

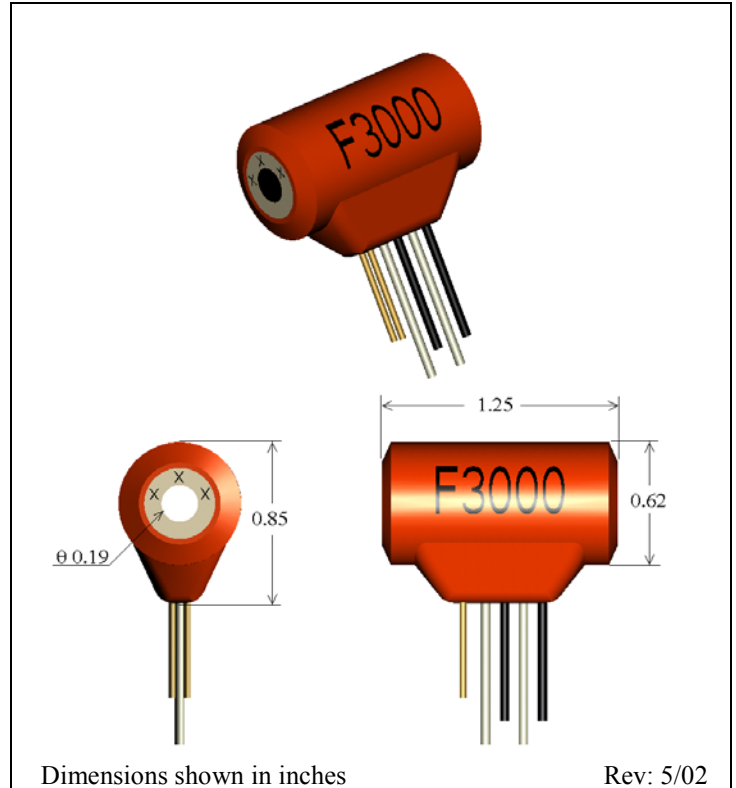


Innovative Mechanism Solutions

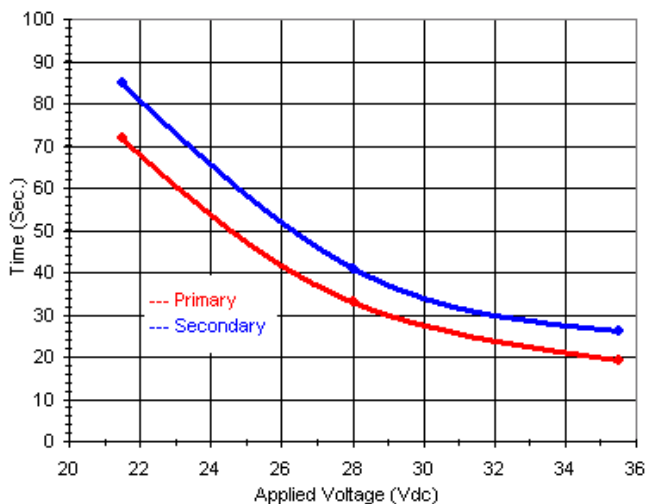
Frangibolt[®] Actuator (Model FC3-20-16SR2)

The FC3-20-16SR2 Frangibolt Actuator was first qualified and flown on the STEX (Space Technology Experiment) satellite in October of 1998. It is designed to operate with any standard high strength #10 size notched bolt or stud¹. The Nitinol (Shape Memory Alloy) cylinder generates greater than 2000 lbs of force and 0.035 in. of stroke to fracture the fastener in tension during actuation. As with all Frangibolt Actuators it is reloaded by simply re-compressing the Nitinol cylinder after each actuation cycle. This may be done using any standard laboratory press or using TiNi's portable compression tool FBT-CT2. Frangibolt model FC3-20-16SR2 may be purchased with a thermocouple by adding a TC to the part number.

¹ TiNi Aerospace must provide the specially notched Titanium Fastener. This is largely application-dependent and is readily manufactured to customer specification. See Frangibolt Fastener Specification Sheet.



Function Time² (@ 23 °C)



Specifications

Max Load Support & Release	4500 N	(1000 lb-f)
Max Joint Length	5.7 cm	(2.25 in)
Operational Voltage	22 to 36 Vdc	
Minimum Operating Temp.	-65 °C	(-85 °F)
Maximum Operating Temp. ²	+80 °C	(176 °F)
Heater Resistance	16 Ohms	
Mass	25 gm	(0.88 oz)
Power Consumption	48 Watts @ 28 Vdc	
Life Cycles	60 Cycles Min.	

Features:	Redundant Heater
	Reusable
	TC Sensor

² Note that the function times shown above are for the higher transition temperature "FC" series Frangibolt Actuators which actuate at roughly 100°C. TiNi Aerospace also manufactures a line of "FB" series Frangibolt actuators which have a lower +75°C actuation temperature and therefore have a ~25% faster function time. Selection between the two should be based on maximum operating temperature.