

Date:	17/10/13	Customer:	GENERIC DATASHEET only
Project No.:		AvK Reference:	dig140I_6_50_11000

Object data:

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

Generator data:

Generator:	DIG 140 I/6	Poles:	6	Standards:	IEC 60034
Rated power:	3250 kVA	2600 kWe	2700 kWm		
Power factor:	0.80				
Power at pf 1,0	2624 kVA	2624 kWe	2700 kWm		
Rated voltage:	11 kV				
Speed:	1000 1/min				
Frequency:	50 Hz			Voltage range / frequency range:	
Rated current:	170.6 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.:	3.0 m³/s	Cooling water quantity:	n/a
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Moment of inertia (I):	275 kgm²	Weight:	11000 Kg	Losses (environment):	100 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	96,12	96,3	96,3	96	94
Power factor 0.9	96,59	96,75	96,75	96,3	94,2
Power factor 1.0	97,06	97,2	97,2	96,6	94,4

Reactances and time constants

	unsaturated	saturated		unsaturated	saturated					
X _d	1.75	1.58 p.u.	X _q	0.88	0.86 p.u.	T _{d0'}	2.7 s	T _{d0''}	0.02667 s	
X _{d'}	0.320	0.320 p.u.	X _{q'}	0.88	0.86 p.u.	T _{d'}	0.49 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''}	0.13333 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: 0.63	Z _n 37.231 Ohm
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Short circuit data:

Initial short circuit current (3-phase):	I _{k''}	948 A	
Max. peak current (3-phase):	I _s	2413 A	
Sustained short circuit current:	I _k	512 A	Minimum 3 x rated current for max.10 s
Initial short circuit torque:	M _{k2}	224.1 kNm	
	M _{k3}	134.5 kNm	
Max. faulty synchron moment:	M _f	481.8 kNm	
Rated kVA torque:	M _{SN}	31.04 kNm	
Rated torque	M _N	24.83 kNm	
Shaft torque	M _{Sh}	25.78 kNm	

Load application:

max. load application: 1523 kVA(corresponds to 46,87 % from 3250 kVA)	Power: 3250 kVA
for Power factor 0.4	Power factor: 0.8
15% transient voltage drop	transient voltage drop: -24.2 %

Remarks:

Alternator : DIG 140 I/6

Rated output [kVA]

3500

Rated power factor:

0.8

Rated voltage [kV]: 6.6

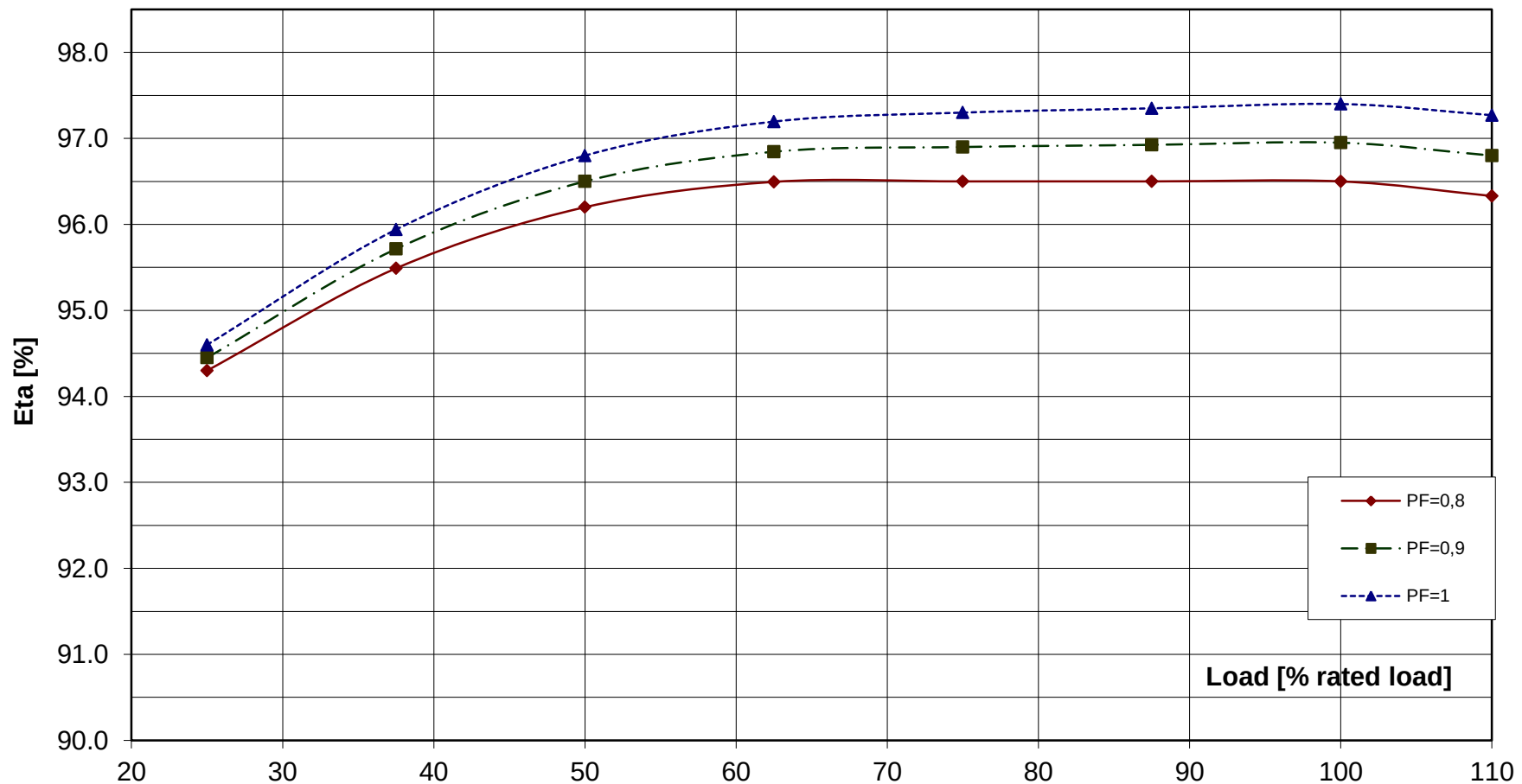
Rated frequency [Hz]

50

Rated speed [rpm]

1000

Wirkungsgrad-Kennlinie - Efficiency Curve



Alternator : DIG 140 I/6

Rated output [kVA] 3500

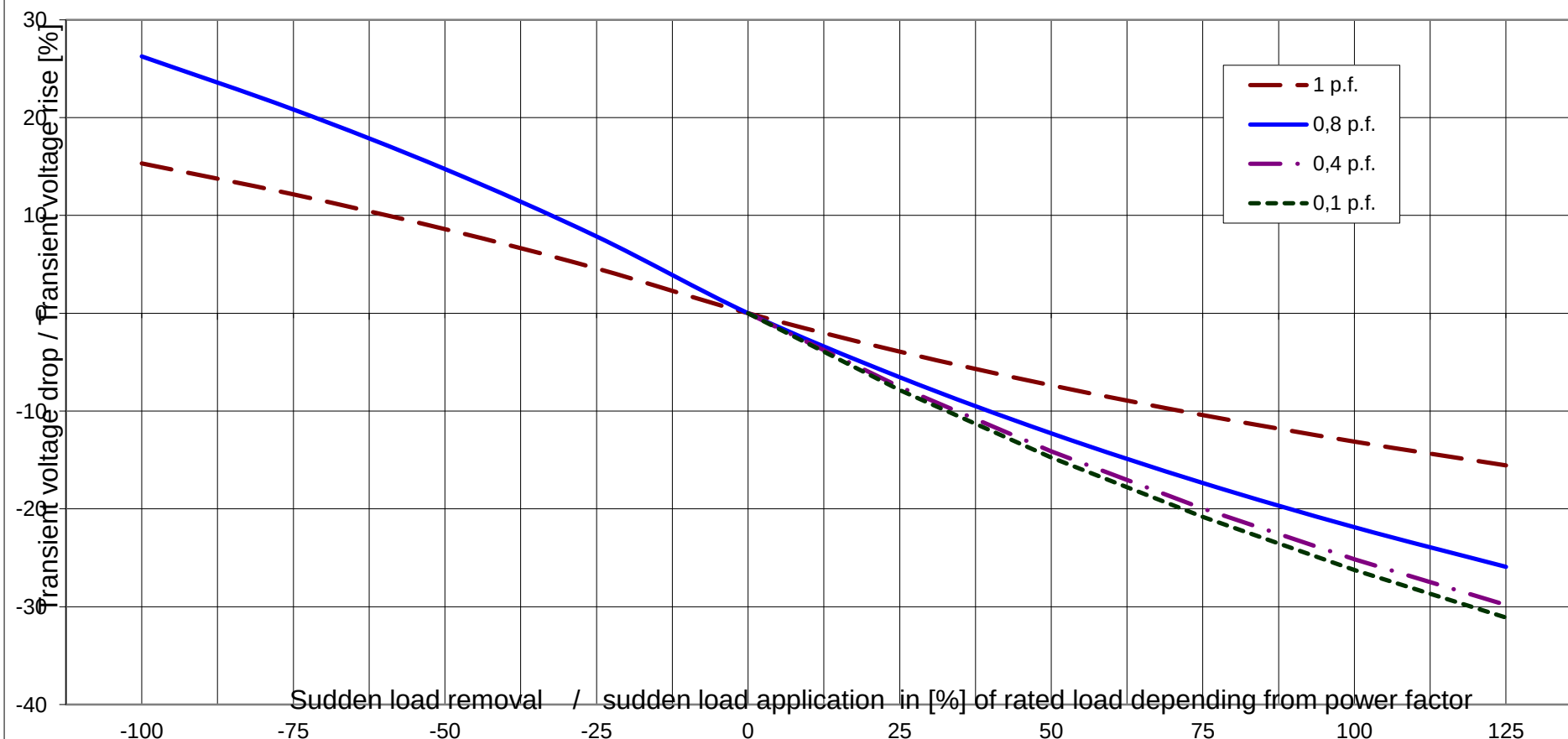
Rated power factor: 0.8

Rated voltage [kV]: 6.6

Rated frequency [Hz] 50

Rated speed [rpm] 1000

Transient Voltage rise or drop for sudden load removal or application



Alternator : DIG 140 I/6

Rated output [kVA]

3500

Rated power factor:

0.8

Rated voltage [kV]: 6.6

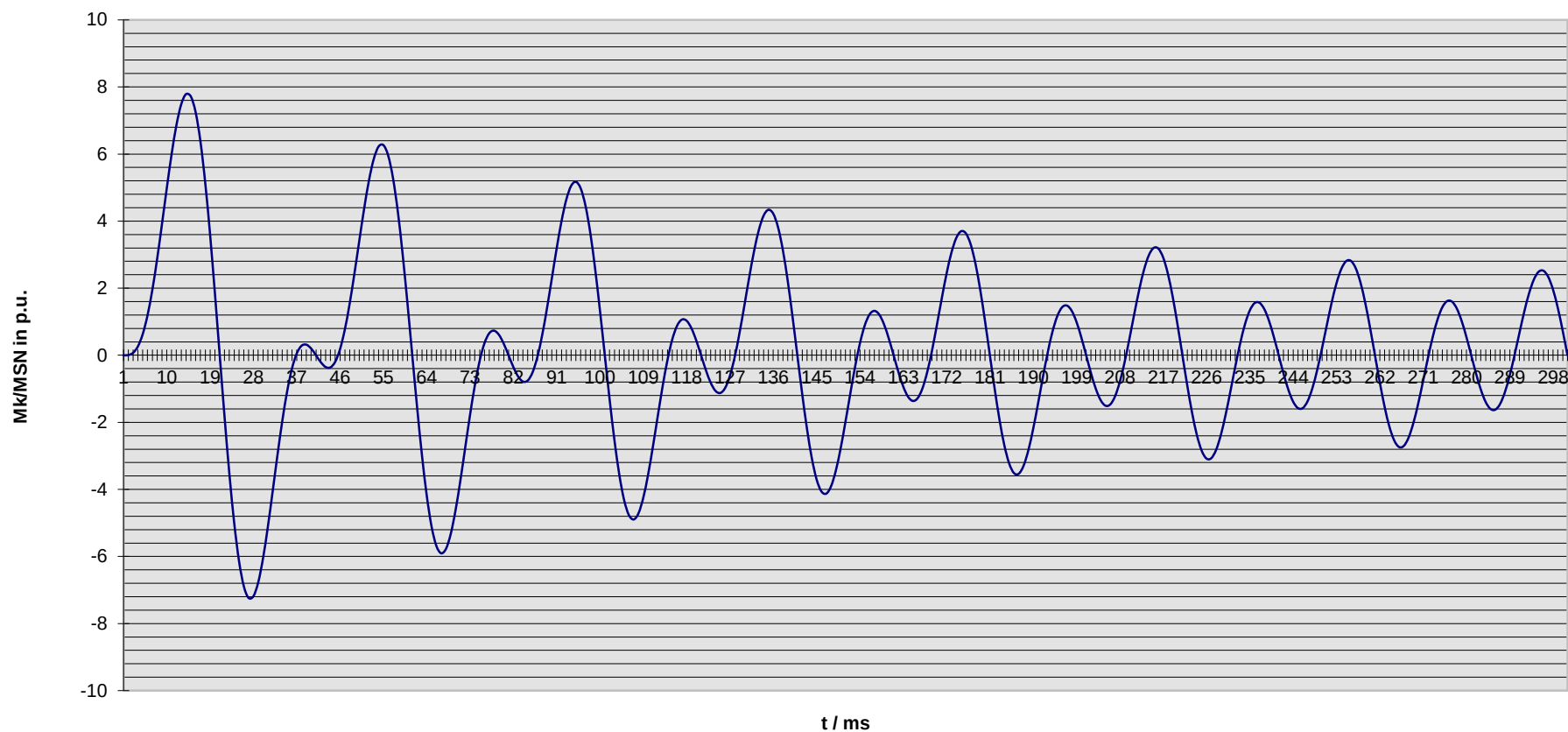
Rated frequency [Hz]

50

Rated speed [rpm]

1000

MSN related to kVA: 33.42 KNm

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

Nenndaten / nominal data

DIG 140 I/6

Leistung S_N : **3500 kVA**

Rating

Spannung U_N : **6.60 kV**

Voltage

Frequenz f : **50 Hz**

Frequency

Schutzart **IP23**

Protection

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

p.f.

Strom I_N : **306 A**

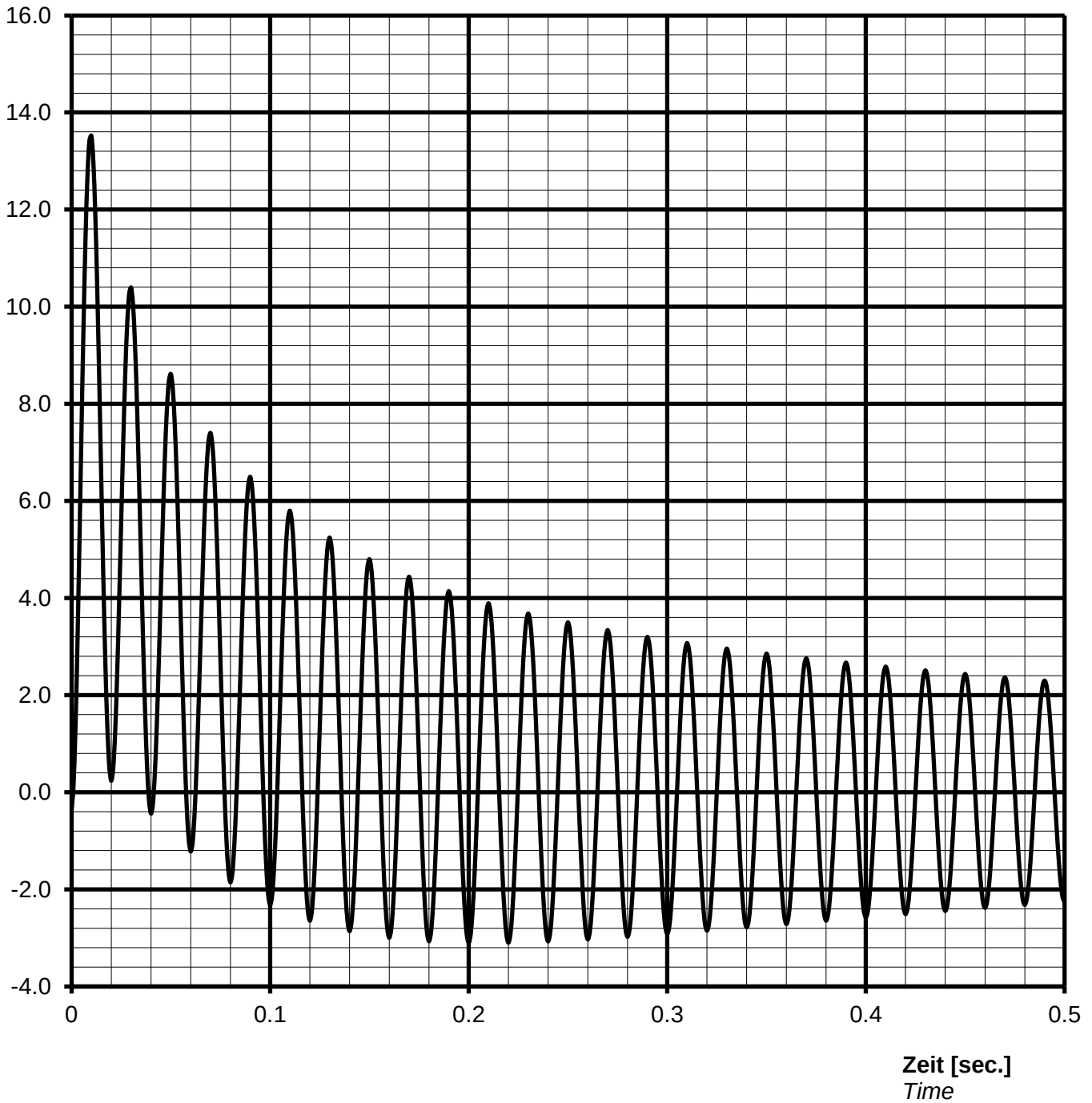
Current

Drehzahl n : **1,000 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

$I_{\text{peak}} =$ **4140 A** or **13.52 p.u.**

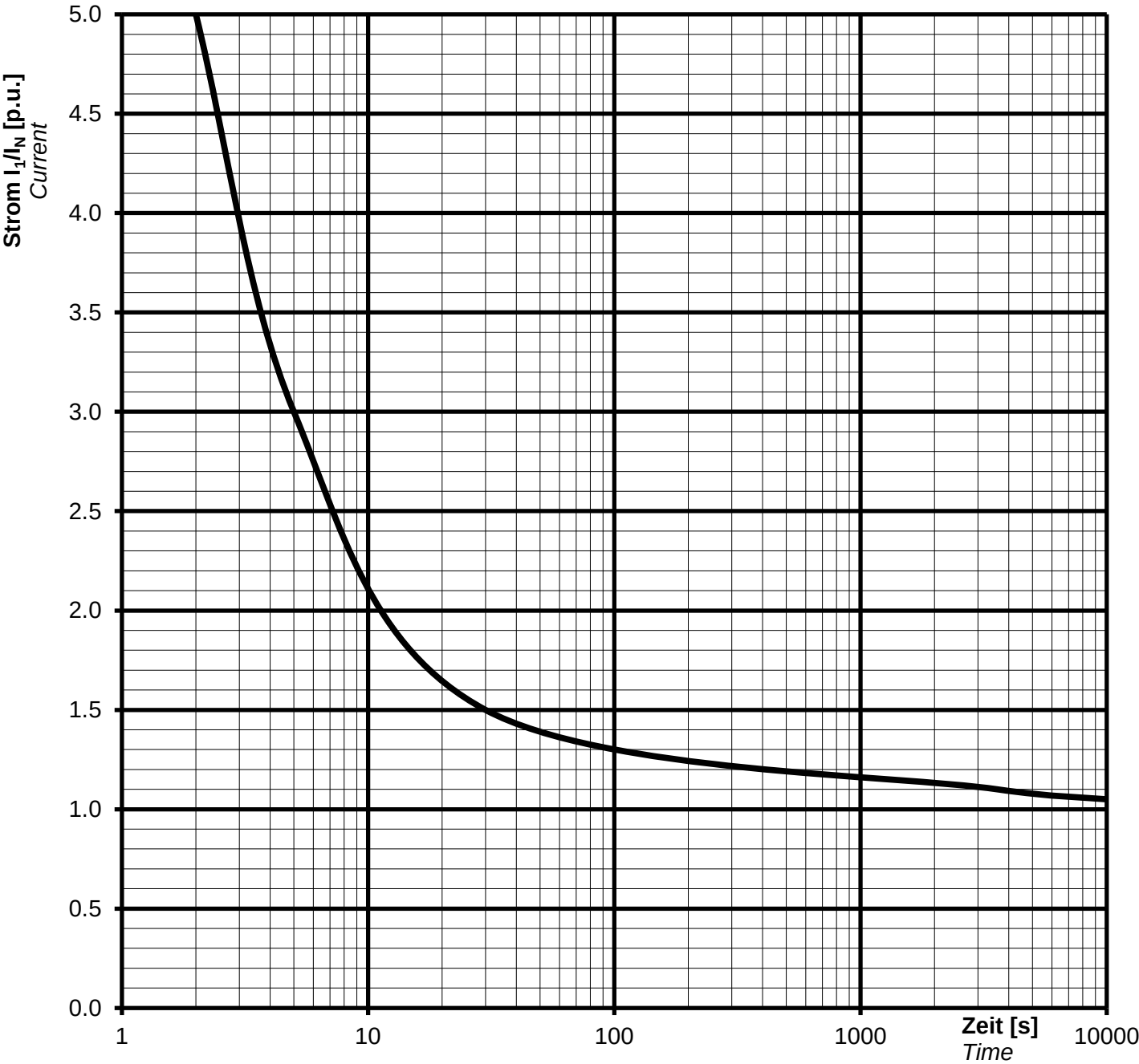
Nerndaten / nominal data

DIG 140 I/6

Leistung S_N : **3500** kVA
Rating
 Spannung U_N : **6.60** kV
Voltage
 Frequenz f : **50** Hz
Frequency
 Schutzart **IP23**
Protection

$\cos \varphi$: **0.80**
p.f.
 Strom I_N : **306** A
Current
 Drehzahl n : **1000** 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 I/6

Rating S_N : **3500** kVA
Bemessungsleistung
 Nominal voltage U_N : **6.60** kV
Bemessungsspannung
 Frequency f_N : **50** Hz
Frequenz
 Protection: **IP23**
Schutzart

p.f. **0.80**

Leistungsfaktor $\cos \varphi$:

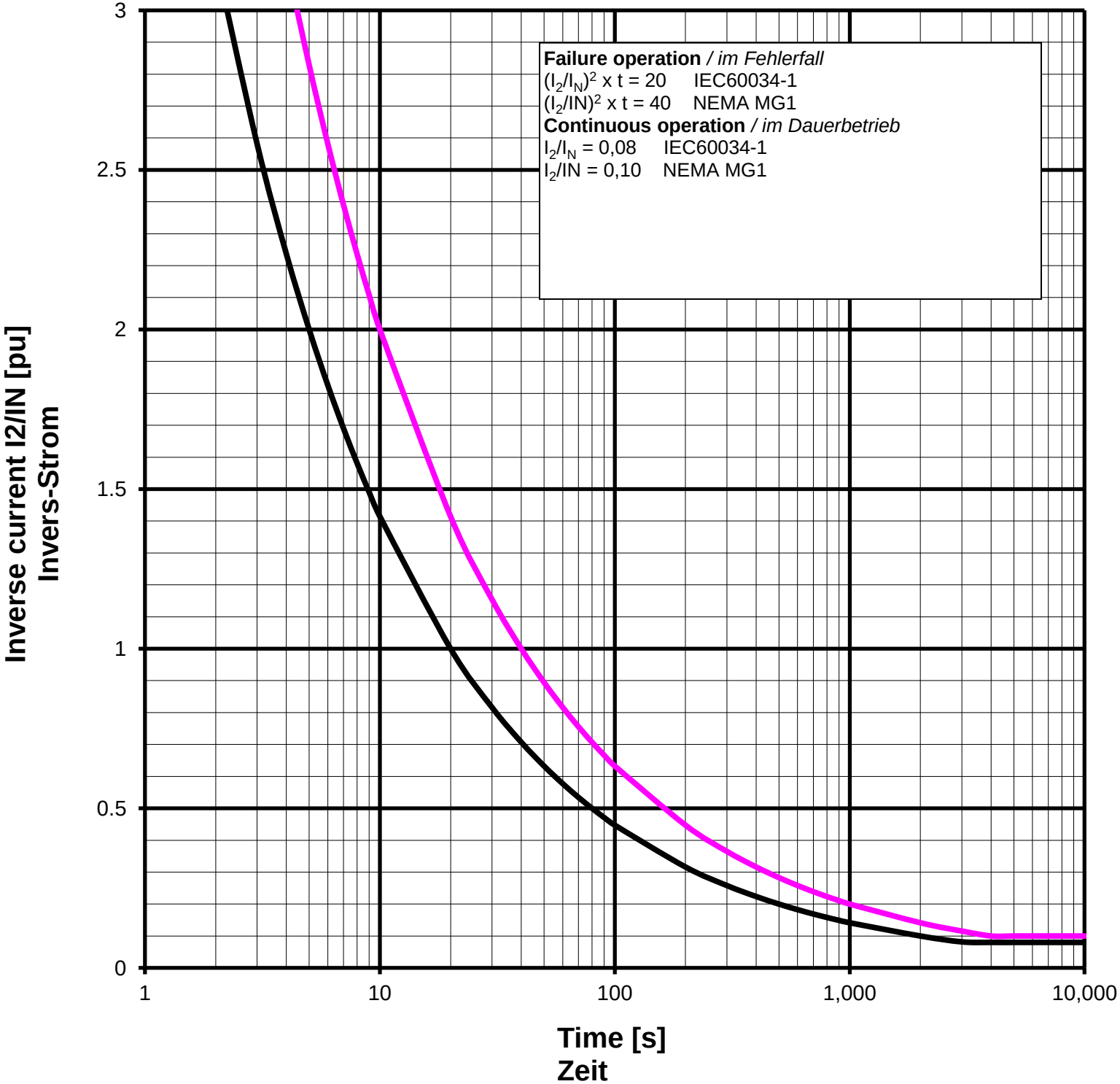
Nominal current I_N : **306** A

Bemessungsstrom

Speed n : **1000** min⁻¹

Drehzahl

Inverse current or unbalanced negative sequence current



Remarks / Notizen:

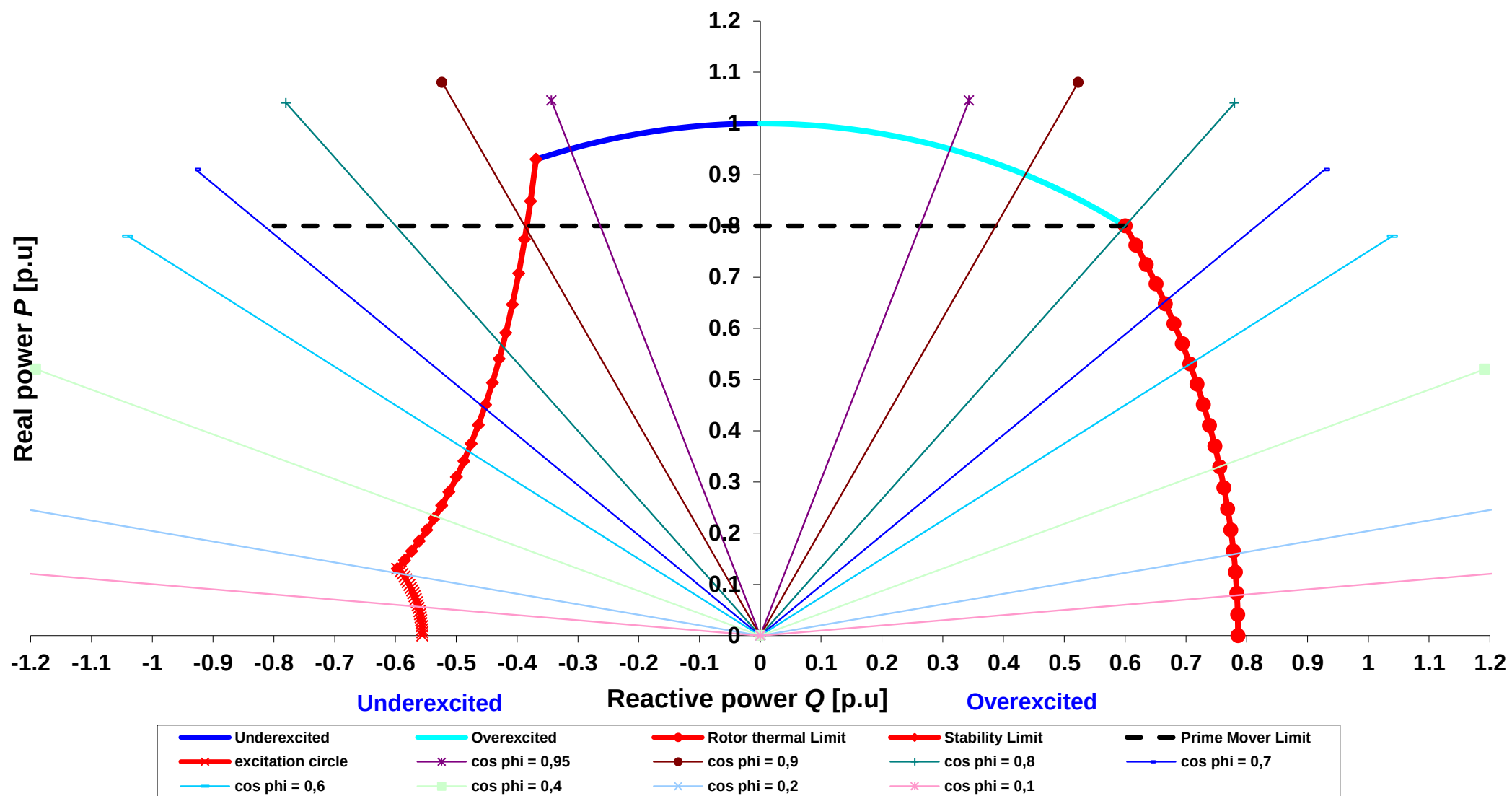
TYPE

DIG 140 I/6

Projekt:

Order Nr.:

Capability (P-Q) Diagram



TYPE

DIG 140 I/6

Projekt:

Order Nr.:

