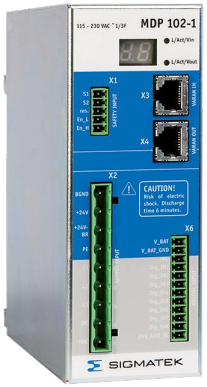
DIAS Drive

MDP 102-1



The MDP 102-1 is a supply module that has a 2 kVA rating with an input voltage of 230 V. The supply module is designed for the 1-phase connection, with an input voltage of 115 V, it can be powered with a 3-phase connection.

This power module is a head station for each MDD 100 servo drive system. The MDP 102-1 forms the communication interface for the control and is responsible for the bus communication with connected axis modules.

Integrated in the module are eight digital capture inputs and a safety input.

Additional Characteristics:

- various feedback systems (Resolver, EnDAT® encoder, Hiperface® encoder, high-resolution Sin/Cos encoder)
- integrated power filter
- integrated Safety functions „Safe Torque Off" STO and „Safe Stop 1" SS1
- fast capture inputs

Rated Data		
Input voltage (symmetrically opposing ground)	V_{AC}	1 or 3x 115 $V_{-10\%}$/1x 230 $V^{+10\%}$, 45-65 Hz
Maximum peak current with activation of the mains contact (limited by inrush circuit)	A	2
Rated power in S1 mode	kVA	2
Rated power in S1 mode for input voltage < 230 V	kVA	2 kVA-8.7 W * (230 - input voltage/V)
Rated DC-link voltage	V_{DC}	150-360
Over voltage threshold of the DC-link voltage	V_{DC}	450
+24 V auxiliary voltage	V_{DC}	22-30
+24 V auxiliary supply power	W	maximum 50
Maximum leakage current	mA	30
Holding brake supply voltage +24 V-BR	V_{DC}	23 to 26 (depending on selected holding brake type)
Brake Switch		
Capacitance of the intermediate circuit voltage	µF	540
G-VMAINS = 230 (rated mains voltage = 230 V)		
Switch-on threshold	V_{DC}	420
Switch-off threshold	V_{DC}	400
Over voltage protection	V_{DC}	450
Peak power of the internal ballast resistance (max. 1 s)	kW	5.3
Safety Input		
Input voltage between ENABLE_H (+) and ENABLE_L (-)	V	typically 24 V to a maximum of 30 V
Signal level between ENABLE_H (+) and ENABLE_L (-)	V	low: ≤ +5, high ≥ +15
Input current	mA	typically 10 mA at 24 V
Input switching delay times	s	switch-on delay circa 0.02 s turn-off delay min. 0.5 s, maximum 1 sec
Relay output (S1, S2)		no
Switching power		maximum 30 V DC, 42 V AC, 100 µA to maximum 0.5 A

Digital Inputs			
Input voltage Dig_IN1 to Dig_IN8	V	typically 24 V to a maximum of 30 V	
Signal level	V	low: ≤ +5, high ≥ +15	
Input current	mA	typically 10 mA at 24 V	
Input switching delay times	ms	typically 0.1	
Safety Conformity			
Safety Integrity Level in accordance with IEC EN 62061		SIL 3	
Performance Level in accordance with EN ISO 13849-1		PLe	
Probability of failure per hour		PFH_D [10^{-9}]	0.3
Mean time to dangerous failure		$MTTF_D$ symmetrized [Years]	high
Proof Test Interval [years]		20	
Internal Fuse			
Auxiliary supply voltage +24 V (+24 V - BGND)		electronic fuse	
Holding brake supply 24 V-BR (24 V-BR - BGND)		electronic fuse	
Ballast resistance		electronic protection	
Resolver Specifications			
Exciter frequency f_{err}	kHz	8	
Exciter voltage U_{Ref}	U_{eff}	2.8	
Number of poles m	-	2, 4, 6, .., 32	
Resolver voltage $U_{sin/cos, max}$	U_{eff}	1.9	
Connector Types			
Safety Inputs (X1)		Phoenix FMC1.5/5-ST-3.5	
Power supply (X2)		Phoenix GMSTB 2.5HCV/9-ST-7.62	
VARAN bus (X3, X4)		RJ 45	
Digital inputs (X6)		Phoenix FMC1.5/12-ST-3.5	
Dimensions			
Height	mm	155	
Width	mm	60	
Depth with module carrier (without/with plugs)	mm	152/195	
Weight	kg	1.2	
Article Number			
		09-403-102-1	
Standard			
		UL 508C, NMMS.E336350	

Notes