DIAS Drive SDD 120



The SDD 120 is a 1-axis device with 20 A continuous and 40 A peak current, which makes it the most powerful drive offered by SIGMATEK.

The VARAN bus interface provides fast, hard real-time capable and nearly jitter-free communication.

Additional Characteristics:

- various feedback systems (Resolver, EnDAT, Hiperface and Sin/Cos)
- reduced power loss using a new PWM process
- integrated class A power filter
- intermediate circuit is accessible for the coupling of additional devices
- spline interpolation implemented in addition to position control
- integrated Safety functions "Safe Torque Off" STO and "Safe Stop 1" SS1

Rated Values		
Rated mains voltage (symmetrically to ground) 5000 A eff. (L1, L2, L3)	V _{AC}	3x 230 V _{-10%} – 480 V ^{10%} , 45-65 Hz
Max. peak current in starting torque (limited by inrush current)	Α	2.5
Rated power in S1 mode	kVA	14
Rated DC-link voltage	V DC	290-680
Over voltage protection - limit for the intermediate circuit $% \left(\frac{1}{2}\right) =\frac{1}{2}\left(\frac{1}$	V DC	450-900
Auxiliary supply voltage +24 V	V DC	22-30
+24 V auxiliary supply power	W	25
Holding brake supply voltage +24 V-BR	V DC	25-27
Max. holding brake current per axis	A DC	2
Holding brake-voltage reduction with a +24 V-BR load	V DC	max. 1
Max. holding brake switching energy	mJ	100
Rated output current for axis 1 (eff. +/- 3 %)	A _{RMS}	20
Max. standstill current axis 1 from 500 ms	A _{RMS}	14
Max. continuous sum current of all axis (heat sink)	A _{RMS}	-
Peak output current of axis 1 for a max. of 5 sec. (eff. +/- 3%)	A _{RMS}	40
Power stage loss	W/A RMS	10
Output frequency of the power output stage	kHz	8
Maximum leakage current	mA	15
PWM frequency	kHz	8
Regulator frequency	kHz	16
Regen Circuit		
Capacitance of the intermediate circuit voltage	μF	700
External brake resistance	Ω	25
Internal regen resistor value	Ω	25
Rated power of the internal regen resistor	W	200

Start-up limit	G-VMAINS = 230 (rated mains voltage = 230 V)		
Over voltage protection V ∞ 450 Max. rated power of the external regen resistor W 750 Peak power of the internal brake resistor (max. 1 s) kW 6.5 G-VMAINS = 400 (rated mains voltage = 400 V) V ∞ 730 Switch-off level V ∞ 690 Over voltage protection V ∞ 800 Max. rated power of the external regen resistor (max. 1 s) W 1200 Peak power of the internal brake resistor (max. 1 s) W 21 G-VMAINS = 480 (rated mains voltage = 480 V) 850 Switch-off level V ∞ 850 Over voltage protection V ∞ 810 Over voltage protection V ∞ 900 Max. rated power of the external regen resistor (max. 1 s) kW 27 Internal Fuse W 1500 Auxiliary supply 24 V (*24 V to BGND) electronic fuse Holding brake supply 24 V +24 V to BGND) electronic protection Resolver Specifications Exciter requency f _{err} kHz 8 Exciter voltage U _{kef} U eff 4 Number of poles m - 2, 4, 6,, 32 Exciter voltage U _{kef} U eff 4 Number of poles m - 2, 4, 6,, 32 Exciter v	Start-up limit	V _{DC}	420
Max. rated power of the external regen resistor Peak power of the internal brake resistor (max. 1 s) G-VMAINS = 400 (rated mains voltage = 400 V) Start-up limit V _{xx} Switch-off level V _{xx} Over voltage protection V _{xx} G-VMAINS = 480 (rated mains voltage = 480 V) Start-up limit V _{xx} G-VMAINS = 480 (rated mains voltage = 480 V) Start-up limit V _{xx} G-VMAINS = 480 (rated mains voltage = 480 V) Start-up limit V _{xx} Switch-off level Switch-off level V _{xx} Switch-off level V _{xx} Switch-off level Switch-off level V _{xx} Switch-off level Switch-off level Switch-off level V _{xx} Switch-off level Swi	Switch-off level	V _{DC}	400
Peak power of the internal brake resistor (max. 1 s) G-VMAINS = 400 (rated mains voltage = 400 V) Start-up limit V _{vc} Start-up limit Sewitch-off level V _{vc} Start-up limit Start-up limit V _{vc} Start-up limit Start-up limit Start-up limit V _{vc} Start-up limit Start-up limit Start-up limit Start-up limit V _{vc} Start-up limit Start-up limi	Over voltage protection	V DC	450
(max. 1 s)	Max. rated power of the external regen resistor	W	750
Crated mains voltage = 400 V Start-up limit V V C 730	·	kW	6.5
Switch-off level Over voltage protection Peak power of the external regen resistor W 1200 Peak power of the internal brake resistor (max. 1 s) G-VMAINS = 480 (rated mains voltage = 480 V) Start-up limit Voc			
Over voltage protection V occ 800 Max. rated power of the external regen resistor W 1200 Peak power of the internal brake resistor (max. 1 s) kW 21 G-VMAINS = 480 (rated mains voltage = 480 V) Start-up limit V occ 850 Switch-off level V occ 810 Over voltage protection V occ 900 Max. rated power of the external regen resistor W 1500 Peak power of the internal brake resistor (max. 1 s) kW 27 Internal Fuse Auxiliary supply 24 V (+24 V to BGND) electronic fuse Holding brake supply 24 V-BR (+24 V-BR to BGND) electronic protection Regen resistor electronic protection Resolver Specifications Exciter frequency ferr kHz 8 Exciter voltage U _{Ref} U _{eff} 4 Number of poles m - 2, 4, 6,, 32 Resolver voltage U _{sin/cos, max} U _{eff} 2.2 Connector Types Auxiliary supply (X1 A, X2 A) Combicon 5, 3-pin Power Combicon 7.62, 8-pin, 4 mm² Feedback (X6, X7, X8) D-Sub 25-pin (female)	Start-up limit	V _{DC}	730
Max. rated power of the external regen resistor Peak power of the internal brake resistor (max. 1 s) G-VMAINS = 480 (rated mains voltage = 480 V) Start-up limit V _{DC} Switch-off level V _{DC} Switch-off level V _{DC} Max. rated power of the external regen resistor V _{DC} Peak power of the external regen resistor W 1500 Peak power of the internal brake resistor (max. 1 s) Internal Fuse Auxiliary supply 24 V (+24 V to BGND) Holding brake supply 24 V (+24 V to BGND) Regen resistor Resolver Specifications Exciter frequency f _{err} kHz Sa Exciter frequency f _{err} kHz Sa Exciter frequency f _{err} kHz Sa Exciter voltage U _{Sin/Cos, max} U _{eff} U _{eff} Queff Connector Types Auxiliary supply (X1 A, X2 A) Power supply (X1 B, X2B) Power Combicon 7.62, 8-pin, 4 mm² Feedback (X6, X7, X8) P-Sub 25-pin (female)	Switch-off level	V _{DC}	690
Peak power of the internal brake resistor (max. 1 s) G-VMAINS = 480 (rated mains voltage = 480 V) Start-up limit V _{DC} Switch-off level V _{DC} Switch-off level V _{DC} Peak power of the external regen resistor W 1500 Peak power of the internal brake resistor (max. 1 s) Internal Fuse Auxiliary supply 24 V (+24 V to BGND) Regen resistor Resolver Specifications Exciter frequency f _{err} kHz Resolver Voltage U _{Ref} V _{eff} Combicon 5, 3-pin Power supply (X1 B, X2 B) Power Combicon 7.62, 8-pin, 4 mm² Feedback (X6, X7, X8) Power Combicon 7.62, 8-pin, 4 mm² Feedback (X6, X7, X8)	Over voltage protection	V DC	800
(max. 1 s) G-VMAINS = 480 (rated mains voltage = 480 V) Start-up limit V _{DC} Start-up limit V _{DC} Stort-up limit Stort stort Nor up 900 Max. rated power of the external regen resistor W Stort stort lipit Lead stort supply Lead	Max. rated power of the external regen resistor	W	1200
(rated mains voltage = 480 V) Start-up limit V pc 850 Switch-off level V pc 810 Over voltage protection V pc 900 Max. rated power of the external regen resistor W 1500 Peak power of the internal brake resistor (max. 1 s) kW 27 Internal Fuse Auxiliary supply 24 V (+24 V to BGND) electronic fuse Holding brake supply 24 V-BR (+24 V-BR to BGND) electronic protection Regen resistor electronic protection Resolver Specifications Exciter frequency ferr kHz 8 Exciter voltage U _{Ref} U _{eff} 4 Number of poles m - 2, 4, 6,, 32 Resolver voltage U _{sin/cos, max} U _{eff} 2.2 Connector Types Auxiliary supply (X1 A, X2 A) Combicon 5, 3-pin Power supply (X1B, X2B) Power Combicon 7.62, 8-pin, 4 mm² Feedback (X6, X7, X8) D-Sub 25-pin (female)	·	kW	21
Switch-off level V _{DC} 810 Over voltage protection V _{DC} 900 Max. rated power of the external regen resistor W 1500 Peak power of the internal brake resistor (max. 1 s) Internal Fuse Auxiliary supply 24 V (+24 V to BGND) electronic fuse Holding brake supply 24 V-BR (+24 V-BR to BGND) electronic protection Regen resistor electronic protection Resolver Specifications Exciter frequency f _{err} kHz 8 Exciter voltage U _{Ref} U _{eff} 4 Number of poles m - 2, 4, 6,, 32 Resolver voltage U _{Sin/cos, max} U _{eff} 2.2 Connector Types Auxiliary supply (X1 A, X2 A) Combicon 5, 3-pin Power supply (X1B, X2B) Power Combicon 7.62, 8-pin, 4 mm² Feedback (X6, X7, X8) D-Sub 25-pin (female)			
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Max. rated power of the external regen resistor Peak power of the internal brake resistor (max. 1 s) Internal Fuse Auxiliary supply 24 V (+24 V to BGND) Regen resistor Regen resistor Resolver Specifications Exciter frequency f _{err} kHz Exciter voltage U _{Ref} Number of poles m - 2, 4, 6,, 32 Resolver Voltage U _{sin/cos, max} U _{eff} U _{eff} Queff Auxiliary supply (X1 A, X2 A) Power supply (X1 B, X2B) Feedback (X6, X7, X8) Library kW 27 Library Resolver Relectronic protection electronic protection electronic protection 4 8 Exciter voltage U _{sin/cos, max} U _{eff} Queff Auxiliary supply (X1 A, X2 A) Combicon 5, 3-pin Power Combicon 7.62, 8-pin, 4 mm² Feedback (X6, X7, X8) D-Sub 25-pin (female)	Switch-off level	V _{DC}	810
Peak power of the internal brake resistor (max. 1 s) Internal Fuse Auxiliary supply 24 V (+24 V to BGND) Holding brake supply 24 V-BR (+24 V-BR to BGND) Regen resistor Resolver Specifications Exciter frequency f _{err} kHz Exciter voltage U _{Ref} Number of poles m - 2, 4, 6,, 32 Resolver Voltage U _{sin/cos, max} U _{eff} Ueff 2.2 Connector Types Auxiliary supply (X1 A, X2 A) Power supply (X1 B, X2B) Feedback (X6, X7, X8) D-Sub 25-pin (female)	Over voltage protection	V _{DC}	900
Internal Fuse Auxiliary supply 24 V (+24 V to BGND) Regen resistor Resolver Specifications Exciter frequency f _{err} Number of poles m Auxiliary supply 24 V -BR (+24 V-BR to BGND) Resolver Specifications Exciter voltage U _{Ref} V _{eff} V _{eff} V _{eff} V _{eff} V _{eff} Auxiliary supply (X1 A, X2 A) Power supply (X1 B, X2B) Feedback (X6, X7, X8) Possible SGND Relectronic fuse electronic protection Resolver voltage V _{slav} (+24 V-BR to BGND) electronic protection 8 8 Exciter frequency f _{err} 4 V _{eff} 4 V _{eff} 2.2 Connector Types Auxiliary supply (X1 A, X2 A) Power Combicon 5, 3-pin Power Supply (X1B, X2B) Power Combicon 7.62, 8-pin, 4 mm² Feedback (X6, X7, X8)	Max. rated power of the external regen resistor	W	1500
Auxiliary supply 24 V (+24 V to BGND) Regen resistor Resolver Specifications Exciter frequency f _{err} Number of poles m Auxiliary supply (X1 A, X2 A) Power supply (X1B, X2B) Feedback (X6, X7, X8) Relectronic protection electronic protection Relectronic protection Relectronic protection electronic protection 8 8 Exciter voltage U 8 4 Vu 9 4 Leff 4 Lu 10 10 10 10 10 10 10 10 10 1	,	kW	27
Holding brake supply 24 V-BR (+24 V-BR to BGND) Regen resistor Resolver Specifications Exciter frequency f _{err} kHz 8 Exciter voltage U _{Ref} Number of poles m - 2, 4, 6,, 32 Resolver voltage U _{sin/cos, max} U _{eff} 2.2 Connector Types Auxiliary supply (X1 A, X2 A) Power supply (X1B, X2B) Feedback (X6, X7, X8) Possible Protection electronic protection 8 Exciter voltage U 8 Exciter voltage U 9 9 10 10 10 10 10 10 10 10	Internal Fuse		
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Resolver Specifications Exciter frequency f _{err} kHz 8 Exciter voltage U _{Ref} V _{eff} 4 Number of poles m - 2, 4, 6,, 32 Resolver voltage U _{sin/cos, max} U _{eff} 2.2 Connector Types Auxiliary supply (X1 A, X2 A) Power supply (X1B, X2B) Feedback (X6, X7, X8) B KHZ 8 C Combicon 5, 3-pin Power Combicon 7.62, 8-pin, 4 mm² Feedback (X6, X7, X8) D-Sub 25-pin (female)	Holding brake supply 24 V-BR (+24 V-BR to BGND)		electronic protection
Exciter frequency f _{err} kHz 8 Exciter voltage U _{Ref} U _{eff} 4 Number of poles m - 2, 4, 6,, 32 Resolver voltage U _{sin/cos, max} U _{eff} 2.2 Connector Types Auxiliary supply (X1 A, X2 A) Combicon 5, 3-pin Power supply (X1B, X2B) Power Combicon 7.62, 8-pin, 4 mm² Feedback (X6, X7, X8) D-Sub 25-pin (female)	Regen resistor		electronic protection
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Number of poles m - 2, 4, 6,, 32 Resolver voltage U _{sin/cos, max} U _{eff} 2.2 Connector Types Auxiliary supply (X1 A, X2 A) Combicon 5, 3-pin Power supply (X1B, X2B) Power Combicon 7.62, 8-pin, 4 mm² Feedback (X6, X7, X8) D-Sub 25-pin (female)	Exciter voltage U _{Ref}	U _{eff}	4
Connector TypesAuxiliary supply (X1 A, X2 A)Combicon 5, 3-pinPower supply (X1B, X2B)Power Combicon 7.62, 8-pin, 4 mm²Feedback (X6, X7, X8)D-Sub 25-pin (female)		-	2, 4, 6,, 32
Connector TypesAuxiliary supply (X1 A, X2 A)Combicon 5, 3-pinPower supply (X1B, X2B)Power Combicon 7.62, 8-pin, 4 mm²Feedback (X6, X7, X8)D-Sub 25-pin (female)	Resolver voltage U _{sin/cos, max}	U_{eff}	2.2
Power supply (X1B, X2B) Power Combicon 7.62, 8-pin, 4 mm² Feedback (X6, X7, X8) D-Sub 25-pin (female)			
Feedback (X6, X7, X8) D-Sub 25-pin (female)	Auxiliary supply (X1 A, X2 A)		Combicon 5, 3-pin
	Power supply (X1B, X2B)		Power Combicon 7.62, 8-pin, 4 mm²
Motor (X3, X4, X5) Power Combicon 7.62 6-nin 4 mm ²	Feedback (X6, X7, X8)		D-Sub 25-pin (female)
(,,, pin, 4 iiiii	Motor (X3, X4, X5)		Power Combicon 7.62, 6-pin, 4 mm ²

Dimensions		
Height with/without plugs	mm	472/378
Width	mm	158
Depth	mm	240
Weight	kg	10
Article Number		
with fan unit		09-501-201 -23