

Permanent Magnet D.C. Servomotors

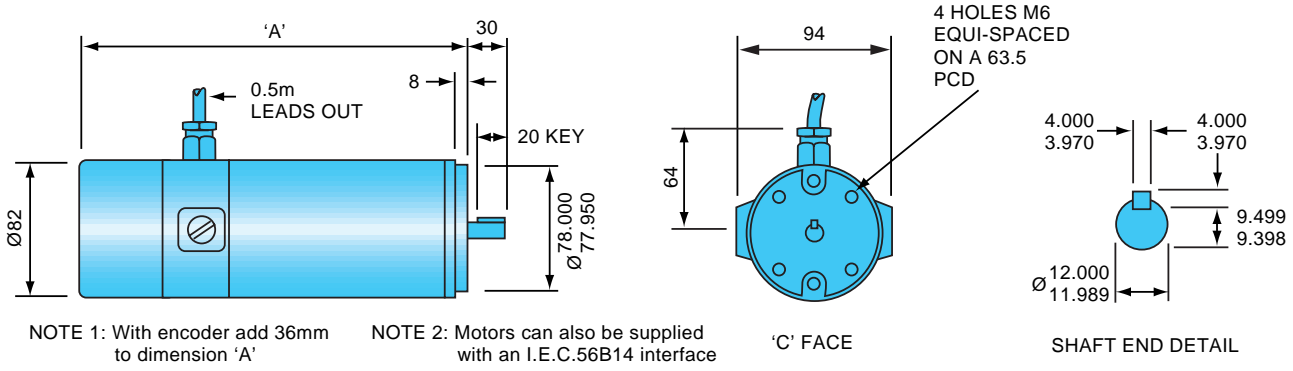


SEM

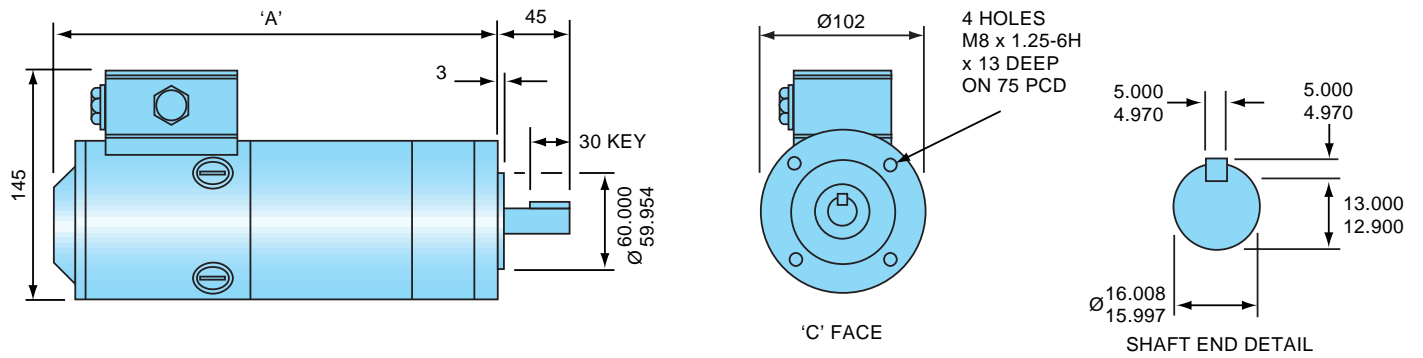
controlled motor technology

PERMANENT MAGNET D.C. SERVOMOTORS

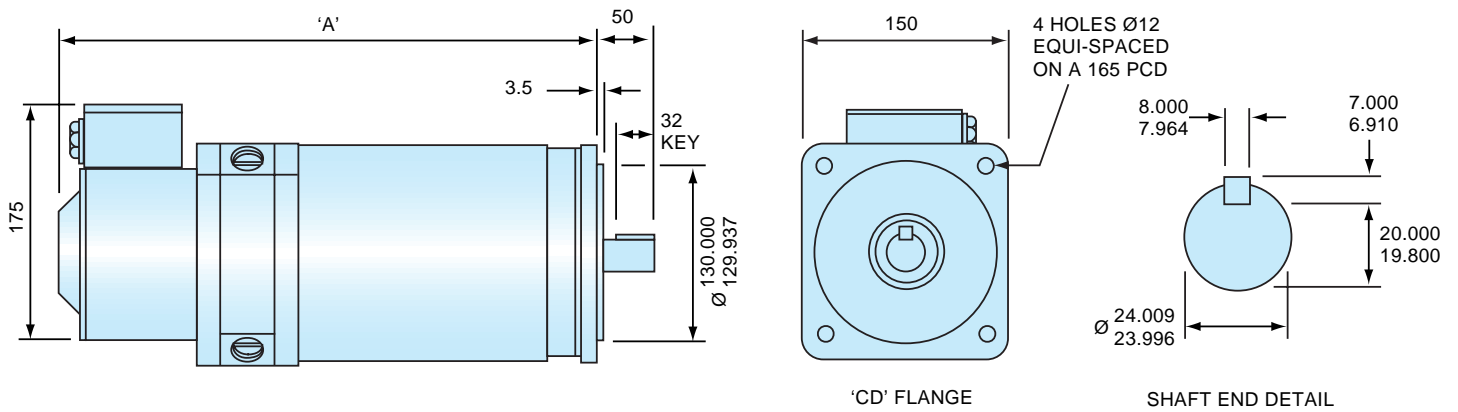
MT22 RANGE



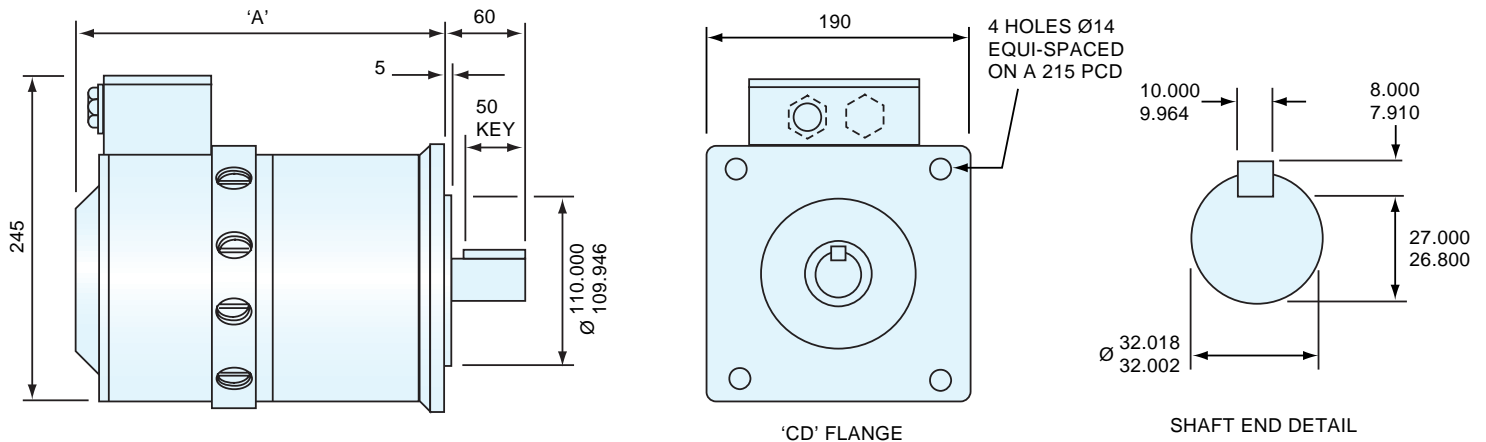
MT30 RANGE



MT40 RANGE



MT52 RANGE



TECHNICAL DATA

Mechanical

Electrical

Motor Type	Overall Dimensions				Polar moment of inertia	Enclosure Protection	Net weight	Cont. stall torque TENV (IC400)	Rated on a heatsink	Cont. stall current TENV	Cont. stall torque blower cooled
	A	With Brake (Add to dimension A)	With blower (Add to dimension A)	With Brake & blower (Add to dimension A)							
	mm	mm	mm	mm	kg.m ²	IP	kg	Nm	Nm	A	Nm
MT22D2-5	173	+30			0.000168		1.7	0.5	0.6	10.0	
MT22D2-10	173	+30	N/A	N/A	0.000168	44/65	1.7	0.5	0.6	5.0	N/A
MT22D2-19	173	+30			0.000168		1.7	0.5	0.6	2.8	
MT22G2-5	203	+30			0.000276		2.7	0.7	0.8	14.0	
MT22G2-10	203	+30	N/A	N/A	0.000276	44/65	2.7	0.7	0.8	7.0	N/A
MT22G2-19	203	+30			0.000276		2.7	0.7	0.8	3.9	
MT22R2-10	263	+30			0.000601		4.1	1.2	1.35	12.0	
MT22R2-12	263	+30	N/A	N/A	0.000601		4.1	1.2	1.35	10.9	
MT22R2-19	263	+30			0.000601	44/65	4.1	1.2	1.35	6.7	N/A
MT22R2-24	263	+30			0.000601		4.1	1.2	1.35	5.2	
MT30E4-52	206	+47	+47	+47	0.0011		5.1	1.1	1.4	2.3	2.0
MT30E4-32	206	+47	+47	+47	0.0011	44/65	5.1	1.1	1.4	3.8	2.0
MT30E4-25	206	+47	+47	+47	0.0011		5.1	1.1	1.4	5.0	2.0
MT30E4-20	206	+47	+47	+47	0.0011		5.1	1.1	1.4	6.5	2.0
MT30F4-52	218	+47	+47	+47	0.0012		5.4	1.5	1.8	3.2	3.0
MT30F4-45	218	+47	+47	+47	0.0012	44/65	5.4	1.5	1.8	3.7	3.0
MT30F4-39	218	+47	+47	+47	0.0012		5.4	1.5	1.8	4.2	3.0
MT30F4-25	218	+47	+47	+47	0.0012		5.4	1.5	1.8	6.5	3.0
MT30H4-65	231	+47	+47	+47	0.0014		6.5	2.1	2.3	3.4	4.0
MT30H4-44	231	+47	+47	+47	0.0014	44/65	6.5	2.1	2.3	4.9	4.0
MT30H4-33	231	+47	+47	+47	0.0014		6.5	2.1	2.3	6.8	4.0
MT30H4-22	231	+47	+47	+47	0.0014		6.5	2.1	2.3	10.5	4.0
MT30M4-59	257	+47	+47	+47	0.0017		7.3	3.0	3.3	5.6	5.5
MT30M4-48	257	+47	+47	+47	0.0017	44/65	7.3	3.0	3.3	6.8	5.5
MT30M4-38	257	+47	+47	+47	0.0017		7.3	3.0	3.3	8.6	5.5
MT30M4-24	257	+47	+47	+47	0.0017		7.3	3.0	3.3	13.6	5.5
MT30R4-58	281	+47	+47	+47	0.0020		8.3	3.5	4.0	6.1	6.0
MT30R4-46	281	+47	+47	+47	0.0020	44/65	8.3	3.5	4.0	7.6	6.0
MT30R4-37	281	+47	+47	+47	0.0020		8.3	3.5	3.6	9.5	6.0
MT30R4-25	281	+47	+47	+47	0.0020		8.3	3.2	3.3	14.6	6.0
MT30U4-57	301	+47	+47	+47	0.0023		9.3	4.5	4.9	8.3	8.0
MT30U4-48	301	+47	+47	+47	0.0023	44/65	9.3	4.5	4.9	10.2	8.0
MT30U4-36	301	+47	+47	+47	0.0023		9.3	4.5	4.6	13.2	8.0
MT30U4-26	301	+47	+47	+47	0.0023		9.3	4.0	4.3	16.7	7.0
MT30Z4-85	336	+47	+47	+47	0.0030		11.3	5.5	6.0	6.8	10.0
MT30Z4-61	336	+47	+47	+47	0.0030	44/65	11.3	5.0	5.2	8.6	9.0
MT30Z4-37	336	+47	+47	+47	0.0030		11.3	4.4	4.6	12.6	8.0
MT40P4-76	348	+45	0	+45	0.0077		17.5	6.0	6.8	8.7	12.0
MT40P4-61	348	+45	0	+45	0.0077	44/65	17.5	6.0	6.8	10.9	12.0
MT40P4-38	348	+45	0	+45	0.0077		17.5	6.0	6.8	17.7	12.0
MT40W4-90	393	+45	0	+45	0.0106		21.5	8.5	10.0	10.4	16.0
MT40W4-68	393	+45	0	+45	0.0106	44/65	21.5	8.5	10.0	14.0	16.0
MT40W4-45	393	+45	0	+45	0.0106		21.5	8.5	10.0	20.7	16.0
MT40ZD4-90	438	+45	0	+45	0.0140		26.0	11.0	12.0	13.4	21.0
MT40ZD4-60	438	+45	0	+45	0.0140	44/65	26.0	11.0	12.0	20.0	21.0
MT40ZD4-45	438	+45	0	+45	0.0140		26.0	11.0	12.0	26.8	21.0
MT52K8-87	278	+72	0	+72	0.0130		23.0	8.0		9.4	16.0
MT52K8-62	278	+72	0	+72	0.0130	44/65	23.0	8.0	N/A	13.6	16.0
MT52K8-50	278	+72	0	+72	0.0130		23.0	8.0		17.0	16.0
MT52K8-37	278	+72	0	+72	0.0130		23.0	8.0		22.9	16.0
MT52V8-87	350	+72	0	+72	0.0260		31.0	15.0		18.3	30.0
MT52V8-69	350	+72	0	+72	0.0260		31.0	15.0		23.8	30.0
MT52V8-50	350	+72	0	+72	0.0260	44/65	31.0	15.0	N/A	33.3	30.0
MT52V8-37	350	+72	0	+72	0.0260		31.0	15.0		44.1	30.0
MT52ZF8-86	422	+72	0	+72	0.0340		39.0	22.0		26.2	45.0
MT52ZF8-67	422	+72	0	+72	0.0340	44/65	39.0	22.0	N/A	33.9	45.0
MT52ZF8-48	422	+72	0	+72	0.0340		39.0	18.0		39.1	35.0
MT52ZF8-38	422	+72	0	+72	0.0340		39.0	16.0		43.2	30.0
DBMT52ZF8-86	449	+72	0	+72	0.0380		41.0	27.5		32.7	45.0
DBMT52ZF8-67	449	+72	0	+72	0.0380	44/65	41.0	27.5	N/A	42.3	45.0
DBMT52ZF8-48	449	+72	0	+72	0.0380		41.0	27.5		60.0	45.0
DBMT52ZF8-38	449	+72	0	+72	0.0380		41.0	27.5		74.3	45.0
MT52ZR8-92	494	+57	0	+57	0.0430		48.0	30.0		35.3	55.0
MT52ZR8-66	494	+57	0	+57	0.0430	44/65	48.0	24.0	N/A	39.3	45.0
MT52ZR8-53	494	+57	0	+57	0.0430		48.0	21.0		43.8	40.0
MT52ZR8-39	494	+57	0	+57	0.0430		48.0	16.0		43.2	30.0
DBMT52ZR8-92	521	+57	0	+57	0.0460		50.0	37.0		43.5	55.0
DBMT52ZR8-66	521	+57	0	+57	0.0460	44/65	50.0	37.0	N/A	60.7	55.0
DBMT52ZR8-53	521	+57	0	+57	0.0460		50.0	34.0		70.8	55.0
DBMT52ZR8-39	521	+57	0	+57	0.0460		50.0	28.0		75.7	55.0

Tacho

Torque constant	Peak stall torque	Peak current	Motor voltage gradient	Maximum armature voltage	Maximum speed	Tacho voltage gradient
● Nm/A	Nm	A	● V/1000 RPM	V	RPM	● V/1000 RPM
0.05	2	43	5	25	5000	9.5
0.10	2	21	10	50	5000	9.5
0.18	2	11	19	96	5000	9.5
0.05	4	84	5	25	5000	9.5
0.10	4	42	10	50	5000	9.5
0.18	4	22	19	96	5000	9.5
0.10	8	84	10	50	5000	9.5
0.11	8	70	12	60	5000	9.5
0.18	8	44	19	96	5000	9.5
0.23	8	35	24	120	5000	9.5
0.48	6	13	52	140	2700	9.5
0.29	6	22	32	130	4000	9.5
0.22	6	29	25	100	4000	9.5
0.17	6	37	20	80	4000	9.5
0.47	7.5	18	52	140	2700	9.5
0.41	7.5	21	45	140	3100	9.5
0.36	7.5	24	39	140	3600	9.5
0.23	7.5	34	25	100	4000	9.5
0.61	10	18	65	140	2100	9.5
0.43	10	26	44	140	3100	9.5
0.31	10	37	33	130	4000	9.5
0.20	10	57	22	90	4000	9.5
0.54	14	30	59	140	2400	9.5
0.44	14	37	48	140	3000	9.5
0.35	14	47	38	140	3700	9.5
0.22	14	75	24	100	4000	9.5
0.57	18	37	58	140	2500	9.5
0.46	18	47	46	140	3000	9.5
0.37	18	57	37	140	3800	9.5
0.24	18	86	25	100	4000	9.5
0.54	22	47	57	140	2500	9.5
0.44	22	57	48	140	3000	9.5
0.34	22	75	36	140	4000	9.5
0.24	22	100	26	100	4000	9.5
0.81	26	37	85	140	1600	9.5
0.58	26	50	61	140	2300	9.5
0.35	26	86	37	140	3750	9.5
0.69	34	50	76	180	2400	9.5
0.55	34	63	61	180	3000	9.5
0.34	34	100	38	150	4000	9.5
0.82	50	65	90	180	2000	9.5
0.61	50	86	68	180	2600	9.5
0.41	50	130	45	180	4000	9.5
0.82	66	85	90	180	2000	9.5
0.55	66	125	60	180	3000	9.5
0.41	66	170	45	180	4000	9.5
0.85	59	71	87	130	1500	9.5
0.59	59	100	62	130	2100	9.5
0.47	59	125	50	130	2600	9.5
0.35	59	166	37	130	3500	9.5
0.82	113	140	87	130	1500	9.5
0.63	113	180	69	130	1900	9.5
0.45	113	250	50	130	2600	9.5
0.34	113	330	37	130	3500	9.5
0.84	184	220	86	130	1500	9.5
0.65	184	285	67	130	2000	9.5
0.46	184	400	48	130	2700	9.5
0.37	184	500	38	130	3500	9.5
0.84	184	220	86	130	1500	9.5
0.65	184	285	67	130	2000	9.5
0.46	184	400	48	130	2700	9.5
0.37	184	500	38	130	3500	9.5
0.85	240	285	92	130	1400	9.5
0.61	240	400	66	130	2000	9.5
0.48	240	500	53	130	2500	9.5
0.37	240	650	39	130	3300	9.5
0.85	240	285	92	130	1400	9.5
0.61	240	400	66	130	2000	9.5
0.48	240	500	53	130	2500	9.5
0.37	240	650	39	130	3300	9.5

EXPLANATORY NOTES

Dimensions are in mm.

- Data marked by: '●' subject to a tolerance of $\pm 10\%$.
- All quoted torques are based on a form factor of 1. Motors must be derated appropriate for use with SCR (Thyristor) type amplifiers.
- Heatsink torque ratings are correct for motors fitted with the following heatsink sizes:
MT22 & MT30 300 x 300 x 12mm.
MT40 450 x 450 x 20mm.
- The motor type number is defined for a MT30F4-39 as an example:
MT = Motor tacho
30 = Frame size
F = Core length
4 = No. of poles
39 = 39V/1000 RPM
- Voltage gradient is the voltage to run the motor at 1000 RPM on no load at 25°C (it is not the KV, the voltage constant which is the generated E.M.F. at 1000 RPM).
- T.E.N.V. (IC400) is an abbreviation for totally enclosed non-ventilated.
- Enclosure protection shown as:
IP44/65 – Shaft and face sealed to IP44, motor body sealed to IP65. When shaft seal is fitted and motor face fixing holes are sealed, the level of protection increases to IP64/65.
- Full dimensions of blower attachments are available on request.
- Performance curves showing continuous/intermittent duties available on request.
- Tacho Ripple 1% (Peak to Average).
- Wide range of options available. (Details overleaf).
- In accordance with our policy of continual product improvement, SEM reserve the right to amend the specification of these products without prior notification.

STANDARD FEATURES

- Ferrite Permanent Magnets
- Skewed motor armature ensures exceptionally smooth running at all speeds.
- Integral tachogenerator fitted as standard.
- Thermal cutouts fitted as standard except in the case of the MT22 range.
- Shaft keyway.
- Standard mounting arrangements illustrated opposite.
- Encoder interfacing facility.
- Matt black paint finish.

Options



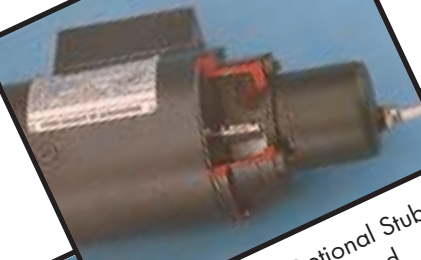
MT30 With Optional Integral Encoder and MS Connector



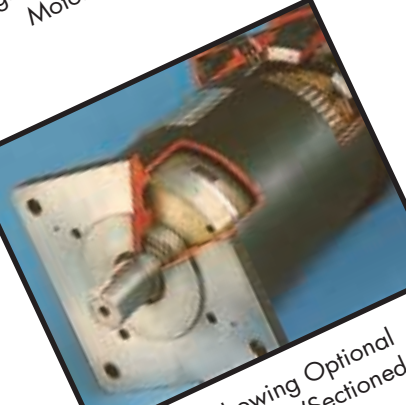
MT52 Showing Standard Integral Tacho (Sectioned Motor shown)



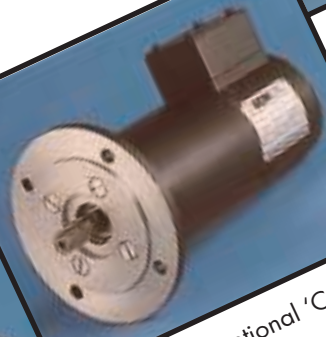
MT52 With Standard 'CD' Flange



MT30 With Optional Stub Shaft Encoder and Mounting Kit



MT52 Showing Optional Integral Brake (Sectioned Motor shown)



MT30 With Optional 'C' Flange



MT22 With Optional Flexible Mounted Encoder (Hollow Shaft)



MT22 With Standard 'C' Face



MT40 With Optional Blower Attached



Two Types of Optional Encoder/Resolver Enclosures With Stub Shaft Adaptors



MT30 With Standard 'C' Face



MT40 With Standard 'CD' Flange

STANDARD / OPTIONAL FEATURES					
DESCRIPTION	OPTIONS	SERVOMOTOR TYPE			
		MT22	MT30	MT40	MT52
FLANGE/FACE ARRANGEMENTS	'C' FACE	■	■	●	●
	'CD' FLANGE	○	○	■	■
	'C' FLANGE	○	●	○	○
DRIVE SHAFT	WITH KEYWAY	■	■	■	■
	WITHOUT KEYWAY	●	●	●	●
FAILSAFE HOLDING BRAKE	24V D.C. BRAKE	●	●	●	●
	90V D.C. BRAKE	○	●	●	●
	110V A.C. BRAKE	○	●	●	●
ENVIRONMENTAL PROTECTION	IP64/65	●	●	●	●
	IP44/65	■	■	■	■
	SHAFT OIL SEAL	■	●	●	●
	TROPICALISED	●	●	●	●
COOLING	TOTALLY ENCLOSED NON-VENTILATED-TENV (IC400)	■	■	■	■
	PREPARED FOR BLOWER (IC400)	○	●	●	●
	BLOWER COOLED (IC06)	○	●	●	●
ELECTRICAL CONNECTION	FLYING LEADS	■	●	●	●
	2 ENTRY TERMINAL BOX	○	■	■	■
	4 ENTRY TERMINAL BOX	○	●	●	●
	M.S. CONNECTOR	●	●	●	●
	P.G. TERMINAL BOX THREADS	○	●	●	●
ENCODER AND MOUNTING KIT OPTIONS	INTEGRAL ENCODER	●	●	●	○
	FLEXIBLE MOUNTED HOLLOW SHAFT ENCODER	●	●	●	●
	STUB SHAFT ENCODER MOUNTING KIT (TO SUIT CUSTOMER SPECIFIED ENCODER)	○	●	●	●
RESOLVER MOUNTING KIT	○	●	●	●	
TACHOGENERATORS	9.5V/1000RPM	■	■	■	■
	7V/1000RPM	●	●	●	●
	14V/1000 RPM	●	○	○	○
	19.5V/1000 RPM	○	●	●	●
	30V/1000 RPM	○	●	●	●

- STANDARD FEATURE
- OPTION
- OPTION NOT AVAILABLE



SEM Limited, Faraday Way,
Orpington, Kent BR5 3QT England
Telephone: +44 (0) 1689 884700
Fax: +44 (0) 1689 884884
E-mail: info@sem.co.uk
Internet: http://www.sem.co.uk

