Nidec Power

Low Voltage Alternators - 4 pole

TAL-A40 TAL-A42 TAL-A44

Electrical and mechanical data

13 to 200 kVA - 50 Hz / 15.5 to 250 kVA - 60 Hz

LEROY-SOMER™

Product Feature

Features and Benefits

Compact Machine

Less footprint Cost-effective Reliability
- One of the shortest products
- Low vibration level

Global Service

Quick & efficient service
- Global manufacturing facilities for local delivery – short lead time
- Unequalled service organization

Leroy-Somer

TAL A Series

Optimized Electrical Performance

Optimized genset power outputs, matching available engines
- Adapted power outputs to reach power nodes with existing engines
- Optimized performance vs Application

Easy Installation & Maintenance

Easy genset maintenance
- Easy access to cables and diode bridges
- ControlReg option

Optimal Mechanical Design

Easy genset installation
- Optimized coupling with engines
- Interchangeable with LSA
- Flying leads option

Compact Terminal Box

Easy access to regulator
- Simplified design

Low Voltage Alternators - 4 pole

TAL-A40 TAL-A42 TAL-A44

Adapted to needs

The TAL alternator range is designed to meet the specific needs of telecommunications, commercial & industrial markets, as well as prime and stand-by power applications.

Compliance with internationally recognized standards

4 Pole Altemators are in compliance to the main international standards and regulations: -IEC 60034, NEMA MG 1.32-33, BS 5000 Part 99, VDE 0530, ISO 8528/3 on request and depending on voltages, marin regulations, etc.
It can be integrated into a CE marked generator.
Alternators are designed, manufactured and marketed in an ISO 9001 and ISO14001 environments.

Electrical design

- Class H insulation
- Low voltage winding
- 4-terminal plate
- Optimized performance

Robust design

- Compact and rugged assembly to withstand engine vibrations
- Steel frame
- Aluminum flanges and shields
- Single-bearing design to be suitable with most diesel engines
- Sealed for life bearing
- Direction of rotation: clockwise

Excitation and regulation system suited to the application

		Excitation system				
	AVR	SHUNT	AREP+ (option)	PMG (Option Except TAL A40)	Remote voltage potentiometer	C.T. for paralleling
Three-phase 6-wire	R120	Standard				
	R150	Option			√	
	R180		Standard	Standard	√	√
	D350	Option	Option	Option	√	√
Three-phase 12-wire*	R120	Standard				
	R250	Option Except TAL A40/42			√	
	R180		Standard	Standard	√	√
	D350	Option	Option	Option	√	√
Single-phase	R121	Standard			√	
	R221	Option			√	

√ : Possible option

Compact terminal box

- Easy access to AVR and terminals

Environment and protection

- The alternators are IP 23
- Standard winding protection for non-harsh environment with relative humidity ≤ 95%

Available options

- AREP+ & PMG (PMG suitable for TAL A42 and above)
- 12-lead (12-lead is standard option for TAL A40 series)
- Customized painting
- Space heater
- Droop kit for alternator paralleling (AVR upgrade to R150)
- CE mark
- Two-bearing version(TAL A44 only)
- Voltage trimmer (AVR upgrade to R150)
- Winding protection for harsh environments and relative humidity greater than 95% (system 2 - 4): de-rating ratio according to 3% (system 2 and above protection system will be proposed for rental application, prevented from potential hash environment)

TAL-A40 - Three-phase 13 to 25 kVA - 50 Hz / 15 to 30 kVA - 60 Hz

General characteristics - 6 & 12-wire

Insulation class	H
Winding pitch	2/3 (wind.6S - 6-wire / wind.6 -12-wire)
Number of wires	6 or 12
Protection	IP 23
Altitude	≤ 1000 m
Overspeed	2250 R.P.M.
Air flow 50 Hz (m^3/s)	0.08
Air flow 60 Hz (m^3/s)	0.10
AREP+ Short-circuit current = 2.7 In: 5 seconds (*)	

*D350: 2.7In 10 seconds

Excitation system 6 wires	SHUNT	AREP+
AVR type	R120	R180
Excitation system 12 wires	SHUNT	AREP+
AVR type	R120	R180
Voltage regulation (*)	± 1 %	± 0.5 %
Waveform: NEMA = TIF (**)	< 50	
Waveform : I.E.C. : THF (**)	< 2%	

(*) Steady state (**) between phases

Ratings 50 Hz - 1500 R.P.M. - 6 & 12-wire

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:125K				F:105K				H:150K				H:163K			
Phase		3ph.			1ph.*	3ph.			1ph.*	3ph.			1ph.*	3ph.			1ph.*
Y		380V	400V	415V		380V	400V	415V		380V	400V	415V		380V	400V	415V	
Δ		220V	230V	240V		220V	230V	240V		220V	230V	240V		220V	230V	240V	
YY		190V	200V	208V		190V	200V	208V		190V	200V	208V		190V	200V	208V	
ΔΔ					230V				230V				230V				230V
TAL-A40-C	kVA	13	**13**	13	7	12	**12**	12	6	13.5	**13.5**	13.5	7.5	14	**14**	14	8
	kW	*10.4*	***10.4***	*10.4*	*5.6*	*9.6*	***9.6***	*9.6*	*4.8*	*10.8*	***10.8***	*10.8*	*6.0*	*11.2*	***11.2***	*11.2*	*6.4*
TAL A40-D	kVA	15	**15**	15	9	13.5	**13.5**	13.5	8	15.8	**15.8**	15.8	9.5	16.5	**16.5**	16.5	10.3
	kW	*12.0*	***12.0***	*12.0*	*7.2*	*10.8*	***10.8***	*10.8*	*6.4*	*12.6*	***12.6***	*12.6*	*7.6*	*13.2*	***13.2***	*13.2*	*8.2*
TAL-A40-E	kVA	17.5	**17.5**	17.5	10.5	16	**16**	16	9.5	18.4	**18.4**	18.4	11	19.3	**19.3**	19.3	12
	kW	*14.0*	***14.0***	*14.0*	*8.4*	*12.8*	***12.8***	*12.8*	*7.6*	*14.7*	***14.7***	*14.7*	*8.8*	*15.4*	***15.4***	*15.4*	*9.6*
TAL-A40-F	kVA	20	**20**	20	12	18	**18**	18	11	21	**21**	21	12.5	22	**22**	22	13.4
	kW	*16.0*	***16.0***	*16.0*	*9.6*	*14.4*	***14.4***	*14.4*	*8.8*	*16.8*	***16.8***	*16.8*	*10.0*	*17.6*	***17.6***	*17.6*	*10.8*
TAL-A40-G	kVA	25	**25**	25	15	22.5	**22.5**	22.5	13.5	26	**26**	26	16	27.5	**27.5**	27.5	16.6
	kW	*20.0*	***20.0***	*20.0*	*12.0*	*18.0*	***18.0***	*18.0*	*10.8*	*20.8*	***20.8***	*20.8*	*12.8*	*22.0*	***22.0***	*22.0*	*13.3*

*please consult factory for 1ph. and 3ph. compatible use

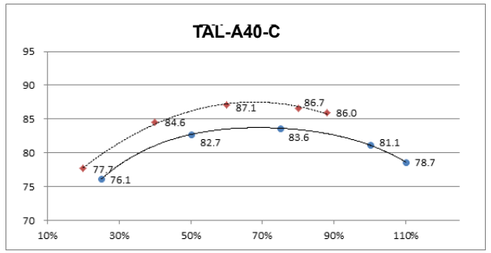
Ratings 60 Hz - 1800 R.P.M. - 6 & 12-wire

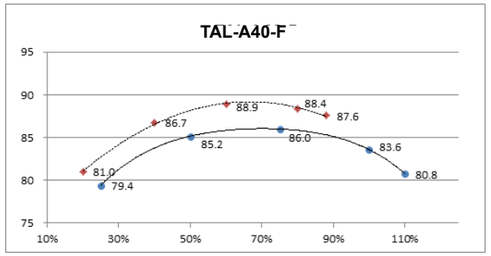
kVA / kW - P.F. = 0.8

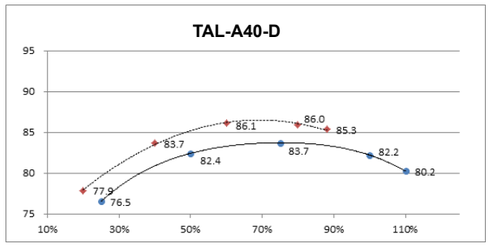
Duty / T° C		Continuous / 40 °C					Continuous / 40 °C					Stand-by / 40 °C					Stand-by / 27 °C				
Class / T° K		H:125K					F:105K					H:150K					H:163K				
Phase		3ph.				1ph.*	3ph.				1ph.*	3ph.				1ph.*	3ph.				1ph.*
Y		380V	416V	440V	480V		380V	416V	440V	480V		380V	416V	440V	480V		380V	416V	440V	480V	
Δ		220V	240V	254V	277V		220V	240V	254V	277V		220V	240V	254V	277V		220V	240V	254V	277V	
YY		190V	208V	220V	240V		190V	208V	220V	240V		190V	208V	220V	240V		190V	208V	220V	240V	
ΔΔ						240V					240V					240V					240V
TAL-A40-C	kVA	12	13.4	14	**15.5**	9	11	12	13	**14**	8	13	14	15	**16**	9.5	13.5	15	15.5	**17**	10
	kW	*9.6*	*10.7*	*11.2*	***12.4***	*7.2*	*8.8*	*9.6*	*10.4*	***11.2***	*6.4*	*10.4*	*11.2*	*12.0*	***12.8***	*7.6*	*10.8*	*12.0*	*12.4*	***13.6***	*8.0*
TAL-A40-D	kVA	14	15.3	16	**18**	11.6	13	14	14.5	**16.5**	10.4	15	16	17	**19**	12	15.8	16.8	17.8	**20**	13
	kW	*11.2*	*12.2*	*12.8*	***14.4***	*9.3*	*10.4*	*11.2*	*11.6*	***13.2***	*8.3*	*12.0*	*12.8*	*13.6*	***15.2***	*9.6*	*12.6*	*13.4*	*14.2*	***16.0***	*10.4*
TAL-A40-E	kVA	17	17.9	19	**21**	13	15	16	17	**19**	12	18	19	20	**22**	14	18.5	19.6	20.8	**23**	14
	kW	*13.6*	*14.3*	*15.2*	***16.8***	*10.4*	*12.0*	*12.8*	*13.6*	***15.2***	*9.6*	*14.4*	*15.2*	*16.0*	***17.6***	*11.2*	*14.8*	*15.7*	*16.6*	***18.4***	*11.2*
TAL-A40-F	kVA	19	20.5	21.5	**24**	14	17	18.5	19.5	**22**	12.5	20	21.5	23	**25**	14.6	21	22.5	24	**26**	15
	kW	*15.2*	*16.4*	*17.2*	***19.2***	*11.2*	*13.6*	*14.8*	*15.6*	***17.6***	*10.0*	*16.0*	*17.2*	*18.4*	***20.0***	*11.7*	*16.8*	*18.0*	*19.2*	***20.8***	*12.0*
TAL-A40-G	kVA	24	26	27	**30**	17	21	23.5	24	**27**	15.4	25	27	28.5	**31.5**	18	26	28.5	30	**33**	19
	kW	*19.2*	*20.8*	*21.6*	***24.0***	*13.6*	*16.8*	*18.8*	*19.2*	***21.6***	*12.3*	*20.0*	*21.6*	*22.8*	***25.2***	*14.4*	*20.8*	*22.8*	*24.0*	***26.4***	*15.2*

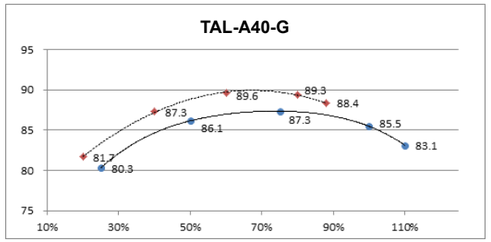
*please consult factory for 1ph. and 3ph. compatible use

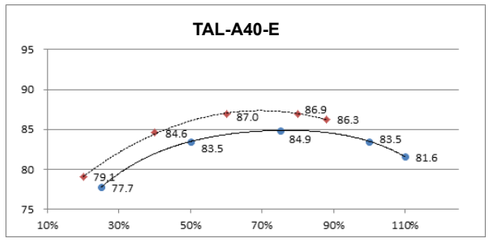
Efficiencies 400 V - 50 Hz (— P.F.: 0.8) (..... P.F.: 1) - 6 & 12-wire











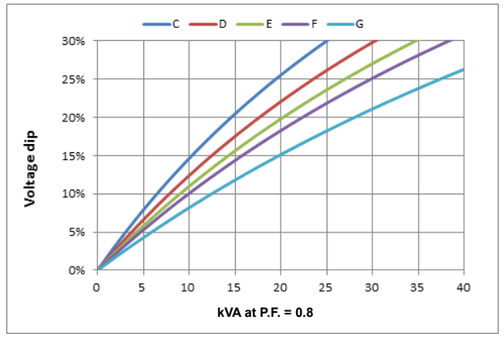
Reactances (%). Time constants (ms) - Class H / 400 V - 6 & 12-wire

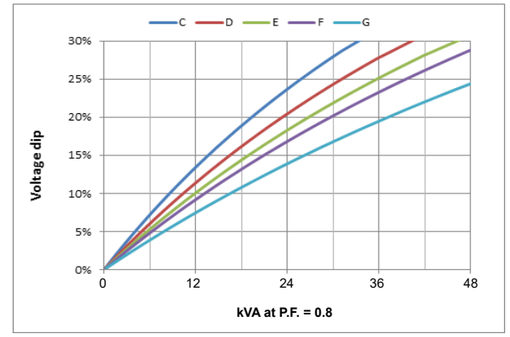
		TAL-A40-C	TAL-A40-D	TAL-A40-E	TAL-A40-F	TAL-A40-G
Kcc	Short-circuit ratio	0.55	0.55	0.54	0.45	0.45
Xd	Direct-axis synchro. reactance unsaturated	217	209	222	251	256
Xq	Quadrature-axis synchro. reactance unsaturated	130	125	133	151	153
T'do	No-load transient time constant	789	826	850	873	914
X'd	Direct-axis transient reactance saturated	19.1	17.7	18.2	19.2	19.1
T'd	Short-circuit transient time constant	74	74	74	74	74
X"d	Direct-axis subtransient reactance saturated	9.5	8.8	9.0	9.5	9.5
T"d	Subtransient time constant	7.0	7.0	7.0	7.0	7.0
X"q	Quadrature-axis subtransient reactance saturated	20.0	18.6	19.0	20.1	20.0
Xo	Zero sequence reactance	0.13	0.13	0.14	0.15	0.16
X2	Negative sequence reactance saturated	14.8	13.7	14.0	14.8	14.7
Ta	Armature time constant	11	11	11	11	11

Other class H / 400 V data		TAL-A40-C	TAL-A40-D	TAL-A40-E	TAL-A40-F	TAL-A40-G
ms	Response time (ΔU = 20%)	500	500	500	500	500
W	No-load losses	483	546	578	630	704
W	Heat dissipation	2424	2599	2766	3139	3392

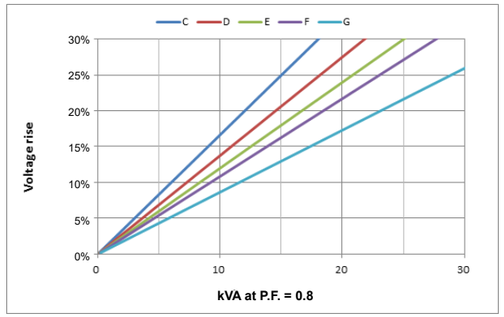
Low Voltage Alternators - 4 pole
TAL-A40 - Three-phase 13 to 25 kVA - 50 Hz / 15 to 30 kVA - 60 Hz

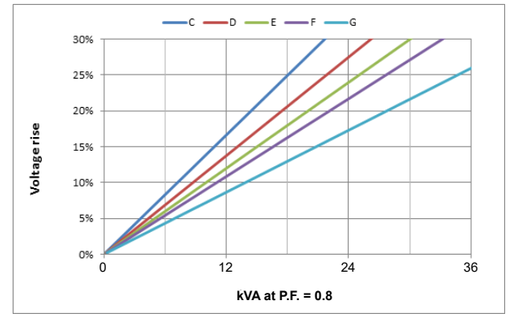
Transient voltage variation 400V - 50 Hz



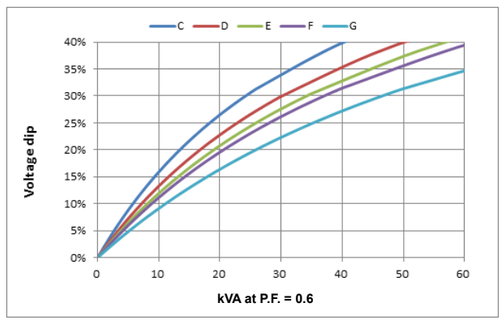


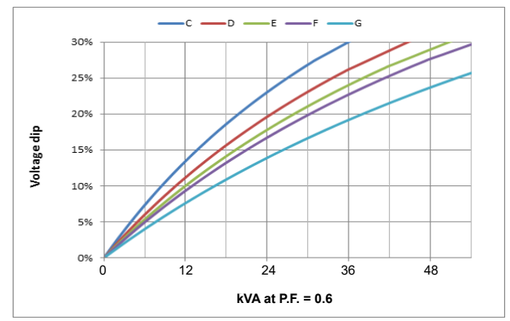
Phase loading (SHUNT/AREP+) - kVA at P.F. = 0.8





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

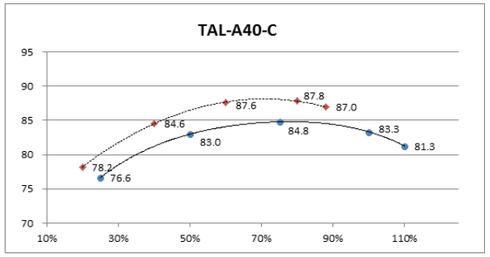


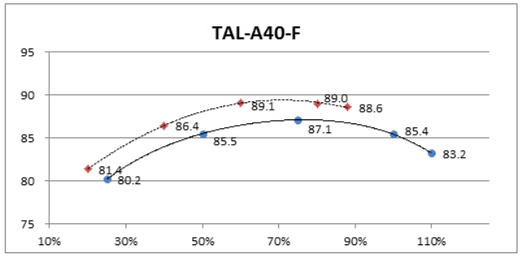


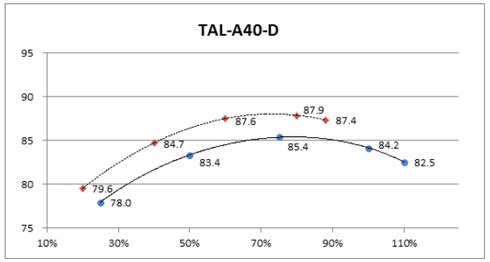
Motor starting (SHUNT/AREP+) - locked rotor kVA at P.F. = 0.6

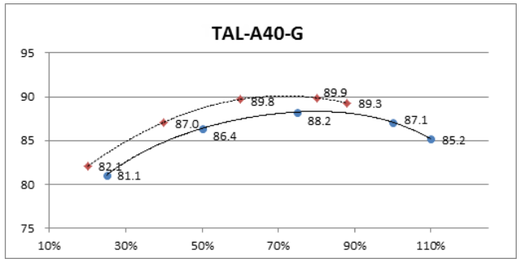
1) For a starting P.F. other than 0.6, the starting kVA must be multiplied by K = Sine P.F. / 0.8
2) For voltages other than 400V (Y), 230V (Δ) at 50 Hz, then kVA must be multiplied by $(400/U)^2$ or $(230/U)^2$.

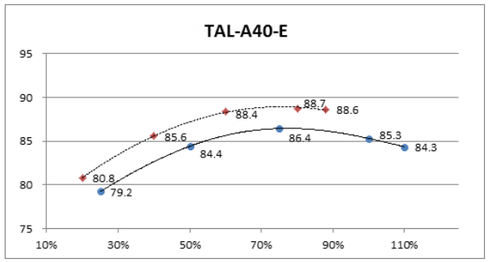
Efficiencies 480 V - 60 Hz (— P.F.: 0.8) (..... P.F.: 1) - 6 & 12-wire











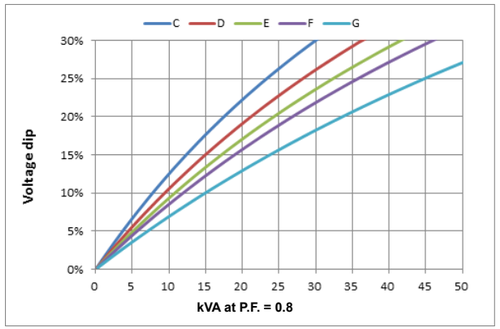
Reactances (%). Time constants (ms) - Class H / 480 V - 6 & 12-wire

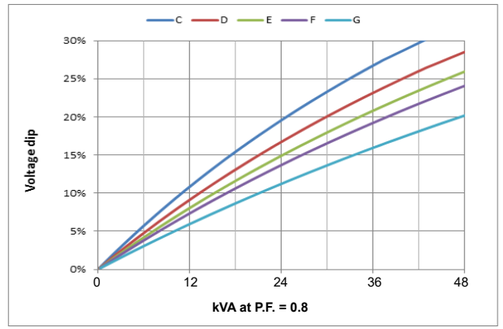
		TAL-A40-C	TAL-A40-D	TAL-A40-E	TAL-A40-F	TAL-A40-G
Kcc	Short-circuit ratio	0.55	0.55	0.54	0.45	0.45
Xd	Direct-axis synchro. reactance unsaturated	217	209	222	251	256
Xq	Quadrature-axis synchro. reactance unsaturated	130	125	133	151	153
T'do	No-load transient time constant	789	826	850	873	914
X'd	Direct-axis transient reactance saturated	19.1	17.7	18.2	19.2	19.1
T'd	Short-circuit transient time constant	74	74	74	74	74
X"d	Direct-axis subtransient reactance saturated	9.5	8.8	9.0	9.5	9.5
T"d	Subtransient time constant	7.0	7.0	7.0	7.0	7.0
X"q	Quadrature-axis subtransient reactance saturated	20.0	18.6	19.0	20.1	20.0
Xo	Zero sequence reactance	0.13	0.13	0.14	0.15	0.16
X2	Negative sequence reactance saturated	14.8	13.7	14.0	14.8	14.7
Ta	Armature time constant	11	11	11	11	11

Other class H / 480 V data		TAL-A40-C	TAL-A40-D	TAL-A40-E	TAL-A40-F	TAL-A40-G
ms	Response time (ΔU = 20%)	500	500	500	500	500
W	No-load losses	696	786	832	907	1013
W	Heat dissipation	2486	2702	2895	3282	3555

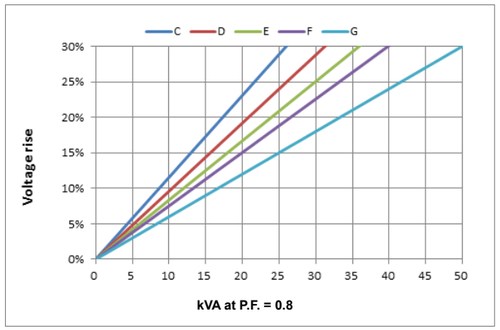
Low Voltage Alternators - 4 pole
TAL-A40 - Three-phase 13 to 25 kVA - 50 Hz / 15 to 30 kVA - 60 Hz

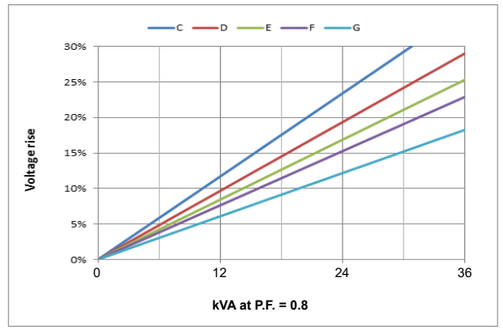
Transient voltage variation 480V - 60 Hz



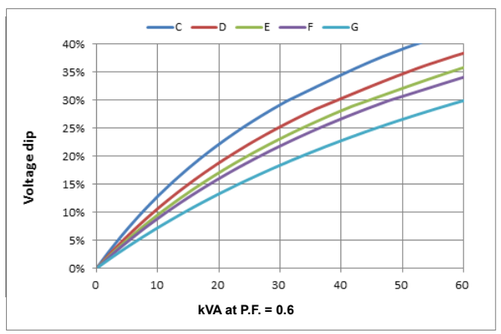


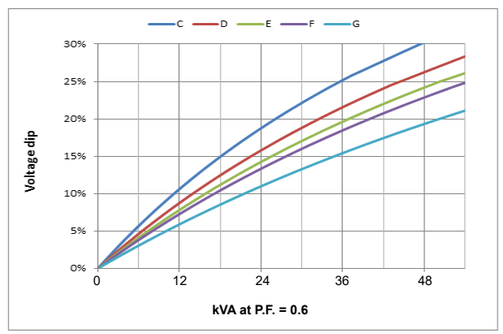
Phase loading (SHUNT/AREP+) - kVA at P.F. = 0.8





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



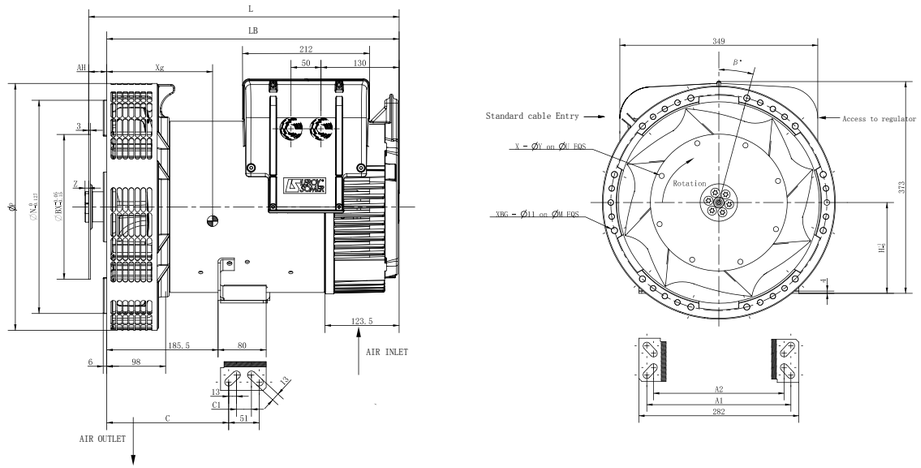


Motor starting (SHUNT/AREP+) - locked rotor kVA at P.F. = 0.6

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 $(240/U)^2$.

TAL-A40 - Three-phase 13 to 25 kVA - 50 Hz / 15 to 30 kVA - 60 Hz

Single bearing general arrangement - 4, 6 & 12-wire



Dimensions (mm) and weight				
Type	L maxi	LB	Xg	Weight (kg)
TAL-A40-C	LB+AH	407	186	73
TAL-A40-D	LB+AH	407	196	80
TAL-A40-E	LB+AH	437	204	87
TAL-A40-F	LB+AH	437	221	92
TAL-A40-G	LB+AH	487	226	108

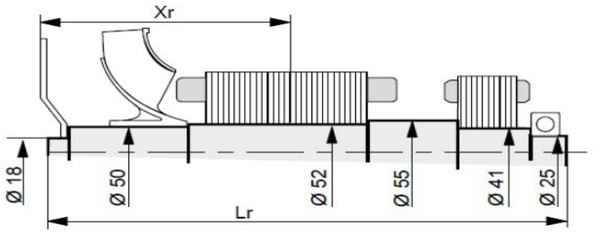
Shaft height (mm)		
	Standard	Option
H	**160**	*180*
	Feet length	
C	203	*238*
C1	25	*22*
A1	254	*279*
A2	230	-

Coupling		
Flange	**3**	**4**
Flex plate		
11 1/2	x	-
10	x	x
8	x	x
7 1/2	-	x
6 1/2	-	x

Flange (mm)					
S.A.E.	P	N	M	XBG	β°
4	411	361.95	381	12	15°
3	450	409.58	428.62	12	15°

Flex plate (mm)						
S.A.E.	BX	U	X	Y	AH	Z
6 1/2	215.9	200.02	6	9	30.2	6
7 1/2	241.3	222.25	8	9	30.2	6
8	263.52	244.48	6	11	62	0
10	314.32	295.28	8	11	53.8	0
11 1/2	352.42	333.38	8	11	39.6	0

Torsional analysis data



Centre of gravity: Xr (mm), Rotor length: Lr (mm), Weight: M (kg), Moment of inertia: J (kgm²): (4J = MD²)

Type	Flex plate S.A.E. 6 1/2				Flex plate S.A.E. 7 1/2				Flex Plate SAE 8				Flex Plate SAE 10				Flex Plate SAE 11 1/2			
	Xr	Lr	M	J	Xr	Lr	M	J	Xr	Lr	M	J	Xr	Lr	M	J	Xr	Lr	M	J
TAL-A40-C	211.43	428	25.6	0.0795	211.43	428	25.76	0.0818	243.24	428	26.06	0.0863	238.04	428	26.56	0.098	220.85	428	27.06	0.1096
TAL-A40-D	221.43	428	28.01	0.0883	221.43	428	28.17	0.0906	253.24	428	28.47	0.0951	248.04	428	28.97	0.1068	230.85	428	29.47	0.1184
TAL-A40-E	228.94	458	30.38	0.0952	228.94	458	30.54	0.0975	260.74	458	30.84	0.102	255.55	458	31.34	0.1137	238.35	458	31.84	0.1253
TAL-A40-F	236.44	458	32.29	0.1021	236.44	458	32.45	0.1044	268.24	458	32.75	0.1089	263.05	458	33.25	0.1206	245.85	458	33.75	0.1322
TAL-A40-G	251.45	508	37.03	0.1164	251.45	508	37.19	0.1187	283.25	508	37.49	0.1232	278.06	508	37.99	0.1349	260.86	508	38.49	0.1465

NOTE : Dimensions are for information only and may be subject to modifications. Contractual 2D/3D drawings can be downloaded from the Leroy-Somer site. The torsional analysis of the transmission is imperative. All values are available upon request.

TAL-A40 - S Dedicated single-phase 10.5 to 16 kVA - 50 Hz / 11.5 to 17.5 kVA - 60 Hz

General characteristics

Insulation class	H	Excitation system	SHUNT
Winding pitch	2/3 (wind. M)	AVR type	R121
Number of wires	4	Voltage regulation (*)	± 1 %
Protection	IP 23	Waveform: NEMA = TIF (**)	< 100
Altitude	≤ 1000 m	Waveform: I.E.C. = THF (**)	< 2 %
Overspeed	2250 R.P.M.		
Air flow (m³/s)	**50 Hz:** 0.06 - **60 Hz:** 0.07		

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

Ratings / Efficiencies 50 Hz - 1500 R.P.M.

kVA / kW - P.F. = 1(*)

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	
Serie (SE)	230 V	η %	230 V	230 V	230V	η %
Parallel (PA)	115 V	η %	115 V	115 V	115 V	η %
TAL-A40-C-S	10.5	82.4	9.5	11	11.5	81.2
TAL-A40-C1-S	12	84.5	11	12.5	13	83.7
TAL-A40-D-S	13	85.4	12	14	14.5	84.7
TAL-A40-E-S	14.5	86.3	13	15.5	16	85.6
TAL-A40-F-S	16	87.3	14.5	17	17.5	86.7

(*) For P.F. 0.8: derating 15%

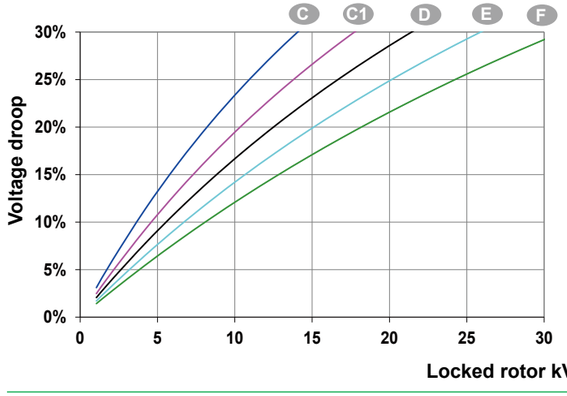
Ratings / Efficiencies 60 Hz - 1800 R.P.M.

kVA / kW - P.F. = 1(*)

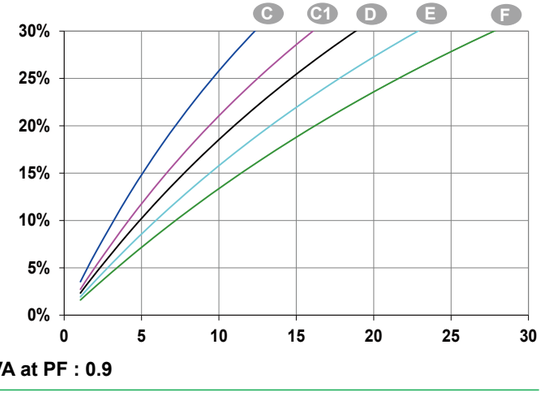
Duty / T° C	Continuous / 40 °C		Continuous / 40 °C	Stand-by / 40 °C	Stand-by / 27 °C	
Class / T° K	H / 125° K		F / 105° K	H / 150° K	H / 163° K	
Serie (SE)	240 V	η %	240 V	240 V	240V	η %
Parallel (PA)	120 V	η %	120 V	120 V	120 V	η %
TAL-A40-C-S	11.5	82.6	10.5	12	12.5	81.7
TAL-A40-C1-S	13.5	84.2	12.5	14.5	15	83.4
TAL-A40-D-S	14.5	85	13	15.5	16	84.3
TAL-A40-E-S	16	85.9	14.5	17	17.5	85.3
TAL-A40-F-S	17.5	86.9	16	18.5	19.5	86.3

(*) For P.F. 0.8: derating 15%

Starting motor 230V - 50Hz

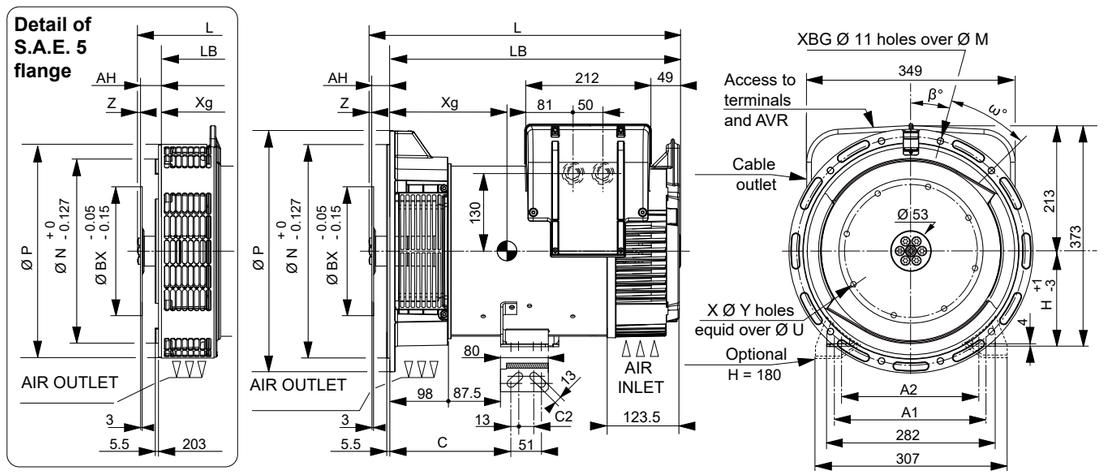


Starting motor 240V - 60Hz



TAL-A40 - S Single-phase

Single bearing general arrangement



Dimensions (mm) and weight				
Type	L maxi	LB	Xg	Weight (kg)
TAL-A40-C-S	469	407	186	73
TAL-A40-C1-S	469	407	196	80
TAL-A40-D-S	499	437	204	87
TAL-A40-E-S	499	437	221	92
TAL-A40-F-S	519	457	221	102

Shaft height (mm)		
	Standard	Option
H	**160**	180
	Feet length	
C	203	238
C2	25	22
A1	254	279
A2	230	-

Coupling			
Flange	**3**	**4**	**5**
Flex plate			
11 1/2	x	-	-
10	x	x	-
8	x	x	-
7 1/2	-	x	x
6 1/2	-	x	x

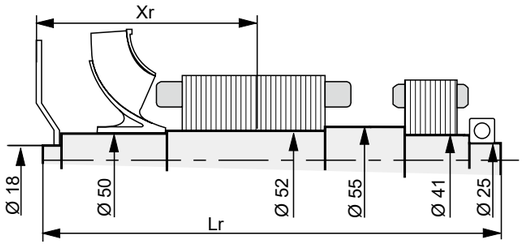
Lmaxi = LB + AH

Flange (mm)						
S.A.E.	P	N	M	XBG	β°	ω °
5	358	314.32	333.38	8	22°30'	45°
4	408	361.95	381	8*	15°	30°
3	460	409.58	428.62	8*	15°	30°
-	-	-	-	-	-	-

*Four lateral holes removal on S.A.E. 3 and 4

Flex plate (mm)						
S.A.E.	BX	U	X	Y	AH	Z
11 1/2	352.42	333.38	8	11	39.6	0
10	314.32	295.28	8	11	53.8	0
8	263.52	244.48	6	11	62	0
7 1/2	241.3	222.25	8	9	30.2	6
6 1/2	215.9	200.02	6	9	30.2	6

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. 6 1/2				S.A.E. 7 1/2				S.A.E. 8				S.A.E. 10			
Type	Xr	Lr	M	J	Xr	Lr	M	J	Xr	Lr	M	J	Xr	Lr	M	J
TAL-A40-C-S	211.7	428	25.5	0.078	211.7	428	25.7	0.080	243.5	428	26	0.085	238.3	428	26.5	0.096
TAL-A40-C1-S	221.7	428	27.9	0.087	221.7	428	28.1	0.089	253.5	428	28.4	0.094	248.3	428	28.9	0.105
TAL-A40-D-S	229.2	458	30.3	0.094	229.2	458	30.5	0.096	261	458	30.8	0.100	255.8	458	31.3	0.112
TAL-A40-E-S	236.7	458	32.2	0.100	236.7	458	32.4	0.103	268.5	458	32.7	0.107	263.3	458	33.2	0.119
TAL-A40-F-S	246.7	478	35.3	0.110	246.7	478	35.4	0.113	278.5	478	35.7	0.117	273.3	478	36.2	0.129

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.

TAL-A42 - Three-phase 30 to 63 kVA - 50 Hz / 36 to 75.6 kVA - 60 Hz

General characteristics - 6 & 12-wire

Insulation class	H
Winding pitch	2/3 (wind.6S - 6-wire / wind.6 -12-wire)
Number of wires	6 or 12
Protection	IP 23
Altitude	≤ 1000 m
Overspeed	2250 R.P.M.
Air flow 50 Hz (m³/s)	0.12
Air flow 60 Hz (m³/s)	0.15
AREP+ Short-circuit current = 2.7 In: 5 seconds (*)	

*D350: 2.7In 10 seconds

Excitation system 6 wires	SHUNT	AREP+/PMG
AVR type	R120	R180
Excitation system 12 wires	SHUNT	AREP+/PMG
AVR type	R120	R180
Voltage regulation (*)	± 1 %	± 0.5 %
Total Harmonic distortion THD (**) in no-load	< 3.5 %	
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. - 6 & 12-wire

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:125K				F:105K				H:150K				H:163K			
Phase		**3ph.**			**1ph.**	**3ph.**			**1ph.**	**3ph.**			**1ph.**	**3ph.**			**1ph.**
Y		380V	400V	415V		380V	400V	415V		380V	400V	415V		380V	400V	415V	
Δ		220V	230V	240V		220V	230V	240V		220V	230V	240V		220V	230V	240V	
YY		190V	200V	208V		190V	200V	208V		190V	200V	208V		190V	200V	208V	
ΔΔ					230V				230V				230V				230V
TAL-A42-C	kVA	29	**30**	30	18	26	**27**	27	16	30	**31.5**	31.5	19	31	**33**	33	19.8
	kW	23.2	***24.0***	24.0	*14.4*	20.8	***21.6***	21.6	*12.8*	24.0	***25.2***	25.2	*15.2*	24.8	***26.4***	26.4	*15.8*
TAL-A42-E	kVA	36	**38**	38	22.8	32.5	**34.5**	34	20.5	38	**40**	40	24	40	**42**	42	25.6
	kW	28.8	***30.4***	30.4	*18.2*	26.0	***27.6***	27.2	*16.4*	30.4	***32.0***	32.0	*19.2*	32.0	***33.6***	33.6	*20.5*
TAL-A42-F	kVA	43	**45**	45	25	38.5	**40.5**	40.5	22.5	45	**47**	47	26	48	**50**	50	28
	kW	34.4	***36.0***	36.0	*20.0*	30.8	***32.4***	32.4	*18.0*	36.0	***37.6***	37.6	*20.8*	38.4	***40.0***	40.0	*22.4*
TAL-A42-G	kVA	48	**50**	50	27	43	**45**	45	24	50	**52.5**	52.5	28	52	**55**	55	30
	kW	38.4	***40.0***	40.0	*21.6*	34.4	***36.0***	36.0	*19.2*	40.0	***42.0***	42.0	*22.4*	41.6	***44.0***	44.0	*24.0*
TAL-A42-H	kVA	60	**63**	63	36	54	**57**	57	32.5	63	**66**	66	38	67	**70**	70	40
	kW	48.0	***50.4***	50.4	*28.8*	43.2	***45.6***	45.6	*26.0*	50.4	***52.8***	52.8	*30.4*	53.6	***56.0***	56.0	*32.0*

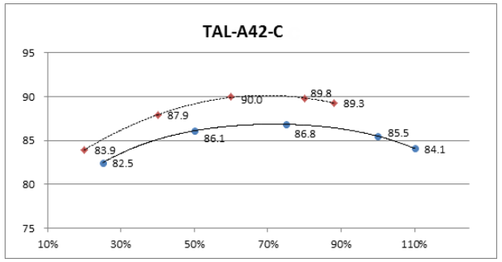
Ratings 60 Hz - 1800 R.P.M. - 6 & 12-wire

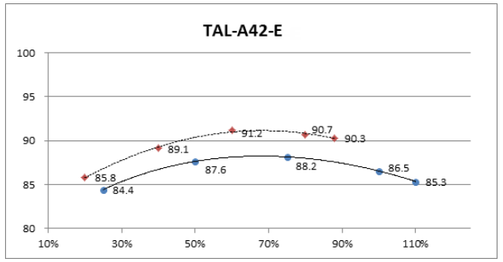
kVA / kW - P.F. = 0.8

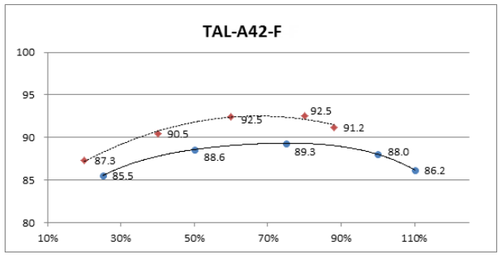
Duty / T° C		Continuous / 40 °C					Continuous / 40 °C					Stand-by / 40 °C					Stand-by / 27 °C				
Class / T° K		H:125K					F:105K					H:150K					H:163K				
Phase		**3ph.**				**1ph.**	**3ph.**				**1ph.**	**3ph.**				**1ph.**	**3ph.**				**1ph.**
Y		380V	416V	440V	480V		380V	416V	440V	480V		380V	416V	440V	480V		380V	416V	440V	480V	
Δ		220V	240V	254V	277V		220V	240V	254V	277V		220V	240V	254V	277V		220V	240V	254V	277V	
YY		190V	208V	220V	240V		190V	208V	220V	240V		190V	208V	220V	240V		190V	208V	220V	240V	
ΔΔ						240V					240V					240V					240V
TAL-A42-C	kVA	28	31	32.5	**36**	21.5	25.5	28	29	**32.5**	19.4	30	32.5	34	**38**	22.6	31	34	36	**39.5**	23.5
	kW	*22.4*	*24.8*	*26.0*	*28.8*	*17.2*	*20.4*	*22.4*	*23.2*	*26.0*	*15.5*	*24.0*	*26.0*	*27.2*	*30.4*	*18.1*	*24.8*	*27.2*	*28.8*	*31.6*	*18.8*
TAL-A42-E	kVA	36	39.5	41.4	**45.5**	25	32.5	35.5	37	**41**	23	38	41.5	43.5	**48**	26.4	39.5	43.5	45.5	**50**	27.7
	kW	*28.8*	*31.6*	*33.1*	*36.4*	*20.0*	*26.0*	*28.4*	*29.6*	*32.8*	*18.4*	*30.4*	*33.2*	*34.8*	*38.4*	*21.1*	*31.6*	*34.8*	*36.4*	*40.0*	*22.2*
TAL-A42-F	kVA	43	46.5	49	**54**	28	38.5	42	44	**49**	25	45	48.5	51.5	**56.5**	29	47	51	54	**59**	31
	kW	*34.4*	*37.2*	*39.2*	*43.2*	*22.4*	*30.8*	*33.6*	*35.2*	*39.2*	*20.0*	*36.0*	*38.8*	*41.2*	*45.2*	*23.2*	*37.6*	*40.8*	*43.2*	*47.2*	*24.8*
TAL-A42-G	kVA	47	52	54.5	**60**	30.5	43	47	49	**54**	27.5	50	54.5	57	**63**	32	52	57	60	**66**	33.6
	kW	*37.6*	*41.6*	*43.6*	*48.0*	*24.4*	*34.4*	*37.6*	*39.2*	*43.2*	*22.0*	*40.0*	*43.6*	*45.6*	*50.4*	*25.6*	*41.6*	*45.6*	*48.0*	*52.8*	*26.9*
TAL-A42-H	kVA	60	65.5	68.5	**75.6**	39	54	59	62	**68**	35	63	68.5	72	**79**	41	66	72	75.5	**83**	43
	Kw	*48.0*	*52.4*	*54.8*	*60.5*	*31.2*	*43.2*	*47.2*	*49.6*	*54.4*	*28.0*	*50.4*	*54.8*	*57.6*	*63.2*	*32.8*	*52.8*	*57.6*	*60.4*	*66.4*	*34.4*

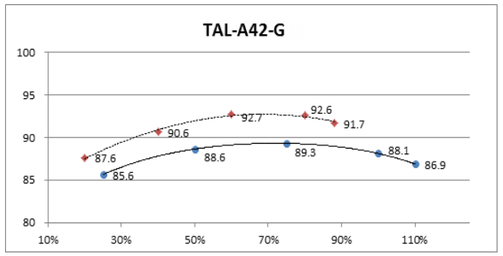
TAL-A42 - Three-phase 30 to 63 kVA - 50 Hz / 36 to 75.6 kVA - 60 Hz

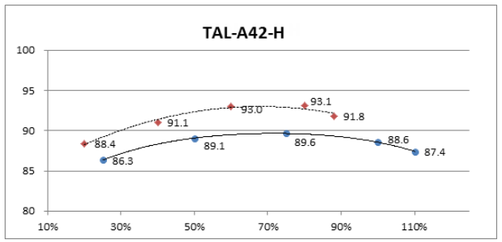
Efficiencies 400 V - 50 Hz (— P.F.: 0.8) (..... P.F.: 1) - 6 & 12-wire











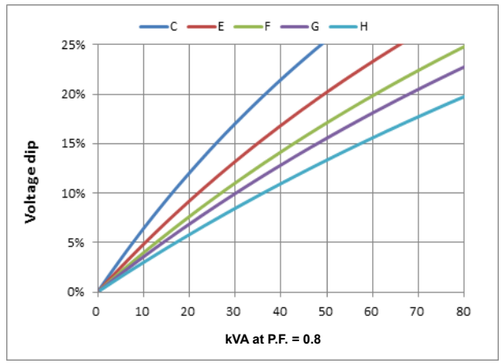
Reactances (%). Time constants (ms) - Class H / 400 V - 6 & 12-wire

		TAL-A42-C	TAL-A42-E	TAL-A42-F	TAL-A42-G	TAL-A42-H
Kcc	Short-circuit ratio	0.45	0.49	0.43	0.47	0.42
Xd	Direct-axis synchro.reactance unsaturated	278	259	275	265	297
Xq	Quadrature-axis synchro.rectance unsaturated	167	155	165	159	178
T'do	No-load transient time constant	805	861	918	933	962
X'd	Direct-axis transient reactance saturated	16.7	15.0	14.1	13.9	15.2
T'd	Short-circuit transient time constant	50	50	50	50	50
X"d	Direct-axis subtransient reactance saturated	9.0	8.1	7.6	7.5	8.2
T"d	Subtransient time constant	5.0	5.0	5.0	5.0	5.0
X"q	Quadrature-axis subtransient reactance saturated	12.7	11.4	10.7	10.6	11.5
Xo	Zero sequence reactance saturated	0.9	0.9	0.9	0.9	11
X2	Negative sequence reactance saturated	10.8	9.8	9.1	9.0	9.9
Ta	Armature time constant	8	8	8	8	8

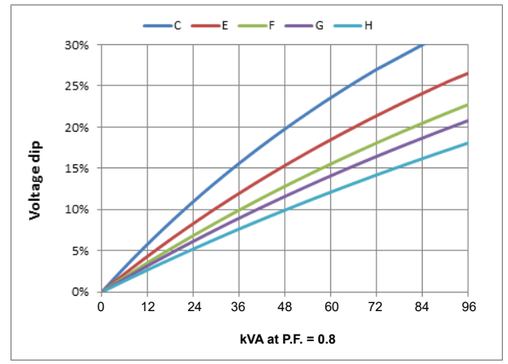
Other class H/400V data		TAL-A42-C	TAL-A42-E	TAL-A42-F	TAL-A42-G	TAL-A42-H
ms	Response time (△U=20%)	500	500	500	500	500
W	No-load losses	749	840	923	1080	1176
W	Heat dissipation	4070	4745	4909	5403	6337

TAL-A42 - Three-phase 30 to 63 kVA - 50 Hz / 36 to 75.6 kVA - 60 Hz

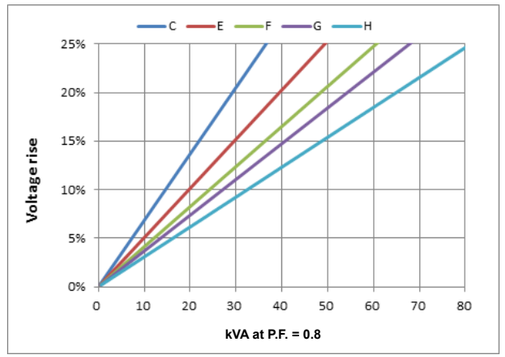
Transient voltage variation 400V - 50 Hz - 12-wire



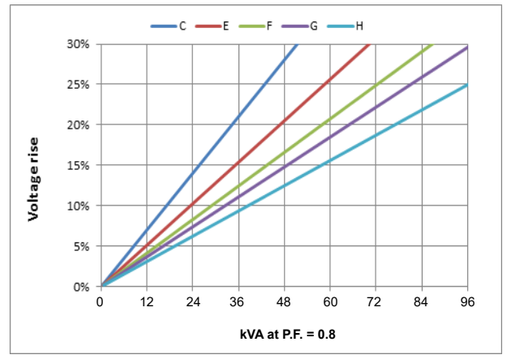
Phase loading (SHUNT) - kVA at P.F. = 0.8



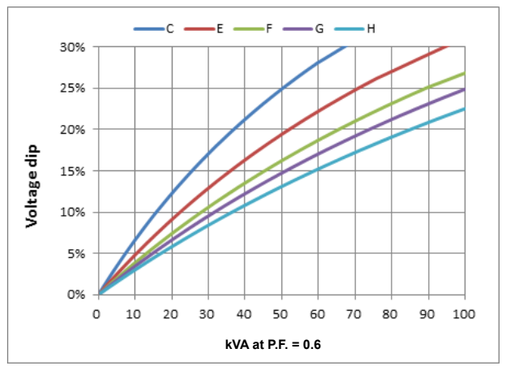
Phase loading (AREP+/PMG) - kVA at P.F. = 0.8



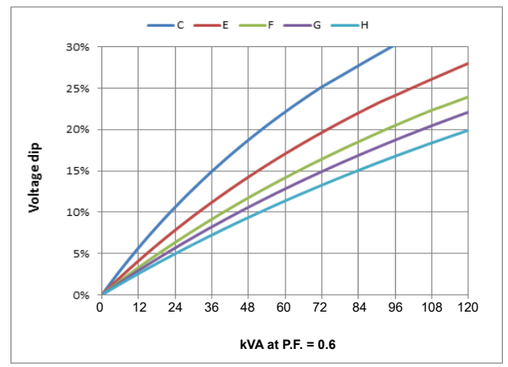
Load shedding (SHUNT) - kVA at P.F. = 0.8



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



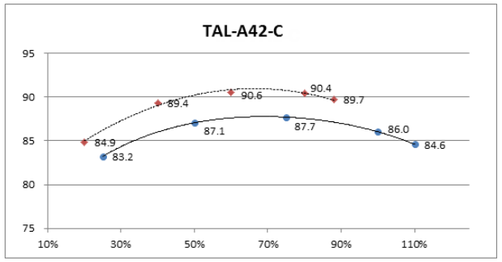
Motor starting (SHUNT)
- locked rotor kVA at P.F. = 0.6

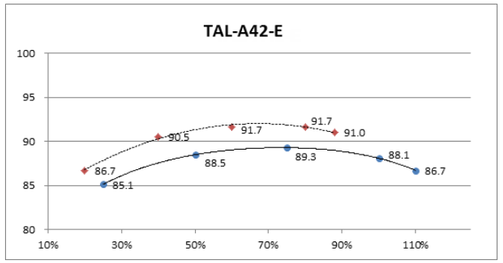


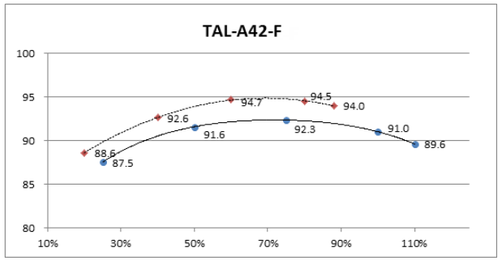
Motor starting (AREP+/PMG)
- locked rotor kVA at P.F. = 0.6

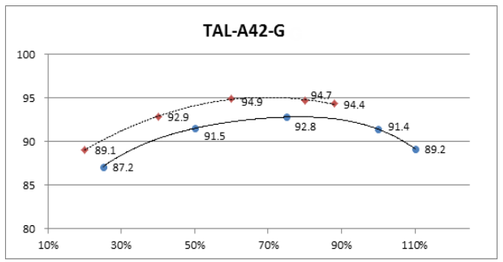
1) For a starting P.F. other than 0.6, the starting kVA must be multiplied by K = Sine P.F. / 0.8
2) For voltages other than 400V (Y), 230V (Δ) at 50 Hz, then kVA must be multiplied by $(400/U)^2$ or $(230/U)^2$.

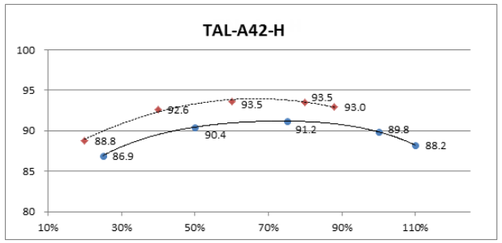
Efficiencies 480 V - 60 Hz (— P.F.: 0.8) (..... P.F.: 1) - 6 & 12-wire











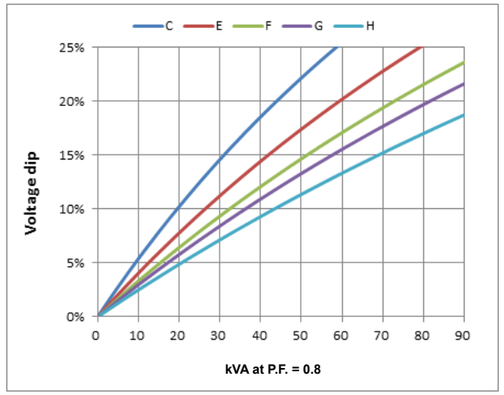
Reactances (%). Time constants (ms) - Class H / 480 V - 6 & 12 wire

		TAL-A42-C	TAL-A42-E	TAL-A42-F	TAL-A42-G	TAL-A42-H
Kcc	Short-circuit ratio	0.45	0.49	0.43	0.47	0.42
Xd	Direct-axis synchro.reactance unsaturated	278	259	275	265	297
Xq	Quadrature-axis synchro.rectance unsaturated	167	155	165	159	178
T'do	No-load transient time constant	805	861	918	933	962
X'd	Direct-axis transient reactance saturated	16.7	15.0	14.1	13.9	15.2
T'd	Short-circuit transient time constant	50	50	50	50	50
X"d	Direct-axis subtransient reactance saturated	9.0	8.1	7.6	7.5	8.2
T"d	Subtransient time constant	5.0	5.0	5.0	5.0	5.0
X"q	Quadrature-axis subtransient reactance saturated	12.7	11.4	10.7	10.6	11.5
Xo	Zero sequence reactance saturated	0.9	0.9	0.9	0.9	11
X2	Negative sequence reactance saturated	10.8	9.8	9.1	9.0	9.9
Ta	Armature time constant	8	8	8	8	8

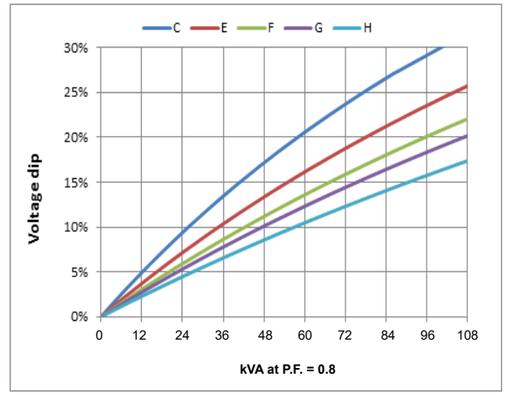
Other class H/480V data		TAL-A42-C	TAL-A42-E	TAL-A42-F	TAL-A42-G	TAL-A42-H
ms	Response time (△U=20%)	500	500	500	500	500
W	No-load losses	1078	1210	1329	1556	1693
W	Heat dissipation	4688	4917	4273	4516	6870

Low Voltage Alternators - 4 pole
TAL-A42 - Three-phase 30 to 63 kVA - 50 Hz / 36 to 75.6 kVA - 60 Hz

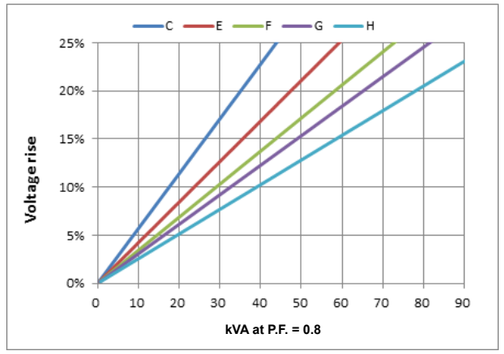
Transient voltage variation 480V - 60 Hz - 6-wire



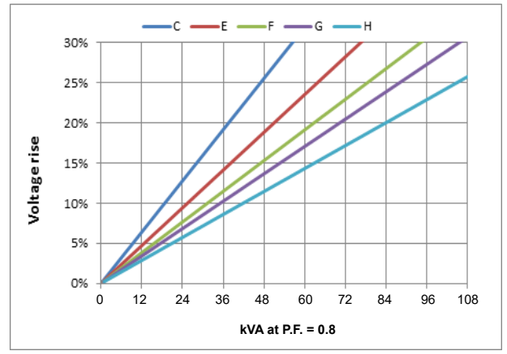
Phase loading (SHUNT) - kVA at P.F. = 0.8



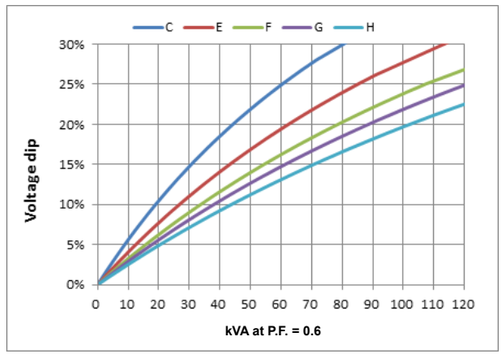
Phase loading (AREP+/PMG) - kVA at P.F. = 0.8



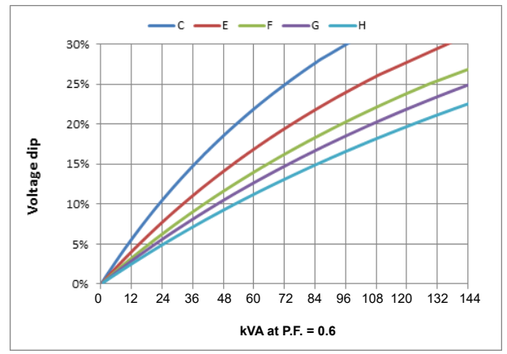
Load shedding (SHUNT) - kVA at P.F. = 0.8



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



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

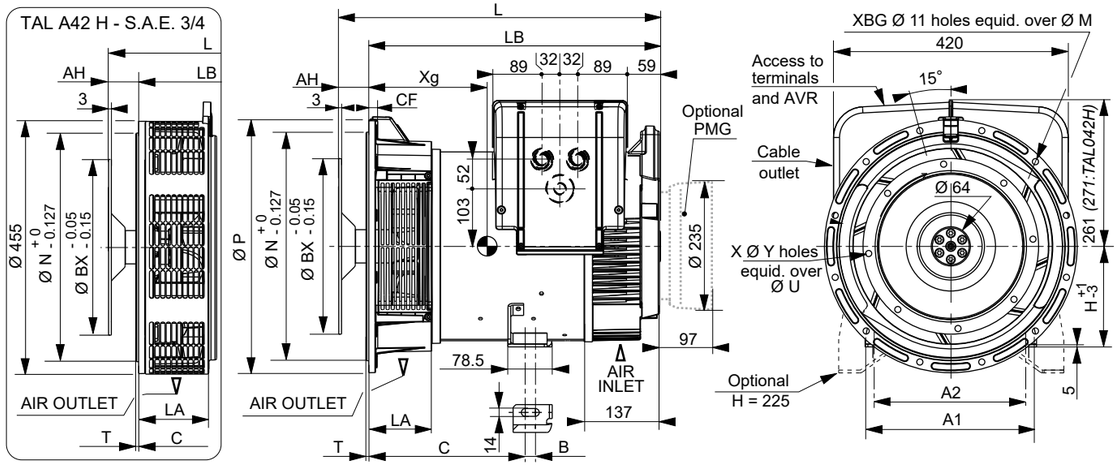


Motor starting (AREP+/PMG)
- locked rotor kVA at P.F. = 0.6

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 $(240/U)^2$.

TAL-A42 - Three-phase 30 to 63 kVA - 50 Hz / 36 to 75.6 kVA - 60 Hz

Single bearing general arrangement - 4, 6 & 12-wire

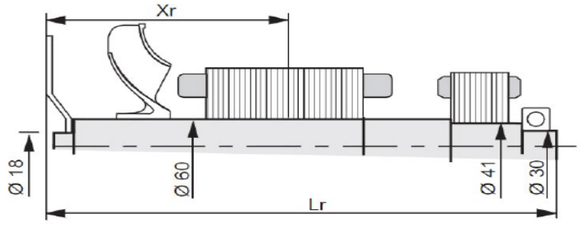


Dimensions (mm) and weight (kg)				DISC 11 1/2	DISC 10	DISC 8	DISC 7 1/2
Type	LB	Xg	Mass (kg)	J (kgm²)	J (kgm²)	J (kgm²)	J (kgm²)
TAL-A42-C	503	242	120	0.2681	0.2561	0.2444	0.2407
TAL-A42-E	523	263	142	0.3324	0.3204	0.3087	0.305
TAL-A42-F	588	287	171	0.3835	0.3715	0.3598	0.3561
TAL-A42-G	588	295	177	0.3957	0.3837	0.372	0.3683
TAL-A42-H	618	310	186	0.4415	0.4295	0.4178	0.4141

Flex plate (mm)							
S.A.E	P	N	M	XBG	T	LA	CF
4	455	361.95	381	12	5	122	16
3	452	409.58	428.62	12	5	105.3	12
2	490	447.675	466.725	12	6	111	12

Flex plate (mm)					
S.A.E.	BX	U	X	Y	AH
11 1/2	352.42	333.38	8	11	39.6
10	314.32	295.28	8	11	53.8
8	263.52	244.48	6	11	62
7 1/2	241.3	222.25	8	9	30.2

Torsional analysis data



Centre of gravity: Xr (mm), Rotor length: Lr (mm), Weight: M (kg), Moment of inertia: J (kgm²): (4J = MD²)

Type	Flex Plate SAE7 1/2				Flex Plate SAE8				Flex Plate SAE10				Flex Plate SAE11 1/2			
	Xr	Lr	M	J	Xr	Lr	M	J	Xr	Lr	M	J	Xr	Lr	M	J
TAL-A42-C	278.97	526.2	47.77	0.2407	308.13	558	48.09	0.2444	288.095	549.8	48.53	0.2561	280.91	535.6	49.03	0.2681
TAL-A42-E	290.53	526.2	57.87	0.305	320.08	558	58.19	0.3087	299.416	549.8	58.63	0.3204	293.5	535.6	59.13	0.3324
TAL-A42-F	321.11	611.2	67.82	0.3561	350.85	643	68.14	0.3598	340.644	634.8	68.58	0.3715	324.45	620.6	69.08	0.3835
TAL-A42-G	326.09	611.2	70.82	0.3753	355.9	643	71.14	0.379	345.742	634.8	71.58	0.3907	329.6	620.6	72.08	0.4027
TAL-A42-H	340.91	641.2	77.49	0.4141	370.82	673	77.81	0.4178	360.747	664.8	78.25	0.4295	344.67	650.6	78.75	0.4415

NOTE : Dimensions are for information only and may be subject to modifications. Contractual 2D/3D drawings can be downloaded from the Leroy-Somer site. The torsional analysis of the transmission is imperative. All values are available upon request.

TAL-A42 - S Dedicated single-phase 18 to 42 kVA - 50 Hz / 23 to 53 kVA - 60 Hz

General characteristics

Insulation class	**H**	Excitation system	SHUNT
Winding pitch	2/3 (wind. M 50 Hz, M1 60 Hz)	AVR type	R121
Number of wires	**4**	**Voltage regulation (*)**	± 1 %
Protection	**IP 23**	Total Harmonic Distortion THD (**) in no-load	< 3.5 %
Altitude	**≤ 1000 m**	Total Harmonic Distortion THD (**) in linear load	< 5 %
Overspeed	2250 R.P.M.	Waveform: NEMA = TIF (**)	**< 100**
Air flow (m³/s)	**50 Hz: 0.10 - 60 Hz: 0.13**	Waveform: I.E.C. = THF (**)	< 2 %

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

Ratings / Efficiencies 50 Hz - 1500 R.P.M. - Winding M

kVA / kW - P.F. = 1 (P.F. 0.8 : derating 15%**)**

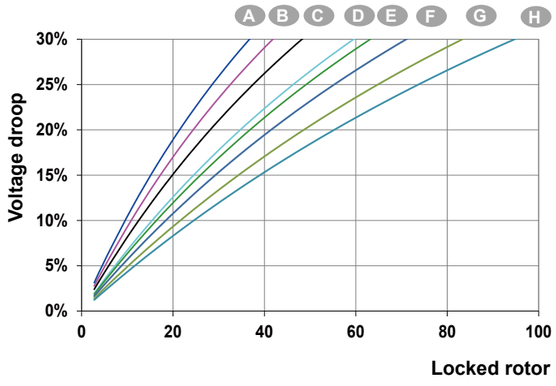
Duty / T° C	Continuous / 40 °C		Continuous / 40 °C	Stand-by / 40 °C	Stand-by / 27 °C	
Class / T° K	H / 125° K		F / 105° K	H / 150° K	H / 163° K	
Serie (SE)	230 V	η %	230 V	230 V	230V	η %
Parallel (PA)	115 V	η %	115 V	115 V	115 V	η %
TAL-A42-A-S	18	88.1	16.5	19	20	87.4
TAL-A42-B-S	20.5	88.1	18.5	21.5	22.5	87.4
TAL-A42-C-S	22.5	89	20.5	24	25	88.4
TAL-A42-D-S	25	90.6	23	26.5	27.5	90.2
TAL-A42-E-S	28	90.1	25.5	29.5	31	89.6
TAL-A42-F-S	31.5	90.3	28.5	33.5	34.5	89.8
TAL-A42-G-S	35	90.4	32	37	38.5	89.9
TAL-A42-H-S	42	90.5	38	44.5	46	90

Ratings / Efficiencies 60 Hz - 1800 R.P.M. - Winding M1

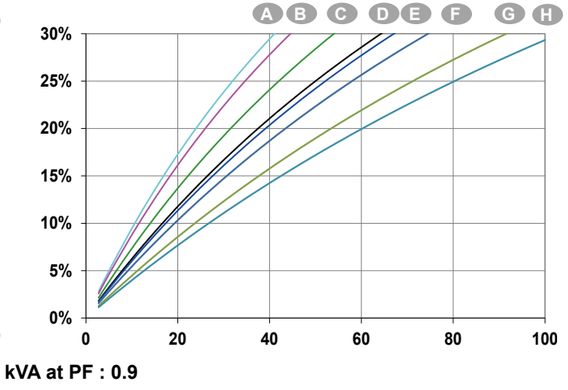
kVA / kW - P.F. = 1 (P.F. 0.8 : derating 15%**)**

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	
Serie (SE)	240 V	η %	240 V	240 V	240V	η %
Parallel (PA)	120 V	η %	120 V	120 V	120 V	η %
TAL-A42-A-S	23	88.3	21	24.5	25.5	87.7
TAL-A42-B-S	26	88.3	23.5	27.5	28.5	87.6
TAL-A42-C-S	29	89	26	30.5	32	88.5
TAL-A42-D-S	31.5	90.4	28.5	33.5	34.5	90
TAL-A42-E-S	36	89.8	33	38	39.5	89.2
TAL-A42-F-S	40	90	36.5	42.5	44	89.5
TAL-A42-G-S	47	90	43	50	51	89.5
TAL-A42-H-S	53	90.5	48	56	58	90

Starting motor 230V - 50Hz

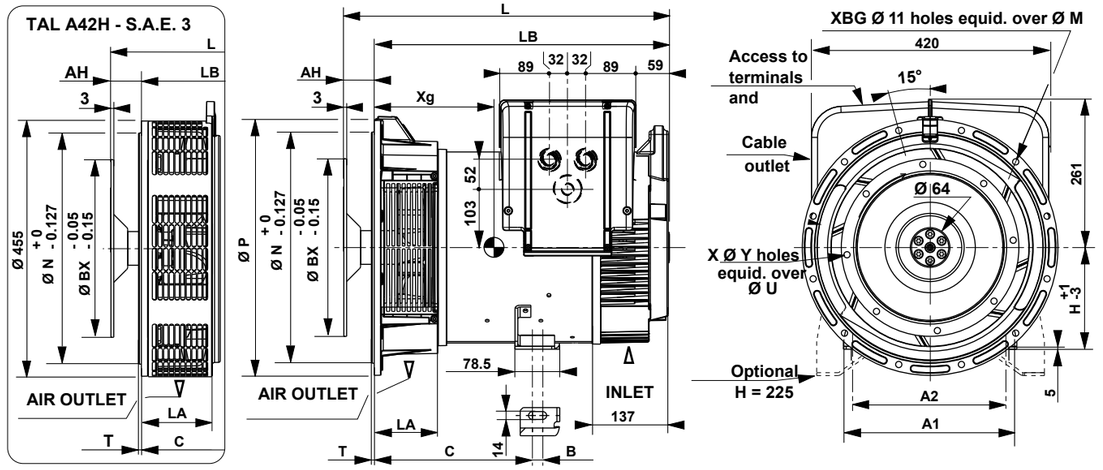


Starting motor 240V - 60Hz



TAL-A42 - S Dedicated single-phase

Single bearing general arrangement



Dimensions (mm) and weight (kg)				
Type	L maxi	LB	Xg	Weight (kg)
TAL-A42-A-S	565	503	237	117
TAL-A42-B-S	565	503	242	122
TAL-A42-C-S	565	503	252	133
TAL-A42-D-S	610	548	275	165
TAL-A42-E-S	610	548	275	165
TAL-A42-F-S	650	588	287	181
TAL-A42-G-S	650	588	295	186
TAL-A42-H-S	680	618	310	187

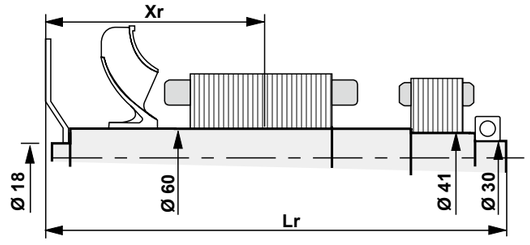
Shaft height (mm)		
	Standard	Option
H	180	225
Feet length		
C	260	299 (A, B, C) / 312.5
B	18	23
A1	307	400
A2	279	356

Coupling		
Flange	3	4
Flex plate		
11 1/2	x	-
10	x	x
8	-	x
7 1/2	-	x

Flange (mm)						
S.A.E.	P	N	M	XBG	T	LA
4	406	361.95	381	12	6	122
3	452	409.58	428.62	12	5	105.3
-	-	-	-	-	-	-

Flex plate (mm)					
S.A.E.	BX	U	X	Y	AH
11 1/2	352.42	333.38	8	11	39.6
10	314.32	295.28	8	11	53.8
8	263.52	244.48	6	11	62
7 1/2	241.3	222.25	8	9	30.2

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. 7 1/2				S.A.E. 8				S.A.E. 10				S.A.E. 11 1/2			
Type	Xr	Lr	M	J	Xr	Lr	M	J	Xr	Lr	M	J	Xr	Lr	M	J
TAL-A42-A-S	279	526.2	44.1	0.216	277	558	44.4	0.220	274	549.8	44.9	0.211	272	535.6	45.4	0.244
TAL-A42-B-S	282	526.2	46.1	0.229	280	558	46.4	0.233	277	549.8	46.9	0.224	274	535.6	47.4	0.257
TAL-A42-C-S	287	526.2	50.1	0.255	286	558	50.5	0.258	283	549.8	50.9	0.249	281	535.6	51.4	0.282
TAL-A42-D-S	310	571.2	60.2	0.312	308	603	60.6	0.316	306	594.8	61	0.307	304	580.6	61.5	0.340
TAL-A42-E-S	310	571.2	60.2	0.312	308	603	60.6	0.316	306	594.8	61	0.307	304	580.6	61.5	0.340
TAL-A42-F-S	325	611.2	66.2	0.344	323	643	66.5	0.348	321	634.8	66.9	0.339	319	620.6	67.4	0.372
TAL-A42-G-S	330	611.2	69.2	0.364	328	643	69.5	0.367	326	634.8	69.9	0.358	324	620.6	70.4	0.391
TAL-A42-H-S	344	641.2	77.5	0.414	342	673	77.8	0.418	340	664.8	78.2	0.430	338	650.6	78.8	0.442

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.**

TAL-A44 - Three-phase 85 to 200 kVA - 50 Hz / 102 to 250 kVA - 60 Hz

General characteristics - 6 & 12-wire

Insulation class	H
Winding pitch	2/3 (wind.6S - 6-wire / wind.6 -12-wire)
Number of wires	6 or 12
Protection	IP 23
Altitude	≤ 1000 m
Overspeed	2250 R.P.M.
Air flow 50 Hz (m³/s)	0.25*
Air flow 60 Hz (m³/s)	0.30**
AREP+ Short-circuit current = 2.7 In: 5 seconds (***)	

(*) 0.29 for L&M (**) 0.34 for L&M ***D350: 2.7In 10 seconds

Excitation system 6 wires	SHUNT	AREP+/PMG
AVR type	R120	R180
Excitation system 12 wires	SHUNT	AREP+/PMG
AVR type	R120	R180
Voltage regulation (*)	± 1 %	± 0.5 %
Total Harmonic distortion THD (**) in no-load	< 3.5 %	
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. - 6 & 12-wire

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:125K					F:105K					H:150K					H:163K				
Phase		3ph.				1ph.	3ph.				1ph.	3ph.				1ph.	3ph.				1ph.
Y		380V	400V	415V	440V*		380V	400V	415V	440V*		380V	400V	415V	440V*		380V	400V	415V	440V*	
Δ		220V	230V	240V		230V	220V	230V	240V		230V	220V	230V	240V		230V	220V	230V	240V		230V
YY		190V	200V	208V	220V*		190V	200V	208V	220V*		190V	200V	208V	220V*		190V	200V	208V	220V*	
ΔΔ						230V					230V					230V					230V
TAL-A44-C	kVA	81	**85**	85		42	73	**76.5**	76.5		38	85	**89**	89		44	88	**93.5**	93.5		46
	kW	64.8	***68.0***	68.0		*33.6*	58.4	***61.2***	61.2		*30.4*	68.0	***71.2***	71.2		*35.2*	70.4	***74.8***	74.8		*36.8*
TAL-A44-D	kVA	100	**100**	95		48	90	**90**	86		43	105	**105**	100		50.5	110	**110**	105		53
	kW	80.0	***80.0***	76.0		*38.4*	72.0	***72.0***	68.8		*34.4*	84.0	***84.0***	80.0		*40.4*	88.0	***88.0***	84.0		*42.4*
TAL-A44-E	kVA	119	**125**	119		60	107	**112.5**	107		54	124	**131**	124		63	130	**137.5**	130		66
	kW	95.2	***100.0***	95.2		*48.0*	85.6	***90.0***	85.6		*43.2*	99.2	***104.8***	99.2		*50.4*	104.0	***110.0***	104.0		*52.8*
TAL-A44-H	kVA	137.5	**137.5**	128		67	124	**125**	115		60	142	**142**	135		70.5	151.5	**151.5**	141		74
	kW	110.0	***110.0***	102.4		*53.6*	99.2	***100.0***	92.0		*48.0*	113.6	***113.6***	108.0		*56.4*	121.2	***121.2***	112.8		*59.2*
TAL-A44-J	kVA	143	**150**	143		73	129	**135**	129		66	150	**158**	150		77	157	**165**	157		80
	kW	114.4	***120.0***	114.4		*58.4*	103.2	***108.0***	103.2		*52.8*	120.0	***126.4***	120.0		*61.6*	125.6	***132.0***	125.6		*64.0*
TAL-A44-K	kVA	161.5	**170**	161.5		80	145	**153**	145		72	170	**179**	170		84	178	**187.5**	178		88
	kW	129.2	***136.0***	129.2		*64.0*	116.0	***122.4***	116.0		*57.6*	136.0	***143.2***	136.0		*67.2*	142.4	***150.0***	142.4		*70.4*
TAL-A44-L	kVA	180	**180**	180	171	90	164	**164**	164	156	82	191	**191**	191	181	95	200	**200**	200	188	99
	kW	144.0	***144.0***	144	136.8	*72.0*	131.2	***131.2***	131.2	124.8	*65.6*	152.8	***152.8***	152.8	144.8	*76.0*	160.0	***160.0***	160.0	150.4	*79.2*
TAL-A44-M	kVA	192	**200**	200	192	100	175	**182**	182	175	91	204	**212**	212	204	106	211	**220**	220	211	110
	kW	153.6	***160.0***	160.0	153.6	*80.0*	140.0	***145.6***	145.6	140.0	*72.8*	163.2	***169.6***	169.6	163.2	*84.8*	168.8	***176.0***	176.0	168.8	*88.0*

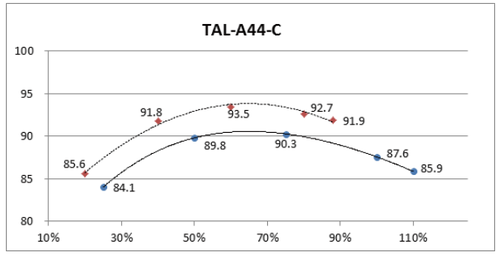
* L,M Only

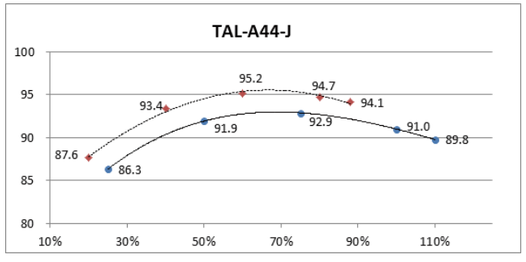
Ratings 60 Hz - 1800 R.P.M. - 6 & 12-wire

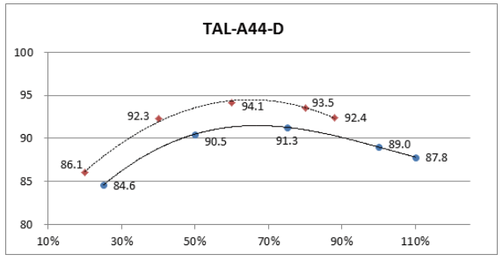
kVA / kW - P.F. = 0.8

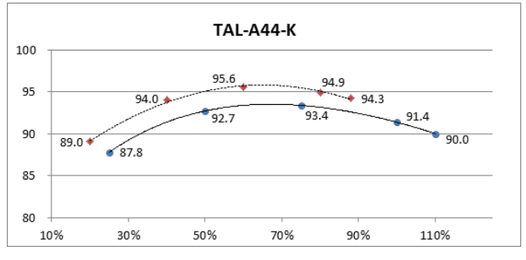
Duty / T° C		Continuous/ 40°C					Continuous/ 40°C					Stand-by/ 40°C					Stand-by/ 27°C				
Class / T° K		H:125K					F:105K					H:150K					H:163K				
Phase		3ph.				1ph.	3ph.				1ph.	3ph.				1ph.	3ph.				1ph.
Y		380V	416V	440V	480V		380V	416V	440V	480V		380V	416V	440V	480V		380V	416V	440V	480V	
Δ		220V	240V	254V	277V		220V	240V	254V	277V		220V	240V	254V	277V		220V	240V	254V	277V	
YY		190V	208V	220V	240V		190V	208V	220V	240V		190V	208V	220V	240V		190V	208V	220V	240V	
ΔΔ						240V					240V					240V					240V
TAL-A44-C	kVA	81	88	93	**102**	52	72.5	79.5	83.5	**92**	47	85	93	97	**107**	54.6	89	97	102	**112**	57
	kW	*64.8*	*70.4*	*74.4*	*81.6*	*41.6*	*58.0*	*63.6*	*66.8*	*73.6*	*37.6*	*68.0*	*74.4*	*77.6*	*85.6*	*43.7*	*71.2*	*77.6*	*81.6*	*89.6*	*45.6*
TAL-A44-D	kVA	95	104	109	**120**	65	85	93.5	98	**108**	58.5	100	109	115	**126**	68	104	114	120	**132**	72
	kW	*76.0*	*83.2*	*87.2*	*96.0*	*52.0*	*68.0*	*74.8*	*78.4*	*86.4*	*46.8*	*80.0*	*87.2*	*92.0*	*100.8*	*54.4*	*83.2*	*91.2*	*96.0*	*105.6*	*57.6*
TAL-A44-E	kVA	119	130	137	**150**	76	107	117	123	**135**	68.4	124	136	143	**158**	80	130	143	150	**165**	83
	kW	*95.2*	*104.0*	*109.6*	*120.0*	*60.8*	*85.6*	*93.6*	*98.4*	*108.0*	*54.7*	*99.2*	*108.8*	*114.4*	*126.4*	*64.0*	*104.0*	*114.4*	*120.0*	*132.0*	*66.4*
TAL-A44-H	kVA	130	143	150	**165**	81	117	129	135	**150**	73	137	150	158	**173**	85	143	157	165	**182**	89
	kW	*104.0*	*114.4*	*120.0*	*132.0*	*64.8*	*93.6*	*103.2*	*108.0*	*120.0*	*58.4*	*109.6*	*120.0*	*126.4*	*138.4*	*68.0*	*114.4*	*125.6*	*132.0*	*145.6*	*71.2*
TAL-A44-J	kVA	142	156	164	**180**	95	128	140	147	**162**	85.5	149	164	172	**189**	100	156	171	180	**198**	105
	kW	*113.6*	*124.8*	*131.2*	*144.0*	*76.0*	*102.4*	*112.0*	*117.6*	*129.6*	*68.4*	*119.2*	*131.2*	*137.6*	*151.2*	*80.0*	*124.8*	*136.8*	*144.0*	*158.4*	*84.0*
TAL-A44-K	kVA	161	177	186	**204**	105	145	159	167	**184**	94.5	169	185	195	**214**	110	177	194	204	**224**	115
	kW	*128.8*	*141.6*	*148.8*	*163.2*	*84.0*	*116.0*	*127.2*	*133.6*	*147.2*	*75.6*	*135.2*	*148.0*	*156.0*	*171.2*	*88.0*	*141.6*	*155.2*	*163.2*	*179.2*	*92.0*
TAL-A44-L	kVA	180	195	210	**225**	113	164	177	191	**205**	102	191	207	223	**239**	119	200	215	231	**250**	124
	kW	*144.0*	*156.0*	*168.0*	*180.0*	*90.4*	*131.2*	*141.6*	*152.8*	*164.0*	*81.6*	*152.8*	*165.6*	*178.4*	*191.2*	*95.2*	*160.0*	*172.0*	*184.8*	*200.0*	*99.2*
TAL-A44-M	kVA	200	215	230	**250**	125	182	196	209	**228**	114	212	228	244	**265**	133	220	237	253	**275**	136
	kW	*160.0*	*172.0*	*184.0*	*200.0*	*100.0*	*145.6*	*156.8*	*167.2*	*182.4*	*91.2*	*169.6*	*182.4*	*195.2*	*212.0*	*106.4*	*176.0*	*189.6*	*202.4*	*220.0*	*108.8*

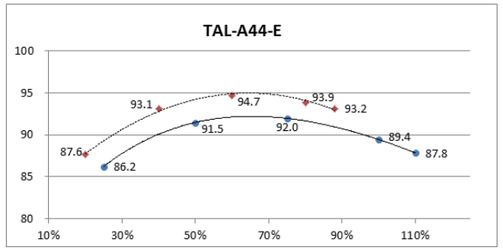
Efficiencies 400 V - 50 Hz (— P.F.: 0.8) (..... P.F.: 1) - 6 & 12-wire

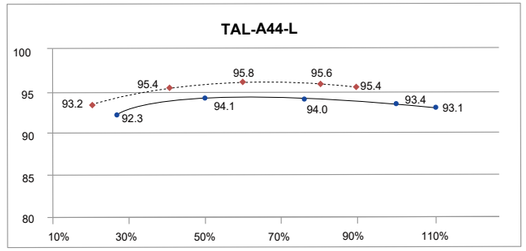


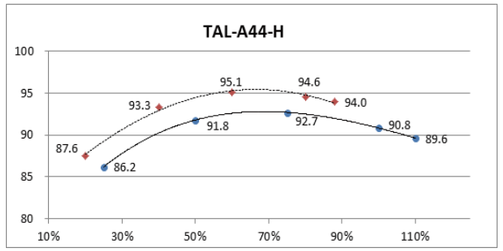


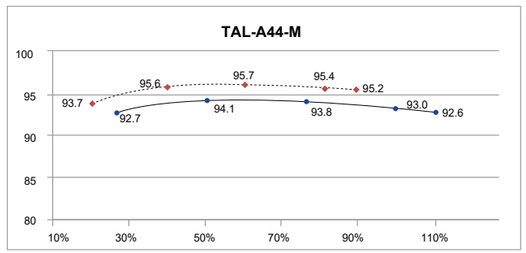






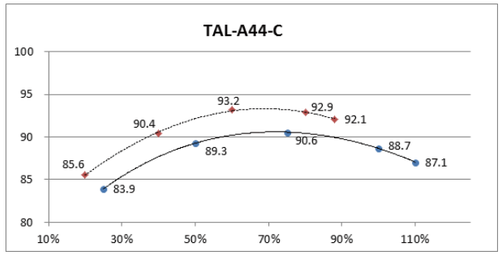


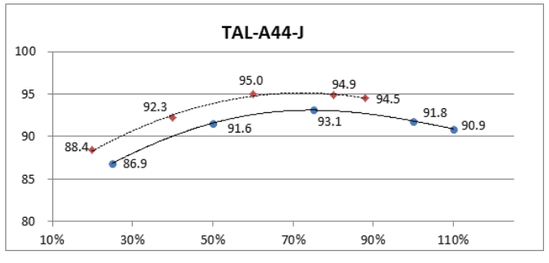


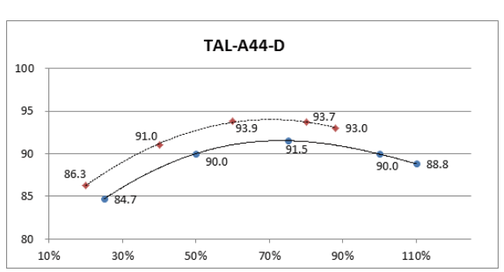


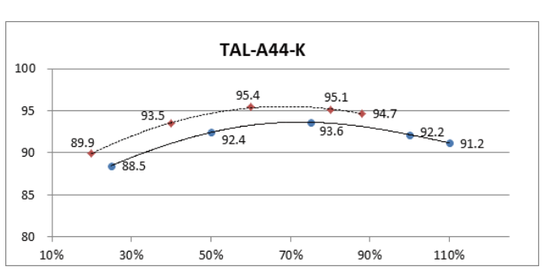
Low Voltage Alternators - 4 pole
TAL-A44 - Three-phase 85 to 200 kVA - 50 Hz / 102 to 250 kVA - 60 Hz

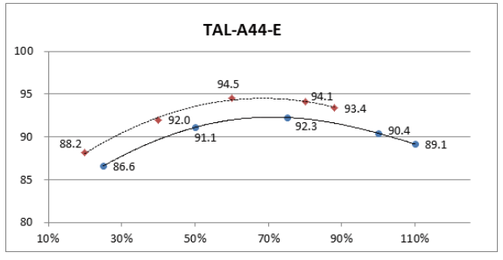
Efficiencies 480 V - 60 Hz (— P.F.: 0.8) (..... P.F.: 1) - 6 & 12-wire

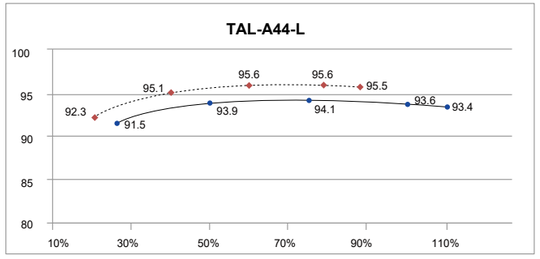


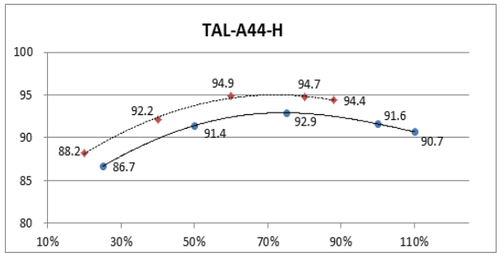


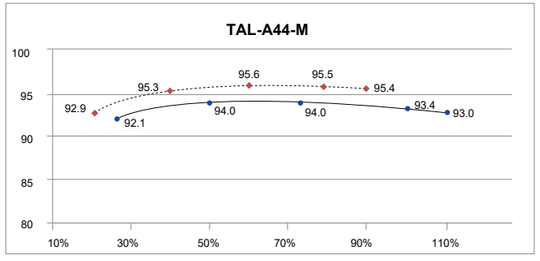












Reactances (%). Time constants (ms) - Class H / 400 V - 6 & 12-wire

		TAL-A44-C	TAL-A44-D	TAL-A44-E	TAL-A44-H	TAL-A44-J	TAL-A44-K	TAL-A44-L	TAL-A44-M
Kcc	Short-circuit ratio	0.50	0.59	0.4	0.56	0.61	0.37	0.37	0.33
Xd	Direct-axis synchro.reactance unsaturated	321	303	365	307	290	373	373	381
Xq	Quadrature-axis synchro. rectance unsaturated	193	182	219	184	174	224	175	194
T'do	No-load transient time constant	1747	1796	2211	1952	2013	2077	2025	2025
X'd	Direct-axis transient reactance saturated	17.7	17.2	16.4	16.1	15.0	16.6	16.9	18.8
T'd	Short-circuit transient time constant	100	100	100	100	100	100	100	100
X"d	Direct-axis subtransient reactance saturated	10.6	10.3	9.8	9.6	9.0	9.9	10.1	11.3
T"d	Subtransient time constant	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
X"q	Quadrature-axis subtransient reactance saturated	21.0	20.4	19.4	19.1	17.8	19.7	19.7	21.9
Xo	Zero sequence reactance saturated	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.78
X2	Negative sequence reactance saturated	15.8	15.4	14.6	14.4	13.4	14.8	14.95	16.62
Ta	Armature time constant	15	15	15	15	15	15	15	15

Other class H/400V data		TAL-A44-C	TAL-A44-D	TAL-A44-E	TAL-A44-H	TAL-A44-J	TAL-A44-K	TAL-A44-L	TAL-A44-M
ms	Response time (△U=20%)	500	500	500	500	500	500	500	500
W	No-load losses	1890	2213	2503	2436	2533	2954	2665	2665
W	Heat dissipation	9625	9888	11256	11145	11868	12796	10134	11895

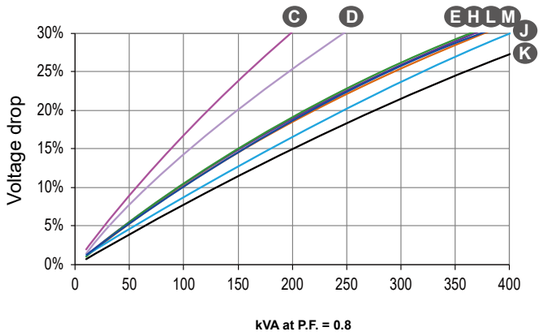
Low Voltage Alternators - 4 pole
TAL-A44 - Three-phase 85 to 200 kVA - 50 Hz / 102 to 250 kVA - 60 Hz

Reactances (%). Time constants (ms) - Class H / 480 V - 6 & 12-wire

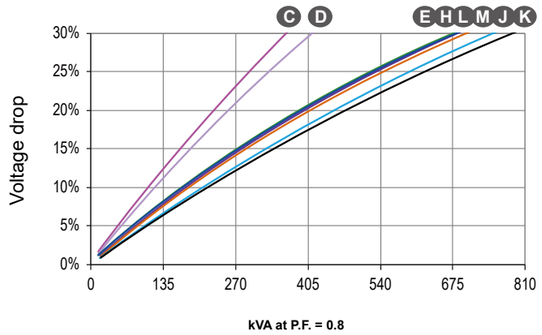
		TAL-A44-C	TAL-A44-D	TAL-A44-E	TAL-A44-H	TAL-A44-J	TAL-A44-K	TAL-A44-L	TAL-A44-M
Kcc	Short-circuit ratio	0.50	0.59	0.4	0.56	0.61	0.37	0.36	0.32
Xd	Direct-axis synchro.reactance unsaturated	321	303	365	307	290	373	358	397
Xq	Quadrature-axis synchro. rectance unsaturated	193	182	219	184	174	224	182	202
T'do	No-load transient time constant	1747	1796	2211	1952	2013	2077	2025	2025
X'd	Direct-axis transient reactance saturated	17.7	17.2	16.4	16.1	15.0	16.6	17.6	19.6
T'd	Short-circuit transient time constant	100	100	100	100	100	100	100	100
X"d	Direct-axis subtransient reactance saturated	10.6	10.3	9.8	9.6	9.0	9.9	10.6	11.7
T"d	Subtransient time constant	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
X"q	Quadrature-axis subtransient reactance saturated	21.0	20.4	19.4	19.1	17.8	19.7	20.5	22.8
Xo	Zero sequence reactance saturated	0.6	0.6	0.6	0.6	0.6	0.7	0.73	0.81
X2	Negative sequence reactance saturated	15.8	15.4	14.6	14.4	13.4	14.8	15.59	17.32
Ta	Armature time constant	15	15	15	15	15	15	15	15

Other class H/480V data		TAL-A44-C	TAL-A44-D	TAL-A44-E	TAL-A44-H	TAL-A44-J	TAL-A44-K	TAL-A44-L	TAL-A44-M
ms	Response time (△U=20%)	500	500	500	500	500	500	500	500
W	No-load losses	2722	3187	3604	3508	3647	4253	3923	3923
W	Heat dissipation	10395	10667	12217	12105	12863	13807	12145	14130

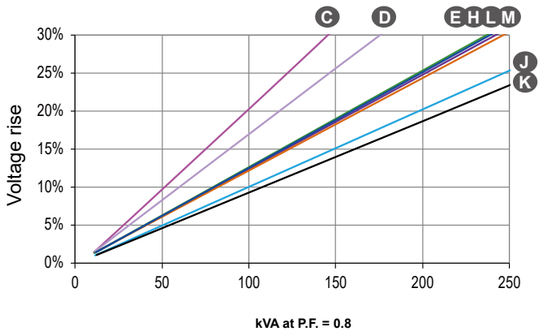
Transient voltage variation 400V - 50 Hz - 12-wire



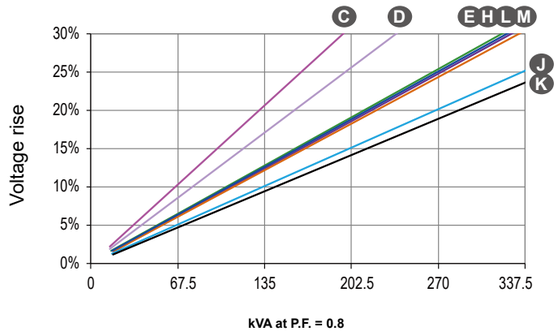
Phase loading (SHUNT) - kVA at P.F. = 0.8



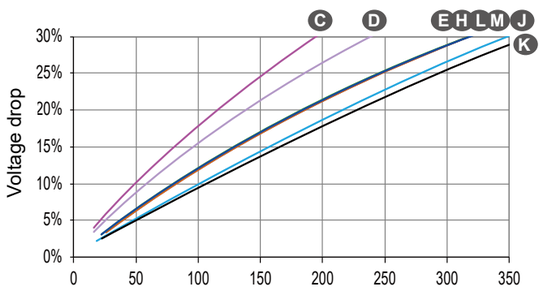
Phase loading (AREP+/PMG) - kVA at P.F. = 0.8



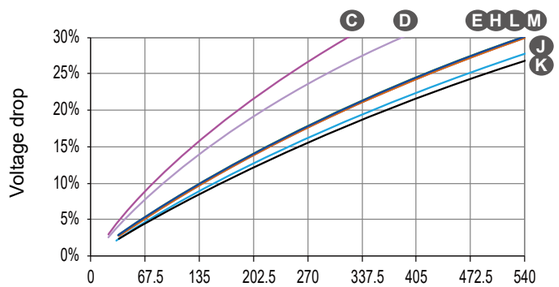
Load shedding (SHUNT) - kVA at P.F. = 0.8



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



**Motor starting (SHUNT)
- locked rotor kVA at P.F. = 0.6**

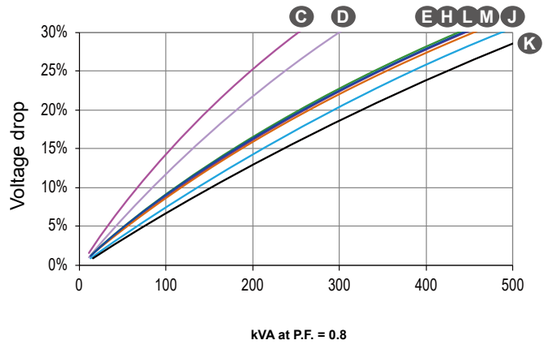


**Motor starting (AREP+/PMG)
- locked rotor kVA at P.F. = 0.6**

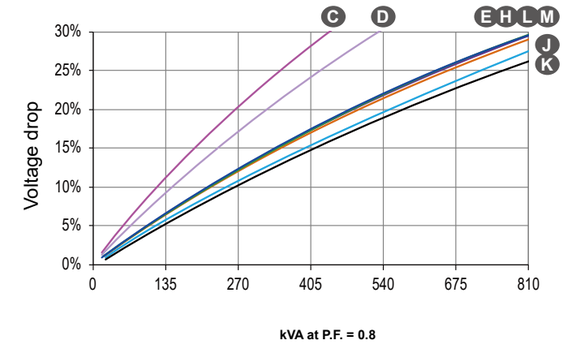
1) For a starting P.F. other than 0.6, the starting kVA must be multiplied by K = Sine P.F. / 0.8
2) For voltages other than 400V (Y), 230V (Δ) at 50 Hz, then kVA must be multiplied by $(400/U)^2$ or $(230/U)^2$.

Low Voltage Alternators - 4 pole
TAL-A44 - Three-phase 85 to 200 kVA - 50 Hz / 102 to 250 kVA - 60 Hz

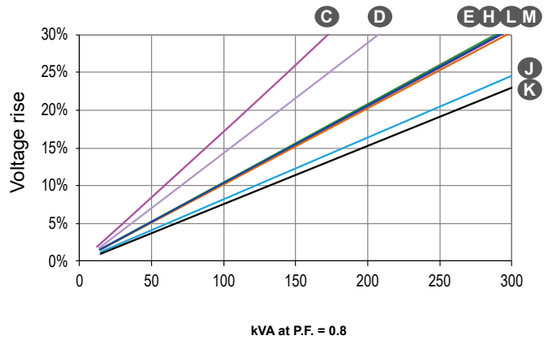
Transient voltage variation 480V - 60 Hz - 6-wire



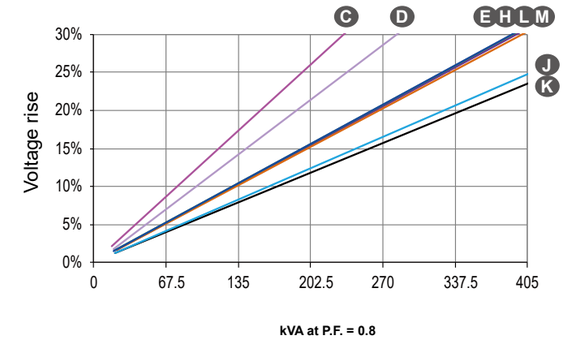
Phase loading (SHUNT) - kVA at P.F. = 0.8



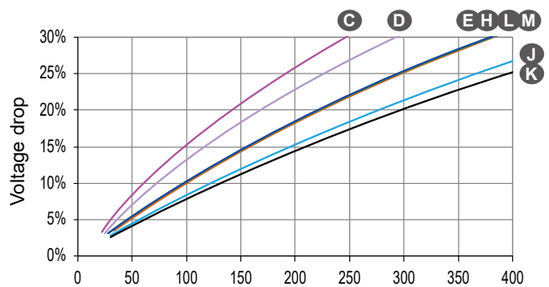
Phase loading (AREP+/PMG) - kVA at P.F. = 0.8



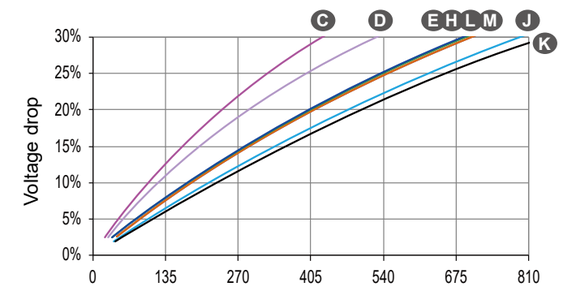
Load shedding (SHUNT) - kVA at P.F. = 0.8



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



**Motor starting (SHUNT)
- locked rotor kVA at P.F. = 0.6**

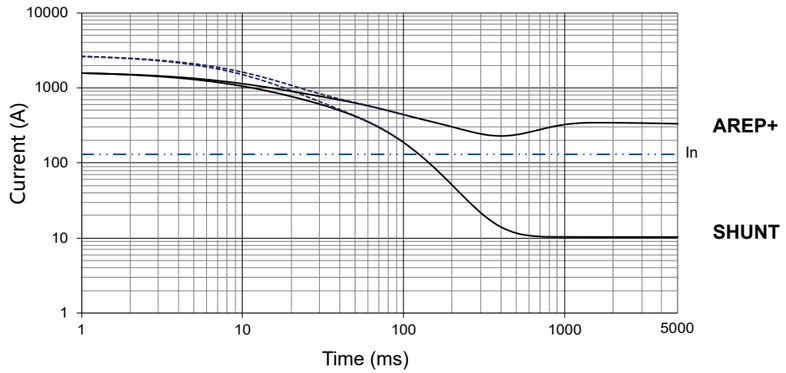


**Motor starting (AREP+/PMG)
- locked rotor kVA at P.F. = 0.6**

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 $(240/U)^2$.

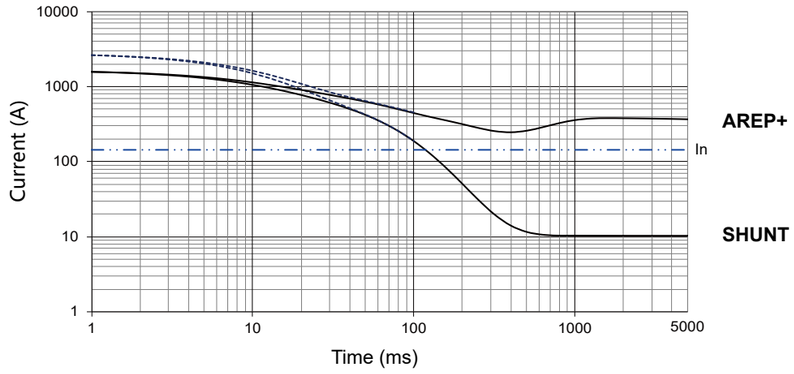
TAL-A44-C

Symmetrical --------
Asymmetrical - - -



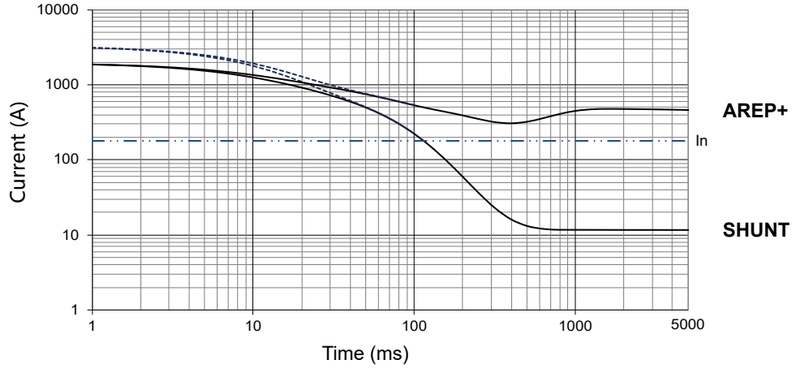
TAL-A44-D

Symmetrical --------
Asymmetrical - - -



TAL-A44-E

Symmetrical --------
Asymmetrical - - -

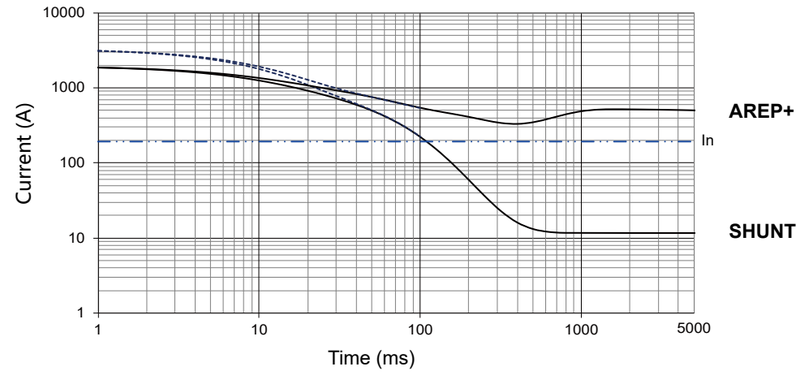


Influence due to connection
For (Δ) connection, use the following multiplication factor:
- Current value x 1.732.

Low Voltage Alternators - 4 pole
TAL-A44 - Three-phase 85 to 200 kVA - 50 Hz / 102 to 250 kVA - 60 Hz

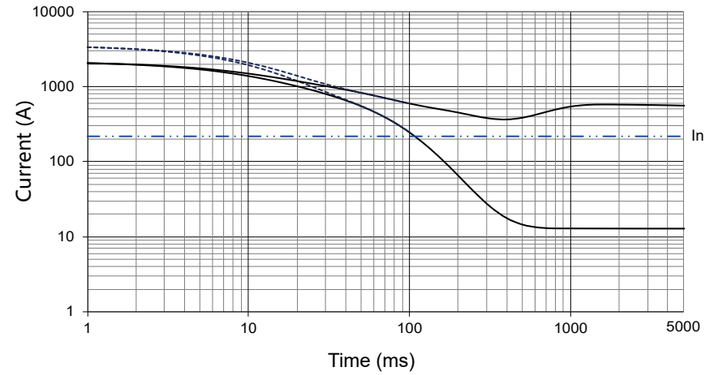
TAL-A44-H

Symmetrical --------
Asymmetrical - - -



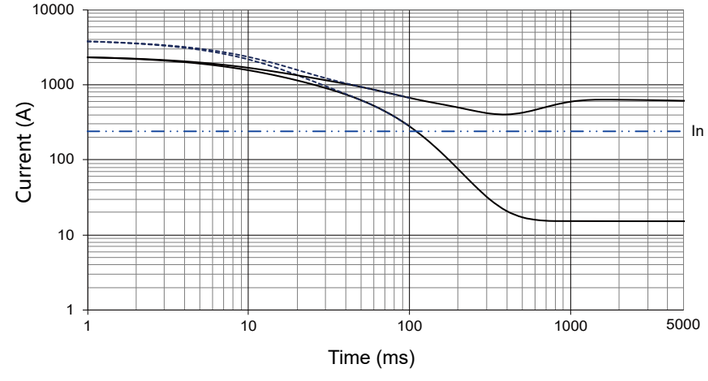
TAL-A44-J

Symmetrical --------
Asymmetrical - - -



TAL-A44-K

Symmetrical --------
Asymmetrical - - -



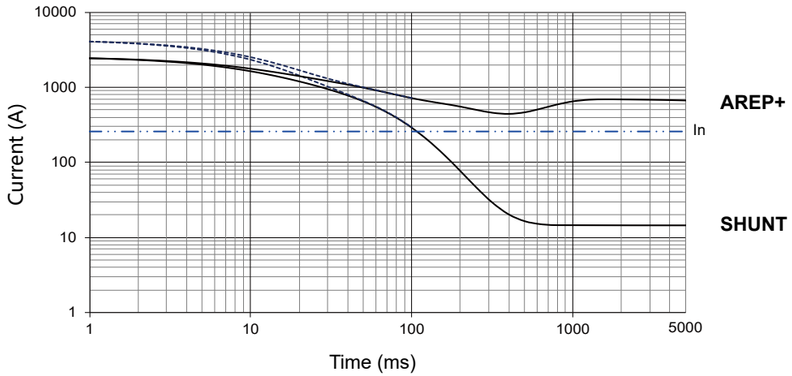
Influence due to short-circuit
Curves are based on a three-phase short-circuit.
For other types of short-circuit,
use the following multiplication factors.

	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	

TAL-A44 - Three-phase 85 to 200 kVA - 50 Hz / 102 to 250 kVA - 60 Hz

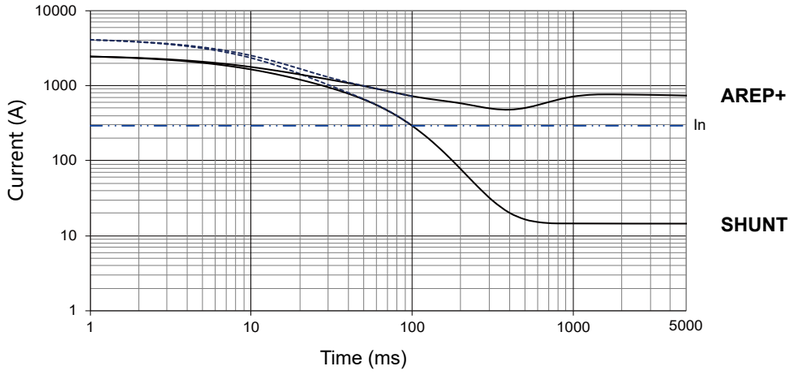
TAL-A44-L

Symmetrical --------
Asymmetrical - - -



TAL-A44-M

Symmetrical --------
Asymmetrical - - -



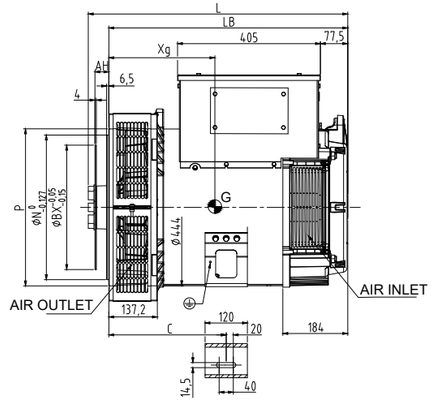
Influence due to connection
For (Δ) connection, use the following multiplication factor:
- Current value x 1.732.

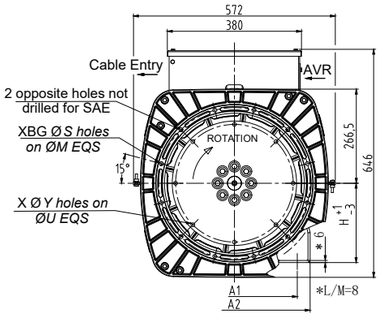
Influence due to short-circuit
Curves are based on a three-phase short-circuit.
For other types of short-circuit,
use the following multiplication factors.

	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	

TAL-A44 - Three-phase 85 to 200 kVA - 50 Hz / 102 to 250 kVA - 60 Hz

Single bearing general arrangement - 4, 6 & 12-wire





Dimensions (mm) and weight (kg)				
Type	L	LB	Xg	Weight/kg
TAL-A44-C	735	677	301	267
TAL-A44-D	735	677	313	295
TAL-A44-E	735	677	329	334
TAL-A44-H	805	747	353	368
TAL-A44-J	805	747	365	398
TAL-A44-K	847	787	383	433
TAL-A44-L	930	872	416	554
TAL-A44-M	930	872	416	554

Shaft Height(mm)			
	standard	option	
H	225(*)	270(**)	280(**)
Feet length			
C	332.5	405	429
A1	356	406	457
A2	474	474	541

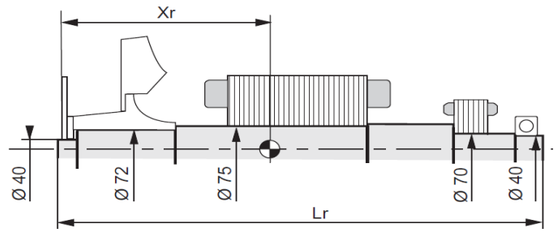
(*) not available for L and M
(**) only for L and M

Coupling			
Flange	**1**	**2**	**3**
Flex plate			
11 1/2	x	x	x
10	x	x	x
10	x	x	x
8	-	-	x

Flange (mm)					
S.A.E.	P	N	M	S	XBG
3	445	409.575	428.62	11	12
2	485	447.675	466.725	11	12
1	560.5(*)	511.18	530.22	12	10

Flex plate (mm)					
S.A.E.	BX	U	X	Y	AH
11 1/2	352.42	333.38	8	11	39.6
10	314.32	295.28	8	11	53.8

Torsional analysis data



Centre of gravity: Xr (mm), Rotor length: Lr (mm), Weight: M (kg), Moment of inertia: J (kgm²): (4J = MD²)

Type	Flex Plate SAE 10				Flex Plate SAE 11 1/2			
	Xr	Lr	M	J	Xr	Lr	M	J
TAL-A44-C	341	704	113	0.805	308	704	113	0.821
TAL-A44-D	354	704	120	0.867	325	704	120	0.883
TAL-A44-E	372	729	139	1.026	359	729	138	1.041
TAL-A44-H	399	774	153	1.141	389	774	153	1.157
TAL-A44-J	410	774	165	1.248	400	774	164	1.264
TAL-A44-K	429	814	180	1.383	420	814	180	1.399
TAL-A44-L	465	914	224.1	1.753	450.7	899	223.7	1.769
TAL-A44-M	465	914	224.1	1.753	450.7	899	223.7	1.769

NOTE : Dimensions are for information only and may be subject to modifications. Contractual 2D/3D drawings can be downloaded from the Leroy-Somer site. The torsional analysis of the transmission is imperative. All values are available upon request.
*Please contact us for the double bearing dimension

Nidec

All for dreams

www.nidecpower.com

Connect with us at:

© 2025 Moteurs Leroy-Somer SAS. The information contained in this brochure is for guidance only and does not form part of any contract. The accuracy cannot be guaranteed as Nidec have an ongoing process of development and reserve the right to change the specification of their products without notice.

Moteurs Leroy-Somer SAS. Siège : Bd Marcellin Leroy, CS 10015, 16915 Angoulême Cedex 9, France.
Share Capital: 32,239,235 €, RCS Angoulême 338 567 258.

5224 en- 2025.01 / f