

**AvK**<sup>®</sup>**Technical Data Sheet for AvK-Alternators****FM 7.3-5**

Date:	24/07/19	Customer:	GENERIC DATASHEET only
Project No.:		AvK Reference:	dig120h_4_60_4160

<b>Object data:</b>					
Site:		Prime Mover:			
Application:	Stationary Power Plant	Manufacturer:			
<b>Generator data:</b>					
Generator:	DIG 120 h/4	Poles:	4	Standards:	IEC 60034
Rated power:	1900 kVA	1520 kWe	1593 kWm		
Power factor:	0.80				
Power at pf 1,0	1536 kVA	1536 kWe	1593 kWm		
Rated voltage:	4.16 kV				
Speed:	1800 1/min				
Frequency:	60 Hz			Voltage range / frequency range:	
Rated current:	263.7 A			Zone A according IEC 60034-1 (dU = +/-5%, df = +/-2%)	
Winding pitch:	ca. 5/6				
Insulation class:	Stator: Class F	Rotor: Class F		Temperature rise:	F
Ambient temperature:	40 ° C		Environment:	Standard environment	
Site altitude:	1000 m				
Enclosure:	IP23	Filter:			
Cooling:	IC 01 - Open-circuit ventilation				
Coolant:	Ambient Air	Temperature	40 ° C	Temperature Air inlet	40 ° C
		Coolant:		generator:	
		Cooling air vol.:	3.0 m <sup>3</sup> /s	Cooling water quantity:	n/a
Moment of inertia (I)*:	48 kgm <sup>2</sup>	Weight*:	4900 Kg	Losses (environment):	73 KW
				Losses (cooling):	n/a

<b>Connections and regulators:</b>	
Wires:	4 terminals, starpoint connected in terminal box
Operation mode:	Single mode
Regulators:	
Voltage regulator:	DECS 100

<b>Electrical data: (acc. IEC)</b>					
Efficiencies:	110%	100%	75%	50%	25%
Power factor 0.8	95,17	95,4	95,2	94,2	91
Power factor 0.9	95,7	95,9	95,6	94,5	91
Power factor 1.0	96,22	96,4	96	94,8	91

<b>Reactances and time constants</b>									
	unsaturated	saturated		unsaturated	saturated				
X <sub>d</sub>	2.40	2.16 p.u.	X <sub>q</sub>	1.20	1.18 p.u.	T <sub>d0'</sub>	2.9 s	T <sub>d0''</sub>	0.02526 s
X <sub>d'</sub>	0.320	0.320 p.u.	X <sub>q'</sub>	1.20	1.18 p.u.	T <sub>d'</sub>	0.39 s	T <sub>q0'</sub>	0.3 s
X <sub>d''</sub>	0.209	0.190 p.u.	X <sub>q''</sub>	0.209	0.209 p.u.	T <sub>d''</sub>	0.015 s	T <sub>q0''</sub>	0.17225 s
X <sub>2</sub>	0.220	0.200 p.u.	X <sub>0</sub>	0.063	0.057 p.u.	T <sub>a</sub>	0.05 s	T <sub>q'</sub>	0.3 s
X <sub>1s</sub>	n.a.	0.114 p.u.						T <sub>q''</sub>	0.03 s
Short circuit ratio saturated: 0.46					Base Impedance (Z <sub>n</sub> ) 9.108 Ohm				

<b>Short circuit data:</b>	
Initial short circuit current (3-phase):	I <sub>k''</sub> 1388 A
Max. peak current (3-phase):	I <sub>s</sub> 3533 A
Sustained short circuit current:	I <sub>k</sub> 791 A
Initial short circuit torque:	M <sub>k2</sub> 69.0 kNm
	M <sub>k3</sub> 41.4 kNm
Max. faulty synchron moment:	M <sub>f</sub> 148.4 kNm
Rated kVA torque:	M <sub>SN</sub> 10.08 kNm
Rated torque	M <sub>N</sub> 8.06 kNm
Shaft torque	M <sub>Sh</sub> 8.45 kNm
	Minimum 3 x rated current for max.10 s

<b>Load application:</b>	
max. load application: 891 kVA (corresponds to 46,87 % from 1900 kVA) for Power factor 0.4 15% transient voltage drop	Power: 1900 kVA Power factor: 0.8 transient voltage drop: -24.2 %

**Remarks:**

\*Preliminary values. For exact values please see valid mechanical arrangement drawing.