EURO-DIESEL
we secure your power

TECHNICAL DATA SHEET

NO-BREAK KS®5 SINGLE
STANDARD CONFIGURATION
TDS0010

DESCRIPTION

Voltage/Frequency	:	400V / 50Hz
Rated Power	:	1000 kVA at cos ϕ=0.8
Critical Power	:	1000 kVA
Diesel Engine	:	MWM TCD2016V16 TAL4000
Revision	:	**04**

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NOTES:
- Information is given for guidance only and is subject to adjustment at the final design stage
- Pictures are not contractual.

1 SYSTEM GENERAL SPECIFICATIONS

1.1 KEY DIMENSIONS AND WEIGHT OF THE NO-BREAK KS® POWER MODULE

Refer to drawing number: 37315

1.2 NORMAL SERVICE CONDITIONS

Min./Max. temperature	Min./Max.relative humidity	Maximum altitude	Air quality
-25°C / 35°C	20 / 90% non condensing	500 m a.s.l.	No dust or sand loaded air

All values of this data sheet are given for above standard conditions. For environmental conditions out of the above limits, please consult with us : air conditioned power and control panel are available, filters can be added for application in dusty/sandy environments, ...
For storage/transport conditions please consult with us.

1.3 AIR FLOW REQUIREMENTS

Working mode	Air purpose	Value	Unit
Conditioning mode	Ventilation	15000	m³/h
Independent mode	Cooling	Min 75000	m³/h
	Combustion	4300	m³/h
	TOTAL	As per selected cooler	m³/h

1.4 NOISE LEVELS IN CONDITIONING MODE (MEASURED AT 1 METER)

Freq.(Hz)	63	125	250	500	1000	2000	4000	8000	Global
dB	95	94	98	98	97	93	88	83	101 dB(A)

1.5 ENGINE NOISE LEVELS (MEASURED AT 1 METER)

Freq. (Hz)	63	125	250	500	1000	2000	4000	8000	Global
dB	97	106	98	102	101	102	104	104	110 dB(A)

1.6 EXHAUST NOISE LEVELS (MEASURED AT 1 METER)

Freq. (Hz)	63	125	250	500	1000	2000	4000	8000	Global
dB	109	118	126	120	118	119	114	106	125 dB(A)

1.7 NOISE LEVELS IN INDEPENDENT MODE (MEASURED AT 1 METER)

Freq.(Hz)	63	125	250	500	1000	2000	4000	8000	Global
dB	99	106	101	104	103	103	104	104	110 dB(A)

1.8 VIBRATIONS

More than 96% of the vibrations are eliminated by vibrations dampers inserted between an intermediate frame and the main frame, thus allowing the machine to be laid directly on the ground.

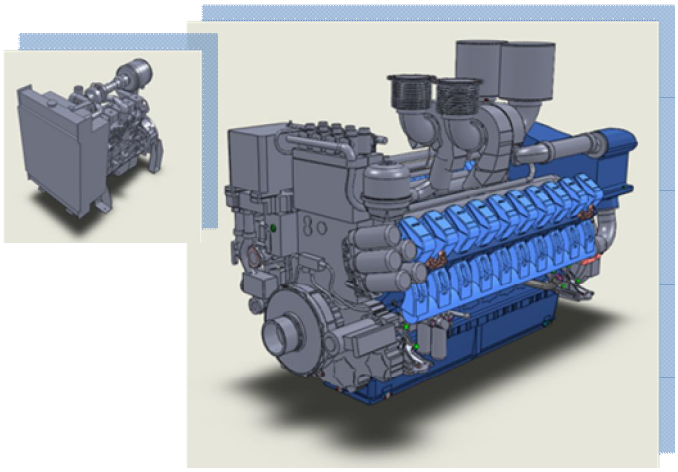
1.9 MACHINE COLOUR

Engine	Stato-alternator	Frame
RAL 7015 (Dark grey)	RAL 7035 (Light grey)	RAL 7024 (Dark Grey)

1.10 SPECIAL FEATURES

Accessories	Included
Stato-alternator vibration monitoring	No
Bearings automatic greasing (AGB)	No
Electrical measurements real-time recording	No
Engine automatic lubricant refill	No

2 DIESEL ENGINE



2.1 MAIN FEATURES

Characteristic	Value	Unit	Remark
Brand	MWM		
Model	TCD2016V16 TAL4000		
Rated speed	1500	RPM	
Displacement	35	L	
Number of cylinders	16		
Electrical system	24	V DC	
Prime power rating (PRP)	876	kW	At 40°C and 100kPa according to ISO 3046
Standby power (ESP)	964	kW	

2.2 SPECIAL FEATURES AND AUXILIARIES

Accessories	Included
Prelubrication pump	Yes
Manual oil sump extraction pump	Yes
Water circuit preheating with thermostatic control and circulation pump	Yes
Air/water charge air cooler	Yes
Oil pressure electrical sensor	Yes
Water temperature electrical sensor	Yes
Overspeed electrical sensor	Yes
Fuel cooler	No

2.3 FLUIDS CAPACITIES

Fluid type	Quantity	Unit
Lubricating oil capacity (total)	90	l
Lubricating oil consumption at rated power		l/h
Coolant capacity in engine circuit (radiator not included)	110	l
Coolant capacity in aftercooler circuit (if applicable and radiator not included)		l

2.4 FUEL

Fuel consumption (Admissible tolerance : +/- 5%)	g/kWh	L/h
at 25% PRP		
at 50% PRP	195	101
at 75% PRP	193	149
at 100% PRP	194	200
at rated output power	194	200

Other characteristics	Value	Unit
Fuel maximum inlet temperature		°C
Maximum fuel flow		L/h

2.5 EXHAUST

Characteristics	Value	Unit
Exhaust gas flow	11300	m³/h
Exhaust gas temperature	560	°C
Heat rejection to exhaust		kW
Exhaust back pressure (Design value)		mbar
Maximum exhaust back pressure	50	mbar

Exhaust emissions (PRP)	Value	Unit
Complies with	TA-Luft	
NOx	< 4000	mg/m³
CO	< 650	mg/m³
Unburned hydrocarbons	< 150	mg/m³
Particulate matter (Dust)	< 130	mg/m³

2.6 RADIATOR

Characteristics	Value	Unit
Type	Free-Standing radiator with electrically driven fan	
Maximum external air pressure drop	As per selected cooler	Pa
Radiator air inlet temperature	42	°C
Maximum radiator air outlet temperature	< 85	°C
Total maximum power of the radiator fans (*)	30	kW
Heat rejected, engine cooling circuit	340	kW
Heat rejected, aftercooler circuit (if applicable)	180	kW
Max. static head of coolant above engine	15	m
Engine circuit:		
Max. friction head external to engine	110	kPa
Coolant flow rate	57.6	m³/h
Coolant temperature FROM engine	90	°C
Aftercooler circuit (if applicable):		
Max. friction head external to engine	25	kPa
Coolant flow rate	25	m³/h
Coolant temperature TO aftercooler	45	°C

(*) If remote radiator is used, this value includes the power of both the radiator fans and the power module cooling fans in independent mode. Please consult with us for proper selection and dimensioning of remote radiator.

2.7 BATTERIES REQUIRED

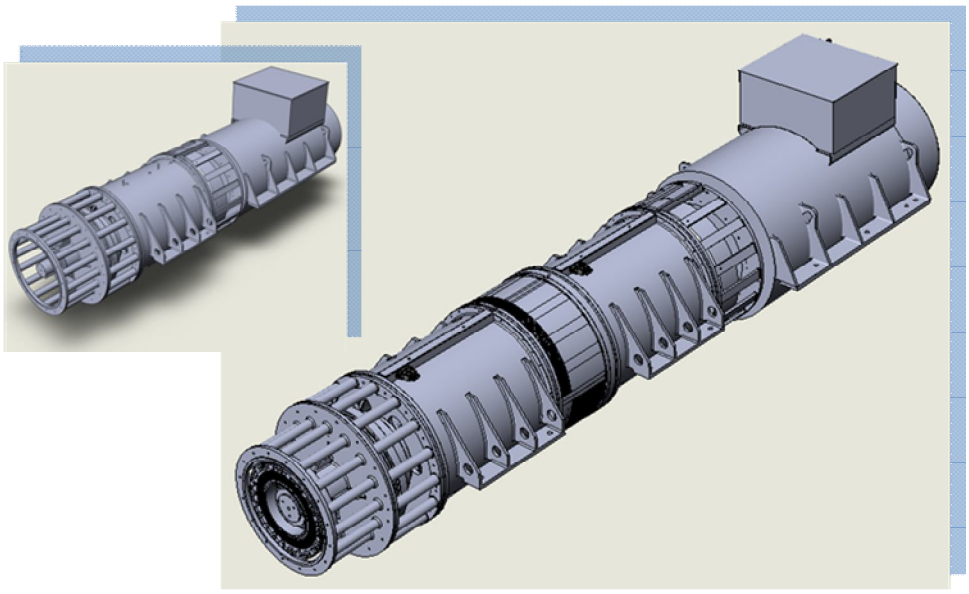
Type	Cold Crank Amps (CCA DIN -18°C)	Voltage	Quantity
Maintenance free lead acid batteries	400 A	12 V	12

NOTE:
-Batteries are serial connected by pairs to obtain 24VDC.

3 ELECTROMAGNETIC CLUTCH

Characteristics	Value	Unit
Brand	STROMAG	
Model	MEA-A 630	
Features	Brushless, ringless, lubrication and maintenance free	
Excitation	24	V DC
Elastic coupling	PERIFLEX type	
Housing	PI-500/630/0/18	

4 STATO-ALTERNATOR



Characteristic	Value	Unit	Remark
Brand	EURO-DIESEL		
Model	KS5-500C-2J-A6		
In accordance with	IEC standards		
Rotating speed (inner/outer rotor)	1500/3000	RPM	
Rated frequency	50	Hz	
Voltage	400	V AC	
Power factor	0,8		Lagging
Rated current (In)	1443	A	
Continuous output power	1000	kVA	
Admissible overload	10	%	
Alt. max. capacitive react. pow.	400	kVAr	
Maximum load step	500	kVA	
Insulation temperature class	Class H		
Operation to class	Class F		
Protection degree	IP23		
Efficiency (including choke losses)	95.3	%	In conditioning mode
Upstream short circuit current	3	In	
Downstream short circuit current	20	In	

5 POWER PANEL

5.1 DIMENSIONS AND WEIGHT

Width (mm)	Depth (mm)	Overall Height (mm)	Weight (kg)	Protection degree	Standard colour	Complies with
2400	800	2160	2180	IP 43	RAL 7035 (Light grey)	IEC standards

NOTES:

- Dimensions and weight are estimates and must be confirmed after detailed design phase
- Provide approximately 10 cm above panel top to allow ventilation air to escape freely.
- Cable entry possible from top, bottom, left or right. To be specified when ordering.

5.2 CHOKE

Characteristic	Value	Unit
Inductance type	3 single phase	

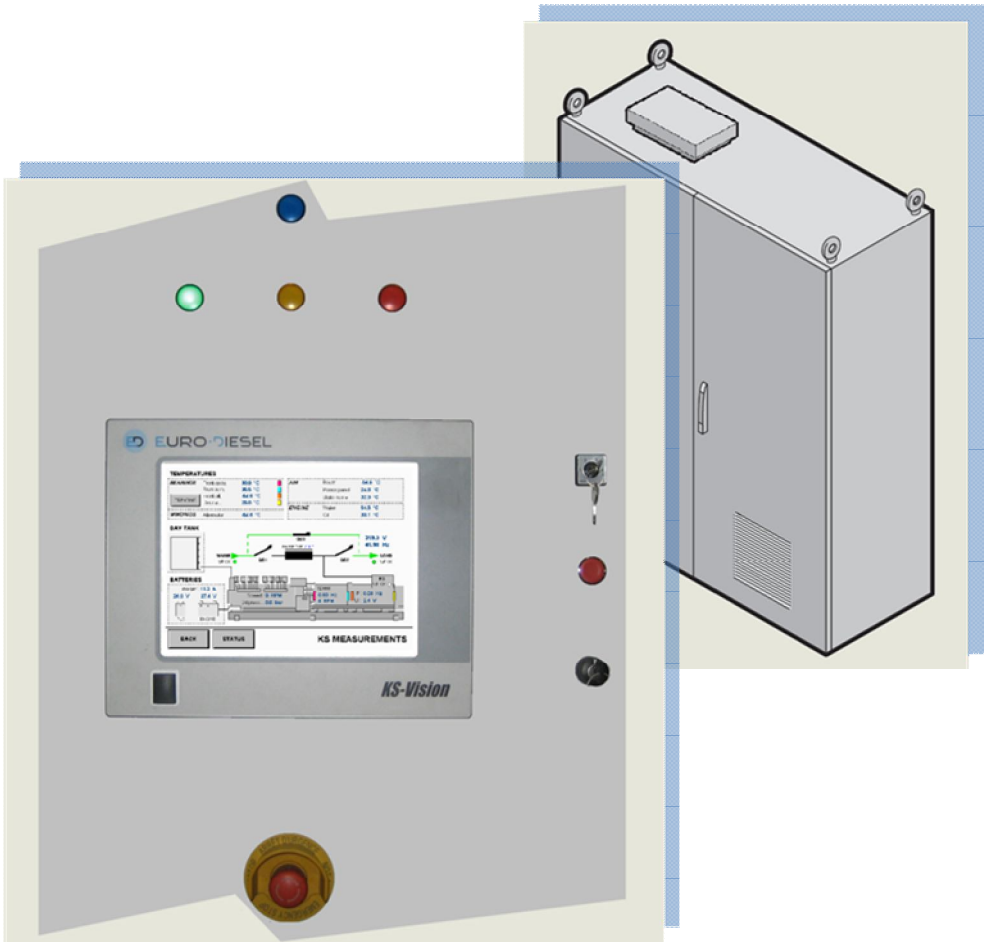
5.3 SWITCHGEAR

Characteristic	Value
Earthing system	TNC

#	Circuit breaker	Rating (A)	Number of poles	Fixed / Withdrawable	Rated breaking capacity (Ics)
1	Motorized circuit breaker (QD1) UP STREAM	1600	3	Fixed	40 kA
1	Motorized circuit breaker (QD2) DOWN STREAM	1600	3	Fixed	
1	Motorized switch (QD3) AUTOMATIC BY PASS	1600	3	Fixed	

NOTE: EURO-DIESEL scope of supply is limited to QD1, QD2, QD3. The other breakers (For instance: QDA, QDB, QMB, ...) are not part of ED scope of supply.

6 CONTROL PANEL



6.1 DIMENSIONS AND WEIGHT

Width (mm)	Depth (mm)	Height base included (mm)	Weight (kg)	Protection degree	Standard colour	Complies with
1800	500	2160	560	IP 43	RAL 7035 (Light grey)	IEC standards

NOTES:

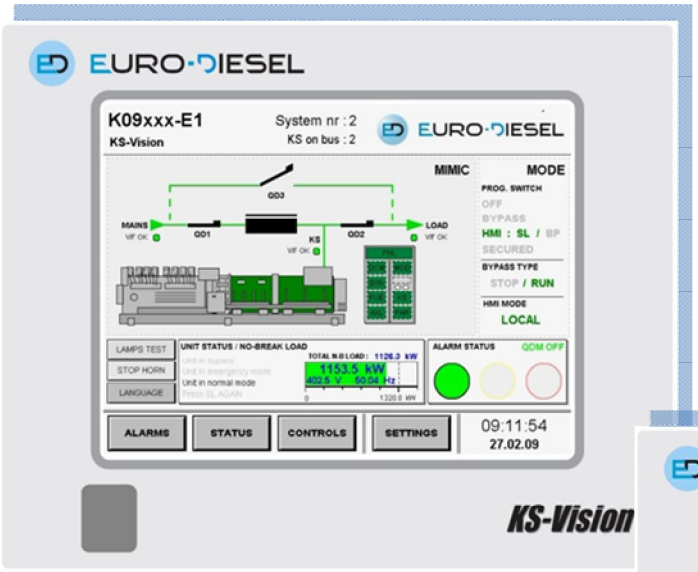
- Dimensions and weight are estimates and must be confirmed after detailed design phase
- Provide approximately 10 cm above panel top to allow ventilation air to escape freely.
- Cable entry possible from top, bottom, left or right. To be specified when ordering.

6.2 HMI TOUCH SCREEN

The HMI touch screen located on the front door allows to access to:

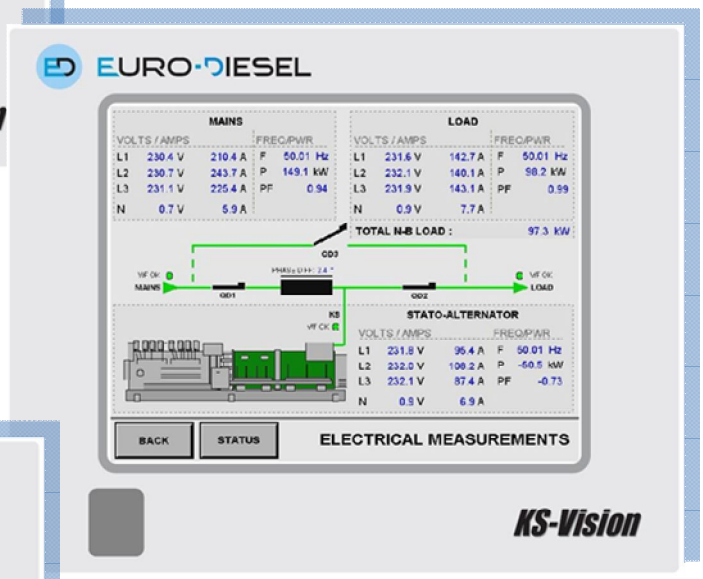
- Measurements (voltage, frequency, power factor, temperature, ...)
- Controls (secure load, by-pass, engine test, mains fault test, ...)
- Status (alarms, maintenance, breakers positions, ...)
- Language selection (Integrated languages : EN, FR, DE, ES, NL, ...)
- Settings (clock, scheduling of maintenance and system tests, ...)

The following screens give some examples of these functionalities.



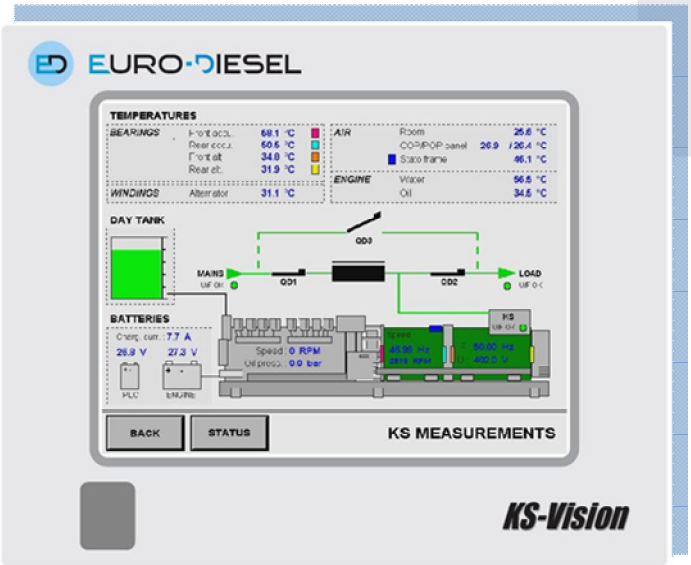
HMI Main Screen

General information and access to other screens.



HMI Electrical Measurements

Displays all needed electrical measurements like voltage, current, power factor, ...



HMI KS Measurements

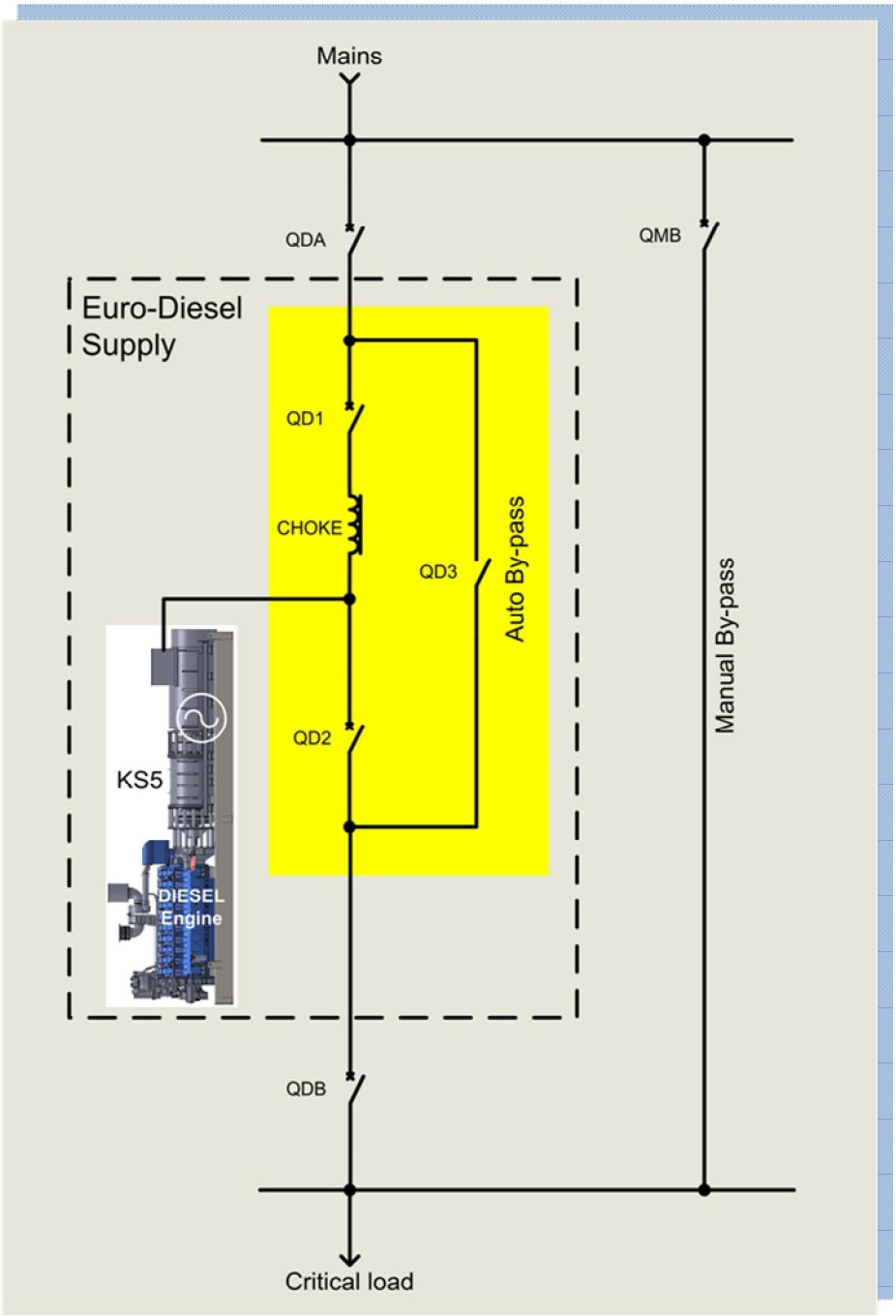
Displays mechanical information like fuel tank level or bearings temperatures.

6.3 BUILT IN FEATURES

The following features/components are part of the KS-VISION system and are integrated in the control panel :

- Digital Control Module (DCM) is responsible for the real-time control which includes :
  - Accumulator inner and outer rotor speed regulation
  - Voltage regulation
  - Mains failure detection
  - Synchronizer control
  - ...
- SAIA Programmable Logic Controller (PLC)
- Communication means :
  - Modem
  - Fieldbus (Modbus, Profibus, ... to be specified when ordering)
  - USB stick
  - Ethernet
  - Digital I/O
- Accumulator maintenance braking
- Energy storage and recovery checks
- Engine speed control and regulation
- Emergency stop
- ...

7 SINGLE LINE DIAGRAM



8 ELECTRICAL PERFORMANCES

8.1 ACCEPTABLE MAINS TOLERANCE IN CONDITIONNING MODE

Characteristic	Value
Frequency tolerance	± 0.2 Hz
Voltage tolerance	± 10 %

8.2 VOLTAGE REGULATION (CONDITIONNING AND INDEPENDENT MODE)

Conditions	Value
In steady state conditions	± 1 %
For load variation of 10%	± 1 %
For load variation of 50%	± 3 %

8.3 FREQUENCY REGULATION IN INDEPENDENT MODE

Conditions	Value
In steady state conditions	± 0.2 %
For load variation of 10%	± 0.5 %
For load variation of 50%	± 1Hz
On mains failure at 100% load	± 1Hz

8.4 HARMONICS

Characteristic	Value
Total harmonic distortion (THD) on linear load	≤ 3 %

8.5 PHASE ANGLE

Conditions	Value
With balanced load	120° ± 0°
With 25 % unbalanced load	120° ± 1°