

**emessem**  
**SOLENOID COMPANY LTD**  
 ELECTROMAGNETIC EQUIPMENT

710-8084



## D.C. Cylindrical Solenoid

Robust enclosed coil design with nose mounting

Rectifier for A.C. supply  
 Stroke up to 25mm  
 Pushing version available (RP)

# 10

Product group

Type **R16 x 16**  
 (RP16 x 16)

- Long stroke design with integral clevis end (fig. 1)
- Pull operation (version with threaded pushrod available)
- Increasing force characteristic (fig. 2)
- Threaded mounting nose with anti-rotation feature, locknut and shakeproof washer
- Coil with insulation to class B, for voltages up to 250 volts
- Protection classification - DIN VDE0470 / EN60529  
 Flying leads - IP00
- UL rated materials of construction
- Zinc / nickel plated iron parts
- Suitable for operation in any attitude
- Modifications and special designs on request
- Increased protection solenoid for arduous service on:
 

Machine tools	Office machines
Motor vehicles	Remote control
Automation	Medical equipment
Packaging and coin equipment	
Textile machinery	

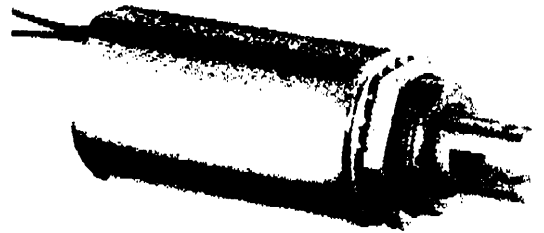
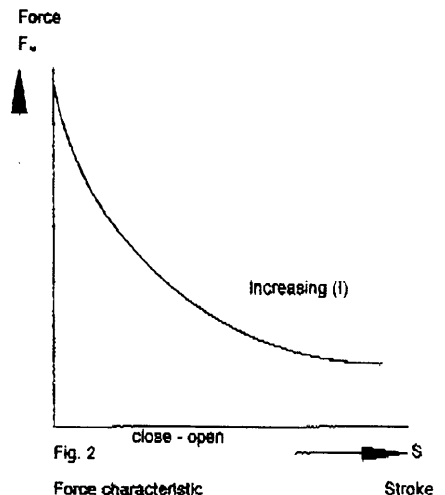


Fig. 1  
 R16 x 16





Performance and dimensional data for type R16 x 16 and RP16 x 16

Duty Rating	R16 x 16 - Pull			RP16 x 16 - Push		
	Continuous	Intermittent	Impulse	Continuous	Intermittent	Impulse
Stroke s (mm)	Magnetic force $F_u$ (N)					
0	25.3	35.6	42.3	25.2	39.0	46.4
2	6.9	19.2	28.6	5.6	14.2	30.3
4	3.8	13.7	23.1	2.7	7.3	21.8
8	1.8	8.3	17.0	0.8	2.8	13.3
12	1.1	5.6	12.9	0.2	1.8	8.3
16	0.76	4.0	10.0			
20	0.45	2.8	7.4			
25	0.11	1.2	3.5			
Power Consumption $P_{25}$ (Watts)	5.5	38	96	5.5	38	96
Armature Weight $m_A$ (kg)	0.043			0.038		
Solenoid Weight $m_M$ (kg)	0.161					

2mm is completion of energised stroke.

**TABLE BASIS**

24V / Continuous - Intermittent - Impulse duty  
 Mounted on steel plate 152 x 152 x 3mm  
 Horizontal working  
 Tolerance +/- 10% (inherent and manufacture)

Ambient temperature 25°C  
 Free air mounted  
 Pull arrangement

**Conversion Factors**

1 N = 0.102 kp ≈ 0.1 kp  
 1 Ncm = 0.102 kpcm ≈ 0.1 kpcm  
 1 kp = 1 kg = 2.2 lbs  
 1 mm = 0.039 in.  
 1 cmkp = 0.856 in. lbs

**MAGNETIC FORCE ( $F_u$ )**

is listed in HOT condition at RATED voltage

Adjust for armature weight

**POWER CONSUMPTION ( $P_{25}$ )**

is listed with a 25°C coil temperature (decrease / HOT)

**DUTY RATING**

The proportion of time that the solenoid is energised per operation cycle, normally shown in %.

$$\text{Proportion (\%)} = \frac{t_{on}}{t_{on} + t_{off}} \times 100$$

For each coil type: maximum energised (proportion) time/cycle -

Continuous: (100%) Intermittent: (10%) 60secs. Impulse: (5%) 0.1secs.

**Order Example**

Type R16 x 16  
 Voltage 24v DC  
 Duty rating Continuous

**SUPPLY VOLTAGE**

Standard DC: 24V, 97V, 205V (for AC 50 / 60Hz rectified, 110, 230V)

Rectifier can be provided for AC supply.

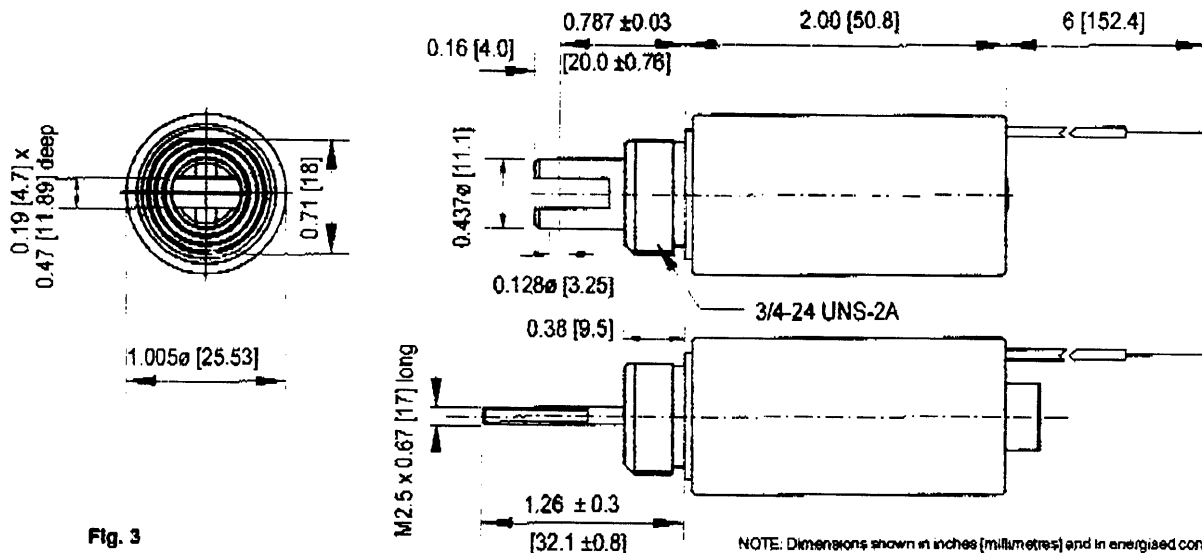


Fig. 3  
 R16 x 16 and RP16 x 16

NOTE: Dimensions shown in inches [millimetres] and in energised condition.