

▶ Brushless – DC Motors

5642R017-P

- Peak torque 800 mNm @ 40A
- Resolution < 0.1° at 0 speed
- Weight 650g
- Vector control compatible Yes
- Redundant position sensor Optional

Compact, with integrated position sensor and high torque density are the main features of this BLDC motor. It is suitable for high temperature and high vibration applications.

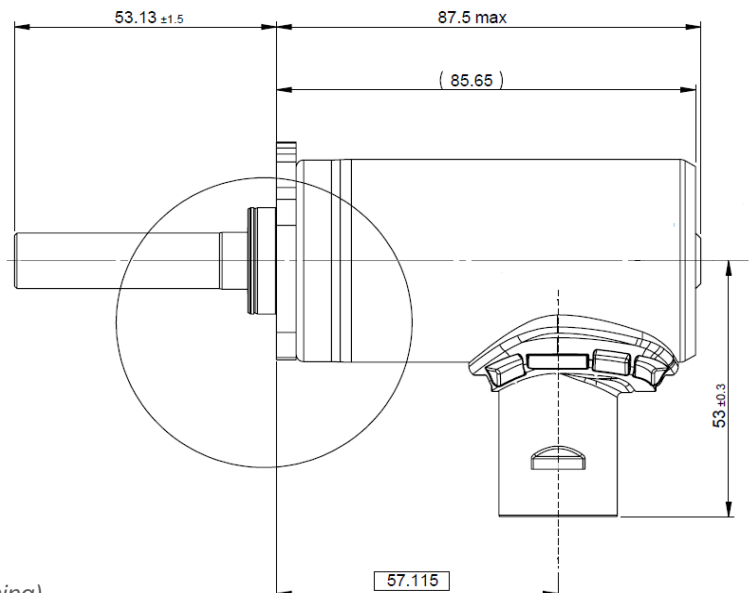
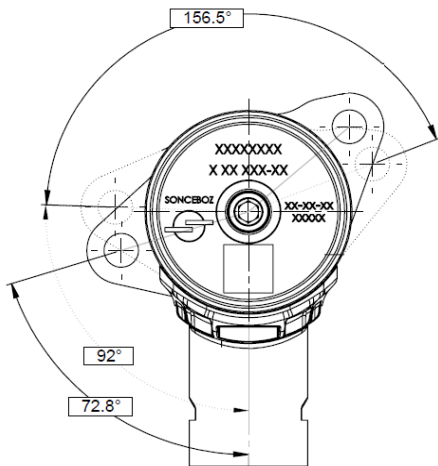
▶ Technical data

Weight	0.650	kg	Detent Torque	<20	mNm
Phase Number	3-Δ	-	Motor Constant	70	mNm/W ^{1/2}
Nominal Voltage	12	V	Torque Constant	20	mNm/A
Phase Resistance	66	mΩ	Continuous Stall Torque	300	mNm
Phase Inductance	40	μH	Max Static Torque	800	mNm
Steps per revolution	30	-	No Load Speed	5500	rpm
Tightness	IP67 IP6K9K	-	Rotor Inertia	12	Kg.mm ²
Max Peak Current	60	A	Sensors Nominal Voltage	5	V

Nota: values at ambient temperature

▶ Dimensions

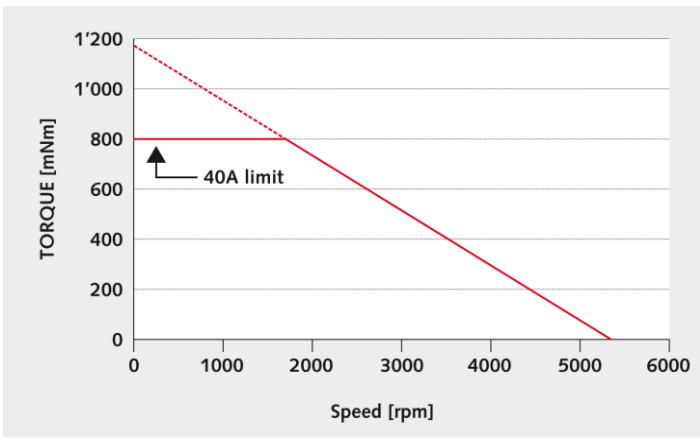
Drawing not to scale. All dimensions in mm.



On demand: Output shaft design adaptation (diameter, tothing)

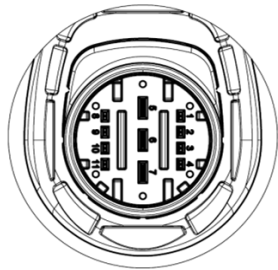
On demand: Different Front Flange orientations

► Dynamic characteristics



with ECU limitation to 30A with R_{mos/cable} = 0.10 Ohms

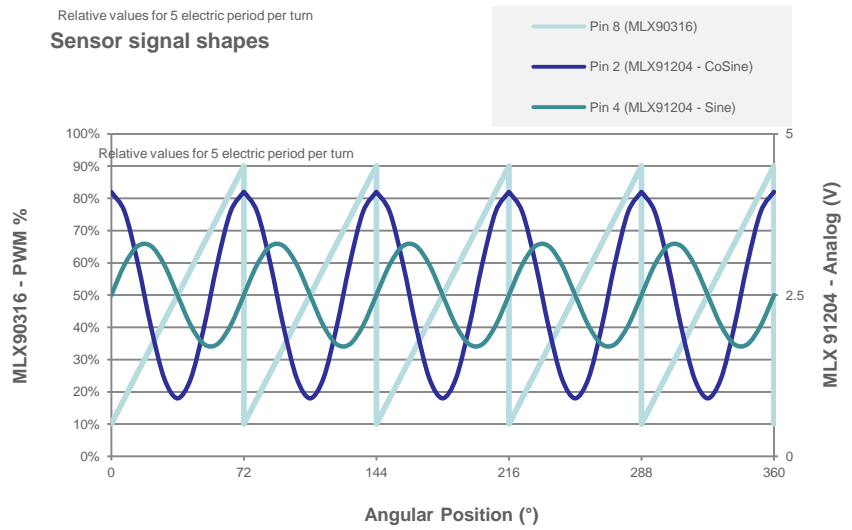
► Electrical Interface and step sequence



PIN Out - To be defined	
PIN	Config.
1	-
2	Y out (sine)
3	C out (~V _{supp} /2)
4	X out (cosine)
5	W
6	V
7	U
8	Ang. Vout (PWM)
9	Supply 5V 91204
10	GND
11	Supply 5V 90316

Relative values for 5 electric period per turn

Sensor signal shapes



	Resolution	Accuracy	Supply Voltage/Current	Output signal
Unit	°mech	°mech	V/A	-
Sensor#1 [MLX90316]	Speed dependant [12bits max] Probe high speed mode (sampling rate 200µs) 	±1.13	5V±0.5V / 13.5...16mA	PWM [From 100Hz to 1000Hz possible] [Push-Pull or Nmos]
Sensor#2 [MLX91204]	N/A Returns a sine and a cosine analog. The signal treatment by the customer will define the resolution of the sensor.		5V±0.5V / 16.5...19mA	Analog Voltage Range 0.5 ... 4.5V

► Operating conditions

- Temperature range -40°C/140°C
- Vibration level..... Up to 15g – bandwidth 0-1600Hz

Overall specifications depend on sensor options and driving duty cycles.
Special requirements upon customer specifications. Right to change without notifications reserved.

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