



PSME SERIES

LINEAR SHAFT MOTOR



BUILT - IN ENCODER

turn key linear motion systems

PBA
SYSTEMS

www.pbasystems.com.sg



HIGH CONTINUOUS FORCE

for precise and efficient linear motion systems

PSM / PSME SERIES

LINEAR SHAFT MOTOR



High Continuous Force for Precise and Efficient Linear Motion Systems

PBA Linear Shaft motors were designed with similar form factor dimensional outline and Functionality to that of a mechanical ballscrew/nut with the intention to provide to equivalent upgrades to traditionally ballscrews and pneumatic cylinder applications.

The coils of the PSM motor surrounds the magnets allowing for optimal use of magnetic flux which makes the air gap non-critical and allows for max efficiency as the motor requires less current and mass to produce similar force ranges when compared to other brushless linear motors.

Resultant performance characteristics from above design are precision positioning and Minimal speed ripple which makes the range of applications unlimited and highly diverse.

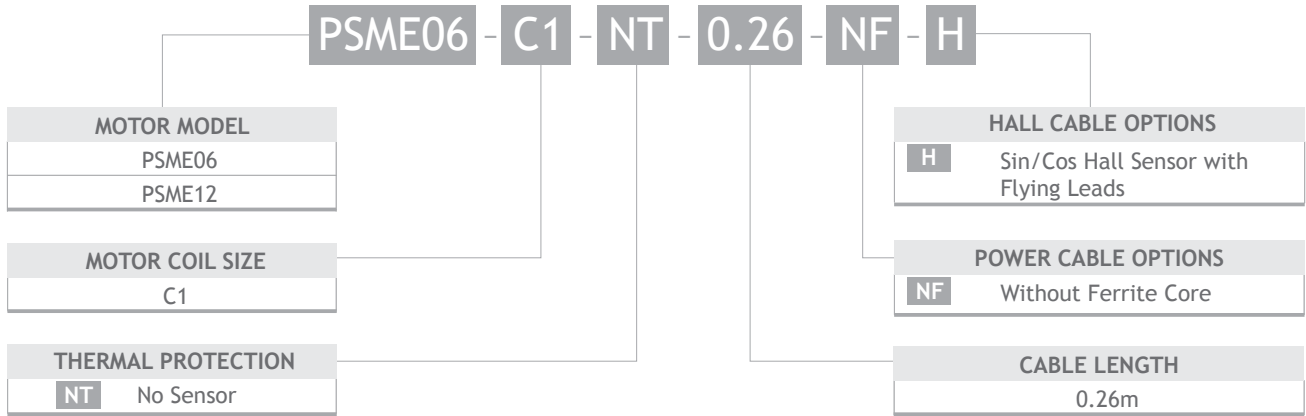
- Zero cogging
- Precise speed and positional
- Low speed and torque ripple
- Simple economical construction
- Compact and light weight
- Non critical air gap
- Easy upgrade of existing ballscrew systems

Application

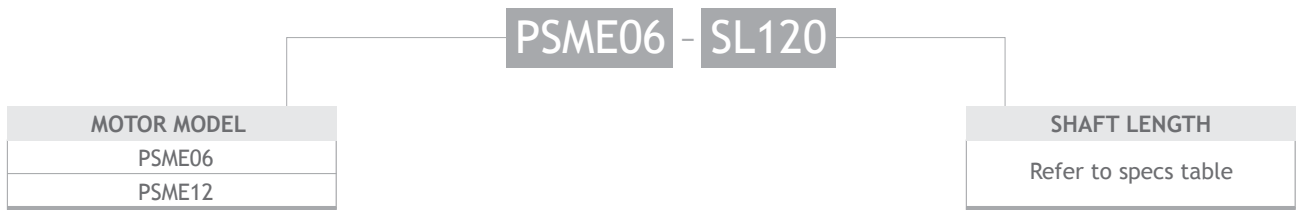
- Z axis IC picking head
- PCB indexer
- SMT alignment
- Biomedical pipetting
- Active dispensing
- Precision Pick & Place
- Scanning
- Leadframe indexing
- Bptech open frame stages

PART NUMBERING SYSTEM

■ Coil Assembly



■ Magnet Shaft



LINEAR SHAFT MOTOR

DXB / BT

PIX / PIXA

PSM / PSME

CVC

CVCA

RVCA

PDDR

PCA

PDA

PIA

OCTO

PRG

LINEAR ENCODER

MAXTUNE

DELTA

MITSUBISHI

TECHNOSOFT

PSME 06 / PSME 12

- Built-in encoder
- Ideal for Z-axis
- Small cross-section
- Control mode switching function available



PSME SERIES
 LINEAR SHAFT MOTOR
 WITH INTEGRATED ENCODER SYSTEM

LINEAR SHAFT MOTOR

DX B / BT

PIX / PIXA

PSM / PSME

CVC

CVCA

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PDDR

PGA

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SPECIFICATION	Unit	MODEL	
		PSME06-C1	PSME12-C1
Performance			
Peak Force	N	10.7	27.6
Continuous Force @ 125°C*	N	3.5	9.2
Peak Power @ 125°C	W	77.1	129.2
Continuous Power @ 125°C*	W	8.5	14.4
Electrical			
Peak Current	A ^{pk}	2.35	3.35
Continuous Current @ 125°C*	A ^{pk}	0.78	1.12
Continuous Stall Current @ 125°C*	Arms	0.55	0.79
Force Constant	N/A ^{pk}	4.55	8.23
Back EMF Constant	V ^{pk} /m/s	5.23	9.47
Resistance L-L @ 22°C	Ohm	13.2	10.8
Resistance L-L @ 125°C	Ohm	18.7	15.3
Inductance L-L @ 1kHz	mH	0.82	1.13
Motor Constant @ 125°C	N/√W	1.22	2.43
Electrical Cycle Length	mm	18	24
Max. Terminal Voltage	Vdc	75	
Thermal			
Thermal Resistance @ 125°C	°C/W	12.2	7.2
Max. Winding Temperature	°C	125	
Mechanical			
Coil Weight	gram	39	

Notes:

1. A^{pk} = 1.414 * Arms; V^{pk} = 1.414 * Vrms.
2. * Ambient temperature 22°C, natural convection, no heat sink.
3. ^ Typical values with integrated Sin/Cos Hall sensors and Elmo SOL-WHI2.5/60I0L. Values may vary depending on conditions of use.
4. Specifications tolerance – inductance +/-30%, all others +/-10%.

PSME 06

LINEAR SHAFT MOTOR

DXB / BT

PIX / PIXA

PSM / PSME

CVC

CVCA

RVCA

PDDR

PCA

PDA

PIA

OCTO

PRG

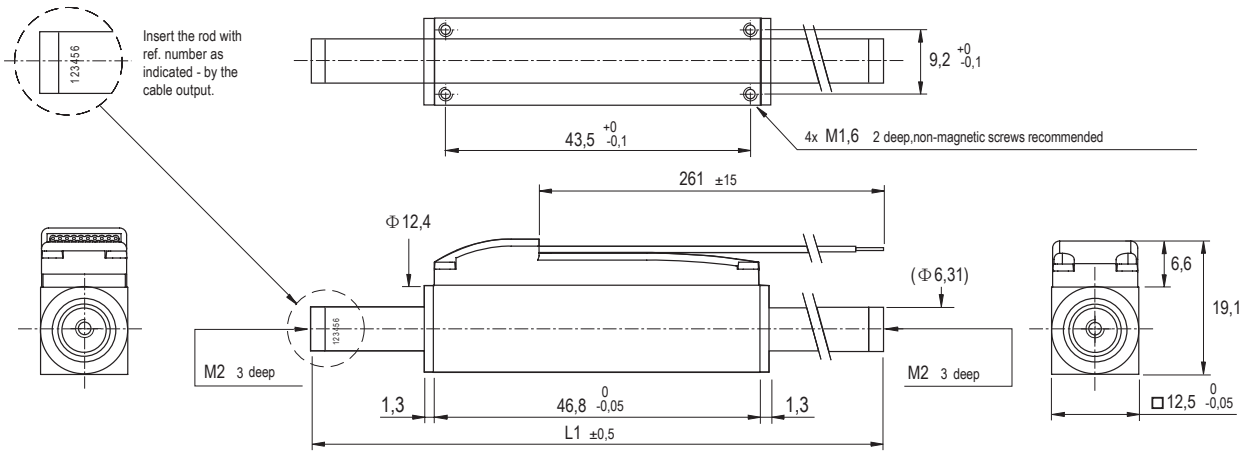
LINEAR ENCODER

MAXTUNE

DELTA

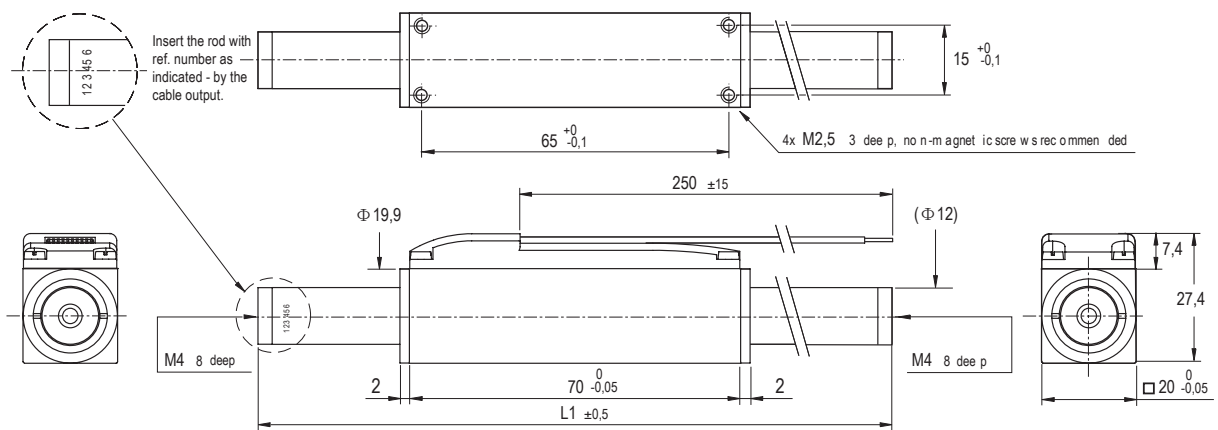
MITSUBISHI

TECHNOSOFT



SHAFT LENGTH SL (mm)	EFFECTIVE LENGTH (mm)	REPEATABILITY** (um)	ACCURACY** (um)	WEIGHT (g)
SL82	67	+/-15	+/-200	18
SL109	87		+/-220	24
SL127	107		+/-240	28
SL154	127		+/-260	35
SL172	147		+/-280	39
SL190	167		+/-300	43

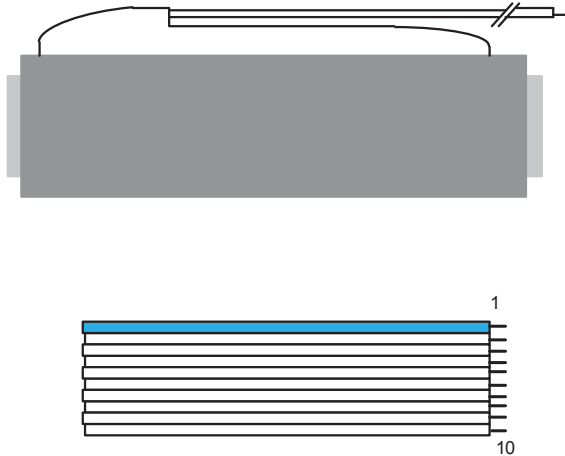
PSME 12



SHAFT LENGTH SL (mm)	EFFECTIVE LENGTH (mm)	REPEATABILITY** (um)	ACCURACY** (um)	WEIGHT (g)
SL134	110	+/-20	+/-500	98
SL182	150		+/-600	140
SL218	190		+/-700	168
SL254	230		+/-800	200
SL314	290		+/-900	250

PSME SERIES PIN OUT

PSME□-C1-NT-0.25-NF-H



PIN FUNCTION	
1	Phase C
2	Phase B
3	Phase A
4	Logic GND
5	Logic Supply +5V
6	Sin+
7	Sin-
8	Cos+
9	Cos-
10	N.C.

**Material PVC, 10 conductors, AWG 28, pitch 2mm.
Only 0.26m length is available

Technosoft iPOS360x BX-CAN (Standalone module & step/direction supported)

