

## SM Solenoids

- A range of seven (7) stripped frame solenoids to suit a wide range of push and pull applications.
- Wide choice of AC\* or DC operating coils.
- Two (2) miniature solenoids for light high speed applications.
- Five (5) robust general purpose solenoids.
- Thrust rod lengths to order.
- Suitable for intermittent duty where loads can be significantly increased.
- RoSH compliant.

\* SM00 & SM5 Solenoids are DC operation only.



### 1. SM0/SM00 Miniature Solenoids

For light high speed pull or thrust applications, particularly suitable for intermittent duty where loads can be significantly increased. Simple single hole fixing (see SM Outline Drawing). For standard and custom (special order) options available, contact sales e.g. impregnation, thrust rod length, etc.

#### 1.1. SM00 Solenoid

Short stroke miniature solenoid for use in confined spaces (at up to 2000 cycles/minute). Coil voltages from 3V to 50V DC continuous, or higher for intermittent duty with increased pull/thrust (see performance data).

#### 1.2. Technical Data

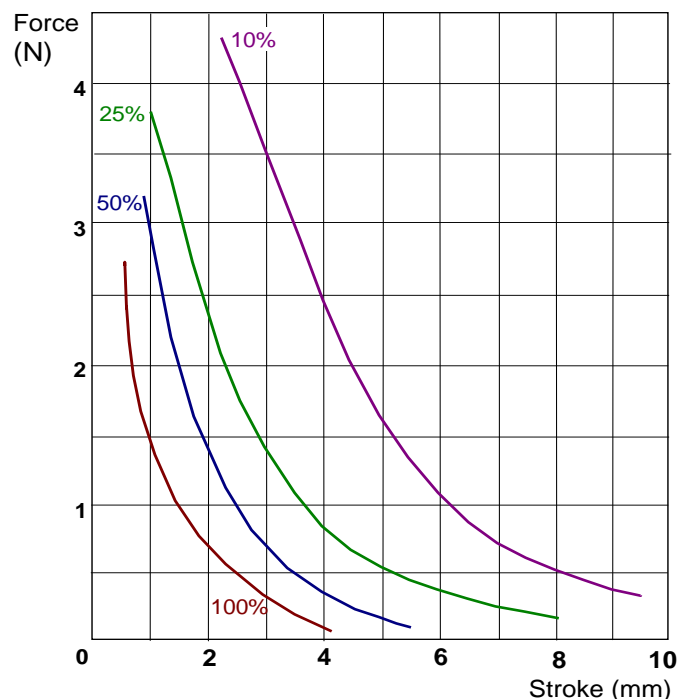
Standard voltages (continuous rating): 12, 24, 50VDC  
Mass 38g.

#### 1.3. SM00 Performance Data

##### 1.3.1. Nominal D.C. Power Consumption (cold)

Rating*	Watts
100%	2.75
50%	5.5
25%	11
10%	27.5

##### 1.3.2. SM00 Characteristics



D.C. characteristics for horizontal operation at working temperature.

### 1.4. SM0 Solenoid

Longer stroke than SM00 solenoid. Coil voltages from 3V to 125VDC. May be used on AC but should be restricted to very light loads with plunger seated to avoid slight noise.

### 1.5. Technical Data

Standard Voltages (continuous rating): -  
48, 110 & 240VAC 50Hz.  
6, 12, 14 & 50VDC.

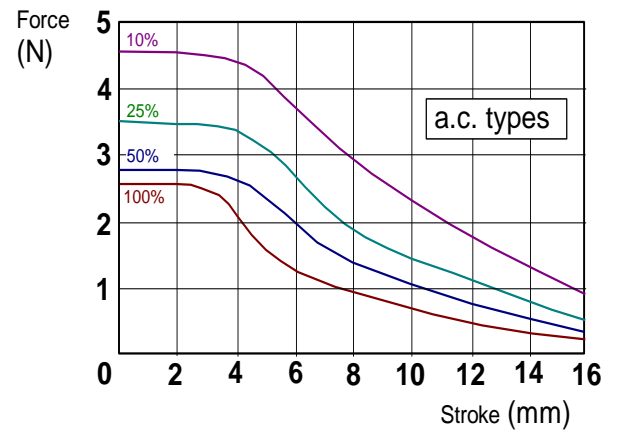
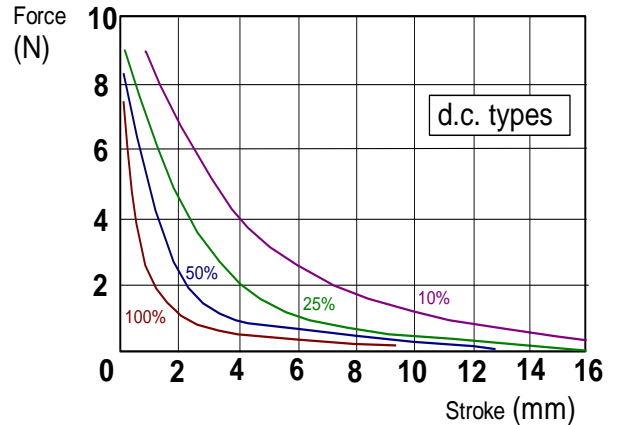
Mass 53g.

### 1.6. SM0 Performance Data

#### 1.6.1. Nominal Power Consumption (cold)

Rating*	A.C.		D.C.
	VA closed	VA at 12.7mm stroke	Watts
100%	6	13	3
50%	11	17	6
25%	18	25	12
10%	41	50	30

### 1.6.2. SM0 Characteristics



D.C. & A.C. characteristics for horizontal operation at working temperature.

\* Note – duty cycle must ensure that heating is not excessive during “ON” time.

## 2. SM1 – SM5 General Purpose Solenoids

A range of five (5) robust solenoids with sleeved plungers for trouble-free operation and tapped hole on two (2) face of the stripped frame for universal mounting (see SM Outline Drawing). The solenoids are capable of operations up to 200 cycles per minute dependant on conditions. Coils are readily interchangeable and are available for AC and DC operation (except SM5 that are DC only). For standard and custom (special order) options available contact sales e.g. impregnation, thrust rod length, lead termination, AC coil operating frequency (Hz), etc.

### 2.1. Technical Data

Standard voltages (continuous rating): -  
12, 24, 50, 110V DC.  
48, 110, 240 AC 50Hz.

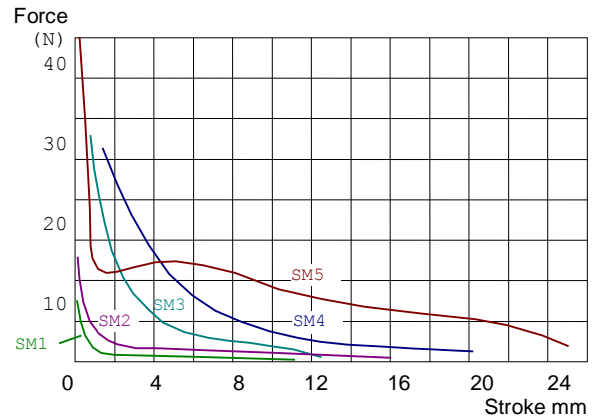
Coils available to order for other voltages and frequencies, or for intermittent use where operating force can be increased significantly (see characteristics).

Mass (g)		
Type	Total	Plunger
SM1	135	21.3
SM2	193	28.4
SM3	397	35.4
SM4	610	49.5
SM5	815	120.1

## 2.2 SM Solenoids – DC Characteristics

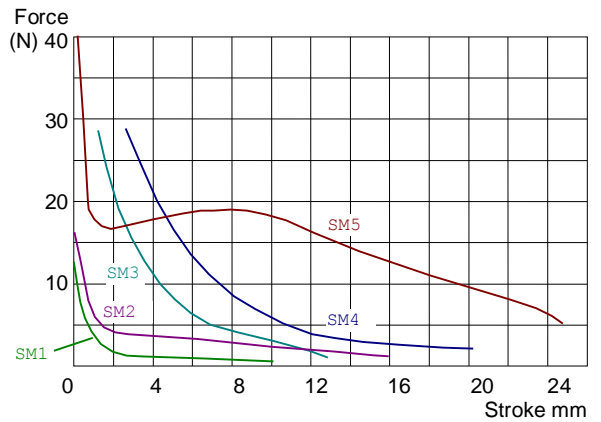
### D.C. Continuous Rating

Type	Max. Stroke mm	Pull at Max. Stroke N	Approx. Watts (Cold)	Max. Volts
SM1	9.5	0.20	4.4	100
SM2	16.0	0.28	6.0	200
SM3	14.3	0.28	8.5	250
SM4	22.0	0.85	10.2	250
SM5	25.0	1.98	12.8	250



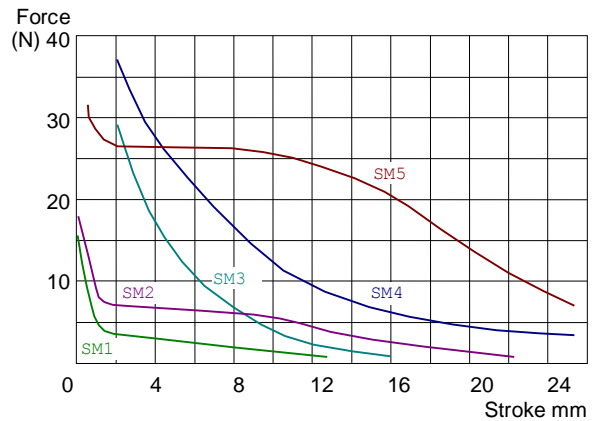
### D.C. 50% Rating

Type	Max. Stroke mm	Pull at Max. Stroke N	Approx. Watts (Cold)	Max. Volts
SM1	9.5	0.99	8.8	100
SM2	16.0	1.27	12.0	250
SM3	14.3	1.42	17.0	250
SM4	22.0	2.26	20.4	250
SM5	25.0	5.38	25.6	250



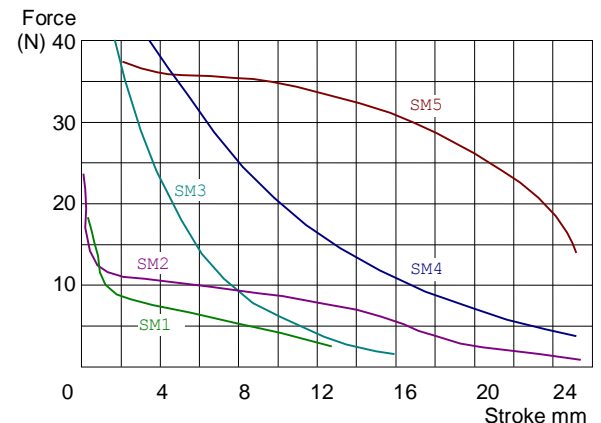
### D.C. 25% Rating

Type	Max. Stroke mm	Pull at Max. Stroke N	Approx. Watts (Cold)	Max. Volts
SM1	12	1.00	18	250
SM2	22	1.00	24	250
SM3	16	1.00	34	250
SM4	25	3.00	41	250
SM5	25	7.00	52	250



### D.C. 10% Rating

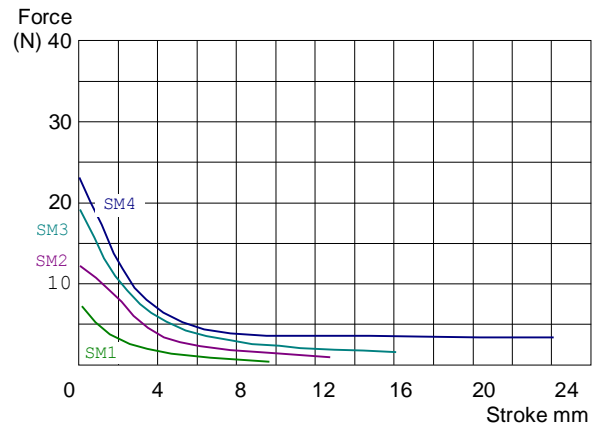
Type	Max. Stroke mm	Pull at Max. Stroke N	Approx. Watts (Cold)	Max. Volts
SM1	12	3.00	44	250
SM2	24	1.25	60	250
SM3	16	2.00	85	440
SM4	25	4.00	102	440
SM5	25	15.00	128	440



## 2.3 SM Solenoids – AC Characteristics

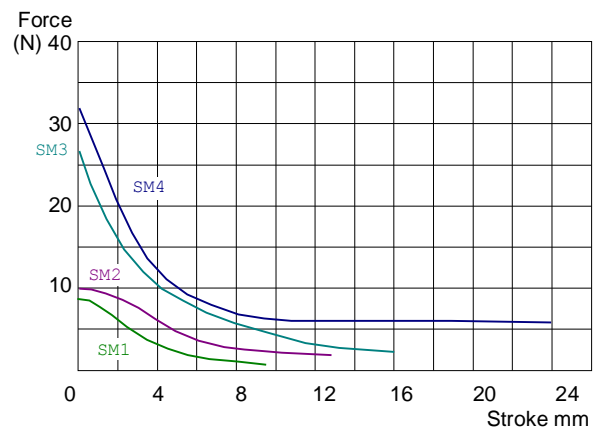
### A.C. Continuous Rating at 50Hz

Type	Max. Stroke mm	Pull at Max. Stroke N	Approx.VA Inrush At Max. Stroke (cold)	Approx. VA Closed	Max. Volts
SM1	9.5	0.28	17	6.0	250
SM2	16.0	0.56	33	10.0	250
SM3	14.3	2.55	50	12.0	250
SM4	25.0	3.11	95	18.5	440



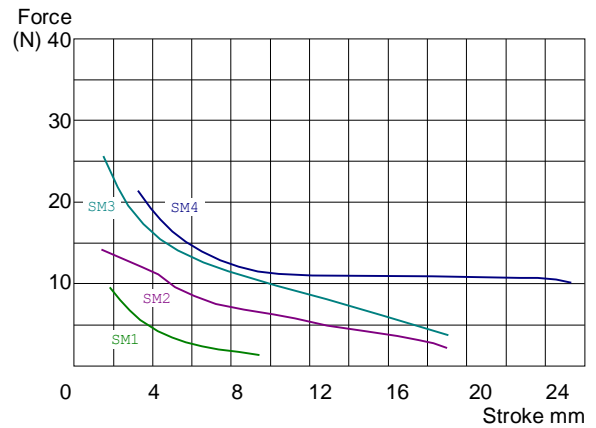
### A.C. 50% Rating at 50Hz

Type	Max. Stroke mm	Pull at Max. Stroke N	Approx.VA Inrush At Max. Stroke (cold)	Approx. VA Closed	Max. Volts
SM1	9.5	0.56	30	12.0	250
SM2	16.0	1.13	44	17.5	250
SM3	14.3	3.97	84	24.0	440
SM4	25.0	5.38	168	35.0	440



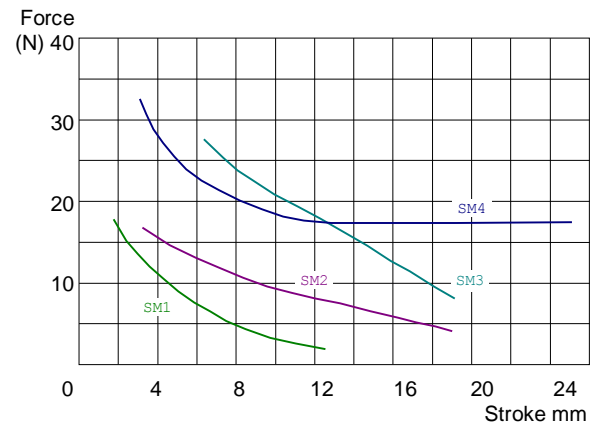
### A.C. 25% Rating at 50Hz

Type	Max. Stroke mm	Pull at Max. Stroke N	Approx.VA Inrush At Max. Stroke (cold)	Approx. VA Closed	Max. Volts
SM1	12.0	1.00	58	21	250
SM2	19.0	2.50	75	30	250
SM3	19.0	3.50	148	41	440
SM4	25.0	10.00	280	60	440



### A.C. 10% Rating at 50Hz

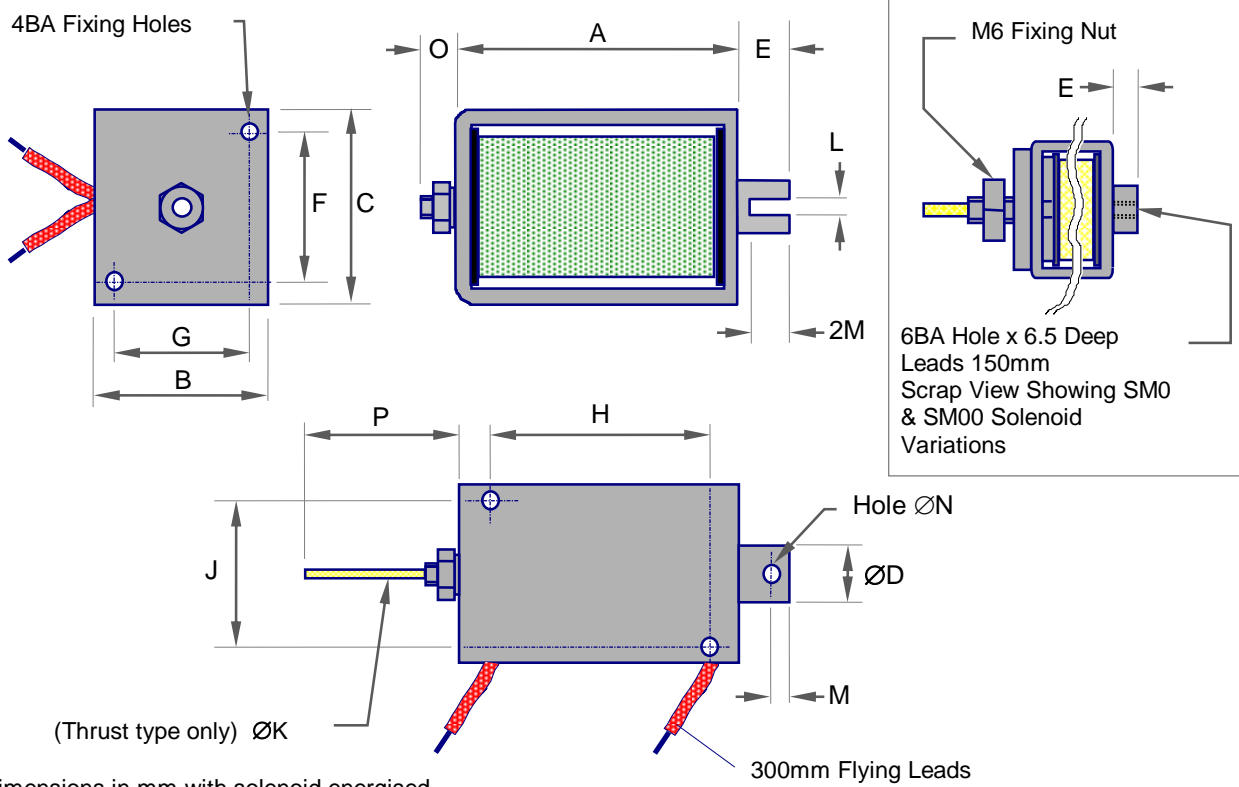
Type	Max. Stroke mm	Pull at Max. Stroke N	Approx.VA Inrush At Max. Stroke (cold)	Approx. VA Closed	Max. Volts
SM1	13.0	2.00	140	52	250
SM2	19.0	4.00	160	60	250
SM3	19.0	8.00	300	115	440
SM4	25.0	17.50	600	200	440



### 3. SM Solenoid Outline Drawings

All dimensions in mm unless stated.

# Custom thrust rod length available to special order (SM0/SM00).



Dimensions in mm with solenoid energised

Type	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Total Mass	Plunger Mass
SM00	25.4	15.9	18.3	5.5	3.2	NOT APPLICABLE				1.8	SEE SCRAP VIEW		8.4	20.9#	38g	-	
SM0	38.1	15.9	18.3	5.5	5.9	SEE SCRAP VIEW				1.8	SEE SCRAP VIEW		8.4	20.9#	53g	-	
SM1	33.3	25.4	31.8	11.1	12.7	18.3	17.5	19.1	17.5	2.4	3.6	4.8	2.4	6.5	Length	135g	21.3g
SM2	52.4	25.4	31.8	11.1	12.7	18.3	17.5	38.1	17.5	2.4	3.6	4.8	2.4	6.5	to order	193g	28.3g
SM3	42.9	39.7	49.2	12.7	12.7	34.9	31.8	28.6	31.8	3.2	3.6	4.8	2.4	6.5	for	397g	35.4g
SM4	68.3	39.7	49.2	12.7	12.7	34.9	31.8	54.0	31.8	3.2	3.6	4.8	2.4	6.5	thrust	610g	49.5g
SM5	66.7	46.5	54.0	17.5	20.6	34.9	31.8	47.6	31.8	3.2	4.8	6.4	3.2	8.0	types	815g	120g

### 4. How to Order

Please specify:

1. Type (e.g. SM3).
2. Pull or thrust. For thrust types specify projection required (dimension 'P' above) with solenoid energised.
3. Voltage, DC or AC (& frequency).
4. Rating (e.g. 50%)
5. Special requirements (e.g. lead lengths, coil treatments, etc).

#### 4.1 Technical Advice

For advice on selecting the most suitable solenoids our Sales and Engineering will be pleased to assist.