EN

SELF power

Synchronous Eco Line-start Friendly

SELF-STARTING SYNCHRONOUS MOTOR

A NEW DIMENSION OF EFFICIENCY
SMALLER OVERALL DIMENSIONS AND SAME POWER

MOTOVARIO®
HEART OF MOTION
a TECO Group company

Synchronous
Synchronous motor

ECO
High efficiency motor without magnets

Line-start
It starts directly from the mains without an inverter

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Friendly
Lighter and interchangeable motor

Power
Greater power density

The SELF Power motor is an ecological hybrid electric motor halfway between an asynchronous motor and a reluctance motor. After an asynchronous start-up, the motor synchronizes with the working frequency and runs synchronously at constant speed (without encoder) regardless of the load.

PATENTED TECHNOLOGY

The rotor has an advanced magnet-less geometry that optimizes performance and increases power density compared to a standard asynchronous motor.
The innovative design of the rotor, the squirrel cage and the absence of magnets make this motor a unique product on the market.

BENEFITS

- High energy efficiency
- Accurate speed without encoder
- Simple synchronization:
  multiple Self-Power motors powered by a single inverter
- Interchangeable with asynchronous motors
- Lower temperature on bearings
- Less maintenance
- NO magnets

+ more **operating hours**

– fewer **raw materials**

– smaller **overall dimensions**

example

Asynchronous Motor - TP Series TP 100LA4-2.2 kW-4 poles	Size **100**
New SELF POWER Motor - TP-SL Series TP-SL90LM4-2.2 kW-4 poles	Size **90L**

THE BEST PERFORMANCE FOR YOUR APPLICATIONS

pumps

compressors

fans and ventilation

mixers

conveyor belts

textiles

bottling

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Smaller overall dimensions

A lighter motor is easier to handle and install on the machine.

Better speed control

Some applications require a rigorously constant speed.
A V/f scalar inverter can be used to accurately select the speed by simply setting the power supply frequency. The motor does not require an encoder. With the asynchronous motor, the same result can only be achieved with a vector inverter backdriven by the encoder, with a considerable increase in cost.

Easy to use

A single inverter can easily control multiple SELF POWER motors.

Less material

Lower environmental impact.
In future, EU regulations and standards, which are already being developed, will reward this aspect.

Greater reliability

Lower temperatures for the bearings and windings ensure greater reliability and durability. The design allows for a quieter motor, leading to a better operating environment.

CARE for EARTH

TECHNICAL DATA

PERFORMANCE

400V 50Hz

TP-SL/TBP-SL 4 Poles

P_n [kW]	Size	n_n [min^{-1}]	I_n [A]	M_n [Nm]		η% (4/4) limit	η% (4/4)	η% (3/4)	η% (2/4)	cosΦ$_n$	M_s/M_n	I_s/I_n	M_{max}/M_n	M_{po}/M_n	$J_{L max}$/J_T a Mn 1)	$J_{L max}$/J_T a Mn 2)	J_T [10^{-4}×Kgm^2] 1)	J_T [10^{-4}×Kgm^2] 2)	W_T [Kg] 1)	W_T [Kg] 2)	Z_0 [10^3×1/h]	M_B [Nm]
0.75	**80B4**	1500	1.86	4.8	**IE3**	82.5	**83.0**	82.5	80.5	0.70	2.6	5.4	2.7	1.8	4.5	4.3	30.7	32.3	11.2	14.7	7.1	15
1.1	**90S4**	1500	2.67	7.0	**IE3**	84.1	**85.0**	84.5	82.3	0.70	2.7	5.6	2.7	1.9	5.0	4.5	32.3	35.8	14.1	17.6	5.0	13
1.5	**90L4**	1500	3.6	9.5	**IE3**	85.3	**85.5**	85.3	83.2	0.70	3.1	5.6	2.7	1.9	6.0	5.5	37.5	41.0	15.9	21.5	4.0	26
2.2	**90LM4**	1500	5.2	14.0	**IE3**	86.7	**86.7**	86.2	83.7	0.70	3.0	6.1	2.9	2.0	5.0	4.6	47.0	50.5	19.3	24.9	3.2	40

TSP-SL/TBSP-SL 4 Poles

P_n [kW]	Size	n_n [min^{-1}]	I_n [A]	M_n [Nm]		η% (4/4) limit	η% (4/4)	η% (3/4)	η% (2/4)	cosΦ$_n$	M_s/M_n	I_s/I_n	M_{max}/M_n	M_{po}/M_n	$J_{L max}$/J_T a Mn 1)	$J_{L max}$/J_T a Mn 2)	J_T [10^{-4}×Kgm^2] 1)	J_T [10^{-4}×Kgm^2] 2)	W_T [Kg] 1)	W_T [Kg] 2)	Z_0 [10^3×1/h]	M_B [Nm]
0.75	**80B4**	1500	1.83	4.8	**IE4**	85.7	**85.7**	84.6	82.9	0.69	3.0	5.6	2.7	1.9	4.5	4.3	30.7	32.3	11.3	14.8	7.1	15
1.1	**90S4**	1500	2.60	7.0	**IE4**	87.2	**87.2**	86.4	83.9	0.70	2.6	5.9	3.0	2.0	5.0	4.5	32.3	35.8	14.4	17.9	5.0	13
1.5	**90L4**	1500	3.6	9.5	**IE4**	88.2	**88.2**	87.5	85.9	0.69	2.9	5.8	3.2	2.1	6.0	5.5	39.0	42.5	16.4	22.0	4.0	26

460V 60Hz

TP-SL/TBP-SL 4 Poles

P_n [kW]	Size	n_n [min^{-1}]	I_n [A]	M_n [Nm]		η% (4/4) limit	η% (4/4)	η% (3/4)	η% (2/4)	cosΦ$_n$	M_s/M_n	I_s/I_n	M_{max}/M_n	M_{po}/M_n	$J_{L max}$/J_T a Mn 1)	$J_{L max}$/J_T a Mn 2)	J_T [10^{-4}×Kgm^2] 1)	J_T [10^{-4}×Kgm^2] 2)	W_T [Kg] 1)	W_T [Kg] 2)	Z_0 [10^3×1/h]	M_B [Nm]
0.75	**80B4**	1800	1.62	4.0	**IE3**	83.5	**85.5**	84.1	81.0	0.68	3.1	6.6	3.2	2.1	4.5	4.3	30.7	32.3	11.2	14.7	7.1	15
1.1	**90S4**	1800	2.35	5.8	**IE3**	86.5	**86.5**	85.6	82.7	0.68	3.2	6.7	3.0	2.3	5.0	4.5	32.3	35.8	14.1	17.6	5.0	13
1.5	**90L4**	1800	3.2	8.0	**IE3**	86.5	**86.5**	85.7	83.5	0.68	3.7	6.8	3.4	2.2	6.0	5.5	37.5	41.0	15.9	21.5	4.0	26
2.2	**90LM4**	1800	4.5	11.7	**IE3**	89.5	**89.5**	87.5	85.3	0.68	3.4	7.5	3.7	2.3	5.0	4.6	47.0	50.5	19.3	24.9	3.2	40

TSP-SL/TBSP-SL 4 Poles

P_n [kW]	Size	n_n [min^{-1}]	I_n [A]	M_n [Nm]		η% (4/4) limit	η% (4/4)	η% (3/4)	η% (2/4)	cosΦ$_n$	M_s/M_n	I_s/I_n	M_{max}/M_n	M_{po}/M_n	$J_{L max}$/J_T a Mn 1)	$J_{L max}$/J_T a Mn 2)	J_T [10^{-4}×Kgm^2] 1)	J_T [10^{-4}×Kgm^2] 2)	W_T [Kg] 1)	W_T [Kg] 2)	Z_0 [10^3×1/h]	M_B [Nm]
0.75	**80B4**	1800	1.64	4.0	**IE4**	85.5	**85.5**	84.5	81.0	0.67	3.6	6.9	3.5	2.1	4.5	4.3	30.7	32.3	11.3	14.8	7.1	15
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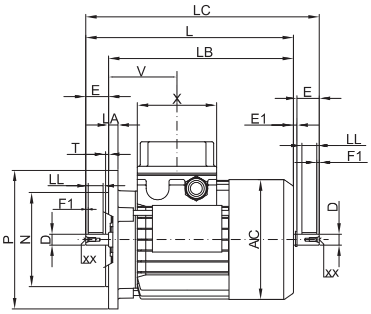
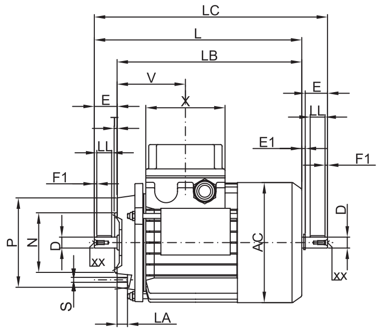
Symbols, units of measurement and description

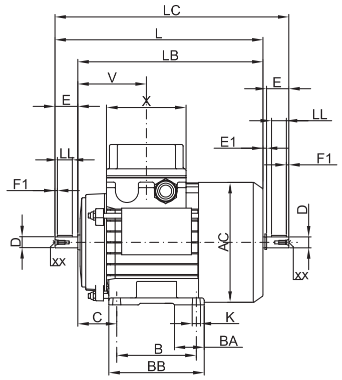
P_n [W]	Rated output [kW]
n_n [rpm]	Rated speed [rpm]
I_n [A]	Rated current [A]
M_n [Nm]	Rated torque [Nm]
η%	Rated efficiency % (limit: minimum value required by the standard; 4/4, 3/4, 2/4: rated output fraction)
cosΦ$_n$	Rated power factor
M_s / M_n	Starting torque / rated torque ratio
M_{max} / M_n	Maximum torque / rated torque ratio
I_s / I_n	Starting current / rated current ratio
$M_{p.o.}$ / M_n	Pull-out torque / rated torque ratio
$J_{L MAX}$ / J_T	Maximum load inertia / motor inertia ratio (maximum start-up inertia at rated torque)
J_t [kg×m^2]	Moment of inertia of motor [10-4 kg×m^2] 1) without brake 2) with brake (MS - FM)
W_t [kg]	Motor weight (B5 version) [kg] 1) without brake 2) with brake (MS - FM)
Z_0 [1/h]	Maximum starting frequency per hour with no load [1/h]
M_B [Nm]	Braking moment [Nm]

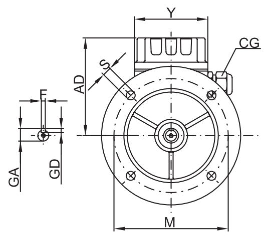
TECHNICAL DATA

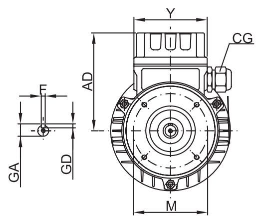
DIMENSIONS

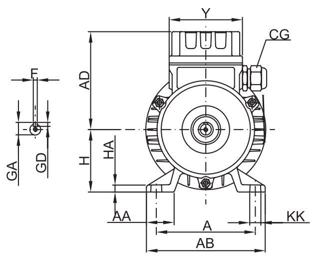












										Shaft end						Key			Cable gland		
	Pn [kW]	AC	AD	L	LB	X	Y	V	LC	D	E	E1	xx	F1	GA	F	GD	LL	CG	cable ø min	max
80B4	0.75	158	121.5	272.5	232.5	80	74	78	314	19 j6	40	1.5	M6x16	5	21.5	6	6	30	M20x1.5	6	12
90S4	1.1	173	129.5	298	248	98	98	89.5	349.5	24 j6	50	1.5	M8x19	5	27	8	7	35	M25x1.5	13	18
90L4	1.5			323	273				374.5												
90LM4	2.2			356	306				407.5												

B5	M	N	P	LA	S	T
80	165	130	200	12	11	3.5
90	165	130	200	12	11	3.5

B14	M	N	P	LA	S	T
80	100	80	120	10.5	M6	3
90	115	95	140	11.5	M8	3

B3	A	AA	AB	KK	B	BB	BA	K	C	H	HA
80	125	56.5	156	19.5	100	122	26	9.5	49	80	11
90S	140	56	172	12	100	136	33	8.5	54	90	11
90L	140	57	172	12	125	155	33	8.5	54	90	13

SELF POWER/2022/REV.0/EN rscadv.it

DISCOVER OUR WORLD OF SERVICES

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