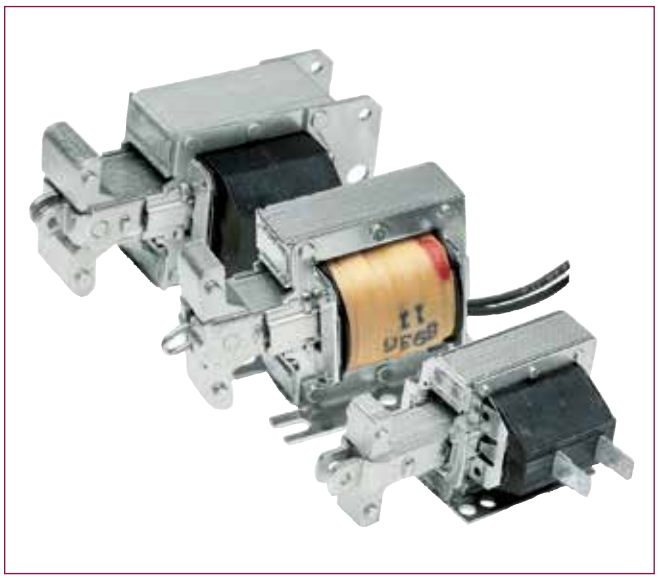
Dormeyer® AC Laminates



- Low cost, high volume products
- Strokes to 1.25 inches (0.32 mm)
- Custom design work is our strength

Applications

- Commercial equipment
- Industrial doors
- Machine tools

All catalog products manufactured after April 1, 2006 are RoHS Compliant

Laminates

This solenoid has a T-shaped laminated design plunger and laminated steel frame. It has the unique ability to hold an exceptionally heavy load with a minium of humming or vibration.

To minimize the humming or chattering of most AC solenoids, the contact surfaces of the laminated frame and plunger are machined to provide a smooth and flush contact surface. Dormeyer Super-T Laminates are products of years of engineering, research and manufacturing experience.

Available in various frame sizes to meet most requirements for medium life as well as in a variety of plunger and coil arrangements, they are readily suited for most high force AC applications. These include appliances, business machines and vending machines.

The Super-T Series Laminates are tooled with provisions to modify the basic design and tooling to fit high volume applications at the lowest possible unit cost. Super-T Laminates can be supplied with fully encapsulated coils at the same price as taped coils.

Principle of Operation

Laminate solenoids consist of a laminated steel frame, a coil, and a movable plunger in the center of the coil. When the coil is energized the plunger is pulled into the coil.

Selection Overview

Use the selection chart on the following page to determine which model offers the desired performance and mechanical specifications. Refer to the individual frame size specification pages for complete performance and mechanical data.

Even with our many standard solenoid designs, our customers often require a product with unique features or performance capabilities. If you don't find what you're looking for in the catalog, please give us a call and talk to one of our application engineers.

Design Considerations

Life

When selecting an open frame solenoid, as with any other solenoid style, it is important to consider the effects of heat, since an increase in coil temperature reduces the work output and the life of the unit. Standard life is 50,000 to 100,000 operations. Consult the factory for longer life of 500,000 or more cycles, and other special requirements.

Duty Cycle

Duty cycle is determined by solenoid ON time/(ON + OFF time).

For example: a solenoid is actuated for 30 seconds, then off for 90 seconds. *30 sec ON / (30 Sec ON + 90 sec OFF) = 30/120 = 1/4 or 25% duty cycle.*

Performance Curves

The Force/Stroke performance curves in this section serve as guides to determine the solenoid size needed to produce a desired force at a given stroke, duty cycle, and power source. All Force/Stroke curves are performed under standard test conditions: ambient temperature of 20°C. A design safety factor of 1.3 to 1.5 is recommended. For example, when a 4.5 lb pull force is required, select a model with a safety factor of 1.3 to 1.5 times (5.8 to 6.7 lb).

Model Size	Frame Type	Coil Type[1]	Height (inches)	Width (inches)	Length (inches)	Max. Stroke (inches)	Nominal Stroke (inches)	Typical Force (lbs) Nominal Stroke and 100% Rated Voltage @ 100% Duty	20% Duty	Page
1000	1/2 " Stack	OM	1.44	1.19	1.61	0.75	0.375	1.9	3.0	24
1000	3/4 " Stack	T	1.44	1.43	1.61	0.75	0.375	2.5	4.0	25
2000	3/4" Stack	OM	2.06	1.81	2.50	1.00	0.50	6.3	7.8	26
2000	1" Stack	OM	2.06	2.06	2.50	1.00	0.50	9.0	11.9	27
3000	1" Stack	OM	2.94	2.38	2.97	1.25	0.75	14.5	22.0	28

[1] OM = Overmolded; T = Taped

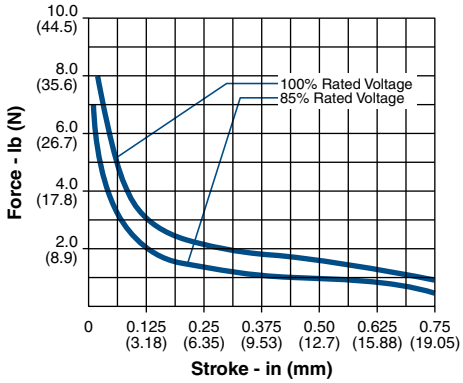
Dormeyer® Laminate Size 1000 (½" Stack) — AC Operation

Specifications

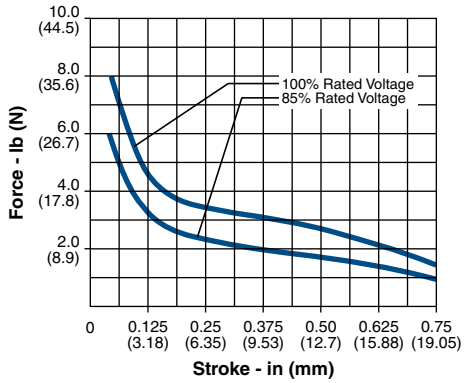
Continuous Duty Cycle	At 20°C ambient temperature
Intermittent Duty Cycle	20% on time, 80% off time. On time not to exceed 3 min. at 20°C ambient temperature
Coil Insulation	Class "A": 105°C max. temperature standard, Class "B" available on request
Coil Termination	Solder lugs
Plunger Variations	See page 37
Total Weight	6.5 oz. (184 g)
Dimensions	See page 29

All catalog products manufactured after April 1, 2006 are RoHS Compliant

AC Continuous Duty



AC Intermittent Duty



Duty Cycle	Continuous		Intermittent	
Model	1000-M-1	1001-M-1	1500-M-1	1501-M-1
Volts — 60Hz (50 Hz. avail.)	120	240	120	240
Coil Resistance ± 10% (Ohms at 25°C)	88	354	58	240
Watts Seated ± 10%	9.5	10.0	20.0	18.5
Amps Seated ± 10%	0.24	0.15	0.52	0.24
Amps at ⅛" ± 10%	0.72	0.38	1.20	0.53
Amps at ¼" ± 10%	0.92	0.47	1.40	0.64
Amps at ⅜" ± 10%	1.00	0.52	1.70	0.76
Amps at ½" ± 10%	1.20	0.56	1.80	0.81
Amps at ⅝" ± 10%	1.22	0.60	1.90	0.84

NOTES:

1. All data is typical.
2. Pull values indicated are without plunger weight. Add or subtract 0.11 lbs. (0.5 N) to obtain net pull when operated with or against gravity. Force data: ±10%. Quiet seal pull: 4.5 oz. (1.2 N) at rated voltage.
3. All data reflects operation with no heatsink.
4. Other coil terminations available.
5. All specifications subject to change without notice.

How to Order

Select the part number from the table provided. (For example, to order a continuous duty cycle unit rated at 120 VAC, specify 1000-M-1.

Please see www.ledex.com (click on Stock Products tab) for our list of stock products available through our distributors.

All specifications subject to change without notice.

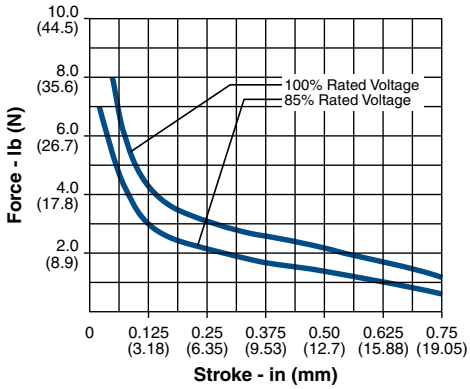
Dormeyer® Laminate Size 1000 (¾" Stack) — AC Operation

Specifications

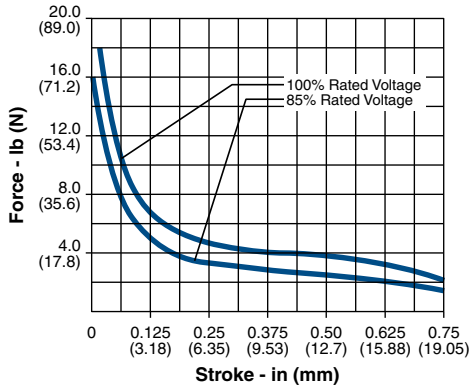
Continuous Duty Cycle	At 20°C ambient temperature
Intermittent Duty Cycle	20% on time, 80% off time. On time not to exceed 3 min. at 20°C ambient temperature
Coil Insulation	Class "A": 105°C max. temperature standard
Coil Termination	Solder lugs
Plunger Variations	See page 38
Average Total Weight	9.2 oz. (260 g)
Dimensions	See page 30

All catalog products manufactured after April 1, 2006 are RoHS Compliant

AC Continuous Duty



AC Intermittent Duty



Duty Cycle	Continuous		Intermittent	
Model	1250-A-1	1251-A-1	1750-A-1	1751-A-1
Volts — 60Hz (50 Hz avail.)	120	240	120	240
Coil Resistance ± 10% (Ohms at 25°C)	64	258	40.5	161
Watts Seated ± 10%	10.7	9.0	17.7	19.5
Amps Seated ± 10%	0.28	0.13	0.50	0.26
Amps at ⅛" ± 10%	0.96	0.44	1.40	0.72
Amps at ¼" ± 10%	1.20	0.58	1.80	0.93
Amps at ⅜" ± 10%	1.40	0.63	2.10	1.10
Amps at ½" ± 10%	1.60	0.72	2.40	1.30
Amps at ⅝" ± 10%	1.70	0.78	2.60	1.40

NOTES:

1. All data is typical.
2. Pull values indicated are without plunger weight. Add or subtract 0.17 lbs. (0.8 N) to obtain net pull when operated with or against gravity. Force data: ±10%.
3. All data reflects operation with no heatsink.
4. Other coil terminations available.
5. All specifications subject to change without notice.

How to Order

Select the part number from the table provided. (For example, to order a continuous duty cycle unit rated at 120 VAC, specify 1250-A-1.

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All specifications subject to change without notice.

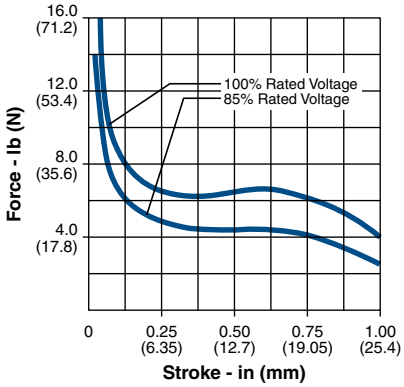
Dormeyer® Laminate Size 2000 (¾" stack) — AC Operation

Specifications

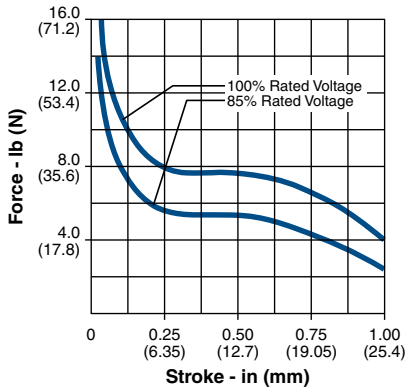
Continuous Duty Cycle	At 20°C ambient temperature
Intermittent Duty Cycle	20% on time, 80% off time. On time not to exceed 3 min. at 20°C ambient temperature
Coil Insulation	Class "F": 155°C max. temperature standard
Coil Termination	1/4" QC
Plunger Variations	See page 39
Average Total Weight	18 oz. (510 g)
Dimensions	See page 31

All catalog products manufactured after April 1, 2006 are RoHS Compliant

AC Continuous Duty



AC Intermittent Duty



Duty Cycle	Continuous		Intermittent	
Model	2005-F-34	2006-F-34	2255-F-34	2256-F-34
Volts — 60Hz (50 Hz avail.)	120	240	120	240
Coil Resistance ± 10% (Ohms at 25°C)	20.5	82	18.3	73.5
Watts Seated ± 10%	17.9	17.5	23.5	23.8
Amps Seated ± 10%	0.43	0.22	0.64	0.32
Amps at ¼" ± 10%	2.30	1.10	2.80	1.40
Amps at ½" ± 10%	3.30	1.60	4.00	2.00
Amps at ¾" ± 10%	4.10	2.10	5.00	2.60
Amps at 1" ± 10%	4.90	2.50	6.00	2.90

NOTES:

1. All data is typical.
2. Pull values indicated are without plunger weight. Add or subtract 0.27 lbs. (1.2 N) to obtain net pull when operated with or against gravity. Force data: ±10%.
3. All data reflects operation with no heatsink.
4. Other coil terminations available.
5. All specifications subject to change without notice.

How to Order

Select the part number from the table provided. (For example, to order a continuous duty cycle unit rated at 120 VAC, specify 2005-F-5.

Please see www.ledex.com (click on Stock Products tab) for our list of stock products available through our distributors.

All specifications subject to change without notice.

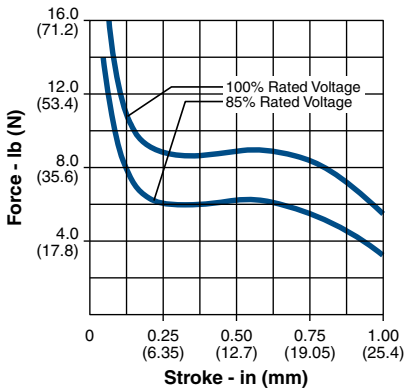
Dormeyer® Laminate Size 2000 (1" stack) — AC Operation

Specifications

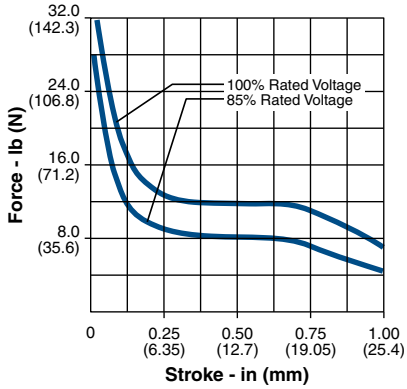
Continuous Duty Cycle	At 20°C ambient temperature
Intermittent Duty Cycle	20% on time, 80% off time. On time not to exceed 3 min. at 20°C ambient temperature
Coil Insulation	Class "F": 155°C max. temperature standard
Coil Termination	1/4" QC
Plunger Variations	See page 40
Total Weight	22 oz. (623 g)
Dimensions	See page 32

All catalog products manufactured after April 1, 2006 are RoHS Compliant

AC Continuous Duty



AC Intermittent Duty



Duty Cycle	Continuous		Intermittent	
Model	2536-F-34	2537-F-34	2786-F-34	2787-F-34
Volts — 60Hz (50 Hz avail.)	120	240	120	240
Coil Resistance ± 10% (Ohms at 25°C)	14.8	60	11.7	48
Watts Seated ± 10%	19.0	18.0	36.5	36.0
Amps Seated ± 10%	0.48	0.24	0.95	0.48
Amps at 1/4" ± 10%	2.90	1.50	4.30	2.20
Amps at 1/2" ± 10%	4.40	2.20	6.00	3.00
Amps at 3/4" ± 10%	5.50	2.70	7.50	3.80
Amps at 1" ± 10%	6.50	3.20	8.50	4.30

NOTES:

1. All data is typical.
2. Pull values indicated are without plunger weight. Add or subtract 0.37 lbs. (0.1 N) to obtain net pull when operated with or against gravity. Force data: ±10%.
3. All data reflects operation with no heatsink.
4. Other coil terminations available.
5. All specifications subject to change without notice.

How to Order

Select the part number from the table provided. (For example, to order a continuous duty cycle unit rated at 120 VAC, specify 2536-F-5.

Please see www.ledex.com (click on Stock Products tab) for our list of stock products available through our distributors.

All specifications subject to change without notice.

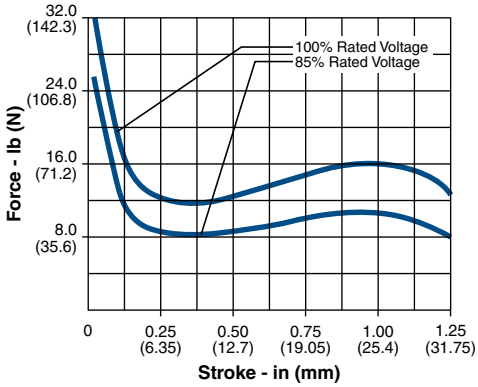
Dormeyer® Laminate Size 3000 (1" stack) — AC Operation

Specifications

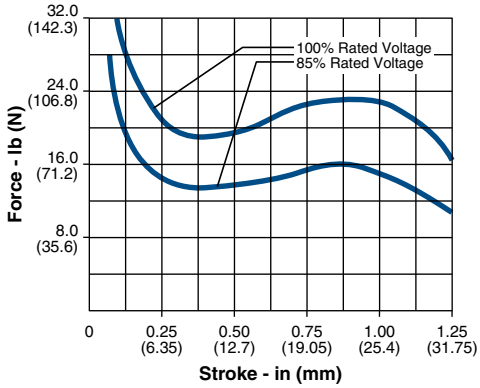
Continuous Duty Cycle	At 20°C ambient temperature
Intermittent Duty Cycle	20% on time, 80% off time. On time not to exceed 3 min. at 20°C ambient temperature
Coil Insulation	Class "A": 105°C max. temperature standard
Coil Termination	Solder lugs
Plunger Variations	See page 41
Total Weight	43 oz. (1.2 kg)
Dimensions	See page 33

All catalog products manufactured after April 1, 2006 are RoHS Compliant

AC Continuous Duty



AC Intermittent Duty



Duty Cycle	Continuous		Intermittent	
Model	3000-M-1	3001-M-1	3500-M-1	3501-M-1
Volts—60Hz (50 Hz avail.)	120	240	120	240
Coil Resistance ± 10% (Ohms at 25°C)	6.5	26	4.8	19.3
Watts Seated ± 10%	25.0	23.5	47.0	48.0
Amps Seated ± 10%	0.66	0.33	1.80	0.68
Amps at ¼" ± 10%	3.80	1.80	6.50	3.20
Amps at ½" ± 10%	5.50	2.80	9.50	4.80
Amps at ¾" ± 10%	7.50	3.90	13.00	6.60
Amps at 1" ± 10%	10.00	5.20	15.50	7.70
Amps at 1¼" ± 10%	12.00	6.50	17.00	8.50

NOTES:

1. All data is typical.
2. Pull values indicated are without plunger weight. Add or subtract 0.79 lbs. (3.5 g) to obtain net pull when operated with or against gravity. Force data: ±10%.
3. All data reflects operation with no heatsink.
4. Other coil terminations available.
5. All specifications subject to change without notice.

How to Order

Select the part number from the table provided. (For example, to order a continuous duty cycle unit rated at 120 VAC, specify 3000-M-1.

Please see www.ledex.com (click on Stock Products tab) for our list of stock products available through our distributors.

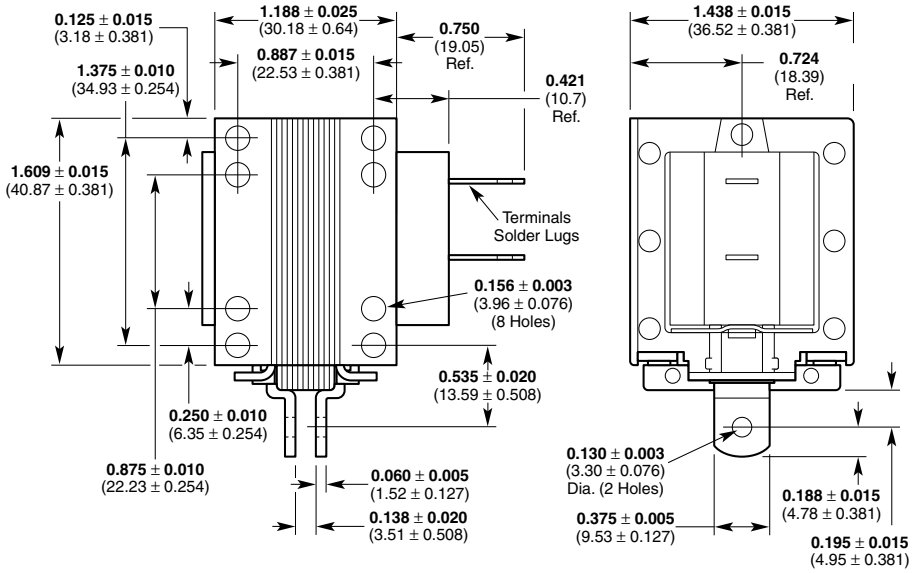
All specifications subject to change without notice.

Dormeyer® Laminate Dimensions

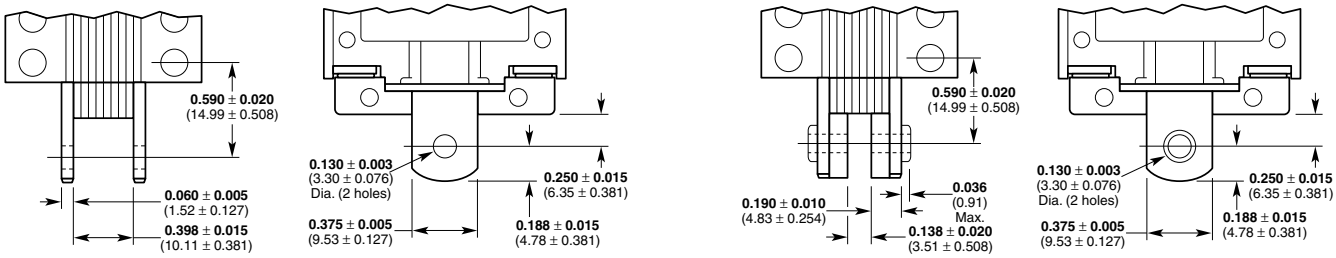
Inches (mm)

All solenoids are illustrated in energized state

Size 1000 (1/2" Stack)



Size 1000 (1/2" Stack) Plunger Variations



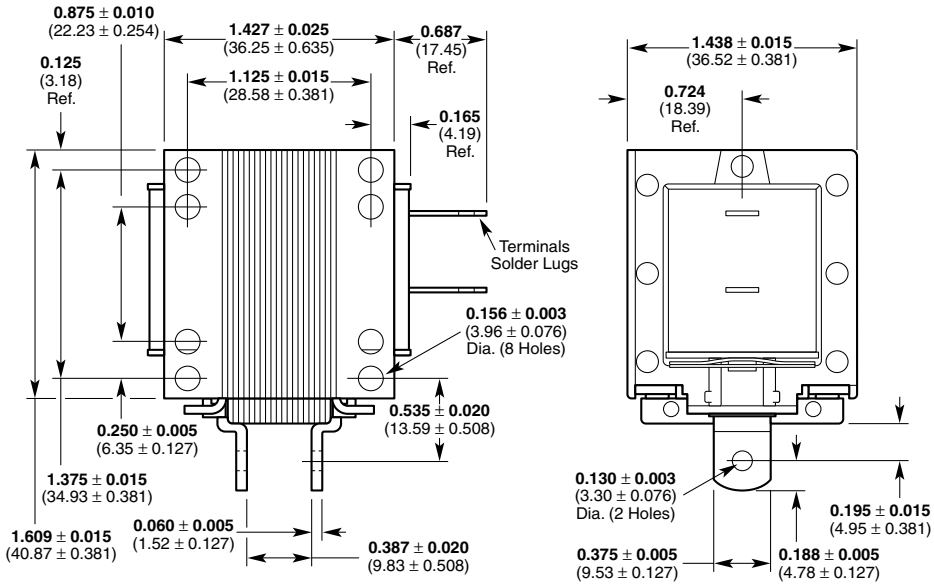
All specifications subject to change without notice.

Dormeyer® Laminate Dimensions

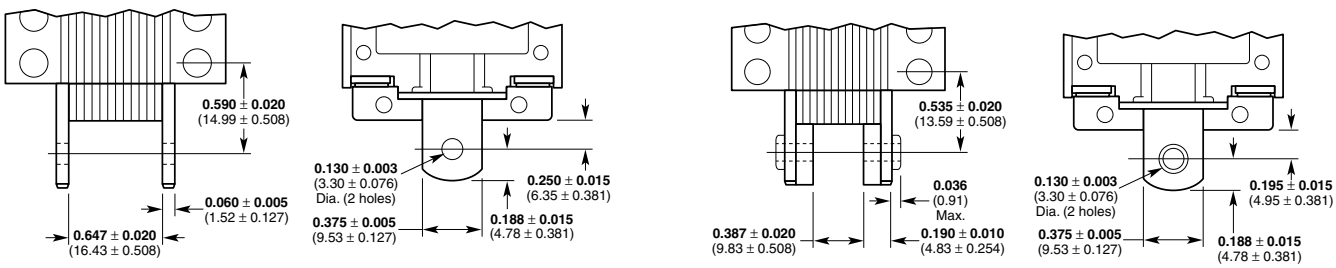
Inches (mm)

All solenoids are illustrated in energized state

Size 1000 (3/4" Stack)



Size 1000 (3/4" Stack) Plunger Variations



Straight **Reinforced**

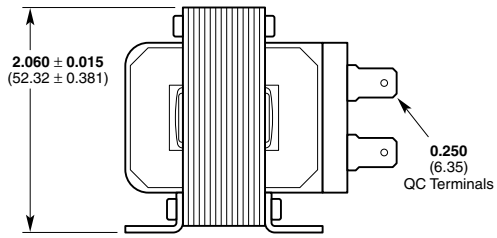
All specifications subject to change without notice.

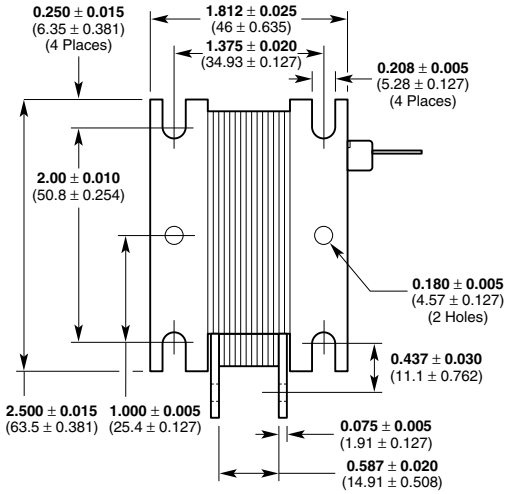
Dormeyer® Laminate Dimensions

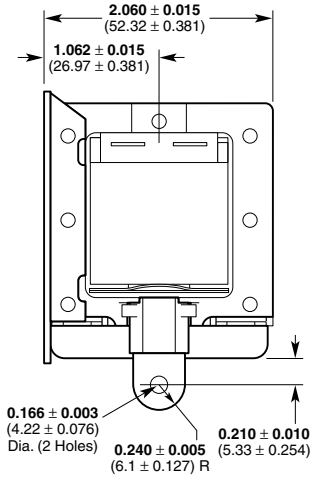
Inches (mm)

All solenoids are illustrated in energized state

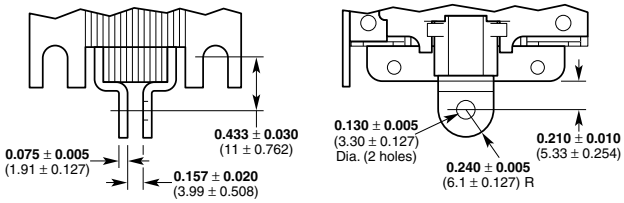
Size 2000 (3/4" Stack)



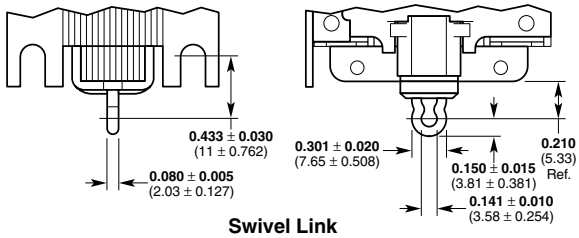




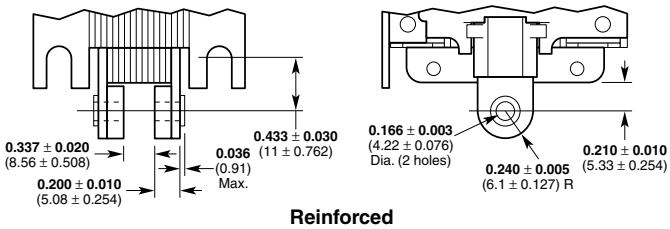
Size 2000 (3/4" Stack) Plunger Variations



Formed



Swivel Link



Reinforced

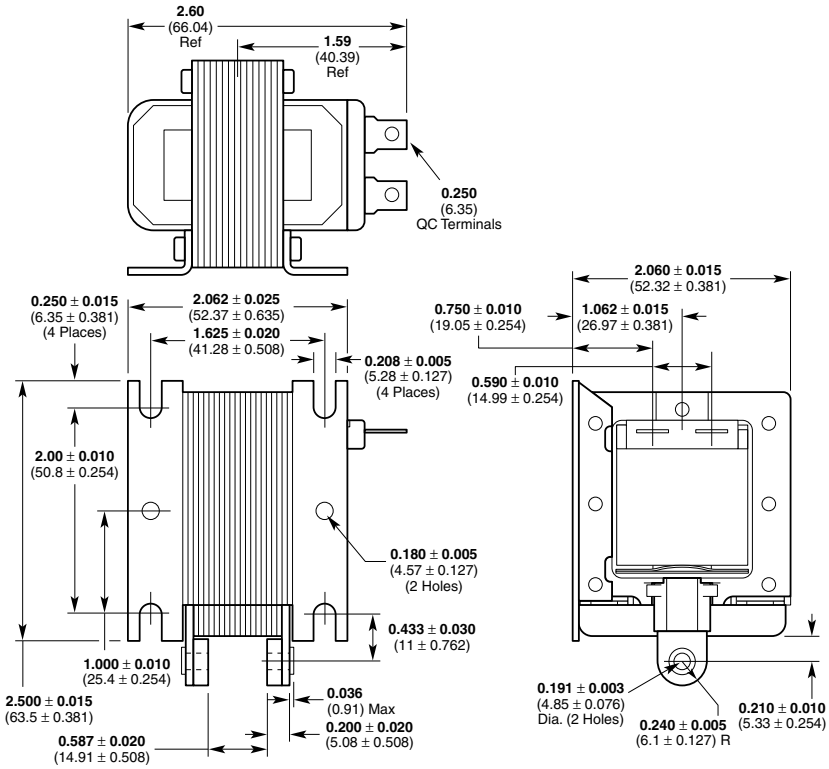
All specifications subject to change without notice.

Dormeyer® Laminate Dimensions

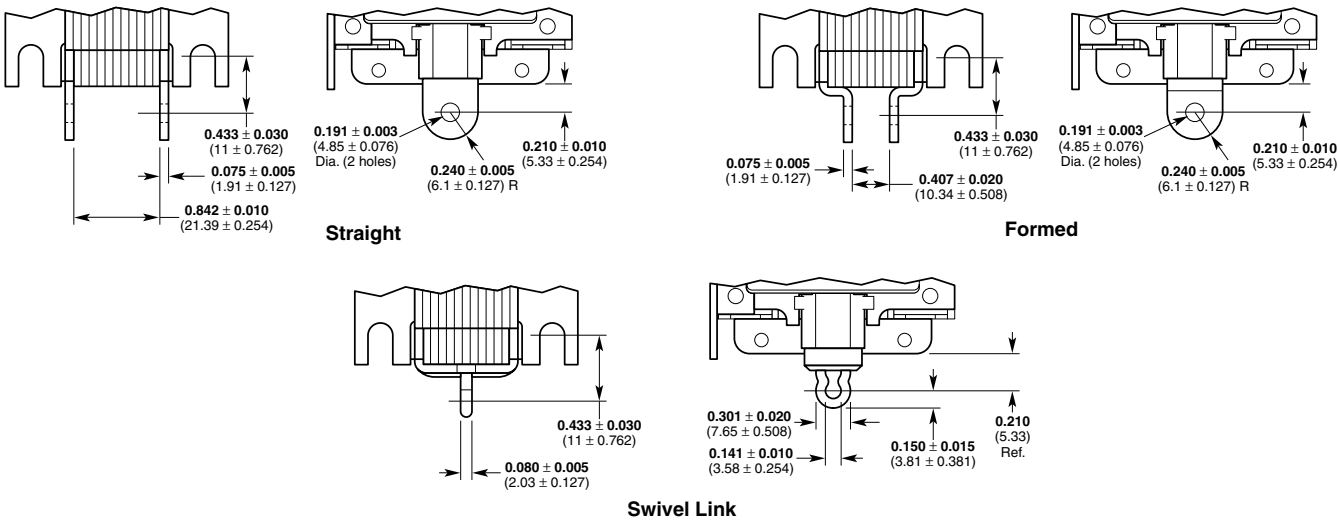
Inches (mm)

All solenoids are illustrated in energized state

Size 2000 (1" Stack)



Size 2000 (1" Stack) Plunger Variations



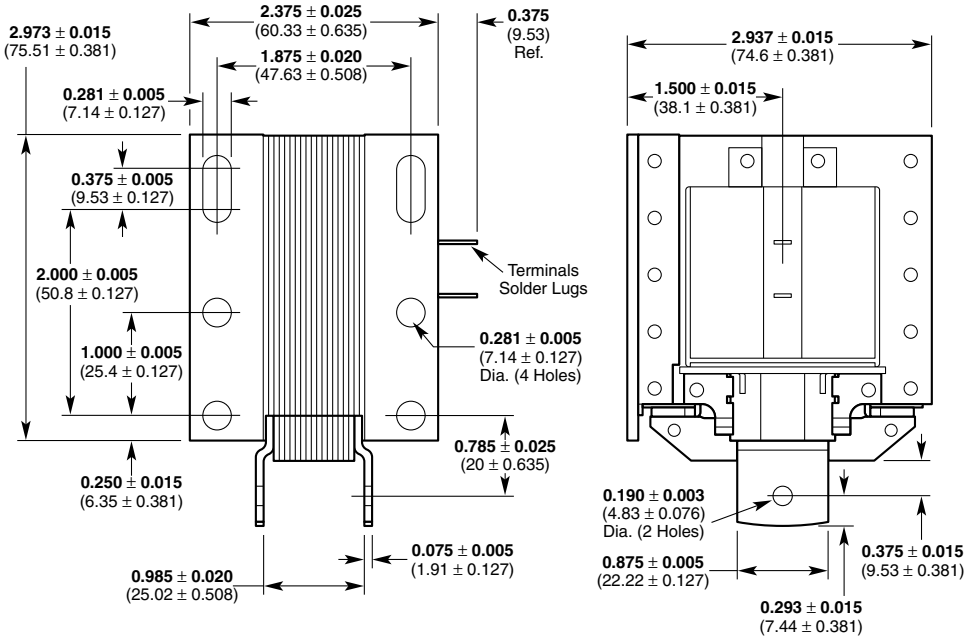
All specifications subject to change without notice.

Dormeyer® Laminate Dimensions

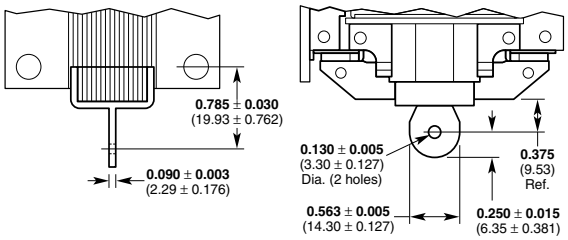
Inches (mm)

All solenoids are illustrated in energized state

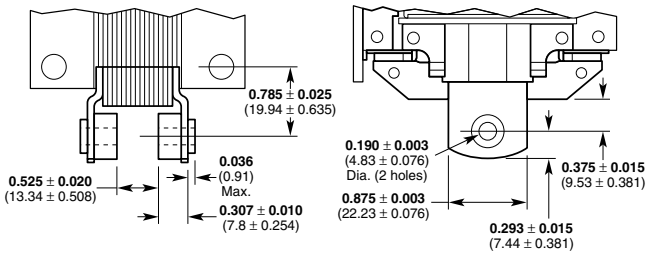
Size 3000 (1" Stack)



Size 3000 (1" Stack) Plunger Variations



Swivel Link



Reinforced

All specifications subject to change without notice.