

Custom Tubular Solenoids



KEY FEATURES

Designed and built to customer requirements

Push, pull or combination motion

Broad operating temperature range

Multiple termination and mounting options

200°C magnet wire insulation is standard

DESCRIPTION

Custom-designed linear solenoids for demanding applications

Top-end devices are engineered for applications where extreme temperatures and other severe environmental conditions may exist

High altitude, shock, acceleration and vibration reliable

PRODUCT OPTIONS

Linear motion, tubular solenoid line ranges from models only one-half inch (12.7 mm) in diameter producing only a few ounces (<1 N) of force at very short strokes, to three-inch (76.2 mm) diameter models capable of 100 pounds (445 N) force at one-inch (25.4 mm) strokes

Push, pull or combination motion available

Continuous or intermittent duty coils available

AC voltages can be handled through the use of internal rectifiers

Dual coil models with low holding power requirement may be appropriate in power sensitive equipment

Solenoids with plunger seals can be built for harsh environments

Solenoids can be made water-resistant, fuel-resistant and with encapsulated coils (ferrous parts are plated for protection against corrosion)

Leads are normally provided with fluoropolymer insulation, PTFE or ETFE; however, any type wire may be used as specified by the customer. MIL type connectors may also be used when specified.

Can be provided with flat or conical face depending on stroke

Solenoid plungers can be internally or externally threaded or have clevis attachment

Prototype solenoids can be custom built to a customer's requirements

ELECTRICAL

Voltage Rating 6 to 270 VDC
28 to 115 VAC (60 or 400 Hz)

MECHANICAL

Ambient Temperature Range -65°C to +125°C

Force 1 oz. to 100 lb push, pull, hold

Rated at 100,000 operations

Built IAW MIL-S-4040 as applicable

FOR MORE INFORMATION

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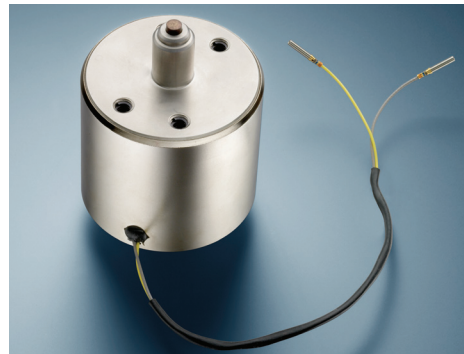
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CII Custom Tubular Solenoids for High Performance Applications





TYPICAL APPLICATIONS



Fin Locking Solenoid

Three of these husky solenoids are used to lock steering fins in place until the guided weapon is released.

Voltage	22-28 VDC
Max. Allowable Current	Not specified
Actuating Force	12 to 15.4 lb (depends on input V)
Stroke	.095"
Time On	Bomb drop time
Time Off	Continuous
Cycling Rate	Not applicable
Type Operation	Pull
Temperature Range	Ambient -65°F to +125°F
Coil Connections	Fluoropolymer Insulation 8" to 8-3/4"
Approximate Dimensions	2.20" dia. x 2.05" long
Type Mounting	Integral tapped holes
Special Environmental Consideration	Exposure to sand, dust, aircraft oils and fuels, will require an "O" ring seal on plunger.



Primer Firing Solenoid

This extremely powerful solenoid together with its companion pulse control module is designed to fire a standard Military #41 arsenal primer, as part of an advanced mine detection system.

Voltage	26 VDC
Max. Allowable Current	10.4 A @ 26 VDC
Actuating Force	90 oz. force inches (.64 joules)
Stroke	.38"
Time On	W/pulse control module, 25 ms
Time Off	3 seconds
Cycling Rate	20 operations/minute
Type Operation	Push
Temperature Range	Ambient -65°F to +85°F
Coil Connections	Fluoropolymer Insulation 20 AWG stranded
	6' long
Approximate Dimensions	3/4" dia. x 3 1/2" long
Type Mounting	Integral 1/2-20 threaded base
Special Environmental Consideration	Sand and dust

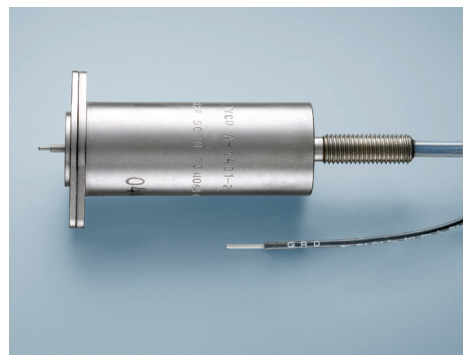
TYPICAL APPLICATIONS



Aero Medical Valve Solenoid

A scant 3/8" in diameter, this tiny precision solenoid is capable of 100,000 reliable operations, controlling various airborne gas systems.

Voltage	28 VDC
Max. Allowable Current	.18 A @ 28 VDC
Actuating Force	190 grams @ .030 A
Stroke	.030" min.
Time On	Continuous duty
Time Off	Not specified
Cycling Rate	Not applicable
Type Operation	Pull
Temperature Range	Ambient -65°F to +125°F
Coil Connections	32 AWG PTFE insulated
	24" min.
Approximate Dimensions	3/8" dia. x 3/4" long
Type Mounting	None



Fuel Valve Solenoid

This is a unique application in which the solenoid is mounted inside an aircraft fuel tank submerged in JP-8 jet fuel. The coil is potted, completely fuel proof.

Voltage	115 VAC 400 Hz
Actuating Force	1 lb min. @ 160°F
Stroke	.030"
Time On	Continuous duty rating
Time Off	Not specified
Type Operation	Push
Temperature Range	Ambient -65°F to +160°F
Coil Connections	IAW customer drawing, Fluoropolymer Insulation leads
	Tubular, 3/4" dia. x 3" long
Approximate Dimensions	Flange IAW customer drawing
Type Mounting	Coil must be air tight, plunger operates while submerged in JP-8 jet fuel
Special Environmental Consideration	

TYPICAL APPLICATIONS



Directional Valve Solenoid

A major valve company selected this rugged type solenoid to control a directional hydraulic valve in heavy industrial machinery. The valve assembly has a 20 year expected life.

Voltage	92 VDC
Max. Allowable Current	7.2 A inrush, .08 A hold
Actuating Force	30 lb min.
Holding Force	40 lb min.
Stroke	.500"
Time On	Continuous duty
Time Off	Not applicable
Cycling Rate	Not applicable
Type Operation	Push and hold
Temperature Range	Ambient -55°F to +85°F
Coil Connections	Fluoropolymer Insulation 18 AWG, 72" L
Approximate Dimensions	2-3/16" dia. x 4-3/16"
Type Mounting	Plate
Special Environmental Consideration	Sand, dust, rain



Refueling Release Solenoid

This complex solenoid with internal current limiting switch is part of an "Air to Air" refueling system.

Voltage	18 to 30 VDC
Max. Allowable Current	10 A/50 ms - 1 A continuous holding
Actuating Force	20 lb min. for .10" of initial stroke
Holding Force	Plunger must hold at bottom
Stroke	.17" to .20"
Time On	Continuous duty
Time Off	Not applicable
Cycling Rate	Not applicable
Type Operation	Pull
Temperature Range	Ambient -65°F to +160°F
Coil Connections	Connector MS 30ZE-10SL-4P per MIL-C-5015
Approximate Dimensions	2-1/4" dia. x 2-3/16"
Type Mounting	Integral with refueling receptacle
Special Environmental Consideration	High performance aircraft exposure