messico

DC Limited Angle Brushless Torque Motors

DC Brushed Torque motors

Special DC Brushed Motors

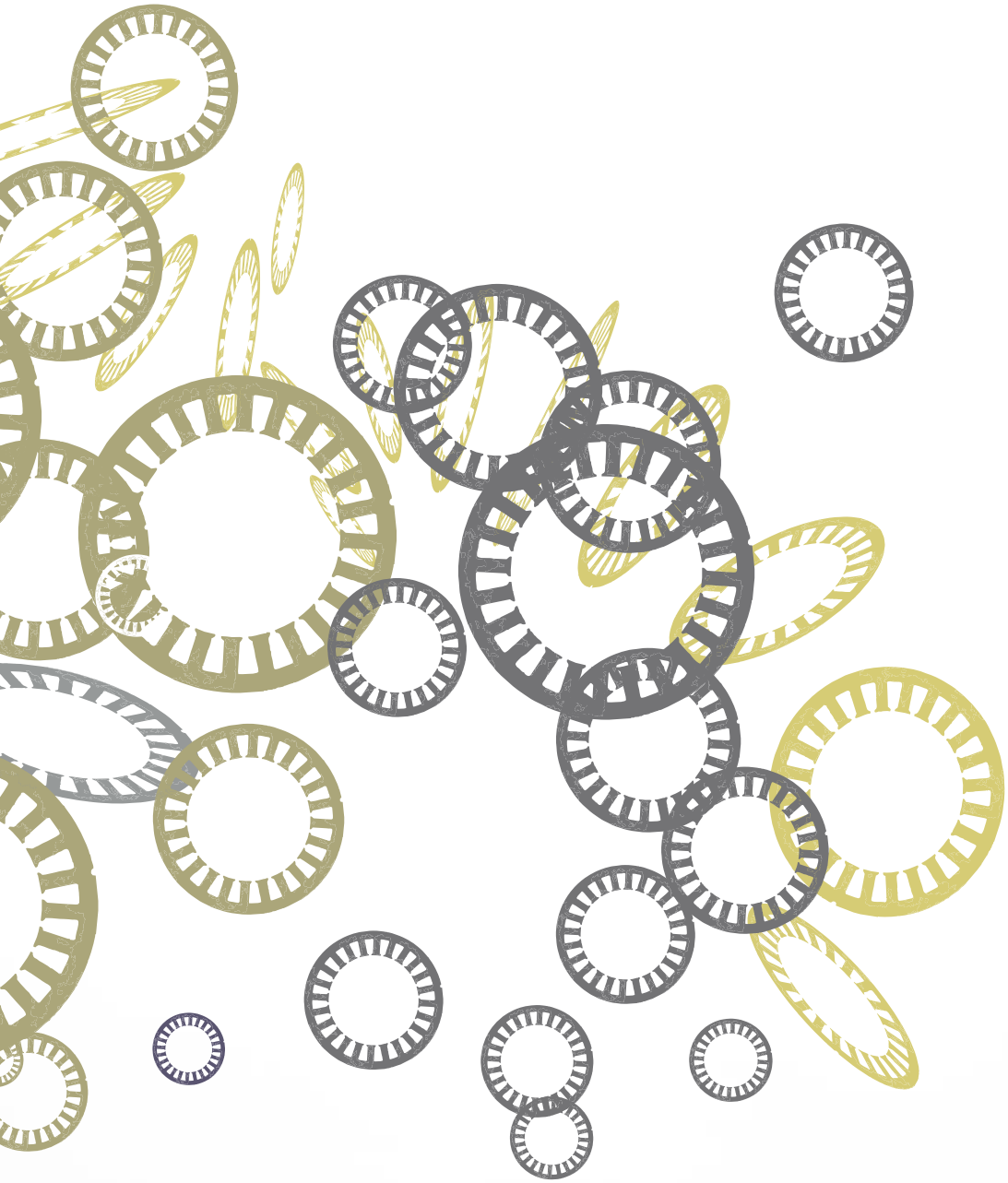
Special DC Brushless Motors

AC Brushless Servomotors

Sinusoidal Output Transducers - Resolvers

Linear Output Transducers – Microsyns, RVDT

Speed Transducers - Tachogeneratores



SPECIAL ELECTRIC MACHINES

ICPE

About us

Over 35 years of experience in the special electrical machine design and production

Developed and produced more than 500 different types of products for the internal market as well as for the external one

In the last 15 years, the companies with confidence in us have had the possibility of developing highly efficient systems, just because they contacted us and asked for products with high performances

Our greatest pleasure is to help you produce the System No. 1 in the world in your activity field.

Products

DC Limited Angle Brushless Torque Motors

DC Brushed Torque motors

Special AC Brushless Motors

Special DC Brushless Motors

AC Brushless Servomotors

Sinusoidal Output Transducers - Resolvers

Linear Output Transducers – Microsyns, RVDT

Speed Transducers - Tachogeneratores

Capabilities

- Electrical machines design capabilities, upon customers technical specification

- Design and manufacturing capabilities of electromechanical components and tools

- Special winding capability

DC Limited Angle Brushless Torque Motors

About:

Limited Angle Torque Motors are ideal for compact, limited angular excursion (±60º), rotary, closed loop servo applications. Unlike conventional rotary brush and brushless motors, the Limited Angle Torque Motors are wound in such a way that no commutation is required for the motion to occur.

The result is a much simpler and more reliable system. Operating in the system, these units endure a long storage life and a harsh thermal and mechanical environment. All motors consist of a housed stator with a high density winding around a steel core, molded in a special resin. The rotor is built from high-grade samarium cobalt magnets or neodymium, on a stainless steel core.

Advantages:
> No Torque Ripple
> High Angular Acceleration
> No Commutation
> Brushless
> Low Profile

Applications:
> Aerospace
> Semiconductor
> Medical
> Military

Technical Features:

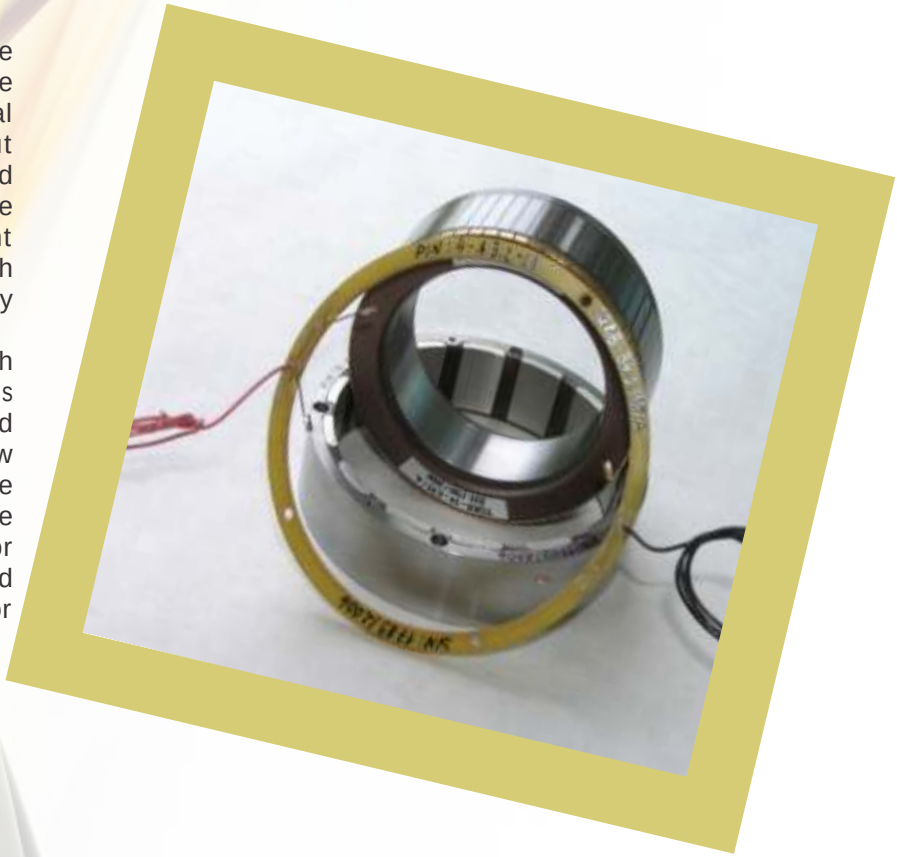
P /N	Number of Poles	Torque Sensitivity	Peak Torque	Outside Diameter	Height
		oz-in/A(Ncm/A)	oz-in (Ncm)	mm	mm
TQR-10-0.8	4	2.65(1.87)	12(8.47)	27	20
TQR-10-0.035	4	2.2(1.55)	1.7(1.2)	25.4	8.89
TQR-11.8-0.085	6	9(6.36)	12(8.47)	26.67	20.066
TQR-16	4	2.83(2)	6.23(4.4)	40.63	8.9
TQR-16/2	2	2.66(1.88)	5.32(3.76)	40.63	8.9
TQR-27-0.65	2	12.4(8.76)	45(31.78)	69.85(87)	16.5
TQR-28	4	21(14.83)	42(29.66)	70	16
TQR-34	8	35.4(25)	162.85(115)	85.09(102)	20.32
TQRI-46-0.75	18	62.03(43.8)	65(45.9)	116.84	19.05
TQR-47-1.2	8	122(86.15)	354(250)	119.4	29.5
TQR-66-1.00	8	90.6(63.98)	250(176.54)	167.6	25.4

DC Brushed Torque Motors

About:

DC Torque Motors operate on the same principles as the conventional DC motors but the magnetic circuit design and consequent mechanical configuration are designed for maximum torque output rather than the usual low torque /high speed characteristic. A range of unhoused units which are supplied as three separate components, a permanent magnet field assembly, a wound armature with precision bore for mounting and a brush ring assembly or brush segments.

Fixed element – the stator, is equipped with rare earth permanent magnets and the rotor is equipped with a dc specific winding which is connected to an extra flat commutator-brushed system. Low speed Torque Motors are beneficial for direct-drive applications. Position and velocity feedback can be achieved via additions of DC Tachos, Resolvers or Optical Encoders. The unhoused motors described below can be offered in custom designed housings for specific applications.



Advantages:
> Stiff Coupling
> Quick Response to Orders
> Accurate Static Positioning
> Accurate Dynamic Positioning
> Less Power Consumption
> Quiet and Vibrations-free Systems
> System in a Compact Construction
> High Reliability

Applications:
> For positioning and speed control purposes
> Plotters
> Servo-controlled optical system: cameras, sights, homing devices
> Tape drives
> Gyro-stabilized platforms

Technical Features:

P / N	Torque Sensitivity	Peak Torque	Outside Diameter	Height
	oz-in/A (Ncm/A)	oz-in (Ncm)	mm	mm
TQRB-15-0.51	5.14(3.63)	17.98(12.7)	38.1	12.91
TQRB-15-1.1	7.65(5.4)	50(35.3)	38.099	27.82
TQRB-24-1C	27.6(19.49)	85(60)	60.32	25.4
TQRB-30-0.78	36.25(25.6)	110(77.7)	76.2	19.8
TQRB-34-0.95/A	62(43.78)	290(204.78)	85.725	24.1
TQRB-37-0.54	29.74(21)	149.97(105.9)	92.075	14.32
TQRB-37-0.84	50.7(35.8)	300(211.9)	92.075	21.33
TQRB-45-0.56	48.15(34)	325(229.5)	114.3	14.22
TQRB-45-0.86	101.25(71.5)	650.15(459.1)	114.3	21.84
TQRB-51-0.93	198.26(140)	396.52(280)	130.175	23.9
TQRB-51-1.00	169.94(120)	679.74(480)	130.175	25.5

Special DC Brushed Motors

About:

The stator of the *DC Brushed Motor* includes four permanent magnet polar pieces built from high-grade neodimium magnet. The rotor has a special dc winding connected to a mechanical commutator. Using permanent magnets with high energy and having integrated speed transducer and brake, our Special DC Brushed Motors are mainly recommended for compact applications where power-usable /weight ratio is high. Integrated feedback device (dc tachometer) give the opportunity of using closed-loop control. In addition, these motors are available with thermal protection (thermoswitch and thermistor).

Advantages:
> Integrated Brake and Tachometer
> Linear Torque/Current Curve
> Linear Speed/Voltage Curve
> Easy to Control Torque
> Easy to Control Speed
> Simple, Cheap Drive Design

Applications:
> Compact Applications
> Portable Systems
> Robotics
> Military

Technical Features:

Parameters	Units	EA-SCPR-001	TA-SCPR-001
Peak Torque	Nm	35.0	70.0
Continuous Torque	Nm	2.6	5.6
Current at Peak Torque	A	430	650
Supply Voltage	V	24	24
D.C. Resistance	O	0.047	0.0315
Back EMF Constant	V/rad/sec	0.081	0.107
No Load Speed	rpm	2200	1800
No Load Current	A	6.4	6.9
Tachometer Sensitivity	V/rad/sec	0.57	
Tachometer Ripple voltage (over 100 rpm)	%	max. 2	
Tachometer Linearity	%	max. 1	
Brake Torque	Nm	min. 14	
Starting Brake Current	A	14	
Continuous Brake Current	A	0.33	

Special DC Brushless Motors

About:

Brushless DC Motors with Hall sensors provide the benefits of brushless technology – quieter operation, smaller size, maintenance-free, longer life, and faster time to speed.Our DC Brushless Motors have high energy neodimium permanent magnets on the rotor and a three-phase wound stator. With the windings on the stator, the motor can handle higher continuous loads without exceeding design temperatures. There are no brushes, no sliding contacts, thus these motors have longer life and operate quieter, requiring less maintenance. The integrated feedback device (dc tachometer) gives the opportunity of using the closed-loop control.

Advantages:

> High-Energy Neodymium Magnets – high torque density and High Demagnetization Level
> Hall sensor feedback – long life and durability in the application
> Low Inertia
> No Rotor Heat Losses
> Free of Maintenance
> No Risk of Electrical Sparking
> High reliability and long life

Applications:

> Open-loop control applications
> Underground Railway Train Door Opening and Closing
> Fuel Pump
> Robotics
> Electrovalve Control

Technical Features:

Parameters	Units	DC-BL-6	DC-BL-7
Operating Voltage	V	18...32	
Peak Torque	Nm	4	
Peak current @20°C	A	1.6	
Continuous Stall Torque	Nm	1.5	
Torque constant	Nm/A	0.3	
Total Breakaway Torque	Nm	0.06	0.09
Tacho Voltage Sensitivity	V/rad/s	0.45...0.57	
Tacho Ripple Voltage	%	2	
Tacho Linearity	%	1	
Brake Operating Voltage	V	-	18...32
Brake Holding Torque	Nm	-	6
Brake Current @24 VDC	A	-	0.6

Special AC Brushless Motors

About:

AC Brushless Servomotors are in sensorless or sensored designs and require external controller. From the construction point of view they are similar to the DC Brushless Motors. Our AC Brushless Servomotors have high energy neodimium permanent magnets on the rotor and a three-phase wound stator. ACG Series has a resolver like sensor and is built with its own case. AMR Series is sensorless and without its own case. There are no brushes, no sliding contacts, thus these motors have longer life and operate quieter, requiring less maintenance

Advantages:
> Low Inertia
> Low ripple torque
> No Rotor Heat Losses
> High-Energy Neodymium Magnets
> High torque density
> High Demagnetization Level
> Free of Maintenance
> High reliability and long life

Applications:
> Robotics
> Industrial electric Drives
> Electrovalve Control
> Medical Application
> Military

Technical Features:

P / N	Torque Sensitivity	Peak Torque	Outside Dimension	Length
	Nm/A	Nm	mm	mm
ACG-0060-4/01-3	0.522	2.1	Ø70	136
ACG-0060-4/01-3	0.514	3.3	Ø 70	146
ACG-0170-4/01-3	0.518	6.3	Ø 70	176
ACG-0190-4/01-3	0.514	7.8	Ø 70	205
AMR-1.18	0.25	1.18	Ø 48	34.4
AMR-1.40	0.48	1.4	Ø 101.46	16
AMR-4.15	0.58	4.15	Ø 80	36.2
AMR-22.5	3.9	22.5	Ø 225	30

Sinusoidal Output Transducers - Resolvers

About:

The *resolvers* belong to the category of angle electromagnetic transducers. They are supplied with an alternative single-phase voltage and generally have two output voltages which depend, according to a sinusoidal low, on the relative angle of the two armatures. According to the supply way, they fall into two categories: resolvers which are directly supplied on the rotor winding, used on either limited angle, case in which they are supplied by means of flexible cables or on 360° and, in this case, they are supplied through some collecting rings, as well as resolvers supplied by means of a rotary transformer with a constant transformation ratio and the input and output winding terminals on the stator.

ICPE Messico has developed and produced a wide range of transmitter – type resolvers for military and industrial applications

Advantages:

> The resolvers with a pair of poles can be used as an absolute angle transducer
> Resistance to mechanical stresses
> Operation within a temperature wide range

Applications:

> Angle transducer proper
> Angle transducer within the brushless motor control

Technical Features:

P /N	Supply Voltage /Frecvency	Transformation Ratio	Error	Outside Diameter	Length
	V / KHz		min. arc	mm	mm
06-RX-2V19	2.5 / 19.2	1	-60...+60 ±20 0...360 ±45	15.875	11
08-RE.1	7 / 10	0.5	p to p 30	20.32	18
08-RX-20-2-0.454	4.4 / 2	0.45	±12	17.55	49.7
15-RX-70-2-0.5-S	4 / 7	0.5	±20	36.83	16
21-RX-50-2-05-S	4 / 5	0.5	±20	52.37	27
29-RE.(ARM-72)	6.6 / 7.8	0.5	p to p 30	72	25.5
36-RE.(ARM-90)	7 / 7	0.5	p to p 20	90	46
50-RE.(ARM-125)	7 / 10	0.5	±10	125	32

Linear Output Transducers – Microsyns, RVDT

About:

Our linear transducers are of the microsyn type, with the output linear characteristic in relation to the relative angle of the two armatures. The excitation and output windings are on the stator and the unwound rotor has a variable reluctance. They are in pan-cake, hollow shaft designs.
Linear transducers have the advantage of a linear characteristic but they have a limited working range (±20°...±40°).

Advantages:
> Linear Characteristic
> Lack of the Rotor Winding
> Operation within a Temperature Wide Range
> Robust Construction

Applications:
> Angle Transducer in Automated Systems

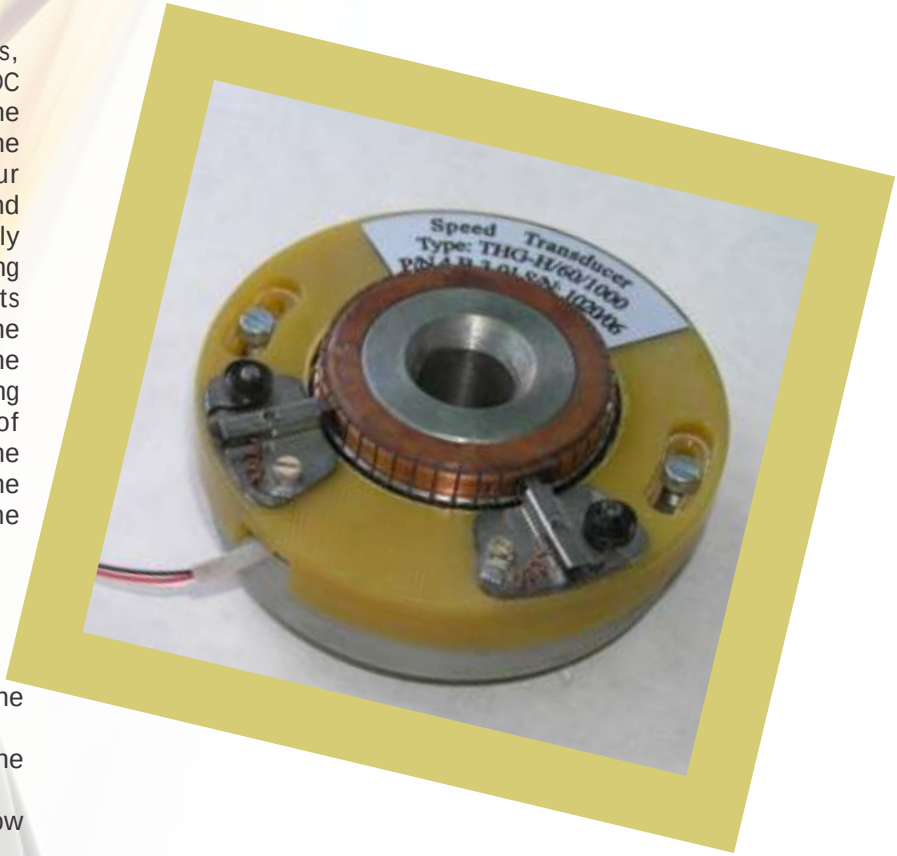
Technical Features:

		LOS-RT-08-01	LOS-RT-08-01
Input Voltage / Frecvency	V / KHz	3.5 / 18	7 / 18
Output Scale Factor	mV / deg	82	140
Angular Range	deg.	±20	±40
Linear Error	%	0.35	0.35
Outside Diameter	mm	18	24.6
Length	mm	7	7

Speed Transducers Tachogenerators

About:

From the category of the speed transducers, ICPE MESSICO has developed the field of the DC tachogenerators. The DC tachogenerators convert the rotor speed into a DC voltage proportional to the speed within the whole working range. Our tachogenerators are in the hollow shaft design and have the advantage that their rotor is directly mounted on the shaft whose speed is measured, being thus obtained a space saving. The stator represents the machine excitation and it is developed on the basis of permanent magnets. The rotor represents the machine armature and bears a special DC winding connected to a commutator with a large number of lamellas. The commutator is made of copper and the brushes are of silver-graphite in order to cover the range of the low speed requested by some applications of these tachogenerators.



Advantages:

> The output signal is a DC voltage proportional to the speed
> The rotation direction is given by the polarity of the output signal
> Operation within a wide range of speeds (the low speeds included)
> They do not require supply sources
> Robust construction

Applications:

> Speed measurement

Technical Features:

Parameter		THG-H-60/1 000
Voltage Sensitivity	V/rpm	60±10%
Linearity	%	1
Voltage Ripple	%	2
Terminal Resistance	O	860±15%
Insulation Resistance	MO	>50
Output Diameter	mm	82
Lenght	mm	28.5

customized
electric machines

design
development
production

messico

phone + 40 21 5893 409 | fax + 40 21 3467 290
mobile + 40 7511 74216
e-mail messico@icpe.ro
address 313 Splaiul Unirii, 030 138,
Bucureşti, ROMÂNIA

www.icpe.ro