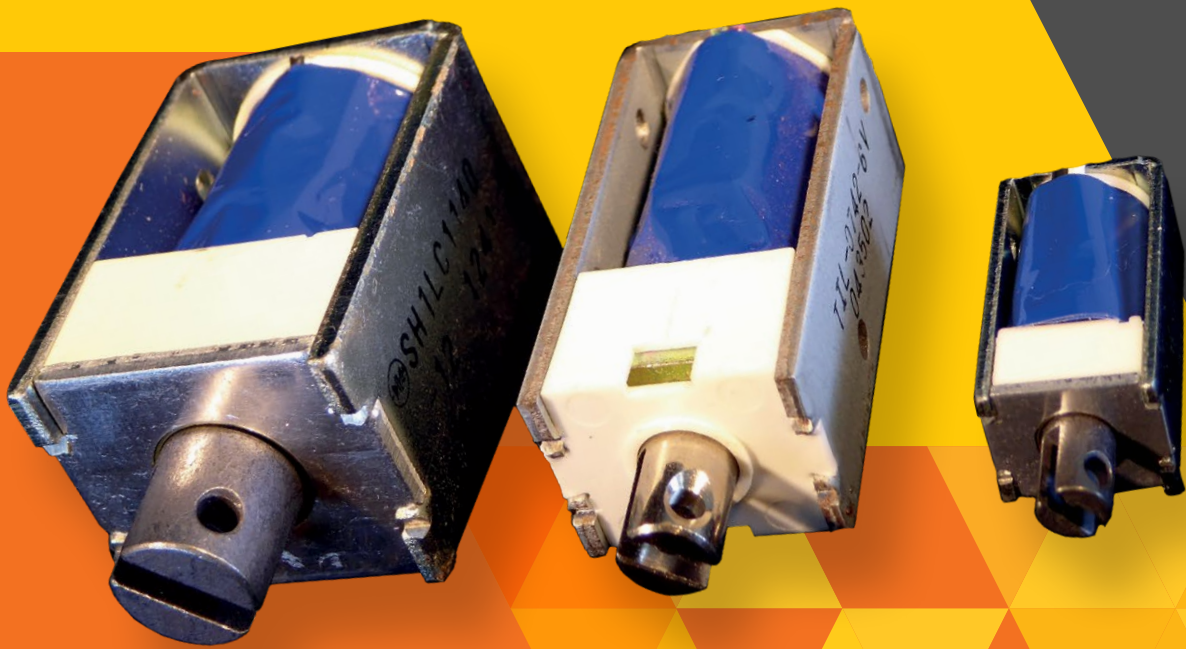


LATCHING SOLENOIDS





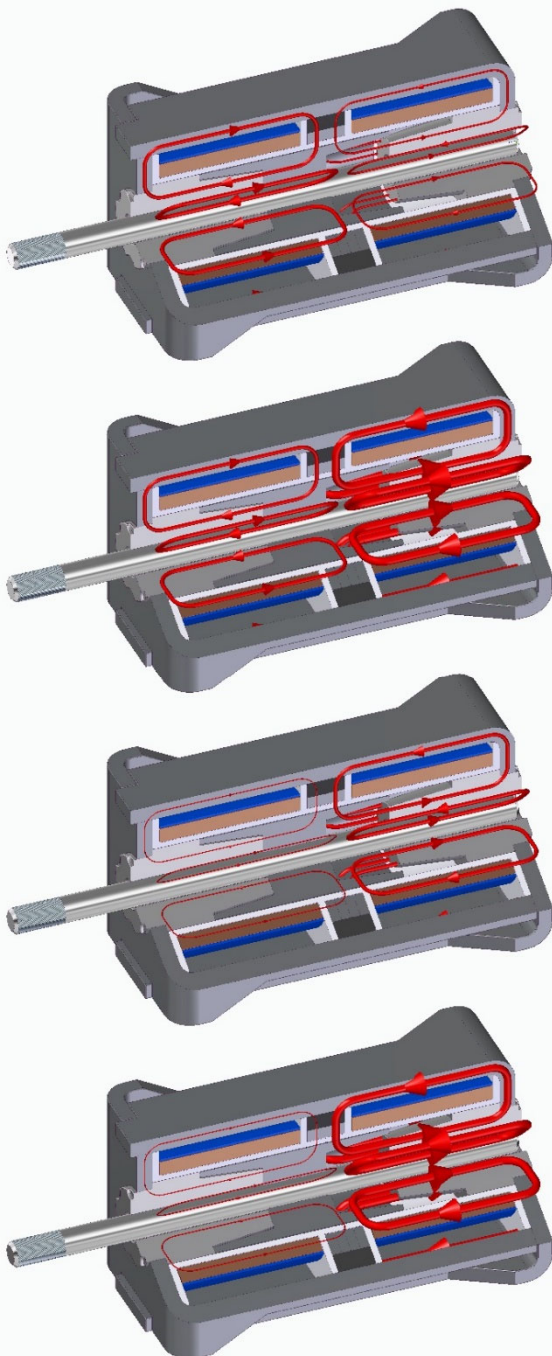
2-COIL LATCHING SOLENOID

The 2-coil latching solenoid is constructed and should be driven as described below.

The top view shows the solenoid in the de-energised condition (with no power applied). As drawn the plunger is in the left-most position. Permanent magnets in the centre of the solenoid drive magnetic flux into the plunger, the flux flows through the plunger into the polepiece at either end or returns through the

steel frame around the solenoid. The gap between the plunger and polepiece is shorter at the left-most side, this results in smaller magnetic reluctance. More flux flows on this side and the solenoid holds this position without power. The solenoid can be driven to the right in one of the following three ways:

1. If the right-most coil is energised with forward polarity, the excitation will increase the flux flowing around this end of the solenoid, when this becomes larger than the flux flowing around the left end, then more force will be developed, and the plunger will be pulled across to the right end.
2. If the leftmost coil is energised with reverse polarity, the excitation will oppose the field due to the magnets and reduce the magnetic flux flowing in this end. As the current increases this will reduce further, when the flux is smaller than that flowing in the right end the plunger will be drawn to the right end.
3. If the right coil is energised with the current of forward polarity, and the left coil with the current of reverse polarity, then the magnetic flux in the left end will reduce, and flux in the right end will increase. The maximum force is developed when flux in the left end reduces to zero, and high flux is induced with forward current in the right coil.



**GEEPLUS****RD2L-0932-24v**

Coil Data

5% ED

P/N

Maximum "on" time in seconds

70ms

Watts at 20°C

72

Ampere-Turns at 20°C

-

RD2L-0932-24v

Resistance
±10% @ 20°CAmp-
turns

Volts DC

Wire Colour

Coil 1

8 Ω

TBA

24

Red-Blue

Coil 2

8 Ω

TBA

24

Red-Black

General Parameters

Life Expectancy (Cycles)

500,000

Mass

86g

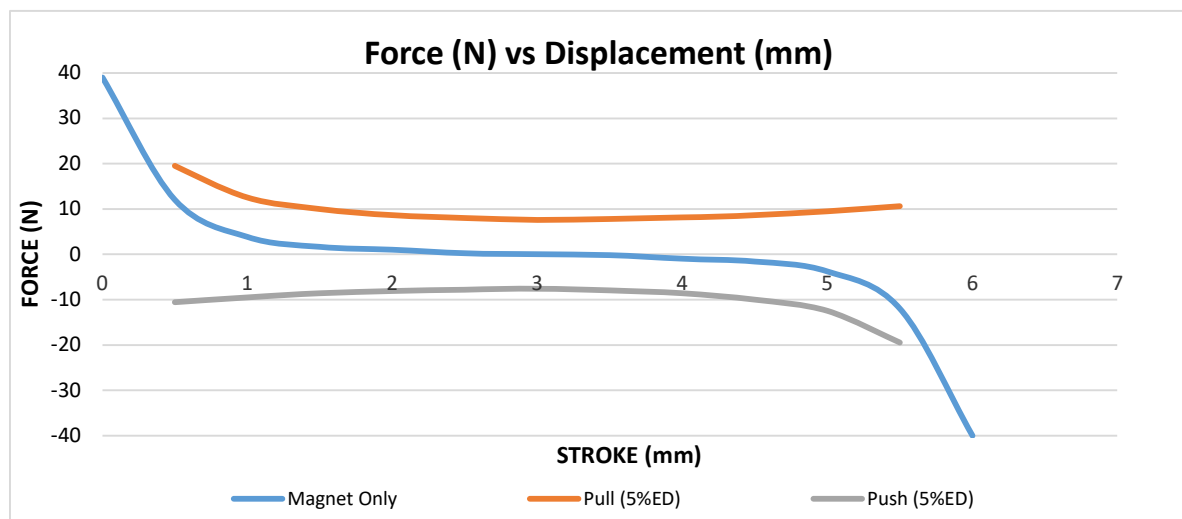
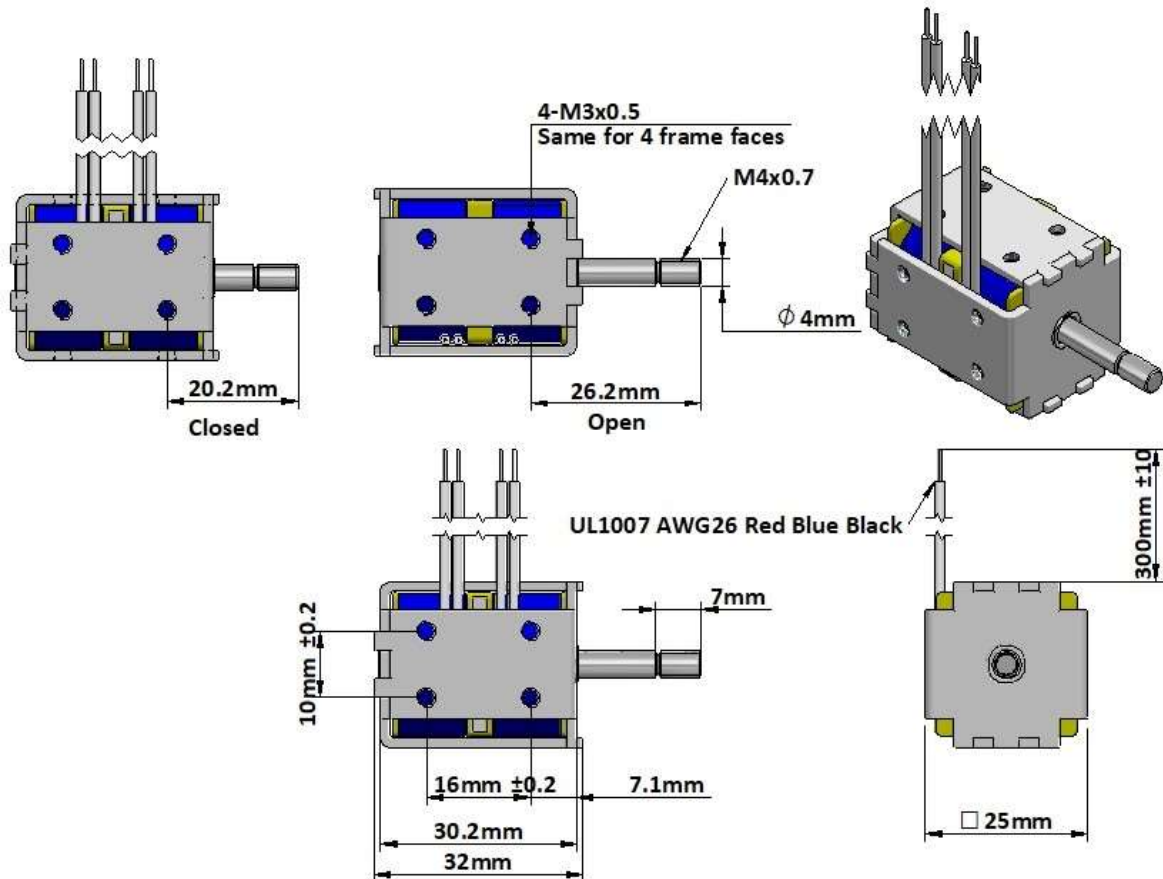
Leadwires 300mm (12")min, UL1007, AWG28

Insulation Class

E (120°C)

Dielectric Strength 1000V AC, 50/60Hz, 1min

Insulation Res >100MΩ, 500V DC Megger



**Coil Data**

$$\text{Duty Cycle} = \frac{\text{"on" time}}{\text{"on" time} + \text{"off" time}} \times 100\% \quad 10\% \text{ ED}$$

Maximum "on" time in seconds **1**

Watts at 20°C **13**

Ampere-Turns at 20°C **364**

P/N

SH2LC-0524-

Resistance

Amp-

Volts DC

XXv

±10% @ 20°C

turns

SH2LC-0524-06v

2.8Ω

166

6

SH2LC-0524-12v

11.1Ω

345

12

SH2LC-0524-24v

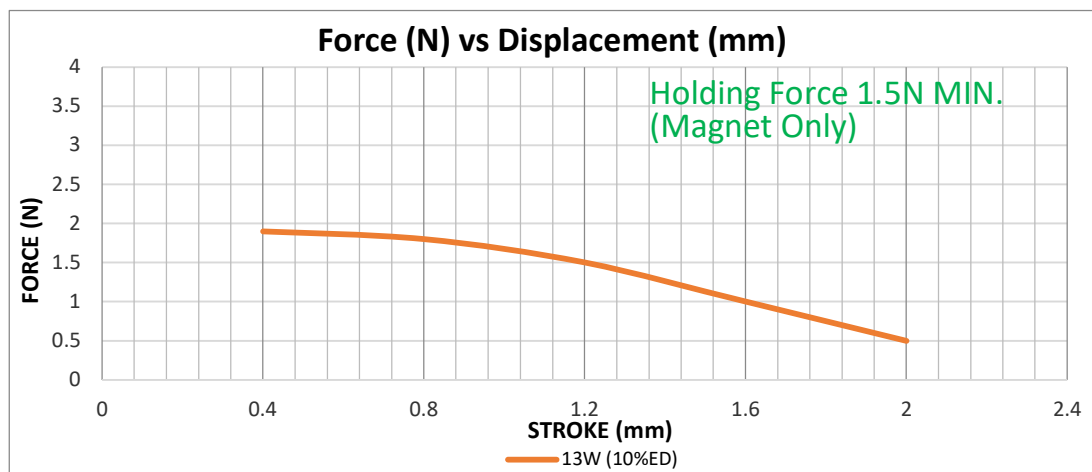
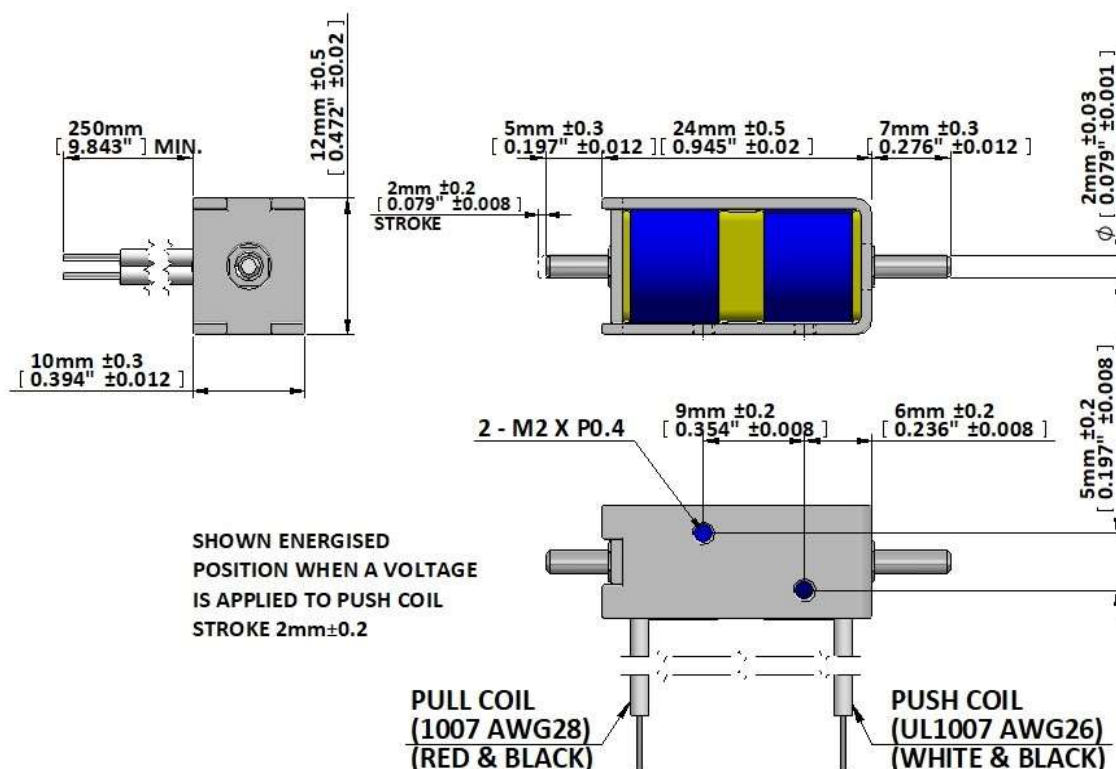
44.3Ω

670

24

General Parameters

Life Expectancy (Cycles)	200,000
Mass	15g
Plunger Mass	3g
Leadwires 250mm (9.84")min, UL1007, AWG28	
Insulation Class	A (105°C)
Dielectric Strength 1000V AC, 50/60Hz, 1min	
Insulation Res >100MΩ, 500V DC Megger	



**Coil Data**

$$\text{Duty Cycle} = \frac{\text{"on" time}}{\text{"on" time} + \text{"off" time}} \times 100\% \quad 10\% \text{ ED}$$

Maximum "on" time in seconds 2

Watts at 20°C 8

Ampere-Turns at 20°C 368

P/N

SH2LC-0730-

Resistance

Amp-

Volts DC

XXv

±10% @ 20°C

turns

SH2LC-0730-06v

4.5Ω

285

6

SH2LC-0730-12v

18Ω

540

12

SH2LC-0730-24v

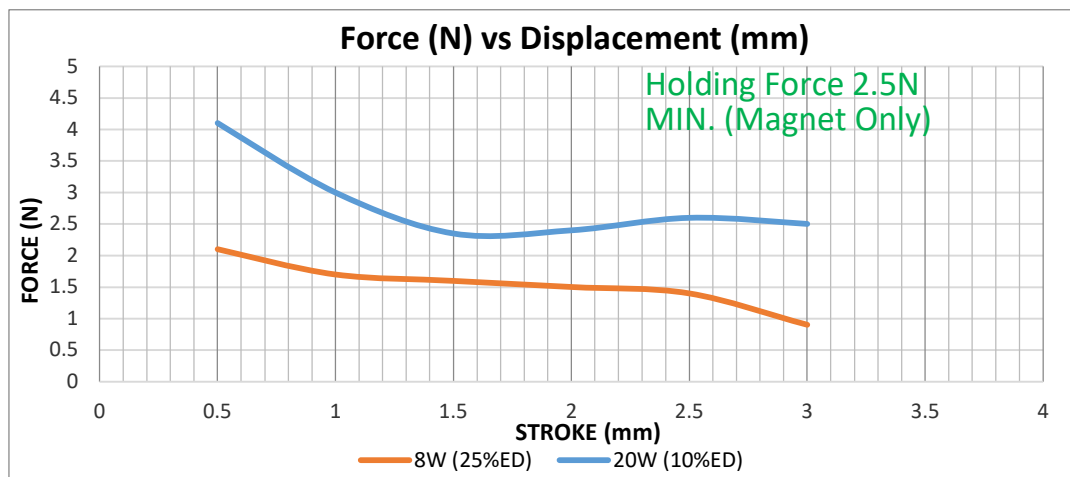
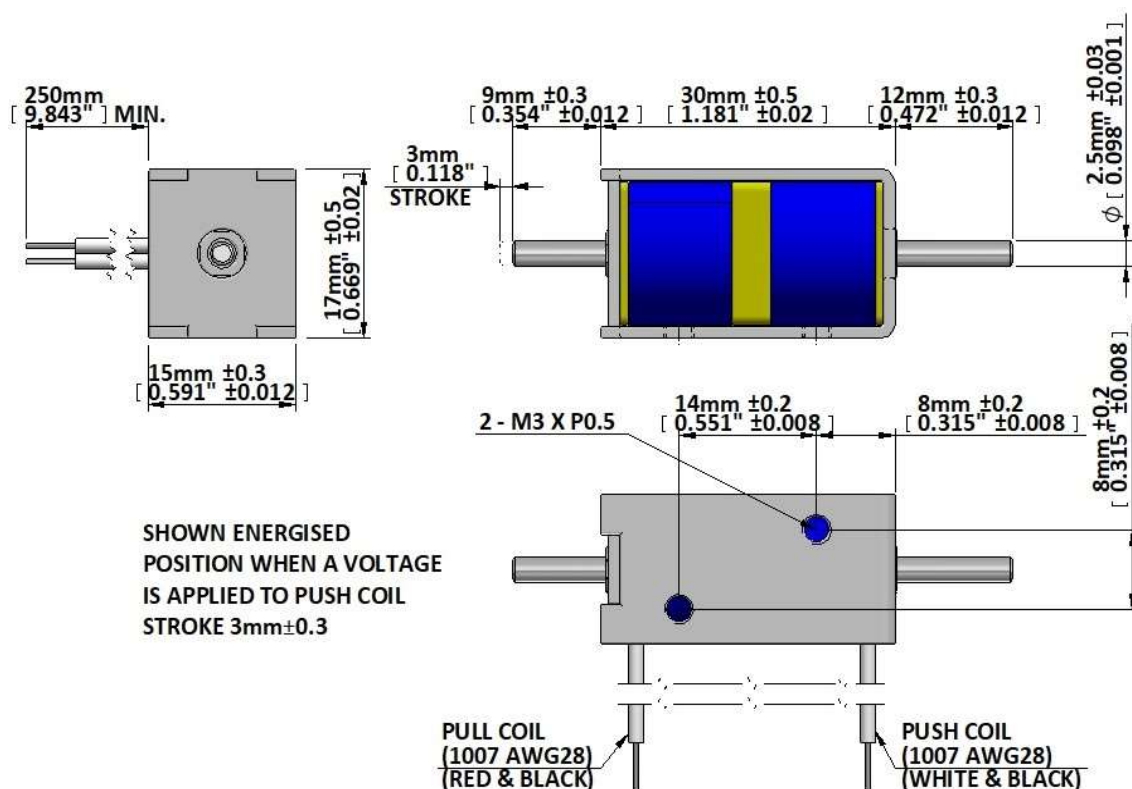
72Ω

1100

24

General Parameters

Life Expectancy (Cycles)	200,000
Mass	35g
Plunger Mass	3g
Leadwires 250mm (9.84")min, UL1007, AWG28	
Insulation Class	A (105°C)
Dielectric Strength 1000V AC, 50/60Hz, 1min	
Insulation Res >100MΩ, 500V DC Megger	





Coil Data

P/N

SH2LC-1140-XXv	Resistance ±10% @ 20°C	Amp- turns	Volts DC
SH2LC-1140-06v	2.3Ω	265	6
SH2LC-1140-12v	9Ω	525	12
SH2LC-1140-24v	36Ω	1025	24

$$\text{Duty Cycle} = \frac{\text{"on" time}}{\text{"on" time} + \text{"off" time}} \times 100\%$$

10% ED

Maximum "on" time in seconds	3
Watts at 20°C	16
Ampere-Turns at 20°C	691

General Parameters

Life Expectancy (Cycles)	200,000
Mass	115g
Plunger Mass	21g
Leadwires 250mm (9.84")min, UL1007, AWG28	
Insulation Class	A (105°C)
Dielectric Strength 1000V AC, 50/60Hz, 1min	
Insulation Res >100MΩ, 500V DC Megger	

