

DIMENSIONS

Dimensions soundproofed version

Type soundproofing	M228
Length (mm)	4475
Width (mm)	1410
Height (mm)	2430
Dry weight (kg)	4178
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Acoustic pressure level @1m in dB(A)	86
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Acoustic pressure level @7m in dB(A)	76

Dimensions DW soundproofed version

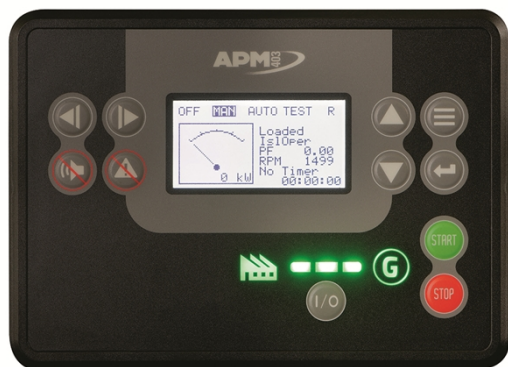
Type soundproofing	M228 DW
Length (mm)	4527
Width (mm)	1410
Height (mm)	2700
Dry weight (kg)	4708
Tank capacity (L)	1368
Acoustic pressure level @1m in dB(A)	86

Dimensions DW compact version

Type soundproofing	
Length (mm)	4527
Width (mm)	1400
Height (mm)	2065
Dry weight (kg)	3628
Tank capacity (L)	1368
Acoustic pressure level @1m in dB(A)	
Guaranteed acoustic power level (Lwa)	
Acoustic pressure level @7m in dB(A)	

Guaranteed acoustic power level (Lwa)	105
Acoustic pressure level @7m in dB(A)	76

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

APM802 dedicated to power plant management



The new APM802 command/control system is specifically designed for operating and monitoring power plants for markets including hospitals, data centres, banks, the oil and gas sector, industries, IPP, rental and mining. This unit is available as standard on all generating sets from 275 Kva designed for coupling. It is optional on the rest of our range.

The Human Machine Interface, designed in collaboration with a company specialising in interface design, facilitates operations with a large 100% touch screen. The pre-configured system for power plant applications features a brand new customisation function which complies with the international standard IEC 61131-3. New communication functions (PLC and regulation), improve the high level of equipment availability in the installation.

Advantages:
 Dedicated to power plant management.
 Specially researched ergonomics.
 High level of equipment availability.
 Modularity and long service life guaranteed.
 Making it easy to extend the installation

For more information, please refer to the sales documentation.

M80, transfer of information

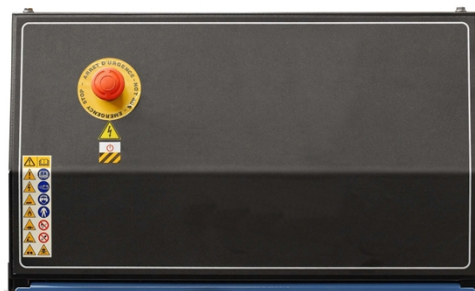


The M80 is a dual-function control unit. It can be used as a basic terminal block for connecting a control box and as an instrument panel with a direct read facility, with displays giving a global view of your generating set's basic parameters.

Offers the following functions:

Engine parameters: tachometer, working hours counter, coolant temperature indicator, oil pressure indicator, emergency stop button, customer connection terminal block, CE.

Basic terminal block



The control unit can be used as a basic terminal block for connecting a control box.

Offers the following functions:

emergency stop button, customer connection terminal block, CE.