DCmind Brushless Datasheet

80350 V1* + PM72

Geared motor

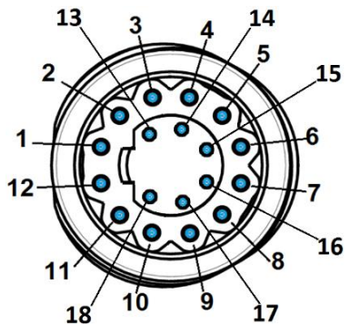
Series

8035D SMI22 CAN

General characteristics

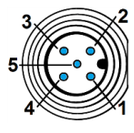
Part numbers						
Geared motor		8035D001	8035D002	8035D003	8035D004	8035D005
Geared motor + brake		8035D101	8035D102	8035D103	8035D104	8035D105
Gearbox characteristics						
Gearbox type		Planetary PM72				
Number of stages		1 stage	2 stages		3 stages	
Max. radial force (16mm from front face)	N	320	480		760	
Max. axial force	N	70	100		160	
RATIO		**6,75**	**25,01**	**45,56**	**92,7**	**168,84**
Max. allowed torque	Nm	14	42	42	84	84
Max. gear play	°	0,6	0,7	0,7	0,7	0,7
Geared motor characteristics at 24V (5)						
At no load						
Max. output speed	rpm	479	129	71	35	19
Standby current	mA	50	50	50	50	50
At nominal						
Speed	rpm	444	120	66	32	18
Torque (2)	Nm	5,4	19	34	70	84
Output power	W	251	236	236	236	160
Current	A	15,4	15,4	15,4	15,4	15,4
Efficiency	%	68	64	64	64	43
At max. output power						
Speed	rpm	342	109	65	32	18
Torque	Nm	13,5	42	42	84	84
Output power	W	484	477	285	280	160
Current	A	34,5	34,5	34,5	34,5	34,5
Efficiency	%	58	58	34	34	19
At peak torque						
Speed	rpm	342	109	65	32	18
Torque	Nm	13,5	42	42	84	84
Output power	W	484	477	285	280	160
Current	A	34,5	34,5	34,5	34,5	34,5
Others						
Weight without brake	kg	3,8	4,3	4,3	4,8	4,8
Weight with brake	kg	4,5	5,0	5,0	5,5	5,5

Connecting	
I/O M16 connector 18 pins	**Pin N°**
Optional logic supply	1
0 Volt	2
Input 6 (analogic 1)	3
Input 5 (analogic 2)	4
Input 1 (digital)	5
Input 2 (digital)	6
Input 3 (digital)	7
Input 4 (digital)	8
0 Volt	9
Output 1 (digital - PWM)	10
Output 2 (digital - PWM)	11
Output 3 (digital)	12
Output 4 (digital)	13
0 Volt	14
STO 2 -	15
STO 2 +	16
STO 1 -	17
STO 1 +	18

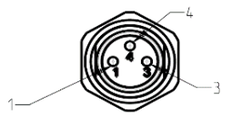


Power supply M16 connector 3 pins	**Pin N°**
Output ballast	1
+VDC	2
0 Volt	3

CAN M12 Connector - 5 pins	**Pin N°**
Not connected	1 / 2
CAN_GND	3
CAN_H	4
CAN_L	5



Brake connector	**Pin N°**
0 Volt	1
24 Vdc	3
Not connected	4



Motor Characteristics (1)		
Motor type		**80 350 001 - V1***
Direct current voltage supply		✓
Nominal voltage range	Vdc	9 --> 75
Max.current	A	**75**

Drive		
Type		**SMI22 CAN**
Built-in drive		✓
Internal magnetic encoder		4096 pulses/rev
Setting software on PC		DCmind soft+CANopen
Control		
Position - speed - torque		✓
4 quadrants		✓
With regenerative energy absorber (3)		✓
Type" Field Oriented Control"		✓
Security		
Wrong polarity from power supply		✓
Output shortcut		✓
Input inverted		✓
Low voltage	Vdc	< 9
Overvoltage (4)	Vdc	> 75
Internal drive temperature protection	°C	110
Temperature drive allowing to restart	°C	90

Geared motor parameters			
Output shaft with ball bearings			✓
2 Safe Torque Off inputs	IEC61800-5-2/62061, ISO13849		✓
Temperature range	IEC60068-2-1/2	°C	-30 -> +70
Storage temperature		°C	-40 -> +80
Dielectric (1s/2mA)	IEC60335	Vdc	1 955
Motor insulation	IEC60085	class	E
Salt spray	ISO9227	severity	48h
EMC			
Electrostatic discharge	IEC61000-4-2	level	3
Radiated field	IEC61000-4-3	level	3
Electrical fast transient/burst test	IEC61000-4-4	level	3
Surge test	IEC61000-4-5	level	1
Conducted disturbances	IEC61000-4-6	level	3
Radiated emission	EN55022	class	B
Approvals			
ROHS	2011/65/CE	✓	
EC		✓	
UL		Pending	
CAN Open	CIA 301 - DSP 402	✓	
Communication			
USB (Setting, monitoring)		Micro-USB B	
CAN open: address - node ID (factory settings)			0x20
CAN open: baud rate (factory settings)		kbaud	1 000

Brake characteristics		
Power OFF brake		YES
Voltage supply	Vdc	24 (+6% ; -10%)
Nominal holding torque	Nm	4,5
Input power	W	12

Notes
Values without tolerances are average production values.
(1) Cold motor, 20°C ambient temp., full speed, sinusoidal commutation
(2) Nominal torque for continuous operation at 20 °C, decrease this value for higher ambient temperature
(3) Ballast resistor to be added
(4) Can be configured via DCmind soft+CANopen
(5): Other values available, please refer to direct motor datasheet
* V1: see label on product

Additionnal information is available in the SQ75 product user manual and in the starter kit manual, available in www.crouzet.com

Specifications subject to change without notice. Updated 03.10.2019

Crouzet Automatismes
12, rue Jean Jullien-Davin - CS 60059
26902 Valence CEDEX 9 France

www.crouzet.com

8035D SMI22 CAN Series

Drive electrical data

Running data				
Parameters		Min.	Typical	Max.
Voltage power supply "Vdc"	Vdc	9	24	75
Current "Idc"	A	-	15	60
Standby power "Wo"	W	-	2	-
Voltage optional logic supply (see wiring diagram)	Vdc	9	-	75*

** UL: maximum voltage supply: 36 Vdc*

CAN Bus characteristics				
Parameters		Min.	Typical	Max.
CAN_L insulated	Vdc	0,5	1,5	2,25
CAN_H insulated	Vdc	2,75	3,5	4,5

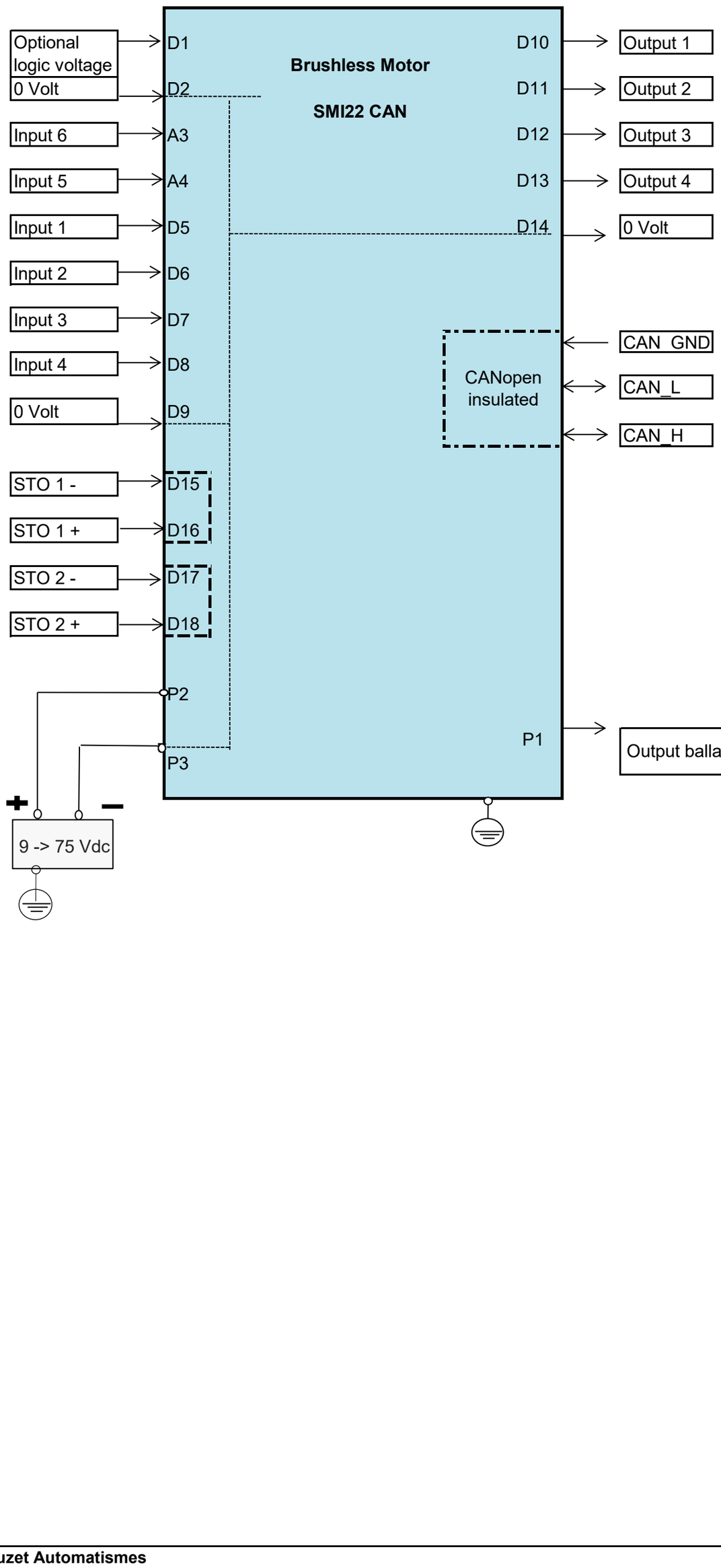
Input data					
Parameters				Min.	Typical	Max.
Input 1, 2, 3, 4	Impedance	kΩ		-	247	-
	Low level	Vdc		-90	-	2,4
	High level	Vdc		4,5	-	90
Input 5, 6	Impedance	kΩ		-	159	-
	Low level	Vdc		-90	-	2
	High level	Vdc		7,1	-	90
Inputs STO	Low level	Vdc		-2	-	4
	High level	Vdc		4,6	-	75

Output data				
Parameters		Min.	Typical	Max.
Low level Output 1, 2, 3, 4	mVdc	-	-	10
High level Output 1, 2, 3, 4	Vdc	-	4,75	-
Max output current "I outmax"	mA	-	-	50
I sink	mA			600

Accessories

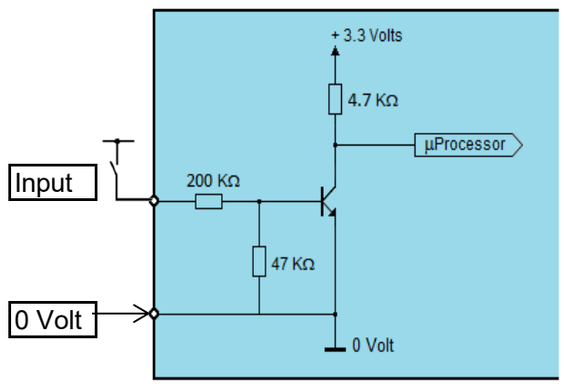
Starter kit			
Part number **79 513 105** Power/logic/CAN 3 m cables - Software - USB to Can Open adapter - CAN terminal resistor - CAN double connector			
Power supply cable	79 298 664	3m length	AWG18
Input-Output cable	79 513 106	3m length	AWG24
CAN cable M12	27 358 015	1m length	AWG26

Wiring

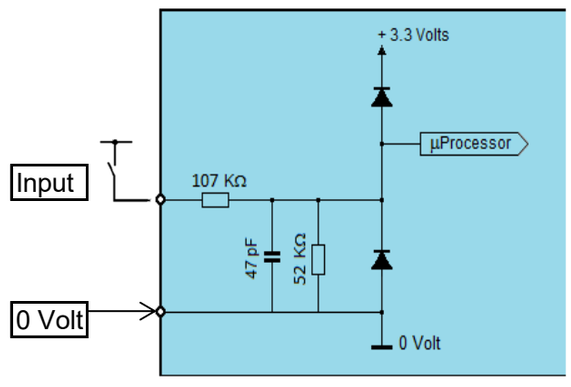


Input equivalent circuit

Inputs 1, 2, 3, 4

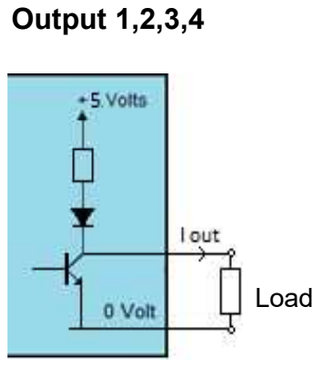


Inputs 5, 6

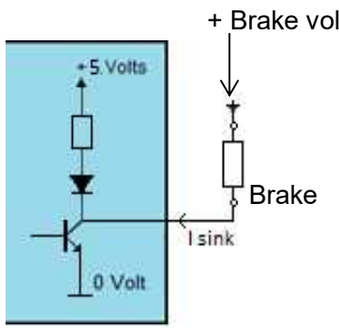


Output equivalent circuit

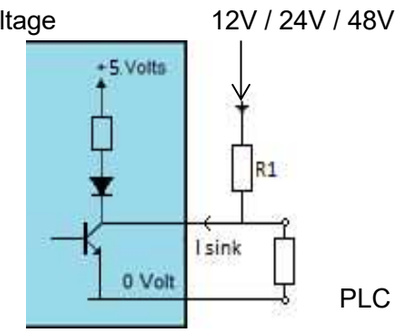
Output 1,2,3,4



I out max = 50 mA

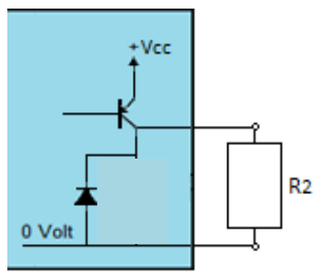


I sink max = 600 mA



I sink max = 600 mA
ex: R1 = 10 Kohms - 1/2W
R1 = 2 Kohms - 2W

Output ballast



Regenerative energy created per inertia load creates over-voltage. In case of too high value, connect R2 resistor through ballast output and ground to absorb this energy. Typical R2 value is 2.2 Ω. Power value depends from machine inertia. Max. voltage can be set.

8035D SMI22 CAN

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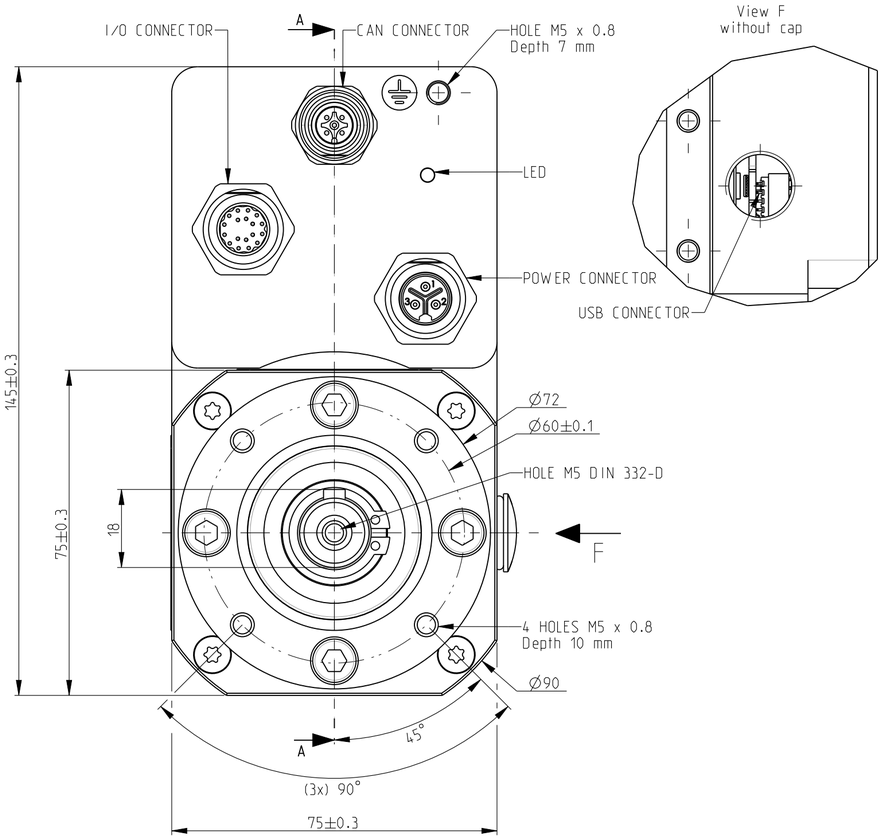

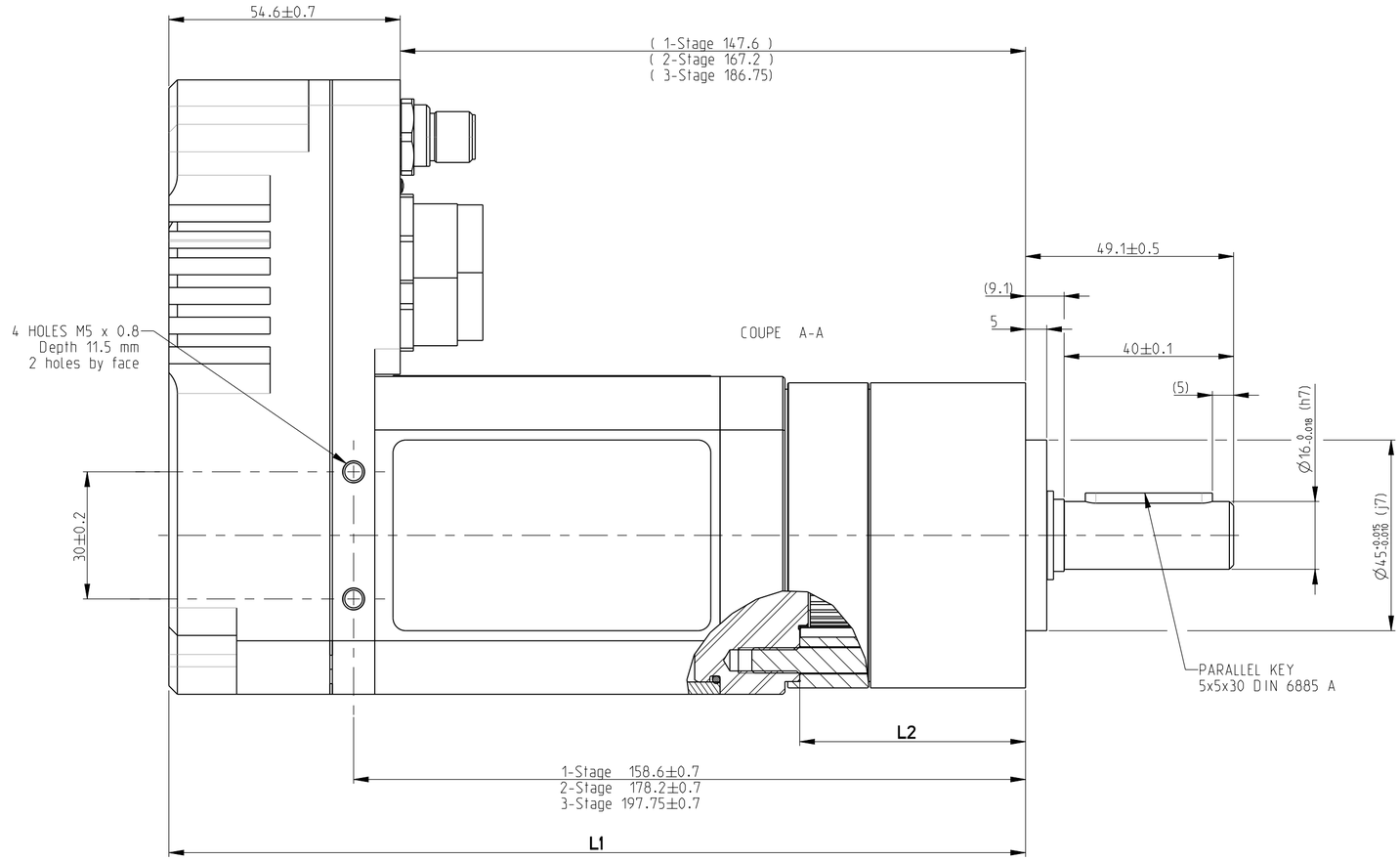

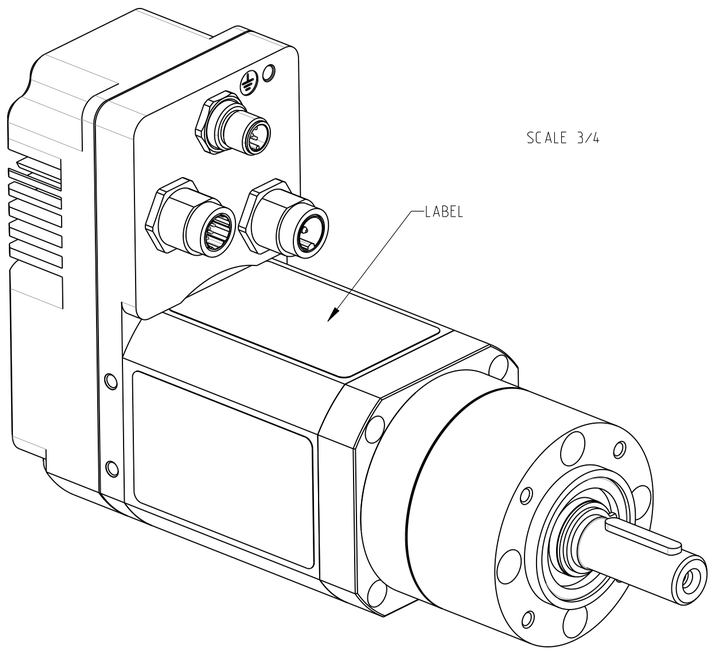

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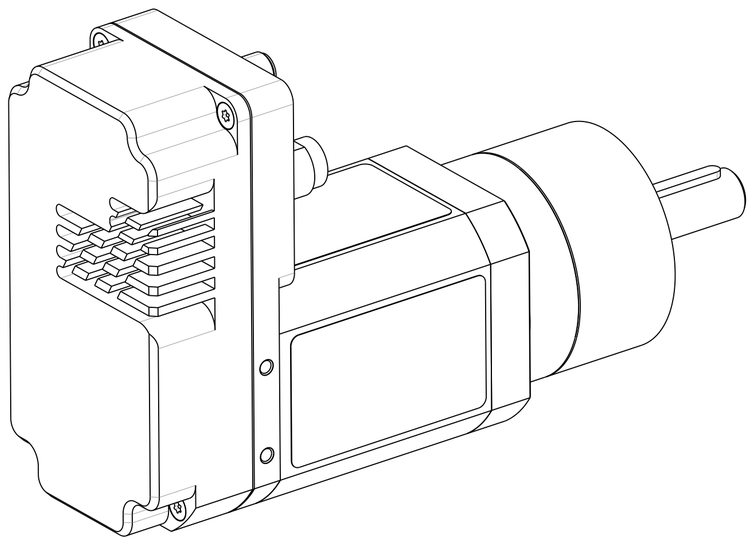

L1 (±1.1)		L1 MAX
PM72 1-STAGE	202.20	**203.30**
PM72 2-STAGE	221.80	**222.90**
PM72 3-STAGE	241.35	**242.45**

L2 (±0.3)		L2 MAX
PM72 1-STAGE	53.30	**53.60**
PM72 2-STAGE	72.90	**73.20**
PM72 3-STAGE	92.45	**92.75**

	GEAR MOTOR AVAILABLE					
	80 35D 001	80 35D 002	80 35D 003	80 35D 004	80 35D 005	80 35D 006
REDUCTION GEARBOX AVAILABLE						
RAPPORT	7:1	25:1	46:1	93:1	169:1	308:1
NB_STAGE	1	2	2	3	3	3
REFERENCE_FOURNISSEUR	PM72/PM 7:1	PM72/PM 25:1	PM72/PM 46:1	PM72/PM 93:1	PM72/PM 169:1	PM72/PM 308:1
POIDS	1.4 Kg	1.9 Kg	1.9 Kg	2.4 Kg	2.4 Kg	2.4 Kg
JEU_ANGULAIRE_MAXI	0.6°	0.65°	0.65°	0.7°	0.7°	0.7°
DIAM_ARBRE_MOTEUR	16	16	16	16	16	16
Reference	79297960	79297961	79297962	79297963	79297964	79297965

80350 V1 + PM72

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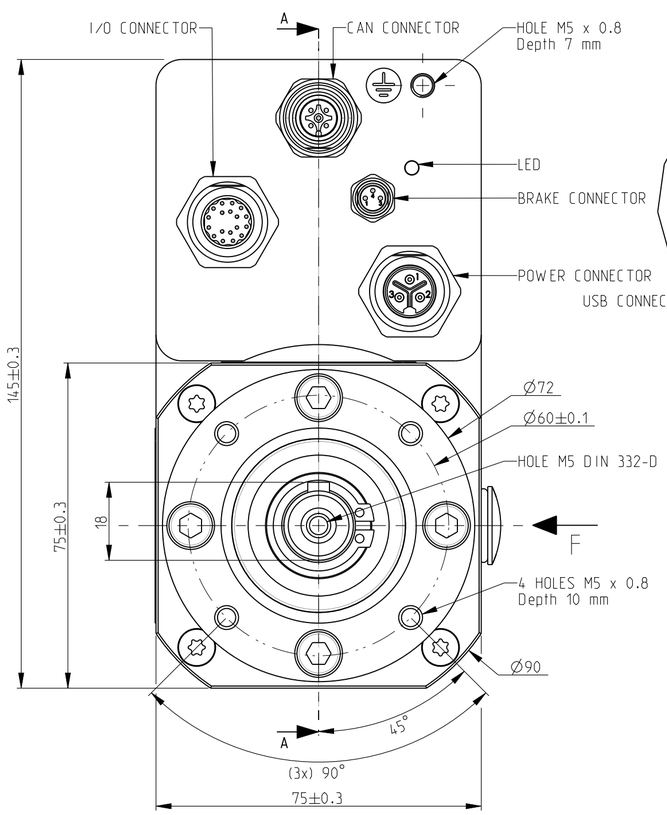

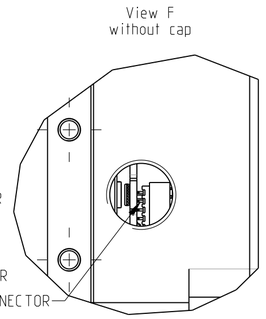

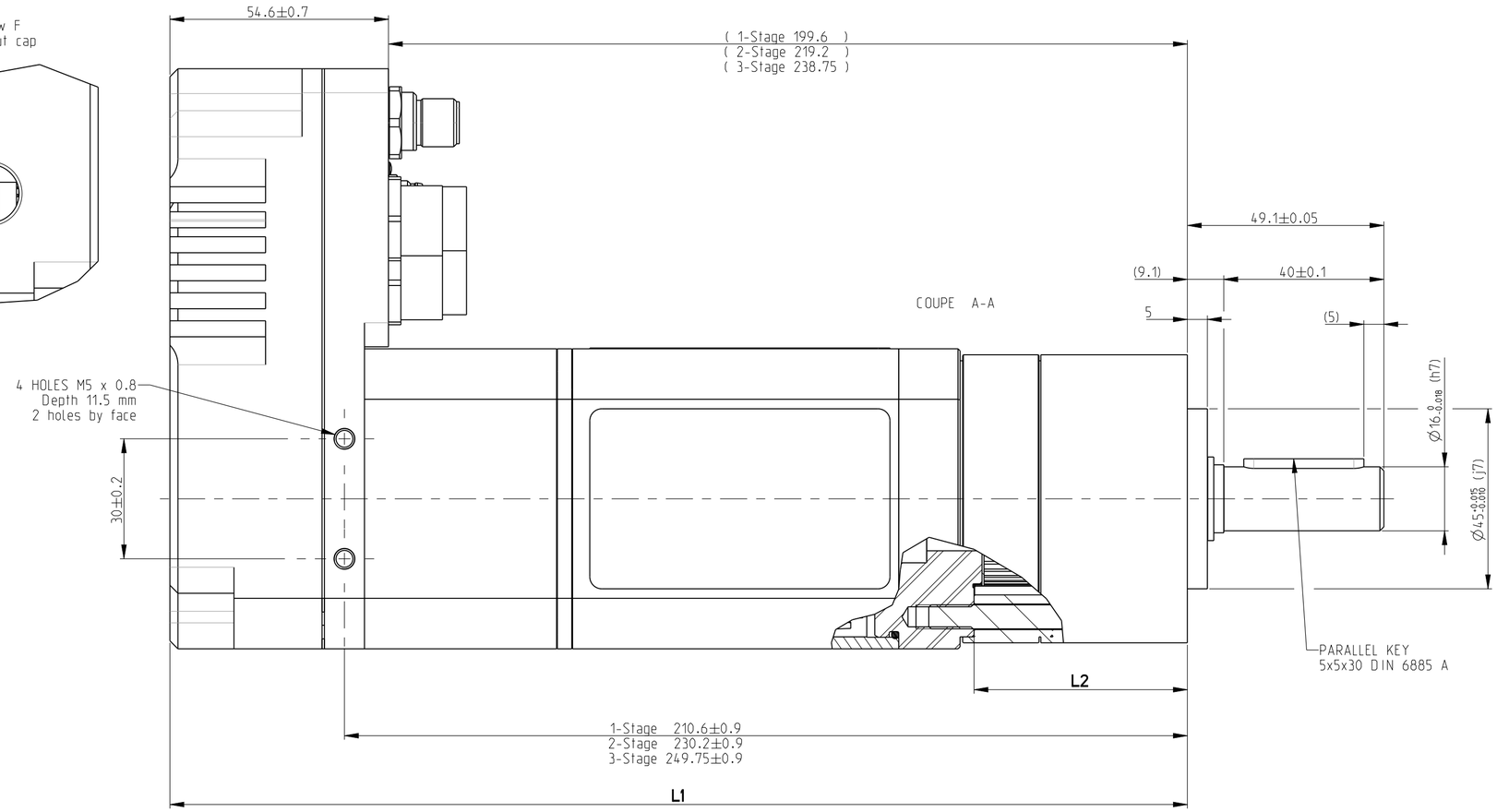

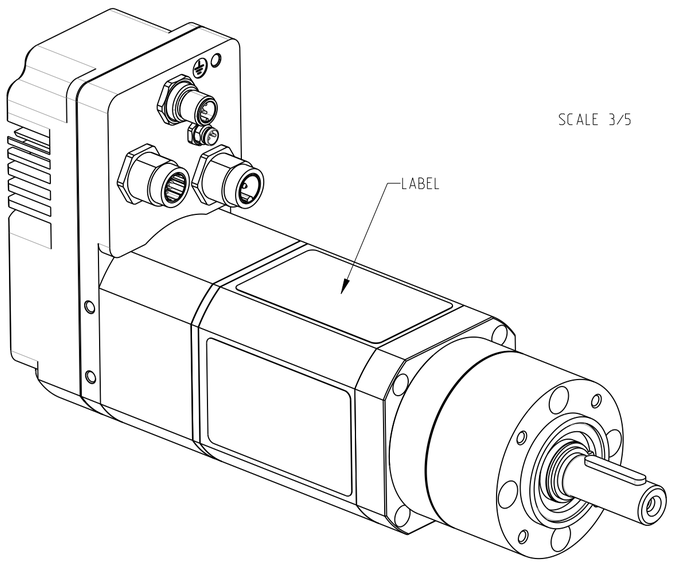

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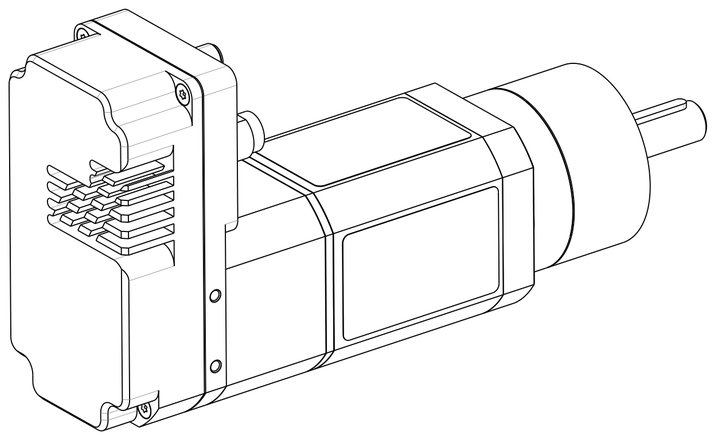

L1 (±1.3)		L1 MAX
PM72 1-STAGE	254.20	255.50
PM72 2-STAGE	273.80	275.10
PM72 3-STAGE	293.35	294.65

L2 (±0.3)		L2 MAX
PM72 1-STAGE	53.30	53.60
PM72 2-STAGE	72.90	73.20
PM72 3-STAGE	92.45	92.75

	GEAR MOTOR AVAILABLE					
	80 35D 101	80 35D 102	80 35D 103	80 35D 104	80 35D 105	80 35D 106
REDUCTION GEARBOX AVAILABLE						
RAPPORT	7:1	25:1	46:1	93:1	169:1	308:1
NB_STAGE	1	2	2	3	3	3
REFERENCE_FOURNISSEUR	PM72/PM 7:1	PM72/PM 25:1	PM72/PM 46:1	PM72/PM 93:1	PM72/PM 169:1	PM72/PM 308:1
POIDS	1.4 Kg	1.9 Kg	1.9 Kg	2.4 Kg	2.4 Kg	2.4 Kg
JEU_ANGULAIRE_MAXI	0.6°	0.65°	0.65°	0.7°	0.7°	0.7°
DIAM_ARBRE_MOTEUR	16	16	16	16	16	16
Reference	79297960	79297961	79297962	79297963	79297964	79297965

80350 V1 + PM72 + BRAKE

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