

Date:	09/10/13	Customer:	GENERIC DATASHEET only
Project No.:		AvK Reference:	dig140k_6_60_4160

Object data:

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

Generator data:

Generator:	DIG 140 k/6	Poles:	6	Standards:	IEC 60034
Rated power:	3800 kVA	3040 kWe	3147 kWm		
Power factor:	0.80				
Power at pf 1,0	3065 kVA	3065 kWe	3147 kWm		
Rated voltage:	4.16 kV				
Speed:	1200 1/min				
Frequency:	60 Hz			Voltage range / frequency range:	
Rated current:	527.4 A			Zone A according IEC 60034-1 (dU = +/-5%, df = +/-2%)	

Winding pitch:	ca. 5/6		
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Insulation class:	Stator: Class F	Rotor: Class F	Temperature rise:	F
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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.:	3.6 m³/s	Cooling water quantity:	n/a
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Moment of inertia (I):	250 kgm²	Weight:	10300 Kg	Losses (environment):	107 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	96,43	96,6	96,6	96,1	93,8
Power factor 0.9	96,85	97	96,9	96,25	93,9
Power factor 1.0	97,27	97,4	97,2	96,4	94

Reactances and time constants

	unsaturated	saturated		unsaturated	saturated					
X _d	1.80	1.62 p.u.	X _q	0.90	0.88 p.u.	T _{d0'}	2.7 s	T _{d0''}	0.02667 s	
X _{d'}	0.320	0.320 p.u.	X _{q'}	0.90	0.88 p.u.	T _{d'}	0.48 s	T _{q0'}	0.3 s	
X _{d''}	0.198	0.180 p.u.	X _{q''}	0.198	0.198 p.u.	T _{d''}	0.015 s	T _{q0''}	0.13636 s	
X ₂	0.208	0.189 p.u.	X ₀	0.059	0.054 p.u.	T _a	0.07 s	T _{q'}	0.3 s	
X _{1s}	n.a.	0.108 p.u.						T _{q''}	0.03 s	

Short circuit ratio saturated:	0.62	Z _n	4.554 Ohm
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Short circuit data:

Initial short circuit current (3-phase):	I _{k''}	2930 A	
Max. peak current (3-phase):	I _s	7459 A	
Sustained short circuit current:	I _k	1582 A	Minimum 3 x rated current for max.10 s
Initial short circuit torque:	M _{k2}	218.4 kNm	
	M _{k3}	131.0 kNm	
Max. faulty synchron moment:	M _f	469.6 kNm	
Rated kVA torque:	M _{SN}	30.24 kNm	
Rated torque	M _N	24.19 kNm	
Shaft torque	M _{Sh}	25.04 kNm	

Load application:

max. load application: 1781 kVA (corresponds to 46,88 % from 3800 kVA)	Power: 3800 kVA
for Power factor 0.4	Power factor: 0.8
15% transient voltage drop	transient voltage drop: -24.2 %

Remarks:

Alternator : DIG 140 k/6

Rated output [kVA]

3800

Rated power factor:

0.8

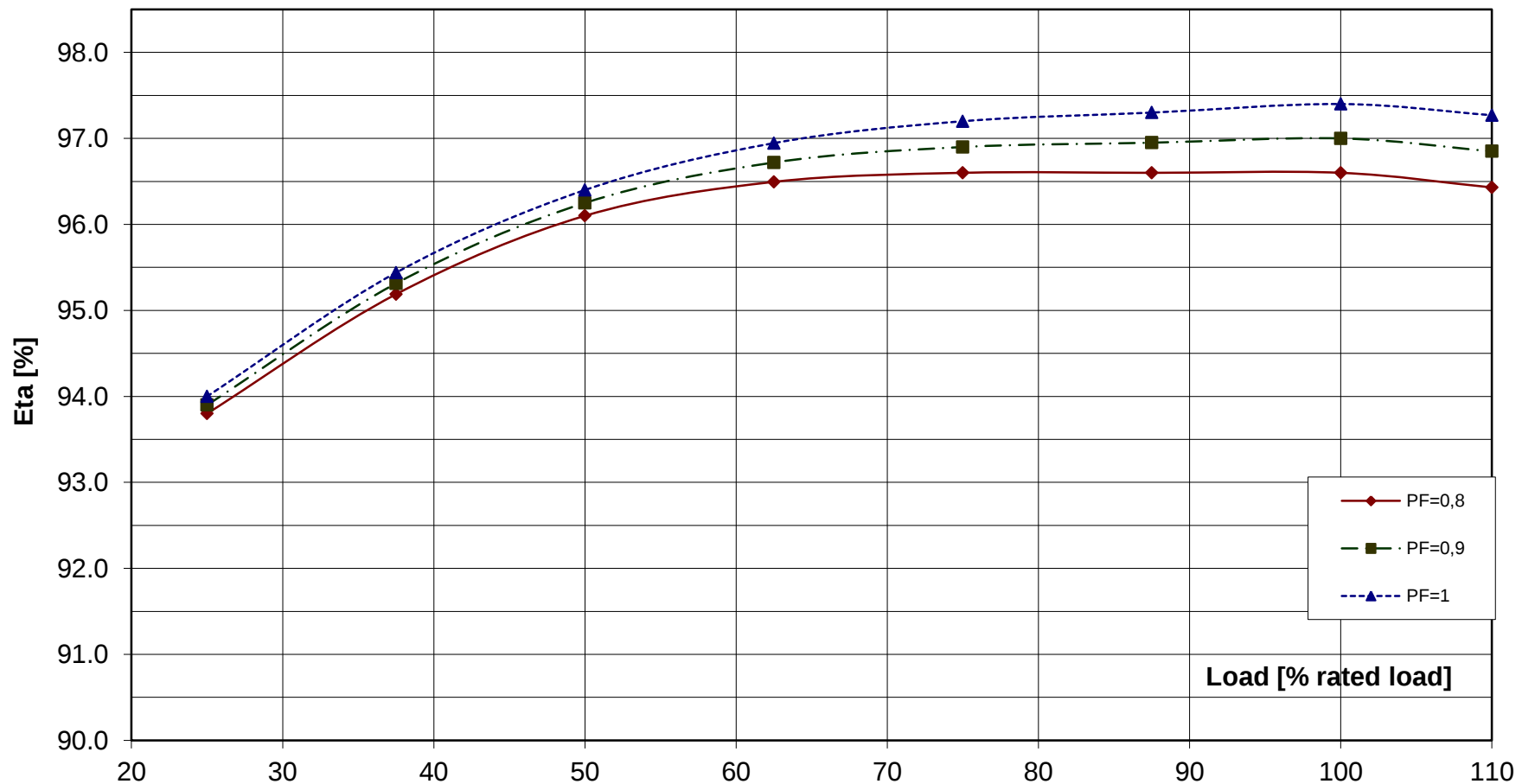
Rated voltage [kV]: 4.16

Rated frequency [Hz]

60

Rated speed [rpm]

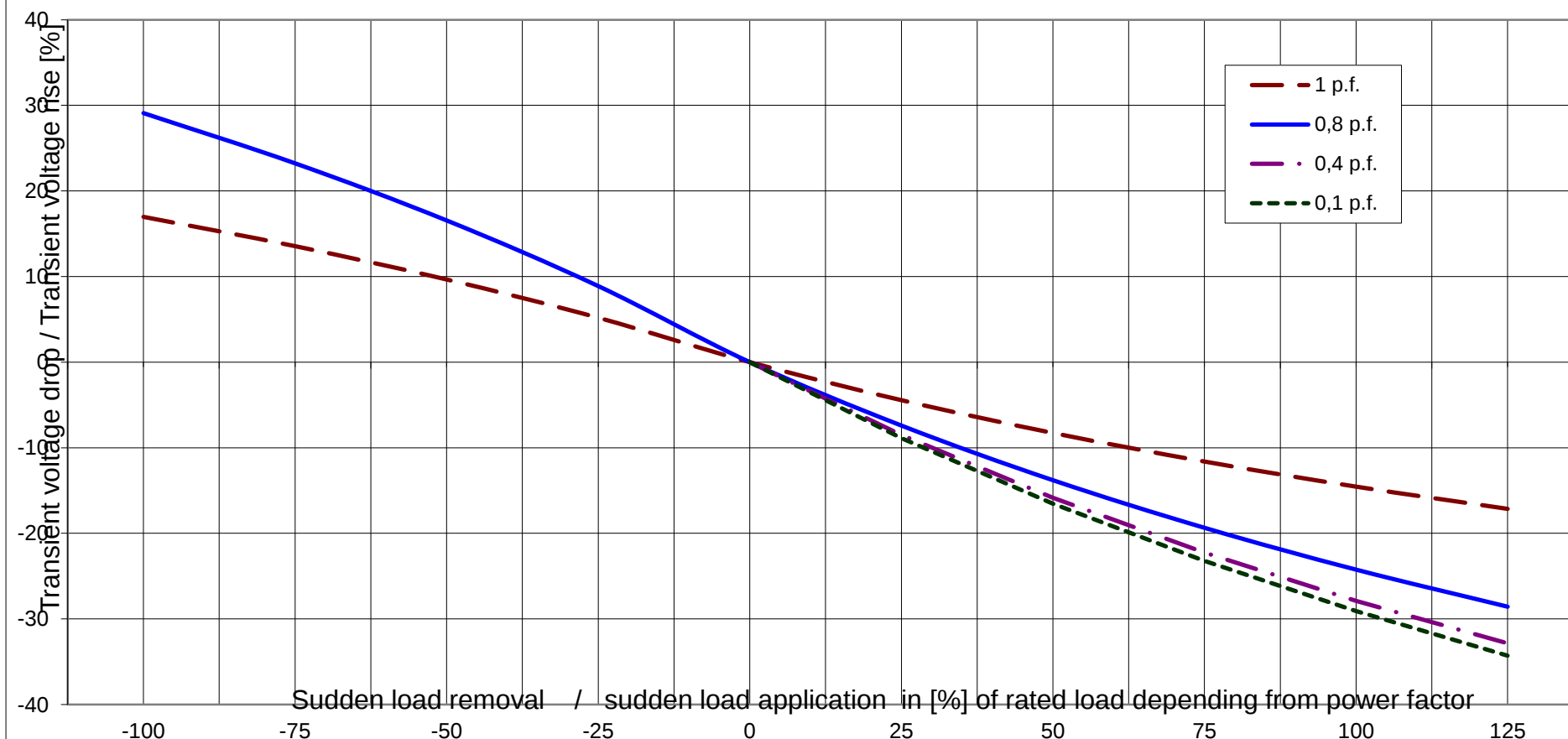
1200

Wirkungsgrad-Kennlinie - Efficiency Curve

Alternator : DIG 140 k/6

Rated output [kVA]	3800	Rated power factor:	0.8	Rated voltage [kV]:	4.16
Rated frequency [Hz]	60	Rated speed [rpm]	1200		

Transient Voltage rise or drop for sudden load removal or application





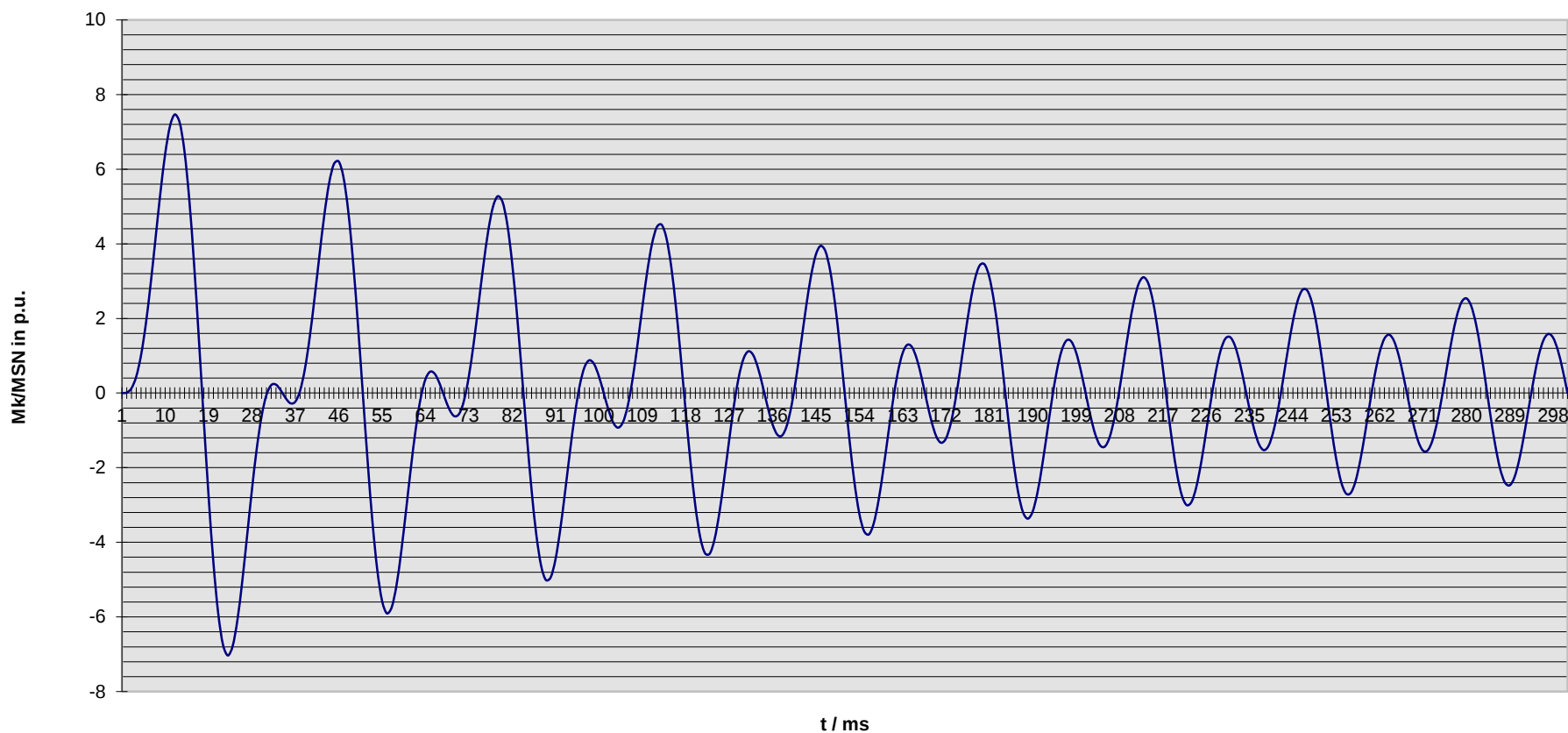
Technisches Datenblatt - Diagramme Technical data sheet - Diagrams

ING-FCD-0112

Alternator : DIG 140 k/6

Rated output [kVA]	3800	Rated power factor:	0.8	Rated voltage [kV]: 4.16
Rated frequency [Hz]	60	Rated speed [rpm]	1200	MSN related to kVA: 30.24 KNm

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



Nenndaten / nominal data

DIG 140 k/6

Leistung S_N : **3800 kVA**

Rating

Spannung U_N : **4.16 kV**

Voltage

Frequenz f : **60 Hz**

Frequency

Schutzart **IP23**

Protection

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

p.f.

Strom I_N : **527 A**

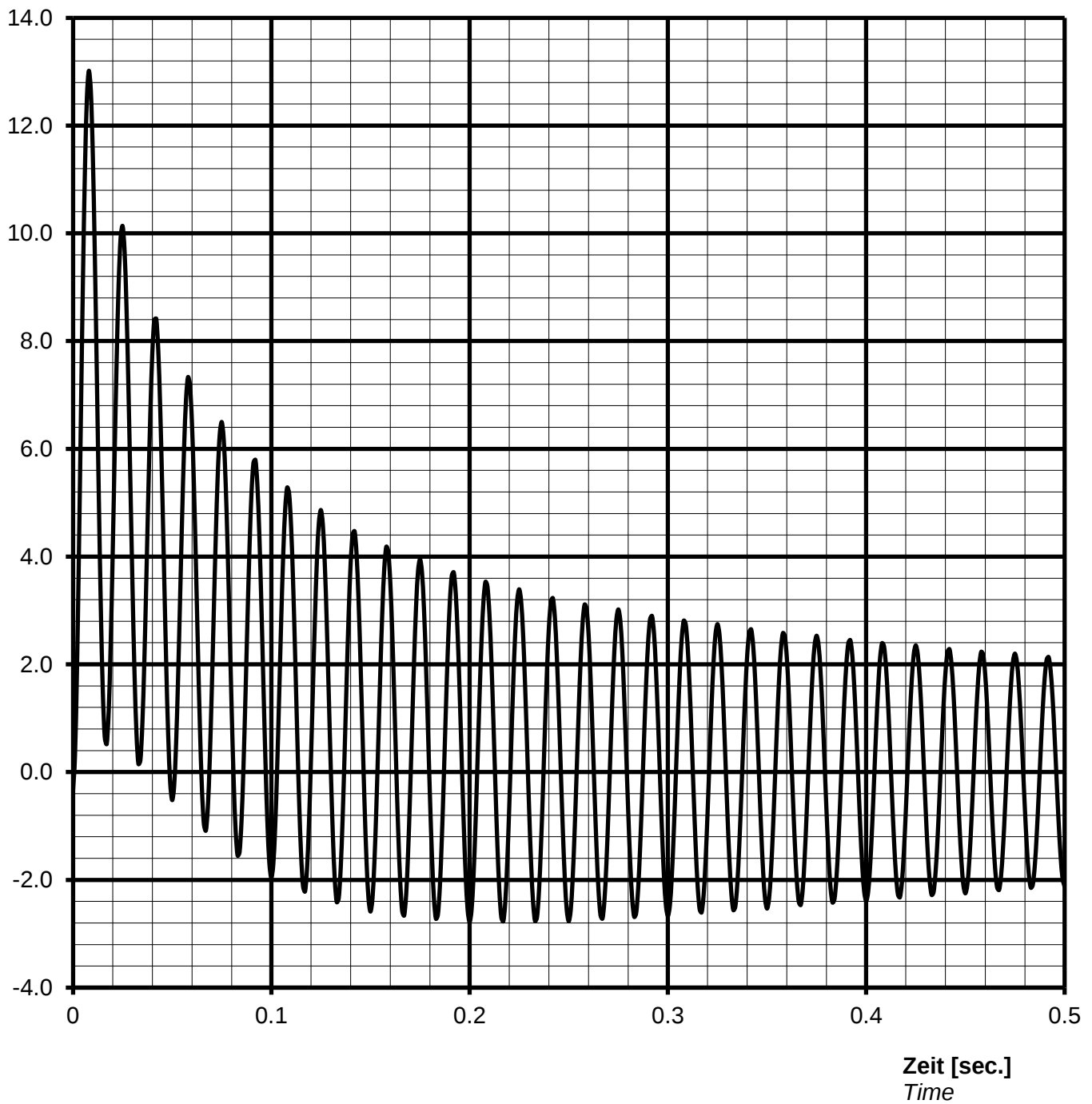
Current

Drehzahl n : **1,200 min⁻¹**

Speed

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

$I_{\text{peak}} =$

6865 A

or

13.02 p.u.

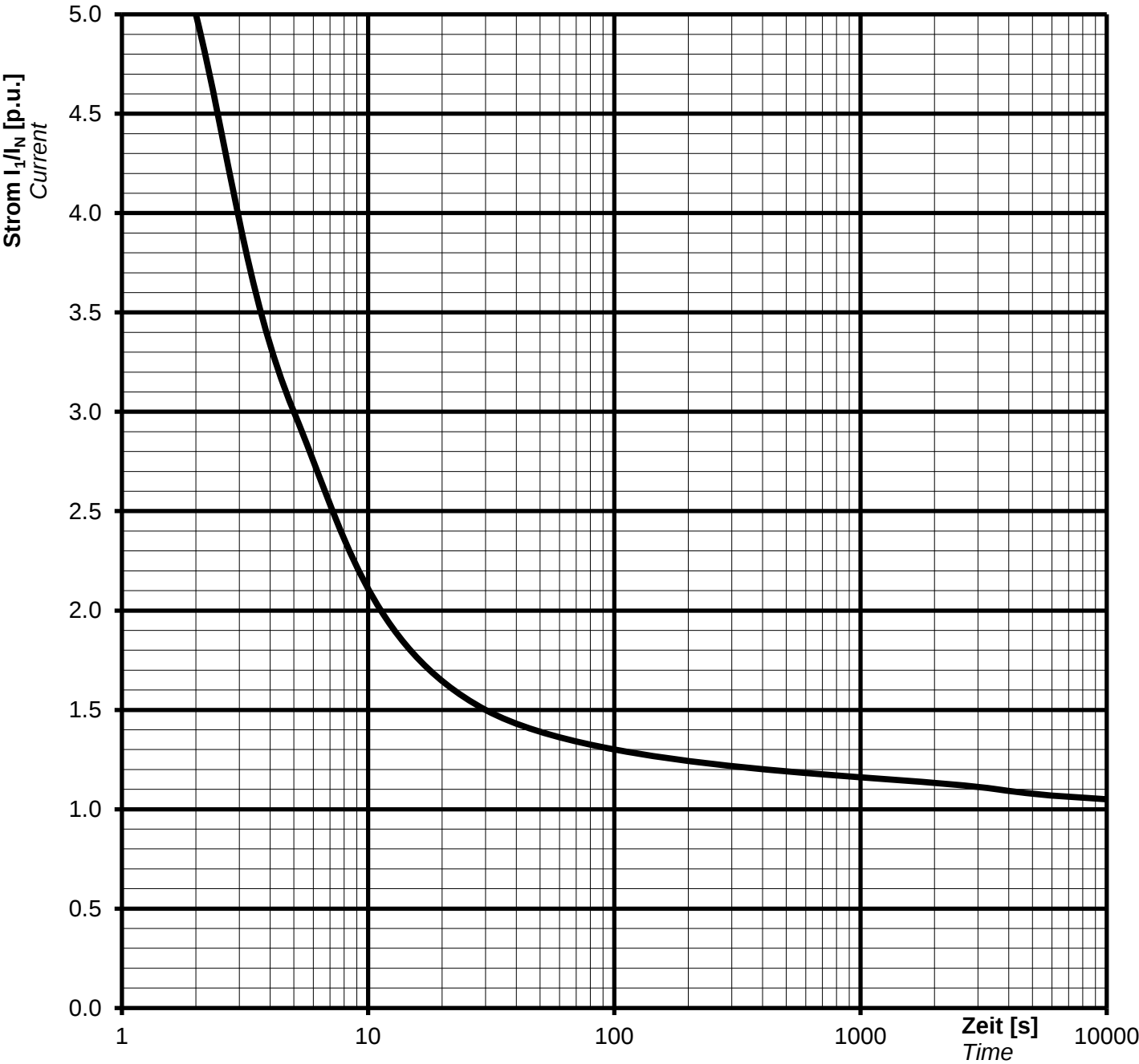
Nenn Daten / nominal data

DIG 140 k/6

Leistung S_N : **3800** kVA
Rating
 Spannung U_N : **4.16** kV
Voltage
 Frequenz f : **60** Hz
Frequency
 Schutzart **IP23**
Protection

$\cos \varphi$: **0.80**
p.f.
 Strom I_N : **527** A
Current
 Drehzahl n : **1200** min⁻¹
Speed

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

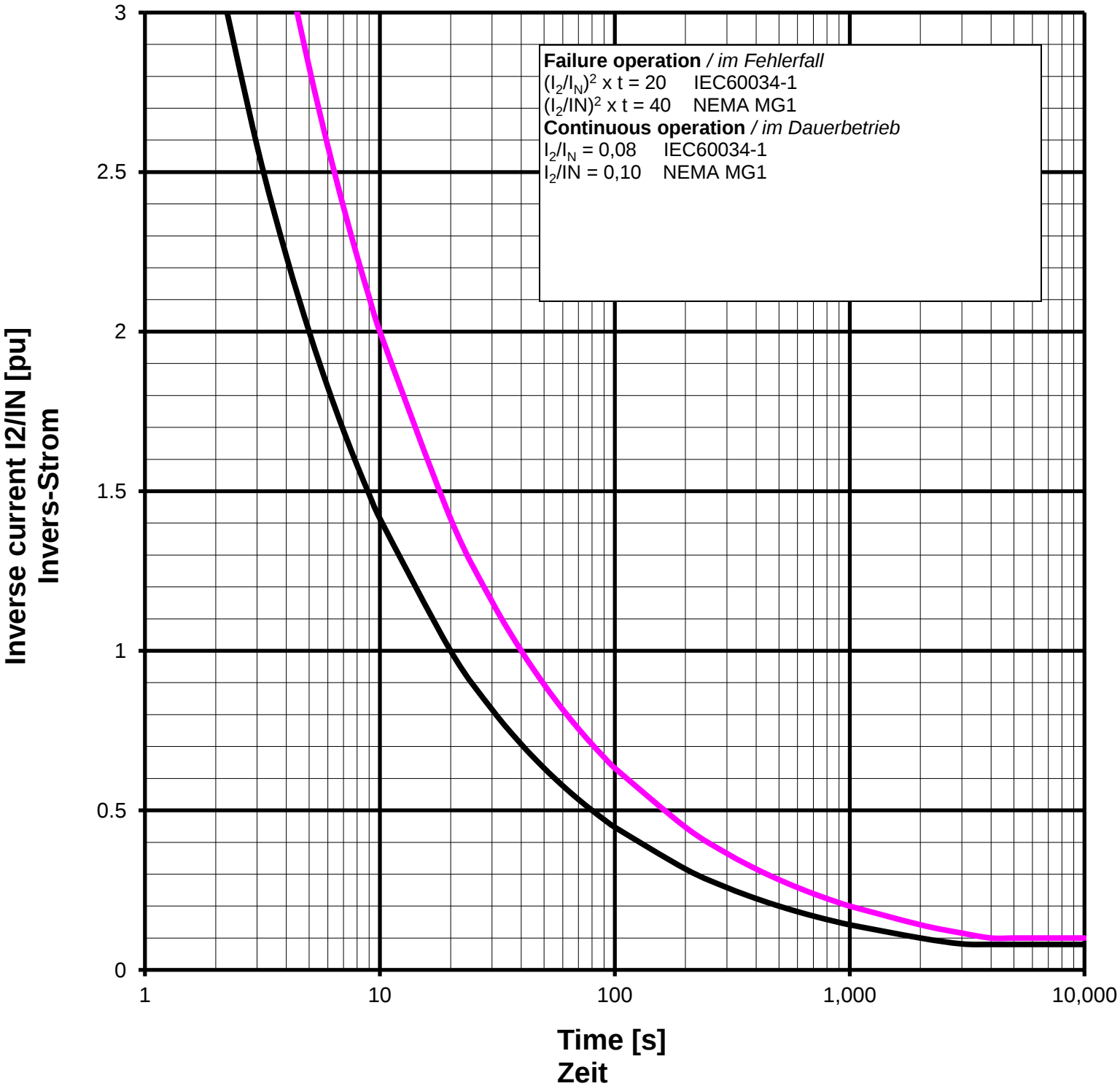
Nenndaten / nominal data

DIG 140 k/6

Rating S_N : 3800 kVA
Bemessungsleistung
Nominal voltage U_N : 4.16 kV
Bemessungsspannung
Frequency f_N : 60 Hz
Frequenz
Protection: IP23
Schutzart

p.f. 0.80
Leistungsfaktor $\cos \varphi$:
Nominal current I_N : 527 A
Bemessungsstrom
Speed n : 1200 min⁻¹
Drehzahl

Inverse current or unbalanced negative sequence current



Remarks / Notizen:

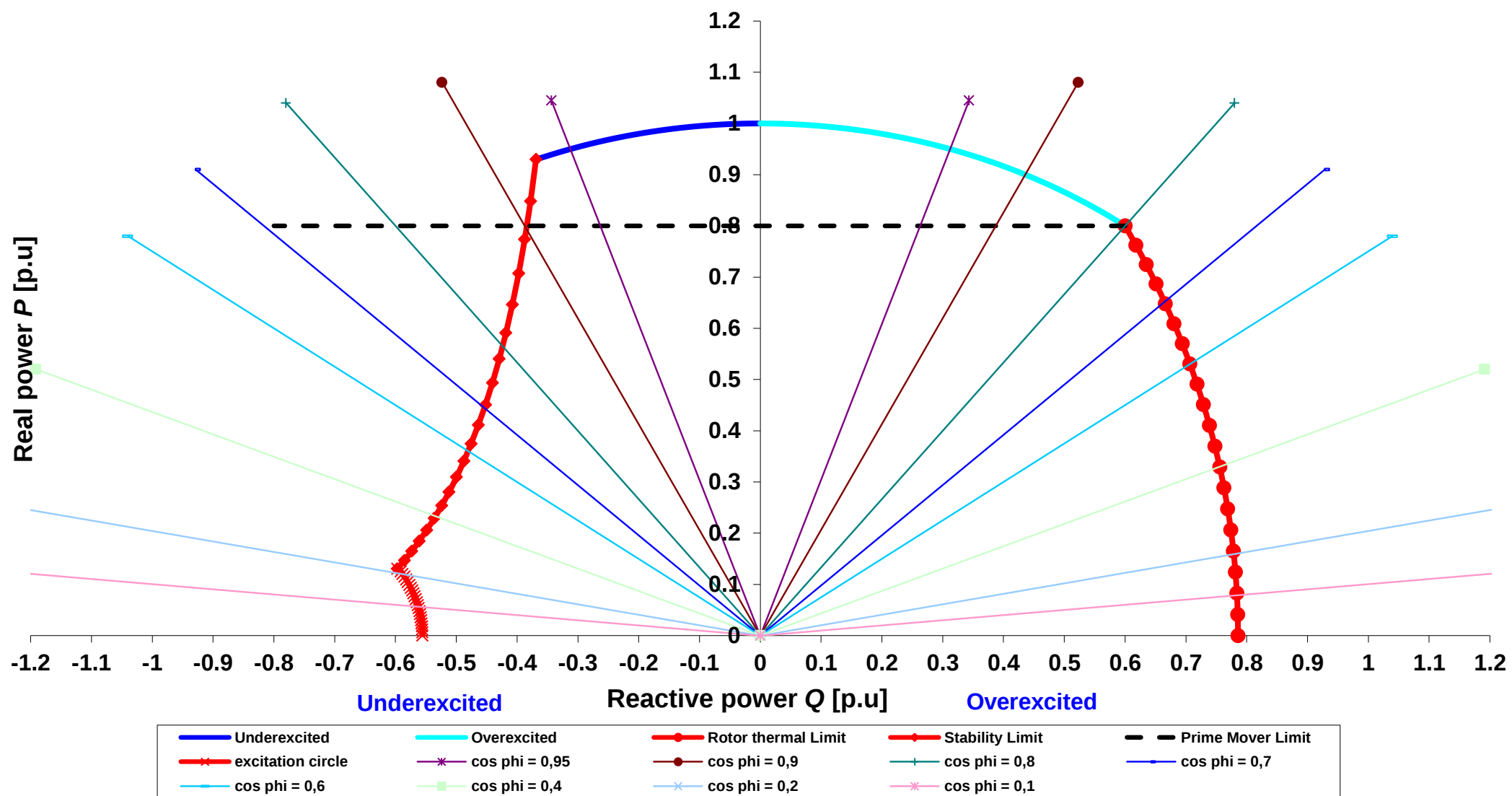
TYPE

DIG 140 k/6

Projekt:

Order Nr.:

Capability (P-Q) Diagram



TYPE

DIG 140 k/6

Projekt:

Order Nr.:

