



7.5° Stepping Motors

Stock Nos. 332-947 and 332-953

7.5° stepper motor

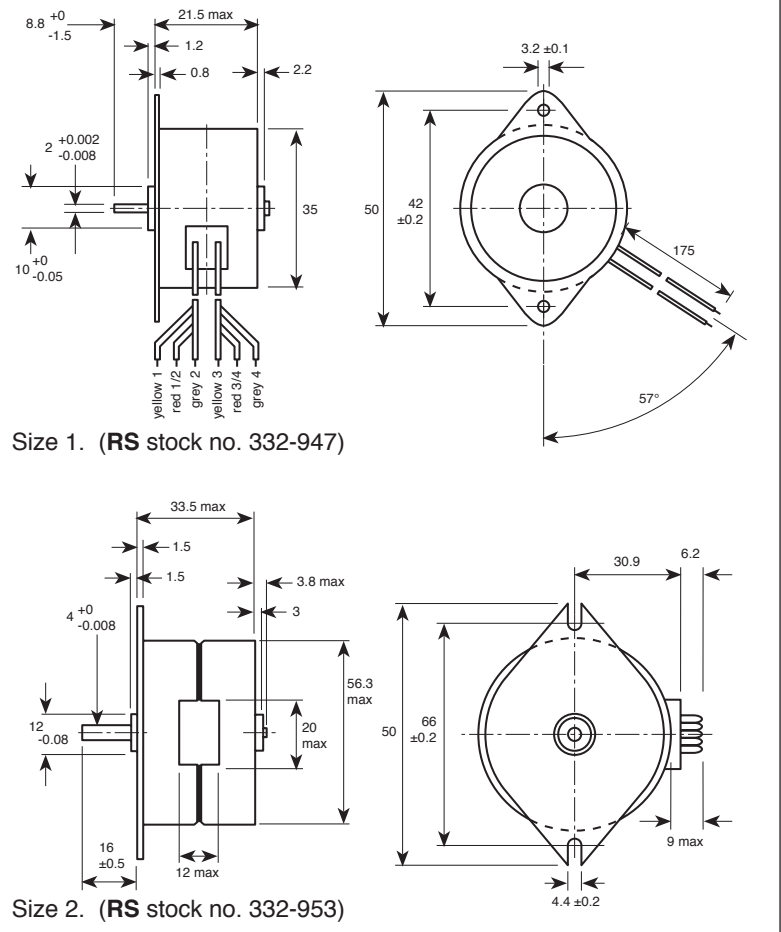
size 1 (RS stock no. 332-947) and size 2 (RS stock no. 332-953)

Two 7.5° stepper motors each with four 12V^{DC} windings (coils) and permanent magnet rotor construction. Designed for unipolar drive, these motors are easily interfaced to simple and relatively low power electronics thus providing economical means of motion and speed control. Due to their permanent magnet rotors these motors have a braking torque even when not energised. This is the detent (residual) torque which is a useful feature for positional integrity.

The size 1 motor is ideal for applications requiring low torque drive but it can also be used with the **RS** range of synchronous gearboxes (**RS** stock nos. 336-400 etc.) to provide finer step angle and increased torque at lower speeds.

The size 2 motor is more powerful general purpose motor ideally suited for direct drive applications.

Figure 1. 7.5° Stepper motors



Technical specification

	Size 1	Size 2	Units
Power consumption of motor only	2	5.3	W
Maximum working torque	6	57	mNm
Holding torque	10	85	mNm
Torque derating	-0.4	-0.4	%/°C
Maximum pull-in rate	350	130	steps/s
Resistance per phase at +20°C	120	47	Ω
Inductance per phase	160	400	mH
Current per phase	100	240	mA
Permissible ambient temperature range	-20 to +70	-20 to +70	°C
Permissible storage temperature range	-40 to +100	-40 to +100	°C
Permissible motor temperature	120	120	°C
Insulation resistance at 500V (CEE 10)	>2	>2	MΩ
Step angle	7° 30'	7° 30'	
Step angle tolerance, not cumulative	±40'	±20'	
Number of steps per revolution	48	48	
Direction of rotation	reversible	reversible	
Rotor inertia	2.6	45	gmc ²
Mass	80	300	g
Maximum radial force	2.5	10	N
Maximum axle force	0.75	1.5	N
Bearings	Slide (bronze)	Slide (sintered bronze)	