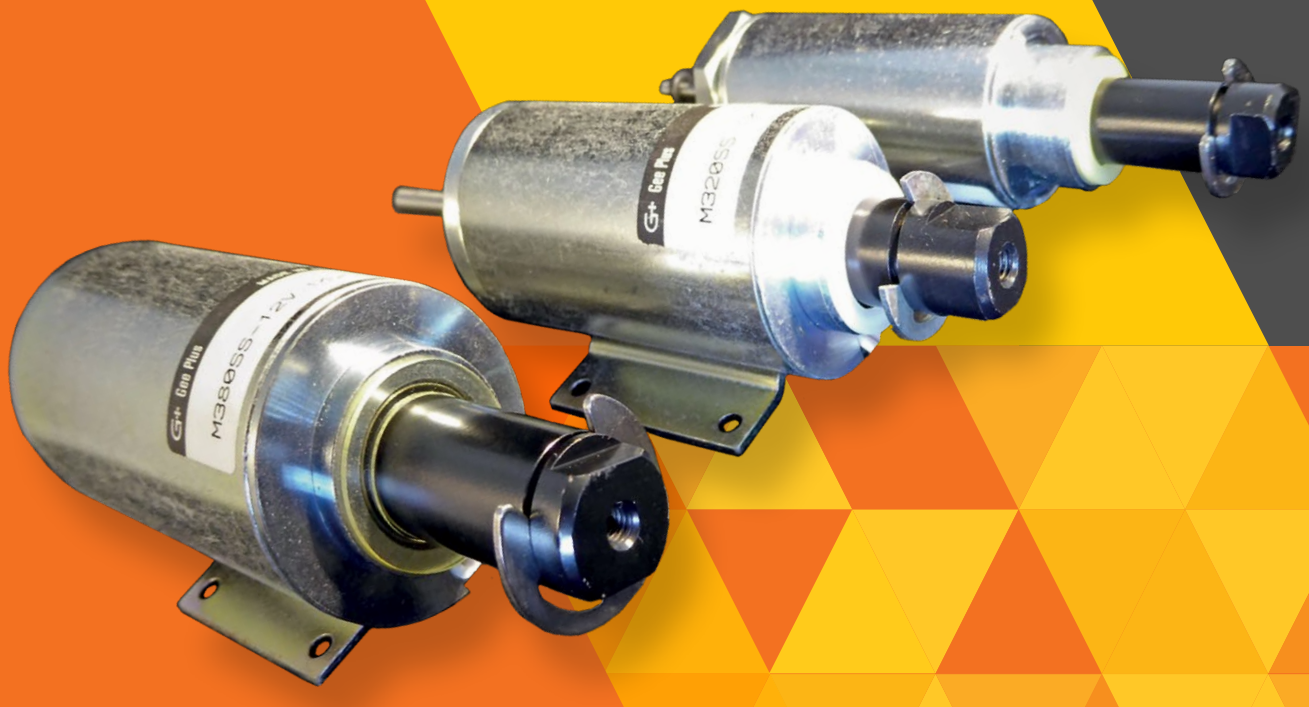
SUPER STROKE SOLENOIDS



Super Stroke Solenoid

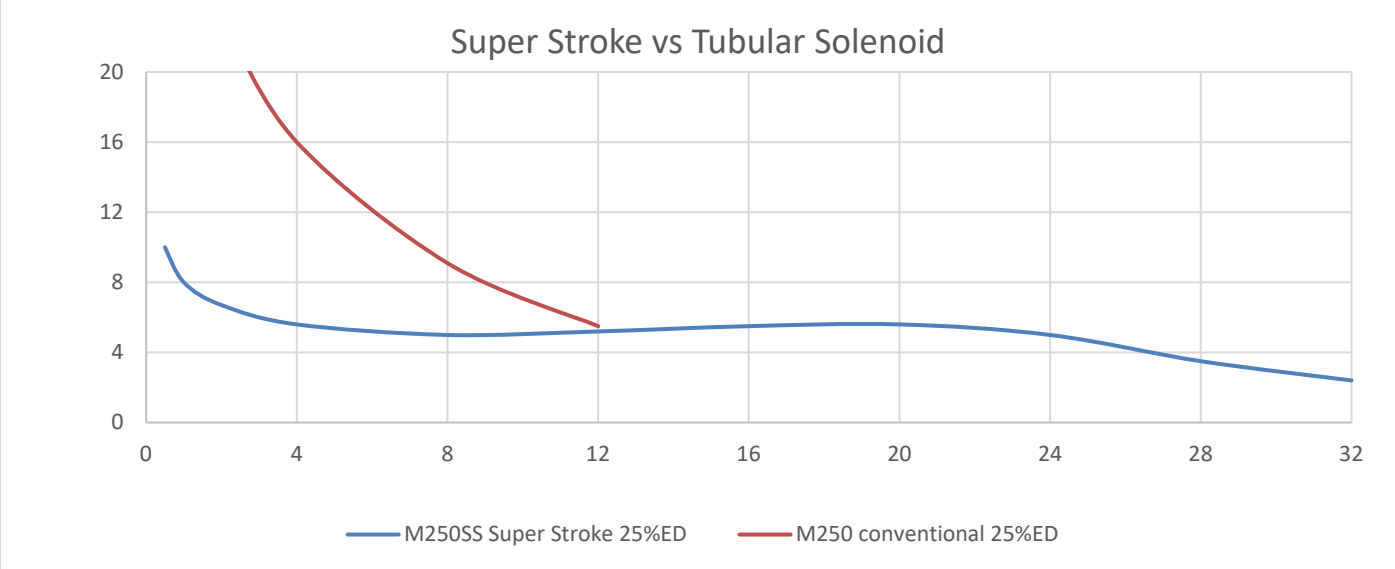
Description

The super stroke solenoid is a special implementation of the tubular solenoid design, modifications have been made to the geometry of the pole-piece and magnetic return path to produce a device which develops useful force over an exceptionally long stroke, with high efficiency, and with a flat force characteristic having many of the characteristics of a proportional solenoid allowing approximate position control over a large linear stroke.

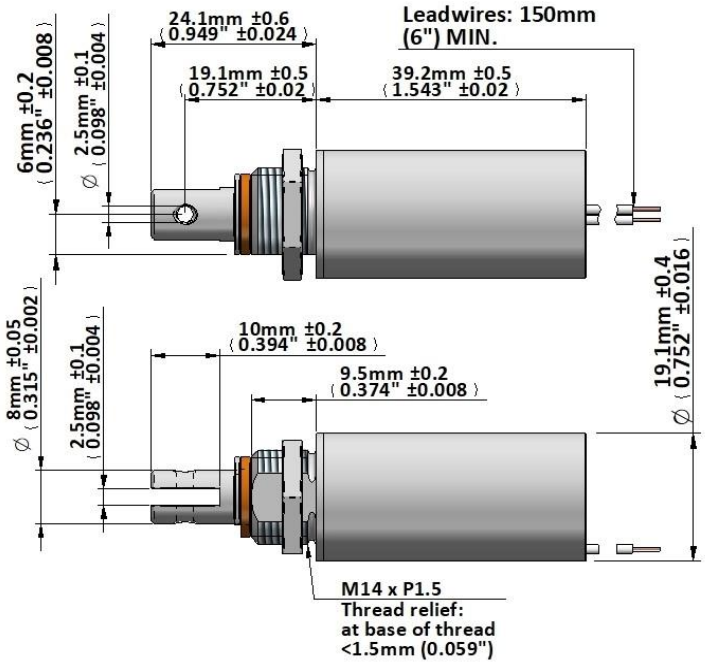
The use of many of the components of the tubular solenoid range makes the super stroke solenoid a cost-effective solution compared to other long-stroke actuators or proportional solenoid designs.

The long stroke with flat force characteristic makes the super stroke solenoid a good replacement for small air cylinders in applications where a few linear actuators are needed, but where air supply is otherwise not required, machinery can be made independent of air supply with elimination of compressors, airline, and air preparation equipment and associated maintenance.

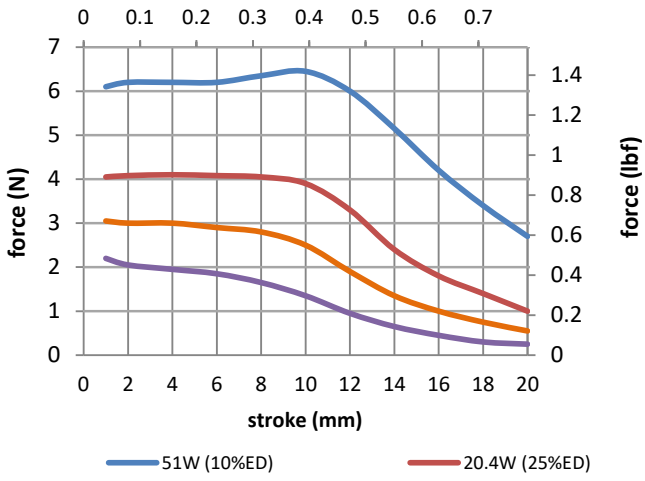
The super stroke solenoid allows approximate proportional control over a long linear stroke, the force is proportional to applied current, and is uniform over the operating stroke. This characteristic can be used to control tension of wire, fibres, or web material, or can be applied against a spring to realise an actuation system where position can be controlled proportional to the applied current.



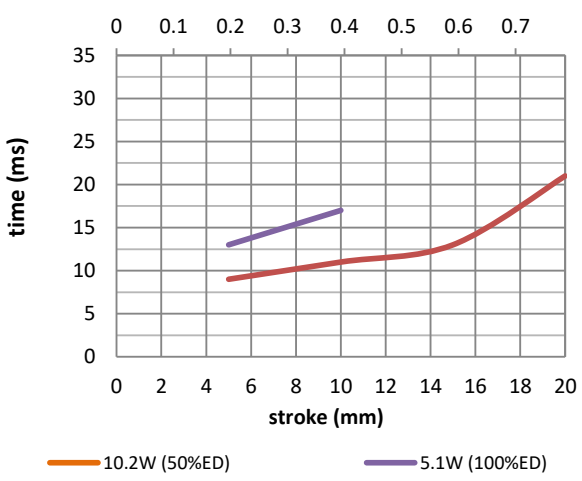
Device drawn in energised condition
Life Expectancy >2M cycles
Leadwires UL1430, 22AWG
Plunger Mass 20 grammes
Mass 81 grammes



force / stroke M190SS



response time



51W (10%ED) 20.4W (25%ED) 10.2W (50%ED) 5.1W (100%ED)

Data at 20°C , device performance measured without heat sink

duty cycle = "on" time / ("on" time + "off" time) x 100%	100% cont.	50% or less	25% or less	10% or less
Max. "on" time in seconds	∞	180	20	5
watts at 20°C	5.1	10.2	20.4	51
ampere-turns at 20°	646	914	1292	2043

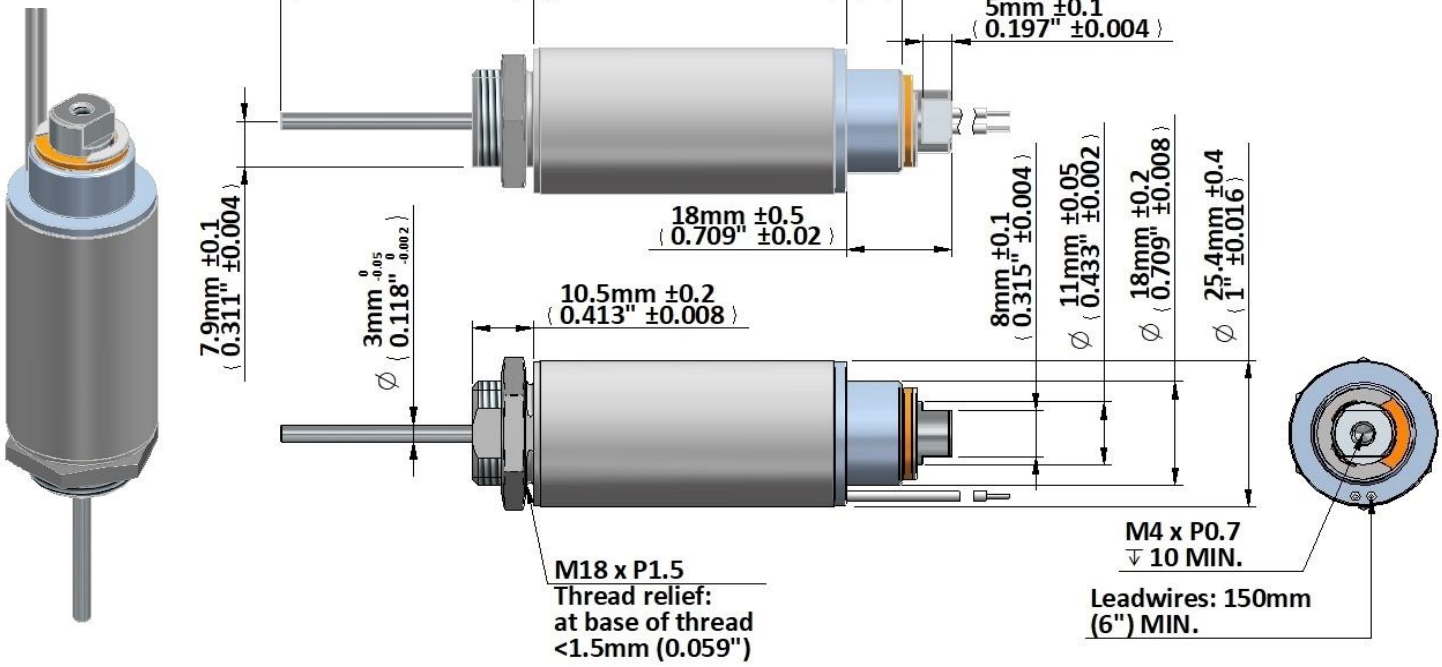
AWG no.	resistance Ω±10% (at 20°C)	number of turns	volts DC			
M190SS-12v	30.9	1722	12.0	17.0	24.0	38.0
M190SS-24v	110	3060	24.0	34.0	48.0	76.0
M190SS-48v	435	6214	48.0	68.0	96.0	152.0
M190SS-96v	1815	12210	96.0	136.0	192	304

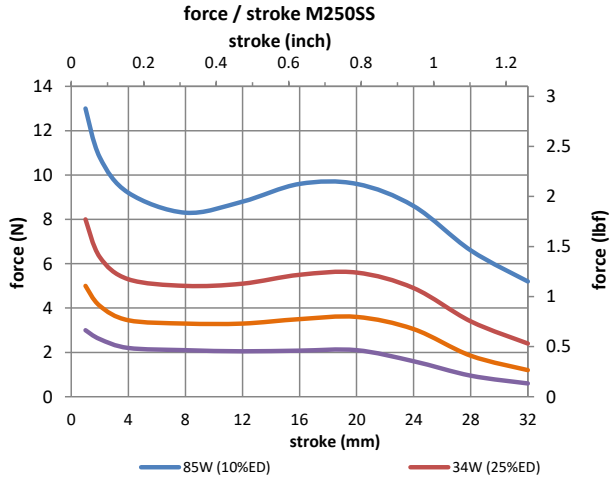
Insulation Resistance >100MΩ, 500VDC Megger

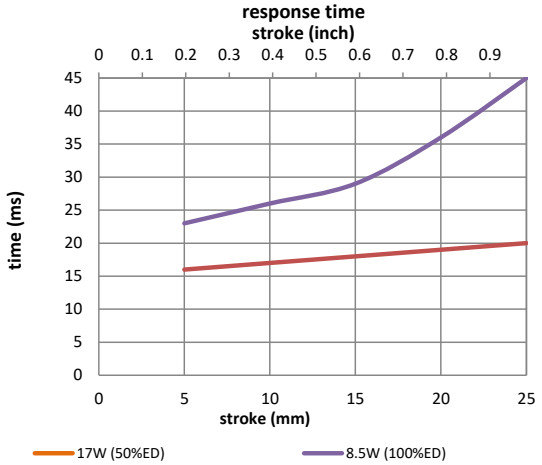
Dielectric Strength 1000VAC, 50/60Hz, 1 minute

Class E (120°C) insulation class

Device drawn in energised condition
Life Expectancy >2M cycles
Leadwires UL1430, 22AWG
Plunger Mass 46 grammes
Mass 200 grammes







Data at 20°C , device performance measured without heat sink

duty cycle = "on" time / ("on" time + "off" time) x 100%	100% cont.	50% or less	25% or less	10% or less
Max. "on" time in seconds	∞	290	26	6
watts at 20°C	8.5	17	34	85
ampere-turns at 20°	983	1390	1966	3109

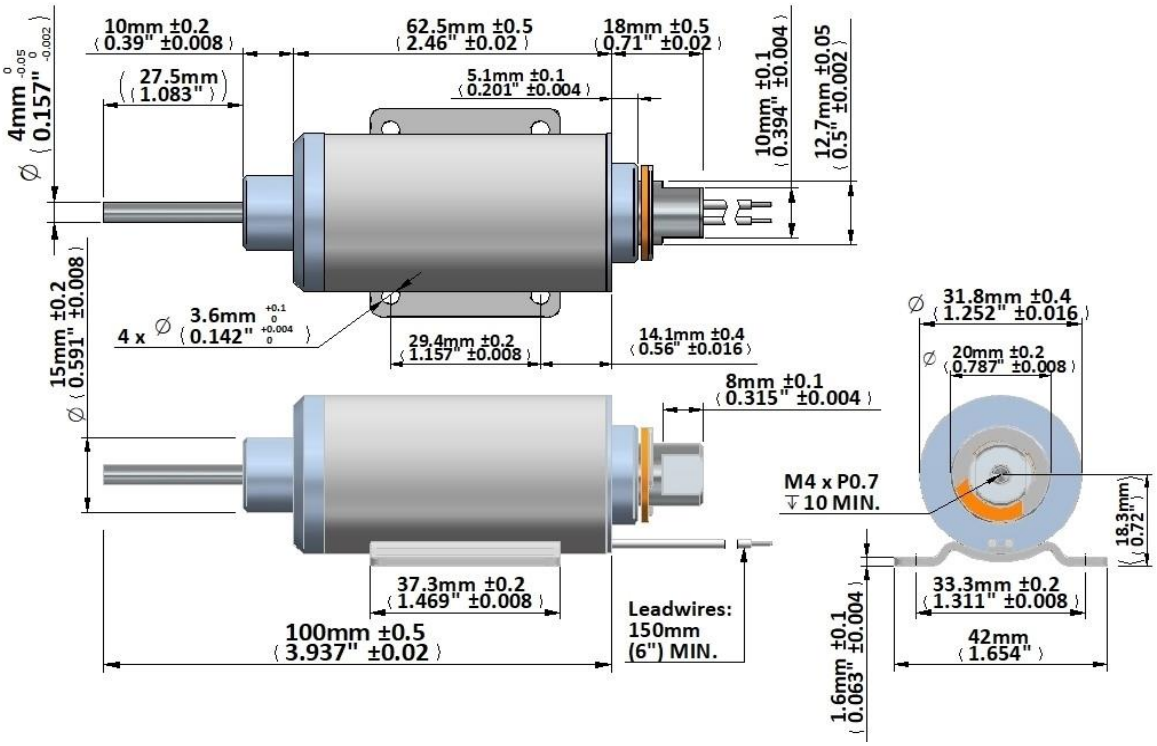
AWG no.	resistance Ω±10% (at 20°C)	number of turns	volts DC			
M250SS-12v	17	1392	12.0	17.0	24.0	38.0
M250SS-24v	66	2686	24.0	34.0	48.0	76.0
M250SS-48v	260	5380	48.0	68.0	96.0	152.0
M250SS-96v	1170	11400	96.0	136.0	192	304

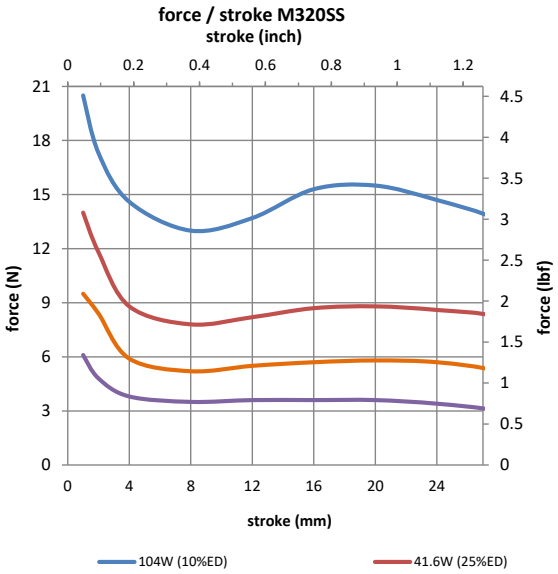
Insulation Resistance >100MΩ, 500VDC Megger

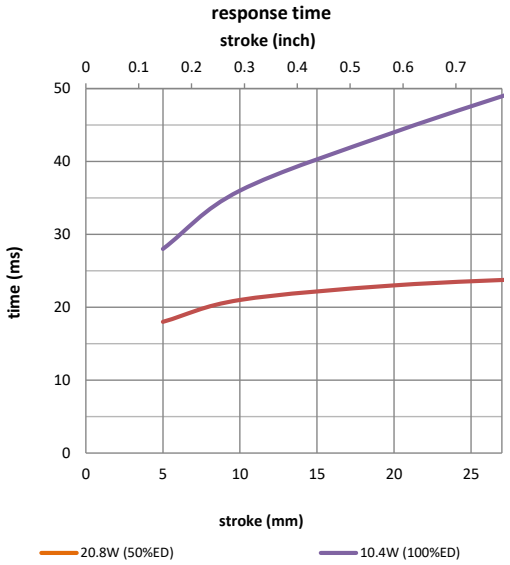
Dielectric Strength 1000VAC, 50/60Hz, 1 minute

Class E (120°C) insulation class

Device drawn in energised condition
Life Expectancy >2M cycles
Leadwires UL1430, 22AWG
Plunger Mass 69 grammes
Mass 355 grammes







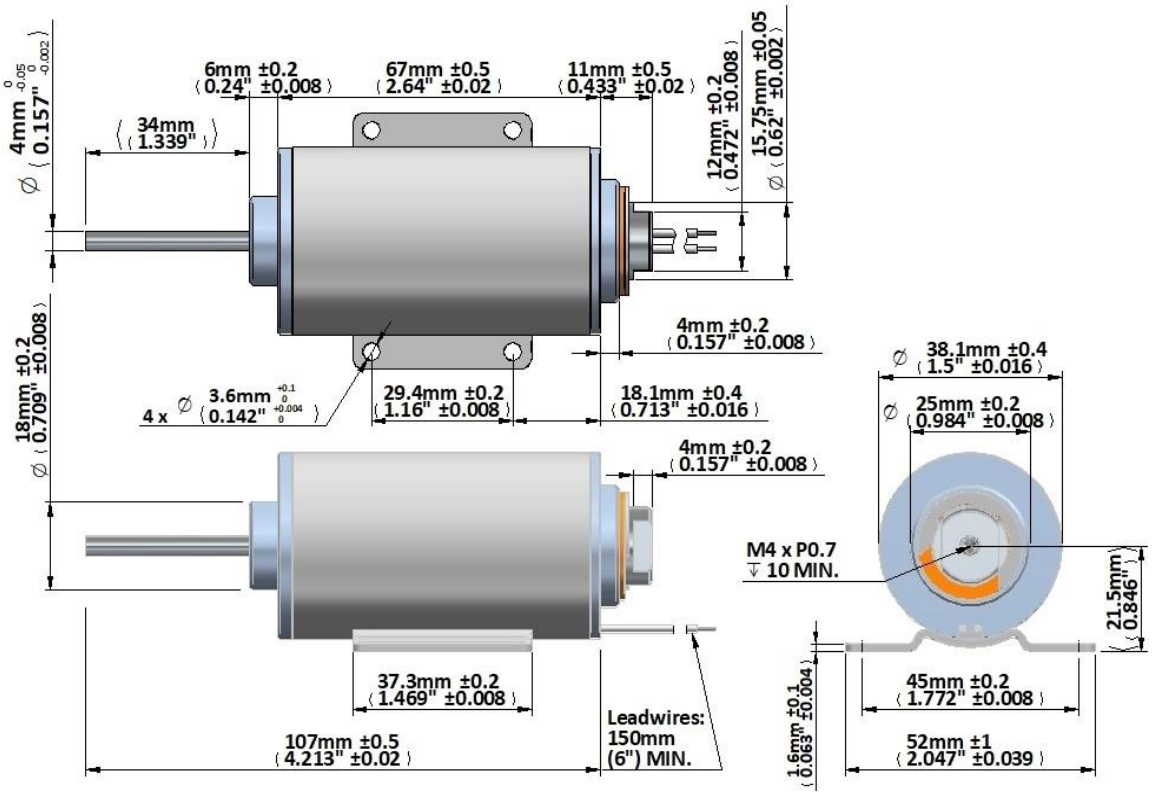
Data at 20°C , device performance measured without heat sink

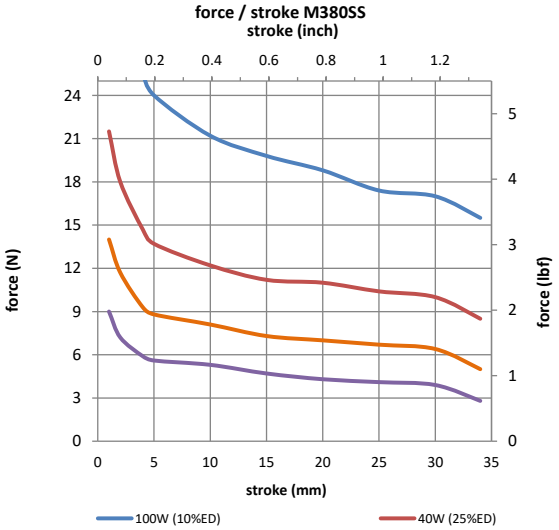
duty cycle = "on" time / ("on" time + "off" time) x 100%	100% cont.	50% or less	25% or less	10% or less
Max. "on" time in seconds	∞	310	48	14
watts at 20°C	10.4	20.8	41.6	104
ampere-turns at 20°	1335	1888	2670	4222

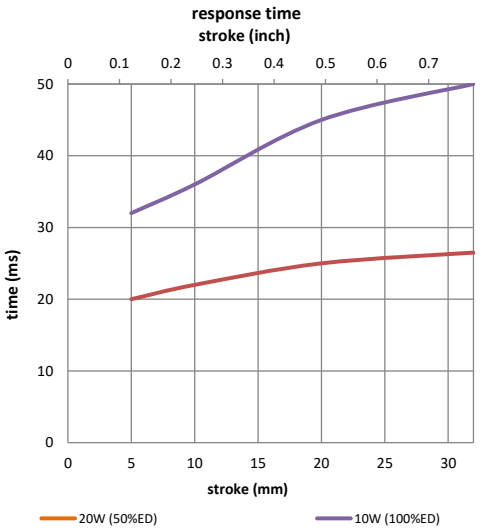
AWG no.	resistance Ω±10% (at 20°C)	number of turns	volts DC			
M320SS-12v	14	1541	12.0	17.0	24.0	38.0
M320SS-24v	55	3060	24.0	34.0	48.0	76.0
M320SS-48v	214	5992	48.0	68.0	96.0	152.0
M320SS-96v	900	12200	96.0	136.0	192	304

Insulation Resistance >100MΩ, 500VDC Megger
Dielectric Strength 1000VAC, 50/60Hz, 1 minute
Class E (120°C) insulation class

Device drawn in energised condition
Life Expectancy >2M cycles
Leadwires UL1430, 22AWG
Plunger Mass 91 grammes
Mass 535 grammes







Data at 20°C , device performance measured without heat sink

duty cycle = "on" time / ("on" time + "off" time) x 100%	100% cont.	50% or less	25% or less	10% or less
Max. "on" time in seconds	∞	330	80	20
watts at 20°C	10	20	40	100
ampere-turns at 20°	1360	1923	2720	4300

AWG no.	resistance Ω±10% (at 20°C)	number of turns	volts DC			
M380SS-12v	15	1712	12.0	17.0	24.0	38.0
M380SS-24v	58	3322	24.0	34.0	48.0	76.0
M380SS-48v	224	6360	48.0	68.0	96.0	152.0
M380SS-96v	871	12400	96.0	136.0	192	304

Insulation Resistance >100MΩ, 500VDC Megger
Dielectric Strength 1000VAC, 50/60Hz, 1 minute
Class E (120°C) insulation class