

# Types of Electrical Motors, RSIR, CSIR, RSCR, CSR, PTC, NTC, LST, HST, MBP, HBP, LBP

Category: compressor, Files

written by [www.mbsm.pro](http://www.mbsm.pro) | 8 April 2021

Types of Electrical Motors

**RSIR (Resistance Start-Induction Run)**

LST motor. No capacitors. Auxiliary winding is disconnected after start up. Standard energy efficiency.

**CSIR (Capacitor Start-Induction Run)**

HST motor. With starting capacitor.

Auxiliary winding is disconnected after start up. Standard efficiency.

**RSCR (Resistance Start-Capacitor Run)**

LST motor. With running capacitor. Auxiliary winding remains connected after start up.

Used for high efficiency in small capacity compressors (particularly in household refrigeration)

**CSR (Capacitor Start and Run)**

HST motor. Two capacitors (starting and running).

Auxiliary winding remains connected after start up.

Used for high efficiency in small compressors and for size reduced size motors in compressors with comparatively large displacements

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Type of starting device

Current relay – (electromechanical). RSIR/CSIR motors and CSR low/medium-power motors with NTC (the NTC is connected in series with the starting capacitor and the main purpose is to reduce the current peaks in the relay contacts)

Potential relay – (electromechanical). CSR high-power motors.

PTC – (Positive Temperature Coefficient), the resistance increases

with the temperature. Device only with RSIR or RSCR motors in the (Small L, B), L and P ranges.

NTC – (Negative Temperature Coefficient), the resistance decreases with the temperature. Used in some CSR in order to reduce dimensions and components.

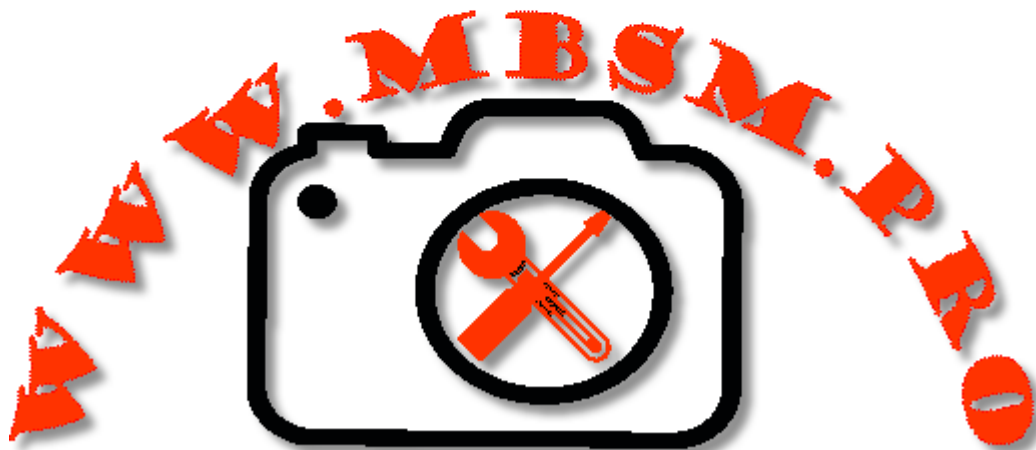
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#### Type of torque

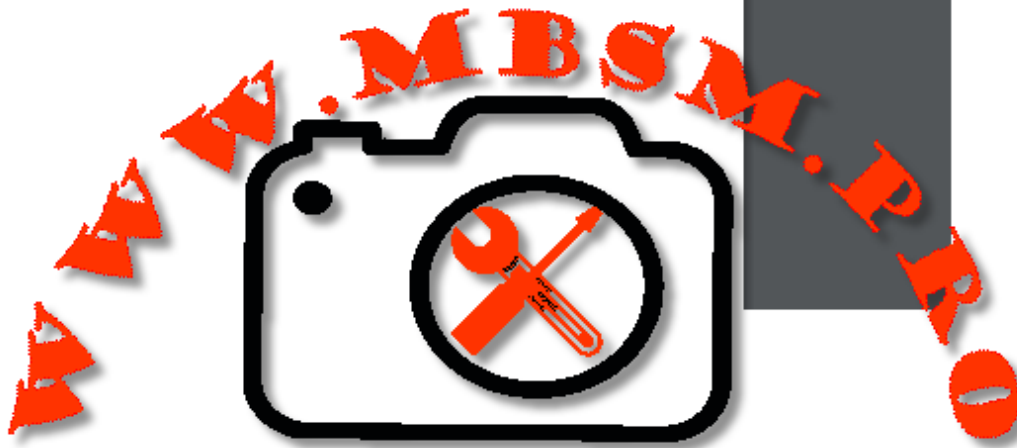
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HST – High Starting Torque – Systems with expansion valve or capillary tube, with unbalanced pressures at start up.

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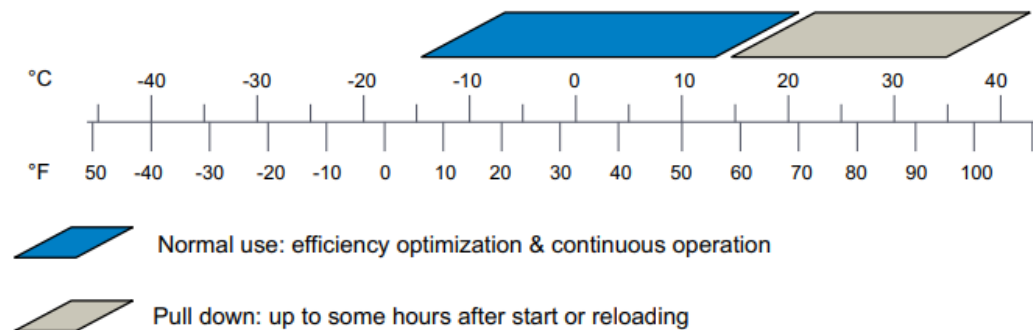
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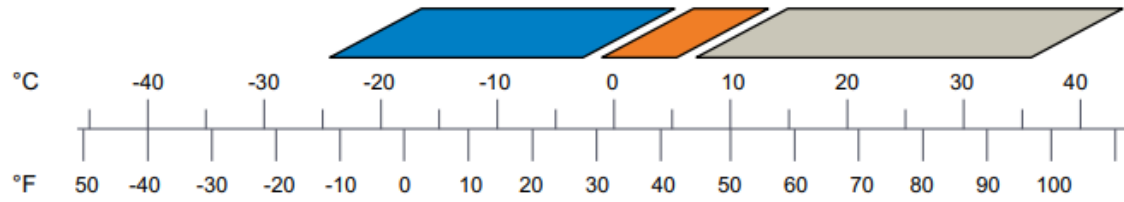
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Secop HBP compressors: evaporation pressures



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# Secop MBP compressors: evaporation pressures

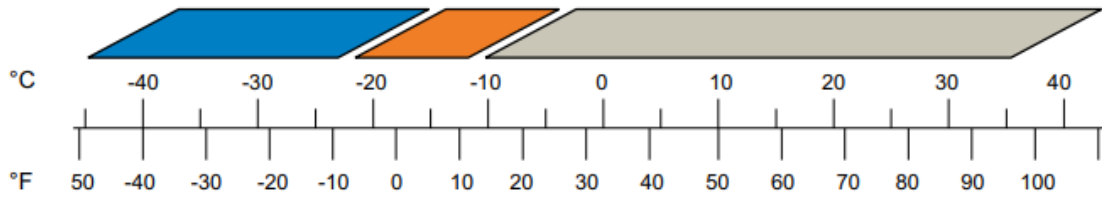





-  Normal use: efficiency optimization & continuous operation
-  High load: continuous operation
-  Pull down: up to some hours after start or reloading



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# Secop LBP compressors: evaporation pressures



-  Normal use: efficiency optimization & continuous operation
-  High load: continuous operation
-  Pull down: short time operation (<60min.) after start or defrost



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Compressors ZMC, EGL70AT, 1/5Hp, 1Ph,  
GL70AT, R-134a, standard Efficiency,  
220-240V 50Hz, Cubigel Compressor,  
Cubigel, RSIR, LBP – LST – S, no  
Starting capacitor

Category: compressor

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Model: GL70AA

General data

Refrigerant:	R134a
Discharge element:	C
Cooling:	S
Maximum ambient temperature [°C]:	43

Compressor's data

Cylinder capacity [cm³]:	6,7
Displacement [m³/h]:	1,1
Weight [kg]:	9,6
Oil charge [cm³]:	345
Oil type:	ISO VG 19 ESTER

Engine's data

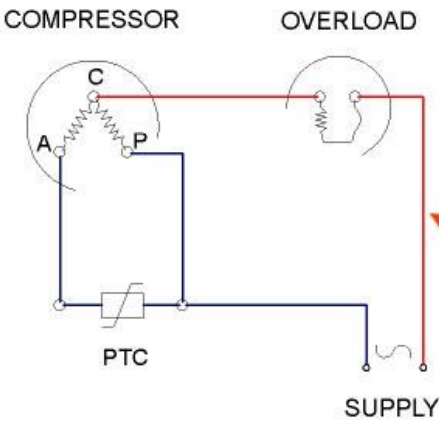
Engine type:	RSIR
Power [KM]:	1/5
Starting element:	LST
Power supply:	220V 50Hz
Voltage range:	187-264
Locked rotor current [A]:	10,9
Running winding resistance (25°C) [Ω]:	12,59
Starting winding resistance (25°C) [Ω]:	22,02

Electrical data

Relays:	3003
Shielding element:	MRA38028, T0508, AF18FU
Starting capacitor volume [μF]:	

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RSIR



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## ■ R134a

Model	Refr.	HP	Ambient Temp C	Rated Voltage	Cooling Capacity		COP without RC		COP with RC	
					ASHRAE -23.3°C kcal/h	CECOMAF -25°C W	ASHRAE -23.3°C W/W	CECOMAF -25°C W/W	ASHRAE -23.3°C W/W	CECOMAF -25°C W/W
▶  <b>GL45AA</b>	LBP-R134a	1.8	43	A	96	82	1.06	0.92		
▶  <b>GL45AN</b>	LBP-R134a	1.8	50	C	96	81	1.05	0.9		
▶  <b>GL60AA</b>	LBP-R134a	1.6	43	A	132	114	1.14	0.99		
▶  <b>GL60AF</b>	LBP-R134a	1.6	43	D	132	113	1.07	0.82		
▶  <b>GL60AH</b>	LBP-R134a	1.6	43	A	133	114	1.31	1.01		
▶  <b>GL60AN</b>	LBP-R134a	1.6	50	C	132	114	1.07	0.93		
▶  <b>GL70AA</b>	LBP-R134a	1.5	43	A	146	128	1.18	0.92		
▶  <b>GL70AN</b>	LBP-R134a	1.5	50	D	150	129	1.08	0.83		
▶  <b>GL70AT</b>	LBP-R134a	1.5	43	E	144	122	1.09	0.84		
▶  <b>GL75AA</b>	LBP-R134a	1.5	43	A	155	133	1.18	0.92		
▶  <b>GL80AA</b>	LBP-R134a	1.5	43	A	173	148	1.16	0.93		
▶  <b>GL80AF</b>	LBP-R134a	1.5	43	D	166	141	1.14	0.88		
▶  <b>GL80AH</b>	LBP-R134a	1.5	43	A	175	150	1.35	1.06		
▶  <b>GL80AN</b>	LBP-R134a	1.4	43	A	196	168	1.36	1.06		
▶  <b>GL90AA</b>	LBP-R134a	1.4	43	A	195	167	1.19	0.93		
▶  <b>GL90AH</b>	LBP-R134a	1.4	43	A	215	182	1.36	1.06		
▶  <b>GL90AN</b>	LBP-R134a	1.4	50	D	190	169	1.1	0.85		
▶  <b>GL90AT</b>	LBP-R134a	1.4	43	E	190	161	1.19	0.92		
▶  <b>GL92AA</b>	LBP-R134a	1.4	43	A	214	182	1.24	0.98		
▶  <b>GL92AH</b>	LBP-R134a	1.4	43	A	215	182	1.36	1.06		
▶  <b>GL80AD</b>	LBP-R134a	1.5	43	W	0	0	0	0		
▶  <b>GL90AD</b>	LBP-R134a	1.4	43	W	0	0	0	0		



**ZMC**

**EGL70AT** 0707

200-220V-50Hz

**R 134 a**

MADE IN EGYPT



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