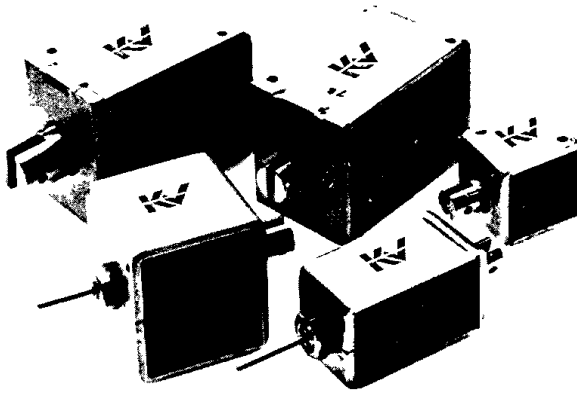


Solenoids

type SM

CSA Certified Report LR 15089

103-743/4 AND 103-746



- Class E (120 C) insulation for high temperature working
- Non-jam plunger design
- Coils easily interchangeable
- Suitable for most environments

These are robustly made strip-frame solenoids, with tapped holes on two faces for universal mounting. Types SM1 to SM4 are available in both ac and dc form, type SM5 is dc only. They are available for pull or thrust operation and the design permits considerable application flexibility. All versions will operate up to 200 cycles per minute dependent on conditions of use.

Each type can be easily dismantled, and a variety of coil connections and impregnations are available to suit most environmental conditions. Each plunger moves within a non-magnetic metal tube to avoid the possibility of jamming should the coil overheat and distort, for example due to a circuit fault.

Standard Coil Voltages

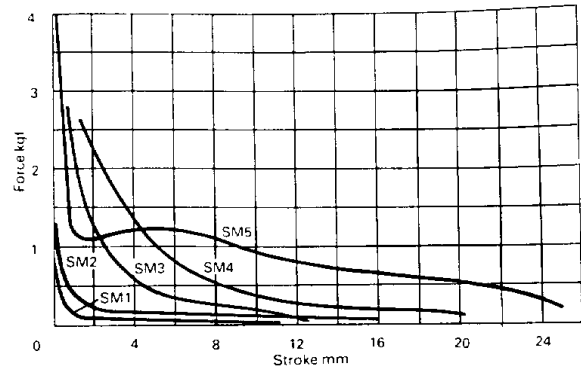
48/50, 110, 230/240V ac Continuous Rating
12, 24, 50, 110V dc Continuous Rating
Greatly increased pull/thrust can be obtained at intermittent ratings
Coils for operation at non-standard voltages are available to special order

Weight in grams

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

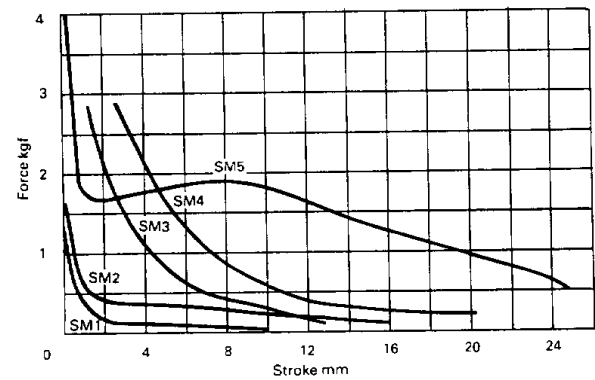
DC Continuous Rating

Type	Max Stroke mm	Pull at Max Stroke gf	Approx Watts	Max Volts
SM1	9.5	42	4.4	100
SM2	16.0	28	6.0	200
SM3	14.3	28	8.5	250
SM4	22.0	85	10.2	250
SM5	25.0	198	12.8	250



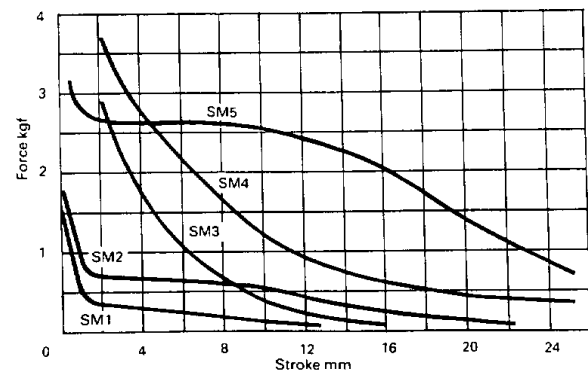
DC 50% Rating

SM1	9.5	99	8.8	100
SM2	16.0	127	12.0	250
SM3	14.3	142	17.0	250
SM4	22.0	226	20.4	250
SM5	25.0	538	25.6	250



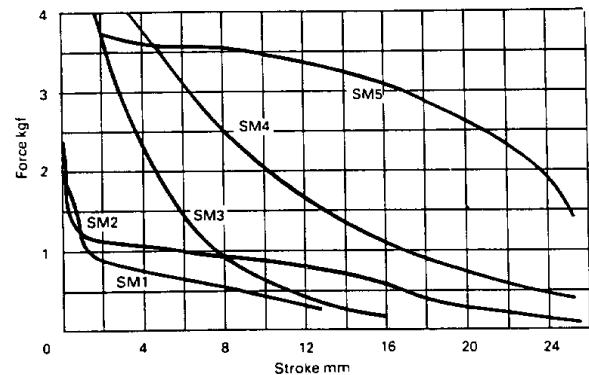
DC 25% Rating

SM1	12	100	18	250
SM2	22	100	24	250
SM3	16	100	34	250
SM4	25	300	41	250
SM5	25	700	52	250



DC 10% Rating

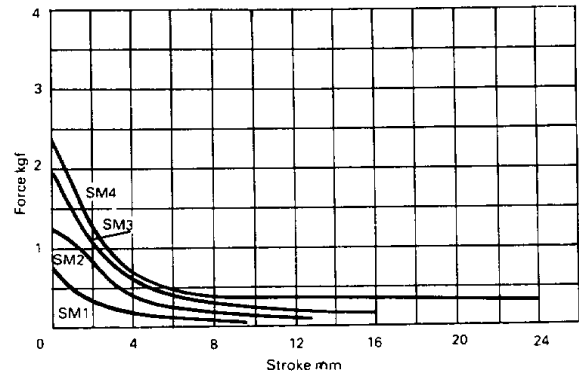
SM1	12	300	44	250
SM2	24	125	60	250
SM3	16	200	85	440
SM4	25	400	102	440
SM5	25	1500	128	440



Performance figures are for operation at working temperature and for horizontal movement

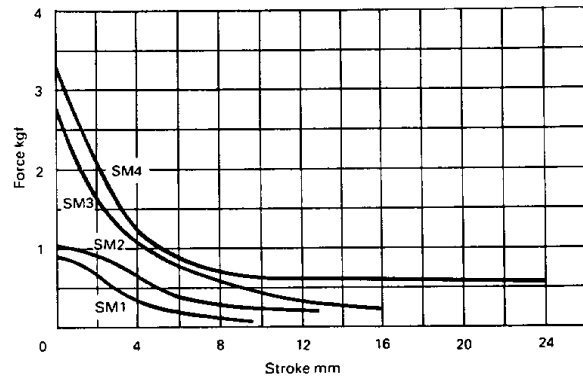
AC Continuous Rating at 50Hz

Type	Max Stroke mm	Pull at Max Stroke gf	Approx VA Inrush at Max Stroke	Approx VA Closed	Max Volts
SM1	9.5	28	17	6.0	250
SM2	16.0	56	33	10.0	250
SM3	14.3	255	50	12.0	250
SM4	25.0	311	95	18.5	440



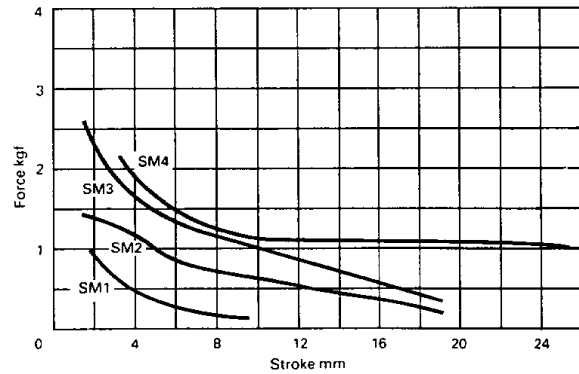
AC 50% Rating at 50Hz

SM1	9.5	56	30	12.0	250
SM2	16.0	113	44	17.5	250
SM3	14.3	397	84	24.0	440
SM4	25.0	538	168	35.0	440



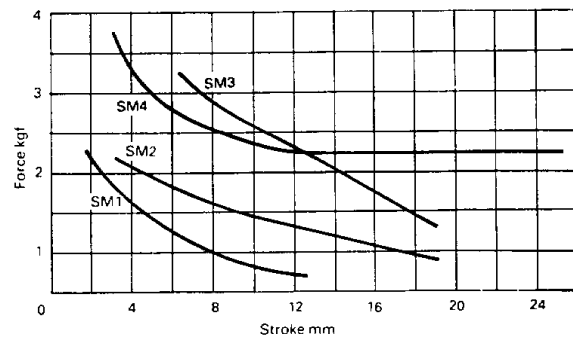
AC 25% Rating at 50Hz

SM1	12	100	58	21	250
SM2	19	250	75	30	250
SM3	19	350	148	41	440
SM4	25	1000	280	60	440



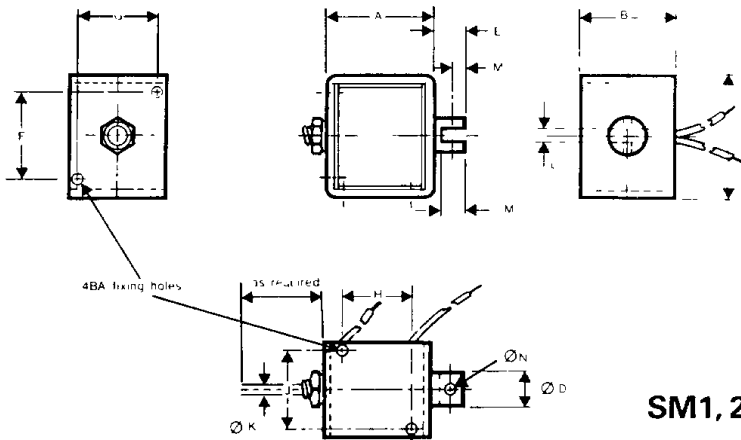
AC 10% Rating at 50Hz

SM1	13	150	140	52	250
SM2	19	400	160	60	250
SM3	19	800	300	115	440
SM4	25	1750	600	200	440



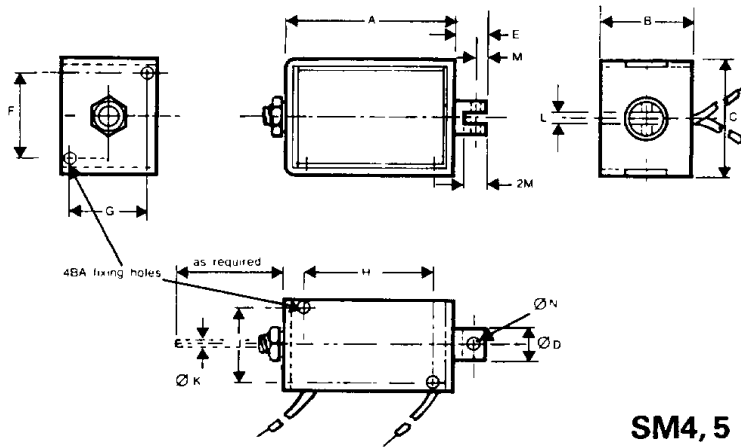
Performance figures are for operation at working temperature and for horizontal movement

All dimensions mm (inch)



SM1, 2, 3

Type	A	B	C	D	E	F	G	H	J	K	L	M	N
SM1	33.3 (1.31)	25.4 (1.00)	31.8 (1.25)	11.1 (0.44)	12.7 (0.50)	18.3 (0.72)	17.5 (0.69)	19.1 (0.75)	17.5 (0.69)	2.4 (0.09)	3.6 (0.14)	4.8 (0.19)	2.4 (0.09)
SM2	52.4 (2.06)	25.4 (1.00)	31.8 (1.25)	11.1 (0.44)	12.7 (0.50)	18.3 (0.72)	17.5 (0.69)	38.1 (1.50)	17.5 (0.69)	2.4 (0.09)	3.6 (0.14)	4.8 (0.19)	2.4 (0.09)
SM3	42.9 (1.69)	39.7 (1.56)	49.2 (1.94)	12.7 (0.50)	12.7 (0.50)	34.9 (1.38)	31.8 (1.25)	28.6 (1.13)	31.8 (1.25)	3.2 (0.13)	3.6 (0.14)	4.8 (0.19)	2.4 (0.09)
SM4	68.3 (2.69)	39.7 (1.56)	49.2 (1.94)	12.7 (0.50)	12.7 (0.50)	34.9 (1.38)	31.8 (1.25)	54.0 (2.13)	31.8 (1.25)	3.2 (0.13)	3.6 (0.14)	4.8 (0.19)	2.4 (0.09)
SM5	66.7 (2.63)	39.7 (1.56)	54.0 (2.13)	17.5 (0.69)	20.6 (0.81)	34.9 (1.38)	31.8 (1.25)	47.6 (1.88)	31.8 (1.25)	3.2 (0.13)	4.8 (0.19)	6.4 (0.25)	3.2 (0.13)



SM4, 5

When ordering, please specify the following
Type e.g SM3
Pull or Thrust
Special coil treatment
Voltage, dc/ac, frequency
Rating, e.g continuous
Projection required, (thrust type) i.e from frame to end of thrust rod, with plunger closed

When ordering spare coils state voltage, frequency (if applicable) and rating required

Technical Advice

Because the choice of solenoid for a particular application can be a complex process, the Keyswitch Varley Technical Advisory Service is always available to help in providing the most economical solution to your problem. The service is entirely free. Simply complete and mail the Solenoid Questionnaire, or contact us by telephone or telex stating your requirements.

December, 1982



Keyswitch Varley Limited



A THORN EMI company