

**Technical Data Sheet for AvK-Alternators**

FM 7.3-5

Date:	25/09/13	Customer:	GENERIC DATASHEET only
Project No.:		AvK Reference:	DSG062L2_4_60_480

Object data:

Site:		Prime Mover:	
Application:	Stationary Power Plant	Manufacturer:	

Generator data:

Generator:	DSG 62 L2/4	Poles:	4	Standards:	IEC 60034
Rated power:	1320 kVA	1056 kWe	1109 kWm		
Power factor:	0.80				
Power at pf 1,0	1069 kVA	1069 kWe	1109 kWm		
Rated voltage:	0.48 kV				
Speed:	1800 1/min				
Frequency:	60 Hz			Voltage range / frequency range:	
Rated current:	1587.7 A			Zone A according IEC 60034-1 (dU = +/-5%, df = +/-2%)	

Winding pitch:	2/3
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Insulation class:	Stator: Class H	Rotor: Class H	Temperature rise:	H
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Ambient temperature:	40 ° C	Environment:	Standard environment
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Site altitude:	1000 m		
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Enclosure:	IP23	Filter:	
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Cooling:	IC 01 - Open-circuit ventilation
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Coolant:	Ambient Air	Temperature	40 ° C	Temperature Air inlet	40 ° C
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		Coolant:		generator:	
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		Cooling air vol.:	2.1 m³/s	Cooling water quantity:	n/a
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Moment of inertia (I):	19.6 kgm²	Weight:	2750 Kg	Losses (environment):	53 KW
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		Losses (cooling):	n/a		
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Wires:	4 terminals, starpoint connected in terminal box
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Operation mode:	Single mode
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Regulators:	
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Voltage regulator:	DECS 100
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Electrical data: (acc. IEC)

Efficiencies:	110%	100%	75%	50%	25%
Power factor 0.8	95	95,24	95,26	94,68	91,78
Power factor 0.9	95,62	95,83	95,73	95,02	91,99
Power factor 1.0	96,24	96,42	96,2	95,36	92,2

Reactances and time constants

	unsaturated	saturated		unsaturated	saturated				
X_d	2.59	2.33 p.u.	X_q	1.20	1.18 p.u.	$T_{d0'}$	2.53682 s	$T_{d0''}$	0.01575 s
X_d'	0.198	0.198 p.u.	X_q'	1.20	1.18 p.u.	$T_{d'}$	0.20 s	$T_{q0'}$	0.1686 s
X_d''	0.117	0.106 p.u.	X_q''	0.126	0.126 p.u.	$T_{d''}$	0.00843 s	$T_{q0''}$	0.16057 s
X_2	0.127	0.115 p.u.	X_0	0.051	0.046 p.u.	T_a	0.02037 s	$T_{q'}$	0.1686 s
X_{1s}	n.a.	0.064 p.u.						$T_{q''}$	0.01686 s

Short circuit ratio saturated:	0.43	Z_n	0.175 Ohm
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Short circuit data:

Initial short circuit current (3-phase):	I_k''	14978 A	
Max. peak current (3-phase):	I_s	38128 A	
Sustained short circuit current:	I_k	4763 A	Minimum 3 x rated current for max.10 s
Initial short circuit torque:	M_{k2}	85.9 kNm	
	M_{k3}	51.5 kNm	
Max. faulty synchron moment:	M_f	184.7 kNm	
Rated kVA torque:	M_{SN}	7.00 kNm	
Rated torque	M_N	5.60 kNm	
Shaft torque	M_{Sh}	5.88 kNm	

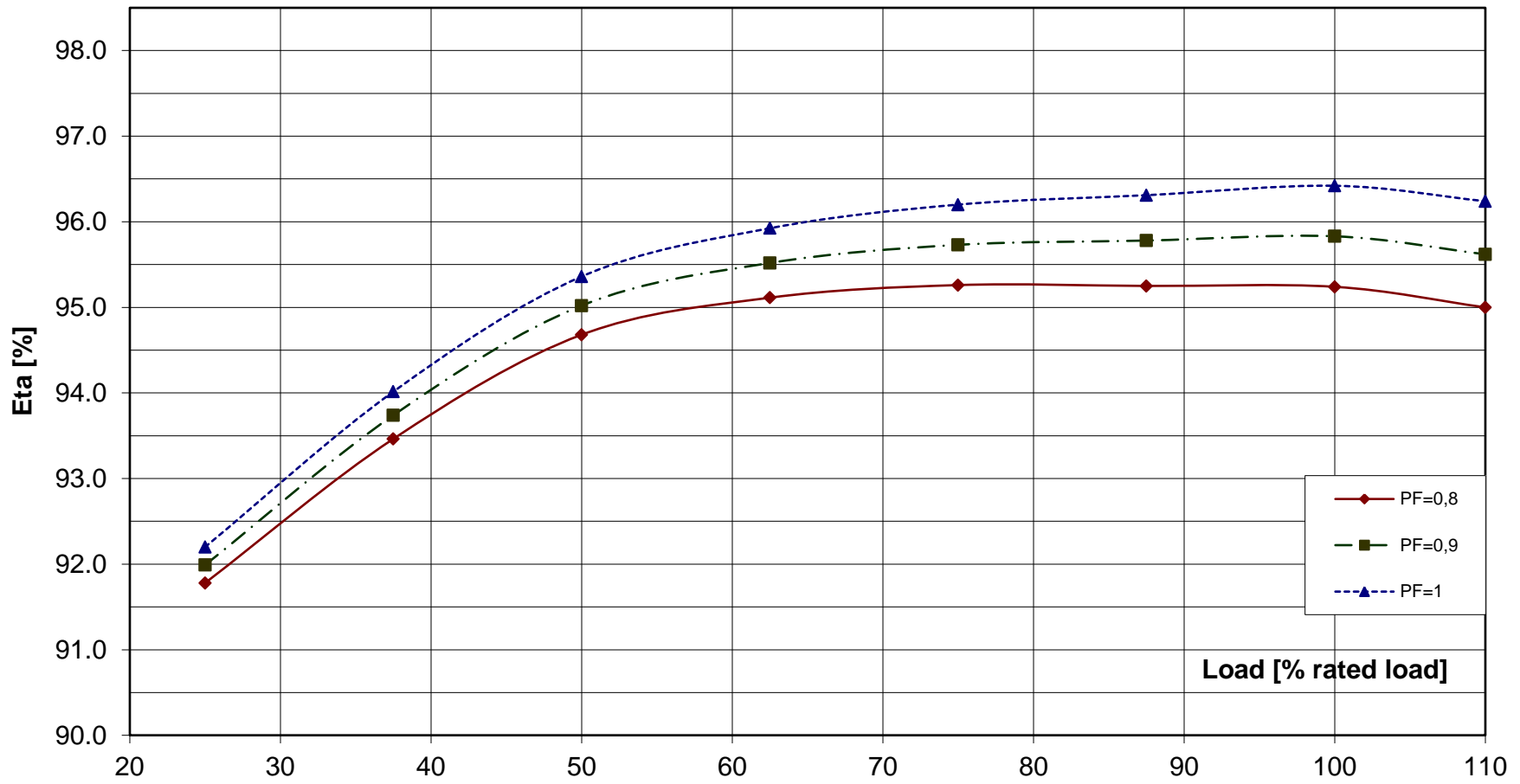
Load application:

max. load application: 1000 kVA (corresponds to 75,76 % from 1320 kVA) for Power factor 0.4 15% transient voltage drop	Power: 1320 kVA Power factor: 0.8 transient voltage drop: -16.5 %
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Remarks:

Alternator :	DSG 62 L2/4			
Rated output [kVA]	1320	Rated power factor:	0.8	Rated voltage [kV]: 0.48
Rated frequency [Hz]	60	Rated speed [rpm]	1800	

Wirkungsgrad-Kennlinie - Efficiency Curve



Alternator : DSG 62 L2/4

Rated output [kVA]

1320

Rated power factor:

0.8

Rated voltage [kV]: 0.48

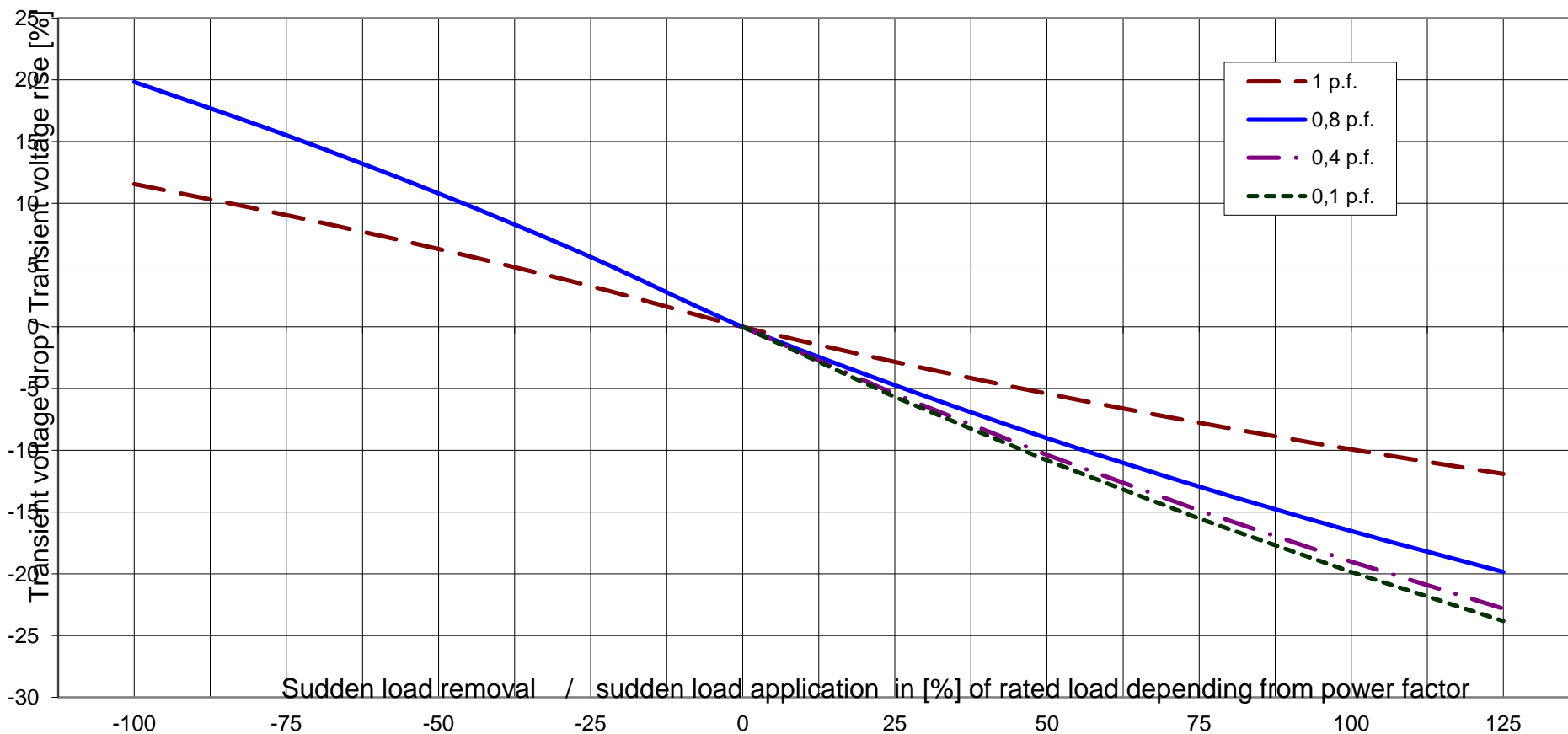
Rated frequency [Hz]

60

Rated speed [rpm]

1800

Transient Voltage rise or drop for sudden load removal or application



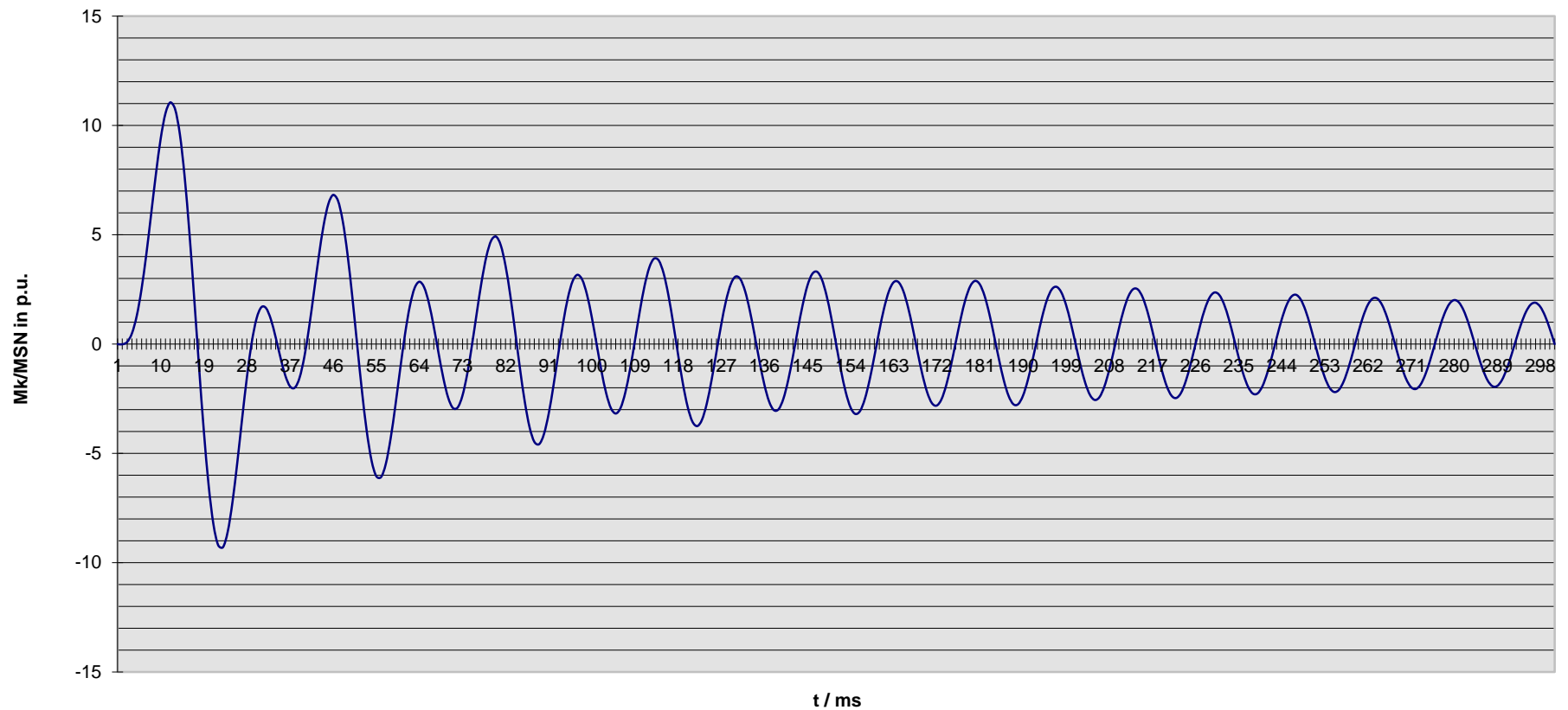


Technisches Datenblatt - Diagramme
Technical data sheet - Diagrams

ING-FCD-0112

Alternator :	DSG 62 L2/4			
Rated output [kVA]	1320	Rated power factor:	0.8	Rated voltage [kV]: 0.48
Rated frequency [Hz]	60	Rated speed [rpm]	1800	MSN related to kVA: 7 KNm

Kurzschlußmomenten-Verlauf 2-poliger KS
Short circuit torque at 2-phase SC



Nenn Daten / nominal data

DSG 62 L2/4

Leistung S_N : **1320** kVA

$\cos \varphi$: **0.80**

Rating

p.f.

Spannung U_N : **0.48** kV

Strom I_N : **1588** A

Voltage

Current

Frequenz f : **60** Hz

Drehzahl n : **1,800** min^{-1}

Frequency

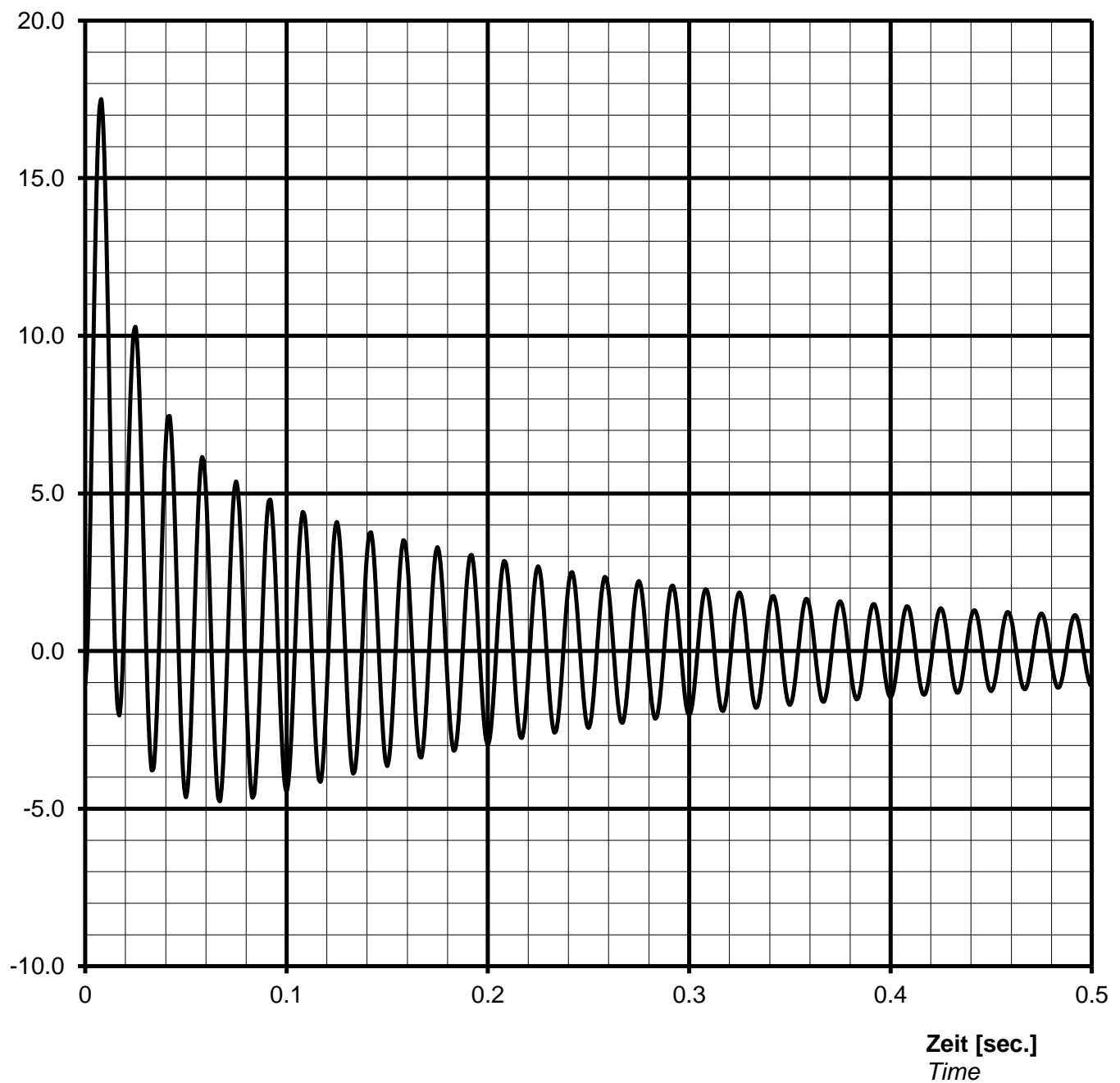
Speed

Schutzart **IP23**

Protection

Kurzschlussstrom $I_{k3\text{phasig}} / I_N$ [p.u.]
Short-circuit current $I_{k3\text{phase}} / I_N$ [p.u.]

Stosskurzschluss-Strom, 3-phasig, asymmetrisch / Sudden short circuit current, 3-phase, asymmetrical



Notizen / remarks:

Maximum asymmetric peak value $I_{\text{peak}} =$ **27788 A** or **17.50 p.u.**



Technisches Datenblatt - Diagramme
Technical data sheet - Diagrams

ING-FCD-0112

Nennwerten / nominal data

DSG 62 L2/4

Leistung S_N : 1320 kVA

$\cos \varphi$: 0.80

Rating

p.f.

Spannung U_N : 0.48 kV

Strom I_N : 1588 A

Voltage

Current

Frequenz f : 60 Hz

Drehzahl n : 1800 min⁻¹

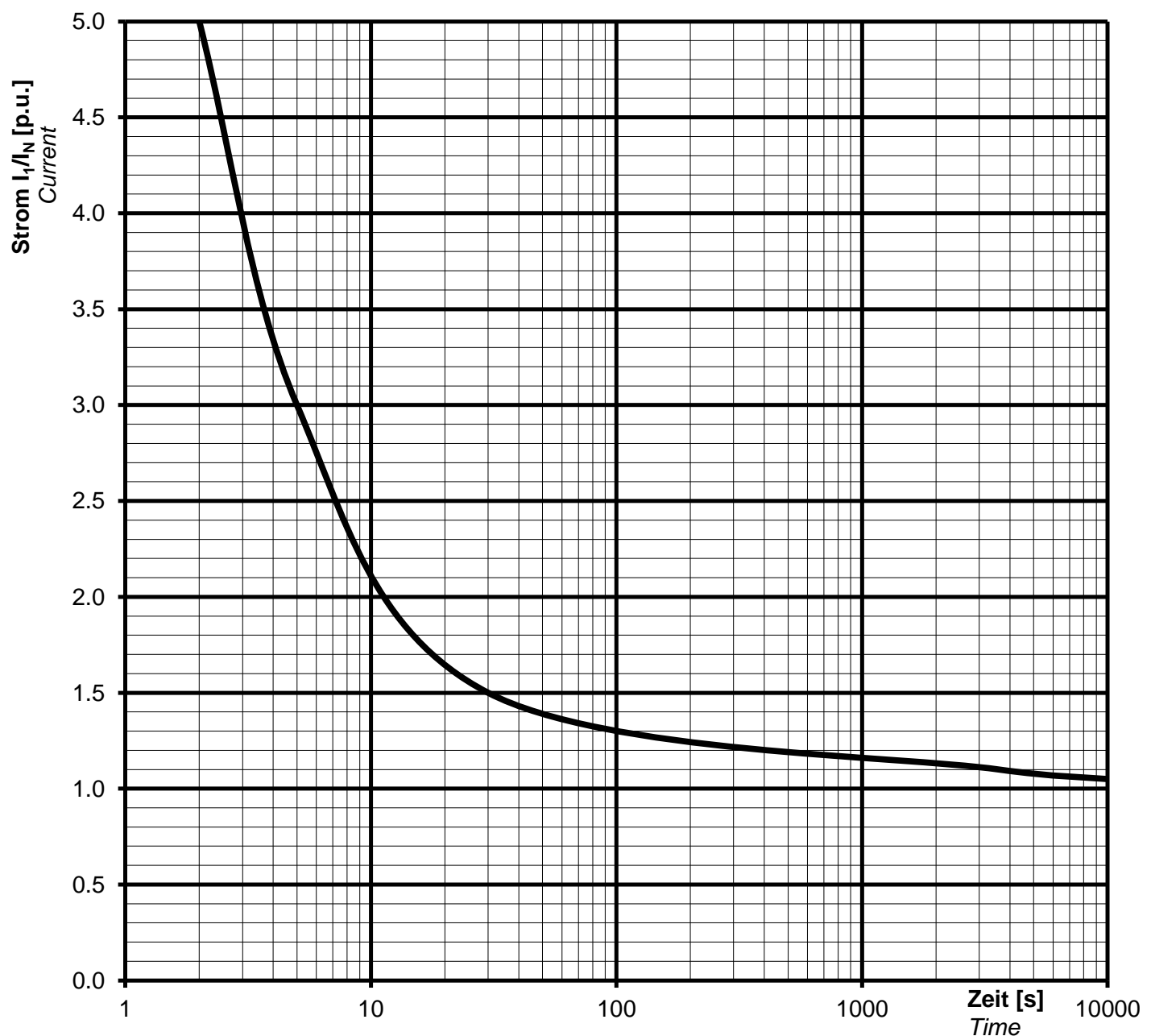
Frequency

Speed

Schutzart IP23

Protection

Überlast Kennlinie
Overload capability



Notizen / remarks:

Strom / Zeit Kriterien:

$$(I/I_N)^{2 \cdot t} = 45s$$

Current/time characteristics:

1,5 * I_N for 30 s

1,1 * I_N for 1 h in 6h

Alle Angaben gemäß VDE 0530, IEC600 34

All data according VDE 0530, IEC600 34

Nenn Daten / nominal data

DSG 62 L2/4

Rating S_N : **1320 kVA**

Bemessungsleistung

Nominal voltage U_N : **0.48 kV**

Bemessungsspannung

Frequency f_N : **60 Hz**

Frequenz

Protection: **IP23**

Schutzart

p.f. **0.80**

Leistungsfaktor $\cos \varphi$:

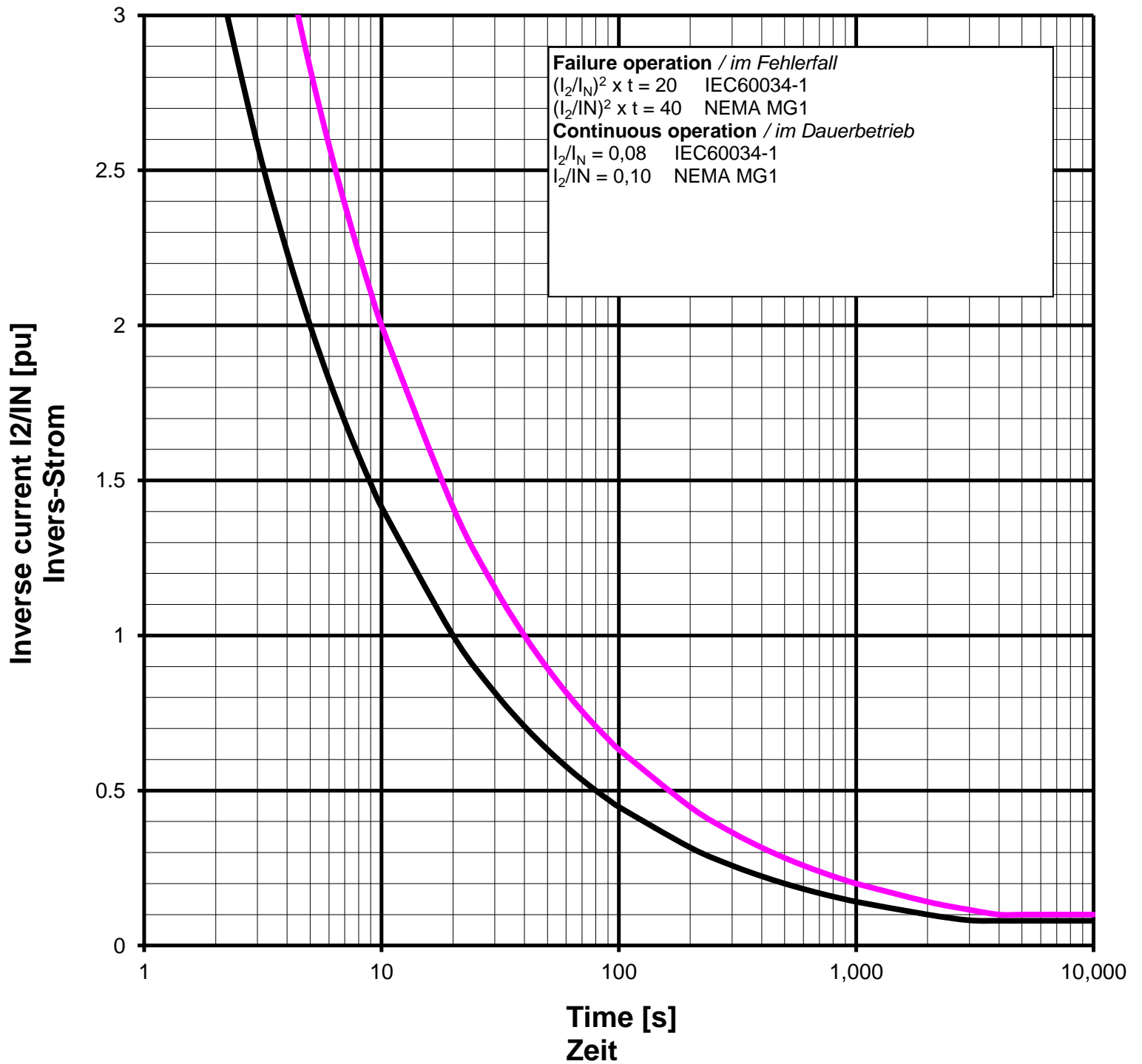
Nominal current I_N : **1588 A**

Bemessungsstrom

Speed n : **1800 min⁻¹**

Drehzahl

Inverse current or unbalanced negative sequence current



Remarks / Notizen:

All data according IEC 60034-1, NEMA MG1



Technische Daten selbstregelnden Drehstrom-Synchrongenerator
technical data for self regulating three phase alternator

ING-FCD-0112

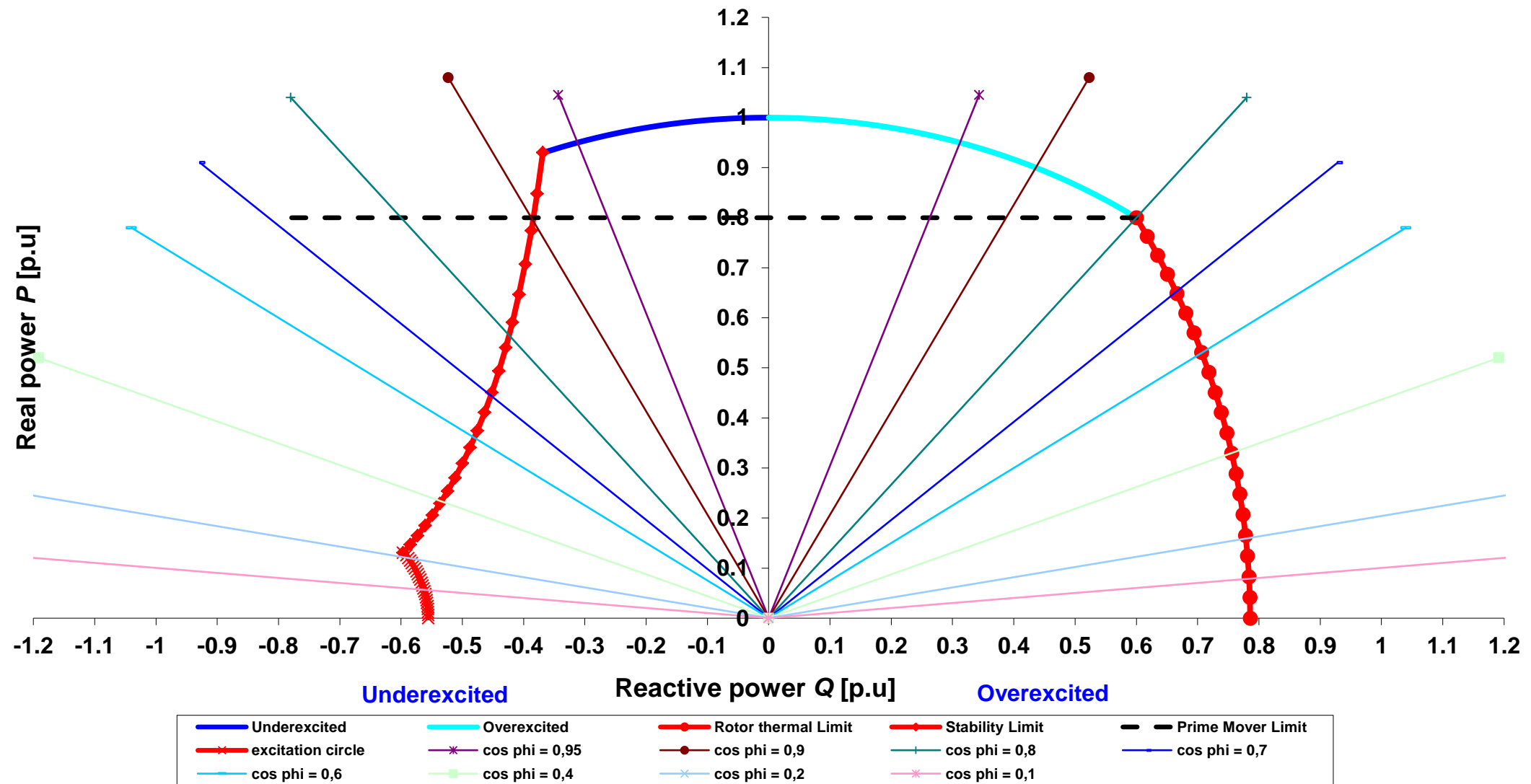
TYPE

DSG 62 L2/4

Projekt:

Order Nr.:

Capability (P-Q) Diagram



Cummins Generator Technologies

Datum / date:

25/09/2013

