

# Hidria Movent

**PSC Motors**

**EC Motors and  
Drives**

**Motors for  
semi hermetic  
compressors**





# Innovativeness. Experience. Flexibility.

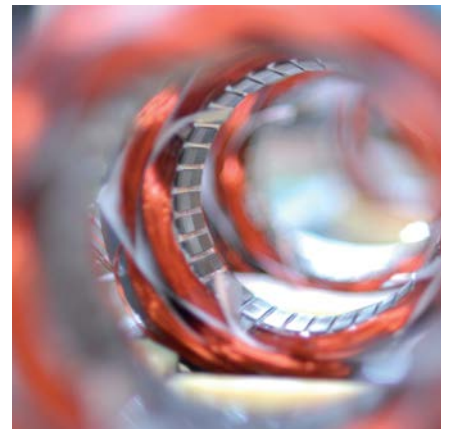
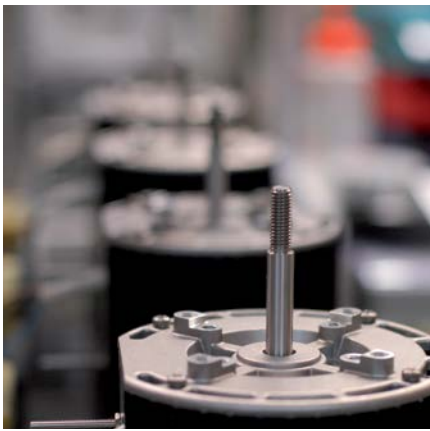
The development, manufacture and marketing of electrical motors for numerous industrial devices and systems is supported by a highly sophisticated and equipped R&D team, sufficiently skilled to satisfy the highest customer demands.

# PSC Motors

For more than 40 years, the company Hidria Rotomatika has served the motor market with single and three phase induction Permanent Split Capacitor motors designed and produced in accordance with customer requirements and corresponding to EN 60335-1, EN 60034-1, UL, CSA, VDE and/or other (inter)national industrial standards.

Thermal class B or F rated motors use self-reset thermal protectors, manually reset thermal protectors, PTC thermistors or other thermal protection topologies to assure the safety of end applications. Special electrical motors are designed and optimized to drive pumps, oil burners, household appliances, office machines and many other industrial appliances. Motors can be delivered as stator-rotor only or fitted in motor housings.

Motor IP protection level requirements define whether a motor can be open frame or whether a fully enclosed motor is a must. The majority of our motors are fitted into a rolled steel shell, extruded aluminium or die cast aluminium bearing brackets. Various cable-only, plug connector or connection box arrangements are available. Accessories like capacitors, cooling fans, plastic or sheet metal motor holders and pulleys are available on request.



TECHNICAL SPECIFICATION		PSC Motor				
Motor Type		0756	0760	0704	0707	0772
<b>Electrical data</b>						
Frequency	Hz	50/60	50/60	50/60	50/60	50/60
Phase		single/three	single/three	single/three	single/three	single/three
Poles	n	2-4	2-4	2	2	2
Speed range	RPM	0-3600	0-3600	0-3600	0-3600	0-3600
Torque	Ncm	4-106	4-106	11-87	11-278	94-521
Output power	W	15-150	15-150	40-250	40-800	350-1500
Max. Efficiency	%	60	60	60	85	83
<b>Basic dimensions</b>						
Stator OD	mm	square 78,2	Ø80	Ø90	101	117
Stack length	mm	20-80	20-80	25-65	25-95	48-107

VSD Motor			
	0707-28	0707-55	
Frequency	Hz	50/60	50/60
Phase		one	one
Poles	n	2	2
Speed range	RPM	1600-3000	1200-3000
Torque	Ncm	12-27	12-60
Output power	W	20-82	16-195
Max. Efficiency	%	65	66
Stator OD	mm	101	101
Stack length	mm	28	55

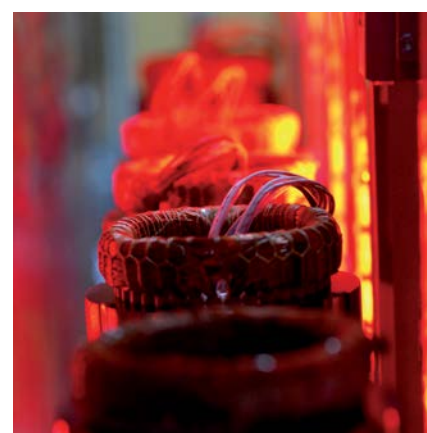
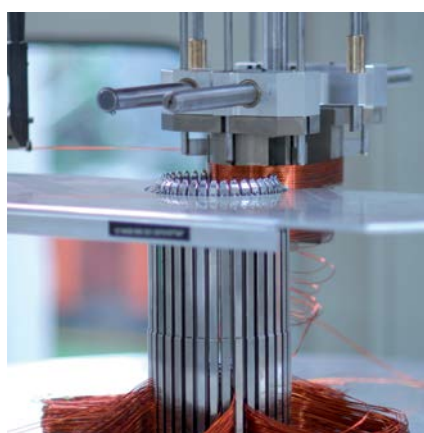
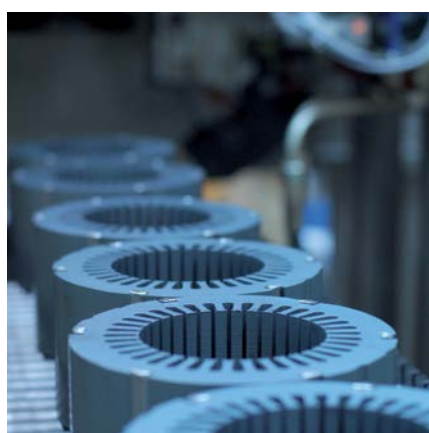


# Motors for semi-hermetic compressors

Motors are specially designed to drive semi-hermetic reciprocating compressor units. Numerically optimized motor design, a selection of hi-performance magnetic materials and precise manufacturing processes are the guarantee for top motor efficiency. The motors are thermally protected by the use of rapid response temperature sensors. Material conformity is verified and listed in the UL file SA 7400.

**Line Start Permanent Magnet motor** represents a hybrid combination of induction motor and permanent magnet synchronous motor. The unique soft starting behaviour of the induction motor is combined with the high-efficiency performance of the permanent magnet synchronous motor. Since the LSPM motor incorporates high power density rear earth permanent magnets, a special rotor design is introduced. This patented

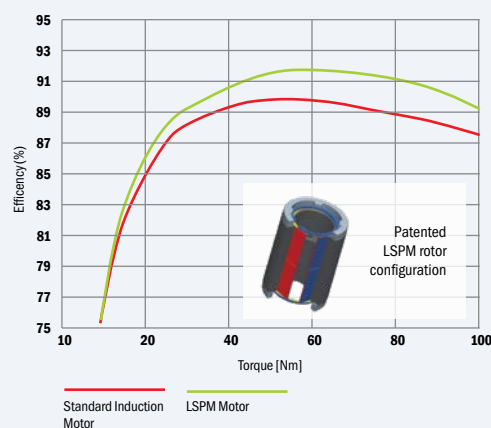
rotor design enables easy PM rotor installation, on-site maintenance and separation at the end of the motor's life time. LSPM motors are the right choice for your new hi-performance natural gas (NH<sub>3</sub> or CO<sub>2</sub>) or other low GPI refrigerant based compressors.



TECHNICAL SPECIFICATION				
Stator / Rotor Type		0799	0798	0589
<b>Electrical data</b>				
Winding type		D/Y	D/Y	PWS, D/Y
Voltage	Volts	200-690	200-690	200-690
Frequency	Hz	50/60*	50/60*	50/60*
Phase	n	3	3	3
Poles	n	4	4	4
Speed range	RPM	0-1800*	0-1800*	0-1800*
Output power	kW	0,55-3,0	1,5-5,5	4,0-40
Max. Efficiency	%	90	92	92
Thermal Protection		PTC sensors	PTC sensors	PTC sensors
<b>Outline Lamination dimensions</b>				
Stator O.D.	mm	160	190	223
Rotor I.D.	mm	22	33	42
Stack height	mm	55-115	55-140	75-250

\* Available for Frequency Drive Control (range 30-90 Hz)

Efficiency comparison of LSPM motor vs. standard induction motor:



# EC Motors and drives

Hidria develops and manufactures motor drives based on **inverter technology** for use in various household and industrial applications. Top drive efficiency is achieved by trimming and setting up electronic drive parameters so they are optimal for the arrangement with selected induction motor and predefined operational range of the end application. Trimming and programming to meet customer performance requirements, including but not limited to the programmable speed range, ramping up/down parameters, rotational direction, PWM modulation frequency, tach out and alarm out is self-evident. For

extreme ambient conditions, inverters with forced air-cooling are available.

**EC synchronous motor drives** are the right solution when variable speed operation and top motor efficiency is a must. The Sensorless Field Oriented Control FOC principle ensures low torque ripple, quiet operation and maximum motor efficiency in a wide motor speed range. When an inner rotor motor is preferred, the Hidria compact synchronous drive with concentrated motor windings is the right choice. For a lower speed range of applications or when direct coupling with the impeller is

required, a selection of outer rotor motors with integrated motor electronic drives are available. Depending on motor power range and customer compliance requirements, single phase and three phase electronic drives are upgraded with passive or active Power Factor Control (PFC) units. For ambient temperatures exceeding 40 °C or when air-over motor drive arrangement is impossible, the cooling of drive electronics is subject of customization. Motor drives can be controlled by the use of SELV or non-SELV control inputs such as 0-10 VDC, 4-20 mA, PWM, MODBUS RTU etc.



TECHNICAL SPECIFICATION						
Motor Type		0309	0310	0314	0768	0769
<b>Electrical data</b>						
Frequency	Hz	50/60	50/60	50/60	50/60	50/60
Phase		single	single	single/three	single	single
Poles	n	12/8	12/8	12/10	6/4	4/4
Speed range	RPM	0-2500	0-1400 (2500)	0-1600 (2500)	3600 (8500)	0-2500
Torque	Nm	0,5	2,9	9,8	0,5	1,0 (1,5)
Output power	W	125	315	855 (1000)	180	200
Efficiency	%	80	80	88	80	85
<b>Basic dimensions</b>						
Motor OD/stator OD	mm	92/71	104/92	139,6/115	74/70	85/80
Stack length	mm	25	35-50	40-80	12-60	30-60
Excursion		Outer rotor	Outer rotor	Outer rotor	Inner rotor	Inner rotor





# Ideas

that Move  
the World

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