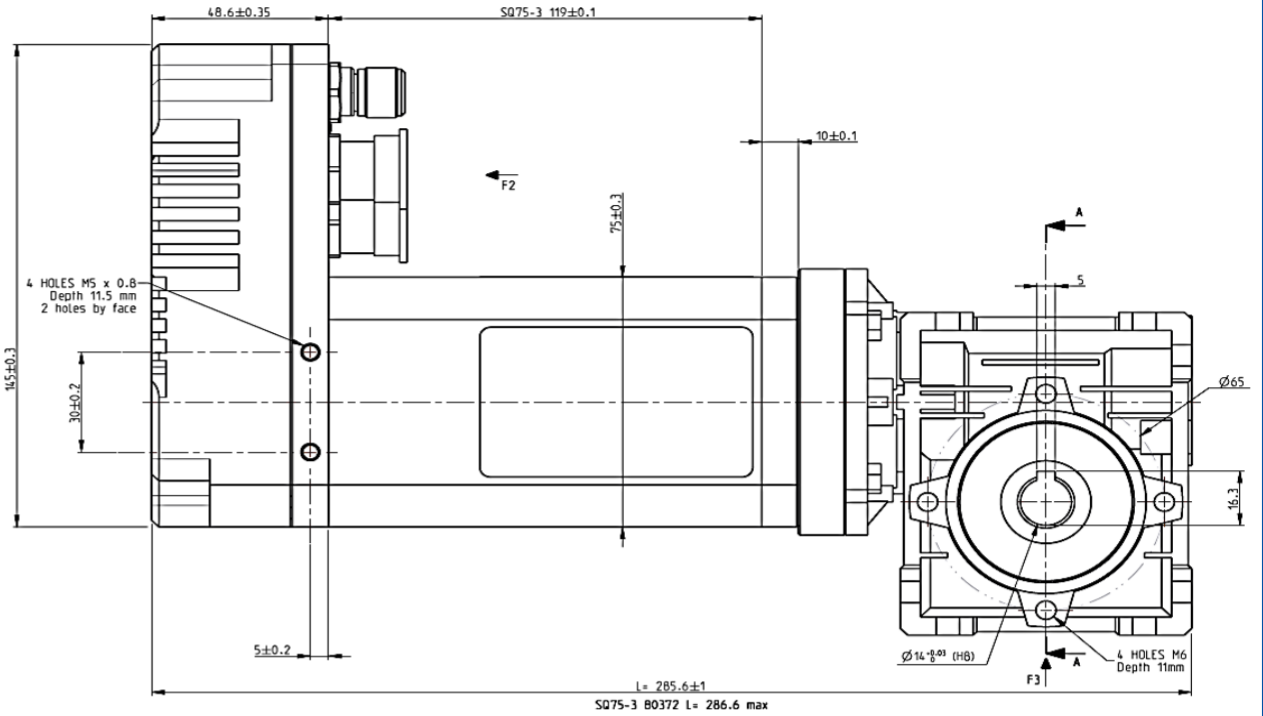
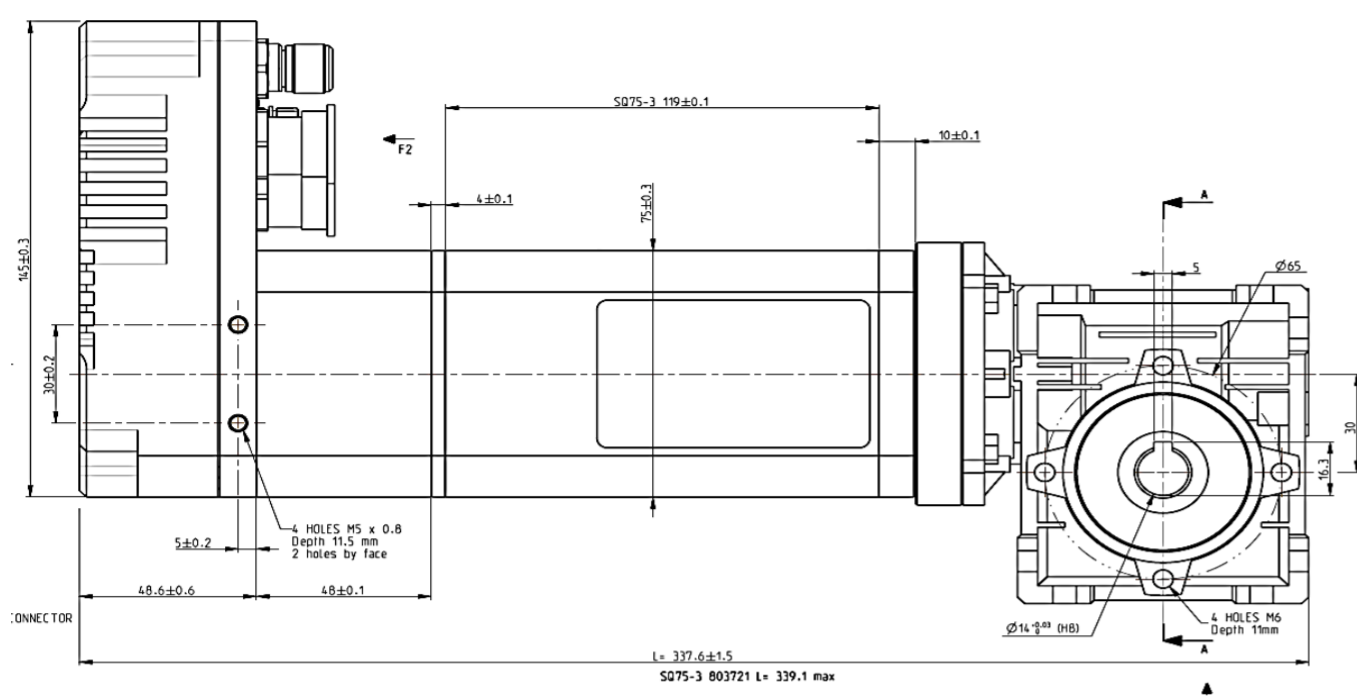


DCMind Brushless Gearmotor

Data sheet

80372
RAD20 Gearbox

Series
80372

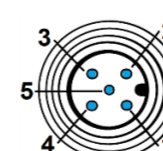
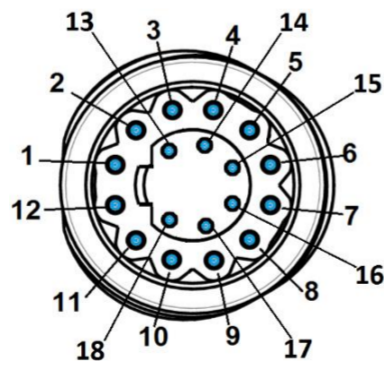


General characteristics

Max. output speed	80370001 48 Vdc + RAD20		
Part Number Gearedmotor	80372001	80372003	80372005
Part Number Gearedmotor + Brake	80372101	80372103	80372105
Gearbox characteristics			
Gearbox type	RAD 20		
RATIO	5	10	20
Max. Radial force	N	1830	1830
Max. axial force	N	366	366
Max. allowed torque	Nm	20	20
Max. gear play	°	0.55	0.55

Geared motor characteristics at 48V (5)		48		
At no load				
Max. output speed	rpm	684	342	171
Current at the max output speed	A	1	1	1
At nominal				
Speed	rpm	626	313	157
Torque (2)	Nm	6	10	19
Output power	W	374	343	311
Current	A	15.1	15.1	15.1
Efficiency	%	52	47	43
At max. output power				
Speed	rpm	468	286	156
Torque (2)	Nm	18	20	20
Output power	W	882	600	326
Current	A	44	44	44
Efficiency	%	42	28	15
At peak torque				
Speed	rpm	468	143	156
Torque (2)	Nm	18	20	20
Output power	W	882	600	326
Current	A	44	44	44
Others				
Weight	kg	3.9	3.9	3.9

Output cable, UL style 2464 80°C 300V - 18 wires AWG26	
Input/Output 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
Ground Digital	9
Output 1 (digital - PWM)	10
Output 2 (digital - PWM)	25
Output 3 (digital)	12
Output 4 (digital)	13
Ground Digital	14
STO2 -	15
STO2 +	16
STO1 -	17
STO1 +	18
Power supply M16 connector 3 pins	Pin N°
Output ballast	1
+VDC	2
0 Volt	3
CAN M 12 Connector - 5 pins	Pin N°
Not connected	1 / 2
CAN_GND	3
CAN_H insulated	4
CAN_L insulated	5



Motor and gearbox characteristics	
Motor type	80 370 001
Direct current voltage supply	✓
Nominal voltage range	Vdc 8 --> 75
Max. current	A 75
Brake characteristics	
Power OFF brake	YES
Voltage supply	Vdc 24 (+6% ; -10%)
Nominal holding torque	Nm 5
Input power	W 12

Drive	
Type	SMI22
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 absorber (3)	OPTIONAL
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 250
Temperature drive allowing to restart	°C 90

Generic parameters	
Motor for direct current supply	✓
Output shaft with ball bearings	✓
2 Safe Torque Off inputs IEC61800-5-2/62061/ISO13849	✓
Max. Radial force (16mm from front face)	N 140
Max. axial force (4)	N 47
Temperature range IEC60068-2-1/2	°C -30 --> +100
Storage temperature	°C -40 --> +80
Dielectric (1s/2mA) IEC60335	Vdc 1 955
Motor insulation IEC60085	class E
Salt spray ISO9227	severity 48h
Degree of protection IEC60529	IP67 + IP69

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 2025/65/CE	✓
EC	✓
UL	Pending
CAN Open CIA 301 - DSP 402	IN PROGRESS

Communication	
USB (Setting, monitoring)	Micro-USB B
CAN open: address - node ID (factory settings)	0x20
CAN open: baud rate (factory settings)	kbaud 1 000

Notes	
Values without tolerances, are average production values.	
(1) Cold motor, 20 ° C ambient temperature, full speed, sinusoidal commutation	
(2) Max 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	

Drive electrical data

Running datas				
Parameters		Min.	Typical	Max.
Voltage supply "Vdc"	Vdc	9	48	75
Current "Idc"	A	-	15	60
Standby power "Wo"	W	-	2	-
Voltage optional logic supply (see wiring diagram)	Vdc	9	-	36

CAN Bus characteristics				
Parameters		Min.	Typical	Max.
CAN_L insulated	A	1	2	2
CAN_H insulated	A	2.75	3.5	4.5

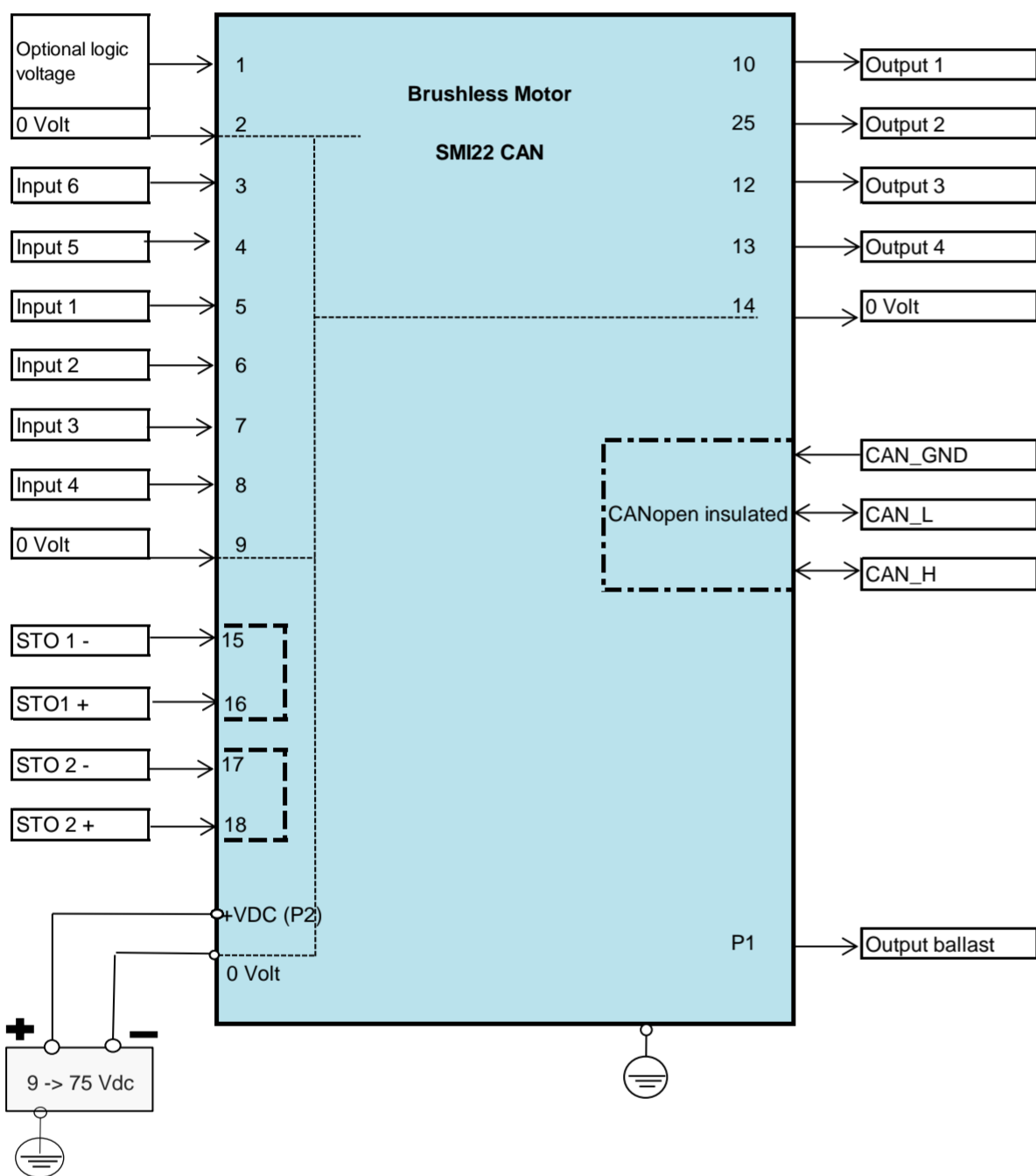
Accessories

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	

Input datas					
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

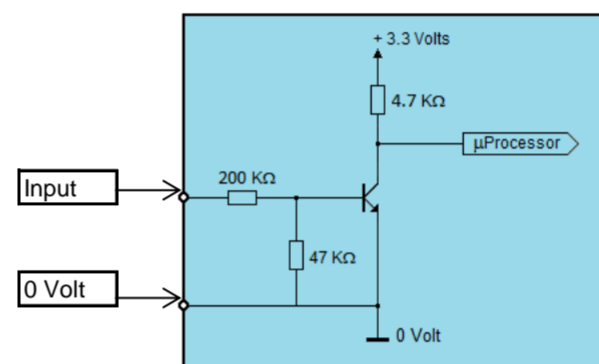
Output datas				
Parameters		Min.	Typical	Max.
Low level Output 1, 2, 3, 4	mVdc	-	-	10
High level Output 1, 2, 3, 4	Vdc	-	4.75	-
Max output current "I outmax"	mA	-	-	50
I sink	mA	-	-	600

Wiring

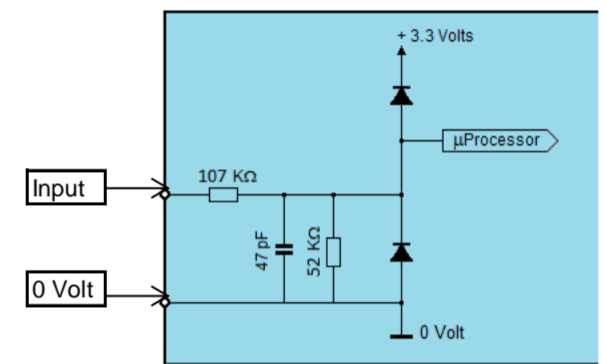


Input equivalent circuit

Inputs 1, 2, 3, 4

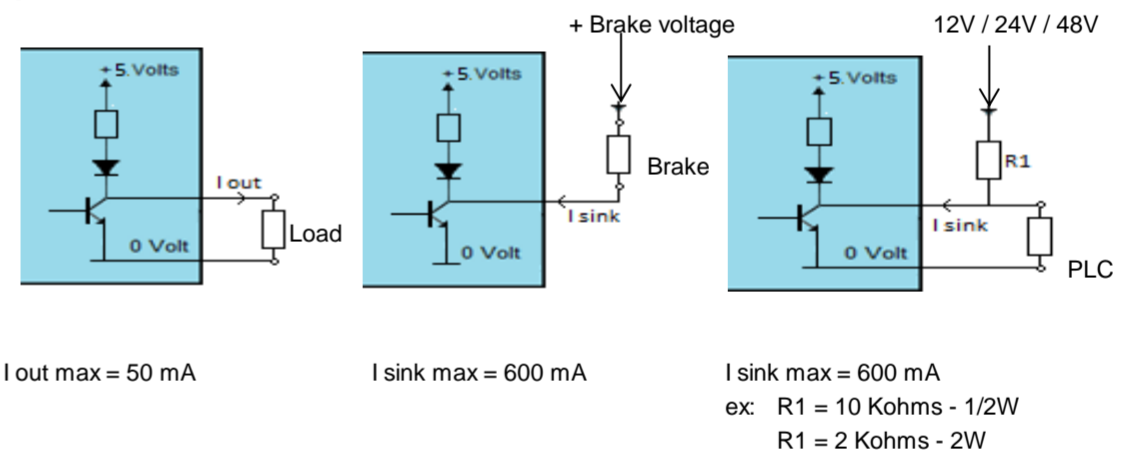


Inputs 5, 6

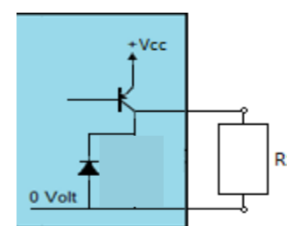


Output equivalent circuit

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