

**CONTINUOUS DUTY**

**4 poles**  
**50 Hz - 1500 rpm / 60 Hz - 1800 rpm**

AMBIENT TEMPERATURE			40°C										
TEMPERATURE RISE			H										
INSULATION CLASS			H										
POWER FACTOR			0,8										
				WINDING DATA					Winding code	M0			
									Number of leads	12			
									Winding pitch	2/3			
FREQUENCY			Hz	50 Hz				60 Hz					
VOLTAGE			V	380	400	415	440	380	416	440	460	480	
Connections		Star series Star parallel		190	200	208	220	190	208	220	230	240	
RATING POWER			kVA	30,9	32,0	32,0	32,0	31,8	33,8	36,9	40,0	40,0	
			kW	24,7	25,6	25,6	25,6	25,4	27,0	29,5	32,0	32,0	
EFFICIENCY [%] @ 0,8 p.f.				87,4	88,3	87,9	87,7	87,1	87,8	88,3	88,8	89,1	
				89,2	89,8	89,4	89,3	89,1	89,4	89,8	90,3	90,7	
				90,3	90,6	89,9	90,1	90,3	90,4	90,6	90,8	90,9	
EFFICIENCY [%] @ 1 p.f.				89,9	90,6	90,3	90,1	89,7	90,2	90,6	91,0	91,3	
				91,4	91,9	91,5	91,5	91,2	91,5	91,9	92,3	92,6	
				92,2	92,5	92,0	92,1	92,2	92,4	92,5	92,7	92,8	
SHORT CIRCUIT RATIO			SCR	0,44	0,47	0,51	0,57	0,36	0,40	0,41	0,41	0,45	
REACTANCES [%]													
Direct axis synchronous			X <sub>d</sub>	293	274	255	226	285	321	313	311	285	
Quadrature axis synchronous			X <sub>q</sub>	164	153	142	126	202	179	175	174	159	
Direct axis transient			X' <sub>d</sub>	26,7	25,0	23,2	20,7	33,0	29,3	28,6	28,4	26,0	
Direct axis subtransient			X'' <sub>d</sub>	11,4	10,7	9,9	8,8	14,1	12,5	12,2	12,1	11,1	
Quadrature axis subtransient			X'' <sub>q</sub>	15,2	14,2	13,2	11,7	18,8	16,6	16,2	16,1	14,8	
Negative sequence			X <sub>2</sub>	13,4	12,5	11,6	10,3	16,5	14,6	14,3	14,2	13,0	
Zero sequence			X <sub>0</sub>	2,5	2,3	2,1	1,9	3,0	2,7	2,6	2,6	2,4	
TIME CONSTANTS [s]													
Open circuit			T' <sub>do</sub>	0,5									
Transient			T' <sub>d</sub>	0,05									
Subtransient			T'' <sub>d</sub>	0,007									
Armature			T <sub>a</sub>	0,005									

**MECHANICAL CHARACTERISTICS**

D-end bearing/Lubrication	6310 2RS C3 / Prelubricated
N-end bearing/Lubrication	6309 2RS C3 / Prelubricated
Overspeed [r.p.m.]	2250
Inertia (J) [kgm <sup>2</sup> ]	Refer to B34 construction 0,17
Weight [kg]	Refer to B34 construction 188
Method of cooling	IC01
Cooling air required [m <sup>3</sup> /s] @ 50/60 Hz	0,11 / 0,14
Degree of protection	IP23
Types of construction available	B2 (SAE) - IM B34
Direction of rotation (Standard)	CW

**OTHER DATA**

Phase resistance [Ω] @ 20 °C - Star series	0,3
Overloads	10% for 1 hour every 12 hours
3-phase short circuit sustained current	-
Voltage regulation accuracy	± 1 % In steady state condition
Radio interference	EN 55011 - Class B Group 1
Wave form THF	< 2%
Total harmonic content	< 2% - At no load

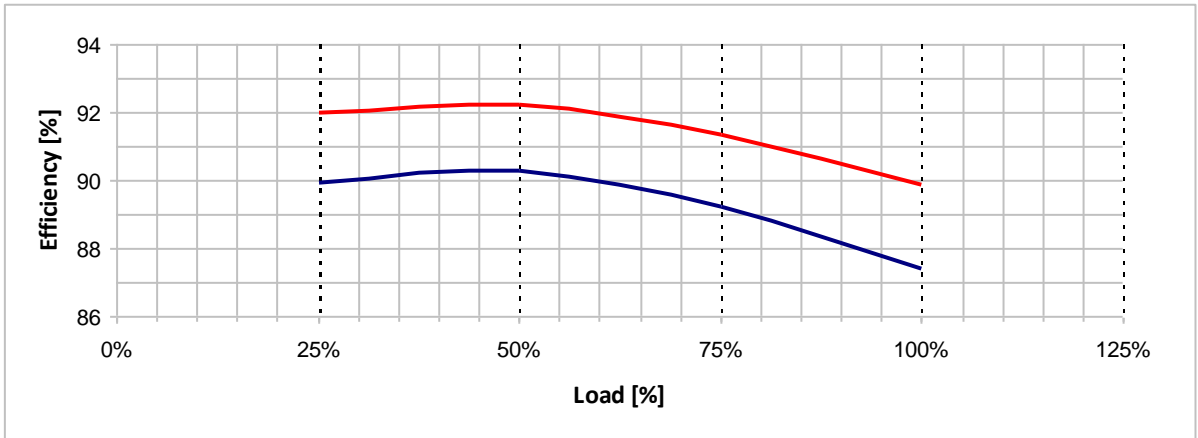
**STANDARDS**

IEC 60034-1; CEI 2-3; BS 4999-5000; VDE 0530; NF 51-100,111; OVE M-10, NEMA MG 1.22.

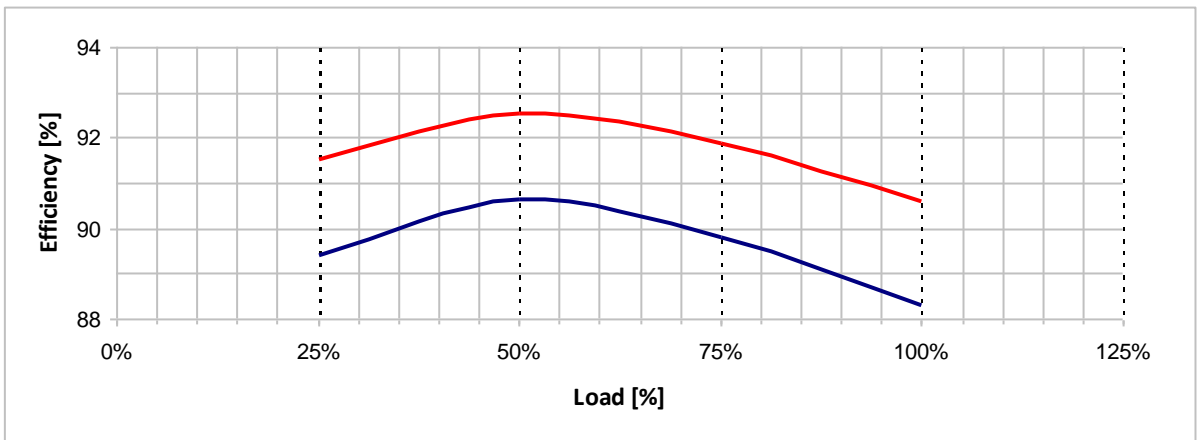
**Typical efficiency curves**

**50 Hz - 1500 rpm**

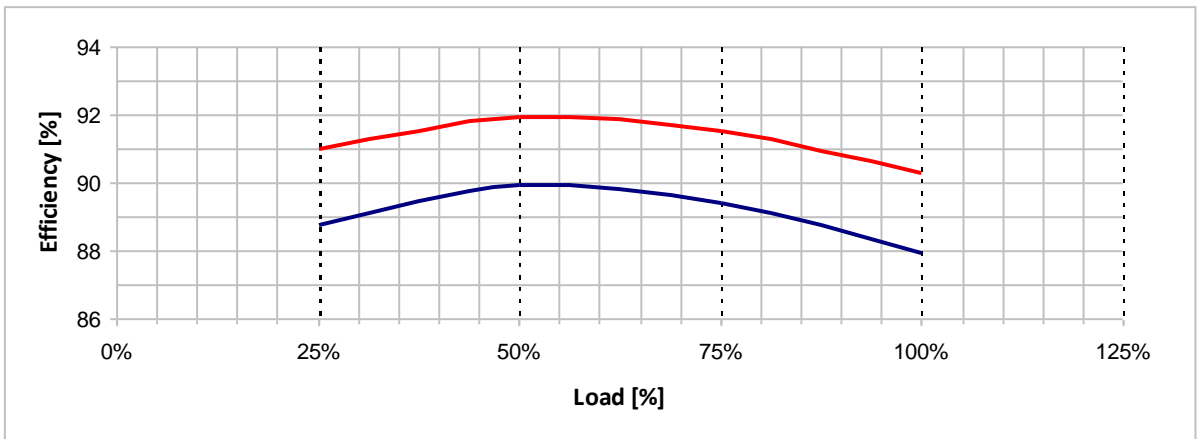
**380 V**



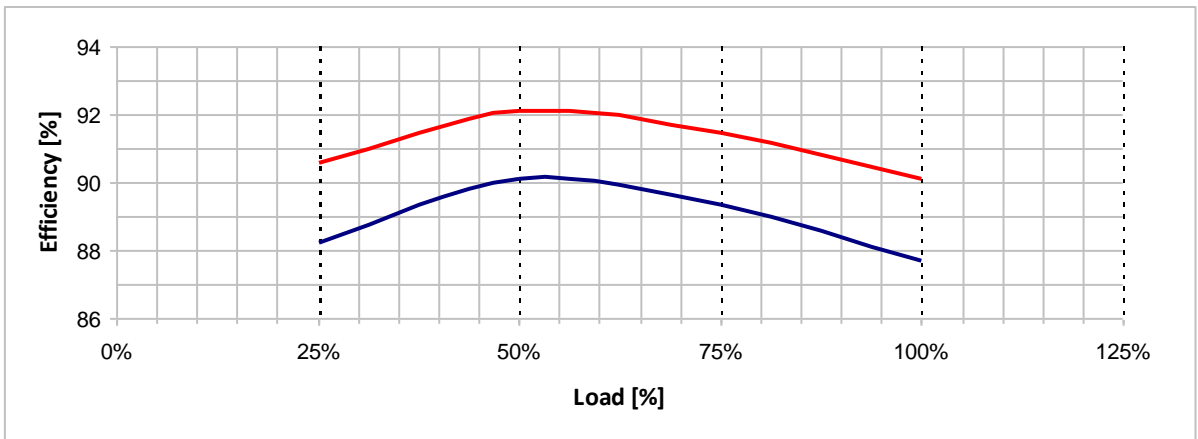
**400 V**



**415 V**



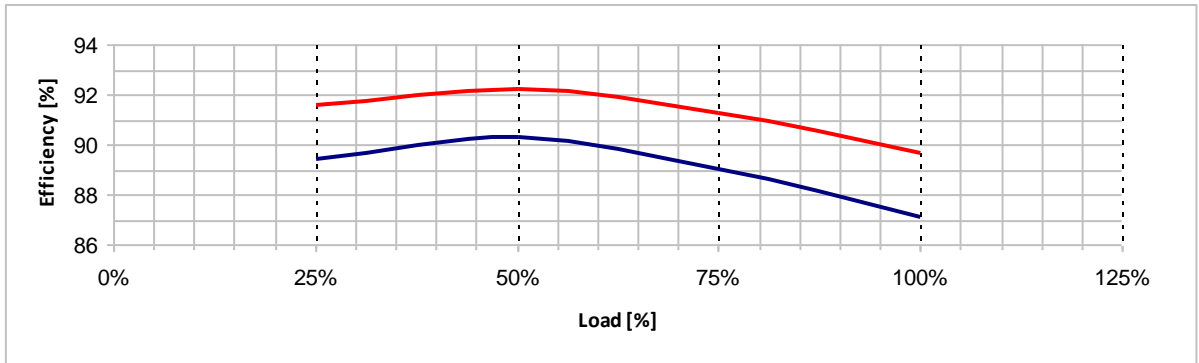
**440 V**



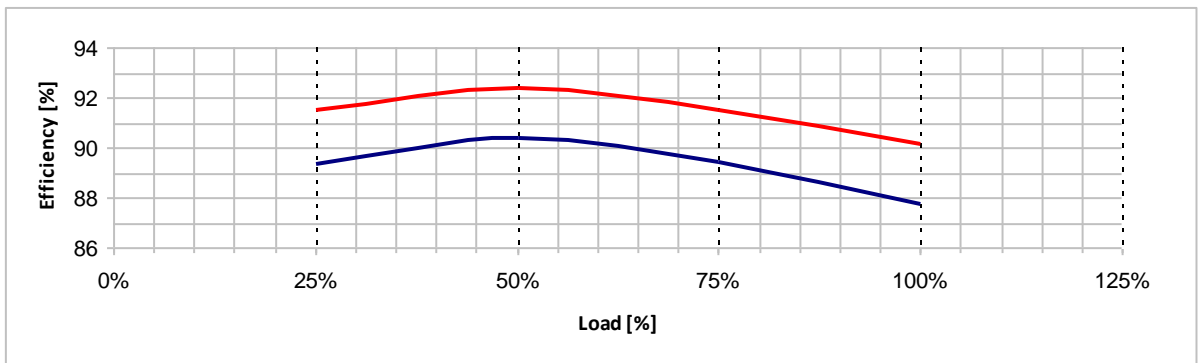
**Typical efficiency curves**

**60 Hz - 1800 rpm**

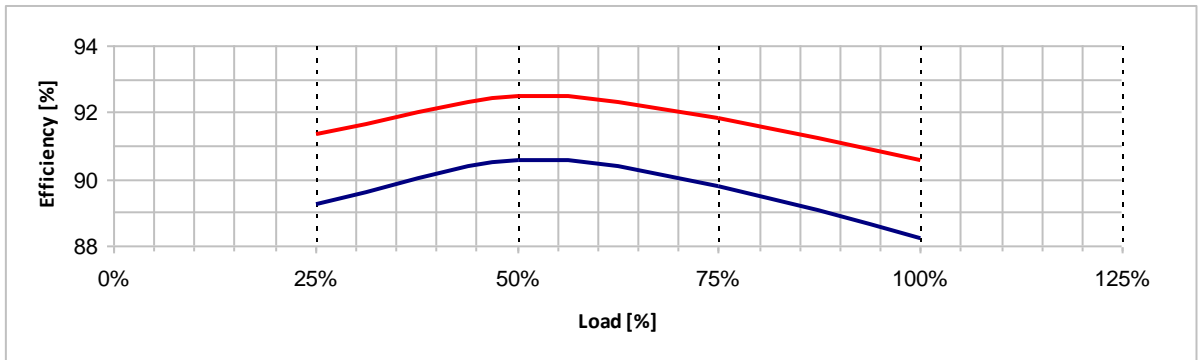
**380 V**



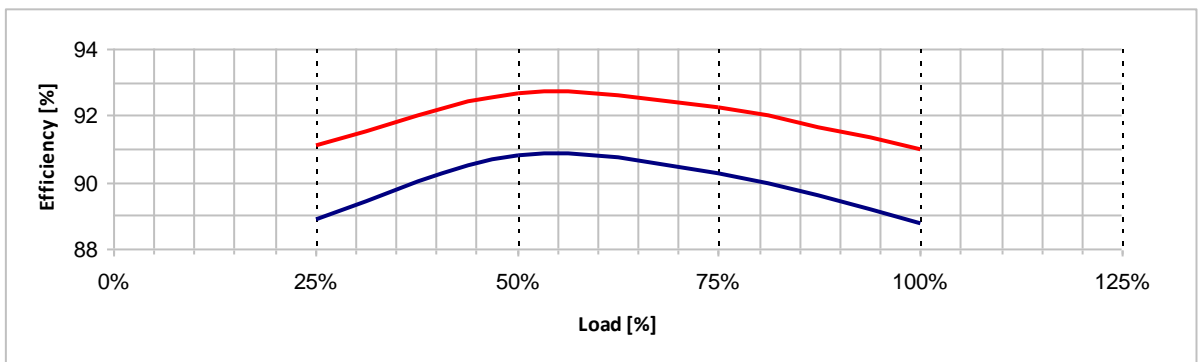
**416 V**



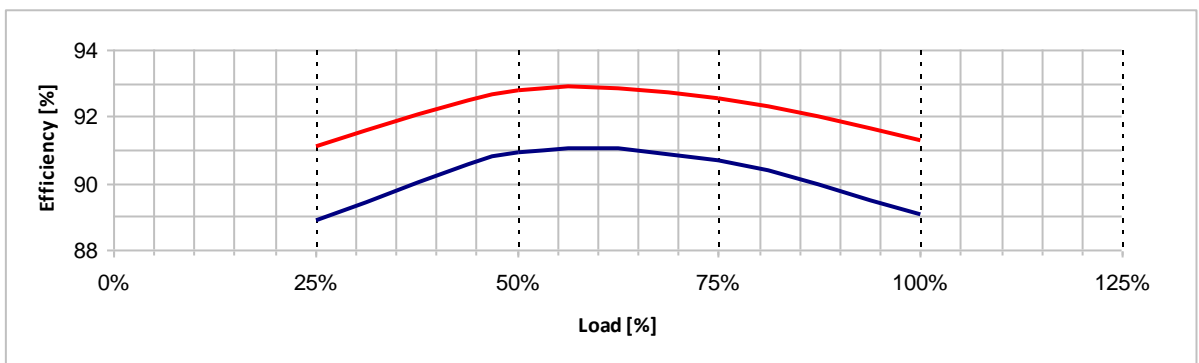
**440 V**



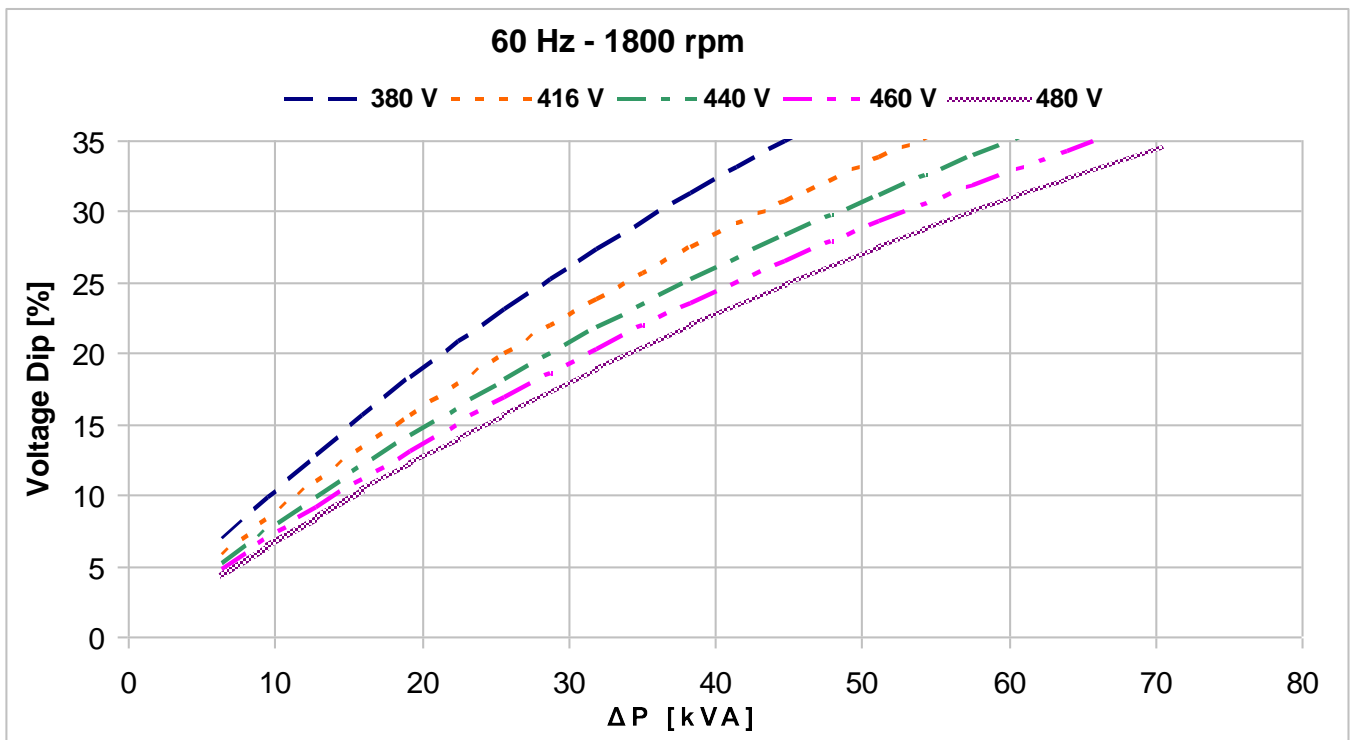
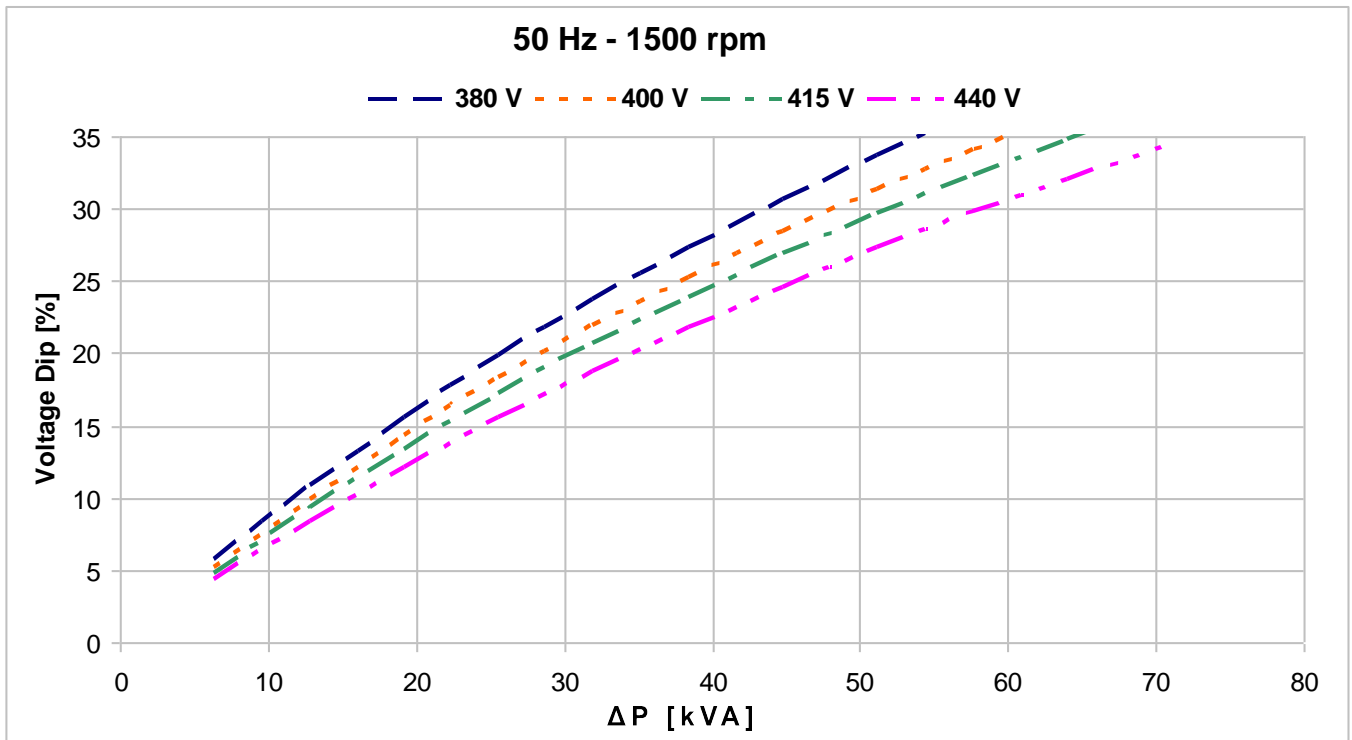
**460 V**



**480 V**



### Locked rotor motor starting curves (\*)



$$\Delta P = P_n \times \frac{I_s / I_n}{\cos \varphi_n \times \eta_n}$$

(\*): A coefficient of 0,85 must be applied to the voltage dip if the load has a power factor equal or greater than 0,8.

<b>AMBIENT TEMPERATURE</b>	<b>27°C</b>	<b>WINDING DATA</b>		
<b>TEMPERATURE RISE</b>	<b>163K</b>	Winding code <b>M0</b>		
<b>INSULATION CLASS</b>	<b>H</b>	Number of leads <b>12</b>		
<b>POWER FACTOR</b>	<b>0,8</b>	Winding pitch <b>2/3</b>		

FREQUENCY	Hz	50				60					
		<b>VOLTAGE</b>	Star series Star parallel	<b>V</b>	<b>380</b>	<b>400</b>	<b>415</b>	<b>440</b>	<b>380</b>	<b>416</b>	<b>440</b>
<b>RATING</b>		<b>kVA</b>	<b>34,0</b>	<b>35,2</b>	<b>35,2</b>	<b>35,2</b>	<b>35,0</b>	<b>37,2</b>	<b>40,6</b>	<b>44,0</b>	<b>44,0</b>
		<b>kW</b>	<b>27,2</b>	<b>28,2</b>	<b>28,2</b>	<b>28,2</b>	<b>28,0</b>	<b>29,8</b>	<b>32,5</b>	<b>35,2</b>	<b>35,2</b>
<b>EFFICIENCY (%) @ 0,8 p.f.</b>	4/4		86,5	87,7	87,2	87,0	86,3	87,0	87,7	88,0	88,2
<b>EFFICIENCY (%) @ 1,0 p.f.</b>	4/4		89,1	90,1	89,7	89,5	89,0	89,5	90,1	90,4	90,5
<b>SHORT CIRCUIT RATIO</b>			0,40	0,43	0,46	0,52	0,32	0,36	0,37	0,38	0,41
<b>REACTANCES (%)</b>											
Direct axis synchronous	x <sub>d</sub>		325	300	280	250	400	355	345	340	315
Quadrature axis synchronous	x <sub>q</sub>		180	170	155	140	225	195	195	190	175
Direct axis transient	x' <sub>d</sub>		29,4	27,5	25,5	22,7	36,4	32,2	31,5	31,2	28,6
Direct axis subtransient	x'' <sub>d</sub>		12,6	11,8	10,9	9,7	15,6	13,8	13,5	13,3	12,3
Quadrature axis subtransient	x'' <sub>q</sub>		16,7	15,6	14,5	12,9	20,7	18,3	17,9	17,7	16,3
Negative sequence	x <sub>2</sub>		14,7	13,8	12,8	11,4	18,2	16,1	15,7	15,6	14,3
Zero sequence	x <sub>0</sub>		2,7	2,5	2,4	2,1	3,3	3,0	2,9	2,9	2,6

**TIME CONSTANTS [s]**

Open circuit (T' <sub>do</sub> )	0,5	Subtransient (T'' <sub>d</sub> )	0,007
Transient (T' <sub>d</sub> )	0,05	Armature (T <sub>a</sub> )	0,005

**MECHANICAL CHARACTERISTICS**

D-end bearing/Lubrication	6310 2RS C3 / Prelubricated
N-end bearing/Lubrication	6309 2RS C3 / Prelubricated
Weight (IM B34) [kg]	188
Inertia (J) (IM B34) [kgm <sup>2</sup> ]	0,170
Overspeed [min <sup>-1</sup> ]	2250
Method of cooling	IC 01
Cooling air required [m <sup>3</sup> /s] @ 50/60 Hz	0,11 / 0,14
Degree of protection	IP 23
Type of construction available	B2 - SAE / IM B34
Direction of rotation	CW

**OTHER DATA**

Phase resistance [Ω] @ 20 °C - Star series	0,3
Overloads	-
3-phase short circuit current	-
Voltage regulation accuracy	+/- 1 % (in steady state condition)
Radio interference	EN 55011 Class B Group 1
Wave form THF	< 2%
Total harmonic content	< 2% (at no load)

**STANDARDS**

IEC 60034-1; CEI 2-3; BS 4999-5000; VDE 0530; NF 51-100,111; OVE M-10, NEMA MG 1.22.