

AMBIENT TEMPERATURE TEMPERATURE RISE INSULATION CLASS POWER FACTOR		40°C H H 0,8						WINDING DATA Winding code Number of leads Winding pitch			M0 12 2/3	
FREQUENCY		Hz	50				60					
VOLTAGE		Star series Star parallel	V	380	400	415	440	380	416	440	460	480
				190	200	208	220	190	208	220	230	240
RATING		kVA kW	145	150	150	143	150	163	172	180	188	
			116	120	120	114	120	130	138	144	150	
EFFICIENCY (%) @ 0,8 p.f.		4/4	91,6	91,9	92,1	92,3	91,5	92,0	92,3	92,4	92,6	
		3/4	92,8	93,0	93,1	93,0	92,7	93,1	93,3	93,4	93,5	
		2/4	93,7	93,7	93,7	93,3	93,5	93,7	93,9	93,9	93,9	
EFFICIENCY (%) @ 1,0 p.f.		4/4	93,7	94,0	94,2	94,6	93,4	93,8	94,1	94,3	94,4	
		3/4	94,7	94,9	95,0	95,2	94,4	94,7	94,9	95,1	95,2	
		2/4	95,4	95,5	95,5	95,3	95,1	95,3	95,4	95,5	95,6	
STAND-BY RATING (163/27)		kVA	160	165	165	157	165	179	189	198	207	
STAND-BY EFFICIENCY (%) @ 0,8 p.f.			91,2	91,4	91,7	92,0	91,0	91,6	91,9	92,0	92,2	
SHORT CIRCUIT RATIO (referred to class H rating)			0,37	0,39	0,42	0,50	0,30	0,33	0,35	0,36	0,38	
REACTANCES (%) (referred to class H rating)												
Direct axis synchronous		x _d	386	360	334	284	479	434	409	392	376	
Quadrature axis synchronous		x _q	160	150	139	118	199	181	170	163	156	
Direct axis transient		x' _d	23,0	21,5	19,9	16,9	28,6	25,9	24,4	23,4	22,4	
Direct axis subtransient		x'' _d	11,9	11,1	10,3	8,8	14,8	13,4	12,6	12,1	11,6	
Quadrature axis subtransient		x'' _q	13,1	12,2	11,4	9,6	16,3	14,7	13,9	13,3	12,8	
Negative sequence		x ₂	12,5	11,7	10,8	9,2	15,5	14,1	13,3	12,7	12,2	
Zero sequence		x ₀	5,8	5,4	5,0	4,2	7,2	6,5	6,1	5,9	5,6	

TIME CONSTANTS [s]

Open circuit (T'do)	1,056	Subtransient (T''d)	0,010
Transient (T'd)	0,098	Armature (Ta)	0,011

MECHANICAL CHARACTERISTICS

D-end bearing/Lubrication	Available on double bearing configuration (on request)
N-end bearing/Lubrication	6309 2RS1 C3 WT / Prelubricated
Weight [kg]	434
Inertia (J) [kgm ²]	1,25
Overspeed [min ⁻¹]	2250
Method of cooling	IC 01
Cooling air required [m ³ /s] @ 50/60 Hz	0,2 / 0,233
Degree of protection	IP 23
Type of construction available	B2 (B34 on request)
Direction of rotation	CW

OTHER DATA

Phase resistance [Ω] @ 20 °C - Star series	0,036
Overloads	10% for 1 hour
3-phase short circuit current	>= 300% (3 In) with aux. winding or PMG
Voltage regulation accuracy	+/- 0,5 % (@ rated load, balanced and non-distorting, p.f. 0,8)
Radio interference	EN 55011 Class B Group 1
Wave form THF	< 2%
Total harmonic content	< 2% (at no load)

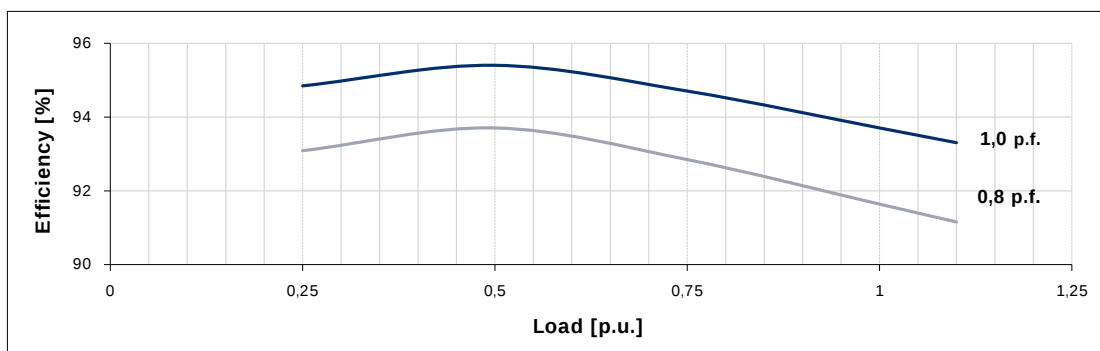
STANDARDS

IEC 60034-1; BS 4999-5000; NEMA MG 1.32.
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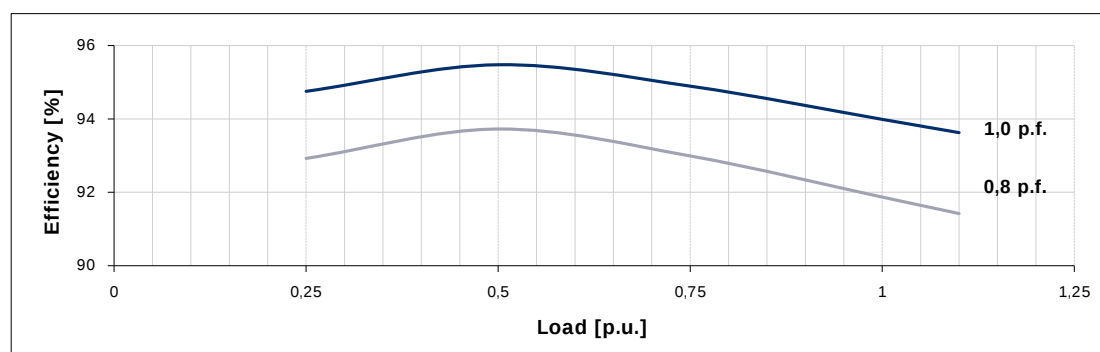
Typical efficiency curves

50 Hz - 1500 min⁻¹

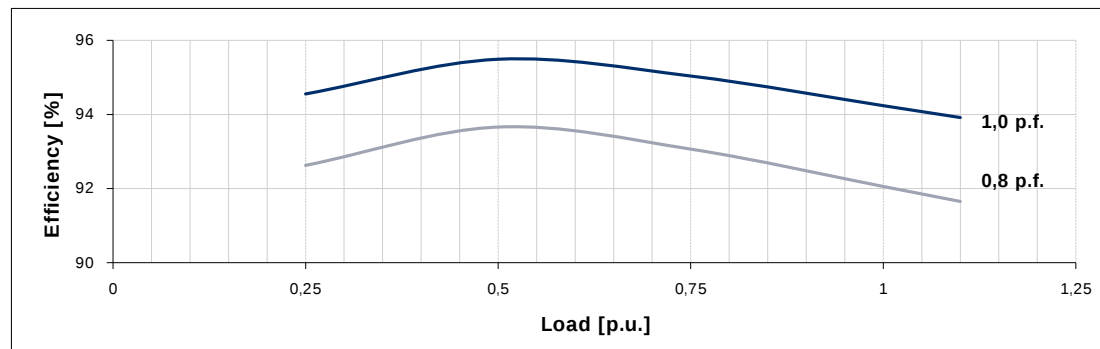
380 V



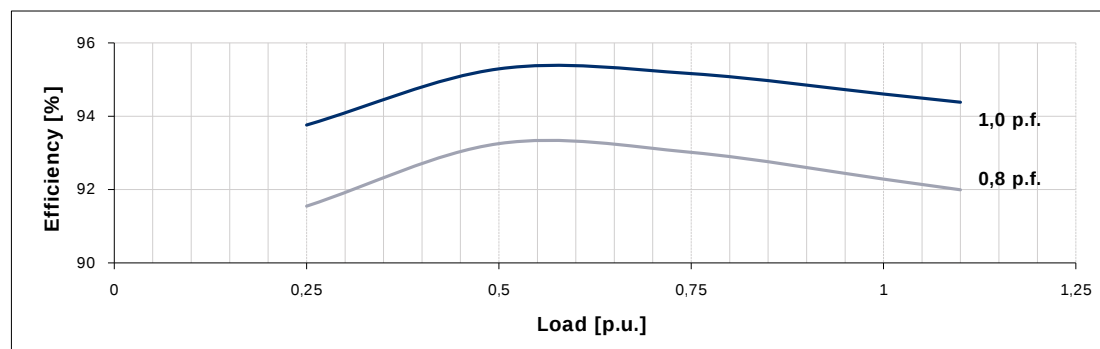
400 V



415 V



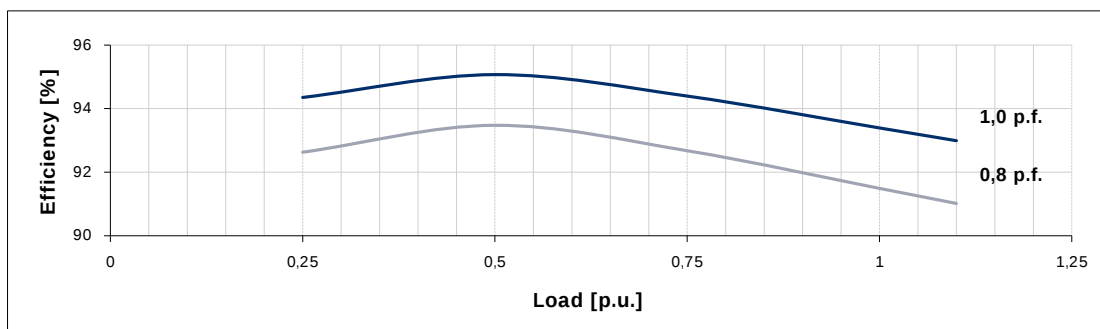
440 V



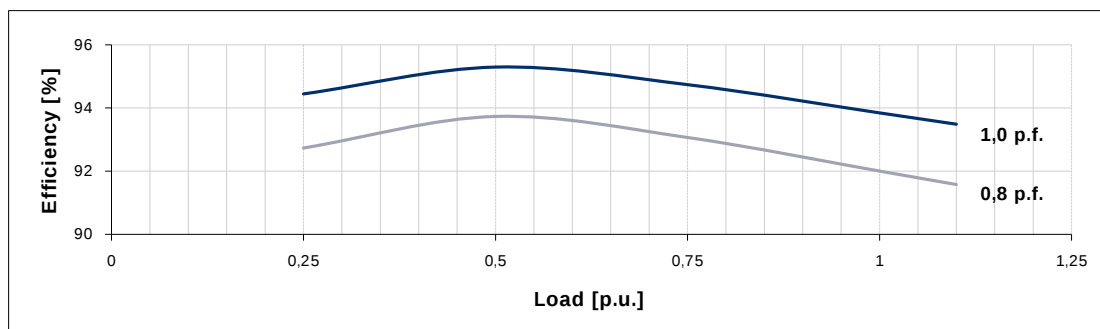
Typical efficiency curves

60 Hz - 1800 min⁻¹

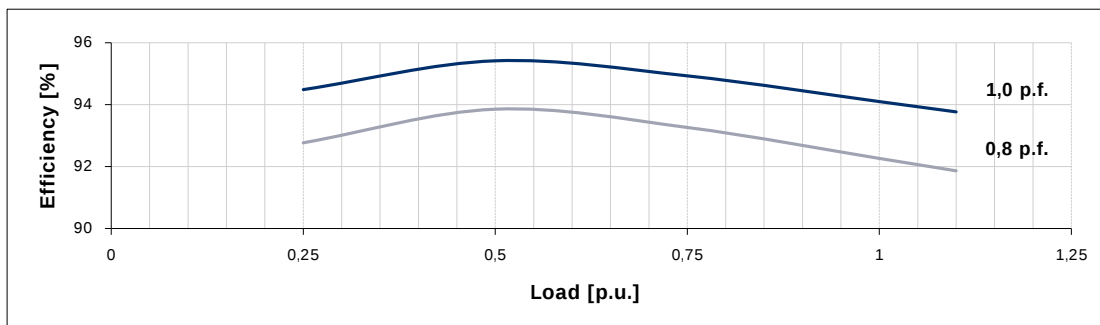
380 V



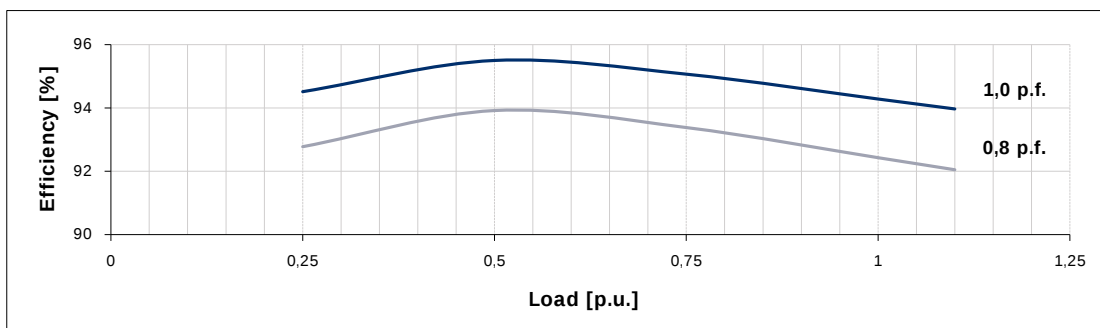
416 V



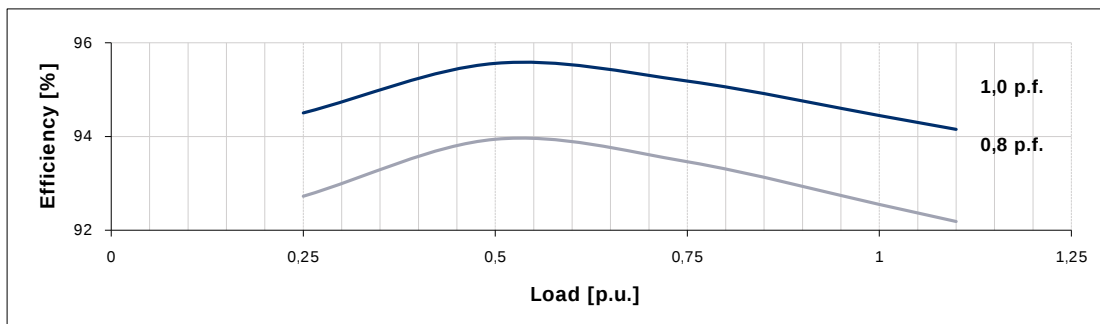
440 V



460 V



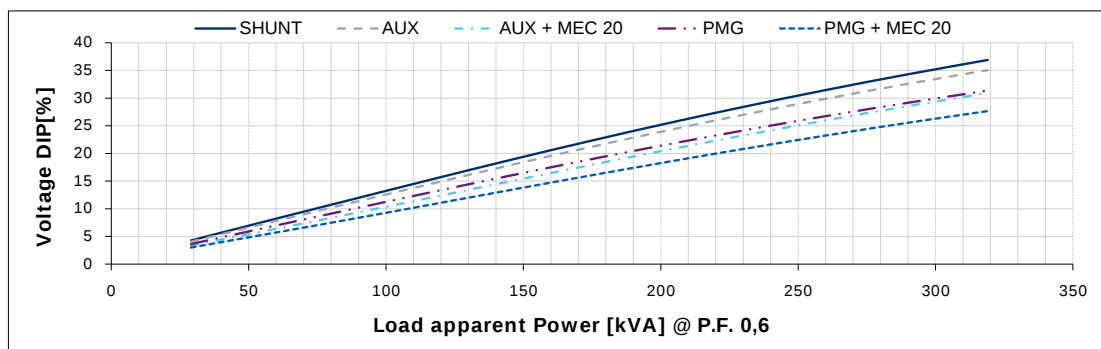
480 V



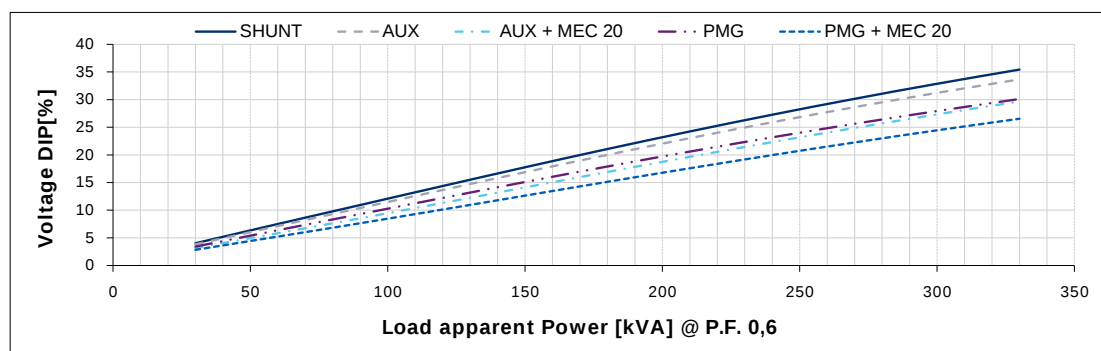
Typical voltage DIP curves

50 Hz - 1500 min⁻¹

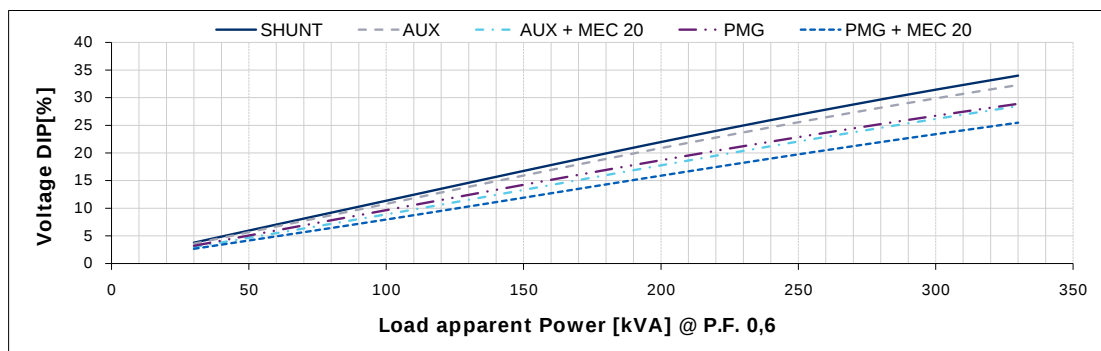
380 V



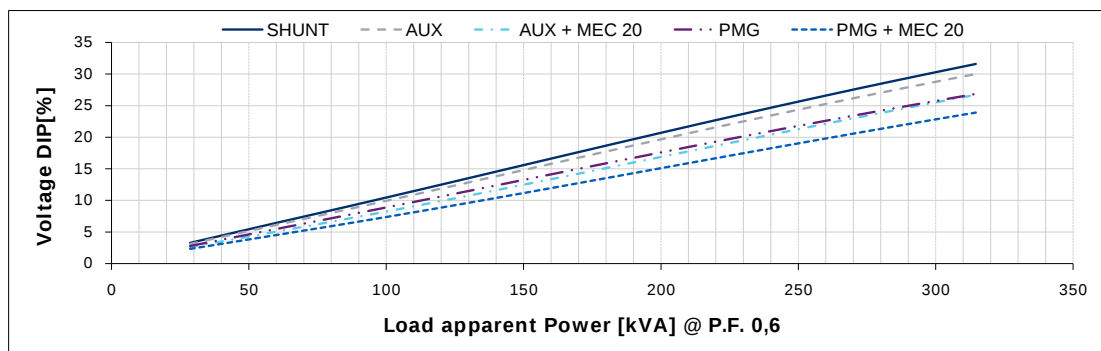
400 V



415 V



440 V

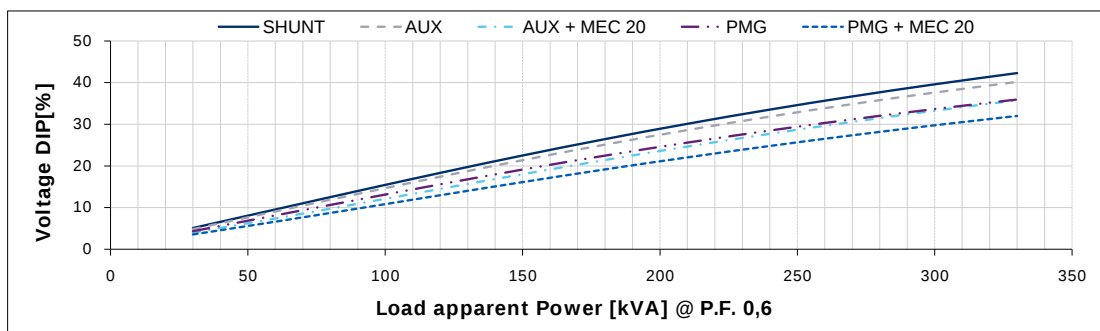


THREE-PHASE SYNCHRONOUS GENERATOR MXB-E 225 LA 4

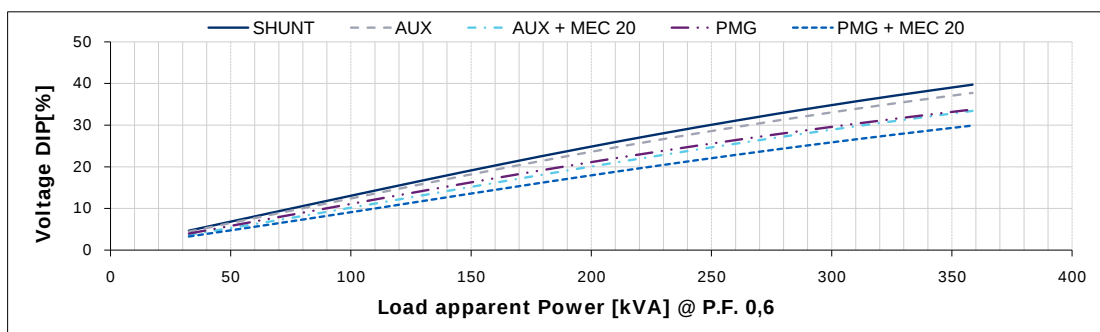
Typical voltage DIP curves

60 Hz - 1800 min⁻¹

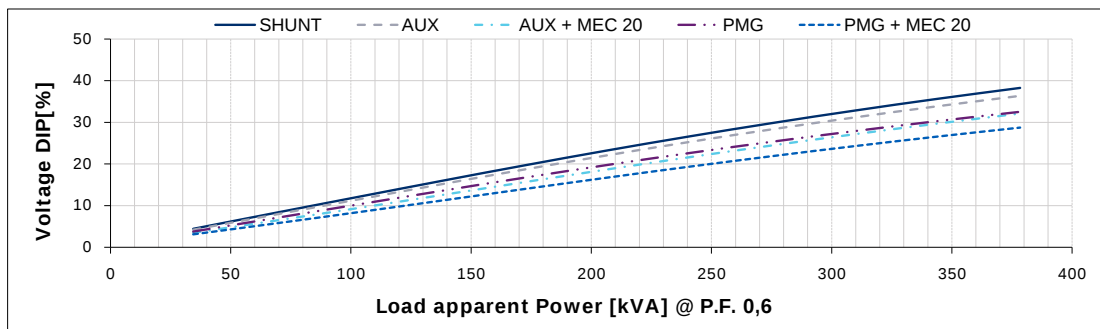
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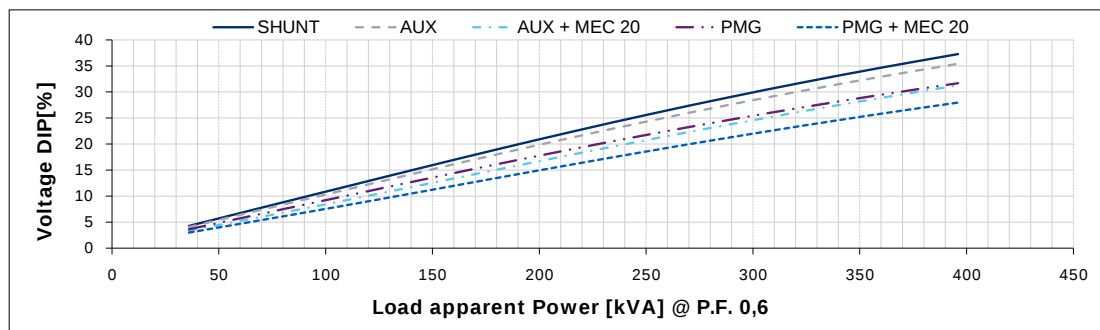
416 V



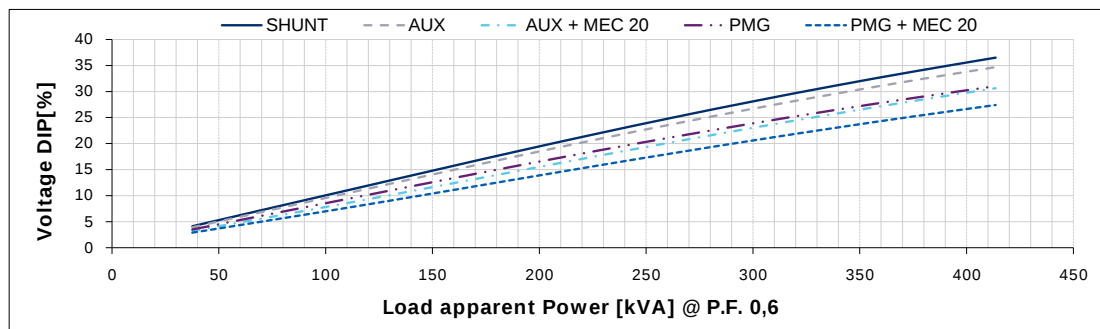
440 V



460 V



480 V



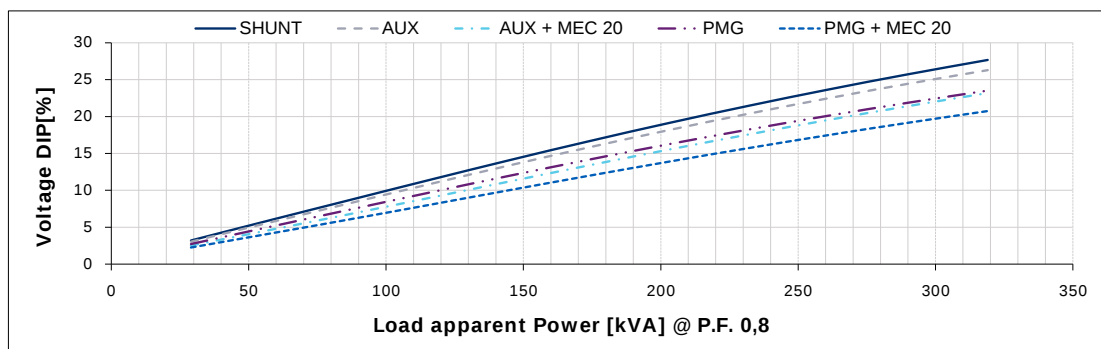
For P.F. different from 0,6 the following simplified formula can be used: $\Delta V (@ P.F.) = \Delta V (@ 0,6) \cdot \sin(\arccos(P.F.)) / 0,8$

THREE-PHASE SYNCHRONOUS GENERATOR MXB-E 225 LA 4

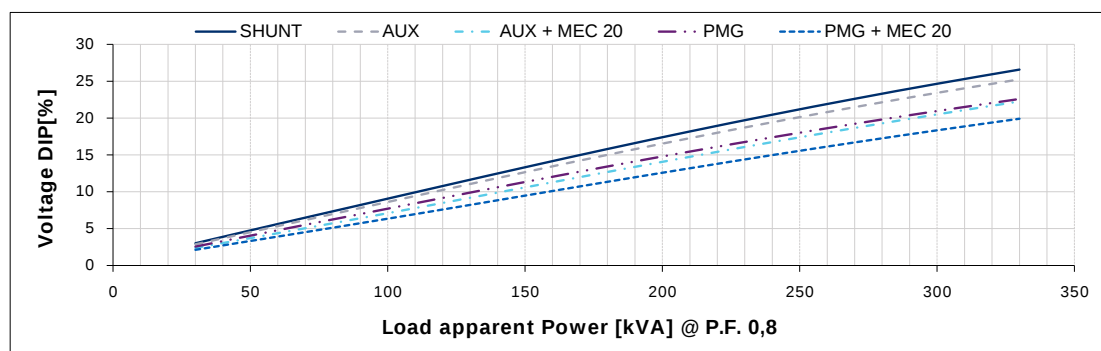
Typical voltage DIP curves

50 Hz - 1500 min⁻¹

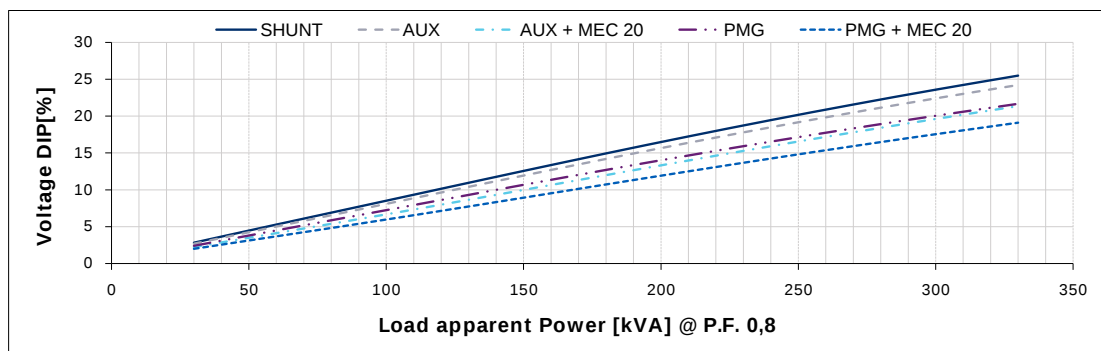
380 V



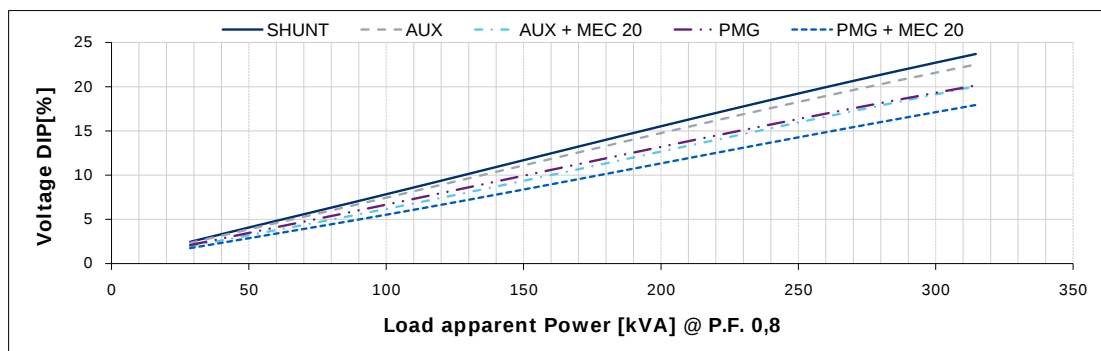
400 V



415 V



440 V

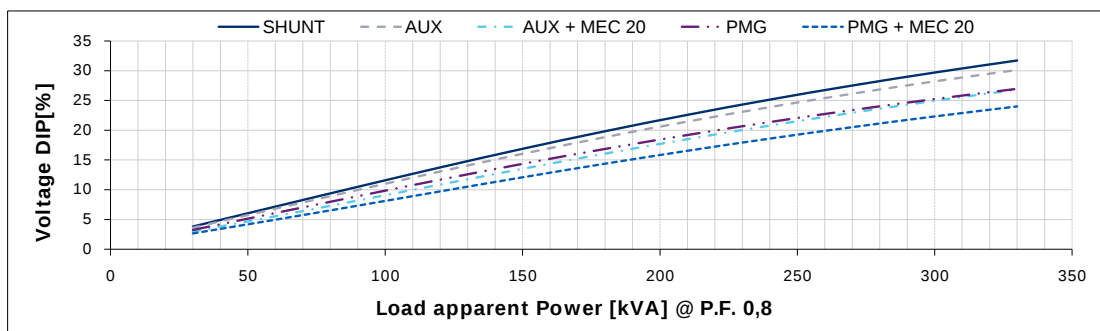


THREE-PHASE SYNCHRONOUS GENERATOR MXB-E 225 LA 4

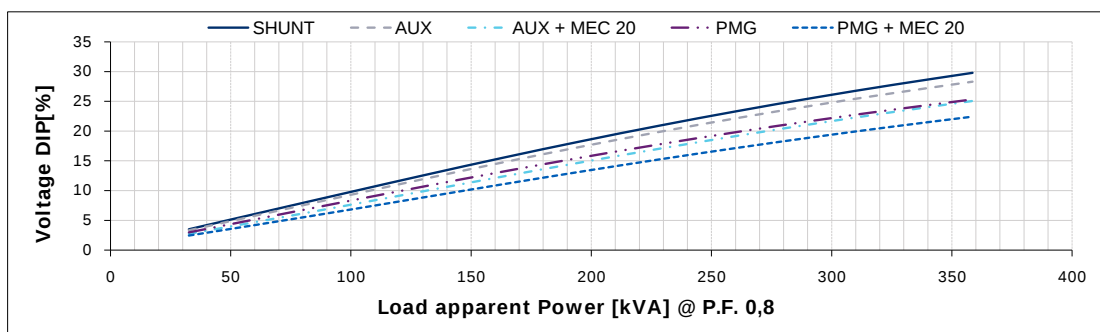
Typical voltage DIP curves

60 Hz - 1800 min⁻¹

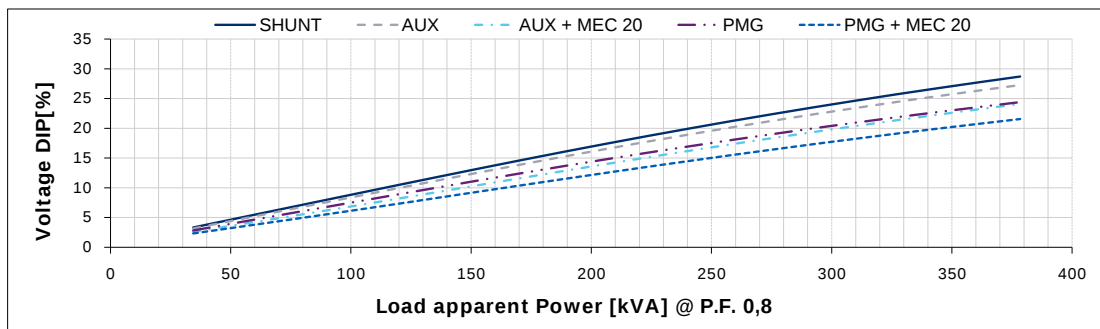
380 V



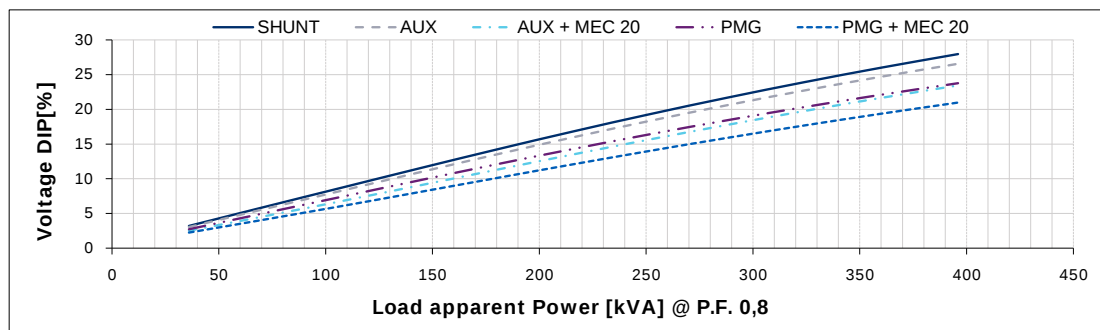
416 V



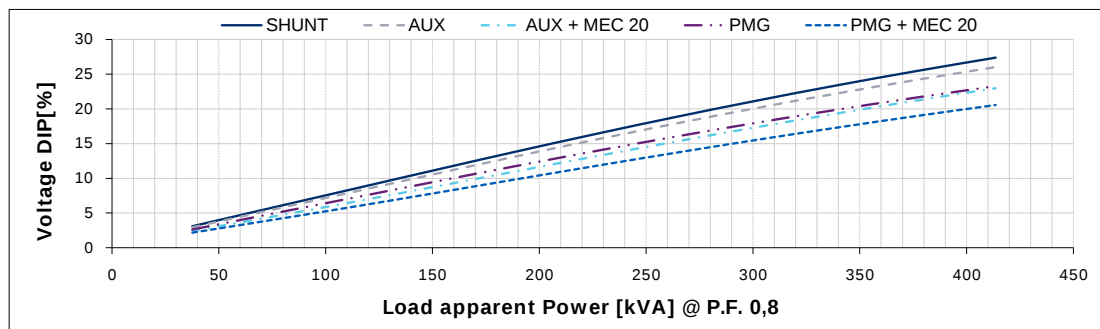
440 V



460 V



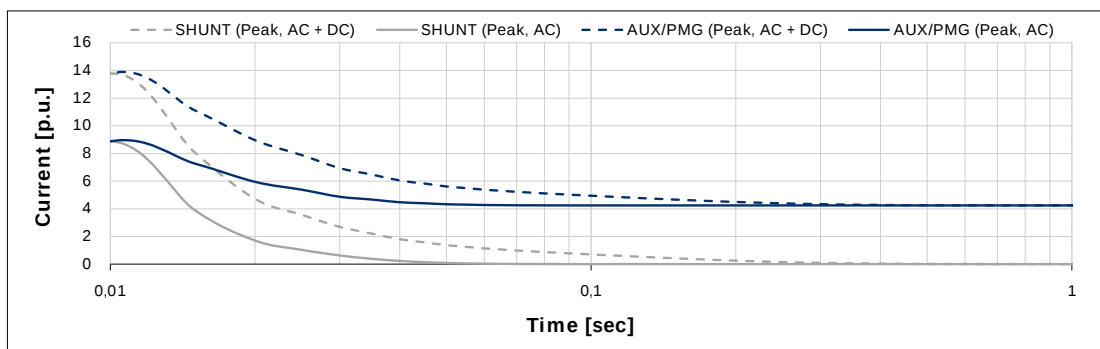
480 V



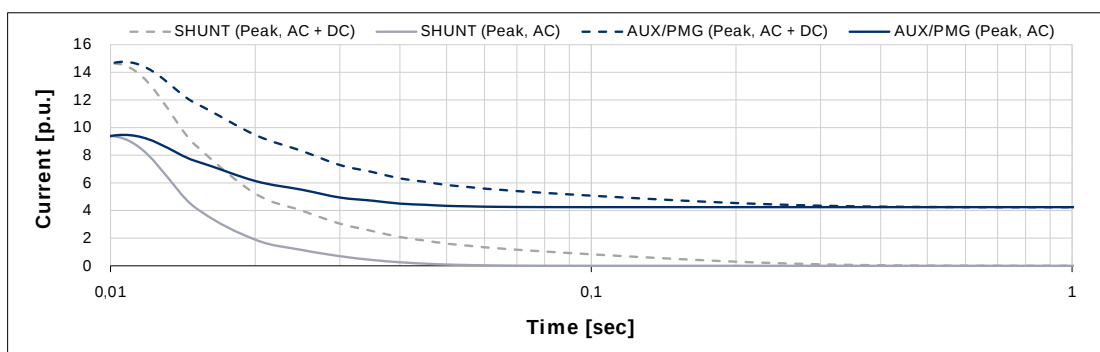
Typical 3-phase short circuit decrement curves

50 Hz - 1500 min⁻¹

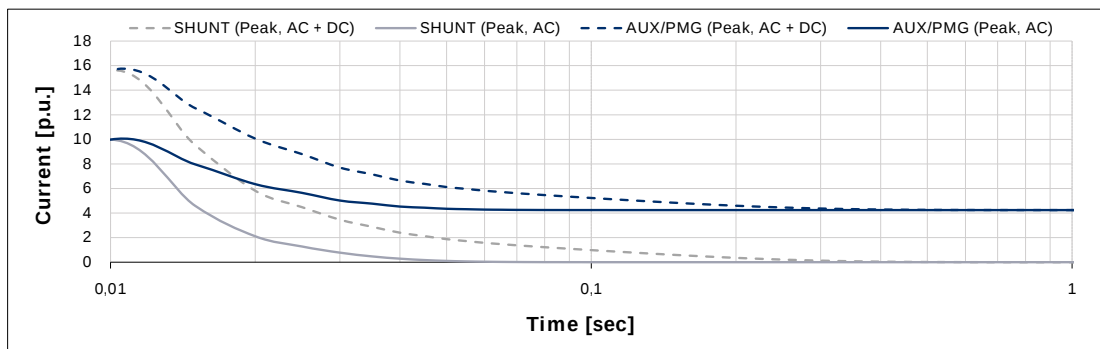
380 V



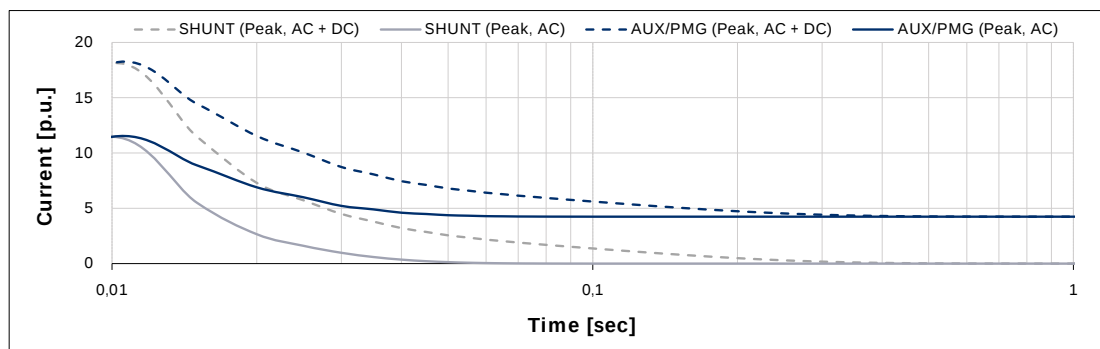
400 V



415 V



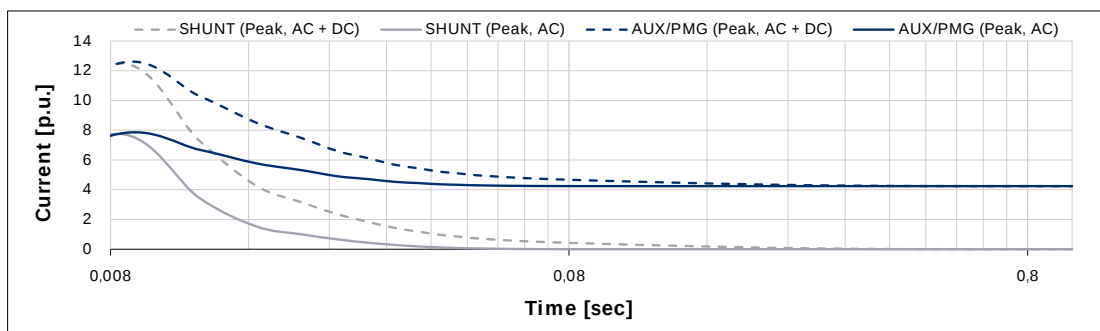
440 V



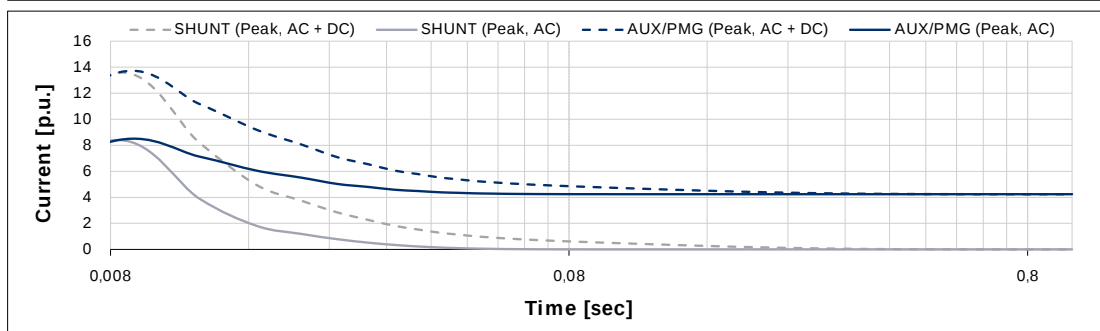
Typical 3-phase short circuit decrement curves

60 Hz - 1800 min⁻¹

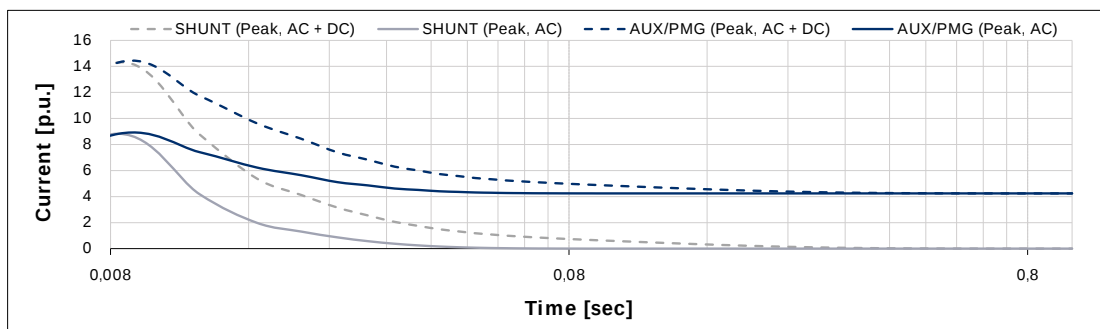
380 V



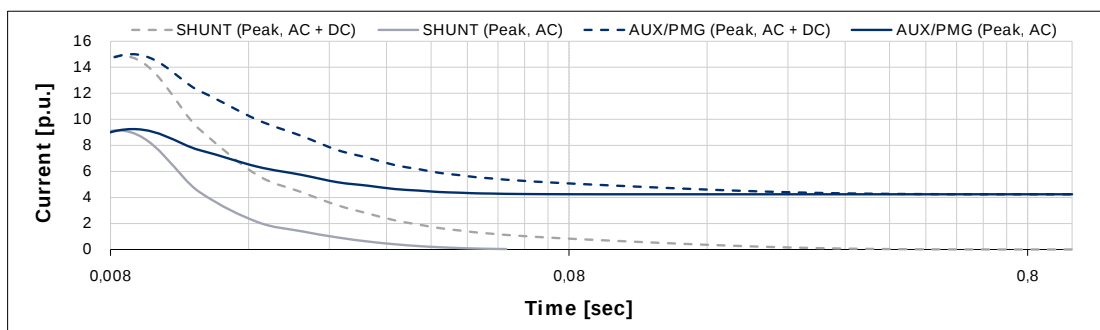
416 V



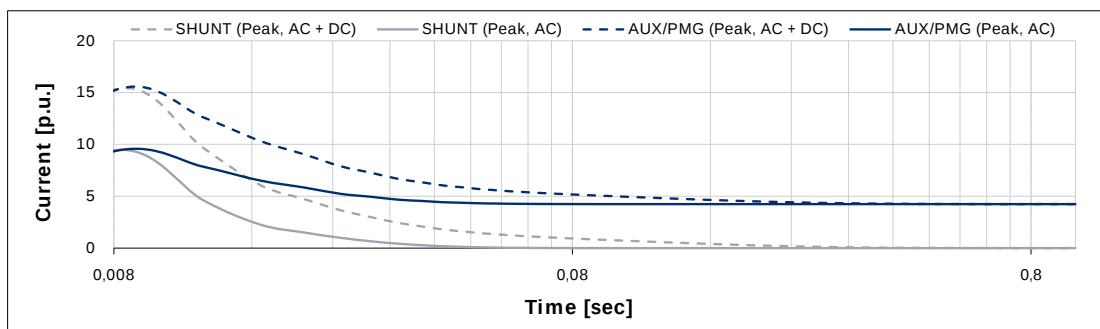
440 V



460 V



480 V



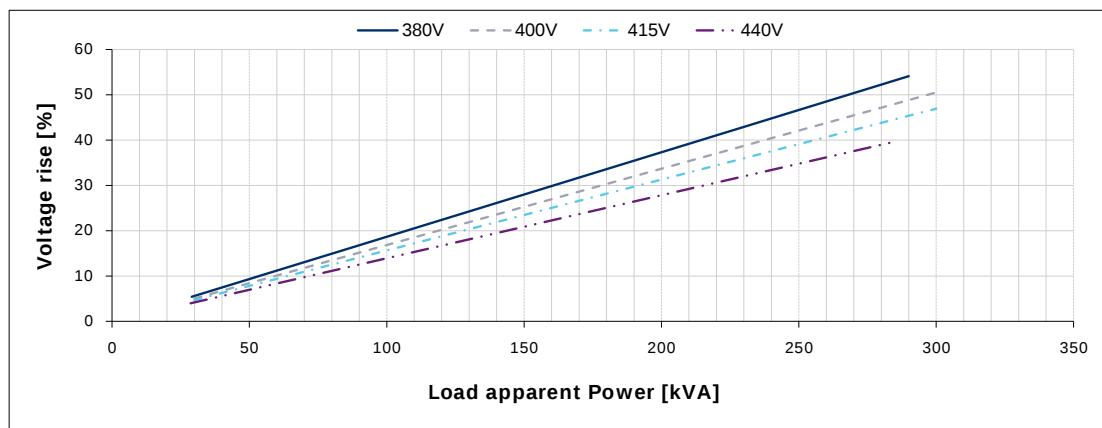
Above curves are based on a three-phase short circuit
For other type of short circuit use the following multiplication factors

	2 phase	1 phase
Instantaneous (max)	0,95	1,20
Continuous	1,50	1,83

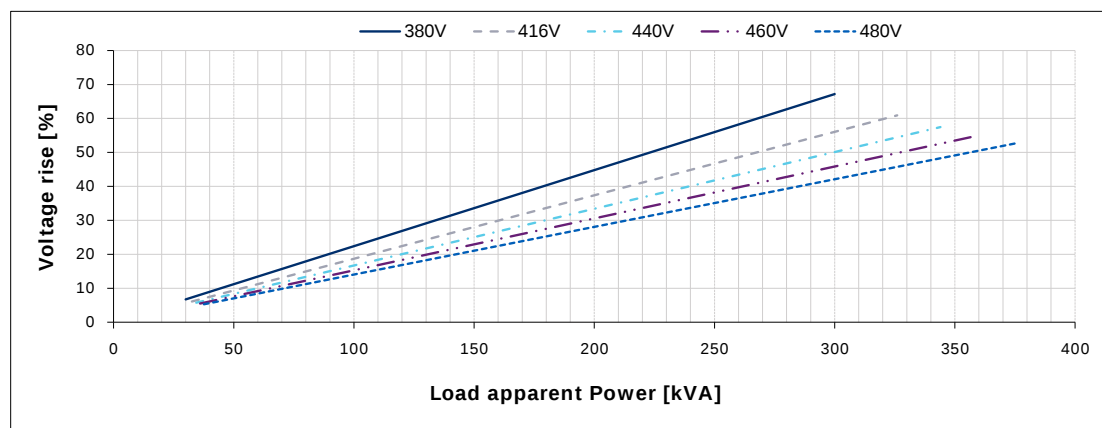
SYN.DS.0067_ =

Typical load rejection curves

50 Hz - 1500 min-1



60 Hz - 1800 min-1



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