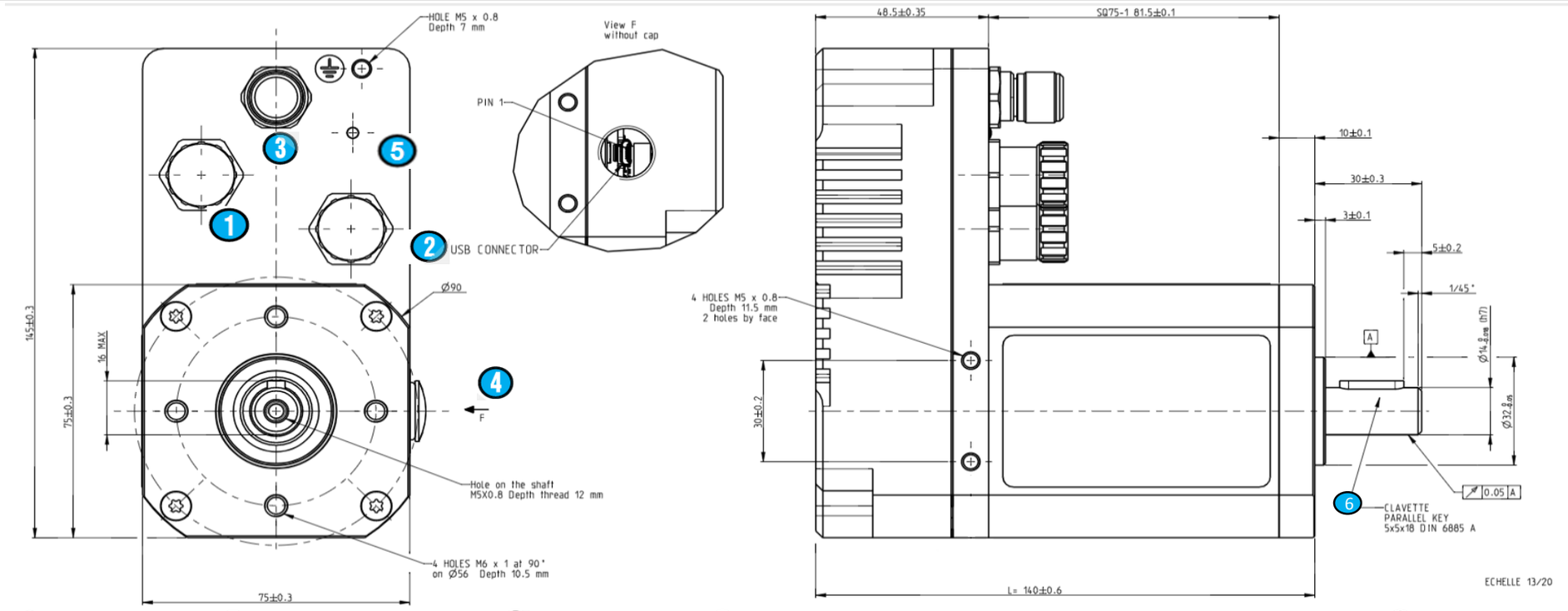
DCmind motor Brushless
Data sheet

80 350 001
SMI22 with CAN

Series
80 350 SMI22 CAN



1 Logic connector 2 Power supply connector 3 CAN connector 4 Micro-USB connector on the side 5 Led 2 colors for motor status 6 Parallalel key 5x5x18 DIN 6885 A

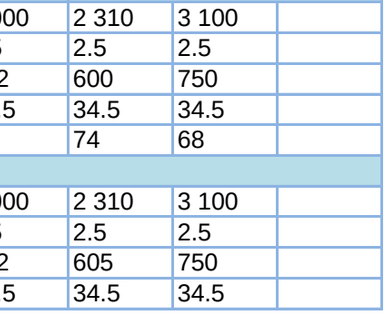
General characteristics

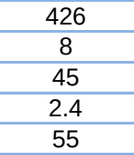
Power supply		
Direct current voltage supply		✓
Nominal voltage range	Vdc	9 -> 75
Max. current	A	75

Motor characteristics (1)		12 Vdc	24 Vdc	32 Vdc	
At no load					
Max. output speed	rpm	1 700	3 230	4 500	
Current at the max output speed	A	1.1	1	2.4	
Standby current	mA	50	50	50	+-10%
At nominal					
Speed	rpm	1 380	3 000	3 845	+-10%
Torque	N.m	1	1	1	
Output power	W	145	314	400	+-10%
Current	A	15.4	15.4	15.4	
Efficiency	%	78	85	82	
At max. output power					
Speed	rpm	1 000	2 310	3 100	
Torque (2)	N.m	2.5	2.5	2.5	
Output power	W	262	600	750	
Current	A	34.5	34.5	34.5	
Efficiency	%	60	74	68	
At peak torque					
Speed	rpm	1 000	2 310	3 100	
Torque	N.m	2.5	2.5	2.5	
Output power	W	262	605	750	
Current	A	34.5	34.5	34.5	

Others		
Life	h	20 000
Rotor inertia	gcm²	426
Rotor poles		8
Cogging torque	mNm	45
Weight	kg	2.4
Noise level	dBA	55

Connecting		
Input/Output M16 connector - 18 pins	**Pin N°**	
Optional logic supply	1	
Ground Power	2	
Input 6 (analogic 2)	3	
Input 5 (analogic 1)	4	
Input 1 (digital)	5	
Input 2 (digital)	6	
Input 3 (digital)	7	
Input 4 (digital)	8	
Ground Digital	9	
Output 1 (digital - PWM)	10	
Output 2 (digital - PWM)	11	
Output 3 (digital)	12	
Output 4 (digital)	13 ²	
Ground Digital	14	
STO2 -	15	
STO2 +	16	
STO1 -	17	
STO1 +	18	
Power supply M16 connector 3 pins	**Pin N°**	
Shunt +	1	
V+	2	
0V - ground (0)	3	
CAN M 12 Connector - 5 pins	**Pin N°**	
Not connected	1 / 2	
CAN Ground Digital	3	
CAN High	4	
CAN Low	5	





Accessories			
Starter kit Part number **79 513 105** Power/logic/CAN 3 m cables - Softwares - 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

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

Generic parameters				
Motor for direct current supply			✓	
Output shaft with ball bearings			✓	
2 Safe Torque Off inputs	IEC 61800-5-2, 62061, ISO 13849		✓	
Max. Radial force	(16mm from front face)		N	140
Max. axial force			N	47
Temperature range		CEI60068-2-1/2	°C	-30 -> +70
Storage temperature			°C	-40 -> +80
Dielectric	(1s/2mA)	UL1004-1	Vdc	1 955
Motor insulation		CEI60085	class	E
Salt spray		ISO9227	severity	48h
Degree of protection (output shaft not included)		CEI60529		IP67 + IP69
EMC				
Electrostatic Discharge		CEI61000-4-2	level	3
Radiated field		CEI61000-4-3	level	3
Electrical fast transient / burst test		CEI61000-4-4	level	3
Surge test		CEI61000-4-5	level	1
Conducted disturbances		CEI61000-4-6	level	3
Radiated emission		EN55022	class	B
Approvals				
ROHS		2011/65/CE	✓	
EC			✓	
UL			IN PROGRESS	
CAN Open		CIA DS 301/402	✓	
Communication				
USB (Setting, monitoring)			Micro-USB B	
CAN open: adress - node ID (factory settings)				0x20
CAN open: baud rate (factory settings)			**kbaud**	1000

Notes
Values without tolerances, are average production values.
(1) Cold motor, 20 ° C ambient temperature, full speed, sinusoïdal commutation
(2) Max torque for continuous operation at 20 ° C, decrease this value for higher ambient temperature
(3) Limit Value

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

Specifications subject to change without notice. Updated September 17, 2018

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

www.crouzet.com

Drive electrical datas

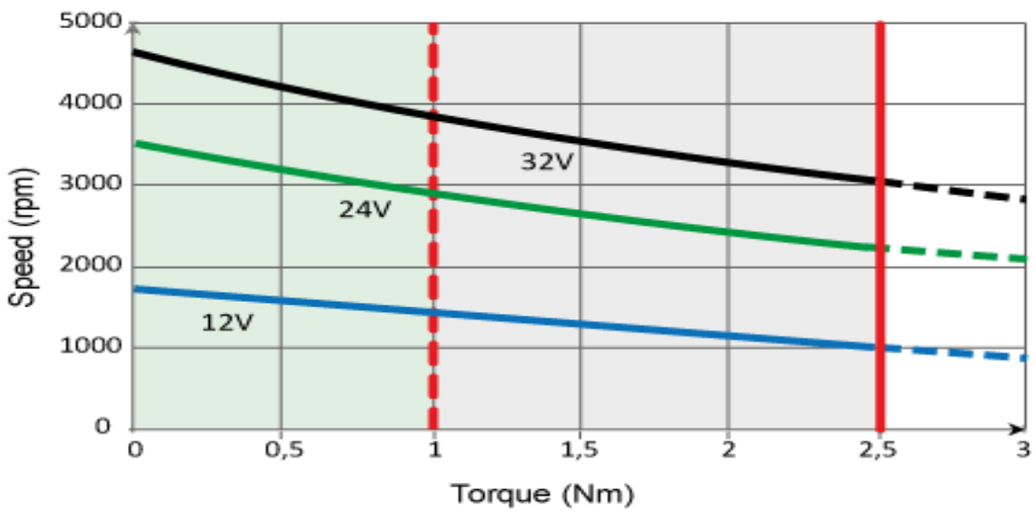
Running datas				
Parameters		Min.	Typical	Max.
Voltage suply "Vdc"	Vdc	9	24	75
Current "Idc"	A	-	15	60
Standby power "Wo"	W	-	2	-
Optional logic voltage (see wiring diagram)	Vdc	8	-	75

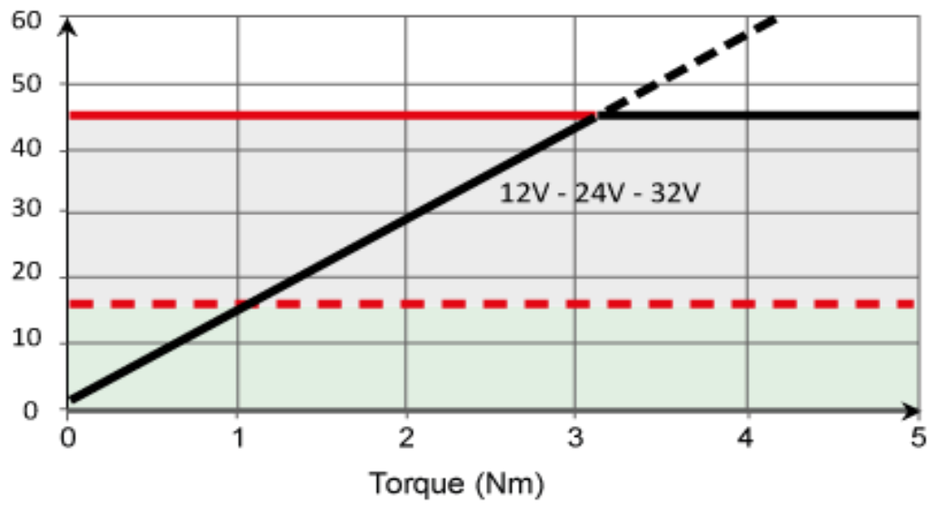
CAN Bus caracteristics					
Parameters			Min	Typical	Max
CAN Low	insulated	Vdc	0.5	1.5	2.25
CAN High	insulated	Vdc	2.75	3.5	4.5

Input datas					
Parameters			Min	Typical	Max
Inputs 1, 2, 3, 4	Impedance	kΩ	-	200	-
	Low level	Vdc	-90	-	2.4
	High level	Vdc	4.5	-	90
Inputs 5, 6	Impedance	kΩ	-	107.2	-
	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 datas				
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	-	-	600

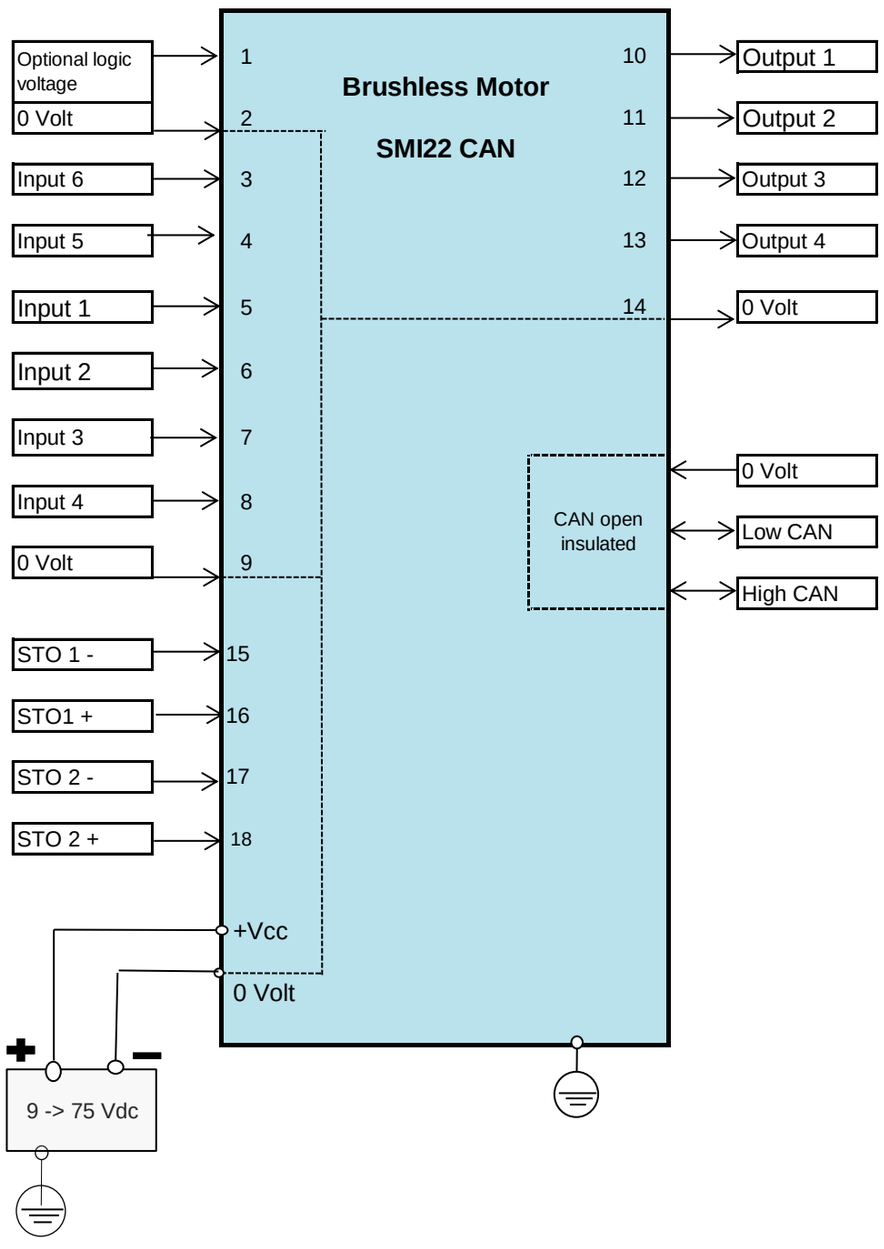
Speed-torque and current-torque curves





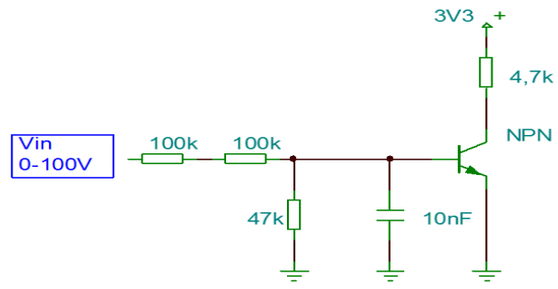
Nominal Peak Continuous running area Cycling running area

Wiring

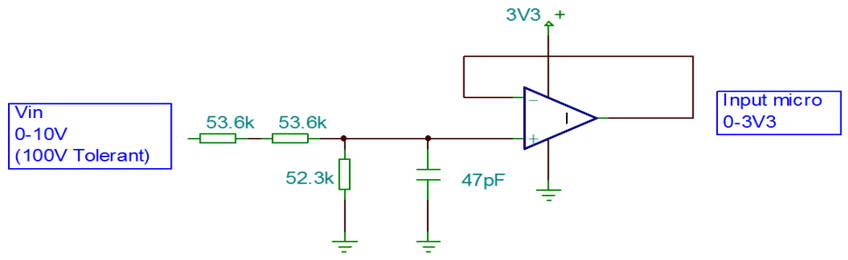


Input equivalent circuit

Inputs 1, 2, 3, 4

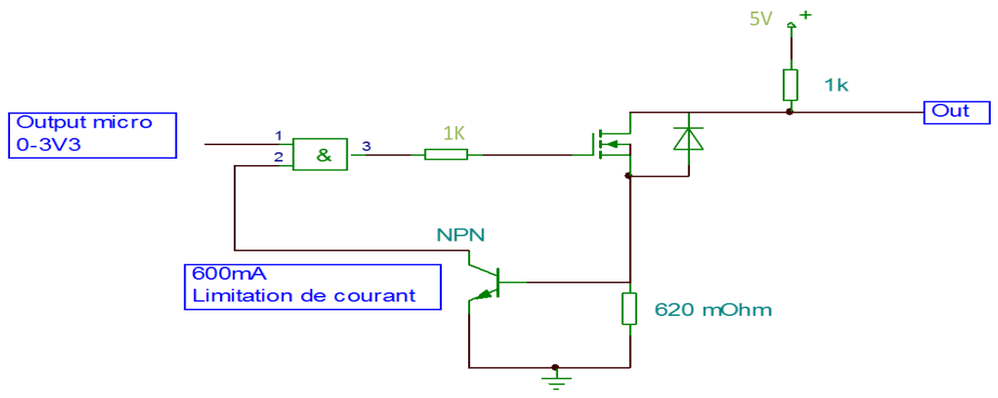


Inputs 5, 6

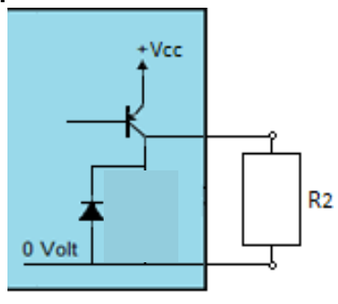


Output equivalent circuit

Output 1,2,3,4



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 Ω. Power value depends from machine inertia. Max. voltage can be set.

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

www.crouzet.com