

## TAL 046 - TAL 047 - TAL 049

### Low Voltage Alternators - 4 pole

180 to 1000 kVA - 50 Hz / 225 to 1250 kVA - 60 Hz  
Electrical and mechanical data

**LEROY-SOMER**<sup>™</sup>

***Nidec***  
All for dreams

# TAL 046 - TAL 047 - TAL 049

## 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 derivative.

The range is designed, manufactured and marketed in an ISO 9001 and 14001 environment.

## Electrical design

- Class H insulation
- Low voltage winding:
  - Three phase 50 Hz: 380V - 400V - 415V - 440V / 220V - 230V - 240V
  - 60 Hz: 380V - 416V - 440V - 480V / 220V - 208V - 240V
- Single phase 50 Hz: 230V (TAL 046 only)
- 60 Hz: 240V (TAL 046 only)
- 6 terminal plate (6 wires) or suitable for 12 wires 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
- Direction of rotation clockwise

## 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

- The alternators are IP 23
- Standard winding protection for non-harsh environments with relative humidity  $\leq 95\%$

## Available options

- 12 wires connection
- AREP & PMG
- ULc/us
- Customized painting (machine not painted as standard)
- Space heaters
- Droop kit for alternator paralleling
- Stator sensors
- Winding 8 for voltage 380V - 416 V / 60 Hz
- Winding protection for harsh environments and relative humidity greater than 95% (system 2 - 4): possible derating ratio according to the following table



Type	50 Hz			60 Hz
	380 V	400 V	415 V	All voltages
TAL 046	1 except 0.97 for TAL 046 H	1 except 0.97 for TAL 046 H	1 except 0.97 for TAL 046 H	1 except 0.97 for TAL 046 H
TAL 047	1 except 0.97 for TAL 047 F	1 except 0.97 for TAL 047 F	1 except 0.97 for TAL 047 F	1 except 0.97 for TAL 047 F
TAL 049	1	1	1	1

# TAL 046 - 180 to 365 kVA - 50 Hz / 225 to 438 kVA - 60 Hz

## General characteristics

Insulation class	H	Excitation system 6 wire	SHUNT	AREP / PMG
Winding pitch	2/3	AVR type	R150	R180
Number of wires	6 (12 option)	Excitation system 12 wire (option)	SHUNT	AREP / PMG
Protection	IP 23	AVR type	R250	R180
Altitude	≤ 1000 m	Voltage regulation (*)	± 1 %	
Overspeed	2250 R.P.M.	Total Harmonic Distortion THD (**) in no-load	< 2.5 %	
Air flow (m³/s)	0.48	Total Harmonic Distortion THD (**) in linear load	< 5 %	
Air flow (m³/s)	0.58	Waveform: NEMA = TIF (**)	< 50	
AREP Short-circuit current = 2.7 In: 5 second		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.			1 ph.	3 ph.			1 ph.	3 ph.			1 ph.	3 ph.			1 ph.				
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 (*)	200V			220V	200V			220V	200V			220V	200V			220V				
ΔΔ (*)				230V				230V				230V				230V				
<b>TAL 046 A</b> kVA	180	<b>180</b>	180	171	108	164	<b>164</b>	164	156	98	191	<b>191</b>	191	181	114	200	<b>200</b>	200	188	119
kW	144	144	144	137	86	131	131	131	125	78	153	153	153	145	91	160	160	160	150	95
<b>TAL 046 B</b> kVA	200	<b>200</b>	200	190	120	182	<b>182</b>	182	173	109	212	<b>212</b>	212	201	127	220	<b>220</b>	220	209	132
kW	160	160	160	152	96	146	146	146	138	87	170	170	170	161	102	176	176	176	167	106
<b>TAL 046 C</b> kVA	230	<b>230</b>	230	219	138	209	<b>209</b>	209	199	126	244	<b>244</b>	244	232	146	253	<b>253</b>	253	241	152
kW	184	184	184	175	110	167	167	167	159	101	195	195	195	186	117	202	202	202	193	122
<b>TAL 046 D</b> kVA	250	<b>250</b>	250	238	150	228	<b>228</b>	228	217	137	265	<b>265</b>	265	252	159	275	<b>275</b>	275	262	165
kW	200	200	200	190	120	182	182	182	174	110	212	212	212	202	127	220	220	220	210	132
<b>TAL 046 E</b> kVA	275	<b>275</b>	275	261	165	250	<b>250</b>	250	238	150	292	<b>292</b>	292	277	175	303	<b>303</b>	303	287	182
kW	220	220	220	209	132	200	200	200	190	120	234	234	234	222	140	242	242	242	230	146
<b>TAL 046 F</b> kVA	300	<b>300</b>	300	285	180	273	<b>273</b>	273	259	164	318	<b>318</b>	318	302	191	330	<b>330</b>	330	314	198
kW	240	240	240	228	144	218	218	218	207	131	254	254	254	242	153	264	264	264	251	158
<b>TAL 046 G</b> kVA	325	<b>325</b>	325	309	195	296	<b>296</b>	296	281	177	345	<b>345</b>	345	328	207	360	<b>360</b>	360	340	215
kW	260	260	260	247	156	237	237	237	225	142	276	276	276	262	166	288	288	288	272	172
<b>TAL 046 H</b> kVA	365	<b>365</b>	365	347	210	332	<b>332</b>	332	316	191	387	<b>387</b>	387	368	223	400	<b>400</b>	400	382	231
kW	292	292	292	278	168	266	266	266	253	153	310	310	310	294	178	320	320	320	306	185

(\*) 12 wires option

## Ratings 60 Hz - 1800 R.P.M.

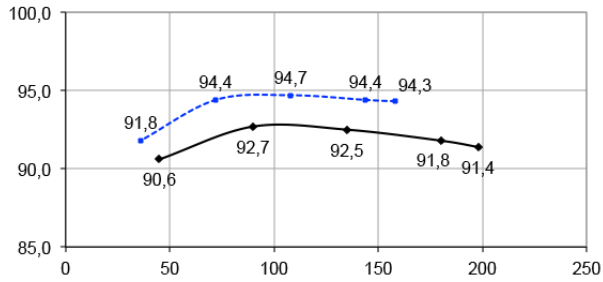
kVA / kW - P.F. = 0.8

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.			1 ph.	3 ph.			1 ph.	3 ph.			1 ph.	3 ph.			1 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
ΔΔ (*)				240V				240V				240V				240V				
<b>TAL 046 A</b> kVA	180	195	210	<b>225</b>	120	164	177	191	<b>205</b>	109	191	207	223	<b>239</b>	127	200	215	230	<b>250</b>	132
kW	144	156	168	180	96	131	142	153	164	87	153	166	178	191	102	160	172	184	200	106
<b>TAL 046 B</b> kVA	200	215	230	<b>250</b>	132	182	196	209	<b>228</b>	120	212	228	244	<b>265</b>	140	220	237	253	<b>275</b>	145
kW	160	172	184	200	106	146	157	167	182	96	170	182	195	212	112	176	190	202	220	116
<b>TAL 046 C</b> kVA	226	250	262	<b>288</b>	152	206	228	238	<b>262</b>	138	240	265	278	<b>305</b>	161	250	275	288	<b>316</b>	167
kW	181	200	210	230	122	165	182	190	210	110	192	212	222	244	129	200	220	230	253	134
<b>TAL 046 D</b> kVA	245	265	280	<b>313</b>	165	223	241	255	<b>285</b>	150	260	281	297	<b>332</b>	175	270	292	308	<b>344</b>	182
kW	196	212	224	250	132	178	193	204	228	120	208	225	238	266	140	216	234	246	275	146
<b>TAL 046 E</b> kVA	275	300	315	<b>344</b>	182	250	273	287	<b>313</b>	166	292	318	334	<b>365</b>	193	303	330	347	<b>378</b>	200
kW	220	240	252	275	146	200	218	230	250	133	234	254	267	292	154	242	264	278	302	160
<b>TAL 046 F</b> kVA	290	315	340	<b>360</b>	200	264	287	309	<b>328</b>	182	307	334	360	<b>382</b>	212	320	347	374	<b>400</b>	220
kW	232	252	272	288	160	211	230	247	262	146	246	267	288	306	170	256	278	299	320	176
<b>TAL 046 G</b> kVA	315	345	365	<b>406</b>	215	287	314	332	<b>369</b>	196	334	366	387	<b>430</b>	228	347	380	402	<b>447</b>	237
kW	252	276	292	325	172	230	251	266	295	157	267	293	310	344	182	278	304	322	358	190
<b>TAL 046 H</b> kVA	345	375	400	<b>438</b>	231	314	341	364	<b>399</b>	210	366	398	424	<b>464</b>	245	380	413	440	<b>480</b>	254
kW	276	300	320	350	185	251	273	291	319	168	293	318	339	371	196	304	330	352	384	203

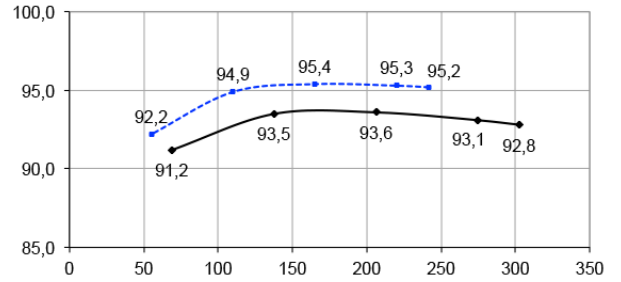
(\*) 12 wires option

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

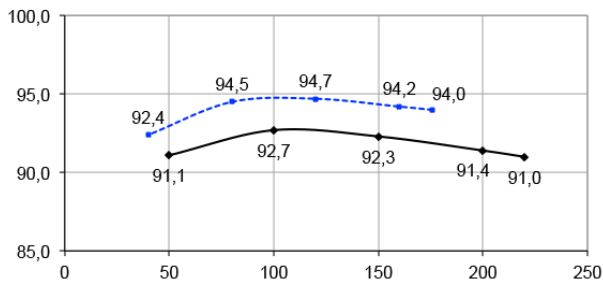
TAL 046 A



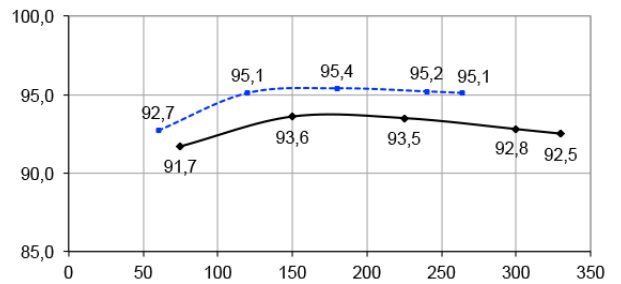
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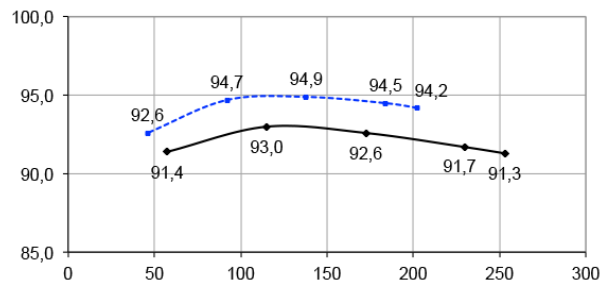
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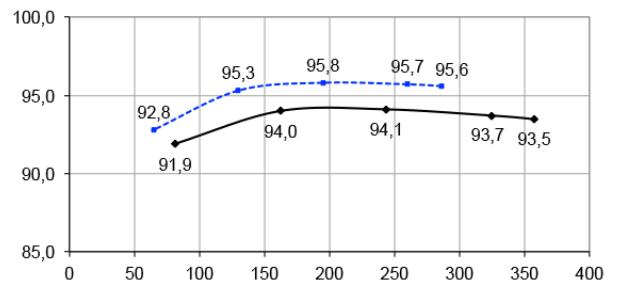
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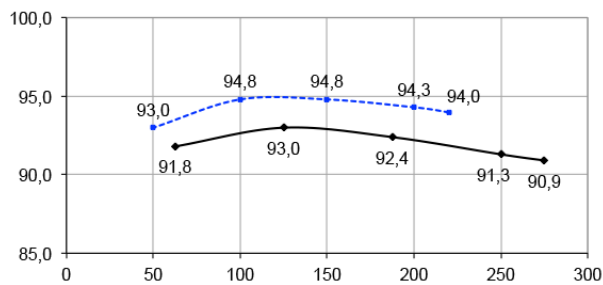
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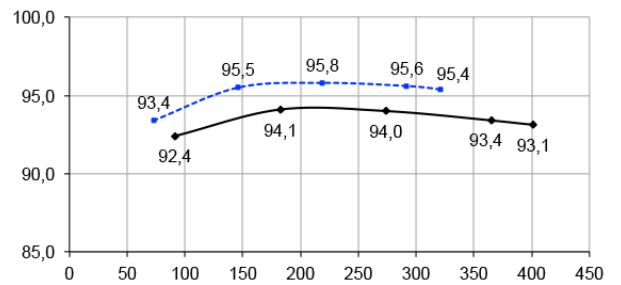
TAL 046 G



TAL 046 D



TAL 046 H



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

	A	B	C	D	E	F	G	H
<b>Kcc</b> Short-circuit ratio	0.39	0.35	0.37	0.34	0.49	0.45	0.48	0.43
<b>Xd</b> Direct-axis synchro. reactance unsaturated	313	348	340	370	278	303	270	303
<b>Xq</b> Quadrature-axis synchro. reactance unsaturated	159	177	173	188	142	154	137	154
<b>T'do</b> No-load transient time constant	1956	1956	1983	1983	2049	2049	2093	2093
<b>X'd</b> Direct-axis transient reactance saturated	16	17.7	17.1	18.6	13.5	14.8	12.9	14.5
<b>T'd</b> Short-circuit transient time constant	100	100	100	100	100	100	100	100
<b>X''d</b> Direct-axis subtransient reactance saturated	12.8	14.2	13.7	14.9	10.8	11.8	10.3	11.6
<b>T''d</b> Subtransient time constant	10	10	10	10	10	10	10	10
<b>X''q</b> Quadrature-axis subtransient reactance saturated	16.4	18.2	17.4	18.9	13.5	14.7	12.6	14.2
<b>Xo</b> Zero sequence reactance unsaturated	0.6	0.7	0.7	0.7	0.5	0.6	0.5	0.6
<b>X2</b> Negative sequence reactance saturated	14.6	16.2	15.5	16.9	12.1	13.3	11.4	12.9
<b>Ta</b> Armature time constant	15	15	15	15	15	15	15	15

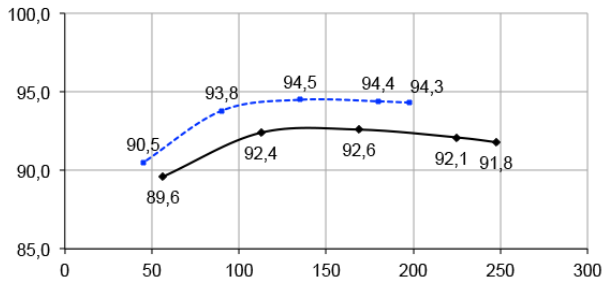
**Other class H / 400 V data**

<b>io (A)</b> No-load excitation current SHUNT/AREP	0.95	0.95	1.01	1.01	1.14	1.14	1.06	1.06
<b>ic (A)</b> On-load excitation current SHUNT/AREP	3.4	3.72	3.84	4.14	3.5	3.76	3.3	3.63
<b>uc (V)</b> On-load excitation voltage SHUNT/AREP	31.8	34.7	35.7	38.4	38	40.7	35.7	39.2
<b>ms</b> Response time ( $\Delta U = 20\%$ transient)	500	500	500	500	500	500	500	500
<b>kVA</b> Start ( $\Delta U = 20\%$ cont. or $\Delta U = 30\%$ trans.) SHUNT*	311	311	372	371	496	495	618	618
<b>kVA</b> Start ( $\Delta U = 20\%$ cont. or $\Delta U = 30\%$ trans.) AREP*	374	376	446	447	596	597	742	741
<b>%</b> Transient $\Delta U$ (on-load 4/4) SHUNT - P.F.: 0.8 <sub>LAG</sub>	17.1	18.4	18	19.1	16.7	17.7	16.1	17.4
<b>%</b> Transient $\Delta U$ (on-load 4/4) AREP - P.F.: 0.8 <sub>LAG</sub>	15.1	16.2	15.8	16.8	14.7	15.6	14.2	15.4
<b>W</b> No-load losses	2977	2977	3297	3297	4326	4326	4749	4749
<b>W</b> Heat dissipation	12841	15040	16555	18860	16231	18362	17360	20473

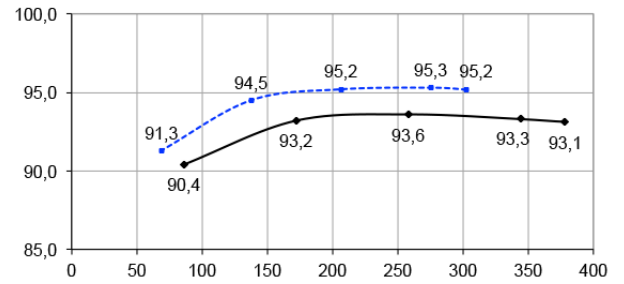
\* P.F. = 0.6

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

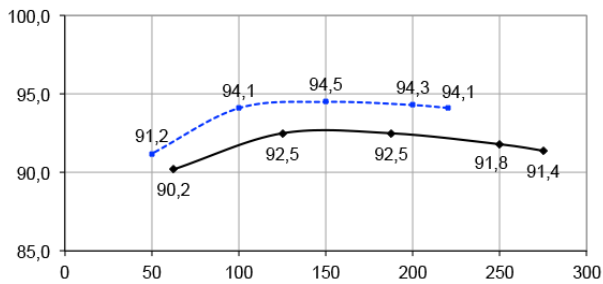
TAL 046 A



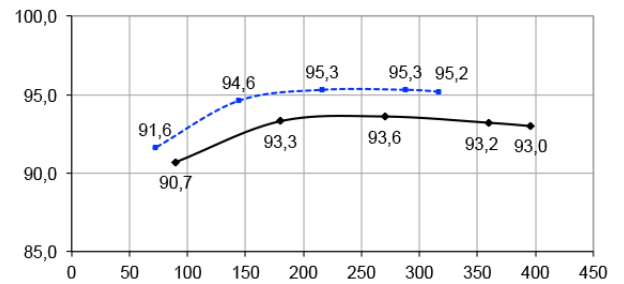
TAL 046 E



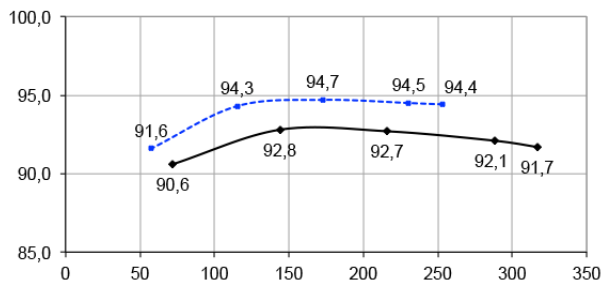
TAL 046 B



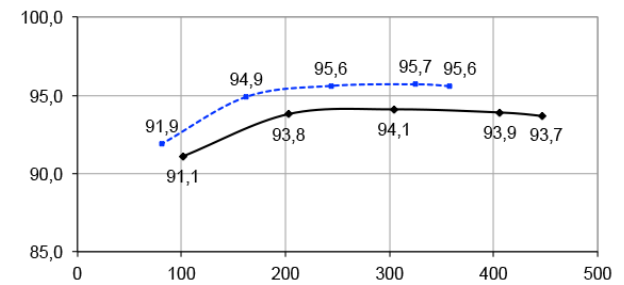
TAL 046 F



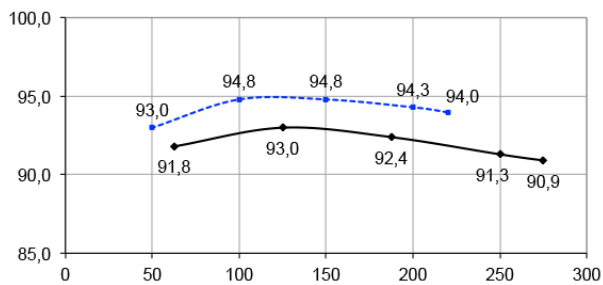
TAL 046 C



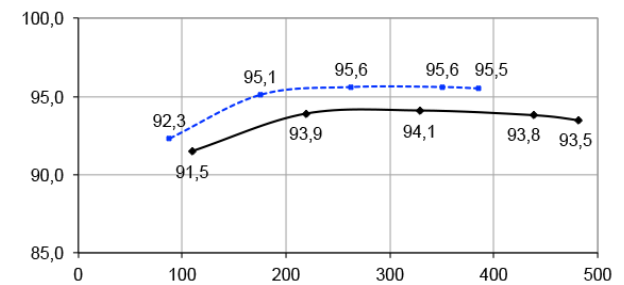
TAL 046 G



TAL 046 D



TAL 046 H



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

		A	B	C	D	E	F	G	H
<b>Kcc</b>	Short-circuit ratio	0.37	0.34	0.36	0.33	0.47	0.45	0.46	0.43
<b>Xd</b>	Direct-axis synchro. reactance unsaturated	326	362	355	386	290	303	281	303
<b>Xq</b>	Quadrature-axis synchro. reactance unsaturated	166	185	181	197	148	154	143	154
<b>T'do</b>	No-load transient time constant	1956	1956	1983	1983	2049	2049	2093	2093
<b>X'd</b>	Direct-axis transient reactance saturated	16.6	18.5	17.9	19.4	14.1	14.8	13.4	14.5
<b>T'd</b>	Short-circuit transient time constant	100	100	100	100	100	100	100	100
<b>X''d</b>	Direct-axis subtransient reactance saturated	13.3	14.8	14.3	15.5	11.3	11.8	10.7	11.6
<b>T''d</b>	Subtransient time constant	10	10	10	10	10	10	10	10
<b>X''q</b>	Quadrature-axis subtransient reactance saturated	17	18.9	18.1	19.7	14	14.7	13.1	14.2
<b>Xo</b>	Zero sequence reactance unsaturated	0.6	0.7	0.7	0.8	0.5	0.6	0.5	0.6
<b>X2</b>	Negative sequence reactance saturated	15.2	16.9	16.2	17.6	12.7	13.3	11.9	12.9
<b>Ta</b>	Armature time constant	15	15	15	15	15	15	15	15

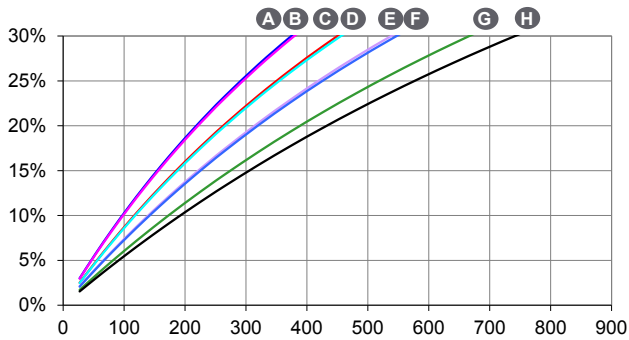
**Other class H / 480 V data**

<b>io (A)</b>	No-load excitation current SHUNT/AREP	0.94	0.94	1.01	1.01	1.14	1.14	1.06	1.06
<b>ic (A)</b>	On-load excitation current SHUNT/AREP	3.46	3.79	3.91	4.21	3.56	3.69	3.35	3.56
<b>uc (V)</b>	On-load excitation voltage SHUNT/AREP	32.5	35.5	36.6	39.3	38.8	40.2	36.4	38.6
<b>ms</b>	Response time ( $\Delta U = 20\%$ transient)	500	500	500	500	500	500	500	500
<b>kVA</b>	Start ( $\Delta U = 20\%$ cont. or $\Delta U = 30\%$ trans.) SHUNT*	376	376	446	448	594	593	740	742
<b>kVA</b>	Start ( $\Delta U = 20\%$ cont. or $\Delta U = 30\%$ trans.) AREP*	450	450	537	536	713	717	888	889
<b>%</b>	Transient $\Delta U$ (on-load 4/4) SHUNT - P.F.: 0.8 <sub>LAG</sub>	17.6	19	18.5	19.6	17.2	17.7	16.5	17.4
<b>%</b>	Transient $\Delta U$ (on-load 4/4) AREP - P.F.: 0.8 <sub>LAG</sub>	15.5	16.7	16.3	17.3	15.1	15.6	14.6	15.4
<b>W</b>	No-load losses	4522	4522	4958	4958	6364	6364	6977	6977
<b>W</b>	Heat dissipation	15376	17830	19666	22234	19519	20719	20934	23130

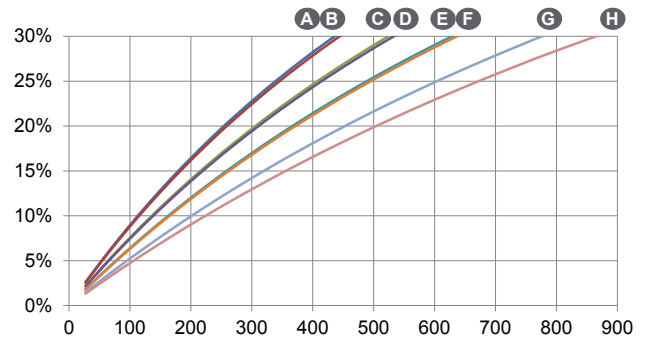
\* P.F. = 0.6



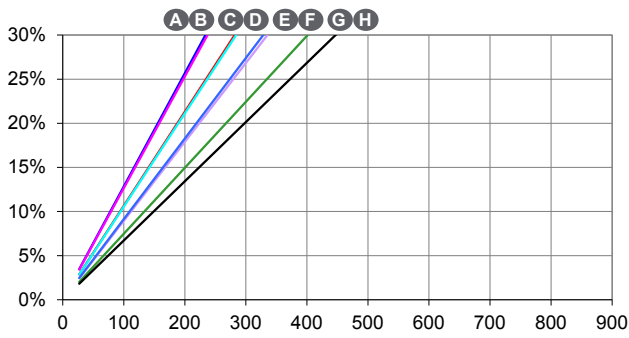
**Transient voltage variation 400 V - 50 Hz**



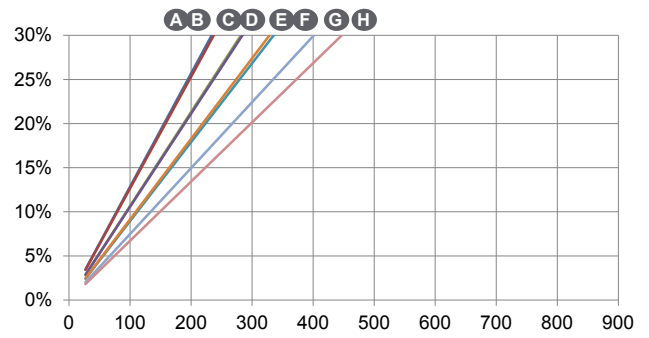
**Phase loading (SHUNT) - kVA at 0.8 P.F.**



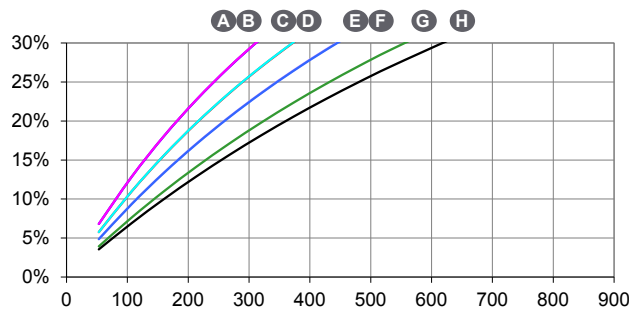
**Phase loading (AREP) - kVA at 0.8 P.F.**



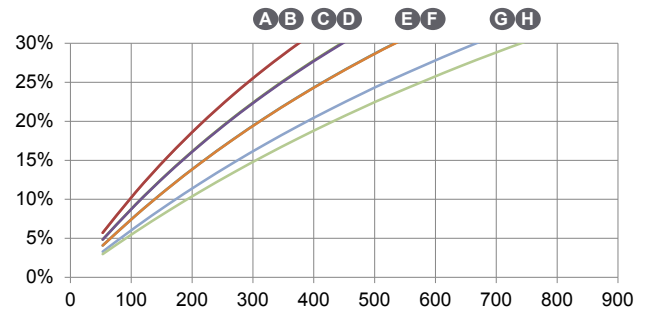
**Load shedding (SHUNT) - kVA at 0.8 P.F.**



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



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

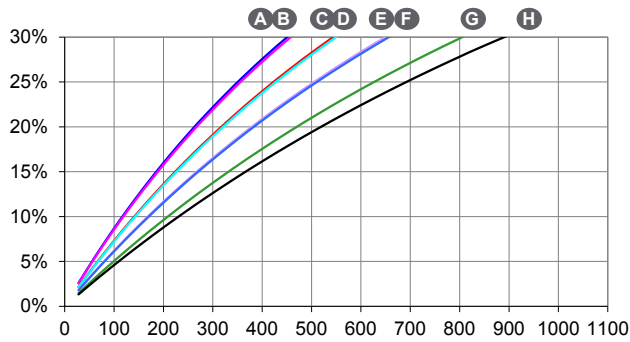


**Motor starting (AREP) - Locked rotor kVA at 0.6 P.F.**

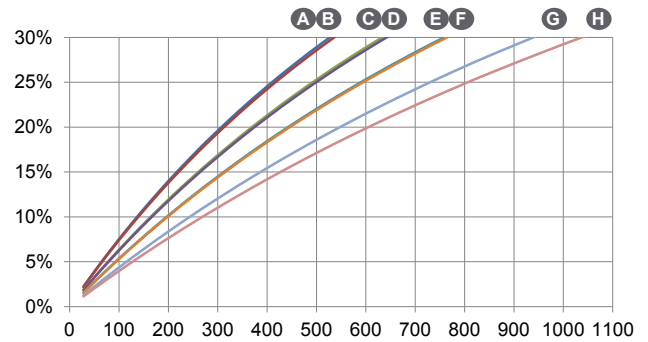
- 1) For a starting P.F. other than 0.6, the starting kVA must be multiplied by  $K = \text{Sine P.F.} / 0.8$
- 2) For voltages other than 400V (Y), 230V (Δ) at 50 Hz, then kVA must be multiplied by  $(400/U)^2$  or  $(230/U)^2$ .



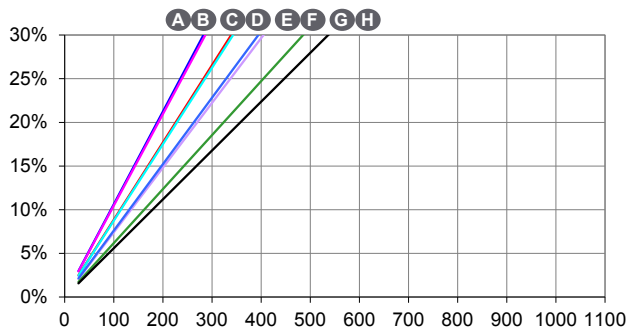
Transient voltage variation 480 V - 60 Hz



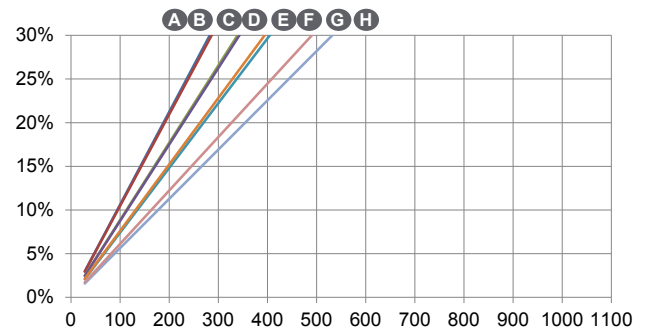
Phase loading (SHUNT) - kVA at 0.8 P.F.



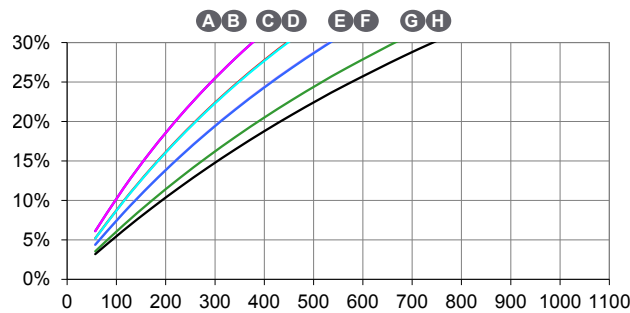
Phase loading (AREP) - kVA at 0.8 P.F.



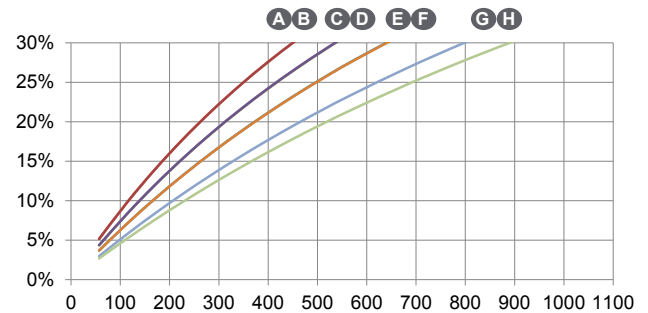
Load shedding (SHUNT) - kVA at 0.8 P.F.



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



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

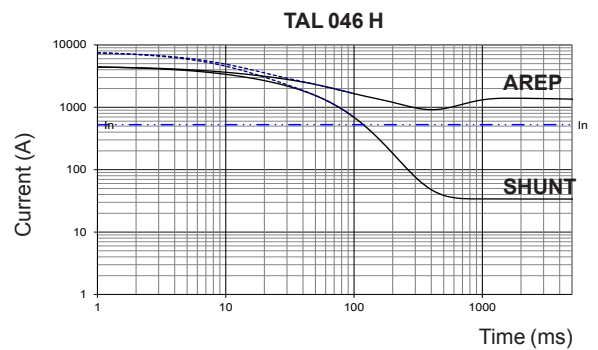
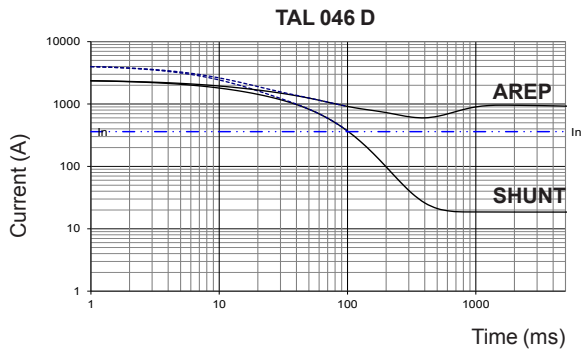
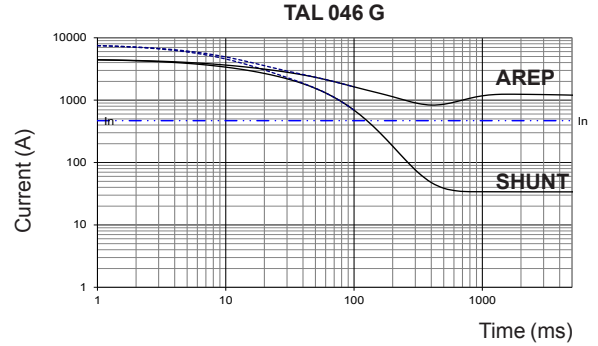
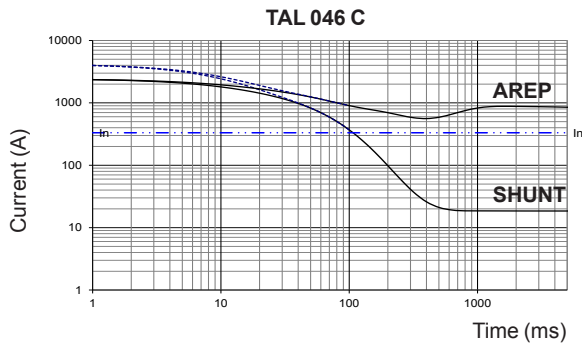
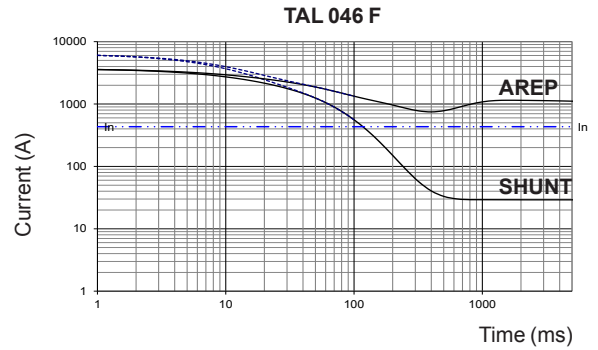
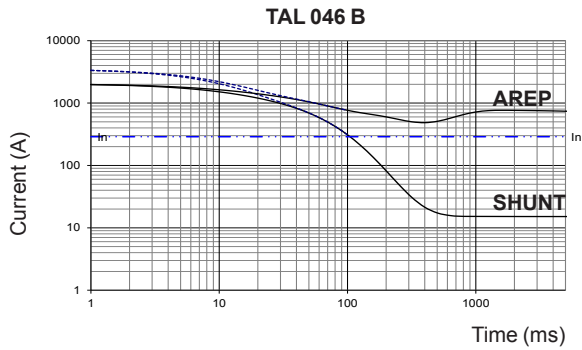
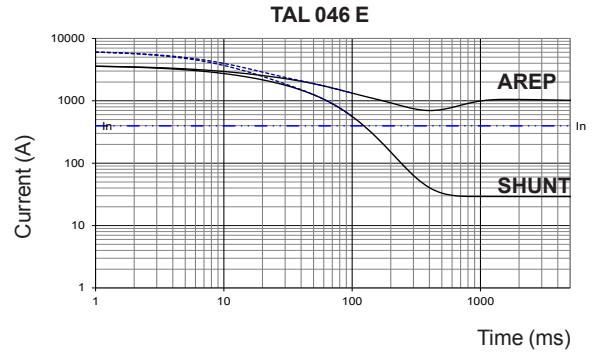
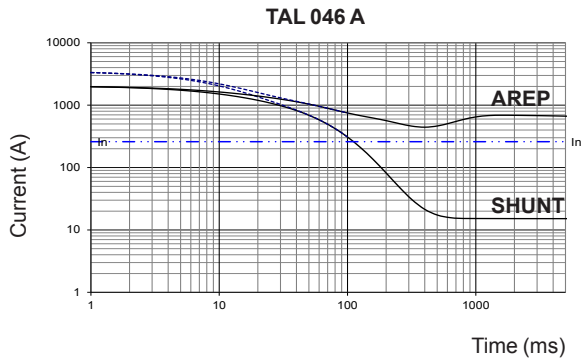


Motor starting (AREP) - Locked rotor kVA at 0.6 P.F.

- 1) For a starting P.F. other than 0.6, the starting kVA must be multiplied by  $K = \text{Sine P.F.} / 0.8$
- 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)

Symmetrical — / Asymmetrical - - -



**Influence due to connection**

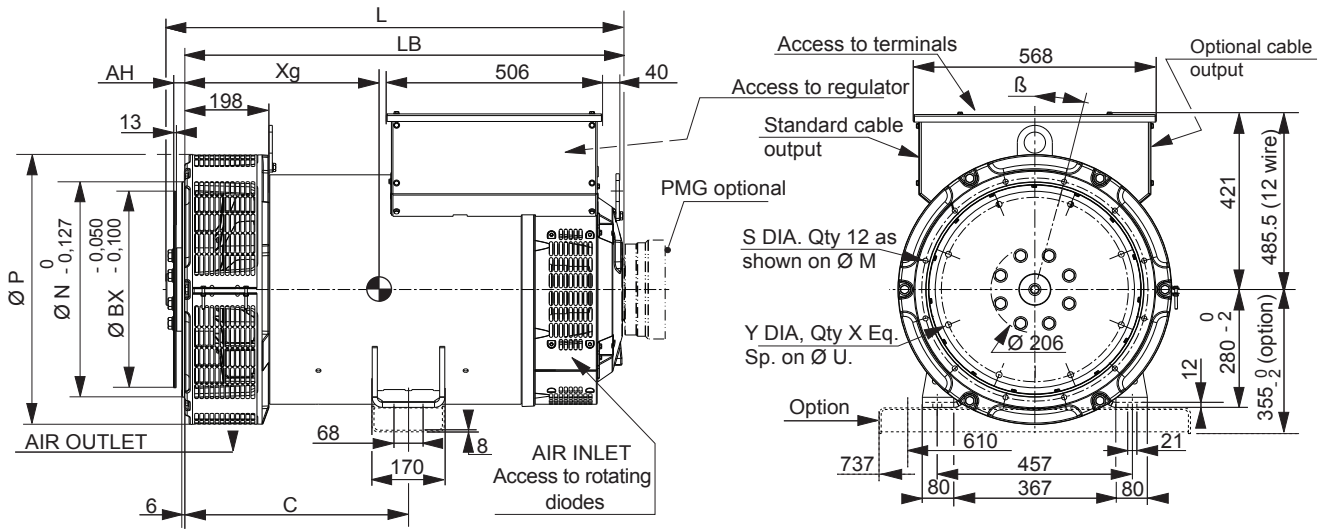
For ( $\Delta$ ) connection, use the following multiplication factor:  
 - Current value x 1.732.

**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 - ph.	2 - ph. L / L	1 - ph. 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	C	Weight (kg)
TAL 046 A	944**/935	892	408	429	569
TAL 046 B	944**/935	892	414	429	599
TAL 046 C	944**/935	892	423	429	674
TAL 046 D	944**/935	892	423	429	682
TAL 046 E	989**/980	937	445	429	754
TAL 046 F	989**/980	937	445	429	754
TAL 046 G*	1084**/1075	1032	493	525	888
TAL 046 H*	1084**/1075	1032	493	525	888

Coupling	Flex plate			
	11 1/2	14	18	
Flange S.A.E 3	X			
Flange S.A.E 2	X			
Flange S.A.E 1	X	X		
Flange S.A.E 1/2		X		
Flange S.A.E 0		X	X	

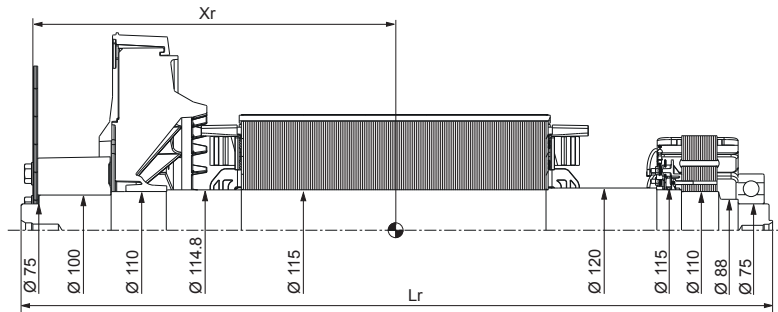
\* Shaft height = 355 mm optional  
 \*\* Dimensions with SAE 11 1/2

Flange (mm)					
S.A.E.	P	N	M	S	β °
3	641	409.575	428.625	11	15°
2	641	447.675	466.725	11	15°
1	641 (713 : J)	511.175	530.225	12	15°
1/2	713	584.2	619.125	14	15°
0	713	647.7	679.45	14	11° 15'

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

\*\*\* Option

Torsional 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. 11 1/2				Flex plate S.A.E. 14				
	Xr	Lr	M	J	Xr	Lr	M	J	J
TAL 046 A	413	923	243	2.46	401	923	244	2.62	
TAL 046 B	413	923	243	2.46	401	923	244	2.62	
TAL 046 C	420	923	255	2.64	408	923	256	2.8	
TAL 046 D	420	923	255	2.64	408	923	256	2.8	
TAL 046 E	460	968	304	3.28	448	968	305	3.44	
TAL 046 F	460	968	304	3.28	448	968	305	3.44	
TAL 046 G	508	1063	358	3.97	497	1063	359	4.13	
TAL 046 H	508	1063	358	3.97	497	1063	359	4.13	

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.



### General characteristics

Insulation class	H	Excitation system 6 wire	SHUNT	AREP / PMG
Winding pitch	2/3	AVR type	R150	R180
Number of wires	6 (12 option)	Excitation system 12 wire (option)	SHUNT	AREP / PMG
Protection	IP 23	AVR type	R250	R180
Altitude	≤ 1000 m	Voltage regulation (*)	± 1 %	
Overspeed	2250 R.P.M.	Total Harmonic Distortion THD (**) in no-load	< 1.5 %	
Air flow (m <sup>3</sup> /s)	0.9	Total Harmonic Distortion THD (**) in linear load	< 5 %	
Air flow (m <sup>3</sup> /s)	1.1	Waveform: NEMA = TIF (**)	< 50	
AREP Short-circuit current = 2.7 In : 5 second		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
<b>TAL 047 A</b> kVA	390	<b>410</b>	410	385	355	<b>375</b>	375	350	415	<b>435</b>	435	410	430	<b>450</b>	450	425
kW	310	330	330	310	285	300	300	280	330	350	350	330	345	360	360	340
<b>TAL 047 B</b> kVA	430	<b>455</b>	455	430	390	<b>415</b>	415	390	455	<b>480</b>	480	455	475	<b>500</b>	500	475
kW	345	365	365	345	315	330	330	315	365	385	385	365	380	400	400	380
<b>TAL 047 C</b> kVA	475	<b>500</b>	500	460	430	<b>455</b>	455	420	505	<b>530</b>	530	490	525	<b>550</b>	550	505
kW	380	400	400	370	345	365	365	335	405	425	425	390	420	440	440	405
<b>TAL 047 D</b> kVA	525	<b>550</b>	550	535	480	<b>500</b>	500	485	555	<b>585</b>	585	565	580	<b>605</b>	605	590
kW	420	440	440	430	380	400	400	390	445	465	465	455	460	485	485	470
<b>TAL 047 E</b> kVA	585	<b>600</b>	600	570	530	<b>545</b>	545	520	620	<b>635</b>	635	605	645	<b>660</b>	660	625
kW	470	480	480	455	425	435	435	415	495	510	510	485	515	530	530	500
<b>TAL 047 F</b> kVA	645	<b>660</b>	660	620	585	<b>600</b>	600	565	685	<b>700</b>	700	655	710	<b>725</b>	725	680
kW	515	530	530	495	470	480	480	450	545	560	560	525	570	580	580	545

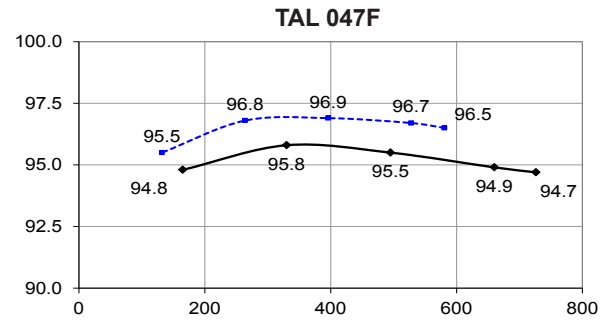
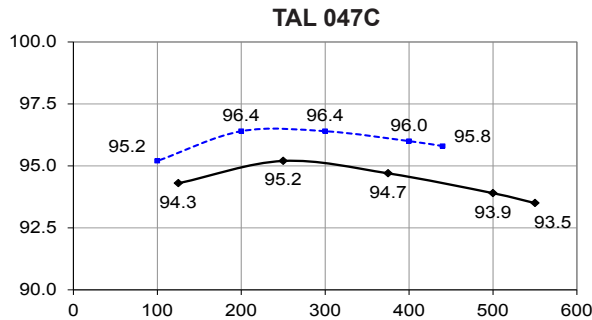
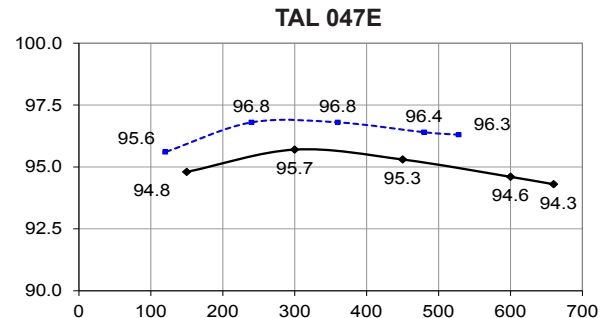
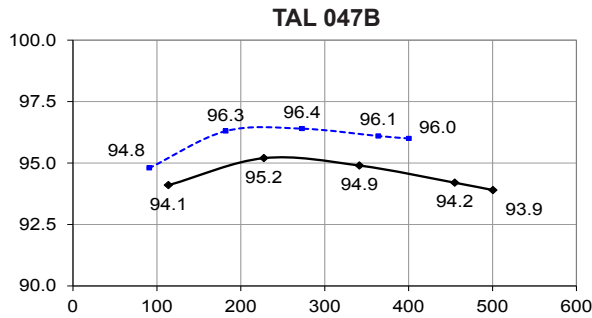
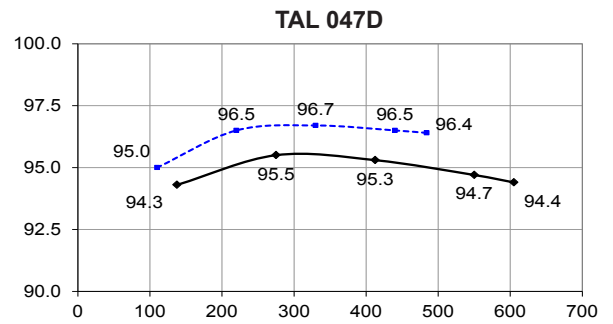
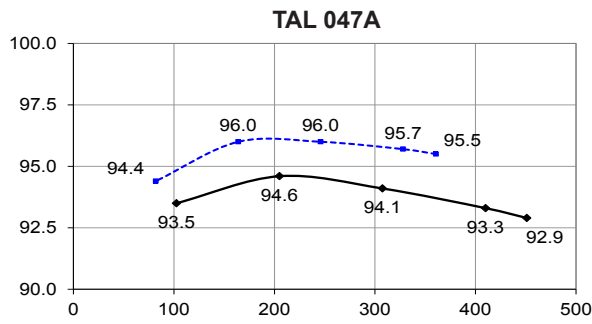
(\*) 12 wires option

### 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
<b>TAL 047 A</b> kVA	450	480	500	<b>512</b>	396	442	442	<b>465</b>	475	513	533	<b>550</b>	500	530	550	<b>581</b>
kW	360	384	400	410	317	354	354	372	380	410	426	440	400	424	440	465
<b>TAL 047 B</b> kVA	475	510	531	<b>570</b>	441	473	493	<b>518</b>	503	543	566	<b>592</b>	527	562	585	<b>625</b>
kW	380	408	425	456	353	378	394	414	402	434	453	474	422	450	468	500
<b>TAL 047 C</b> kVA	520	555	590	<b>625</b>	473	505	537	<b>569</b>	551	588	625	<b>663</b>	570	610	650	<b>690</b>
kW	416	444	472	500	379	404	430	455	441	471	500	530	455	490	520	550
<b>TAL 047 D</b> kVA	562	610	630	<b>690</b>	523	566	587	<b>632</b>	600	651	672	<b>729</b>	615	671	695	<b>750</b>
kW	450	488	504	552	418	453	470	506	480	521	538	583	490	537	555	600
<b>TAL 047 E</b> kVA	602	661	685	<b>750</b>	556	609	634	<b>675</b>	643	707	734	<b>780</b>	660	725	755	<b>825</b>
kW	482	529	548	600	445	487	507	540	514	566	587	624	528	580	605	660
<b>TAL 047 F</b> kVA	650	715	755	<b>825</b>	592	650	687	<b>750</b>	689	758	800	<b>875</b>	720	785	830	<b>910</b>
kW	526	572	604	660	474	496	550	600	551	607	640	700	576	628	664	728

(\*) 12 wires option

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



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

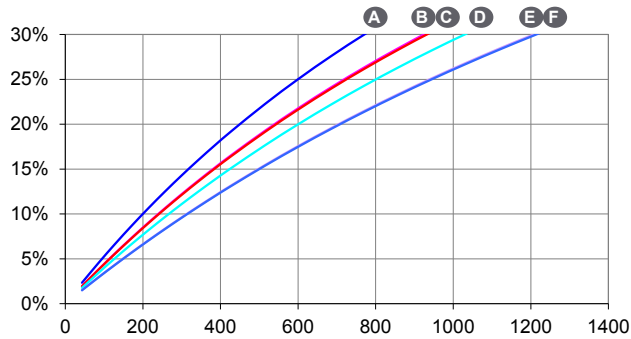
	A	B	C	D	E	F
<b>Kcc</b> Short-circuit ratio	0.35	0.34	0.31	0.39	0.32	0.36
<b>Xd</b> Direct-axis synchro. reactance unsaturated	347	338	372	310	361	328
<b>Xq</b> Quadrature-axis synchro. reactance unsaturated	177	172	189	158	184	167
<b>T'do</b> No-load transient time constant	1601	1705	1705	1773	1797	1832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

Other class H / 400 V data

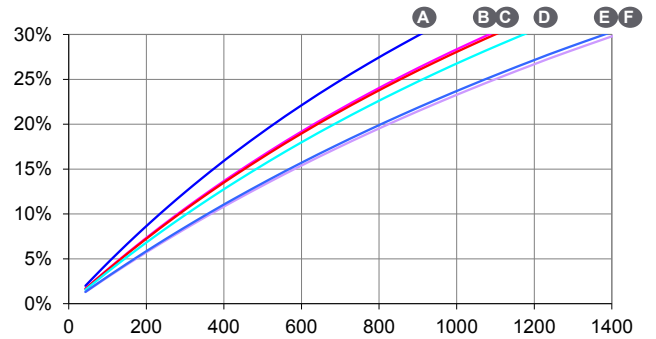
<b>io (A)</b> No-load excitation current SHUNT/AREP	0.97	0.87	0.87	0.97	0.85	0.93
<b>ic (A)</b> On-load excitation current SHUNT/AREP	4.24	3.72	4.06	3.79	3.89	3.87
<b>uc (V)</b> On-load excitation voltage SHUNT/AREP	44.2	38.7	42.2	39.4	40.3	40.1
<b>ms</b> Response time ( $\Delta U = 20\%$ transient)	500	500	500	500	500	500
<b>kVA</b> Start ( $\Delta U = 20\%$ cont. or $\Delta U = 30\%$ trans.) SHUNT*	612	743	742	1017	1053	1195
<b>kVA</b> Start ( $\Delta U = 20\%$ cont. or $\Delta U = 30\%$ trans.) AREP*	738	891	894	1166	1262	1378
<b>%</b> Transient $\Delta U$ (on-load 4/4) SHUNT - P.F.: 0.8 <sub>LAG</sub>	18.6	17.5	18.7	15.9	17.6	16.2
<b>%</b> Transient $\Delta U$ (on-load 4/4) AREP - P.F.: 0.8 <sub>LAG</sub>	16.3	15.3	16.4	13.9	15.4	14.2
<b>W</b> No-load losses	4261	4376	4376	5192	4831	5487
<b>W</b> Heat dissipation	23451	22295	25923	24391	27055	27875

\* P.F. = 0.6

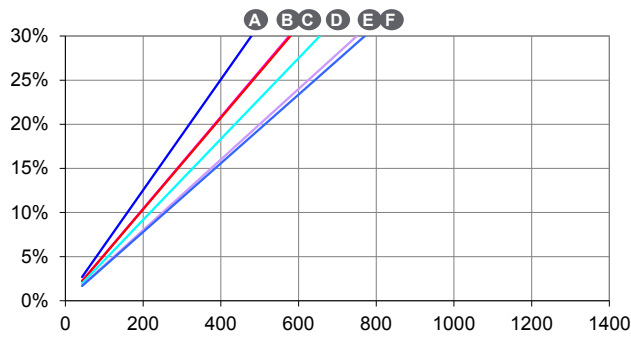
Transient voltage variation 400 V - 50 Hz



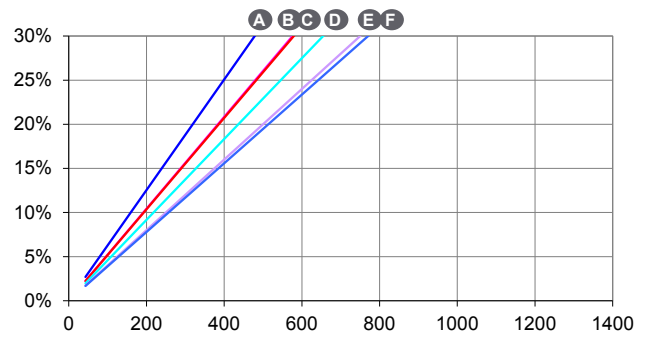
Phase loading (SHUNT) - kVA at 0.8 P.F.



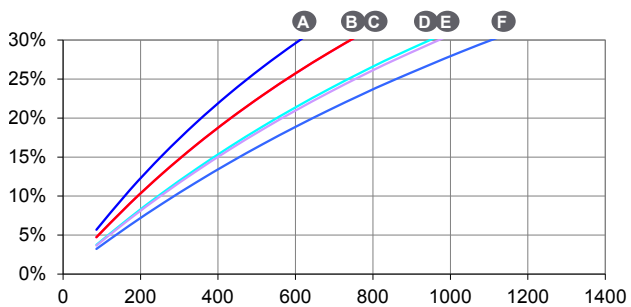
Phase loading (AREP) - kVA at 0.8 P.F.



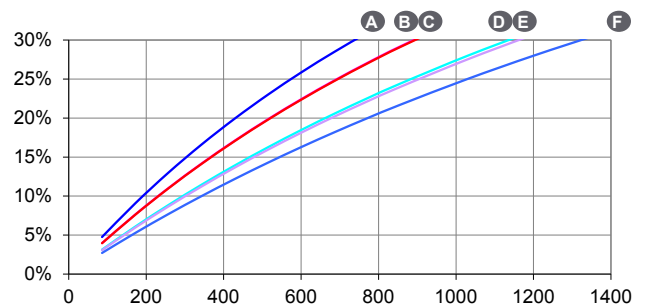
Load shedding (SHUNT) - kVA at 0.8 P.F.



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



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



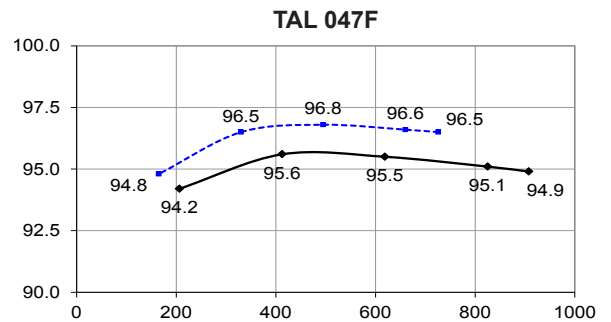
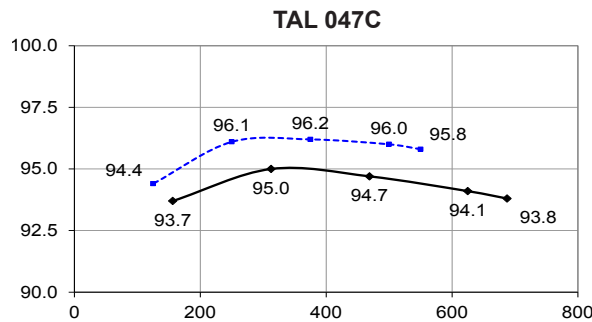
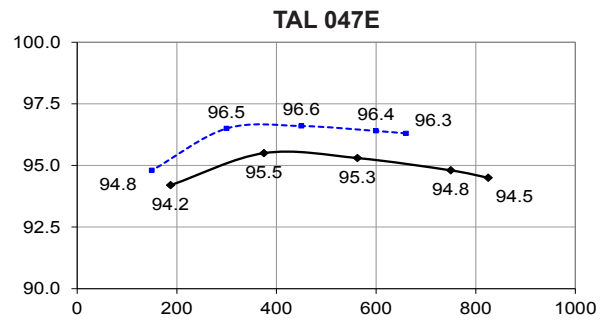
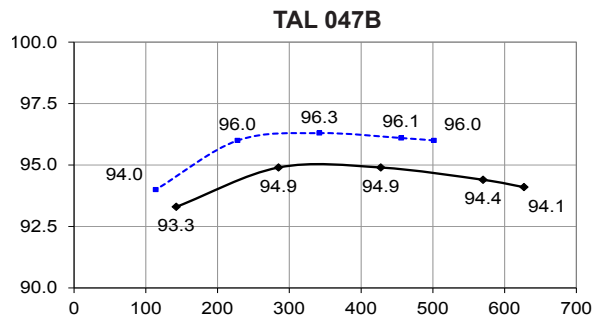
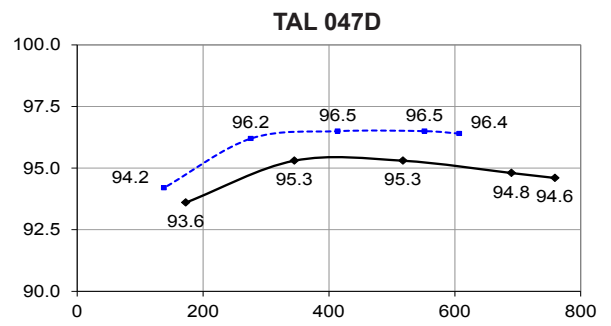
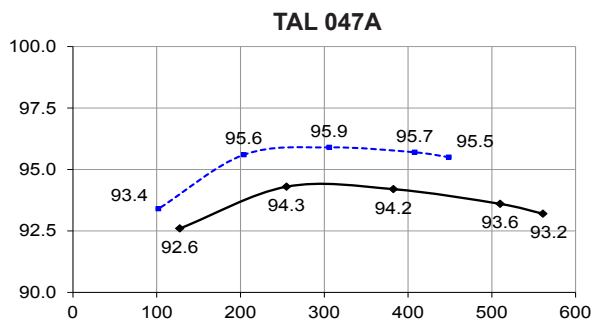
Motor starting (AREP) - Locked rotor kVA at 0.6 P.F.

1) For a starting P.F. other than 0.6, the starting kVA must be multiplied by  $K = \text{Sine P.F.} / 0.8$

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)



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

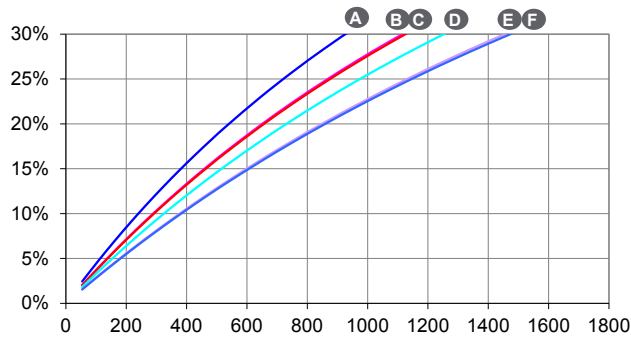
	A	B	C	D	E	F
<b>Kcc</b> Short-circuit ratio	0.34	0.32	0.3	0.37	0.3	0.35
<b>Xd</b> Direct-axis synchro. reactance unsaturated	359	353	387	324	376	342
<b>Xq</b> Quadrature-axis synchro. reactance unsaturated	183	180	197	165	191	174
<b>T'do</b> No-load transient time constant	1601	1705	1705	1773	1797	1832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

Other class H / 480 V data

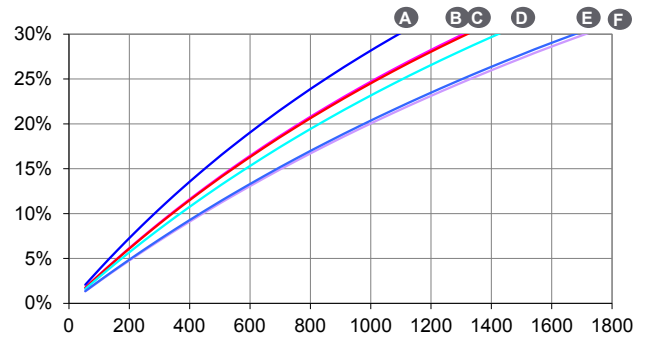
<b>io (A)</b> No-load excitation current SHUNT/AREP	0.97	0.87	0.87	0.97	0.85	0.93
<b>ic (A)</b> On-load excitation current SHUNT/AREP	4.31	3.81	4.15	3.88	3.97	3.94
<b>uc (V)</b> On-load excitation voltage SHUNT/AREP	45.1	39.8	43.3	40.5	41.3	41
<b>ms</b> Response time ( $\Delta U = 20\%$ transient)	500	500	500	500	500	500
<b>kVA</b> Start ( $\Delta U = 20\%$ cont. or $\Delta U = 30\%$ trans.) SHUNT*	738	890	889	1227	1262	1431
<b>kVA</b> Start ( $\Delta U = 20\%$ cont. or $\Delta U = 30\%$ trans.) AREP*	883	1074	1071	1442	1511	1717
<b>%</b> Transient $\Delta U$ (on-load 4/4) SHUNT - P.F.: 0.8 <sub>LAG</sub>	19.1	18	19.3	16.5	18.2	16.7
<b>%</b> Transient $\Delta U$ (on-load 4/4) AREP - P.F.: 0.8 <sub>LAG</sub>	16.7	15.8	16.9	14.4	15.9	14.6
<b>W</b> No-load losses	6583	6766	6766	7888	7408	8312
<b>W</b> Heat dissipation	27879	27031	31057	29695	32579	33674

\* P.F. = 0.6

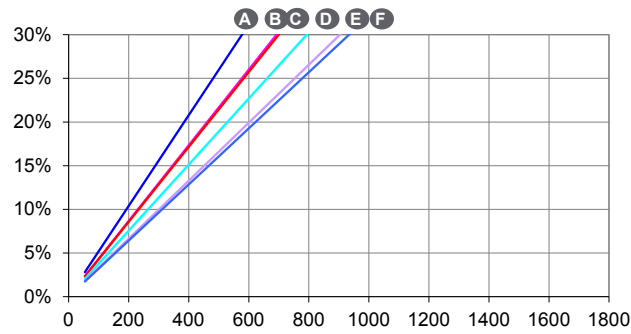
**Transient voltage variation 480 V - 60 Hz**



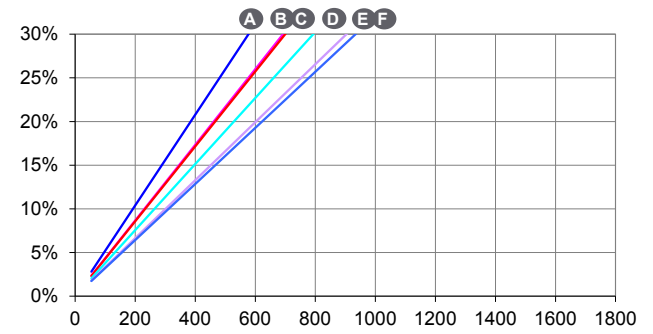
**Phase loading (SHUNT) - kVA at 0.8 P.F.**



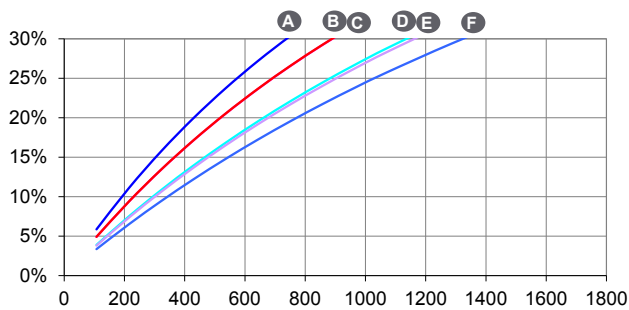
**Phase loading (AREP) - kVA at 0.8 P.F.**



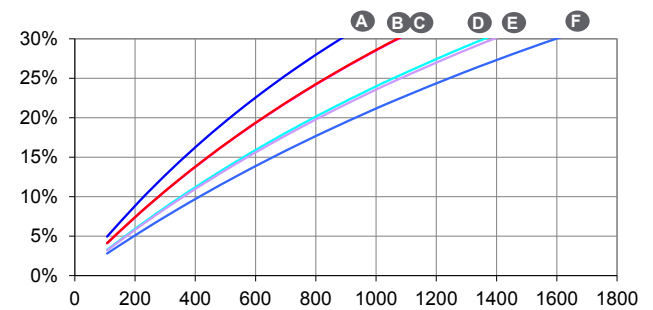
**Load shedding (SHUNT) - kVA at 0.8 P.F.**



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



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

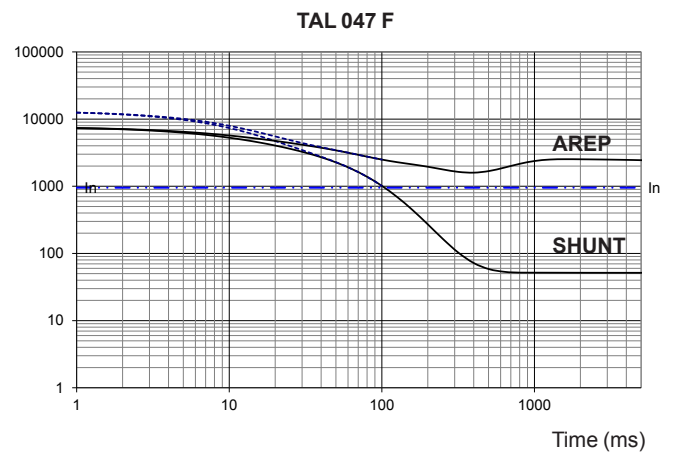
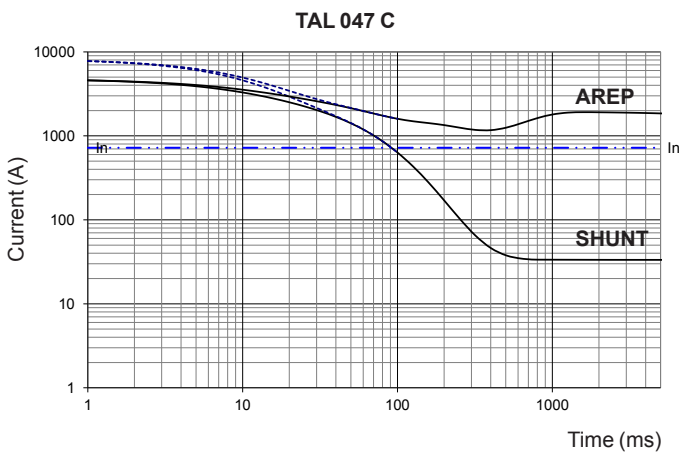
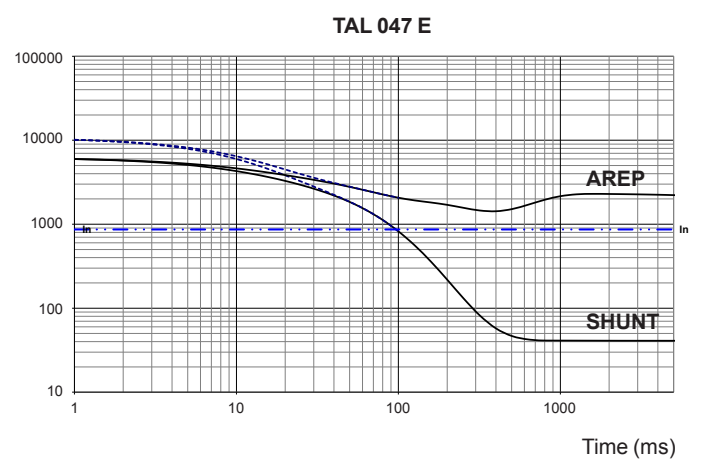
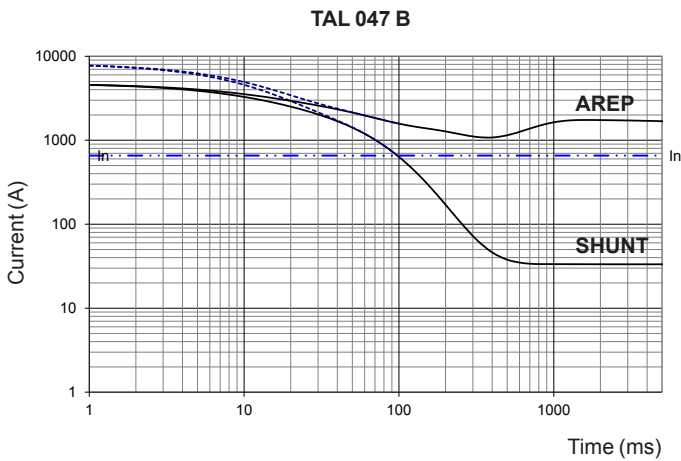
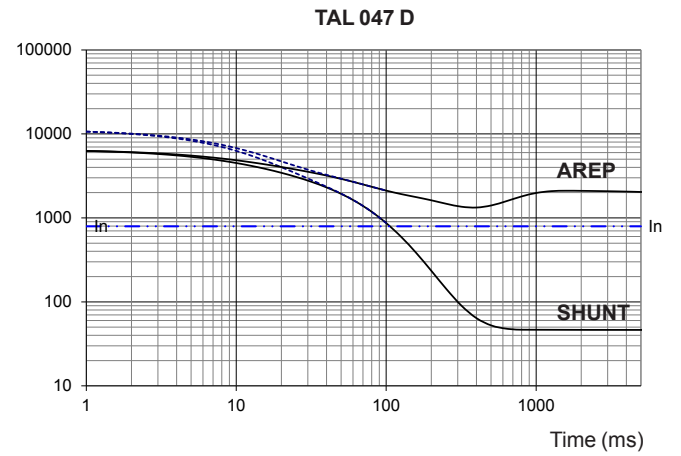
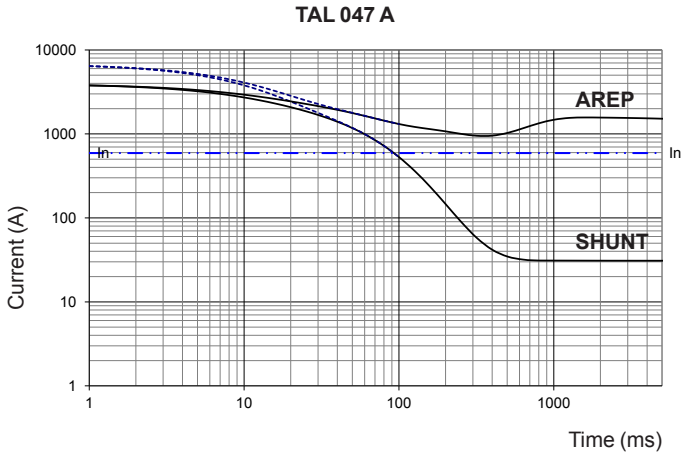


**Motor starting (AREP) - Locked rotor kVA at 0.6 P.F.**

- 1) For a starting P.F. other than 0.6, the starting kVA must be multiplied by  $K = \text{Sine P.F.} / 0.8$
- 2) For voltages other than 480V (Y), 277V ( $\Delta$ ), 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)

Symmetrical — / Asymmetrical - - -



**Influence due to connection**

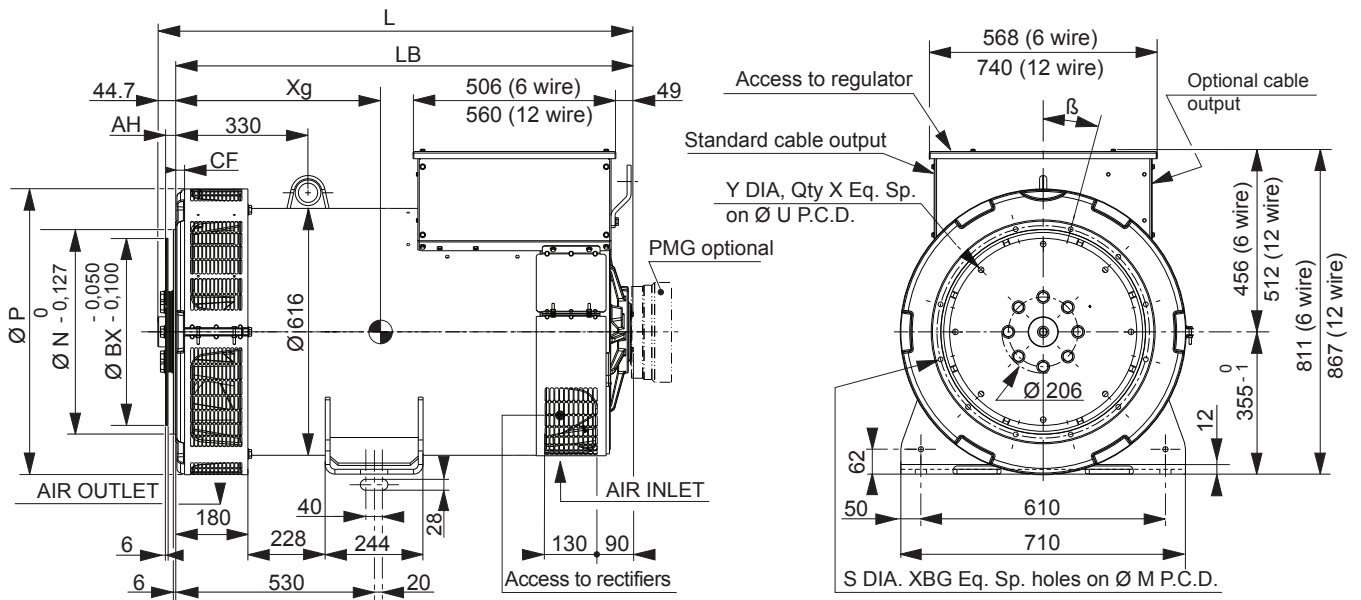
For (Δ) connection, use the following multiplication factor:  
 - Current value x 1.732.

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

Single bearing general arrangement



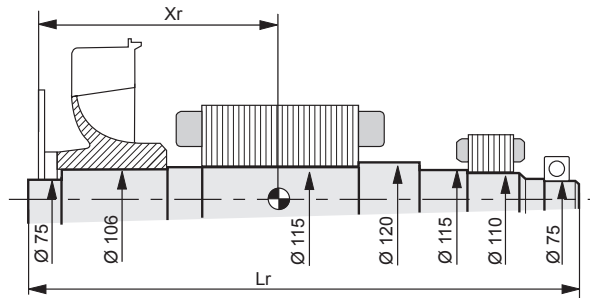
Dimensions (mm) and weight				
Type	L without PMG	LB	Xg	Weight (kg)
TAL 047 A	1041	996	437	976
TAL 047 B	1101	1056	471	1113
TAL 047 C	1101	1056	471	1113
TAL 047 D	1201	1156	511	1240
TAL 047 E	1201	1176	520	1289
TAL 047 F	1221	1176	545	1372

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)								
Type	Flex plate S.A.E. 14				Flex plate S.A.E. 18			
	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.



## General characteristics

Insulation class	H	Excitation system 6 wire	SHUNT	AREP / PMG
Winding pitch	2/3	AVR type	R150	R180
Number of wires	6 (12 option)	Excitation system 12 wire (option)	SHUNT	AREP / PMG
Protection	IP 23	AVR type	R250	R180
Altitude	≤ 1000 m	Voltage regulation (*)		± 1 %
Overspeed	2250 R.P.M.	Total Harmonic Distortion THD (**) in no-load		< 3.5 %
Air flow (m³/s)	1	Total Harmonic Distortion THD (**) in linear load		< 5 %
Air flow (m³/s)	1.2	Waveform: NEMA = TIF (**)		< 50
AREP Short-circuit current = 2.7 In : 5 second		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
<b>TAL 049 B</b> kVA	730	<b>730</b>	730	665	665	<b>665</b>	665	605	775	<b>775</b>	775	705	805	<b>805</b>	805	730
kW	584	584	584	532	532	532	532	484	620	620	620	564	644	644	644	584
<b>TAL 049 C</b> kVA	820	<b>820</b>	820	810	745	<b>745</b>	745	735	870	<b>870</b>	870	860	910	<b>910</b>	910	890
kW	656	656	656	648	596	596	596	588	696	696	696	688	728	728	728	712
<b>TAL 049 D</b> kVA	910	<b>910</b>	910	820	830	<b>830</b>	830	745	965	<b>965</b>	965	870	1010	<b>1010</b>	1010	900
kW	728	728	728	656	664	664	664	596	772	772	772	696	808	808	808	720
<b>TAL 049 E</b> kVA	1000	<b>1000</b>	1000	950	910	<b>910</b>	910	865	1060	<b>1060</b>	1060	1005	1100	<b>1100</b>	1100	1045
kW	800	800	800	760	728	728	728	692	848	848	848	804	880	880	880	836

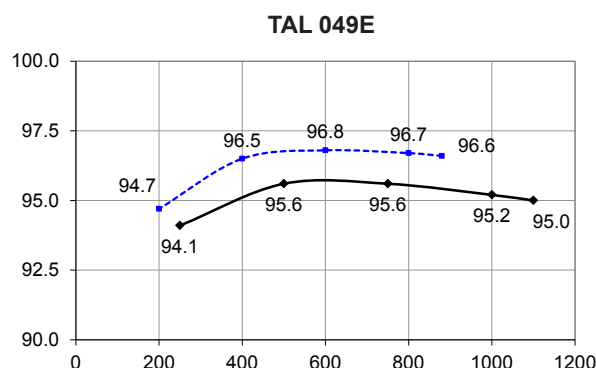
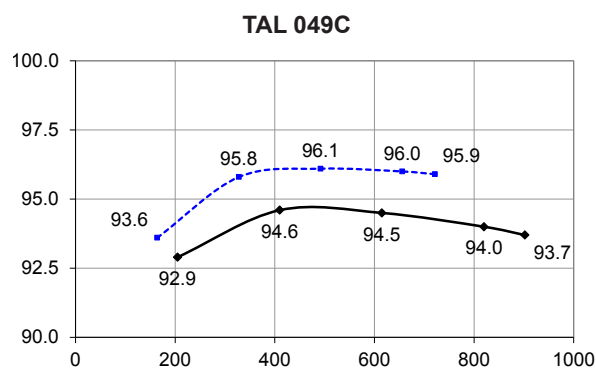
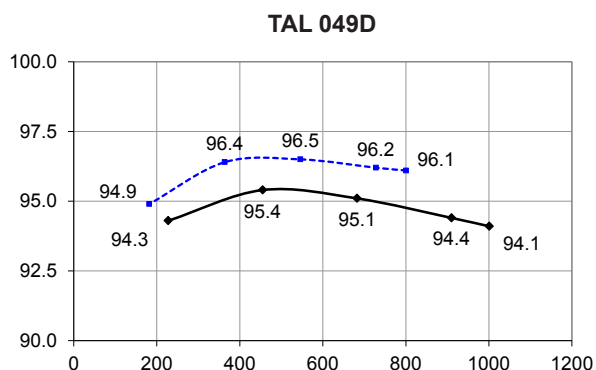
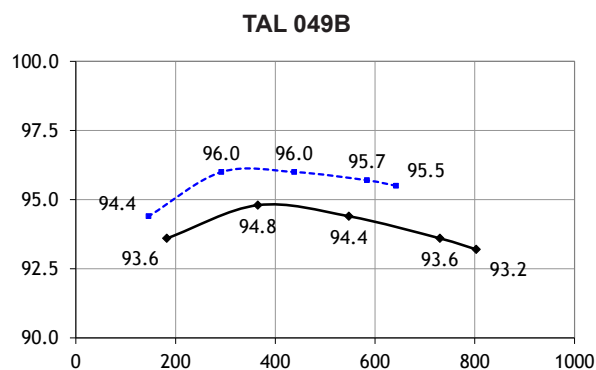
(\*) 12 wires option

## 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			220V	240V			220V	240V			220V	240V		
YY (*)		208V	220V	240V		208V	220V	240V		208V	220V	240V		208V	220V	240V
<b>TAL 049 B</b> kVA	725	795	840	<b>915</b>	660	725	765	<b>835</b>	770	845	890	<b>970</b>	800	875	925	<b>1005</b>
kW	580	636	672	732	528	580	612	668	616	676	712	776	640	700	740	804
<b>TAL 049 C</b> kVA	815	890	940	<b>1025</b>	740	810	855	<b>935</b>	865	945	995	<b>1085</b>	895	980	1040	<b>1130</b>
kW	652	712	752	820	592	648	684	748	692	756	796	868	716	784	832	904
<b>TAL 049 D</b> kVA	905	990	1045	<b>1140</b>	825	900	950	<b>1035</b>	960	1050	1110	<b>1210</b>	1000	1090	1155	<b>1255</b>
kW	724	792	836	912	660	720	760	828	768	840	888	968	800	872	924	1004
<b>TAL 049 E</b> kVA	990	1083	1146	<b>1250</b>	900	985	1045	<b>1140</b>	1050	1150	1215	<b>1325</b>	1089	1192	1260	<b>1375</b>
kW	792	866	917	1000	720	788	836	912	840	920	972	1060	871	954	1008	1100

(\*) 12 wires option

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



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

	B	C	D	E
<b>Kcc</b> Short-circuit ratio	0.28	0.37	0.28	0.38
<b>Xd</b> Direct-axis synchro. reactance unsaturated	403	330	402	348
<b>Xq</b> Quadrature-axis synchro. reactance unsaturated	205	168	205	177
<b>T'do</b> No-load transient time constant	2028	2074	2108	2153
<b>X'd</b> Direct-axis transient reactance saturated	19.8	15.9	19	16.1
<b>T'd</b> Short-circuit transient time constant	100	100	100	100
<b>X''d</b> Direct-axis subtransient reactance saturated	15.9	12.7	15.2	12.9
<b>T''d</b> Subtransient time constant	10	10	10	10
<b>X''q</b> Quadrature-axis subtransient reactance saturated	18.3	14.4	16.9	14.1
<b>Xo</b> Zero sequence reactance unsaturated	0.82	0.66	0.79	0.67
<b>X2</b> Negative sequence reactance saturated	17.1	13.5	16.1	13.5
<b>Ta</b> Armature time constant	15	15	15	15

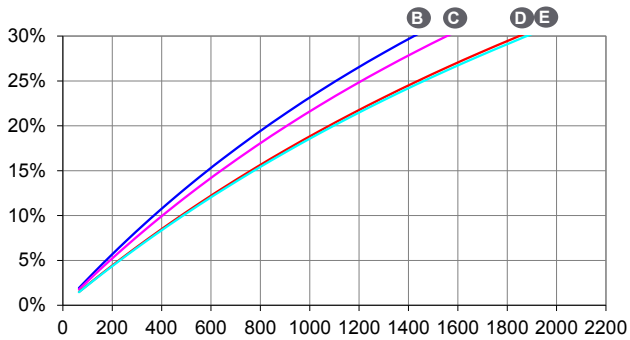
Other class H / 400 V data

<b>io (A)</b> No-load excitation current SHUNT/AREP	0.81	1.13	0.83	1.01
<b>ic (A)</b> On-load excitation current SHUNT/AREP	4.15	4.76	4.15	3.9
<b>uc (V)</b> On-load excitation voltage SHUNT/AREP	47.1	53.8	46.9	44.1
<b>ms</b> Response time ( $\Delta U = 20\%$ transient)	500	500	500	500
<b>kVA</b> Start ( $\Delta U = 20\%$ cont. or $\Delta U = 30\%$ trans.) SHUNT*	1084	1387	1412	1671
<b>kVA</b> Start ( $\Delta U = 20\%$ cont. or $\Delta U = 30\%$ trans.) AREP*	1301	1664	1695	2002
<b>%</b> Transient $\Delta U$ (on-load 4/4) SHUNT - P.F.: 0.8 <sub>LAG</sub>	18.1	18.5	17.5	18.6
<b>%</b> Transient $\Delta U$ (on-load 4/4) AREP - P.F.: 0.8 <sub>LAG</sub>	16.3	16.6	15.7	16.7
<b>W</b> No-load losses	7774	10303	8702	10355
<b>W</b> Heat dissipation	39606	41702	42589	39986

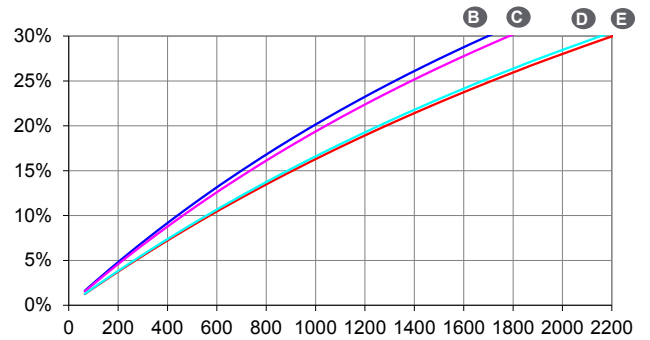
\* P.F. = 0.6



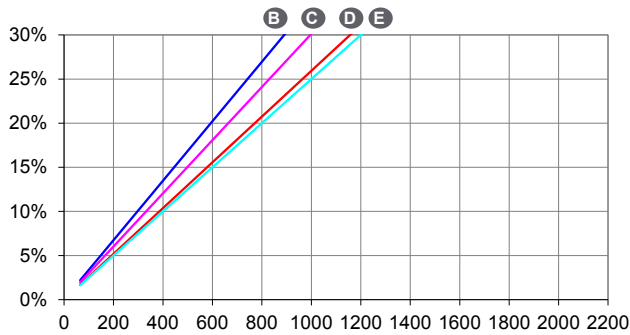
Transient voltage variation 400 V - 50 Hz



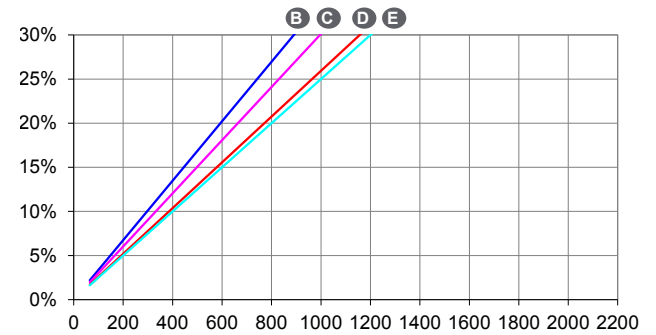
Phase loading (SHUNT) - kVA at 0.8 P.F.



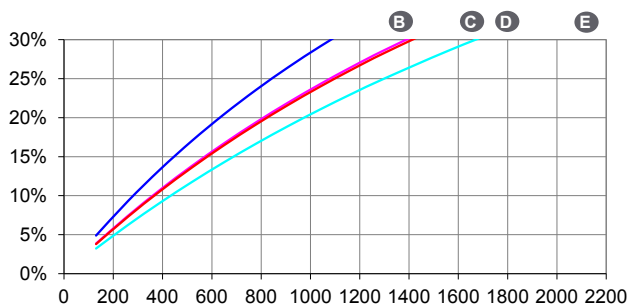
Phase loading (AREP) - kVA at 0.8 P.F.



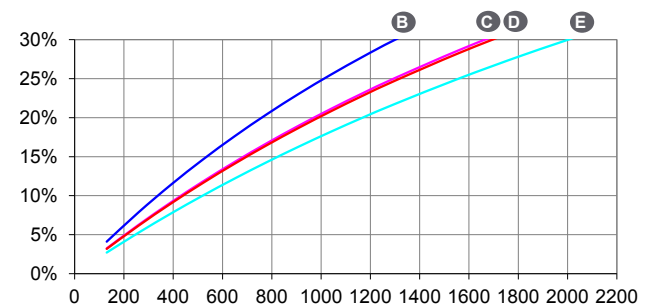
Load shedding (SHUNT) - kVA at 0.8 P.F.



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



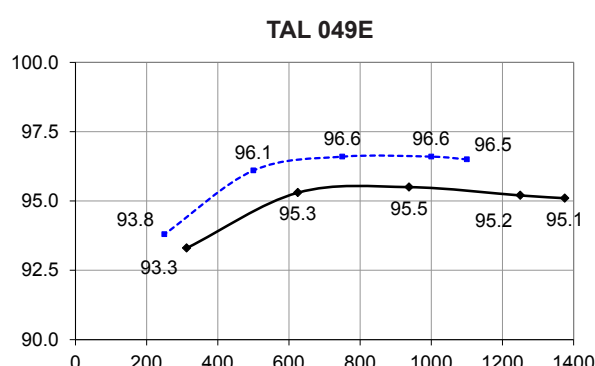
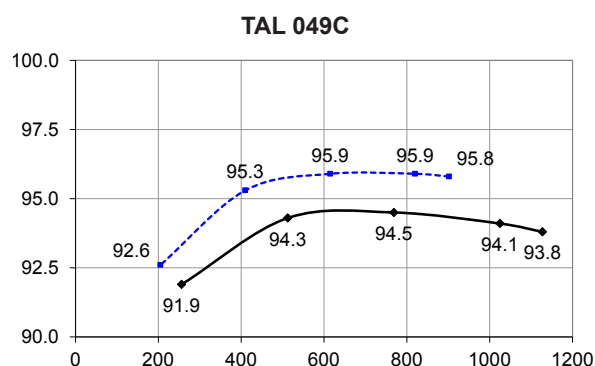
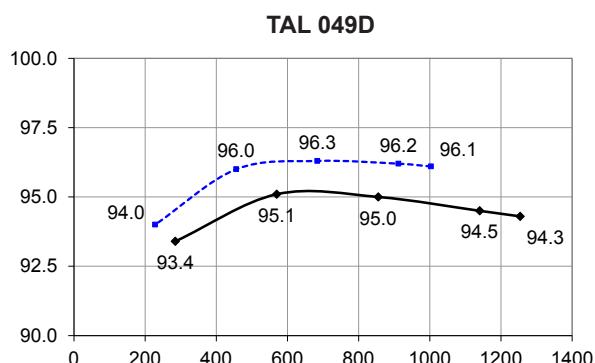
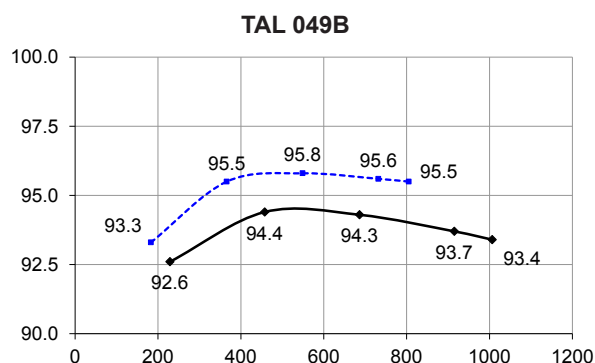
Motor starting (SHUNT)  
Locked rotor kVA at 0.6 P.F.



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

- 1) For a starting P.F. other than 0.6, the starting kVA must be multiplied by  $K = \text{Sine P.F.} / 0.8$
- 2) For voltages other than 400V (Y), 230V ( $\Delta$ ) 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)



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

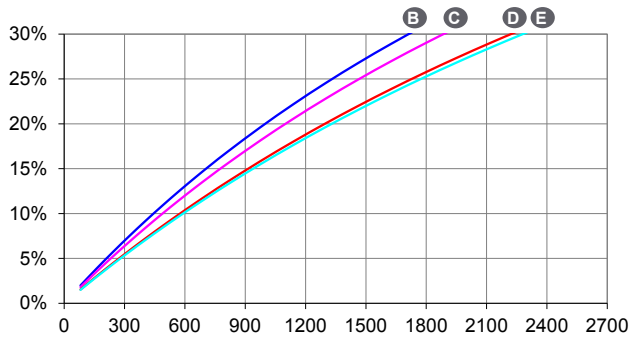
	B	C	D	E
<b>Kcc</b> Short-circuit ratio	0.27	0.36	0.27	0.36
<b>Xd</b> Direct-axis synchro. reactance unsaturated	421	344	419	363
<b>Xq</b> Quadrature-axis synchro. reactance unsaturated	214	175	214	185
<b>T'do</b> No-load transient time constant	2028	2074	2108	2153
<b>X'd</b> Direct-axis transient reactance saturated	20.7	16.6	19.9	16.8
<b>T'd</b> Short-circuit transient time constant	100	100	100	100
<b>X''d</b> Direct-axis subtransient reactance saturated	16.6	13.2	15.9	13.4
<b>T''d</b> Subtransient time constant	10	10	10	10
<b>X''q</b> Quadrature-axis subtransient reactance saturated	19.1	15	17.7	14.7
<b>Xo</b> Zero sequence reactance unsaturated	0.86	0.69	0.82	0.7
<b>X2</b> Negative sequence reactance saturated	17.8	14.1	16.8	14.1
<b>Ta</b> Armature time constant	15	15	15	15

Other class H / 480 V data

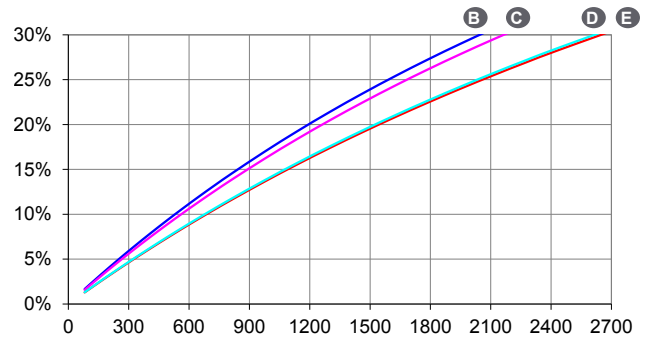
	B	C	D	E
<b>io (A)</b> No-load excitation current SHUNT/AREP	0.81	1.13	0.82	1.01
<b>ic (A)</b> On-load excitation current SHUNT/AREP	4.28	4.87	4.26	3.98
<b>uc (V)</b> On-load excitation voltage SHUNT/AREP	48.6	55.3	48.3	45.1
<b>ms</b> Response time ( $\Delta U = 20\%$ transient)	500	500	500	500
<b>kVA</b> Start ( $\Delta U = 20\%$ cont. or $\Delta U = 30\%$ trans.) SHUNT*	1373.2	1538.3	1710.9	1875.9
<b>kVA</b> Start ( $\Delta U = 20\%$ cont. or $\Delta U = 30\%$ trans.) AREP*	1560	2007	2031	2414
<b>%</b> Transient $\Delta U$ (on-load 4/4) SHUNT - P.F.: 0.8 <sub>LAG</sub>	20.1	20.1	20.1	20.1
<b>%</b> Transient $\Delta U$ (on-load 4/4) AREP - P.F.: 0.8 <sub>LAG</sub>	16.8	17	16.3	17.1
<b>W</b> No-load losses	12224	15725	13536	15739
<b>W</b> Heat dissipation	48497	51122	52250	49398

\* P.F. = 0.6

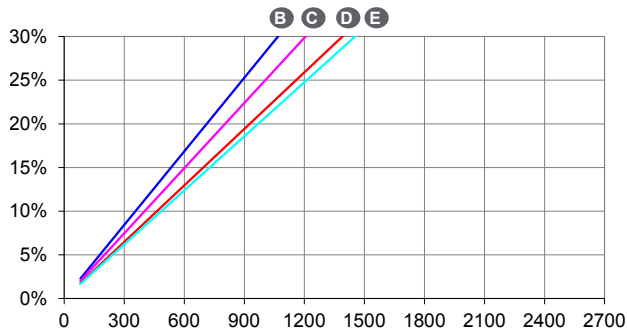
Transient voltage variation 480 V - 60 Hz



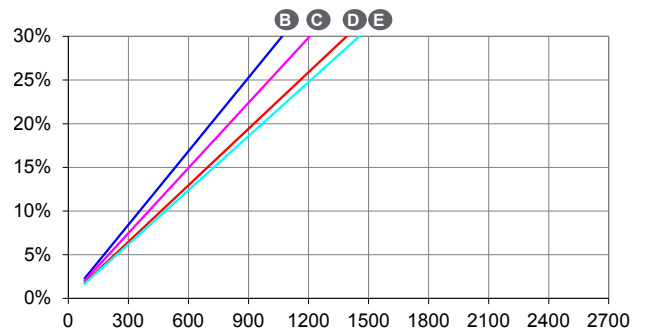
Phase loading (SHUNT) - kVA at 0.8 P.F.



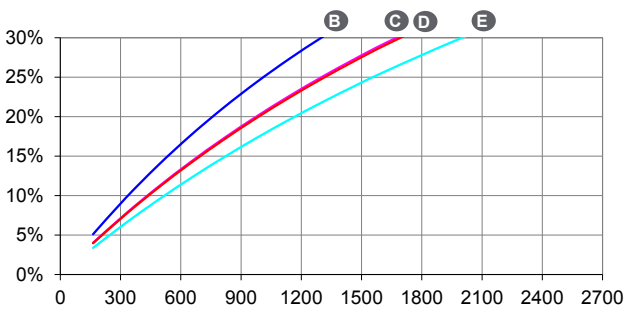
Phase loading (AREP) - kVA at 0.8 P.F.



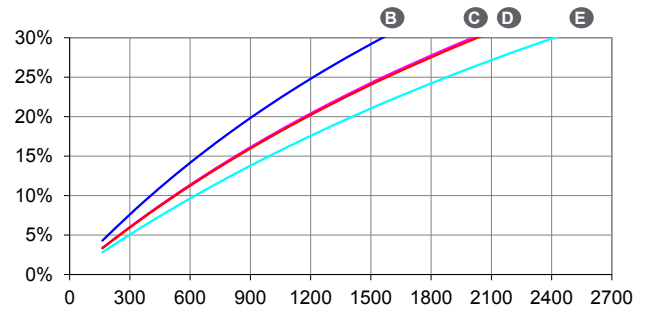
Load shedding (SHUNT) - kVA at 0.8 P.F.



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



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

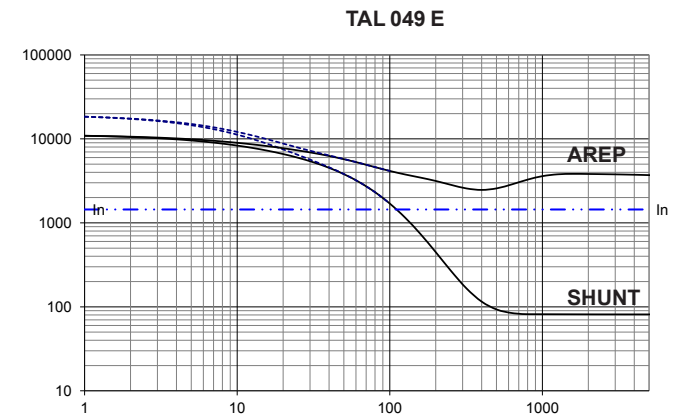
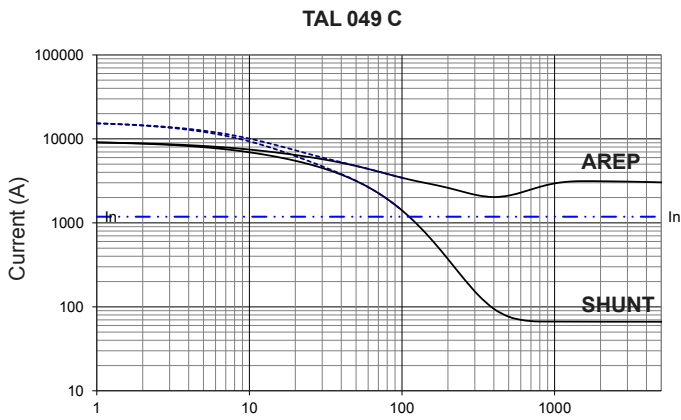
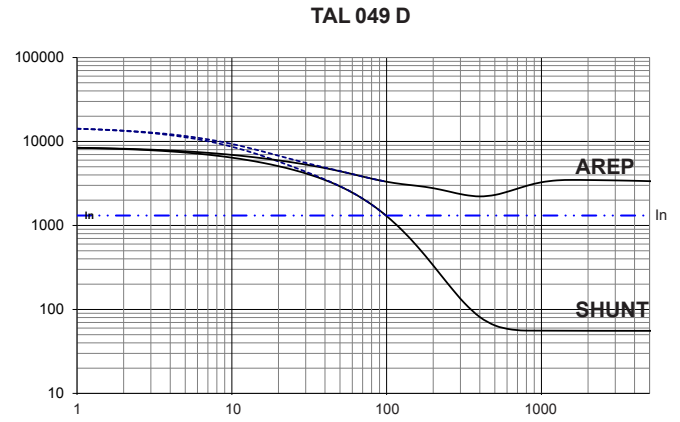
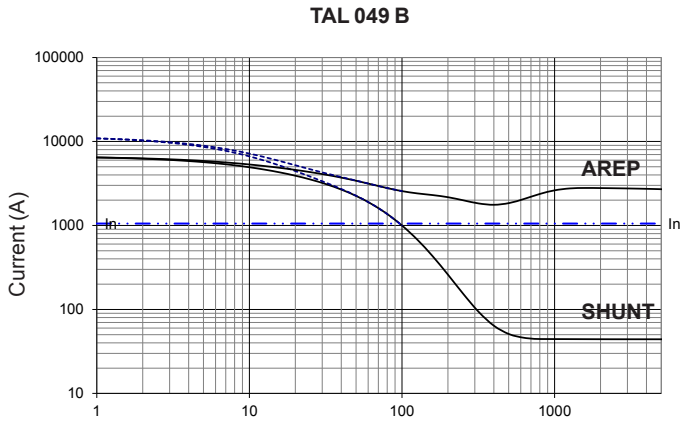


Motor starting (AREP)  
Locked rotor kVA at 0.6 P.F.

- 1) For a starting P.F. other than 0.6, the starting kVA must be multiplied by  $K = \text{Sine P.F.} / 0.8$
- 2) For voltages other than 480V (Y), 277V ( $\Delta$ ), 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)

Symmetrical — / Asymmetrical - - -



#### Influence due to connection

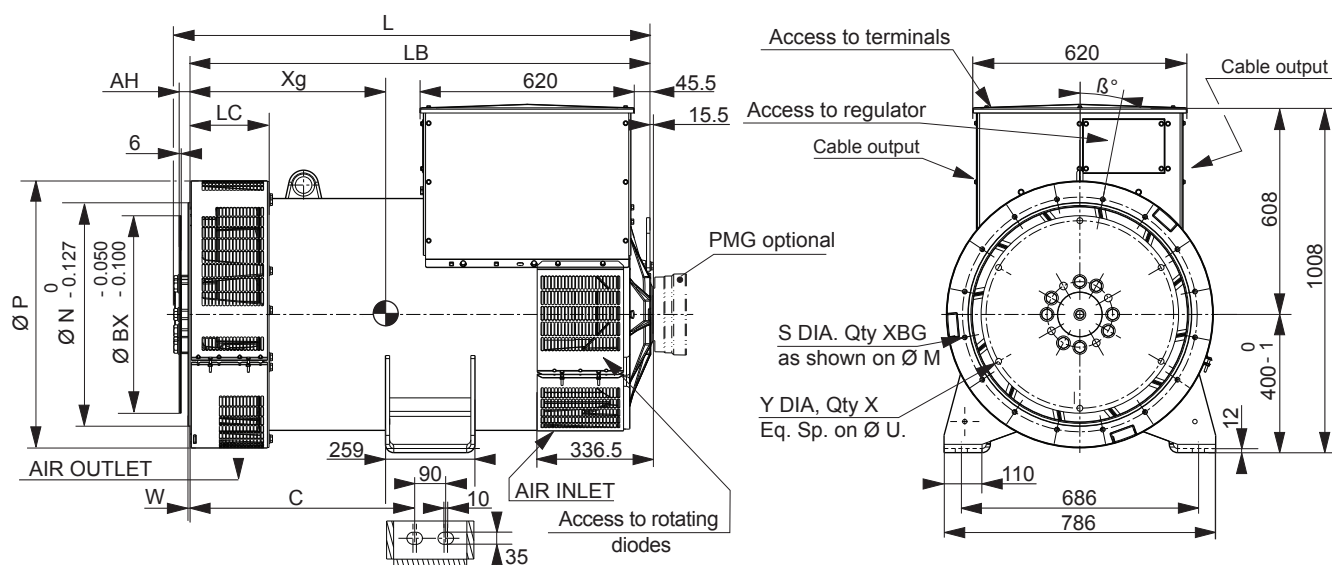
For (Δ) connection, use the following multiplication factor:  
 - Current value x 1.732.

#### 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 - ph.	2 - ph. L / L	1 - ph. 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	C	Xg	Weight (kg)
TAL 049 B	1372	1331	650	629	1574
TAL 049 C	1372	1331	650	636	1635
TAL 049 D	1462	1421	650	673	1788
TAL 049 E	1462	1421	650	681	1837

#### 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 S.A.E 00			X

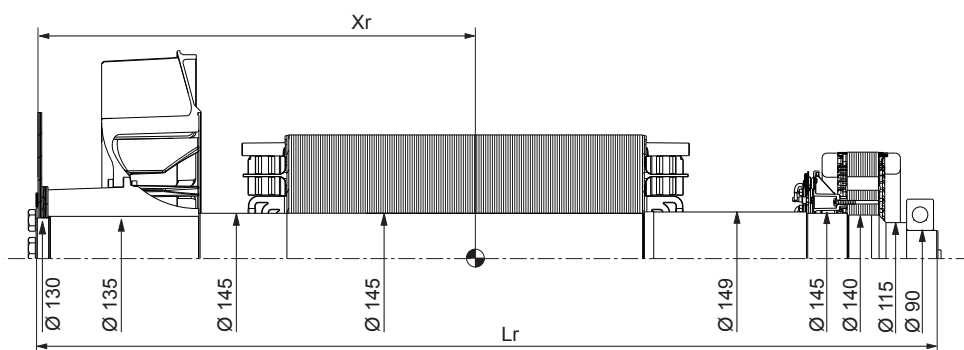
#### Flange (mm)

S.A.E.	P	N	M	LC	XBG	W	β°
1	773	511.175	530.225	228.5	12	6	15°
1/2	773	584.2	619.125	228.5	12	6	15°
0	773	647.7	679.45	228.5	16	6	11° 15'
00	883	787.4	850.9	245	16	7	11° 15'

#### Flex plate (mm)

S.A.E.	BX	U	X	Y	AH
14	466.7	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)

Type	Flex plate S.A.E. 14				Flex plate S.A.E. 18			
	Xr	Lr	M	J	Xr	Lr	M	J
TAL 049 B	626	1345	602	9.61	614	1345	604	9.87
TAL 049 C	634	1345	628	10.16	622	1345	630	10.42
TAL 049 D	671	1435	684	11.12	659	1435	686	11.38
TAL 049 E	681	1435	701	11.48	669	1435	703	11.74

**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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