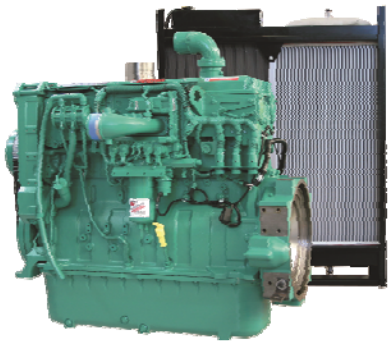
DESERT MACHINERY
آليات الصحراء

CUMMINS GENERATOR

450 KVA (360 KW)

(USA)

QSX15-G8



Emissions Compliance:

Non-Certified or "Flex" program for EU Mobile applications.
Formerly EU Stage2 @ 50Hz.

> Specification sheet

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Description

The QSX15-Series is the first heavy-duty diesel with 24-valve dual overhead camshaft technology. Yet it has an impressive 30% fewer parts than comparable diesels and a utilised design, which eliminates external lube, coolant and fuel lines, leading to higher reliability for such a high power output.

The 15 litre, six-cylinder QSX15 engine is ideally suited to both open and containerised applications in static or portable genset equipment. It can be matched to meet specific duty cycle and operating conditions of any genset.

CE	This engine has been built to comply with CE certification.
ISO 9001	This engine has been designed in facilities certified to ISO9001 and manufactured in facilities certified to ISO9001 or ISO9002.

Features

Holset HX82 Turbocharging - Wastegated design optimizes operation. Improved transient response and low fuel consumption.

Integrated Block Design - Integrated fluid circuits replace hoses and eliminate potential leaks.

High-Pressure Fuel Injection - Capable of over 1,900 bar (28,000 psi) for cleaner, more fuel-efficient combustion.

24-Valve Cylinder Head – Four valves per cylinder for increased power with faster response at every rpm.

Coolpac Integrated Design - Products are supplied complete with cooling package and air cleaner kit for a complete power package. Each component has been specifically developed and rigorously tested for G-Drive products, ensuring high performance, durability and reliability.

Controls - Fitted with Power Generation Interface (PGI) to improve emissions.

Service and Support - G-Drive products are backed by an uncompromising level of technical support and after sales service, delivered through a world class service network.

1500 rpm (50 Hz Ratings)

Gross Engine Output			Net Engine Output			Typical Generator Set Output					
Standby	Prime	Base	Standby	Prime	Base	Standby (ESP)		Prime (PRP)		Base (COP)	
kWm/BHP			kWm/BHP			kWe	kVA	kWe	kVA	kWe	kVA
500/670	444/595	317/425	477/639	426/571	299/400	440	550	400	500	281	351

1800 rpm (60 Hz Ratings)

Gross Engine Output			Net Engine Output			Typical Generator Set Output					
Standby	Prime	Base	Standby	Prime	Base	Standby (ESP)		Prime (PRP)		Base (COP)	
kWm/BHP			kWm/BHP			kWe	kVA	kWe	kVA	kWe	kVA
455/610	414/555	295/395	419/561	383/513	264/354	400	500	360	450	248	310

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General Engine Data

Type	4 Cycle, In-line, Turbo Charged, Air Cooled
Bore mm	137 mm (5.39 in.)
Stroke mm	169 mm (6.65 in.)
Displacement Litre	15 litre (912 in.^{3})
Cylinder Block	Cast iron, 6 cylinder
Battery Charging Alternator	35 amps
Starting Voltage	24 volt
Fuel System	Direct injection
Fuel Filter	Spin-on fuel filters with water separator
Lube Oil Filter Type(s)	Spin-on full flow filter
Lube Oil Capacity (l)	91.0
Flywheel Dimensions	SAE1

Coolpac Performance Data

Cooling System Design	Air-Air Charge Cooled
Coolant Ratio	50% ethylene glycol; 50% water
Coolant Capacity (l)	42.0
Limiting Ambient Temp.** (°C)	55
Fan Power (kWm)	16
Cooling System Air Flow (m^3/s)**	11.8
Air Cleaner Type	Light duty dry replaceable element with restriction indicator

** @ 13 mm H^20 Duct Restriction

Ratings Definitions

Emergency Standby Power (ESP):
Applicable for supplying power to varying electrical load for the duration of power interruption of a reliable utility source. Emergency Standby Power (ESP) is in accordance with ISO 8528. Fuel Stop power in accordance with ISO 3046, AS 2789, DIN 6271 and BS 5514.

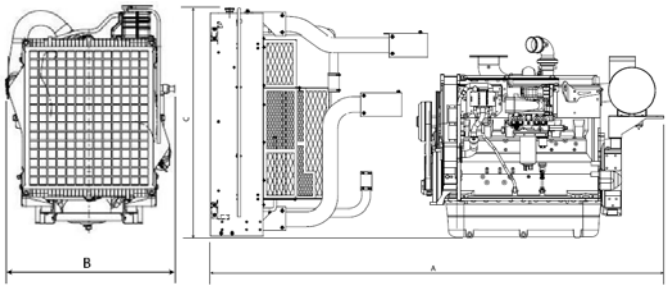
Limited-Time Running Power (LTP):
Applicable for supplying power to a constant electrical load for limited hours. Limited-Time Running Power (LTP) is in accordance with ISO 8528.

Prime Power (PRP):
Applicable for supplying power to varying electrical load for unlimited hours. Prime Power (PRP) is in accordance with ISO 8528. Ten percent overload capability is available in accordance with ISO 3046, AS 2789, DIN 6271 and BS 5514.

Base Load (Continuous) Power (COP):
Applicable for supplying power continuously to a constant electrical load for unlimited hours. Continuous Power (COP) in accordance with ISO 8528, ISO 3046, AS 2789, DIN6271 and BS 5514.

Weight & Dimensions

Length	Width	Height	Weight (dry)
mm	mm	mm	kg
2269	1332	1669	1658



Fuel Consumption 1500 (50 Hz)

%	kWm	BHP	L/ph	US gal/ph
Standby Power				
100	500	670	123.0	32..4
Prime Power				
100	444	595	103.0	27.3
75	333	447	78.7	20.8
50	222	298	54.7	14.5
25	111	149	30.3	8
Continuous Power				
100	317	425	75.7	20

Fuel Consumption 1800 (60 Hz)

%	kWm	BHP	L/ph	US gal/ph
Standby Power				
100	455	610	107.0	28.4
Prime Power				
100	414	555	97.6	25.8
75	311	416	75.2	19.9
50	207	278	53.4	14.1
25	104	139	31.8	8.4
Continuous Power				
100	295	395	72.7	19.1

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TAL 047

Low Voltage Alternator - 4 pole

410 to 660 kVA - 50 Hz / 510 to 825 kVA - 60 Hz
Electrical and mechanical data

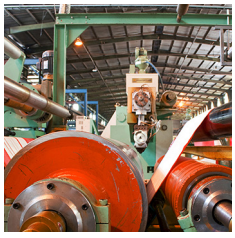
LEROY-SOMER™

Nidec
All for dreams

Adapted to needs

The TAL alternator range is designed to meet the needs of general applications such as prime power and stand-by.





Compliant with international standards

The TAL range complies with international standards and regulations: IEC 60034 and dérivative.
The range is designed, manufactured and marketed in an ISO 9001 and 14001 environment.

Electrical design

- Class H insulation
- Shunt excitation
- Low voltage winding:
  Three-phase 50 Hz: 380V - 400V - 415V - 440V / 220V - 230V - 240V
  60 Hz: 380V - 416V - 440V - 480V / 220V - 208V - 240V
- 6-terminal plates in 6-wire version or suitable for 12-wire option
- Optimized performance

Robust design

- Compact and rugged assembly to withstand engine vibrations
- Steel frame
- Cast iron flanges and shields
- Single bearing design to be suitable with most diesel engines
- Sealed for life bearing
- Standard direction of rotation: clockwise when looking at the drive end view (for anti-clockwise, derate the machine by 5%)

Excitation and regulation system suited to the application

	Excitation system				Regulation options		
	AVR	**Shunt**	**AREP**	**PMG**	**UL$_{C/US}$**	**Remote voltage potentiometer**	**C.T. for paralleling**
Three-phase 6-wire	**R150**	Standard				√	
	R180		Standard	Standard		√	√
	R450		Option	Option	√	√	√
Three-phase 12-wire*	**R250**	Standard			√	√	
	R180		Standard	Standard		√	√
	R450		Option	Option	√	√	√

√ : Possible option *with larger terminal box

Compact terminal box

- Easy access to AVR and terminals
- Standard terminal box with possibility of mounting measurement CTs
- Possibility of current transformer for parallel operation

Environment and protection

- IP Code IP 23
- Standard winding protection for non-harsh environments with relative humidity ≤ 95%

Available options

- Three-phase 12-wire with 9-terminal plates
- AREP or PMG excitation
- ULc/us
- Customized painting
- Space heaters
- Droop kit for alternator paralleling
- Stator sensors
- Winding 8 optimized for three-phase 380V - 416 V / 60 Hz
- Winding protection for harsh environments and relative humidity greater than 95% (system 2 - 4): for TAL 047 F apply a derating coefficient of 0.97

General characteristics

Insulation class	H
Winding pitch	2/3 (wind.6S - 6-wire / wind.6 - 12-wire)
Number of wires	6-wire (12-wire option)
Protection	IP 23
Altitude	≤ 1000 m
Overspeed	2250 R.P.M.
Air flow (m^3/s)	0.9
Air flow (m^3/s)	1.1
AREP Short-circuit current = 2.7 In : 5 second	

Excitation system 6-wire	SHUNT	AREP / PMG
AVR type	R150	R180
Excitation system 12-wire (option)	SHUNT	AREP / PMG
AVR type	R250	R180
Voltage regulation (*)	± 1 %	
Total Harmonic Distortion THD (**) in no-load	< 1.5 %	
Total Harmonic Distortion THD (**) in linear load	< 5 %	
Waveform: NEMA = TIF (**)	< 50	
Waveform: I.E.C. = THF (**)	< 2%	

(*) Steady state (**) Total harmonic distortion between phases, no-load or on-load (non-distorting)

Ratings 50 Hz - 1500 R.P.M.

kVA / kW - P.F. = 0.8

Duty / T° C		Continuous / 40 °C				Continuous / 40 °C				Stand-by / 40 °C				Stand-by / 27 °C			
Class / T° K		H / 125° K				F / 105° K				H / 150° K				H / 163° K			
Phase		**3 ph.**				**3 ph.**				**3 ph.**				**3 ph.**			
Y		380V	400V	415V	440V	380V	400V	415V	440V	380V	400V	415V	440V	380V	400V	415V	440V
Δ		220V	230V	240V		220V	230V	240V		220V	230V	240V		220V	230V	240V	
YY (*)					220V				220V				220V				220V
TAL 047 A	kVA	390	**410**	410	385	355	**375**	375	350	415	**435**	435	410	430	**450**	450	425
	kW	*312*	*328*	*328*	*308*	*284*	*300*	*300*	*280*	*332*	*348*	*348*	*328*	*344*	*360*	*360*	*340*
TAL 047 B	kVA	430	**455**	455	430	390	**415**	415	390	455	**480**	480	455	475	**500**	500	475
	kW	*344*	*364*	*364*	*344*	*312*	*332*	*332*	*312*	*364*	*384*	*384*	*364*	*380*	*400*	*400*	*380*
TAL 047 C	kVA	475	**500**	500	460	430	**455**	455	420	505	**530**	530	490	525	**550**	550	505
	kW	*380*	*400*	*400*	*368*	*344*	*364*	*364*	*336*	*404*	*424*	*424*	*392*	*420*	*440*	*440*	*404*
TAL 047 D	kVA	525	**550**	550	535	480	**500**	500	485	555	**585**	585	565	580	**600**	600	590
	kW	*420*	*440*	*440*	*428*	*384*	*400*	*400*	*388*	*444*	*468*	*468*	*452*	*464*	*480*	*480*	*472*
TAL 047 E	kVA	585	**600**	600	570	530	**545**	545	520	620	**635**	635	605	645	**660**	660	625
	kW	*468*	*480*	*480*	*456*	*424*	*436*	*436*	*416*	*496*	*508*	*508*	*484*	*516*	*528*	*528*	*500*
TAL 047 F (**)	kVA	645	**660**	660	620	585	**600**	600	565	685	**700**	700	655	710	**730**	730	680
	kW	*516*	*528*	*528*	*496*	*468*	*480*	*480*	*452*	*548*	*560*	*560*	*524*	*568*	*584*	*584*	*544*

(*) 12-wire option (**) 6-wire only

Ratings 60 Hz - 1800 R.P.M.

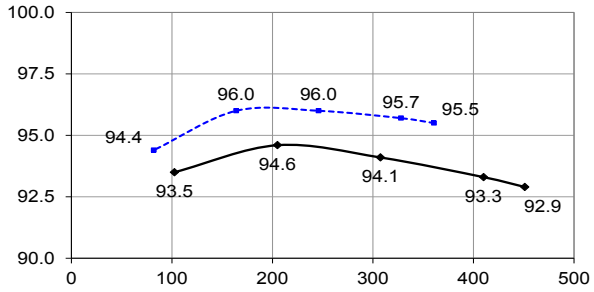
kVA / kW - P.F. = 0.8

Duty / T° C		Continuous / 40 °C				Continuous / 40 °C				Stand-by / 40 °C				Stand-by / 27 °C			
Class / T° K		H / 125° K				F / 105° K				H / 150° K				H / 163° K			
Phase		**3 ph.**				**3 ph.**				**3 ph.**				**3 ph.**			
Y		380V	416V	440V	480V	380V	416V	440V	480V	380V	416V	440V	480V	380V	416V	440V	480V
Δ		220V	240V	240V		220V	240V	240V		220V	240V	240V		220V	240V	240V	
YY (*)			208V	220V	240V		208V	220V	240V		208V	220V	240V		208V	220V	240V
TAL 047 A	kVA	450	480	500	**510**	410	435	455	**465**	475	510	530	**540**	495	530	550	**580**
	kW	*360*	*384*	*400*	*408*	*328*	*348*	*364*	*372*	*380*	*408*	*424*	*432*	*396*	*424*	*440*	*464*
TAL 047 B	kVA	475	510	530	**570**	430	465	480	**520**	505	540	560	**605**	525	560	585	**625**
	kW	*380*	*408*	*424*	*456*	*344*	*372*	*384*	*416*	*404*	*432*	*448*	*484*	*420*	*448*	*468*	*500*
TAL 047 C	kVA	520	555	590	**625**	475	505	535	**570**	550	590	625	**665**	570	610	650	**690**
	kW	*416*	*444*	*472*	*500*	*380*	*404*	*428*	*456*	*440*	*472*	*500*	*532*	*456*	*488*	*520*	*552*
TAL 047 D	kVA	560	610	630	**690**	510	555	575	**630**	595	645	670	**730**	615	670	695	**750**
	kW	*448*	*488*	*504*	*552*	*408*	*444*	*460*	*504*	*476*	*516*	*536*	*584*	*492*	*536*	*556*	*600*
TAL 047 E	kVA	600	660	685	**750**	545	600	625	**685**	635	700	725	**795**	660	725	755	**825**
	kW	*480*	*528*	*548*	*600*	*436*	*480*	*500*	*548*	*508*	*560*	*580*	*636*	*528*	*580*	*604*	*660*
TAL 047 F (**)	kVA	650	715	755	**825**	590	650	685	**750**	690	760	800	**875**	720	785	830	**910**
	kW	*520*	*572*	*604*	*660*	*472*	*520*	*548*	*600*	*552*	*608*	*640*	*700*	*576*	*628*	*664*	*728*

(*) 12-wire option (**) 6-wire only

Efficiencies 400 V 50 Hz (— P.F.: 0.8) (····· P.F.: 1)

TAL 047A



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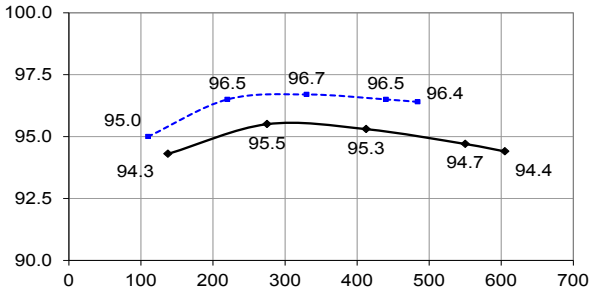

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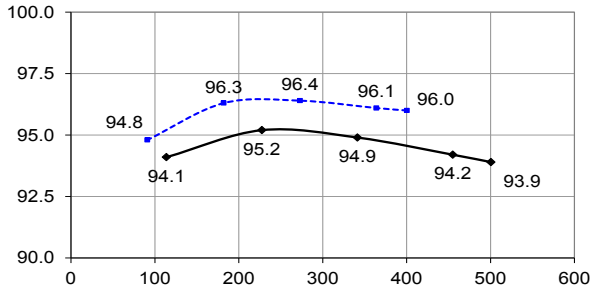

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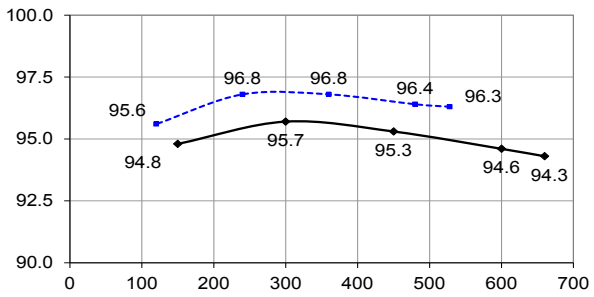

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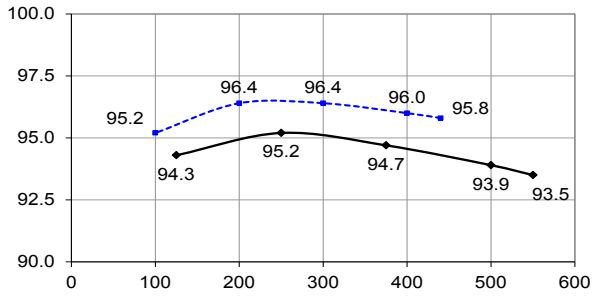

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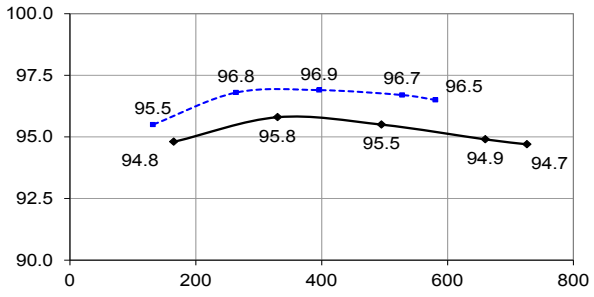


Reactances (%). Time constants (ms) - Class H / 400 V

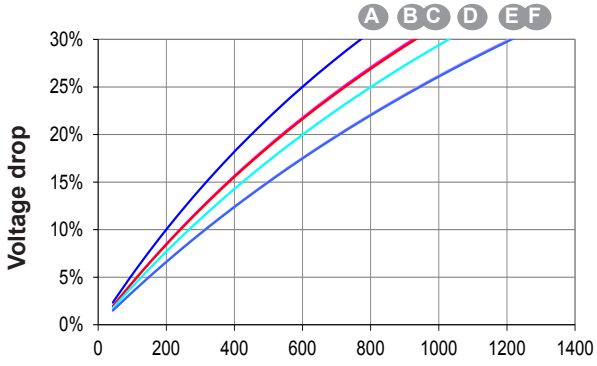
		A	B	C	D	E	F
Kcc	Short-circuit ratio	0.35	0.34	0.31	0.39	0.32	0.36
Xd	Direct-axis synchro. reactance unsaturated	347	338	372	310	361	328
Xq	Quadrature-axis synchro. reactance unsaturated	177	172	189	158	184	167
T'do	No-load transient time constant	1601	1705	1705	1773	1797	1832
X'd	Direct-axis transient reactance saturated	21.6	19.8	21.8	17.5	20	17.9
T'd	Short-circuit transient time constant	100	100	100	100	100	100
X"d	Direct-axis subtransient reactance saturated	15.1	13.9	15.2	12.2	14	12.5
T"d	Subtransient time constant	10	10	10	10	10	10
X"q	Quadrature-axis subtransient reactance saturated	16.6	17.4	19.1	16.5	19.5	18
Xo	Zero sequence reactance	0.9	0.82	0.9	0.72	0.83	0.74
X2	Negative sequence reactance saturated	15.91	15.66	17.21	14.41	16.8	15.31
Ta	Armature time constant	15	15	15	15	15	15

Other class H / 400 V data

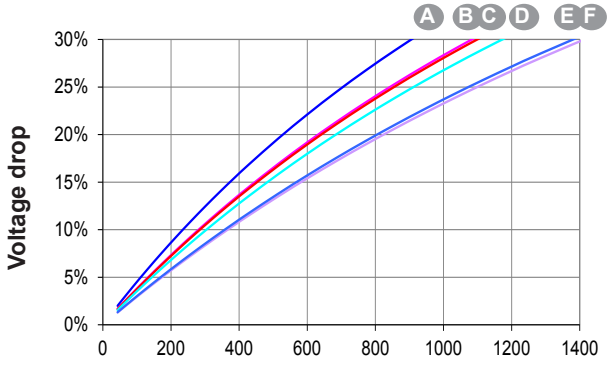
io (A)	No-load excitation current SHUNT/AREP	0.97	0.87	0.87	0.97	0.85	0.93
ic (A)	On-load excitation current SHUNT/AREP	4.24	3.72	4.06	3.79	3.89	3.87
uc (V)	On-load excitation voltage SHUNT/AREP	44.2	38.7	42.2	39.4	40.3	40.1
ms	Response time (ΔU = 20% transient)	500	500	500	500	500	500
kVA	Start (ΔU = 20% cont. or ΔU = 30% trans.) SHUNT*	612	743	742	947	970	1105
kVA	Start (ΔU = 20% cont. or ΔU = 30% trans.) AREP*	738	891	894	1135	1162	1324
%	Transient ΔU (on-load 4/4) SHUNT - P.F.: 0.8 $_{LAG}$	18.6	17.5	18.7	18.7	17.6	18.9
%	Transient ΔU (on-load 4/4) AREP - P.F.: 0.8 $_{LAG}$	16.3	15.3	16.4	16.8	15.4	17
W	No-load losses	4261	4376	4376	5192	4831	5487
W	Heat dissipation	23451	22295	25923	24391	27055	27875

* P.F. = 0.6

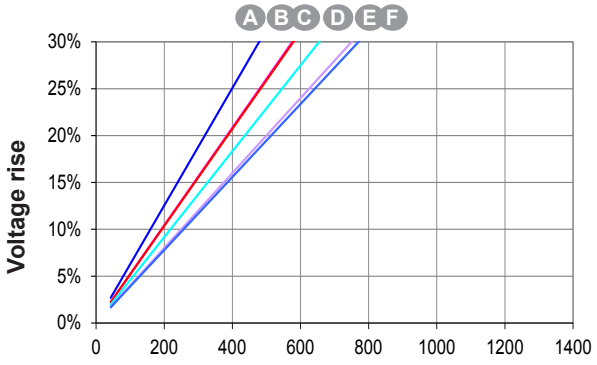
Transient voltage variation 400 V - 50 Hz



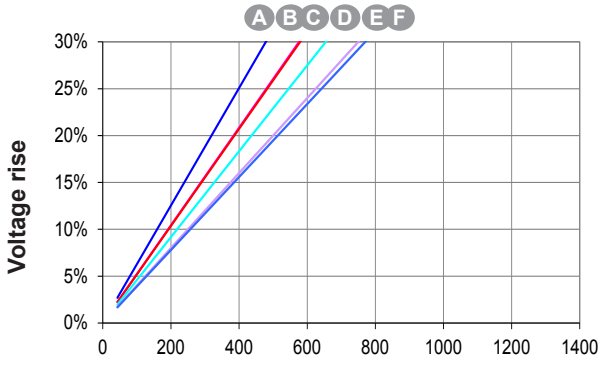
Phase loading (SHUNT) - kVA at P.F. = 0.8



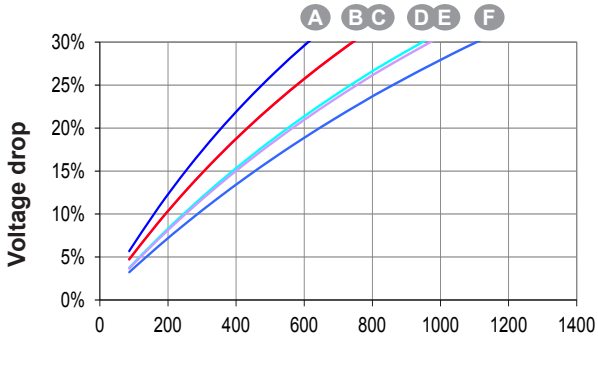
Phase loading (AREP) - kVA at P.F. = 0.8



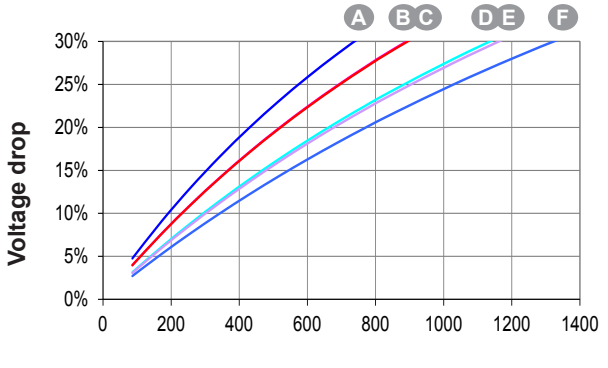
Load shedding (SHUNT) - kVA at P.F. = 0.8



Load shedding (AREP) - kVA at P.F. = 0.8



Motor starting (SHUNT)
Locked rotor kVA at P.F. = 0.6

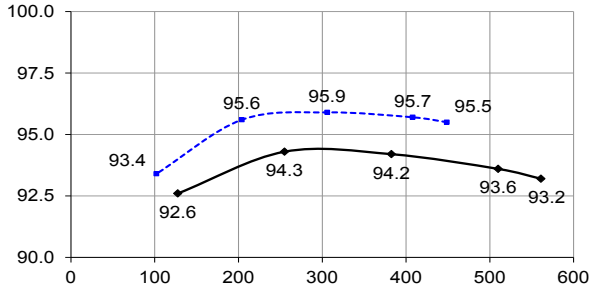


Motor starting (AREP)
Locked rotor kVA at P.F. = 0.6

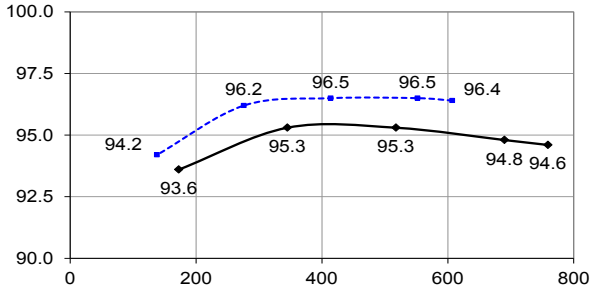
1) For a starting P.F. other than 0.6, the starting kVA must be multiplied by K = Sine P.F. / 0.8
2) For voltages other than 400V (Y), 230V (Δ) at 50 Hz, then kVA must be multiplied by $(400/U)^2$ or $(230/U)^2$.

Efficiencies 480 V - 60 Hz (— P.F.: 0.8) (····· P.F.: 1)

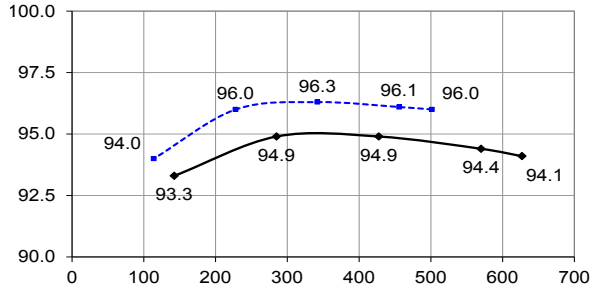
TAL 047A



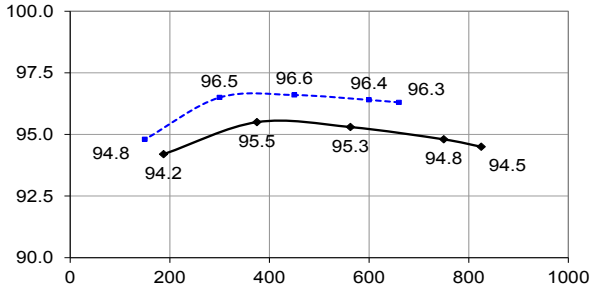
TAL 047D



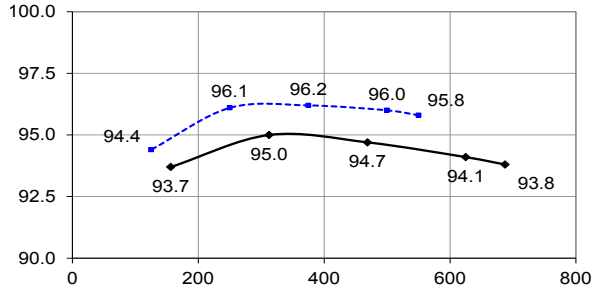
TAL 047B



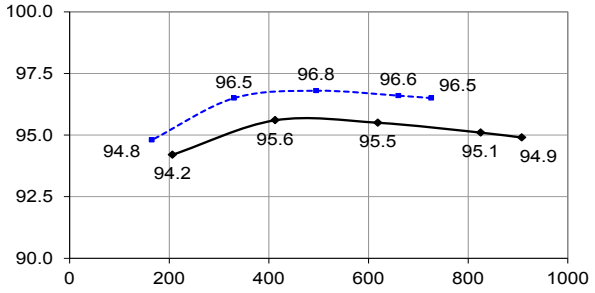
TAL 047E



TAL 047C



TAL 047F



Reactances (%). Time constants (ms) - Class H / 480 V

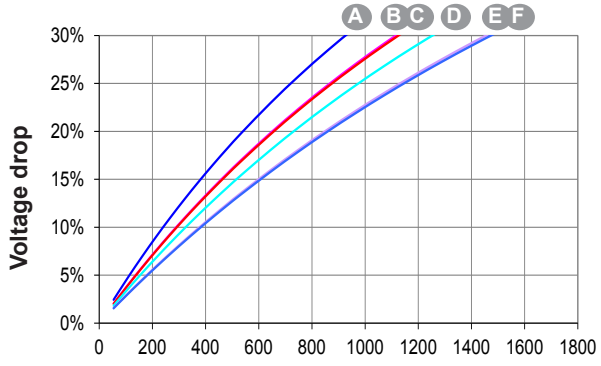
		A	B	C	D	E	F
Kcc	Short-circuit ratio	0.34	0.32	0.3	0.37	0.3	0.35
Xd	Direct-axis synchro. reactance unsaturated	359	353	387	324	376	342
Xq	Quadrature-axis synchro. reactance unsaturated	183	180	197	165	191	174
T'do	No-load transient time constant	1601	1705	1705	1773	1797	1832
X'd	Direct-axis transient reactance saturated	22.4	20.7	22.7	18.3	20.9	18.6
T'd	Short-circuit transient time constant	100	100	100	100	100	100
X"d	Direct-axis subtransient reactance saturated	15.7	14.5	15.9	12.8	14.6	13
T"d	Subtransient time constant	10	10	10	10	10	10
X"q	Quadrature-axis subtransient reactance saturated	17.2	18.1	19.9	17.3	20.3	18.8
Xo	Zero sequence reactance	0.93	0.86	0.94	0.76	0.87	0.77
X2	Negative sequence reactance saturated	16.5	16.35	17.92	15.07	17.5	15.95
Ta	Armature time constant	15	15	15	15	15	15

Other class H / 480 V data

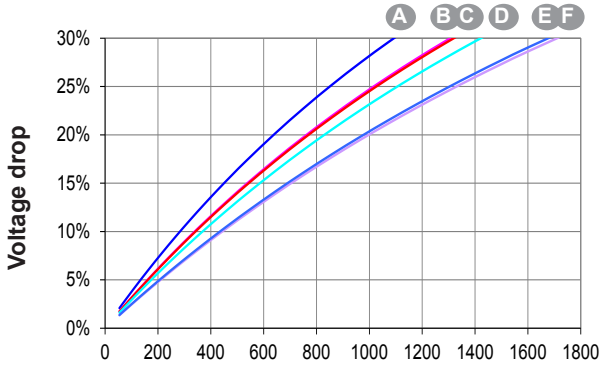
io (A)	No-load excitation current SHUNT/AREP	0.97	0.87	0.87	0.97	0.85	0.93
ic (A)	On-load excitation current SHUNT/AREP	4.31	3.81	4.15	3.88	3.97	3.94
uc (V)	On-load excitation voltage SHUNT/AREP	45.1	39.8	43.3	40.5	41.3	41
ms	Response time (ΔU = 20% transient)	500	500	500	500	500	500
kVA	Start (ΔU = 20% cont. or ΔU = 30% trans.) SHUNT*	738	890	889	1135	1162	1324
kVA	Start (ΔU = 20% cont. or ΔU = 30% trans.) AREP*	883	1074	1071	1360	1391	1597
%	Transient ΔU (on-load 4/4) SHUNT - P.F.: 0.8 $_{LAG}$	19.1	18	19.3	19.2	18.2	19.4
%	Transient ΔU (on-load 4/4) AREP - P.F.: 0.8 $_{LAG}$	16.7	15.8	16.9	17.2	15.9	17.4
W	No-load losses	6583	6766	6766	7888	7408	8312
W	Heat dissipation	27879	27031	31057	29695	32579	33674

* P.F. = 0.6

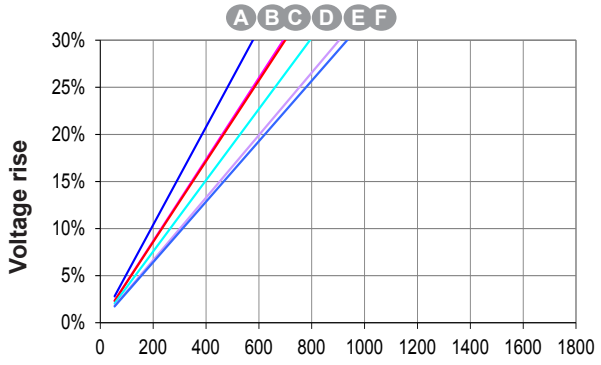
Transient voltage variation 480 V - 60 Hz



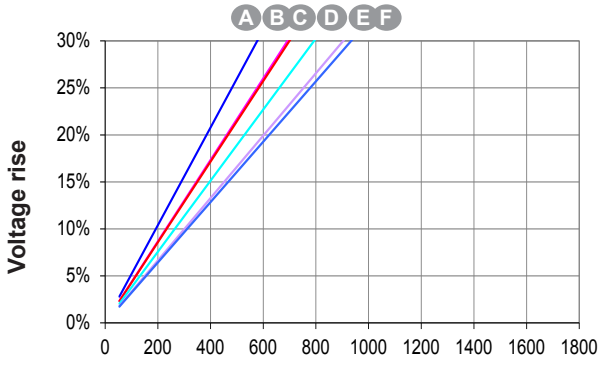
Phase loading (SHUNT) - kVA at P.F. = 0.8



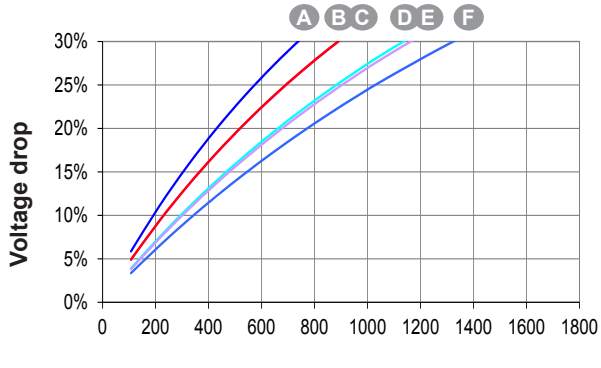
Phase loading (AREP) - kVA at P.F. = 0.8



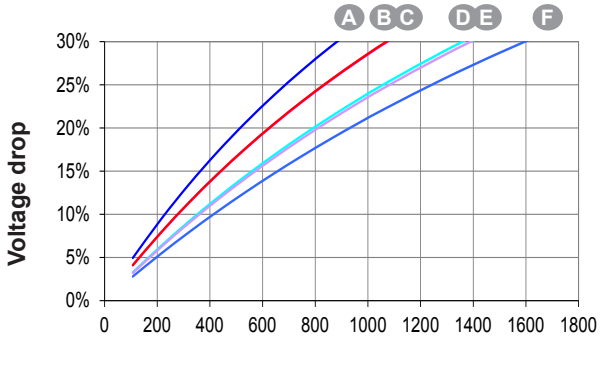
Load shedding (SHUNT) - kVA at P.F. = 0.8



Load shedding (AREP) - kVA at P.F. = 0.8



Motor starting (SHUNT)
Locked rotor kVA at P.F. = 0.6



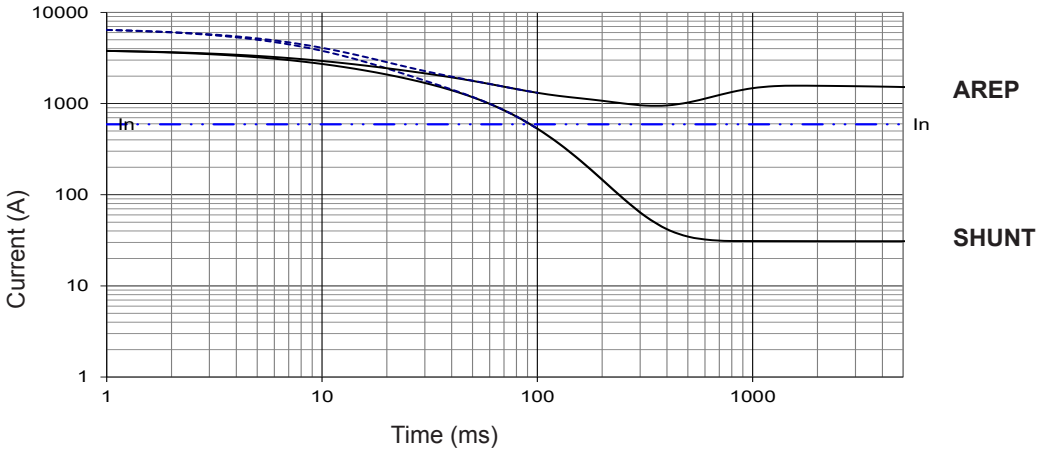
Motor starting (AREP)
Locked rotor kVA at P.F. = 0.6

1) For a starting P.F. other than 0.6, the starting kVA must be multiplied by K = Sine P.F. / 0.8
2) For voltages other than 480V (Y), 277V (Δ), 240V (YY) at 60 Hz, then kVA must be multiplied by $(480/U)^2$ or $(277/U)^2$ or $(240/U)^2$..

3-phase short-circuit curves at no load and rated speed (star connection Y)

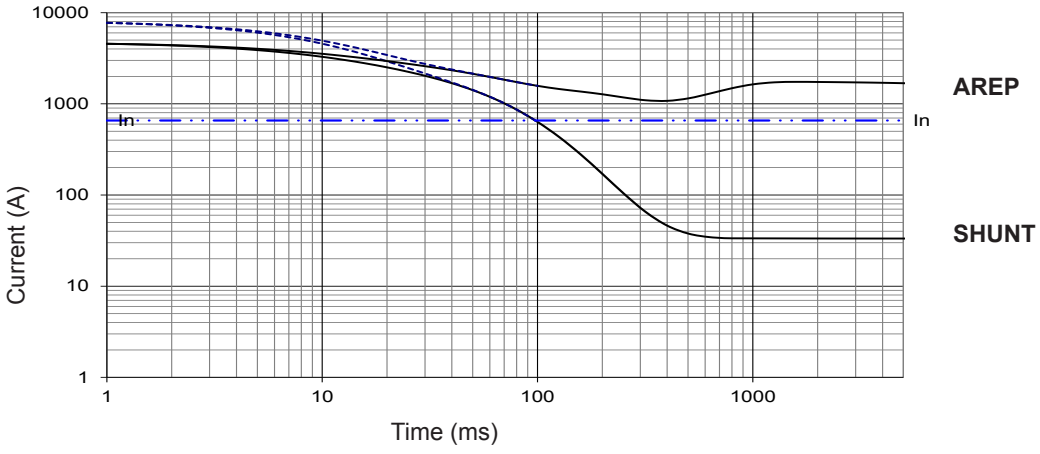
TAL 047 A

Symmetrical ——
Asymmetrical - - -



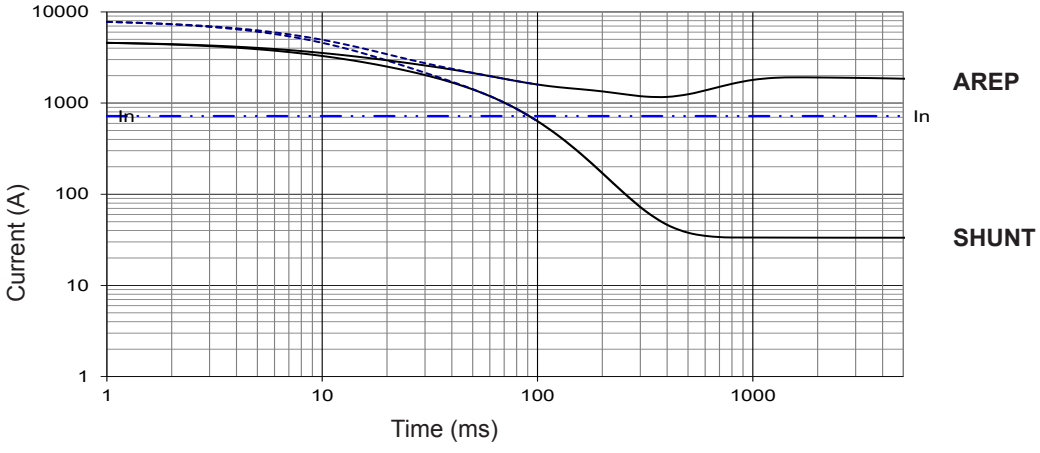
TAL 047 B

Symmetrical ——
Asymmetrical - - -



TAL 047 C

Symmetrical ——
Asymmetrical - - -

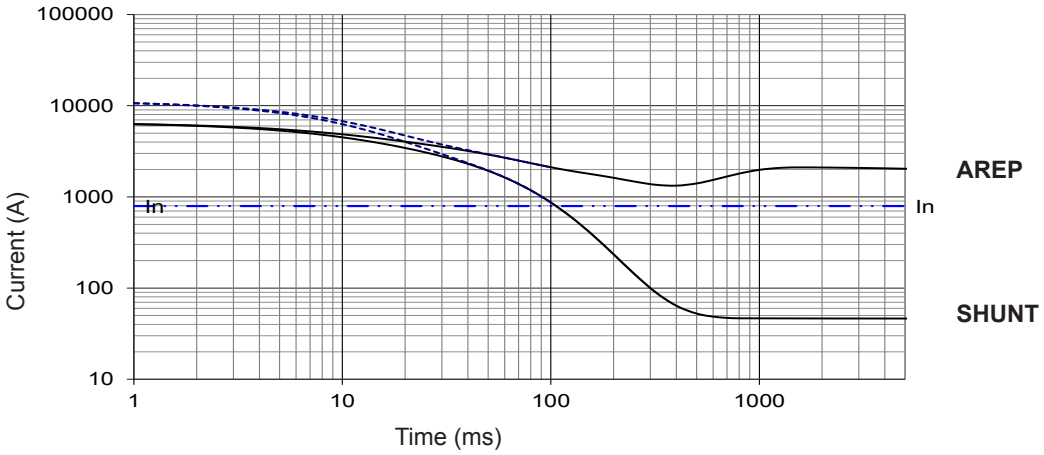


Influence due to connection
For (Δ) connection, use the following multiplication factor:
- Current value x 1.732.

3-phase short-circuit curves at no load and rated speed (star connection Y)

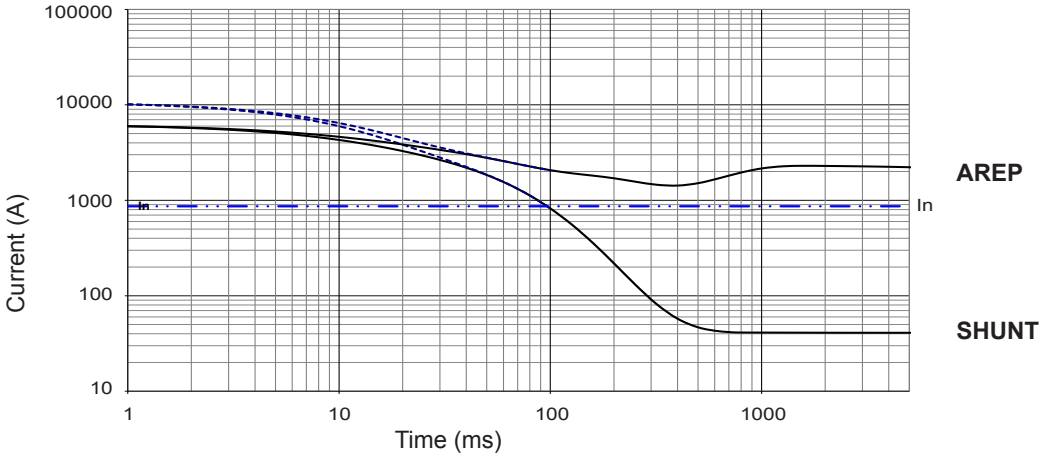
TAL 047 D

Symmetrical ——
Asymmetrical - - -



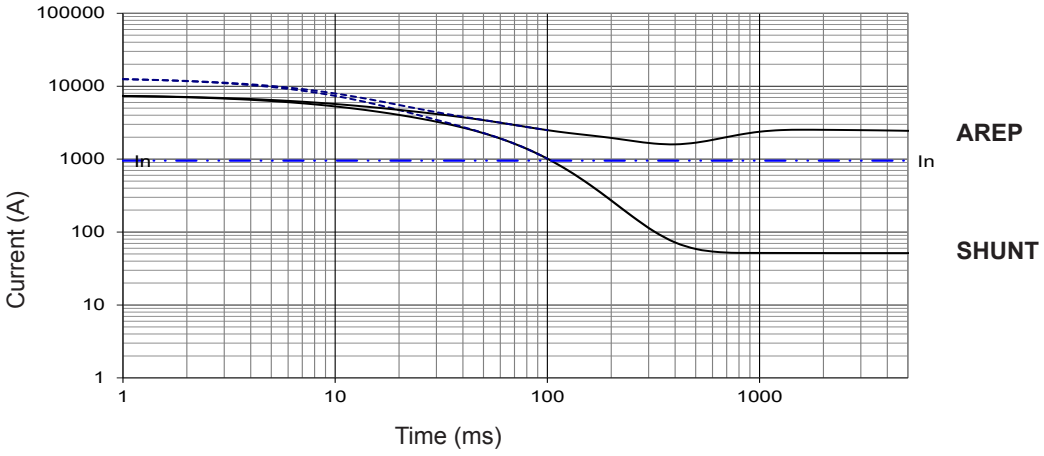
TAL 047 E

Symmetrical ——
Asymmetrical - - -



TAL 047 F

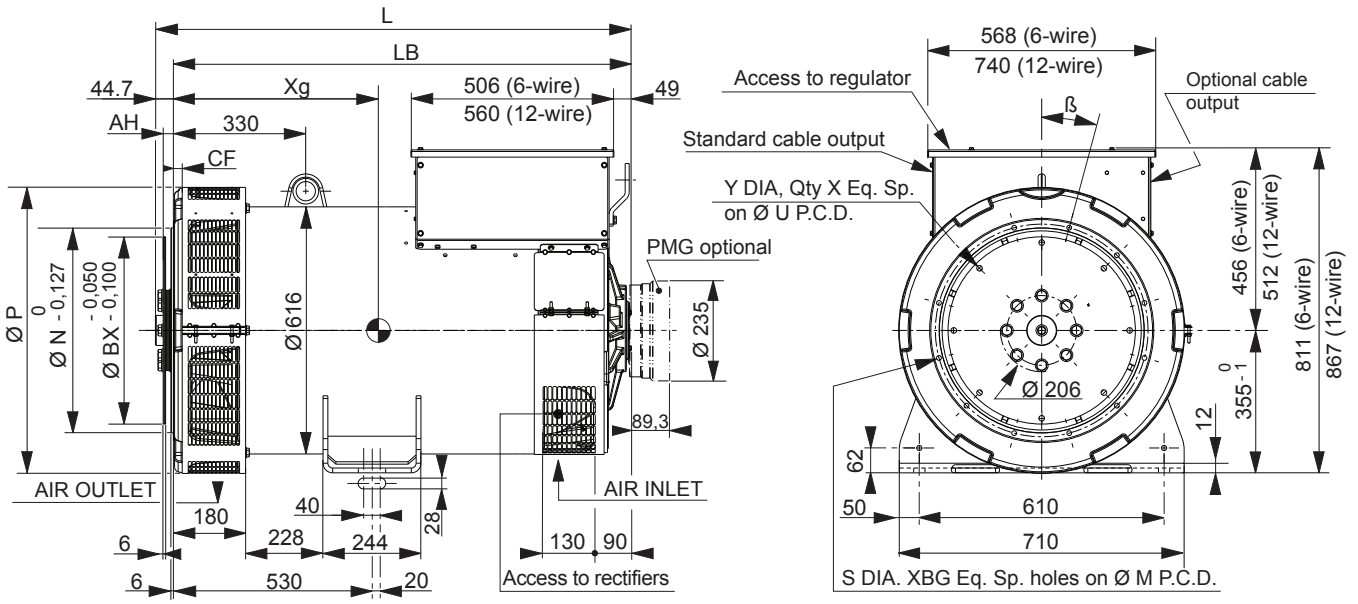
Symmetrical ——
Asymmetrical - - -



Influence due to short-circuit
Curves are based on a three-phase short-circuit.
For other types of short-circuit,
use the following multiplication factors.

	3 - phase	2 - phase L / L	1 - phase L / N
Instantaneous (max.)	1	0.87	1.3
Continuous	1	1.5	2.2
Maximum duration		1.5	

Single bearing general arrangement



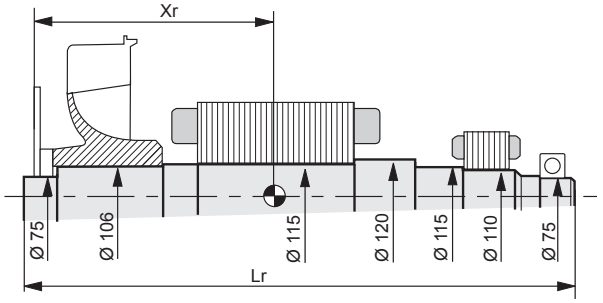
Dimensions (mm) and weight				
Type	L without PMG	LB	Xg	Weight (kg)
TAL 047 A	1041	996	437	976
TAL 047 B	1101	1056	471	1113
TAL 047 C	1101	1056	471	1113
TAL 047 D	1201	1156	511	1240
TAL 047 E	1201	1176	520	1289
TAL 047 F	1221	1176	545	1372

Coupling		
Flex plate	14	18
Flange S.A.E 1	X	
Flange S.A.E 1/2	X	
Flange S.A.E 0	X	X

Flange (mm)							
S.A.E.	P	N	M	XBG	S	β°	CF
1	713	511.175	530.225	12	12	15°	15
1/2	713	584.2	619.125	12	14	15°	22
0	713	647.7	679.45	16	14	11° 15'	42

Flex plate (mm)					
S.A.E.	BX	U	X	Y	AH
11 1/2	352.42	333.38	8	11	39.6
14	466.72	438.15	8	14	25.4
18	571.5	542.92	6	17	15.7

Torsional data



Centre of gravity: Xr (mm), Rotor length: Lr (mm), Weight: M (kg), Moment of inertia: J (kgm²): (4J = MD²)								
	Flex plate S.A.E. 14				Flex plate S.A.E. 18			
Type	Xr	Lr	M	J	Xr	Lr	M	J
TAL 047 A	418.3	1020	374.9	5.92	408.5	1020	376	6.18
TAL 047 B	456	1080	426.6	6.77	446	1080	427.7	7.03
TAL 047 C	456	1080	426.6	6.77	446	1080	427.7	7.03
TAL 047 D	496	1180	477	7.5	486	1180	478.1	7.76
TAL 047 E	507	1180	493.8	7.8	497	1180	494.9	8.06
TAL 047 F	528	1200	525.2	8.32	518	1200	526.3	8.58

NOTE : Dimensions are for information only and may be subject to modifications. The torsional analysis of the transmission is imperative. All values are available upon request.

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Nidec
All for dreams

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Moteurs Leroy-Somer SAS. Siège : Bd Marcellin Leroy, CS 10015, 16915 Angoulême Cedex 9, France.
Capital social : 65 800 512 €, RCS Angoulême 338 567 258.

5676 en - 2018.04 / b

DSEGenset

DSE

DSE7310/20

AUTO START & AUTO MAINS FAILURE CONTROL MODULES

FEATURES

The DSE7310 is an Auto Start Control Module and the DSE7320 is an Auto Mains (Utility) Failure Control Module suitable for a wide variety of single, diesel or gas, gen-set applications.

Monitoring an extensive number of engine parameters, the modules will display warnings, shutdown and engine status information on the back-lit LCD screen, illuminated LEDs, remote PC and via SMS text alerts (with external modem).

The DSE7320 will also monitor the mains (utility) supply. The modules include USB, RS232 and RS485 ports as well as dedicated DSENet® terminals for system expansion.

Both modules are compatible with electronic (CAN) and non-electronic (magnetic pick-up/alternator sensing) engines and offer an extensive number of flexible inputs, outputs and extensive engine protections so the system can be easily adapted to meet the most demanding industry requirements.

The extensive list of features includes enhanced event and performance monitoring, remote communications, PLC functionality and dual mutual standby (DSE7310 only) to reduce engine wear.

The modules can be easily configured using the DSE Configuration Suite PC software. Selected front panel editing is also available.

ENVIRONMENTAL TESTING STANDARDS

ELECTRO-MAGNETIC COMPATIBILITY
BS EN 61000-6-2
EMC Generic Immunity Standard for the Industrial Environment
BS EN 61000-6-4
EMC Generic Emission Standard for the Industrial Environment

ELECTRICAL SAFETY
BS EN 60950
Safety of Information Technology Equipment, including Electrical Business Equipment

TEMPERATURE
BS EN 60068-2-1
Ab/Ae Cold Test -30 °C
BS EN 60068-2-2
Bb/Be Dry Heat +70 °C

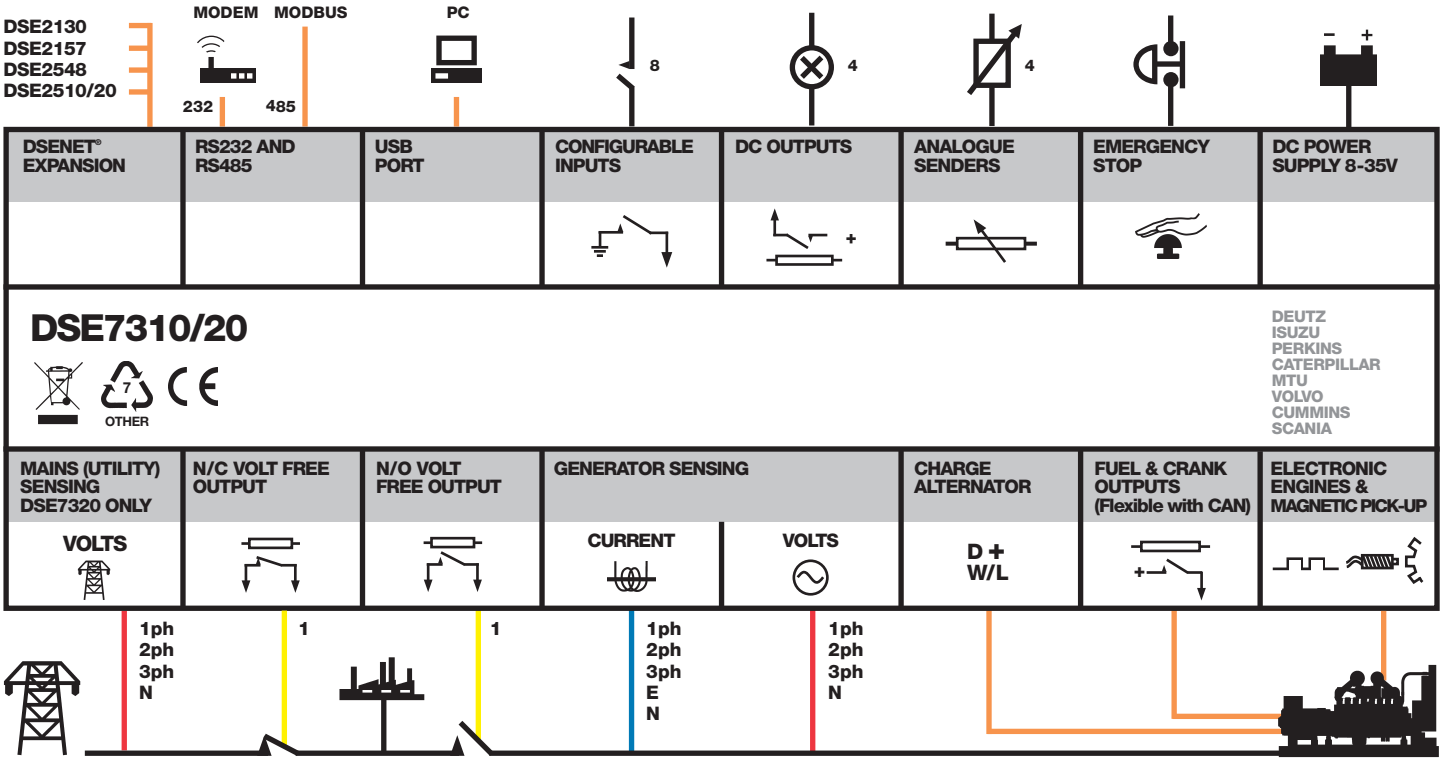
VIBRATION
BS EN 60068-2-6
Ten sweeps in each of three major axes
5 Hz to 8 Hz @ +/-7.5 mm,
8 Hz to 500 Hz @ 2 gn

HUMIDITY
BS EN 60068-2-30
Db Damp Heat Cyclic 20/55 °C @ 95% RH 48 Hours
BS EN 60068-2-78
Cab Damp Heat Static 40 °C @ 93% RH 48 Hours

SHOCK
BS EN 60068-2-27
Three shocks in each of three major axes
15 gn in 11 mS

DEGREES OF PROTECTION PROVIDED BY ENCLOSURES
BS EN 60529
IP65 - Front of module when installed into the control panel with the supplied sealing gasket.

COMPREHENSIVE FEATURE LIST TO SUIT A WIDE VARIETY OF GEN-SET APPLICATIONS



ISSUE 6

DSEGenset

DSE7310/20

AUTO START & AUTO MAINS FAILURE CONTROL MODULES

FEATURES

DSE7310

DSE7320

KEY FEATURES

- 4-Line back-lit LCD text display
- Five key menu navigation
- Front panel editing with PIN protection
- Customisable status screens
- Power save mode
- Support for up to three remote display units
- 9 configurable inputs
- 8 configurable outputs
- Flexible sender inputs
- Configurable timers and alarms
- 3 configurable maintenance alarms
- Multiple date and time scheduler
- Configurable event log (250)
- Tier 4 CAN engine support
- Integral PLC editor
- Easy access diagnostic page
- CAN and Magnetic Pick-up/Alt. sensing
- Fuel usage monitor and low fuel alarms
- Charge alternator failure alarm
- Manual speed control (on compatible CAN engines)
- Manual fuel pump control
- Engine exerciser
- “Protections disabled” feature
- kW & kV Ar protection
- Reverse power (kW & kV Ar) protection
- LED and LCD alarm indication
- Power monitoring (kW h, kV Ar, kV A h, kV Ar h)
- Load switching (load shedding and dummy load outputs)
- Automatic load transfer (DSE7320)
- Unbalanced load protection
- Independent Earth Fault trip
- True dual mutual standby with load balancing timer (DSE7310 only)
- USB connectivity
- Backed up real time clock
- Fully configurable via DSE Configuration Suite PC software
- Configurable display languages
- Remote SCADA monitoring via DSE Configuration Suite PC software
- User selectable RS232 and RS485 communications
- Configurable Gencomm pages
- Advanced SMS messaging (additional external modem required)
- Start & stop capability via SMS messaging
- Additional display screens to help with modem diagnostics
- Idle control for starting & stopping.
- DSENet® expansion compatible

KEY BENEFITS

- 132 x 64 pixel ratio display for clarity
- Real-time clock provides accurate event logging
- Multiple date and time scheduler
- Set maintenance periods can be configured to maintain optimum engine performance
- Ethernet communications (via DSE860/865 modules), provides advanced remote monitoring at low cost
- Modules can be integrated into building management systems (BMS)
- Increased input and output expansion capability via DSENet®
- Licence-free PC software
- IP65 rating (with supplied gasket) offers increased resistance to water ingress
- PLC editor allows user configurable functions to meet specific application requirements

SPECIFICATION

DC SUPPLY

CONTINUOUS VOLTAGE RATING
8 V to 35 V Continuous

CRANKING DROPOUTS
Able to survive 0 V for 50 mS, providing supply was at least 10 V before dropout and supply recovers to 5 V. This is achieved without the need for internal batteries. LEDs and backlight will not be maintained during cranking.

MAXIMUM OPERATING CURRENT
340 mA at 12 V, 160 mA at 24 V

MAXIMUM STANDBY CURRENT
160 mA at 12 V, 80 mA at 24 V

CHARGE FAIL/EXCITATION RANGE
0 V to 35 V

MAINS (UTILITY) DSE7320 ONLY

VOLTAGE RANGE
15 V - 333 V AC (L-N)

FREQUENCY RANGE
3.5 Hz to 75 Hz

OUTPUTS

OUTPUT A (FUEL)
15 A DC at supply voltage

OUTPUT B (START)
15 A DC at supply voltage

OUTPUTS C & D
8 A 250 V (Volt free)

AUXILIARY OUTPUTS E,F,G,H
2 A DC at supply voltage

GENERATOR

VOLTAGE RANGE
15 V - 333 V AC (L-N)

FREQUENCY RANGE
3.5 Hz to 75 Hz

MAGNETIC PICK UP

VOLTAGE RANGE
+/- 0.5 V to 70 V

FREQUENCY RANGE
10,000 Hz (max)

DIMENSIONS

OVERALL
240 mm x 181 mm x 42 mm
9.4” x 7.1” x 1.6”

PANEL CUT-OUT
220 mm x 160 mm
8.7” x 6.3”

MAXIMUM PANEL THICKNESS
8 mm
0.3”

RELATED MATERIALS

TITLE	PART NO’S
DSE7310 Installation Instructions	053-028
DSE7320 Installation Instructions	053-029
DSE7200/7300 Quick Start Guide	057-101
DSE7200/7300 Operator Manual	057-074
DSE7200/7300 Configuration Suite PC Manual	057-077

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