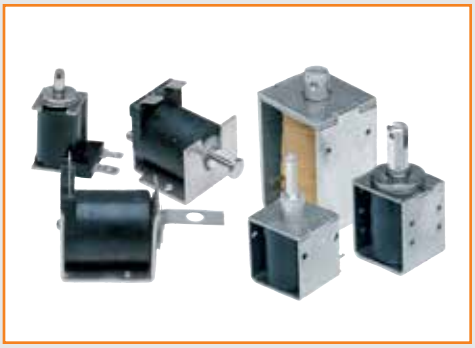
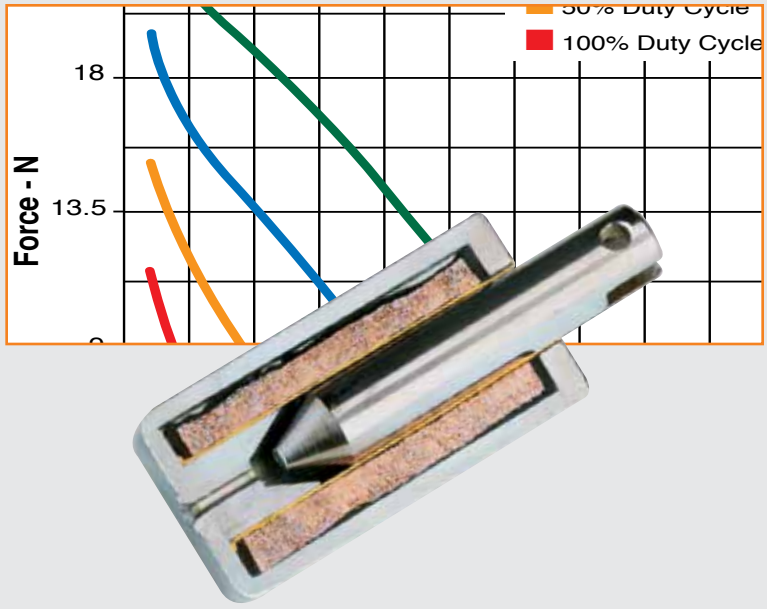
Ledex®
Open Frame Solenoids



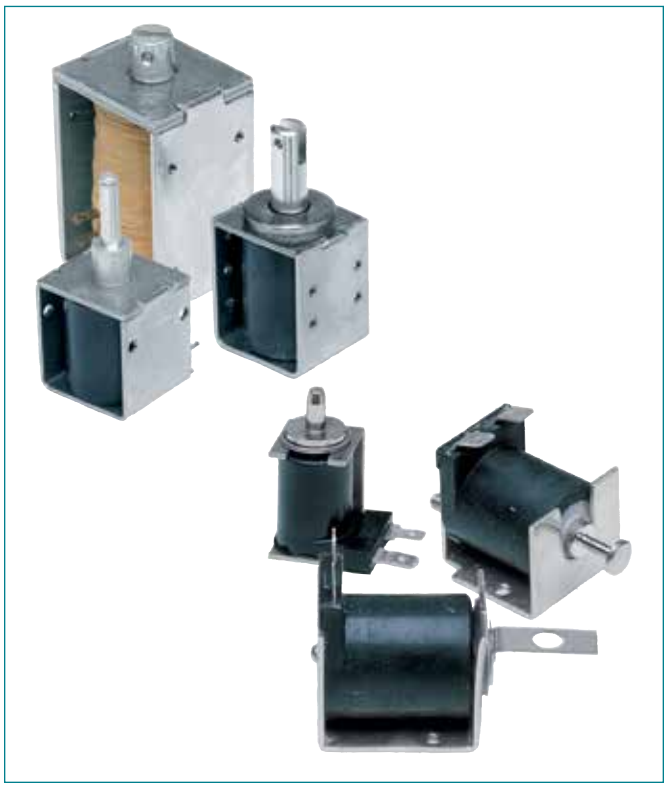


JOHNSON ELECTRIC

innovating motion

Ledex® Open Frame Solenoids

LINEAR Open Frame



- Low cost, high volume products
- Strokes to 24 mm
- Custom design work is our strength

Applications

- Printers
- Coin dispensers
- Security door locks
- Storage/retrieval systems
- PC board insertion equipment
- Vending

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

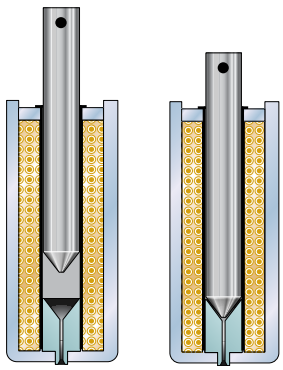
The open frame solenoid is the simplest solenoid device consisting of an open iron frame, an overmolded or taped coil, and a movable plunger in the centre of the coil. Open frame solenoids are the most economical of all the solenoid types, and are typically selected for applications in which extremely long life and precise positioning are not critical.

Applications for Ledex® DC open frame devices are numerous. As with all types of solenoids, open frame models are well suited for applications which require either locking or latching functions.

Applications for DC open frame solenoids include residential and commercial door locks, credit card key “smart” locks, pharmaceutical compartment locks, circuit breakers, pinch valves, and many more.

Principle of Operation

The open frame solenoid consists of an open iron frame, a coil, and a movable plunger in the centre of the coil.



De-energised Energised

Selection Overview

Use the selection charts 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 catalogue, please give us a call and talk to one of our application engineers.

Design Considerations

Construction

Open frame solenoids are designed with two frame styles, the C Frame style, in which the coil is enclosed on one side, and the Box Frame style in which the coil is enclosed on two sides. The Box Frame style provides slightly higher force output and is more rugged in design.

Tapped mounting holes are used for easy installation and interchangeability.

Most models have slotted and cross drilled plungers for easy load attachment.

The plunger is plated for corrosion resistance, and provides a low coefficient of friction and long life.

Over molded coils are available in both Box Frame and C Frame solenoids and offer excellent protection from moisture and humidity. Some solenoids are UL recognised. Most have UL recognised coil insulation systems.

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. Life ratings extend to 3 million cycles depending on the product size and application. Consult the factory for longer life of 500,000 or more cycles, and other special requirements.

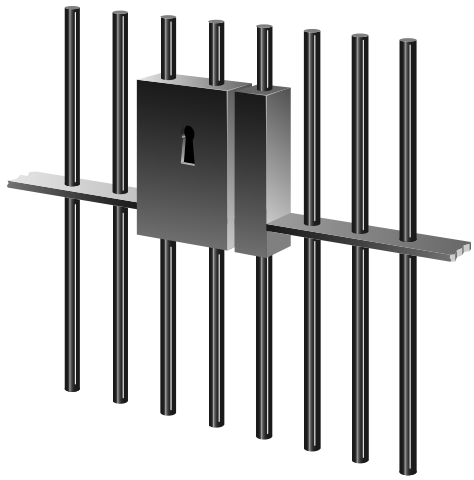
Duty Cycle

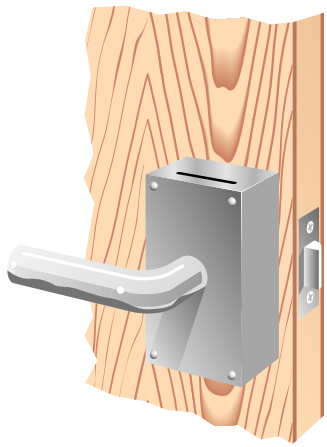
Duty cycle is determined by solenoid ON time/(ON + OFF time).

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 20 N pull force is required, select a model with a safety factor of 1.3 to 1.5 times (26.3 N).





Ledex® Open Frame Solenoids

On-Off DC Open Frame Solenoids

All products are RoHS Compliant

DC actuated units are available in box frame and C frame design styles in a variety of models and sizes.

Models are available for continuous use and intermittent duty.

For low duty cycle applications, consider a magnetic latching open frame.

Box Frame

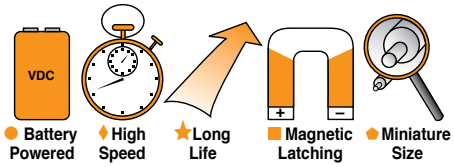
This solenoid has a 4-sided closed box frame and solid plunger and is, therefore, more electrically efficient than the C Frame solenoid. The closed, box frame also provides improved mechanical strength.

C Frame

C Frame solenoids consist of a formed C-shaped steel frame and solid plunger. Therefore, these solenoids are less efficient and less costly than their Box Frame counterparts.

Size	Frame Type	Coil Type[1]	Height (mm)	Width (mm)	Length (mm)	Max. Stroke (mm)	Nominal Stroke (mm)	Typical Force (N) Nominal Stroke [2] and 100% Rated Voltage @	
								100% Duty	25% Duty
B12M ●♦⬟	Box	T	10.2	8.0	16.0	5.0	1.9	0.10	0.6
C5M ●♦⬟	C	T	11.7	10.4	23.8	5.0	2.5	0.45	1.9
B17M ●♦⬟	Box	T	15.1	13.0	20.0	4.5	2.0	0.4	1.7
C8M ●♦	C	OM	20.6	19.1	28.6	12.5	5.0	0.2	1.2
B20M ●	Box	T	23.8	20.6	29.0	12.5	6.3	0.4	2.2
B14M ●	Box	T	26.0	20.0	36.8	15.0	5.0	2.2	8.5
B14HD ●★	Box	T	26.0	20.0	37.0	15.0	5.0	2.2	8.8
B14HDP ●★	Box	T	26.0	20.0	37.0	12.5	5.0	2.2	8.8
B28M	Box	T	30.2	23.9	28.7	12.5	5.0	2.2	6.0
B28HDM	Box	T	31.8	23.9	31.2	17.5	5.0	2.0	11.0
B11HDM	Box	T	31.8	23.9	50.8	17.5	10.0	5.8	12.6
B22M	Box	OM	37.3	33.3	40.9	25.0	10.0	2.7	10.0
B4HDM	Box	OM	41.3	36.8	55.3	25.0	12.5	3.6	15.0
B41M	Box	T	51.5	44.0	77.5	25.0	12.5	12.0	49.0

[1] OM = Overmolded; T = Taped *[2] Using flat face plunger*



All specifications subject to change without notice.

Force values for reference only.

Magnetic Latching DC Open Frame Solenoids

Magnetic latching solenoids are designed for low duty cycle applications where the solenoid's energised position is needed for an extended period of time.

When power is applied to the solenoid, the plunger moves to its energised position. The plunger latches magnetically in this position and remains there, consuming no power, until a negative electrical pulse is applied to allow the plunger to unlatch.

The reverse voltage applied is dependent on the load attached to the plunger but must be well below the initial energizing value.

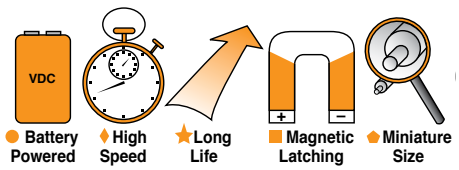
While continuous duty, on/off solenoids tend to develop heat, magnetic latching solenoids do not since no power is consumed in the energised state.

Since magnetic latching solenoids are typically used in low duty cycle applications, they are also perfect candidates for battery operation. These products are therefore catalogued as standard as low as 3-6 volts.

Typical applications for magnetic latching solenoids include door closers, locks, latches and security devices. Almost any solenoid type can be developed as a magnetic latching version. We offer open frame and tubular varieties as catalogue standard products.

Size	Frame Type	Coil Type[1]	Height (mm)	Width (mm)	Length (mm)	Max. Stroke (mm)	Nominal Stroke (mm)	Typical Force (N) Nominal Stroke [2] and 100% Rated Voltage @ 25% Duty
B12-L ●♦■⬟	Box-Latching	T	8.0	10.2	16.0	3.5	1.0	1.3
B12P-L ●♦■⬟	Box-Latching	T	8.0	10.2	16.0	3.5	1.0	0.9
C5M-L ●♦■⬟	C - Latching	T	11.7	10.4	23.8	4.5	1.5	1.4
B17M-L ●♦■⬟	Box - Latching	T	15.1	13.0	20.0	4.5	2.0	0.6
C8M-L ●♦■	C - Latching	OM	20.6	19.1	28.6	12.5	5.0	2.7
B14M-L ● ■	Box - Latching	T	26.0	20.0	36.8	125	3.8	7.0
B14HD-L ●★■	Box - Latching	T	26.0	20.0	37.0	12.5	3.8	16.5
B14HDP-L ●★■	Box - Latching	T	26.0	20.0	37.0	12.5	3.8	16.5
B22M-L ■	Box - Latching	OM	37.3	33.3	40.9	12.5	5.0	9.4

[1] OM = Overmolded; T = Taped *[2] Using flat face plunger*



All specifications subject to change without notice.

Ledex® Box Frame Size B4HDM

Part Number: B4HDM - XXX - M- 36

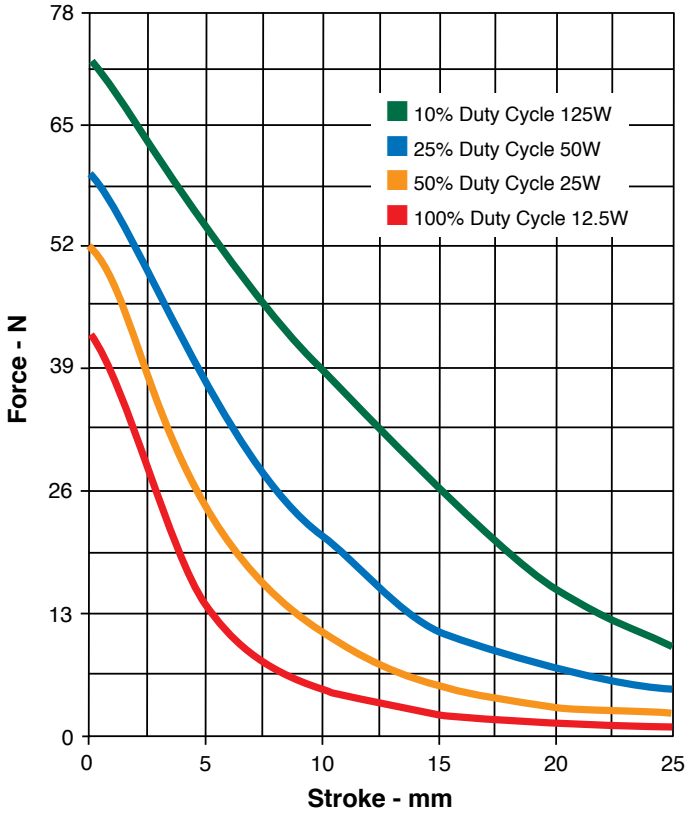
Select from performance chart below

All products are RoHS Compliant

Specifications

Operation	Pull
Dielectric Strength	1500 VRMS for one second
Continuous Duty Cycle	100% at 20°C ambient temperature
Intermittent Duty Cycle	See below
Holding Force	52 N at 20°C
Coil Insulation	Class "A": 105°C max.
Coil Termination	3/16" QC
Plunger Weight	66.6 g
Total Weight	382.7 g

Typical Force @ 20°C



Performance

Maximum Duty Cycle	100%	50%	25%	10%
Maximum ON Time (sec) when pulsed continuously	∞	83	34	13
Maximum ON Time (sec) for single pulse	∞	609	207	66
Watts (@ 20°C)	12.5	25	50	125
Ampere Turns (@ 20°C)	1536	2174	3073	4860

Coil Data

Part Number	Resistance (@20°C)	Ref # Turns	VDC (Nom)	VDC (Nom)	VDC (Nom)	VDC (Nom)
B4HDM-255-M-36	2.94	754	6	8.5	12	19
B4HDM-254-M-36	11.42	1467	12	17	24	38
B4HDM-253-M-36	46.83	2964	24	34	48	76
B4HDM-252-M-36	181	5724	48	68	96	152
B4HDM-251-M-36	1157	14239	120	170	240	380

NOTES:

1. All data is typical.
2. Force testing is done with the solenoid in the horizontal position.
3. All data reflects operation with no heatsink.
4. Pull versions standard; push versions available.
5. Other coil terminations available.

How to Order

Select the part number from the table provided. (For example, to order a 25% duty cycle unit rated at 48 VDC, specify B4HDM-253-M-36.

Please see www.ledex.com for our list of stock products available through our North American distributors.

All specifications subject to change without notice.

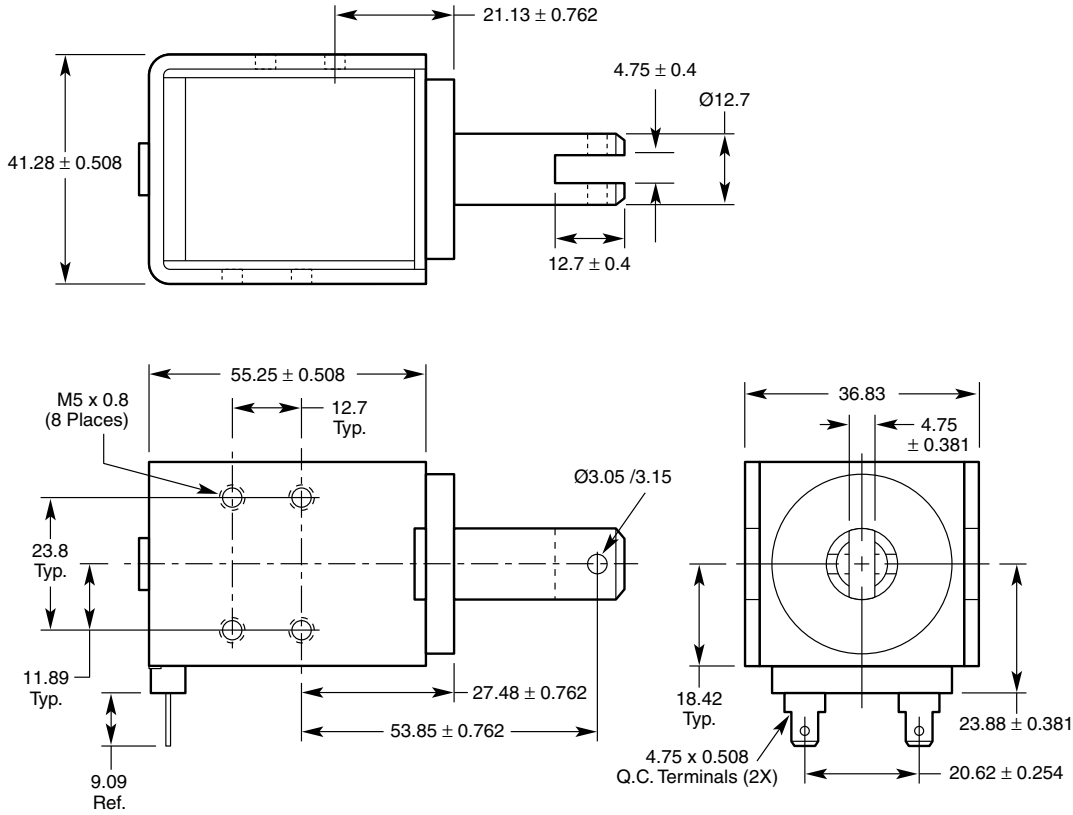
Force values for reference only.

Ledex® Box Frame Size B4HDM

Dimensions

mm

All solenoids are illustrated in energised state



Ledex® Box Frame Size B11HDM

LINEAR Open Frame

Part Number: B11HDM - XXX - B- 3

Select from performance chart below

All products are RoHS Compliant

Specifications

Operation	Pull
Dielectric Strength	1500 VRMS for one second
Continuous Duty Cycle	100% at 20°C ambient temperature
Intermittent Duty Cycle	See below
Minimum Heat Sink	None
Holding Force	34.5 N)at 20°C
Coil Resistance	±5% tolerance
Coil Insulation	Class "B": 130°C max.
Coil Termination	254 mm PVC lead wires
Plunger Weight	38 g
Total Weight	192.8 g

Performance

Maximum Duty Cycle	100%	50%	25%	10%
Maximum ON Time (sec) when pulsed continuously	∞	382	71	21
Maximum ON Time (sec) for single pulse	∞	528	164	48
Watts (@ 20°C)	9	18	36	90
Ampere Turns (@ 20°C)	1119	1582	2238	3539

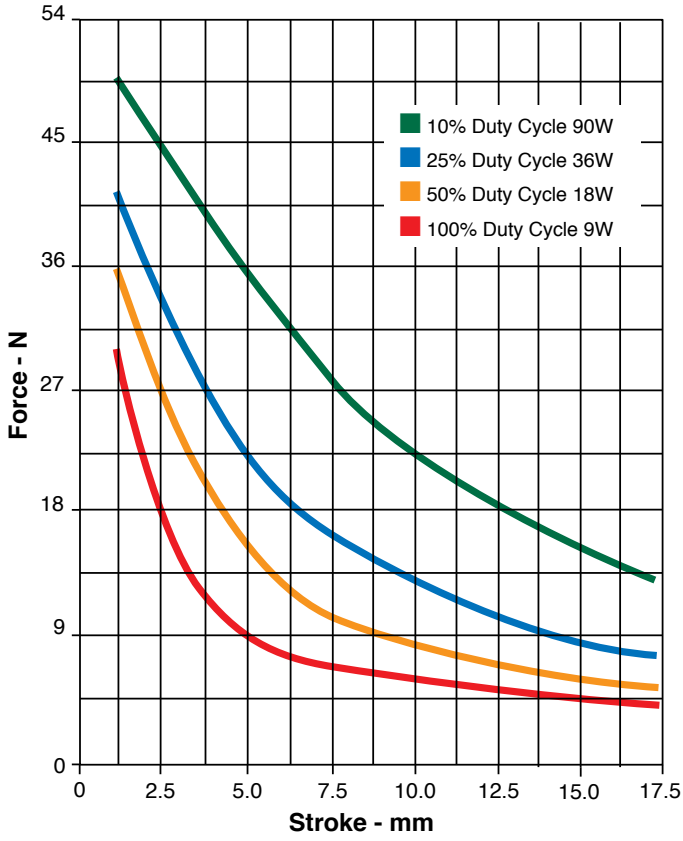
Coil Data

Part Number	Resistance (@20°C)	Ref # Turns	VDC (Nom)	VDC (Nom)	VDC (Nom)	VDC (Nom)
B11HDM-255-B-3	4.2	780	6.1	8.7	12.3	19
B11HDM-254-B-3	16.7	1533	12.3	17	25	39
B11HDM-253-B-3	67	3050	25	35	49	78
B11HDM-252-B-3	286	6360	51	72	102	160
B11HDM-251-B-3	1710	14973	124	176	248	382

NOTES:

1. All data is typical.
2. Force testing is done with the solenoid in the horizontal position.
3. All data reflects operation with no heat sink.
4. Pull versions standard; push versions available.

Typical Force @ 20°C



How to Order

Select the part number from the table provided. (For example, to order a 25% duty cycle unit rated at 49 VDC, specify B11HDM-253-B-3.

Please see www.ledex.com for our list of stock products available through our North American distributors.

All specifications subject to change without notice.

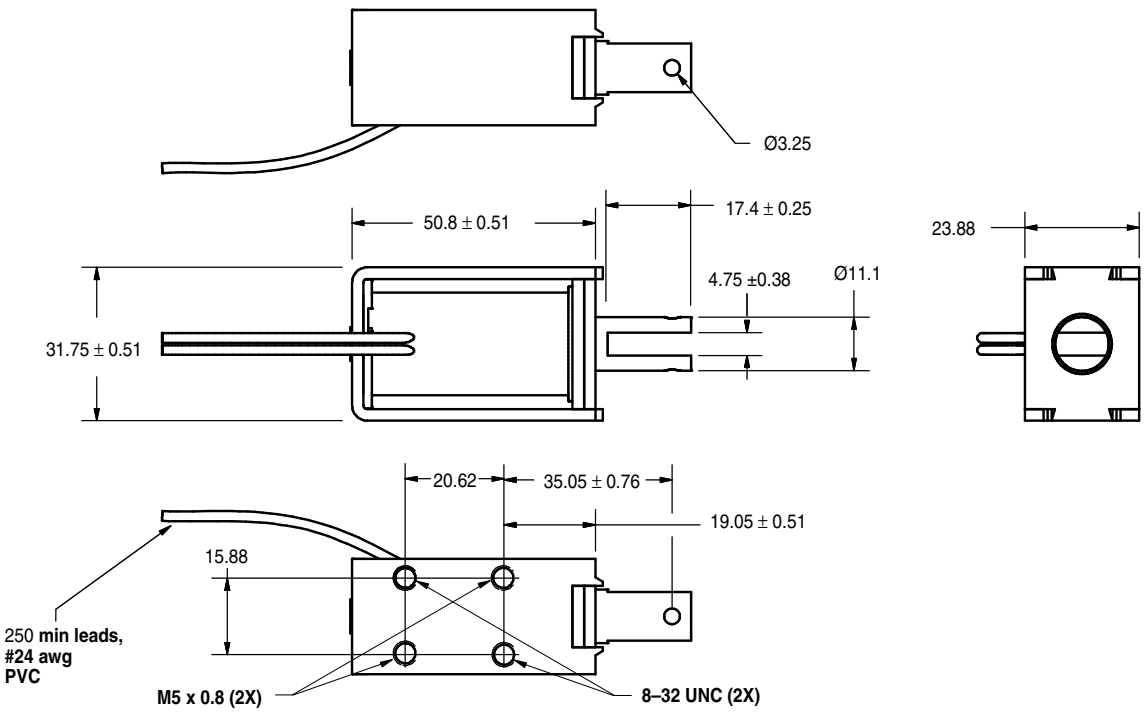
Force values for reference only.

Ledex® Box Frame Size B11HDM

Dimensions

mm

All solenoids are illustrated in energised state



Ledex® Box Frame Size B12M

LINEAR Open Frame

VDC
Battery Powered

High Speed

Miniature Size

Part Number: B12M - XXX - B- 3

Select from performance chart below

All products are RoHS Compliant

Specifications

Operation	Pull
Dielectric Strength	500 VRMS for one second
Continuous Duty Cycle	100% at 20°C ambient temperature
Intermittent Duty Cycle	See below
Holding Force	2.1 N at 20°C
Coil Insulation	Class "A": 105°C max.
Coil Termination	254 mm PVC lead wires
Plunger Weight	1.4 g
Total Weight	8.5 g

Performance

Maximum Duty Cycle	100%	50%	25%	10%
Maximum ON Time (sec) when pulsed continuously	∞	84	11	2
Maximum ON Time (sec) for single pulse	∞	120	34	8
Watts (@ 20°C)	1.3	2.6	5.2	13
Ampere Turns (@ 20°C)	178	251	355	561

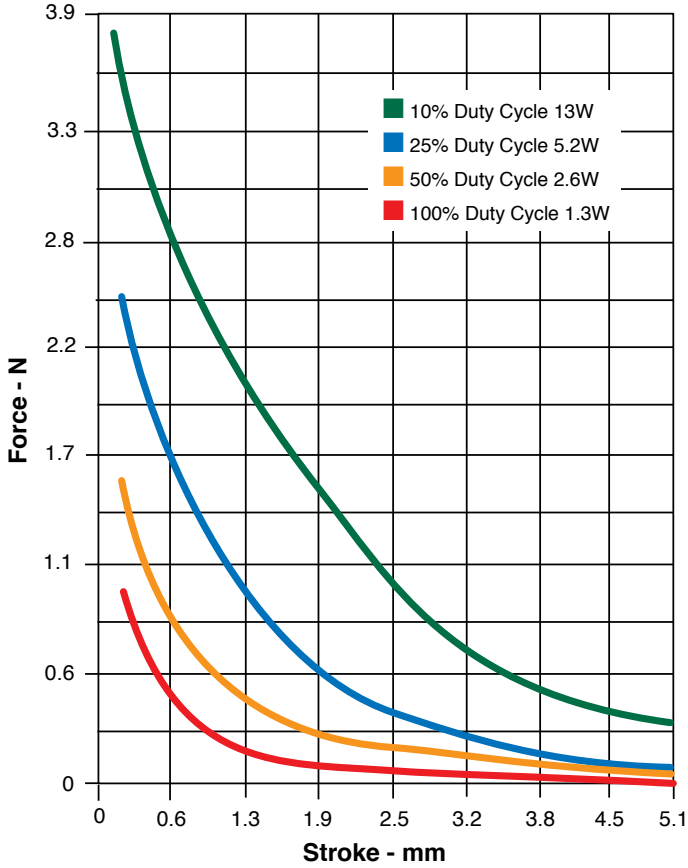
Coil Data

Part Number	Resistance (@20°C)	Ref # Turns	VDC (Nom)	VDC (Nom)	VDC (Nom)	VDC (Nom)
B12M-258-B-3	6.92	417	3	4.24	6	9.5
B12M-255-B-3	27.7	824	6	8.5	12	19
B12M-256-B-3	62.3	1184	9	13	18	28.5
B12M-254-B-3	110.8	1632	12	17	24	38
B12M-253-B-3	443.1	3336	24	34	48	76

NOTES:

1. All data is typical.
2. Force testing is done with the solenoid in the horizontal position.
3. All data reflects operation with no heat sink.
4. Pull versions standard; push versions available.
5. Magnetic latching version available.

Typical Force @ 20°C



How to Order

Select the part number from the table provided. (For example, to order a 25% duty cycle unit rated at 48 VDC, specify B12M-253-B-3.

Please see www.ledex.com for our list of stock products available through our North American distributors.

All specifications subject to change without notice.

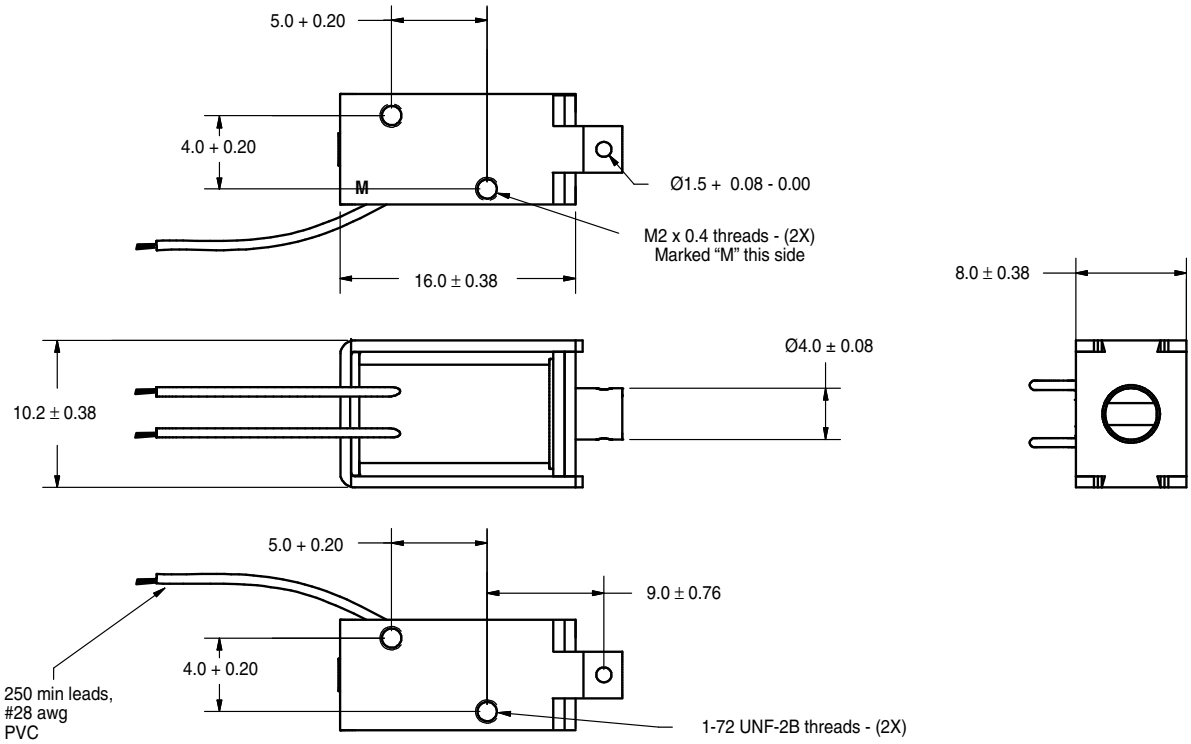
Force values for reference only.

Ledex® Box Frame Size B12M

Dimensions

mm

All solenoids are illustrated in energised state



Ledex® Box Frame Size B14M

LINEAR Open Frame

VDC

Battery Powered

Part Number: B14M - XXX - B- 1

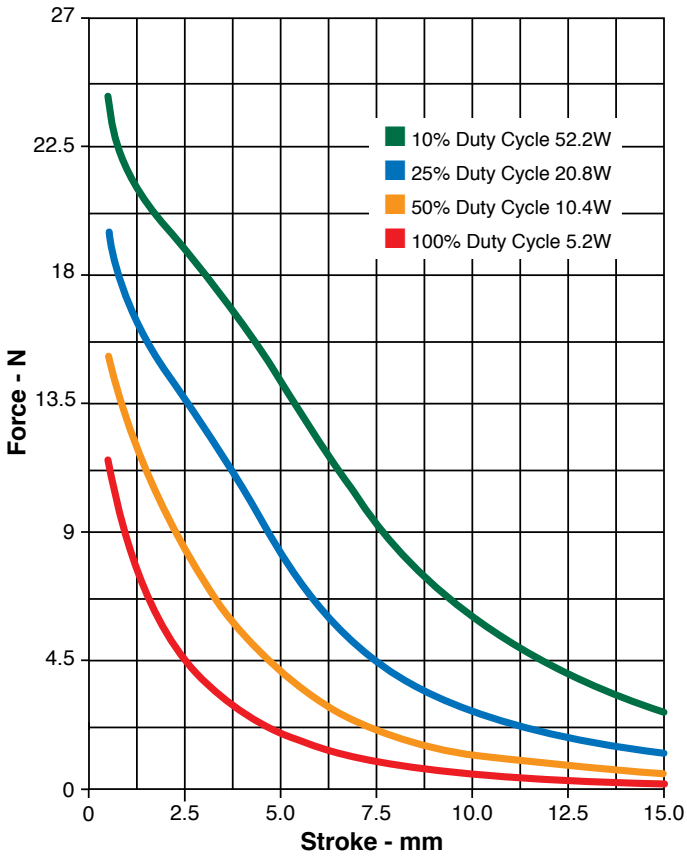
Select from performance chart below

All products are RoHS Compliant

Specifications

Operation	Pull
Dielectric Strength	1000 VRMS for one second
Continuous Duty Cycle	100% at 20°C ambient temperature
Intermittent Duty Cycle	See below
Holding Force	15.6 N at 20°C
Coil Insulation	Class " B": 130°C max.
Coil Termination	254 mm PVC lead wires
Plunger Weight	12 g
Total Weight	90 g

Typical Force @ 20°C



Performance

Maximum Duty Cycle	100%	50%	25%	10%
Maximum ON Time (sec) when pulsed continuously	∞	100	36	7
Maximum ON Time (sec) for single pulse	∞	480	180	45
Watts (@ 20°C)	5.2	10.4	20.8	52.2
Ampere Turns (@ 20°C)	750	1060	1500	2370

Coil Data

Part Number	Resistance (@20°C)	Ref # Turns	VDC (Nom)	VDC (Nom)	VDC (Nom)	VDC (Nom)
B14M-255-B-1	6.9	871	6	8.5	12	19
B14M-254-B-1	28.6	1791	12	17	24	38
B14M-253-B-1	110	3450	24	34	48	76

NOTES:

1. All data is typical.
2. Force testing is done with the solenoid in the horizontal position.
3. All data reflects operation with no heatsink.
4. Pull versions standard; push versions available.
5. Magnetic latching version available.

How to Order

Select the part number from the table provided. (For example, to order a 25% duty cycle unit rated at 48 VDC, specify B14M-253-B-1.

Please see www.ledex.com for our list of stock products available through our North American distributors.

All specifications subject to change without notice.

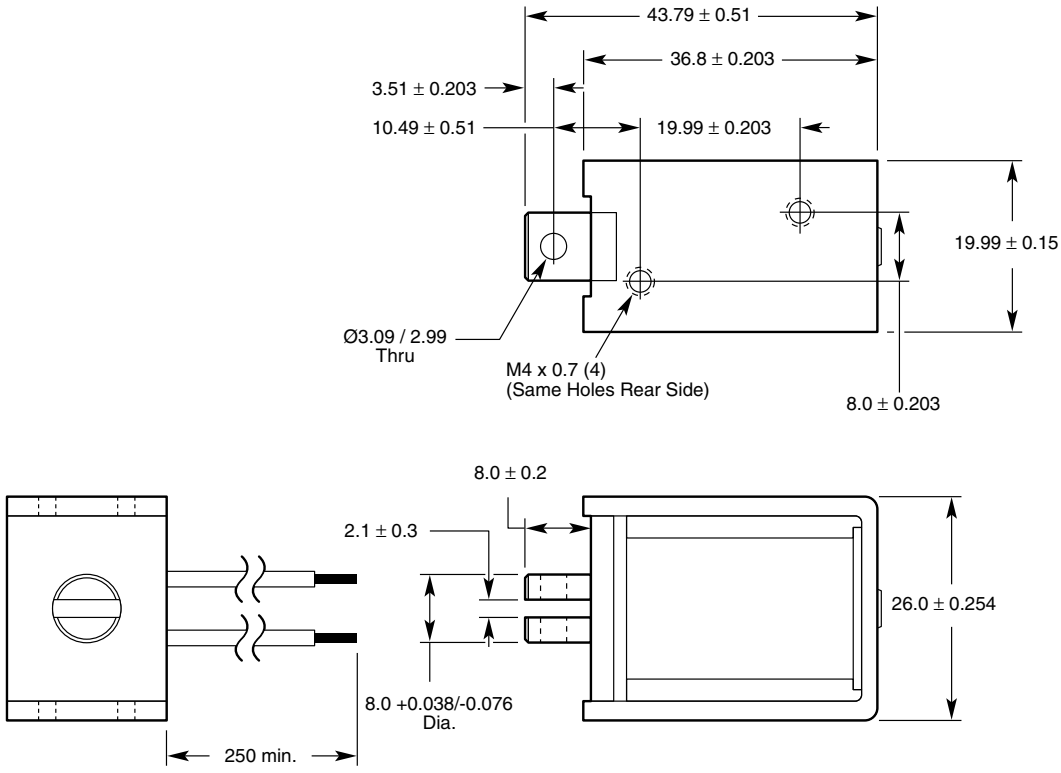
Force values for reference only.

Ledex® Box Frame Size B14M

Dimensions

mm

All solenoids are illustrated in energised state



Ledex® Box Frame Size B14HD

LINEAR Open Frame

VDC
Battery Powered

Long Life

Part Number: B14HD - 2 XX - B- X

- 4 - 254 mm leads
- 6 - Terminals
- Coil Selection (from performance chart below)
- 2 - Conical Pole Configuration

All products are RoHS Compliant

Specifications

Operation	Pull
Dielectric Strength	1000 VRMS for one second
Continuous Duty Cycle	100% at 20°C ambient temperature
Intermittent Duty Cycle	See below
Holding Force	28.4 N at 20°C
Coil Insulation	Class " B": 130°C max.
Coil Termination	254 mm PVC lead wires or terminal
Plunger Weight	24.4 g
Total Weight	98.4 g

Performance

Maximum Duty Cycle	100%	50%	25%	10%
Maximum ON Time (sec) when pulsed continuously	∞	100	27	7
Maximum ON Time (sec) for single pulse	∞	326	100	28
Watts (@ 20°C)	5.5	11	22	55
Ampere Turns (@ 20°C)	663	938	1326	2097

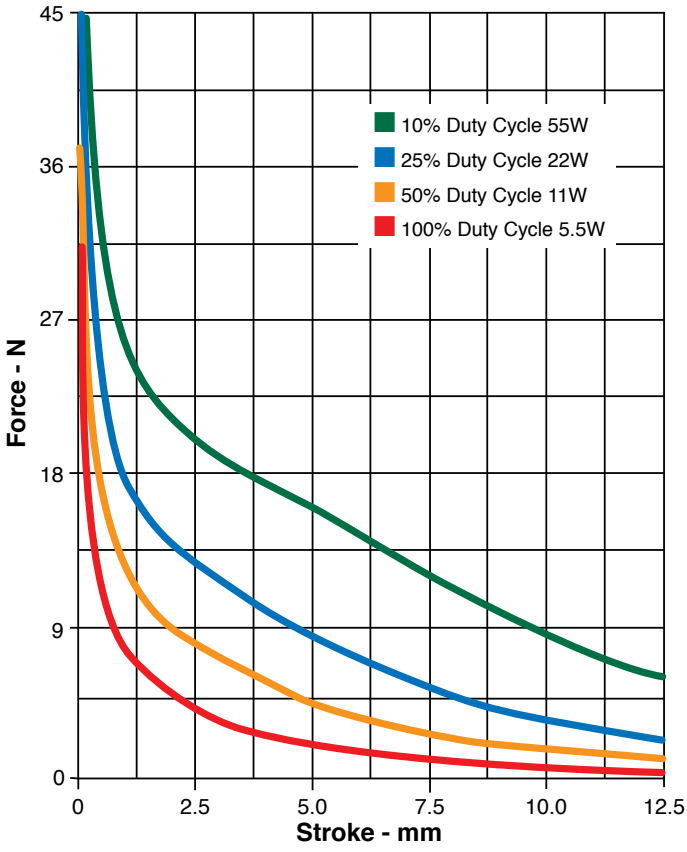
Coil Data

Part Number	Resistance (@20°C)	Ref # Turns	VDC (Nom)	VDC (Nom)	VDC (Nom)	VDC (Nom)
B14HD-258-BX	1.45	321	3.0	4.3	6.1	9.7
B14HD-257-BX	7.0	750	6.0	8.7	12.4	19.6
B14HD-256-BX	14.2	1068	9.0	12.5	17.6	27.9
B14HD-254-BX	27.5	1470	12.0	17.4	24.6	38.9
B14HD-253-BX	110.2	2920	24.0	34.8	49.2	77.8

NOTES:

1. All data is typical.
2. Force testing is done with the solenoid in the horizontal position.
3. All data reflects operation with no heat sink.
4. Pull versions standard; push versions available.
5. Magnetic latching version available.

Typical Force @ 20°C



How to Order

Select the part number from the table provided. (For example, to order a 25% duty cycle unit rated at 46.1 VDC with 254 mm lead wires, specify B14HD-258-B4.

Please see www.ledex.com for our list of stock products available through our North American distributors.

All specifications subject to change without notice.

Force values for reference only.

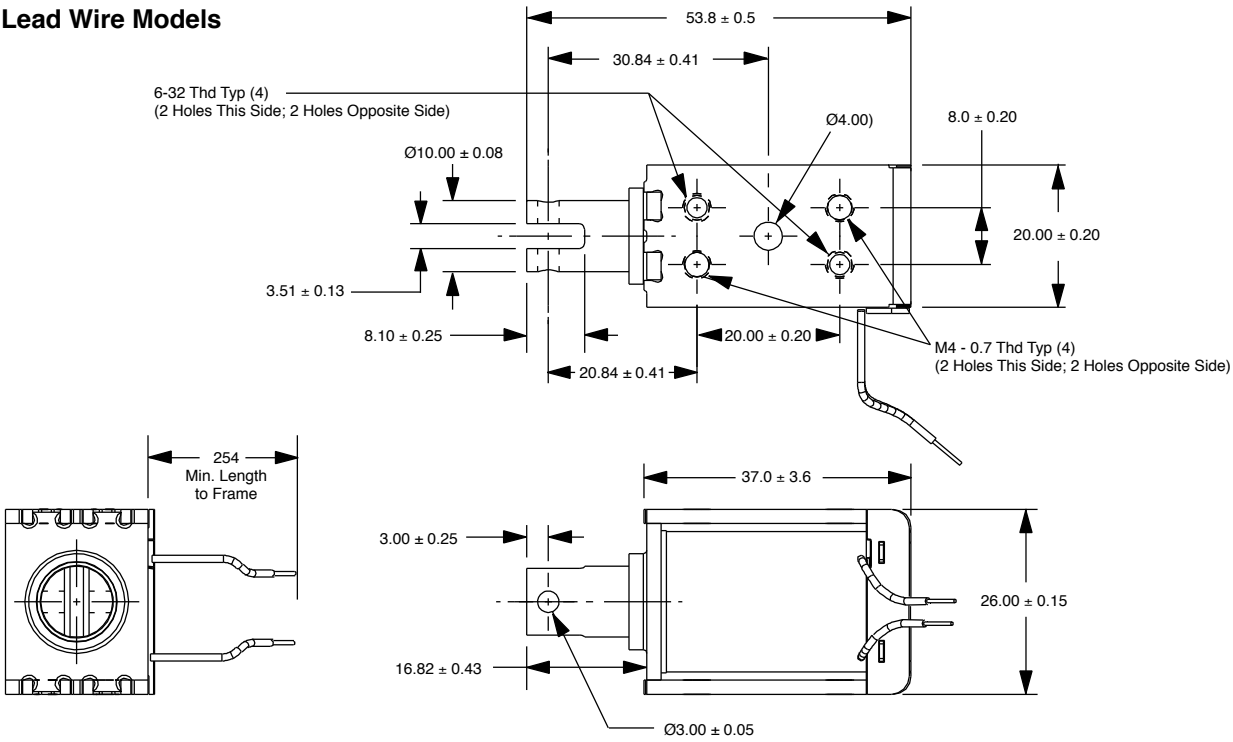
Ledex® Box Frame Size B14HD

Dimensions

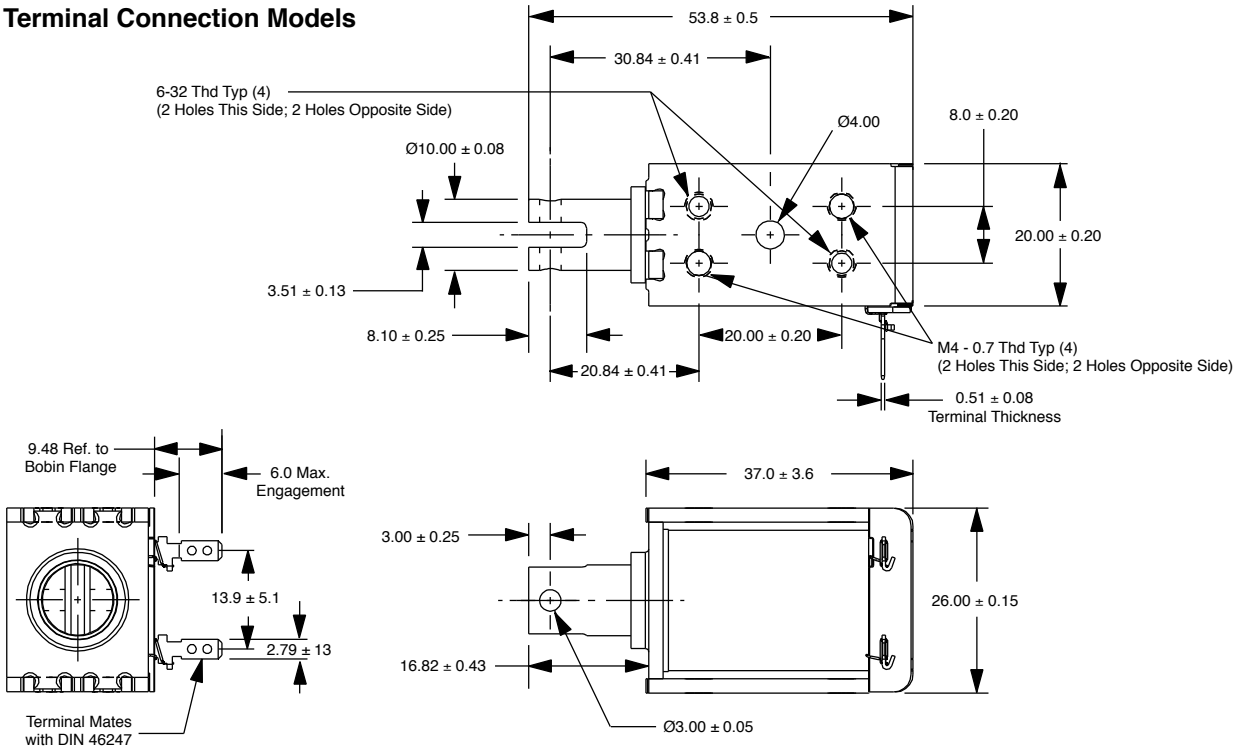
mm

All solenoids are illustrated in energised state

Lead Wire Models



Terminal Connection Models



Ledex® Box Frame Size B14HDP

LINEAR Open Frame

VDC

Battery Powered

Long Life

Part Number: B14HDP - 2 XX - B- X

- 4 - 254 mm leads
- 6 - Terminals
- Coil Selection (from performance chart below)
- 2 - Conical Pole Configuration

All products are RoHS Compliant

Specifications

Operation	PushDielectric Strength1000 VRMS for one second
Continuous Duty Cycle	100% at 20°C ambient temperature
Intermittent Duty Cycle	See below
Holding Force	28.4 N at 20°C
Coil Insulation	Class " B": 130°C max.
Coil Termination	254 mm PVC lead wires or terminal
Plunger Weight	25.8 g
Total Weight	100.1 g

Performance

Maximum Duty Cycle	100%	50%	25%	10%
Maximum ON Time (sec) when pulsed continuously	∞	100	27	7
Maximum ON Time (sec) for single pulse	∞	326	100	28
Watts (@ 20°C)	5.5	11	22	55
Ampere Turns (@ 20°C)	663	938	1326	2097

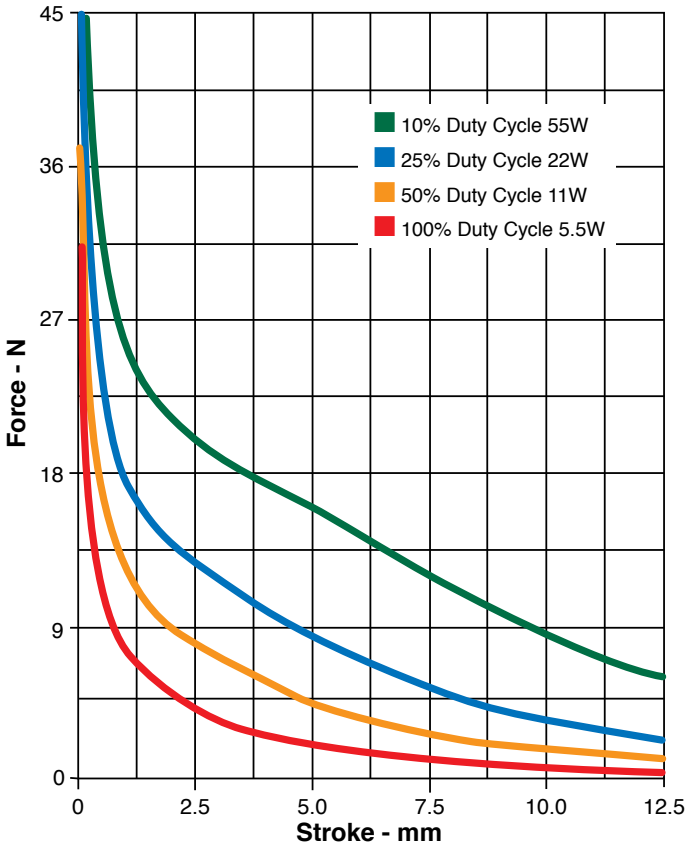
Coil Data

Part Number	Resistance (@20°C)	Ref # Turns	VDC (Nom)	VDC (Nom)	VDC (Nom)	VDC (Nom)
B14HDP-258-BX	1.45	321	3.0	4.3	6.1	9.7
B14HDP-257-BX	7.0	750	6.0	8.7	12.4	19.6
B14HDP-256-BX	14.2	1068	9.0	12.5	17.6	27.9
B14HDP-254-BX	27.5	1470	12.0	17.4	24.6	38.9
B14HDP-253-BX	110.2	2920	24.0	34.8	49.2	77.8

NOTES:

1. All data is typical.
2. Force testing is done with the solenoid in the horizontal position.
3. All data reflects operation with no heat sink.
4. Pull versions standard; push versions available.
5. Magnetic latching version available.

Typical Force @ 20°C



How to Order

Select the part number from the table provided. (For example, to order a 25% duty cycle unit rated at 46.1 VDC with 254 mm lead wires, specify B14HDP-258-B4.

Please see www.ledex.com for our list of stock products available through our North American distributors.

All specifications subject to change without notice.

Force values for reference only.

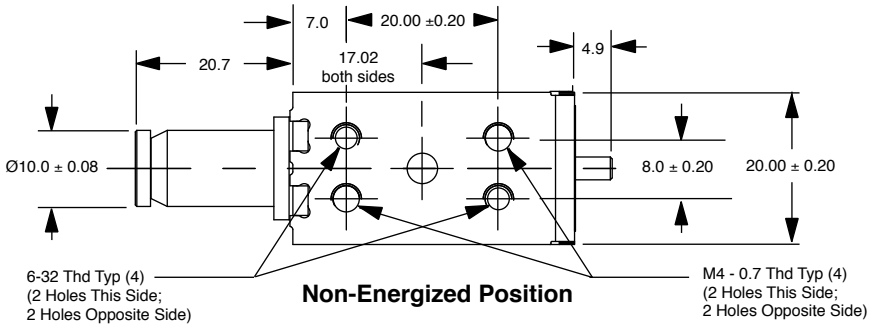
Ledex® Box Frame Size B14HDP

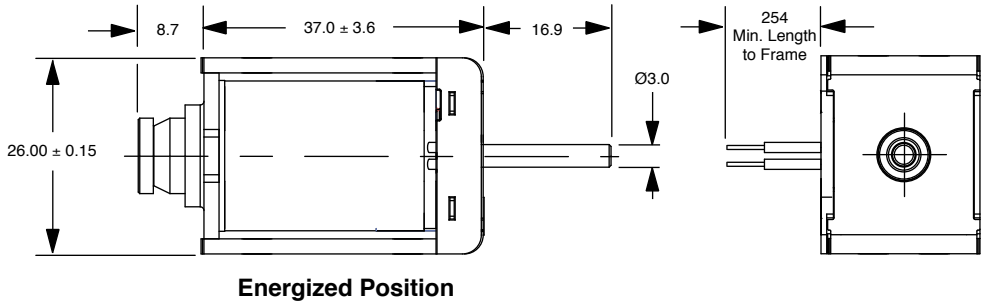
Dimensions

mm

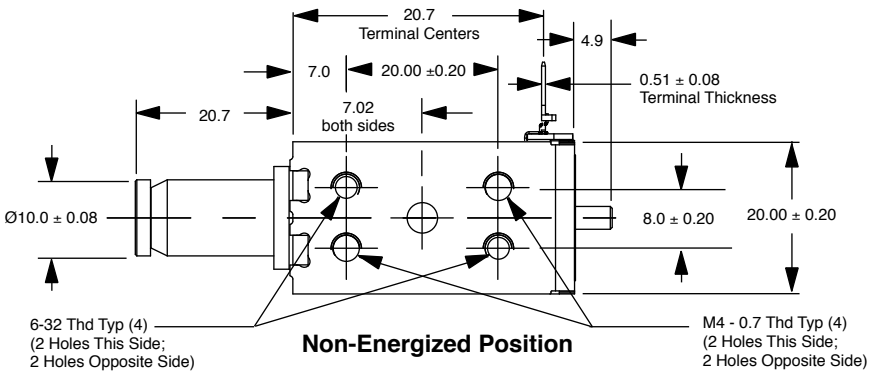
All solenoids are illustrated in energised state

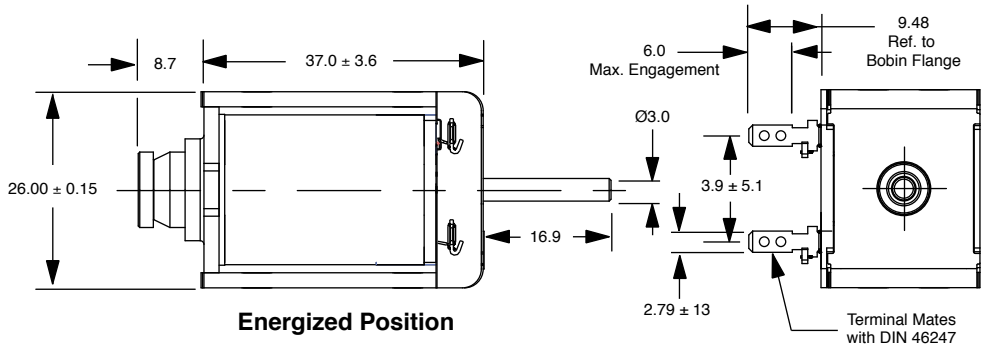
Lead Wire Models





Terminal Connection Models





Ledex® Box Frame Size B17M

LINEAR Open Frame

Part Number: B17M - XXX - A- 1

Select from performance chart below

All products are RoHS Compliant

Specifications

Operation	Pull
Dielectric Strength	500 VRMS for one second
Continuous Duty Cycle	100% at 20°C ambient temperature
Intermittent Duty Cycle	See below
Holding Force	3.9 N at 20°C
Coil Insulation	Class " B": 130°C max.
Coil Termination	254 mm PVC lead wires
Plunger Weight	2.84 g
Total Weight	18.4 g

VDC
Battery Powered

High Speed

Miniature Size

Performance

Maximum Duty Cycle	100%	50%	25%	10%
Maximum ON Time (sec) when pulsed continuously	∞	15	6	2
Maximum ON Time (sec) for single pulse	∞	112	36	10.5
Watts (@ 20°C)	1.6	3.2	6.4	16
Ampere Turns (@ 20°C)	292	414	584	923

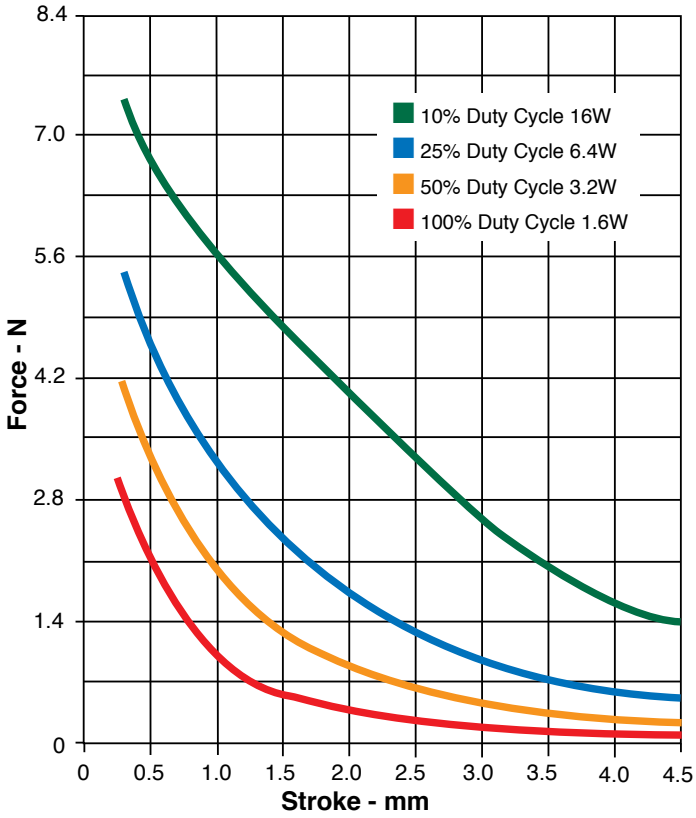
Coil Data

Part Number	Resistance (@20°C)	Ref # Turns	VDC (Nom)	VDC (Nom)	VDC (Nom)	VDC (Nom)
B17M-258-A-1	5.40	556	3	4	6	9
B17M-255-A-1	21.93	1112	6	8.5	12	19
B17M-256-A-1	50.2	1540	9	12	18	28.3
B17M-254-A-1	88.95	2208	12	17	24	38
B17M-253-A-1	337	3687	24	34	48	76
B17M-252-A-1	1465	9177	48	68	96	153

NOTES:

1. All data is typical.
2. Force testing is done with the solenoid in the horizontal position.
3. All data reflects operation with no heatsink.
4. Pull versions standard; push versions available.
5. Magnetic latching version available.

Typical Force @ 20°C



How to Order

Select the part number from the table provided. (For example, to order a 25% duty cycle unit rated at 48 VDC, specify B17M-253-A-1.

Please see www.ledex.com for our list of stock products available through our North American distributors.

All specifications subject to change without notice.

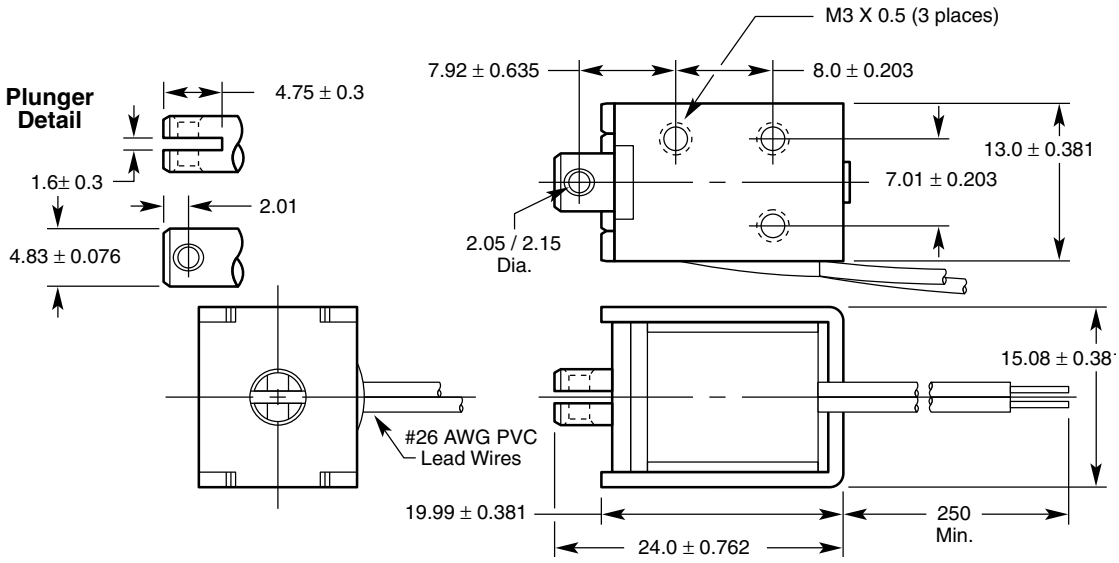
Force values for reference only.

Ledex® Box Frame Size B17M

Dimensions

mm

All solenoids are illustrated in energised state



Ledex® Box Frame Size B20M

LINEAR Open Frame

VDC

Battery Powered

Part Number: B20M - XXX - A- 3

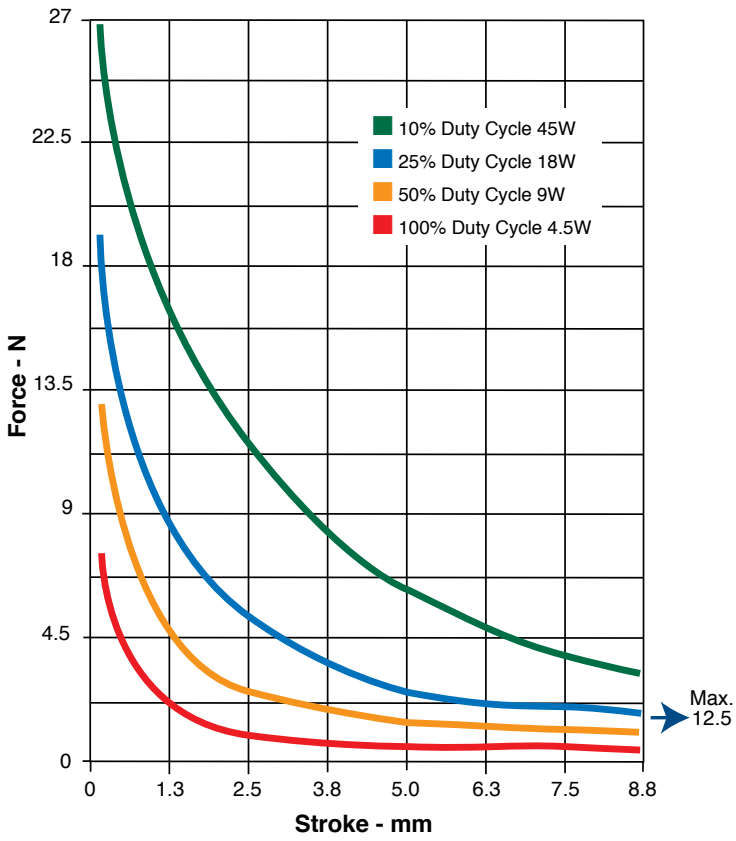
Select from performance chart below

All products are RoHS Compliant

Specifications

Operation	Pull
Dielectric Strength	1000 VRMS for one second
Continuous Duty Cycle	100% at 20°C ambient temperature
Intermittent Duty Cycle	See below
Holding Force	10.2 N at 20°C
Coil Insulation	Class " A": 105°C max.
Coil Termination	254 mm PVC lead wires
Plunger Weight	16.4 g
Total Weight	61.6 g

Typical Force @ 20°C



Performance

Maximum Duty Cycle	100%	50%	25%	10%
Maximum ON Time (sec) when pulsed continuously	∞	65	28	7
Maximum ON Time (sec) for single pulse	∞	190	80	28
Watts (@ 20°C)	4.5	9.0	18.0	45.0
Ampere Turns (@ 20°C)	429	608	858	1358

Coil Data

Part Number	Resistance (@20°C)	Ref # Turns	VDC (Nom)	VDC (Nom)	VDC (Nom)	VDC (Nom)
B20M-255-A-3	8	572	6	8.5	12	19
B20M-254-A-3	32	1222	12	17	24	38
B20M-253-A-3	128	2269	24	34	48	76
B20M-252-A-3	512	4496	48	68	96	152
B20M-251-A-3	3200	10944	120	170	240	380

NOTES:

1. All data is typical.
2. Force testing is done with the solenoid in the horizontal position.
3. All data reflects operation with no heatsink.
4. Pull versions standard; push versions available.

How to Order

Select the part number from the table provided. (For example, to order a 25% duty cycle unit rated at 48 VDC, specify B20M-253-A-3.

Please see www.ledex.com for our list of stock products available through our North American distributors.

All specifications subject to change without notice.

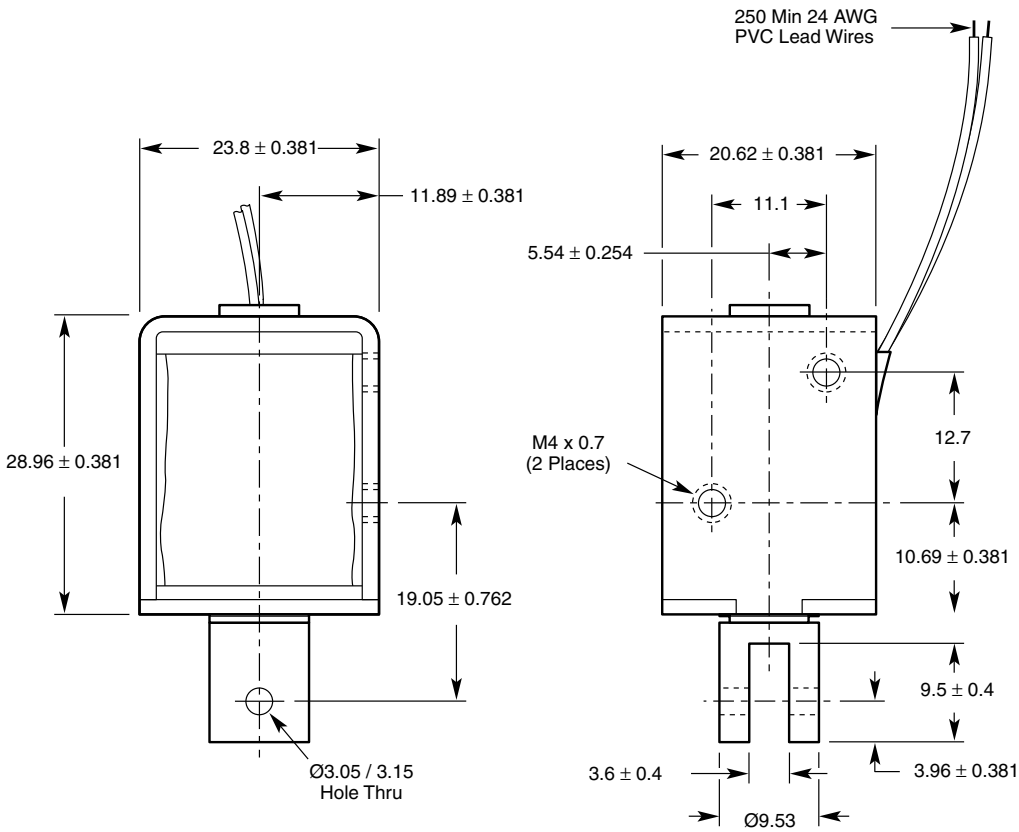
Force values for reference only.

Ledex® Box Frame Size B20M

Dimensions

mm

All solenoids are illustrated in energised state



Ledex® Box Frame Size B22M

LINEAR Open Frame

Part Number: B22M - XXX - M- 36

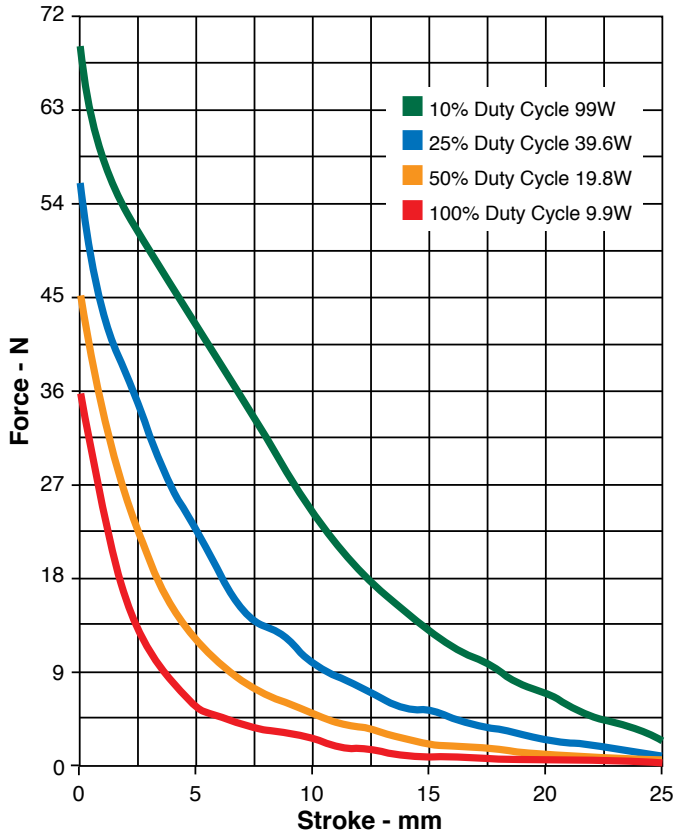
Select from performance chart below

All products are RoHS Compliant

Specifications

Operation	Pull
Dielectric Strength	1500 VRMS for one second
Continuous Duty Cycle	100% at 20°C ambient temperature
Intermittent Duty Cycle	See below
Holding Force	35.6 N at 20°C
Coil Insulation	Class "A": 105°C max.
Coil Termination	3/16" QC
Plunger Weight	39.7 g
Total Weight	212.6 g

Typical Force @ 20°C



Performance

Maximum Duty Cycle	100%	50%	25%	10%
Maximum ON Time (sec) when pulsed continuously	∞	52	23	9
Maximum ON Time (sec) for single pulse	∞	485	167	47
Watts (@ 20°C)	9.9	19.8	39.6	99
Ampere Turns (@ 20°C)	1046	1482	2093	3314

Coil Data

Part Number	Resistance (@20°C)	Ref # Turns	VDC (Nom)	VDC (Nom)	VDC (Nom)	VDC (Nom)
B22M-255-M-36	3.64	635	6	8.5	12	19
B22M-254-M-36	14.55	1300	12	17	24	38
B22M-253-M-36	58.18	2578	24	34	48	76
B22M-252-M-36	232.73	5103	48	68	96	152
B22M-251-M-36	1493	12744	120	172	240	385

NOTES:

1. All data is typical.
2. Force testing is done with the solenoid in the horizontal position.
3. All data reflects operation with no heatsink.
4. Pull versions standard; push versions available.
5. Other coil terminations available.
6. Magnetic latching version available.

How to Order

Select the part number from the table provided. (For example, to order a 25% duty cycle unit rated at 48 VDC, specify B22M-253-M-36.

Please see www.ledex.com for our list of stock products available through our North American distributors.

All specifications subject to change without notice.

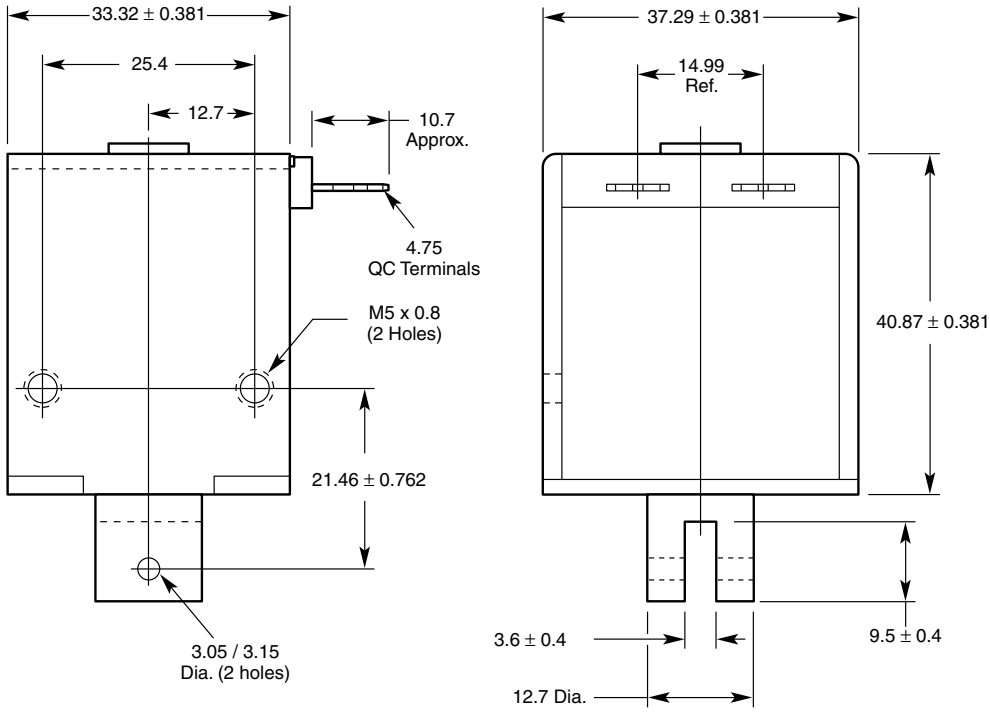
Force values for reference only.

Ledex® Box Frame Size B22M

Dimensions

mm

All solenoids are illustrated in energised state



Ledex® Box Frame Size B28M

LINEAR Open Frame

Part Number: B28M - XXX - B- 4

Select from performance chart below

All products are RoHS Compliant

Specifications

Operation	Pull
Dielectric Strength	1500 VRMS for one second
Continuous Duty Cycle	100% at 20°C ambient temperature
Intermittent Duty Cycle	See below
Holding Force	18.7 N at 20°C
Coil Resistance	±5% tolerance
Coil Insulation	Class "B": 130°C max.
Coil Termination	254 mm PVC leads
Plunger Weight	13.4 g
Total Weight	110.6 g

Performance

Maximum Duty Cycle	100%	50%	25%	10%
Maximum ON Time (sec) when pulsed continuously	∞	242	54	16
Maximum ON Time (sec) for single pulse	∞	441	130	38
Watts (@ 20°C)	5.2	10.4	20.8	52
Ampere Turns (@ 20°C)	695	983	1390	2197

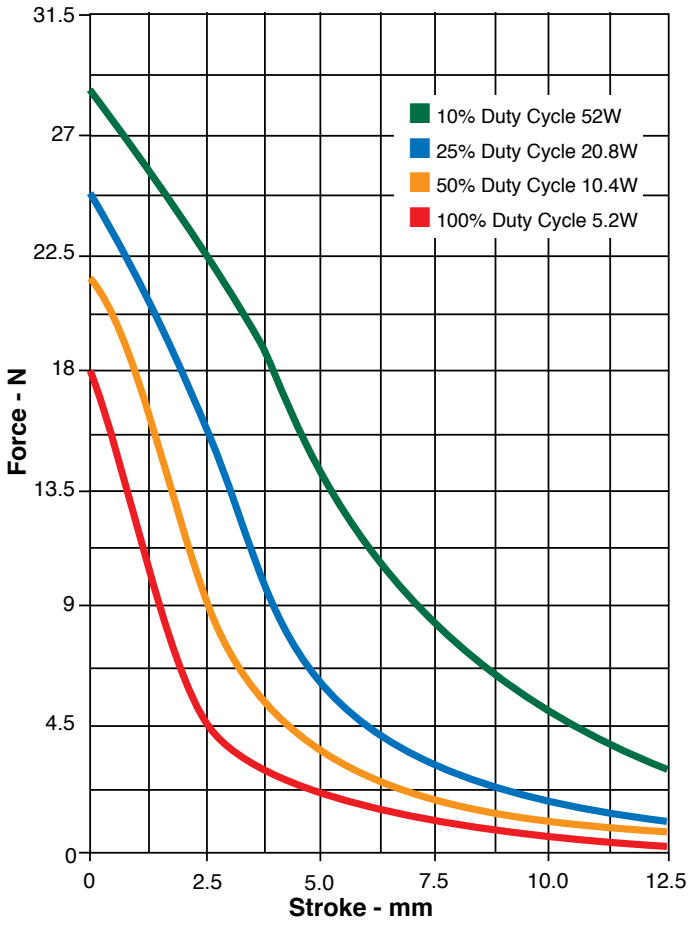
Coil Data

Part Number	Resistance (@20°C)	Ref # Turns	VDC (Nom)	VDC (Nom)	VDC (Nom)	VDC (Nom)
B28M-255-B-4	7.8	891	6.4	9	12.7	20
B28M-254-B-4	28.7	1656	12.2	17	24	39
B28M-253-B-4	115	3281	24	35	49	77
B28M-252-B-4	454	6408	48	69	97	154
B28M-251-B-4	2718	15096	119	168	238	376

NOTES:

1. All data is typical.
2. Force testing is done with the solenoid in the horizontal position.
3. All data reflects operation with no heat sink.
4. Pull versions standard; push versions available.

Typical Force @ 20°C



How to Order

Select the part number from the table provided. (For example, to order a 25% duty cycle unit rated at 49 VDC, specify B28M-253-B-4.

Please see www.ledex.com for our list of stock products available through our North American distributors.

All specifications subject to change without notice.

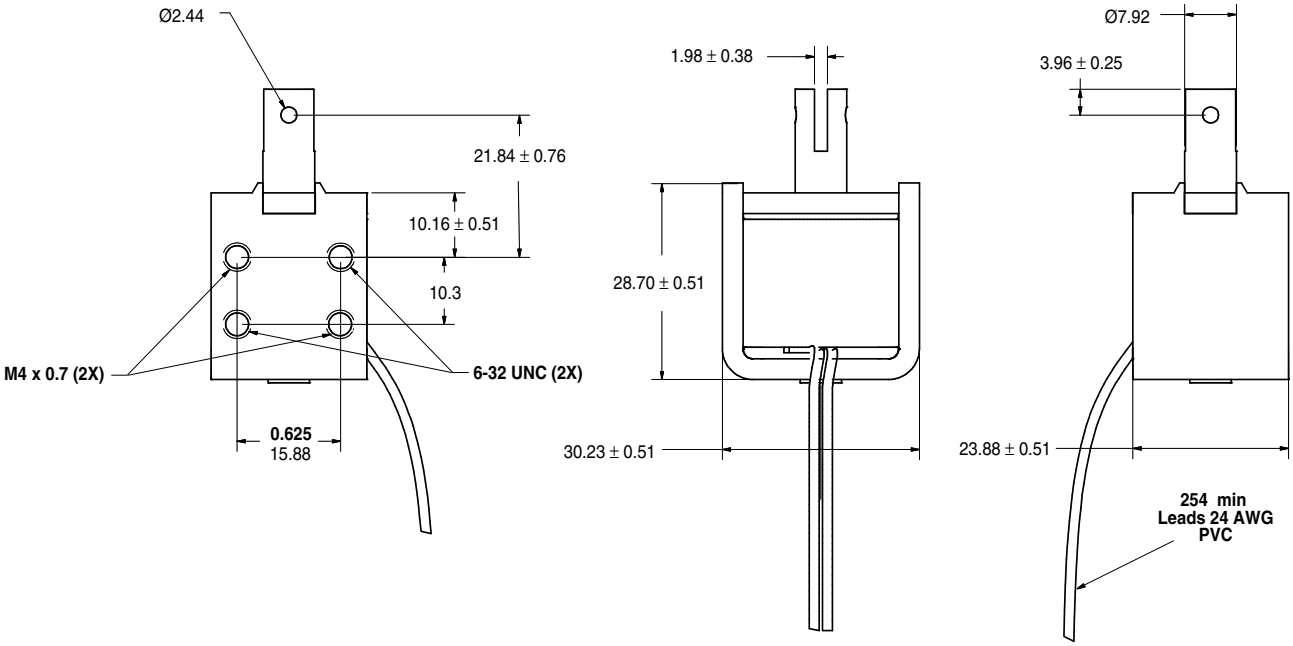
Force values for reference only.

Ledex® Box Frame Size B28M

Dimensions

mm

All solenoids are illustrated in energised state



Ledex® Box Frame Size B28HDM

Part Number: B28HDM - XXX - B- 4

Select from performance chart below

All products are RoHS Compliant

Specifications

Operation	Pull
Dielectric Strength	1500 VRMS for one second
Continuous Duty Cycle	100% at 20°C ambient temperature
Intermittent Duty Cycle	See below
Holding Force	27.8 N at 20°C
Coil Resistance	±5% tolerance
Coil Insulation	Class "B": 130°C max.
Coil Termination	254 mm PVC leads
Plunger Weight	23.8 g
Total Weight	141.8 g

Performance

Maximum Duty Cycle	100%	50%	25%	10%
Maximum ON Time (sec) when pulsed continuously	∞	159	36	10
Maximum ON Time (sec) for single pulse	∞	477	123	32
Watts (@ 20°C)	6.2	12.4	24.8	62
Ampere Turns (@ 20°C)	621	878	1242	1963

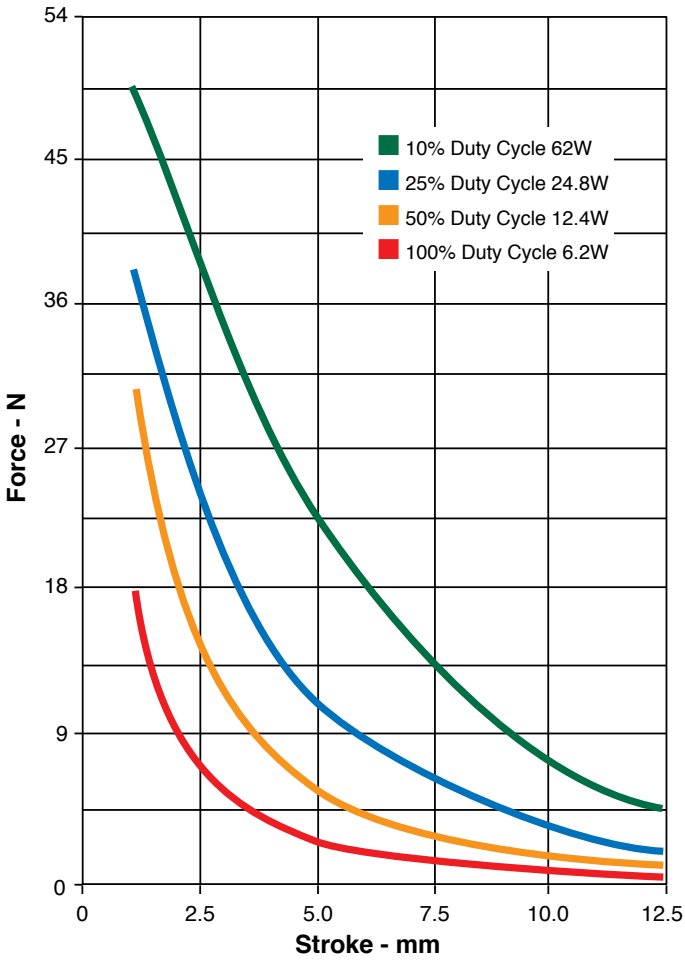
Coil Data

Part Number	Resistance (@20°C)	Ref # Turns	VDC (Nom)	VDC (Nom)	VDC (Nom)	VDC (Nom)
B28HDM-255-B-4	6	624	6.1	8.6	12.2	19
B28HDM-254-B-4	25	1273	12.4	18	25	39
B28HDM-253-B-4	99	2524	25	35	50	78
B28HDM-252-B-4	375	4791	48	68	96	153
B28HDM-251-B-4	2250	11257	119	167	236	374

NOTES:

1. All data is typical.
2. Force testing is done with the solenoid in the horizontal position.
3. All data reflects operation with no heat sink.
4. Pull versions standard; push versions available.

Typical Force @ 20°C



How to Order

Select the part number from the table provided. (For example, to order a 25% duty cycle unit rated at 50 VDC, specify B28HDM-253-B-4.

Please see www.ledex.com for our list of stock products available through our North American distributors.

All specifications subject to change without notice.

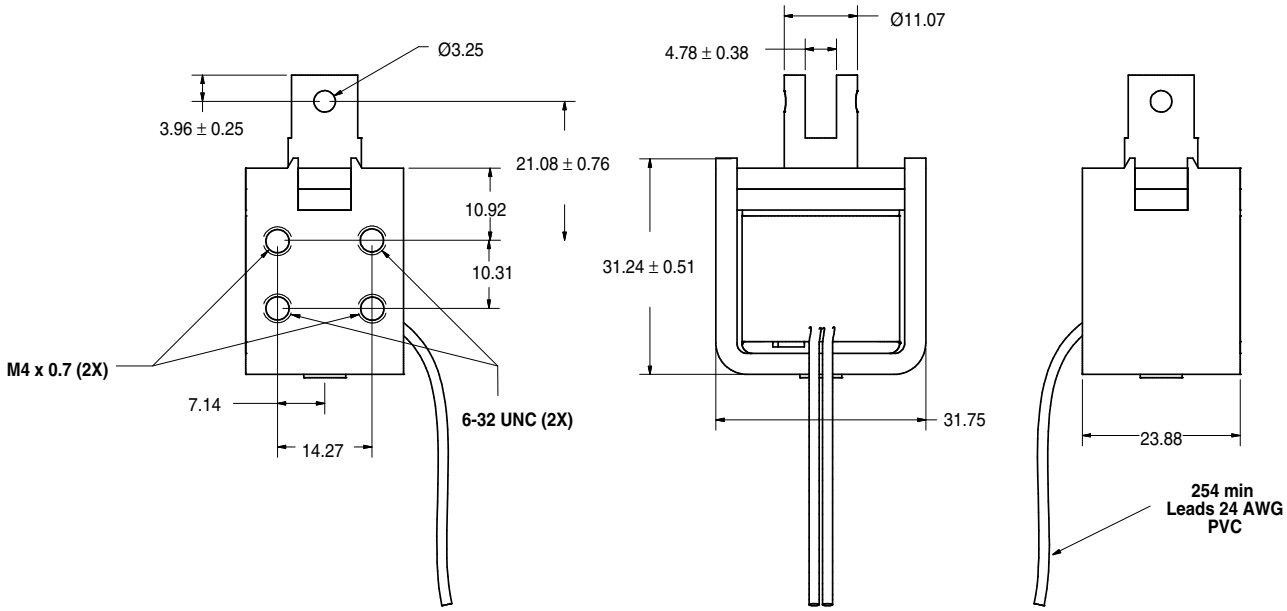
Force values for reference only.

Ledex® Box Frame Size B28HDM

Dimensions

mm

All solenoids are illustrated in energised state



Ledex® Box Frame Size B41M

Part Number: B41M - XXX - B- 1

Select from performance chart below

All products are RoHS Compliant

Specifications

Operation	Pull
Dielectric Strength	1000 VRMS for one second
Continuous Duty Cycle	100% at 20°C ambient temperature
Intermittent Duty Cycle	See below
Holding Force	71.2 N at 20°C
Coil Insulation	Class "A": 105°C max.
Coil Termination	254 mm PVC leads
Plunger Weight	158.8 g
Total Weight	878.9 g

Performance

Maximum Duty Cycle	100%	50%	25%	10%
Maximum ON Time (sec) when pulsed continuously	∞	95	60	14
Maximum ON Time (sec) for single pulse	∞	1548	491	139
Watts (@ 20°C)	19	38	76	190
Ampere Turns (@ 20°C)	1981	2807	3963	6274

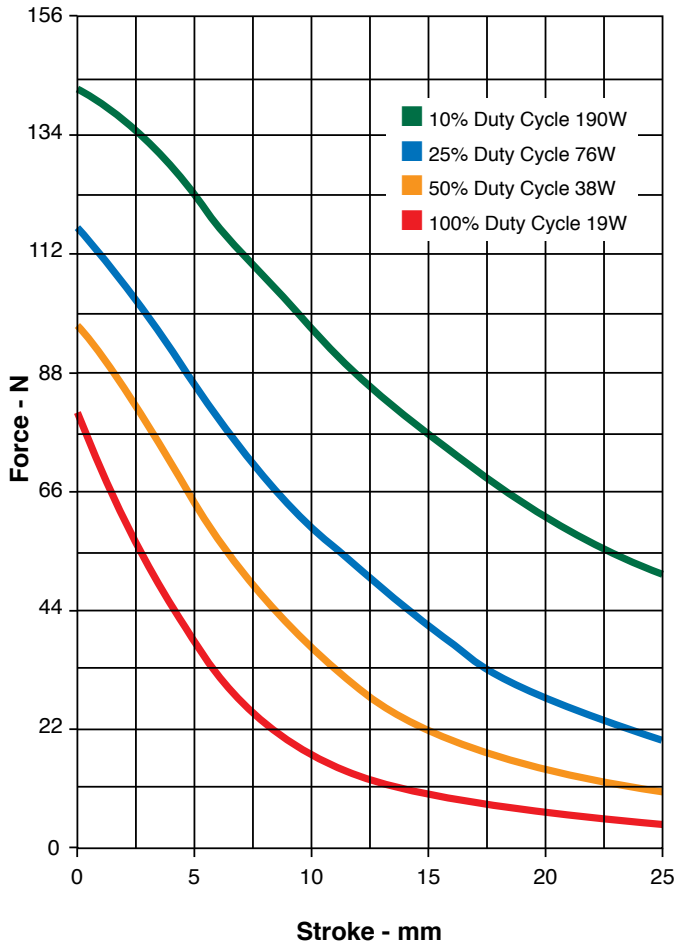
Coil Data

Part Number	Resistance (@20°C)	Ref # Turns	VDC (Nom)	VDC (Nom)	VDC (Nom)	VDC (Nom)
B41M-255-B-1	1.84	608	6	8.5	12	19
B41M-254-B-1	7.67	1432	12	17	24	38
B41M-253-B-1	30.19	2814	24	34	48	76
B41M-252-B-1	121.5	5610	48	68	96	152
B41M-251-B-1	793.46	14259	120	173	240	388

NOTES:

1. All data is typical.
2. Force testing is done with the solenoid in the horizontal position.
3. All data reflects operation with no heatsink.
4. Pull versions standard; push versions available.

Typical Force @ 20°C



How to Order

Select the part number from the table provided. (For example, to order a 25% duty cycle unit rated at 48 VDC, specify B41M-253-B-1.

Please see www.ledex.com for our list of stock products available through our North American distributors.

All specifications subject to change without notice.

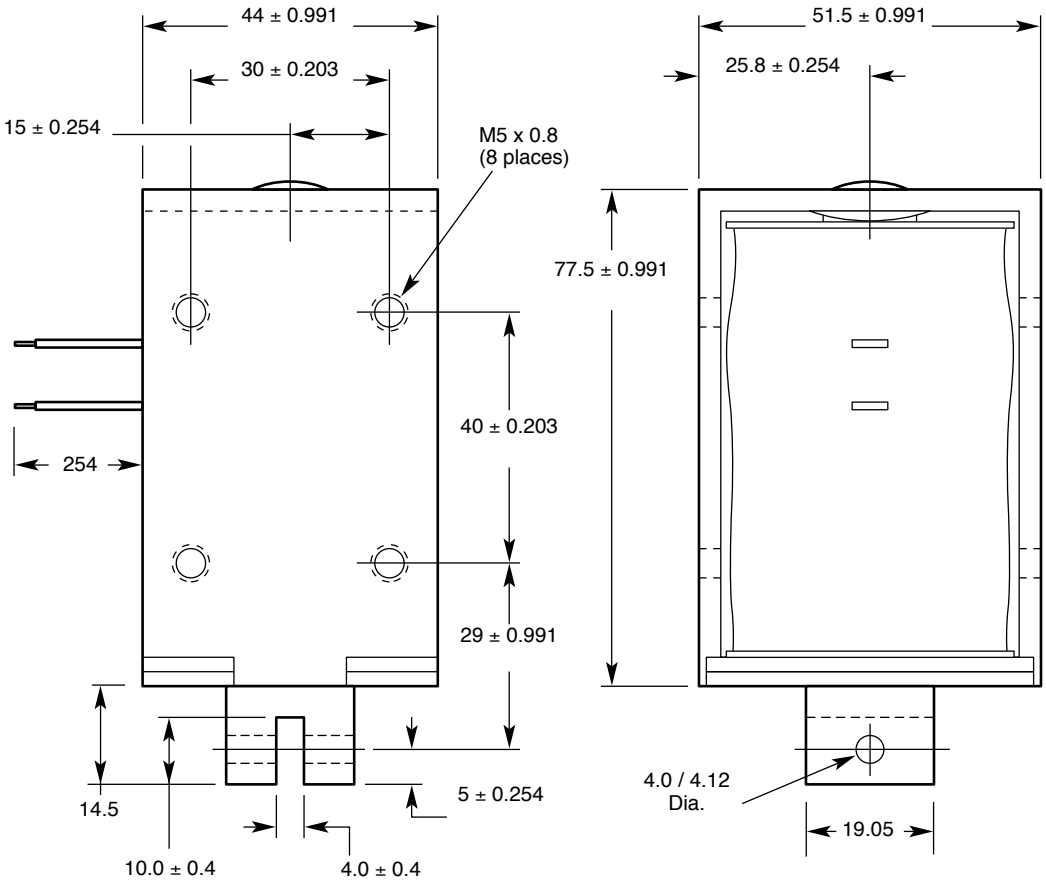
Force values for reference only.

Ledex® Box Frame Size B41M

Dimensions

mm

All solenoids are illustrated in energised state



Ledex® C Frame Size C5M

LINEAR Open Frame

Part Number: C5M - XXX - B- 1

Select from performance chart below

All products are RoHS Compliant

VDC
Battery Powered

High Speed

Miniature Size

Specifications

Operation	Pull
Dieletectric Strength	500 VRMS for one second
Continuous Duty Cycle	100% At 20°C ambient temperature
Intermittent Duty Cycle	See below
Coil Insulation	Class "B": 130°C max.
Coil Termination	0.025" square pin terminals
Plunger Pole Face	60° conical
Plunger Weight	2.2 g
Total Weight	11.9 g

Performance

Maximum Duty Cycle	100%	50%	25%	10%
Maximum ON Time (sec)	∞	145	47	14
Watts (@ 20°C)	3	6	12	30
Ampere Turns (@ 20°C)	422	564	844	1268

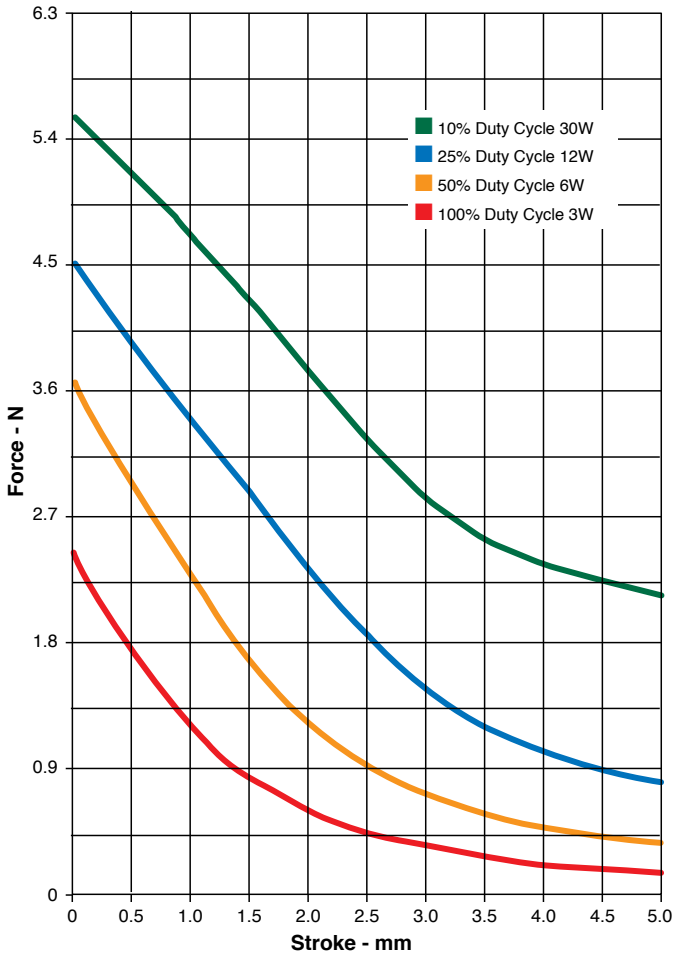
Coil Data

Part Number	Resistance (@20°C)	Ref # Turns	VDC (Nom)	VDC (Nom)	VDC (Nom)	VDC (Nom)
C5M-273-B-1	2.88	406	3	4	6	9
C5M-272-B-1	11.52	795	6	8	12	19
C5M-271-B-1	25.77	1222	9	12	18	28
C5M-270-B-1	48.65	1642	12	17	24	38
C5M-269-B-1	72.84	1968	15	21	30	47
C5M-268-B-1	152.20	2860	21	30	43	68
C5M-267-B-1	191.73	3202	24	34	48	76

NOTES:

1. All data is typical.
2. Force testing is done with the solenoid in the horizontal position.
3. All data reflects operation with no heatsink.
4. Other coil terminations available.
5. Pull versions standard; push versions available.
6. Magnetic latching version available.

Force (Gross, Without Spring)



How to Order

Select the part number from the table provided. (For example, to order a 25% duty cycle unit rated at 48 VDC, specify C5M-267-B-1.

Please see www.ledex.com for our list of stock products available through our North American distributors.

All specifications subject to change without notice.

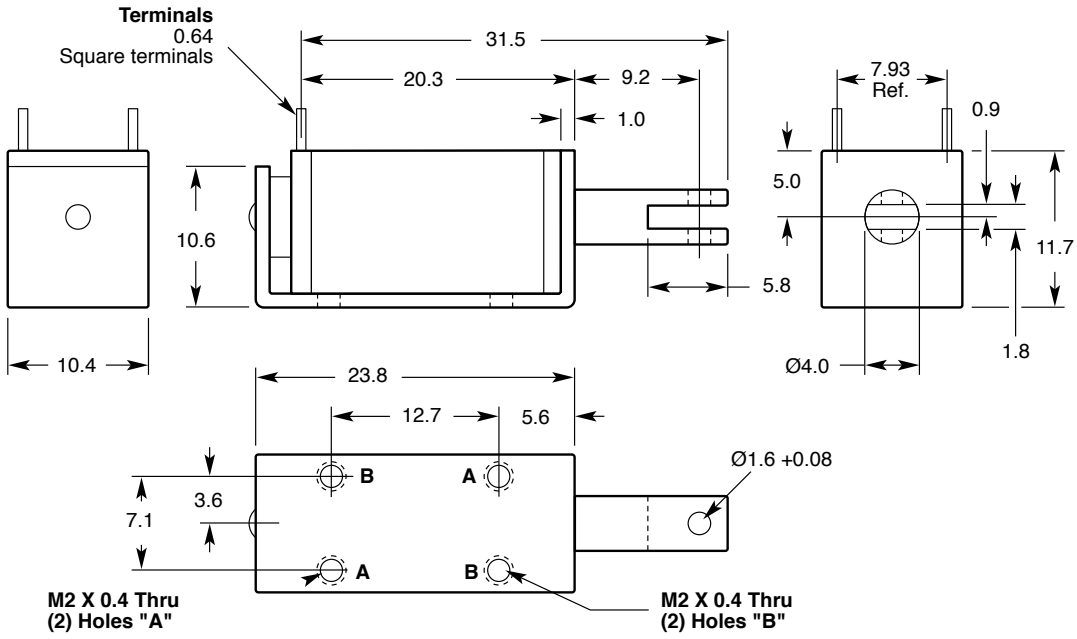
Force values for reference only.

Ledex® C Frame Size C5M

Dimensions

mm

All solenoids are illustrated in energised state



Ledex® C Frame Size C8M

LINEAR Open Frame

VDC
Battery Powered

High Speed

Part Number: C8M - XXX - M- 36

Select from performance chart below

All products are RoHS Compliant

Specifications

Operation	Pull
Dieletectric Strength	500 VRMS for one second
Continuous Duty Cycle	100% at 20°C ambient temperature
Intermittent Duty Cycle	See below
Holding Force	9.96 N at 20°C
Coil Insulation	Class "A": 105°C max.
Coil Termination	3/16" QC
Plunger Weight	11.3 g
Total Weight	45.4 g

Performance

Maximum Duty Cycle	100%	50%	25%	10%
Maximum ON Time (sec) when pulsed continuously	∞	19	9	3
Maximum ON Time (sec) for single pulse	∞	286	92	27
Watts (@ 20°C)	3.6	7	14	35
Ampere Turns (@ 20°C)	464	657	929	1470

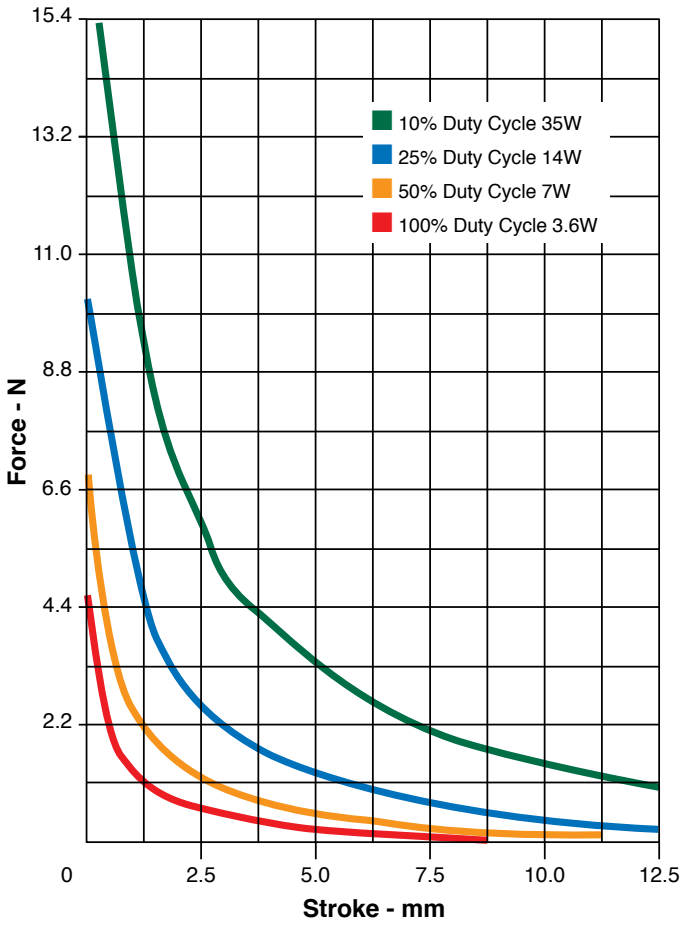
Coil Data

Part Number	Resistance (@20°C)	Ref # Turns	VDC (Nom)	VDC (Nom)	VDC (Nom)	VDC (Nom)
C8M-276-M-36	2.56	404	3	4.2	5.9	9.3
C8M-273-M-36	9.30	752	6	8.5	12	19
C8M-274-M-36	23.2	1252	9	12.7	18	28.5
C8M-272-M-36	37.12	1484	12	17	24	38
C8M-271-M-36	150.73	2736	24	34	48	76
C8M-270-M-36	621.54	5544	48	68	96	152
C8M-269-M-36	3824	15035	120	164	231	366

NOTES:

1. All data is typical.
2. Force testing is done with the solenoid in the horizontal position.
3. All data reflects operation with no heatsink.
4. Magnetic latching versions available.
5. Pull versions standard; push versions available.
6. Other coil terminations available.

Typical Force @ 20°C



How to Order

Select the part number from the table provided. (For example, to order a 25% duty cycle unit rated at 48 VDC, specify C8M-271-M-36.

Please see www.ledex.com for our list of stock products available through our North American distributors.

All specifications subject to change without notice.

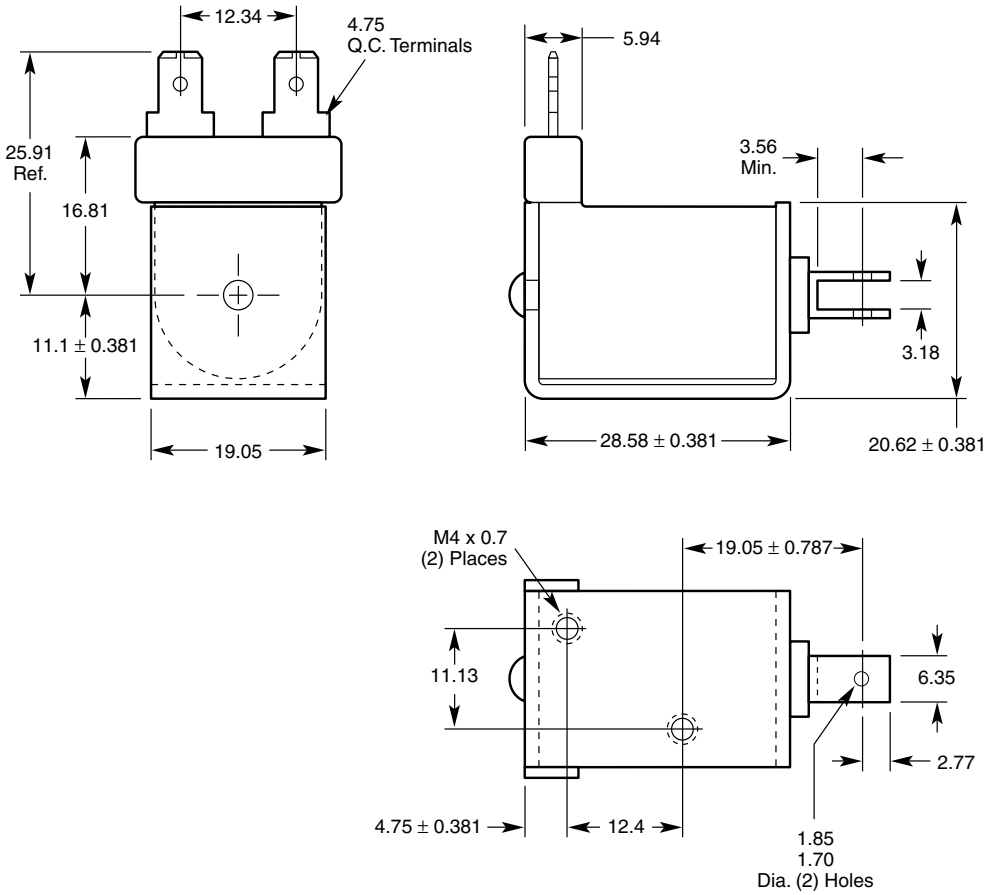
Force values for reference only.

Ledex® C Frame Size C8M

Dimensions

mm

All solenoids are illustrated in energised state



Ledex® Magnetic Latching Box Frame Size B12-L

LINEAR Open Frame

Part Number: B12 - L - [1] [XX] - B- 3

- [XX] Coil Selection (from performance chart below)
- [1] Pole Configuration: 1 Flat Face

All products are RoHS Compliant

Specifications

Operation	Pull
Dielectric Strength	500 VRMS for one second
Unlatch Voltage	See schematic and coil data below
Magnet Hold Force*	3.2 N (@20°C)
Coil Insulation	Class "A": 105°C max.
Coil Termination	254 mm PVC lead wires
Spring Force	62.1 N/mm; 0.588 N latched position
Plunger Pole Face	Flat face
Plunger Weight	1.13 g
Total Weight	8.22 g

* In no power, latched position, with return spring

VDC Battery Powered

High Speed

Magnetic Latching

Miniature Size

Performance

Maximum Duty Cycle	Unlatch Voltage	50%	25%	10%
Recommended Max ON Time (sec)	1	1	1	1
Watts (@ 20°C)	1.3	2.6	5.2	13
Ampere Turns (@ 20°C)	178	251	355	561

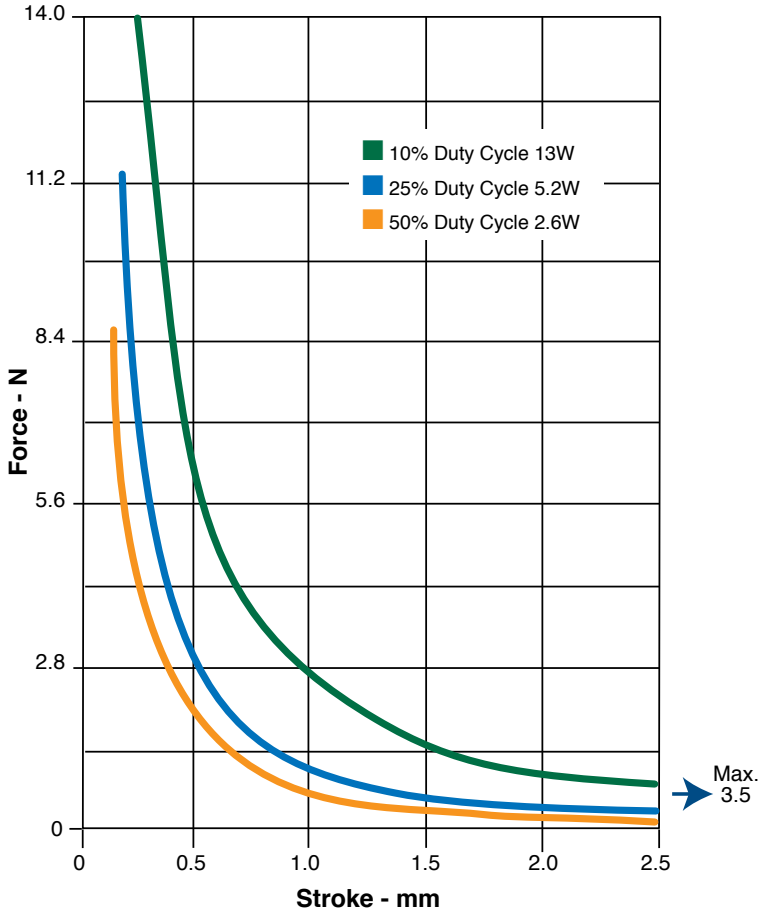
Coil Data

Part Number	Resistance (@20°C)	Ref # Turns	Unlatch VDC	VDC (Nom)	VDC (Nom)	VDC (Nom)
B12-L-158-B-3	6.92	417	3	4.2	6	9.5
B12-L-155-B-3	27.70	824	6	8.5	12	19
B12-L-156-B-3	62.30	1184	9	13	18	28.5
B12-L-154-B-3	110.80	1632	12	17	24	38
B12-L-153-B-3	443.10	3336	24	34	48	76

NOTES:

1. All data is typical.
2. Force testing is done with the solenoid in the horizontal position.
3. All data reflects operation with no heatsink.

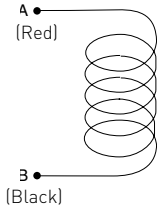
Typical Force @ 20°C – Flat Face Plunger (net with spring)



Coil Polarity

Latch: A+ B-

Unlatch: A- B+



How to Order

Select the part number from the table provided. (For example, to order a 25% duty cycle unit rated at 12 VDC, specify B12-L-155-B-3.)

Please see www.ledex.com for our list of stock products available through our North American distributors.

All specifications subject to change without notice.

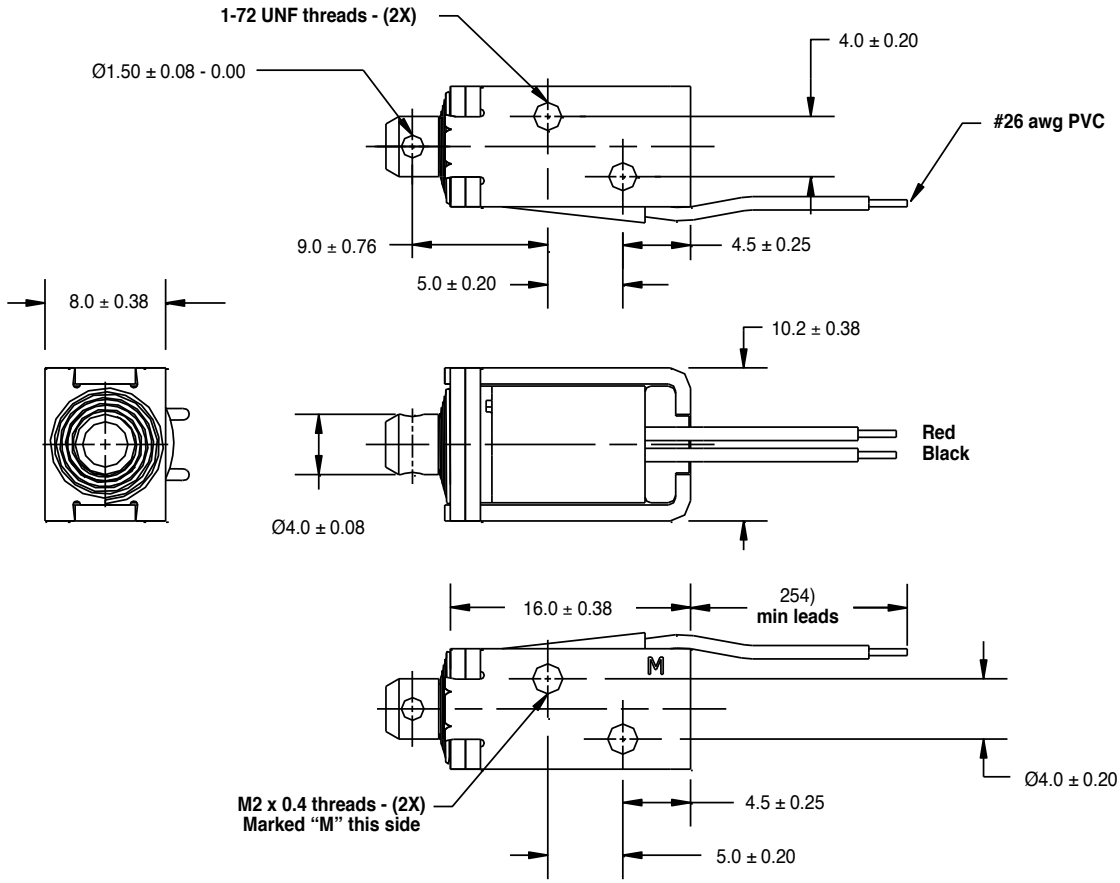
Force values for reference only.

Ledex® Magnetic Latching Box Frame Size B12-L

Dimensions

mm

All solenoids are illustrated in energised state



Ledex® Magnetic Latching Box Frame Size B12P-L

LINEAR Open Frame

Part Number: B12P - L - [1] [XX] - B- 3

- [XX] Coil Selection (from performance chart below)
- [1] Pole Configuration
  1 Flat Face

All products are RoHS Compliant

Specifications

Operation	Push
Dielectric Strength	500 VRMS for one second
Unlatch Voltage	See schematic and coil data below
Magnet Hold Force*	2.6 N (@20°C)
Coil Insulation	Class "A": 105°C max.
Coil Termination	254 mm PVC lead wires
Spring Force	62.1 N/mm; 0.588 N latched position
Plunger Pole Face	Flat face
Plunger Weight	1.42 g
Total Weight	8.51 g

* In no power, latched position, with return spring

VDC – Battery Powered

High Speed

Performance

Magnetic Latching

Maximum Duty Cycle	Unlatch Voltage	50%	25%	10%
Recommended Max ON Time (sec)	1	1	1	1
Watts (@ 20°C)	1.3	2.6	5.2	13
Ampere Turns (@ 20°C)	178	251	355	561

Miniature Size

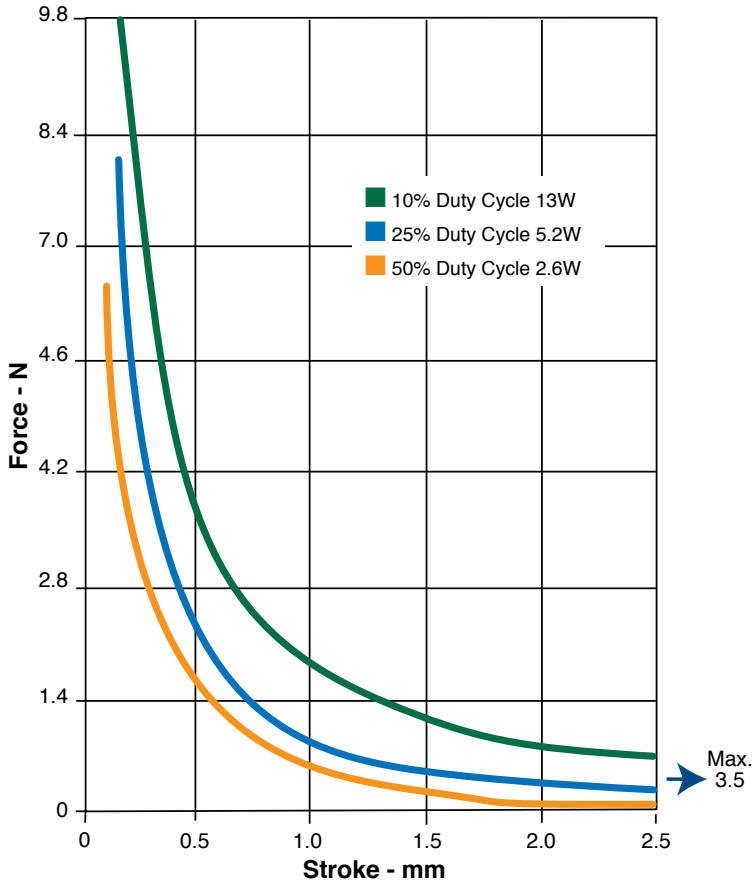
Coil Data

Part Number	Resistance (@20°C)	Ref # Turns	Unlatch VDC	VDC (Nom)	VDC (Nom)	VDC (Nom)
B12P-L-158-B-3	6.92	417	3	4.2	6	9.5
B12P-L-155-B-3	27.70	824	6	8.5	12	19
B12P-L-156-B-3	62.30	1184	9	13	18	28.5
B12P-L-154-B-3	110.80	1632	12	17	24	38
B12P-L-153-B-3	443.10	3336	24	34	48	76

NOTES:

1. All data is typical.
2. Force testing is done with the solenoid in the horizontal position.
3. All data reflects operation with no heatsink.

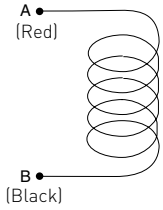
Typical Force @ 20°C – Flat Face Plunger (net with spring)



Coil Polarity

Latch: A+ B-

Unlatch: A- B+



How to Order

Select the part number from the table provided. (For example, to order a 25% duty cycle unit rated at 12 VDC, specify B12-L-155-B-3.)

Please see www.ledex.com for our list of stock products available through our North American distributors.

All specifications subject to change without notice.

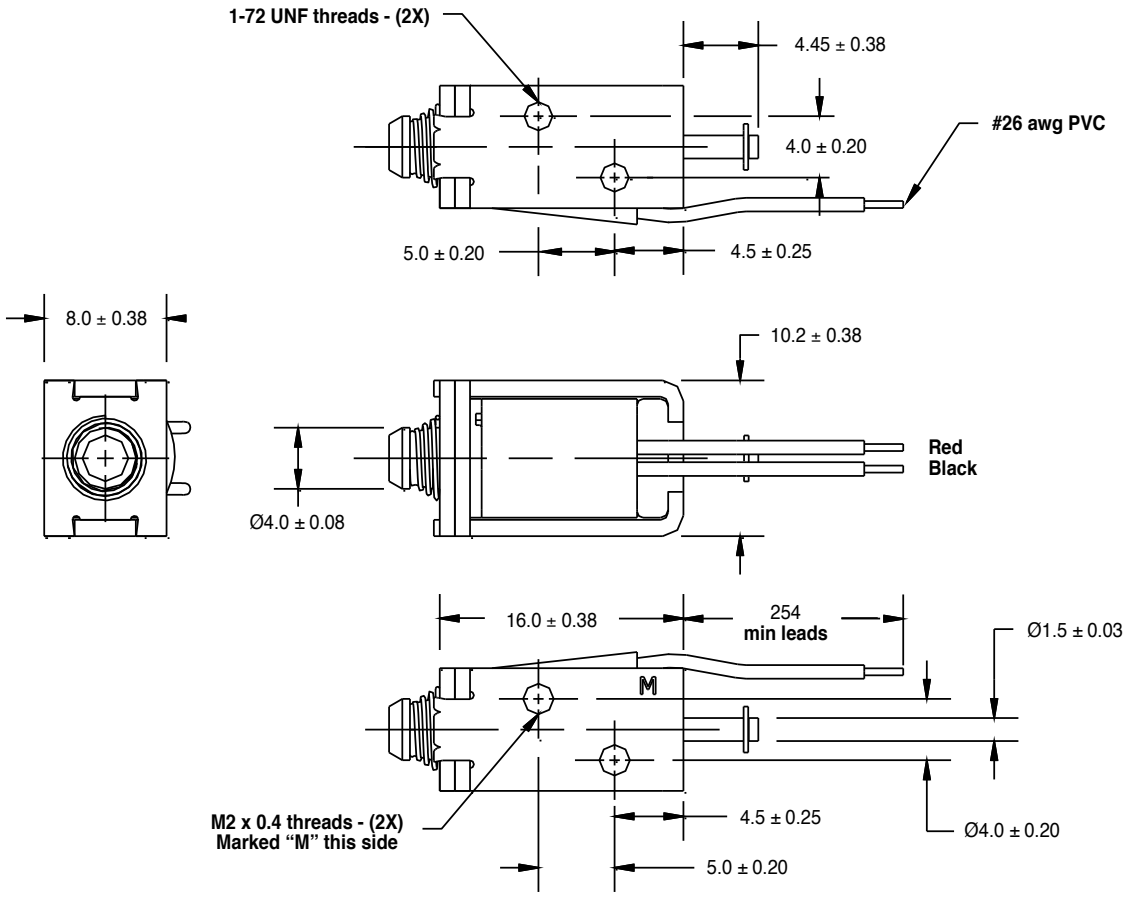
Force values for reference only.

Ledex® Magnetic Latching Box Frame Size B12P-L

Dimensions

mm

All solenoids are illustrated in energised state



Ledex® Magnetic Latching Box Frame Size B14M-L

LINEAR Open Frame

VDC
Battery Powered

Magnetic Latching

Part Number: B14M - L - X XX - B- 4

All products are RoHS Compliant

- XX: Coil Selection (from performance chart below)
- X: Pole Configuration
  - 1 Flat Face
  - 2 50° Conical

Specifications

Operation	Pull
Dielectric Strength	500 VRMS for one second
Unlatch Voltage	See schematic and coil data below
Magnet Hold Force*	Flat Face: 5.3 N 50° Conical: 1.3 N
Coil Insulation	Class " B": 130°C max.
Coil Termination	254 mm PVC lead wires
Spring Force	0.6 N/mm; 0.8 N latched position
Plunger Pole Face	Flat face or 50° conical
Plunger Weight	14.2 g
Total Weight	95.9 g

* In no power, latched position, with return spring

Performance

Maximum Duty Cycle	Unlatch Voltage	50%	25%	10%
Recommended Max ON Time (sec)	1	1	1	1
Watts (@ 20°C)	5.2	10.4	20.8	52.2
Ampere Turns (@ 20°C)	750	1060	1500	2370

Coil Data

Part Number	Resistance (@20°C)	Ref # Turns	Unlatch VDC	VDC (Nom)	VDC (Nom)	VDC (Nom)
B14M-L-X58-B-4	1.93	480	3	4	6	10
B14M-L-X55-B-4	6.90	871	6	8.5	12	19
B14M-L-X56-B-4	17.40	1408	9	13	18	29
B14M-L-X54-B-4	28.60	1791	12	17	24	38
B14M-L-X53-B-4	110.00	3450	24	34	48	76

NOTES:

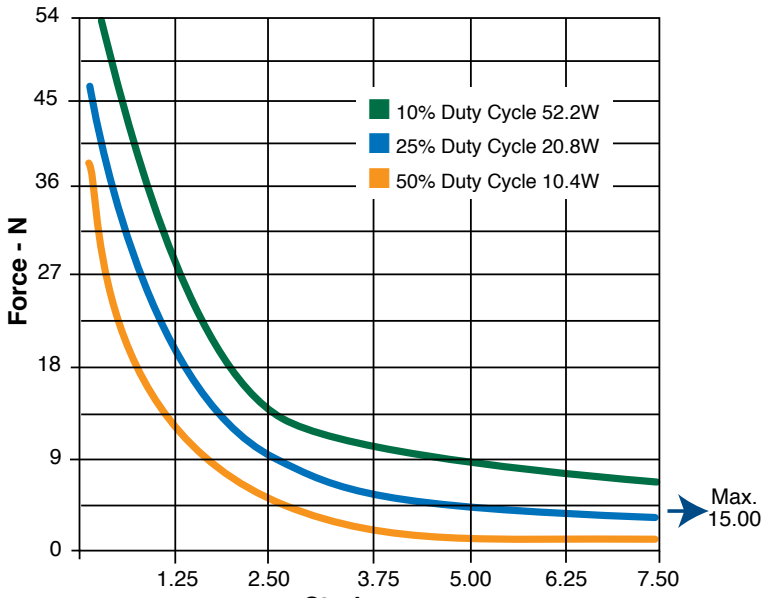
1. All data is typical.
2. Force testing is done with the solenoid in the horizontal position.
3. All data reflects operation with no heatsink.

How to Order

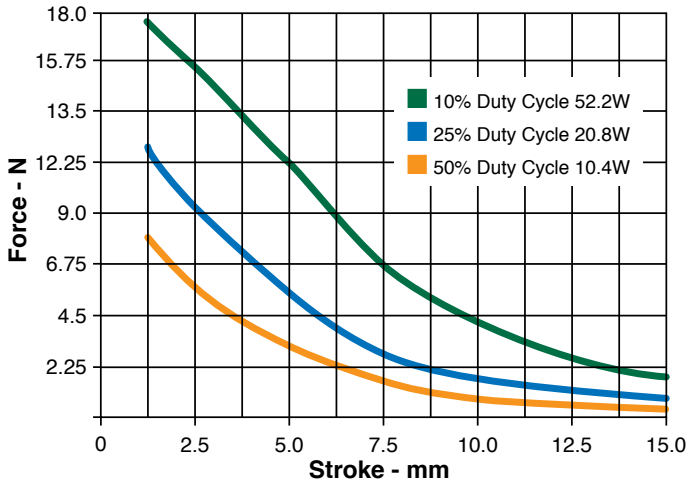
Select the part number from the table provided. (For example, to order a 25% duty cycle unit rated at 48 VDC with a 50° Conical Armature, specify B14M-L-253-B-4.

Please see www.ledex.com for our list of stock products available through our North American distributors.

Typical Force @ 20°C – Flat Face Armature (net with spring)



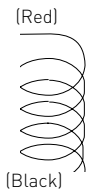
Typical Force @ 20°C – 50° Conical Armature (net with spring)



Coil Polarity

Latch: A+ B-

Unlatch: A- B+



All specifications subject to change without notice.

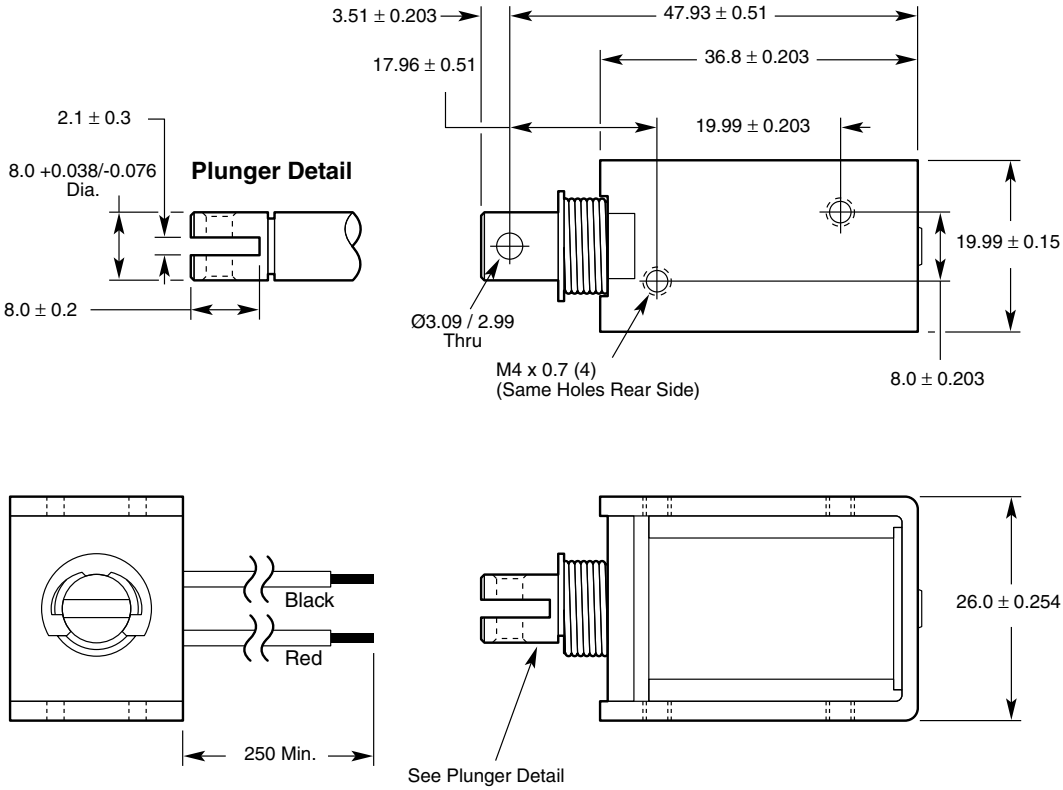
Force values for reference only.

Ledex® Magnetic Latching Box Frame Size B14M-L

Dimensions

mm

All solenoids are illustrated in energised state



Ledex® Magnetic Latching Box Frame Size B14HD-L

LINEAR Open Frame

VDC
Battery Powered

Long Life

Magnetic Latching

Part Number: B14HD - L - [X] [XX] - B- [X]

All products are RoHS Compliant

- 4 - 254 mm leads
- 6 - Terminals

Coil Selection (from performance chart below)

Pole Configuration
- 1 - Flat Face
- 2 - Conical

Specifications

Operation	Pull
Dielectric Strength	1000 VRMS for one second
Unlatch Voltage	See schematic and coil data below
Magnetic Holding Force*	Conical: 38 N Flat Face: 56 N
Coil Insulation	Class " B": 130°C max.
Coil Termination	254 mm PVC lead wires or terminal
Plunger Pole Face	Flat face or conical
Plunger Weight	24.4 g
Total Weight	98.4 g

* In no power, latched position, with return spring

Performance

Maximum Duty Cycle	Unlatch Voltage	50%	25%	10%
Recommended Max ON Time (sec)	1	1	1	1
Watts (@ 20°C)	11	11	22	55
Ampere Turns (@ 20°C)	940	938	1326	2097

Coil Data

Part Number	Resistance (@20°C)	Ref # Turns	VDC (Nom)	VDC (Nom)	VDC (Nom)	VDC (Nom)
B14HD-L-X58-B-X	1.45	321	4.4	4.3	6.1	9.7
B14HD-L-X57-B-X	7.0	750	8.9	8.7	12.4	19.6
B14HD-L-X56-B-X	14.2	1068	12.7	12.5	17.6	27.9
B14HD-L-X54-B-X	27.5	1470	17.7	17.4	24.6	38.9
B14HD-L-X53-B-X	110.2	2920	35.4	34.8	49.2	77.8

NOTES:

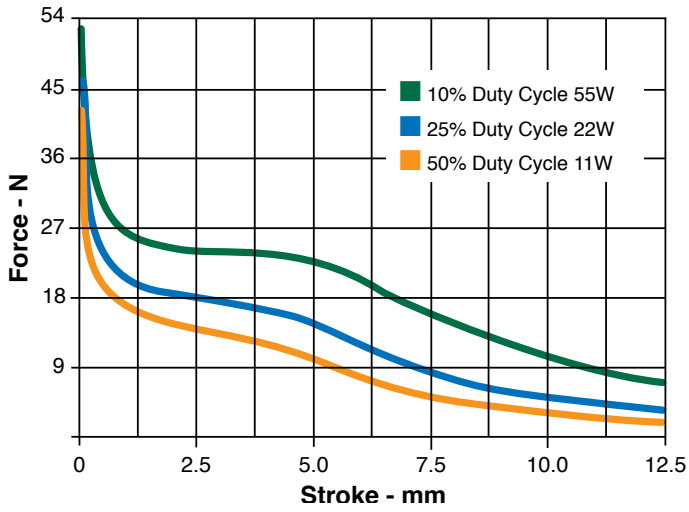
1. All data is typical.
2. Force testing is done with the solenoid in the horizontal position.
3. All data reflects operation with no heat sink.

How to Order

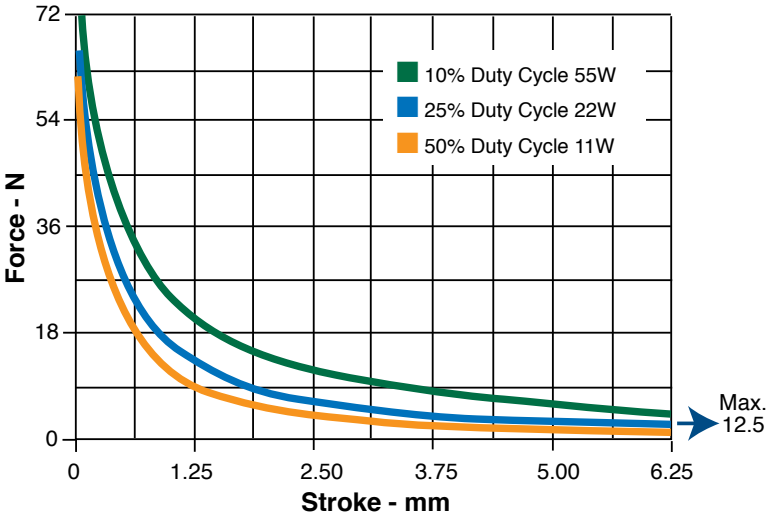
Select the part number from the table provided. (For example, to order a 25% duty cycle unit with a conical pole configuration rated at 6.1 VDC with 254 mm lead wires, specify B14HD-L-258-B-4.

Please see www.ledex.com for our list of stock products available through our North American distributors.

Typical Force @ 20°C – Conical (net with spring)



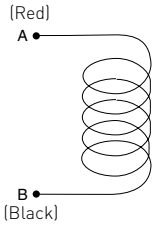
Typical Force @ 20°C – Flat Face (net with spring)



Coil Polarity

Latch: A+ B-

Unlatch: A- B+



All specifications subject to change without notice.

Force values for reference only.

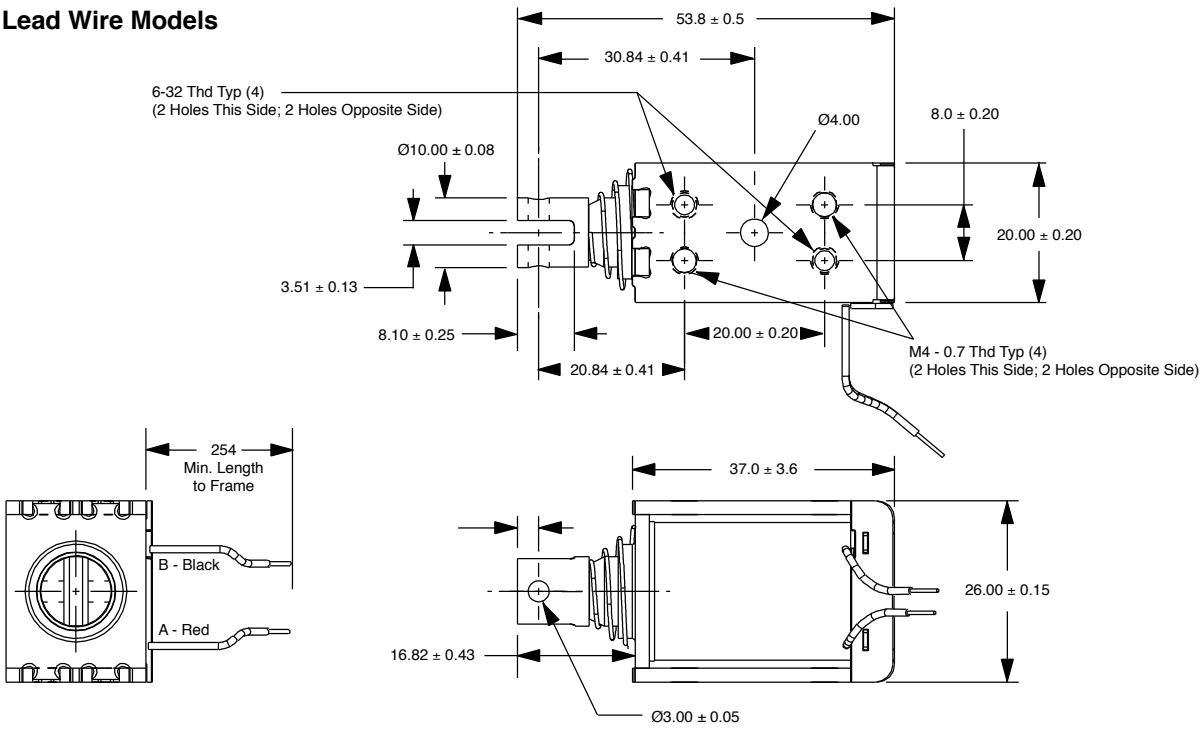
Ledex® Magnetic Latching Box Frame Size B14HD-L

Dimensions

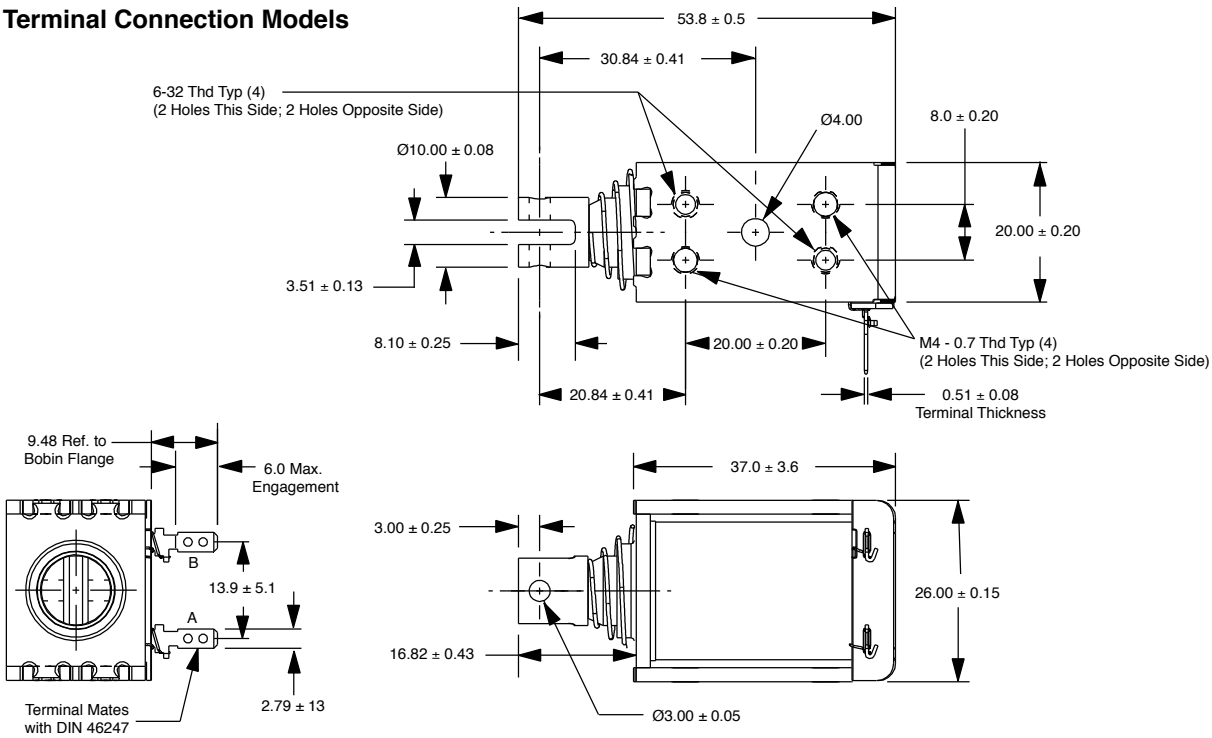
mm

All solenoids are illustrated in energised state

Lead Wire Models



Terminal Connection Models



Ledex® Magnetic Latching Box Frame Size B14HDP-L

LINEAR Open Frame

VDC
Battery Powered

Long Life

Magnetic Latching

Part Number: B14HDP - L - X XX - B- X

All products are RoHS Compliant

- X: 4 - 254 mm leads; 6 - Terminals
- XX: Coil Selection (from performance chart below)
- X: Pole Configuration; 1 - Flat Face; 2 - Conical

Specifications

Operation	Push
Dielectric Strength	1000 VRMS for one second
Unlatch Voltage	See schematic and coil data below
Magnetic Holding Force*	Conical: 38 N Flat Face: 56 N
Coil Insulation	Class " B": 130°C max.
Coil Termination	254 mm PVC lead wires or terminal
Plunger Pole Face	Flat face or conical
Plunger Weight	24.4 g
Total Weight	93.5 g

* In no power, latched position, with return spring

Performance

Maximum Duty Cycle	Unlatch Voltage	50%	25%	10%
Recommended Max ON Time (sec)	1	1	1	1
Watts (@ 20°C)	11	11	22	55
Ampere Turns (@ 20°C)	940	938	1326	2097

Coil Data

Part Number	Resistance (@20°C)	Ref # Turns	VDC (Nom)	VDC (Nom)	VDC (Nom)	VDC (Nom)
B14HDP-L-X58-B-X	1.45	321	4.4	4.3	6.1	9.7
B14HDP-L-X57-B-X	7.0	750	8.9	8.7	12.4	19.6
B14HDP-L-X56-B-X	14.2	1068	12.7	12.5	17.6	27.9
B14HDP-L-X54-B-X	27.5	1470	17.7	17.4	24.6	38.9
B14HDP-L-X53-B-X	110.2	2920	35.4	34.8	49.2	77.8

NOTES:

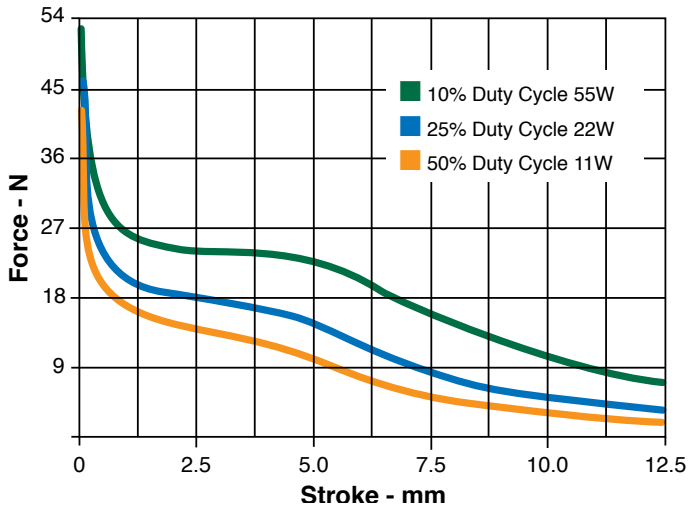
1. All data is typical.
2. Force testing is done with the solenoid in the horizontal position.
3. All data reflects operation with no heat sink.

How to Order

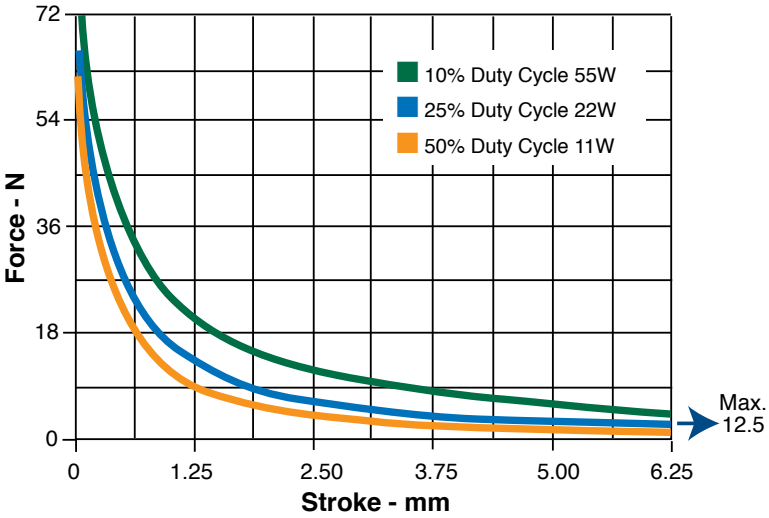
Select the part number from the table provided. (For example, to order a 25% duty cycle unit with a conical pole configuration rated at 6.1 VDC with 254 mm lead wires, specify B14HDP-L-258-B-4.

Please see www.ledex.com for our list of stock products available through our North American distributors.

Typical Force @ 20°C – Conical (net with spring)



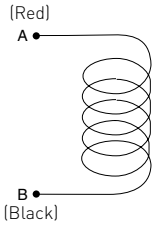
Typical Force @ 20°C – Flat Face (net with spring)



Coil Polarity

Latch: A+ B-

Unlatch: A- B+



All specifications subject to change without notice.

Force values for reference only.

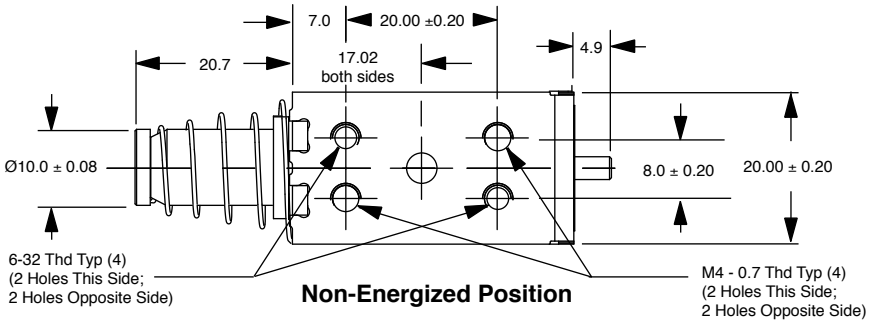
Ledex® Magnetic Latching Box Frame Size B14HDP-L

Dimensions

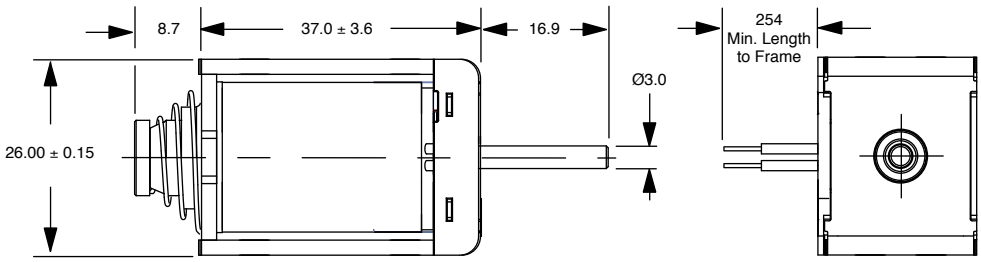
mm

All solenoids are illustrated in energised state

Lead Wire Models

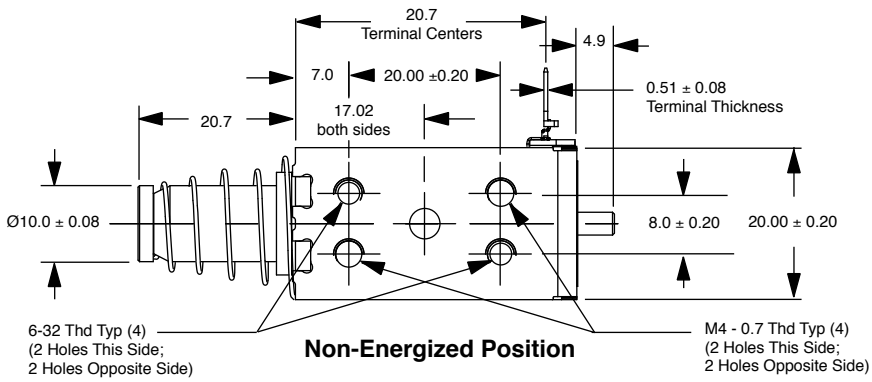


Non-Energized Position

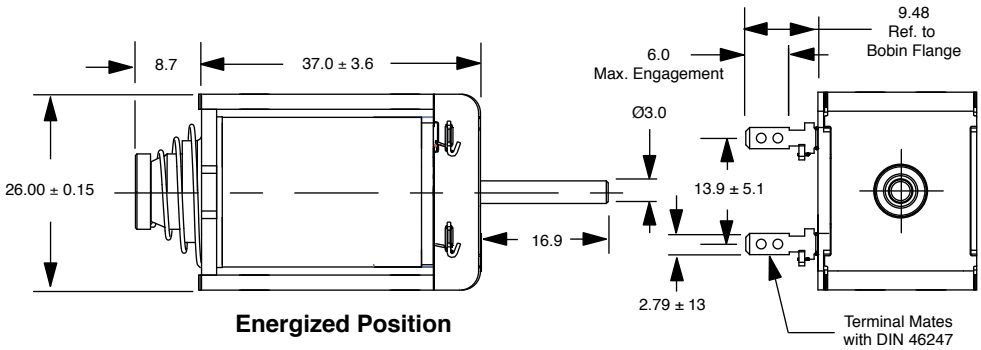


Energized Position

Terminal Connection Models



Non-Energized Position



Energized Position

Ledex® Magnetic Latching Box Frame Size B17M-L

LINEAR Open Frame

Part Number: B17M - L - [X] [XX] - B- 3

- [XX]: Coil Selection (from performance chart below)
- [X]: Pole Configuration
  1 Flat Face

All products are RoHS Compliant

Specifications

Operation	Pull
Dielectric Strength	500 VRMS for one second
Unlatch Voltage	See schematic and coil data below
Magnet Hold Force*	2.5 N
Coil Insulation	Class " B": 130°C max.
Coil Termination	254 mm PVC lead wires
Spring Force	0.175 N/mm; 0.67 N latched position
Plunger Pole Face	Flat face (other options available)
Plunger Weight	2.46 g
Total Weight	19.85 g

* In no power, latched position, with return spring

VDC
Battery Powered

High Speed

Magnetic Latching

Miniature Size

Performance

Maximum Duty Cycle	Unlatch Voltage	50%	25%	10%
Recommended Max ON Time (sec)	1	1	1	1
Watts (@ 20°C)	1.6	3.2	6.4	16
Ampere Turns (@ 20°C)	292	414	584	923

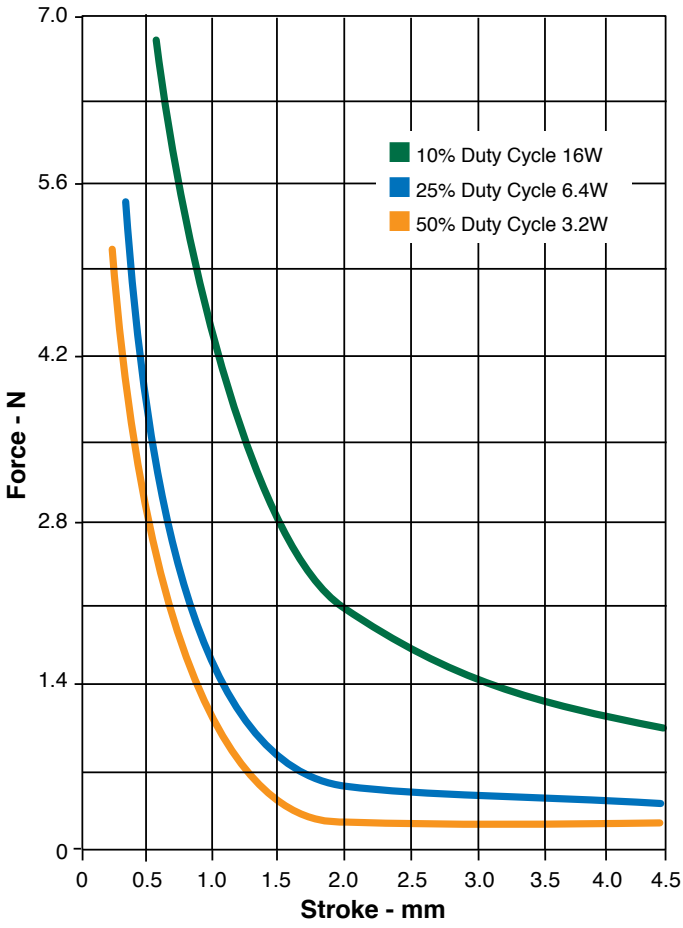
Coil Data

Part Number	Resistance (@20°C)	Ref # Turns	Unlatch VDC	VDC (Nom)	VDC (Nom)	VDC (Nom)
B17M-L-158-B-3	5.40	556	3	4	6	9
B17M-L-155-B-3	21.93	1112	6	8.5	12	19
B17M-L-156-B-3	50.20	1540	9	12	18	28.3
B17M-L-154-B-3	88.95	2208	12	17	24	38
B17M-L-153-B-3	337.00	3687	24	34	48	76
B17M-L-152-B-3	1465.00	9177	48	68	96	153

NOTES:

1. All data is typical.
2. Force testing is done with the solenoid in the horizontal position.
3. All data reflects operation with no heatsink.

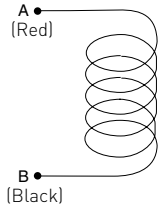
Typical Force @ 20°C (Net, with Spring)



Coil Polarity

Latch: A+ B-

Unlatch: A- B+



How to Order

Select the part number from the table provided. (For example, to order a 25% duty cycle unit rated at 48 VDC, specify B17M-L-153-B-3.

Please see www.ledex.com for our list of stock products available through our North American distributors.

All specifications subject to change without notice.

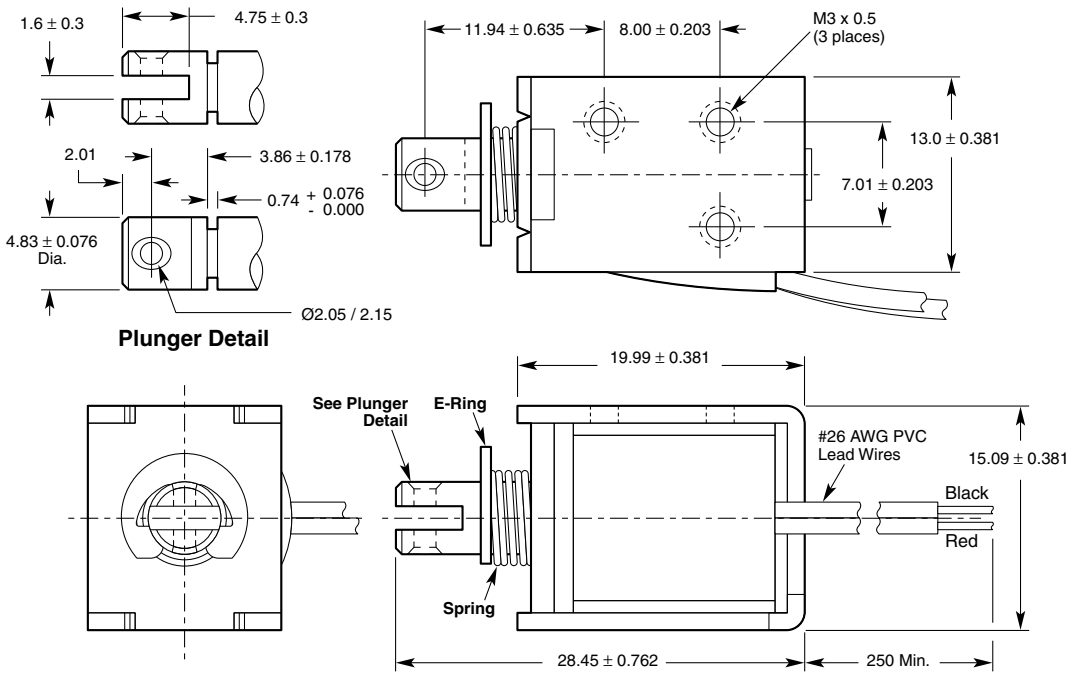
Force values for reference only.

Ledex® Magnetic Latching Box Frame Size B17M-L

Dimensions

mm

All solenoids are illustrated in energised state



Ledex® Magnetic Latching Box Frame Size B22M-L

LINEAR Open Frame

Part Number: B22M - L - X XX - M- 36

- XX: Coil Selection (from performance chart below)
- X: Pole Configuration
  - 1 Flat Face
  - 2 60° Conical

All products are RoHS Compliant

Specifications

Operation	Pull
Dielectric Strength	1500 VRMS for one second
Unlatch Voltage	See schematic and coil data below
Magnet Hold Force*	Flat Face:: 22 N
	60° Concial: 4.5 N
Coil Insulation	Class " B": 130°C max.
Coil Termination	(1) 3/16" QC; (1) 1/4" QC
Spring Force	0.31 N/mm; 4.8 N latched position
Plunger Pole Face	Flat face or 60° conical
Plunger Weight	35.2 g
Total Weight	212.8 g

Magnetic Latching

* In no power, latched position, with return spring

Performance

Maximum Duty Cycle	Unlatch Voltage	50%	25%	10%
Recommended Max ON Time (sec)	1	1	1	1
Watts (@ 20°C)	9.9	19.8	39.6	99
Ampere Turns (@ 20°C)	1046	1482	2093	3314

Coil Data

Part Number	Resistance (@20°C)	Ref # Turns	Unlatch VDC	VDC (Nom)	VDC (Nom)	VDC (Nom)
B22M-L-X55-M-36	3.64	635	6	8.5	12	19
B22M-L-X54-M-36	14.55	1300	12	17	24	38
B22M-L-X53-M-36	58.18	2578	24	34	48	76
B22M-L-X52-M-36	232.73	5103	48	68	96	152
B22M-L-X51-M-36	1493.00	12744	120	172	240	385

NOTES:

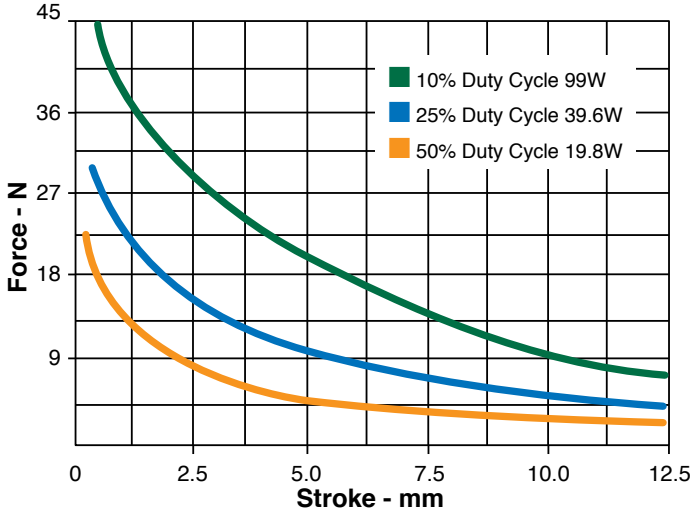
1. All data is typical.
2. Force testing is done with the solenoid in the horizontal position.
3. All data reflects operation with no heatsink.

How to Order

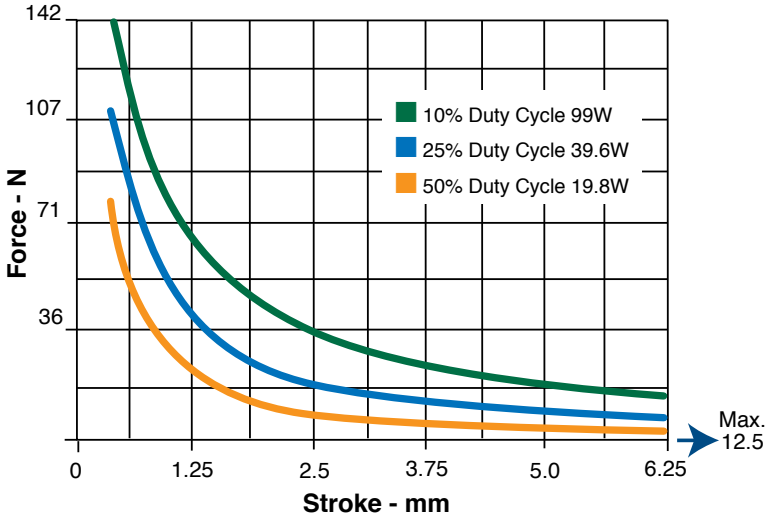
Select the part number from the table provided. (For example, to order a 25% duty cycle flat face unit rated at 48 VDC, specify B22M-L-153-M-36.

Please see www.ledex.com for our list of stock products available through our North American distributors.

Typical Force @ 20°C – 60° Armature (Net, with Spring)



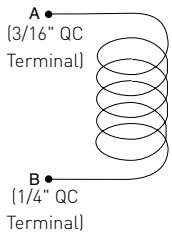
Typical Force @ 20°C – Flat Face Armature (Net, with Spring)



Coil Polarity

Latch: A+ B-

Unlatch: A- B+



All specifications subject to change without notice.

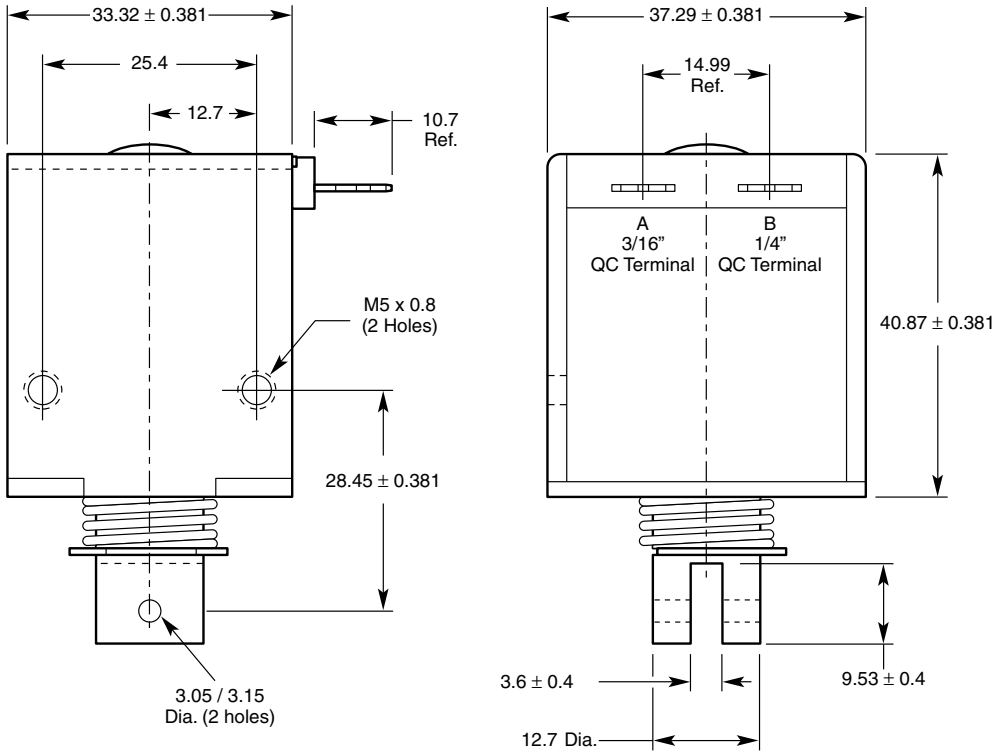
Force values for reference only.

Ledex® Magnetic Latching Box Frame Size B22M-L

Dimensions

mm

All solenoids are illustrated in energised state



Ledex® Magnetic Latching C Frame Size C5M-L

LINEAR Open Frame

Part Number: C5M - L - XXX - B - 1

Select from performance chart below

All products are RoHS Compliant

Specifications

Operation	Pull
Dieletectric Strength	500 VRMS for one second
Unlatch Voltage	See schematic and coil data below
Magnet Hold Force*	5.7 N (with return spring)
Coil Insulation	Class "B": 130°C max.
Coil Termination	0.025" square pin terminals
Plunger Pole Face	Flat face (other options available)
Spring Force	0.1 N/mm; 0.7 N latched position
Plunger Weight	2.8 g
Total Weight	11.9 g

* In no power, latched position, with return spring

VDC
Battery Powered

High Speed

Magnetic Latching

Miniature Size

Performance

Maximum Duty Cycle	Unlatch Voltage	50%	25%	10%
Recommended Max ON Time (sec)	1	1	1	1
Watts (@ 20°C)	3	6	12	30
Ampere Turns (@ 20°C)	422	564	844	1268

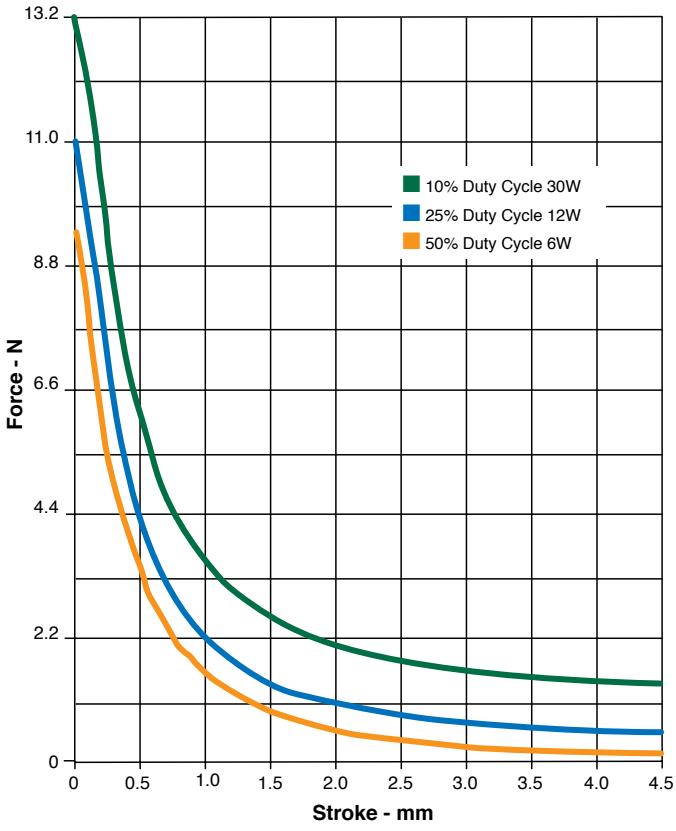
Coil Data

Part Number	Resistance (@20°C)	Ref # Turns	VDC (Nom)	VDC (Nom)	VDC (Nom)	VDC (Nom)
C5M-L-273-B-1	2.88	406	3	4	6	9
C5M -L-272-B-1	11.52	795	6	8	12	19
C5M-L-271-B-1	25.77	1222	9	12	18	28
C5M-L-270-B-1	48.65	1642	12	17	24	38
C5M-L-269-B-1	72.84	1968	15	21	30	47
C5M-L-268-B-1	152.20	2860	21	30	43	68
C5M-L-267-B-1	191.73	3202	24	34	48	76

NOTES:

1. All data is typical.
2. Force testing is done with the solenoid in the horizontal position.
3. All data reflects operation with no heatsink.
4. Other coil terminations available.

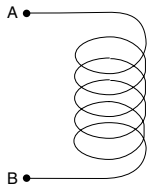
Force (Net, With Spring)



Coil Polarity

Latch: A+ B-

Unlatch: A- B+



How to Order

Select the part number from the table provided. (For example, to order a 25% duty cycle unit rated at 48 VDC, specify C5M-L-267-B-1.

Please see www.ledex.com for our list of stock products available through our North American distributors.

All specifications subject to change without notice.

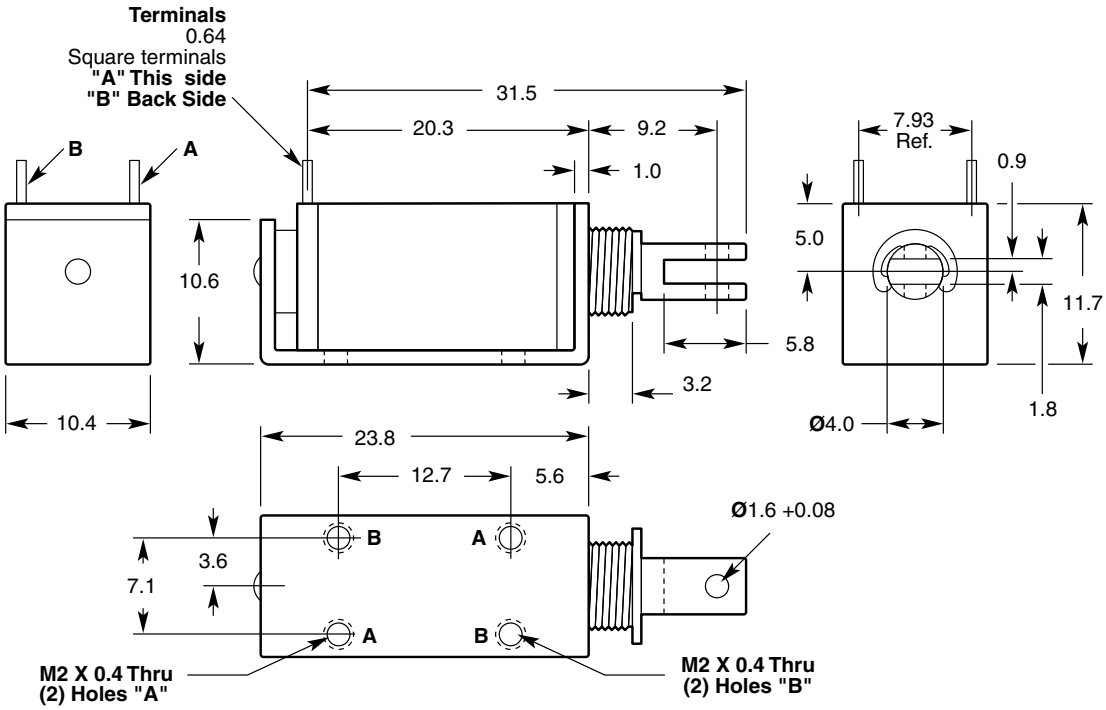
Force values for reference only.

Ledex® Magnetic Latching C Frame Size C5M-L

Dimensions

mm

All solenoids are illustrated in energised state



Ledex® Magnetic Latching C Frame Size C8M-L

LINEAR Open Frame

Part Number: C8M-L - [X] [XX] - M- 36

- [XX]: Select coil from performance chart below
- [X]: Plunger pole face:
  - 1 Flat Face
  - 2 40° Reverse Conical

All products are RoHS Compliant

Specifications

Operation	Pull
Dielectric Strength	500 VRMS for one second
Unlatch Voltage	See schematic and coil data below
Magnet Holding Force*	Flat Face: 7.12 N 40° Reverse Conical: 5.56 N
Spring Force	0.093 N/mm; 1.16 N latched operation
Coil Insulation	Class "B": 130°C max.
Coil Termination	(1) – 1/4" QC; (1) – 3/16" QC
Plunger Pole Face	Flat face or 40° reverse conical
Plunger Weight	11.3 g
Total Weight	45.4 g

* In no power, latched position, with return spring

VDC
Battery Powered

High Speed

Magnetic Latching

Performance

Maximum Duty Cycle	Unlatch Voltage	50%	25%	10%
Recommended Max ON Time (sec)	1	1	1	1
Watts (@ 20°C)	3.6	7	14	35
Ampere Turns (@ 20°C)	464	657	929	1470

Coil Data

Part Number	Resistance (@20°C)	Ref # Turns	VDC (Nom)	VDC (Nom)	VDC (Nom)	VDC (Nom)
C8M-L-X76-M-36	2.56	404	3	4.2	5.9	9.3
C8M-L-X73-M-36	9.30	752	6	8.5	12	19
C8M-L-X74-M-36	23.2	1252	9	12.7	18	28.5
C8M-L-X72-M-36	37.12	1484	12	17	24	38
C8M-L-X71-M-36	150.73	2736	24	34	48	76
C8M-L-X70-M-36	621.54	5544	48	68	96	152
C8M-L-X69-M-36	3824	15035	120	164	231	366

NOTES:

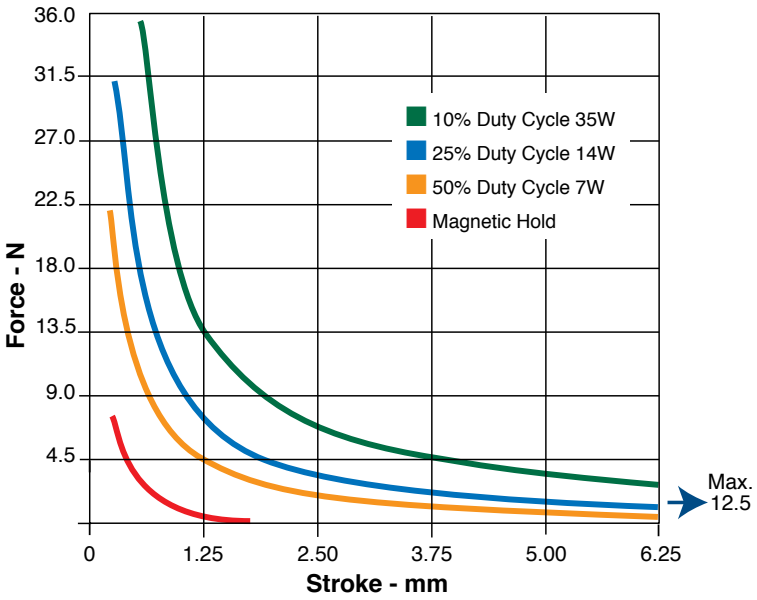
1. All data is typical.
2. Force testing is done with the solenoid in the horizontal position.
3. All data reflects operation with no heatsink.

How to Order

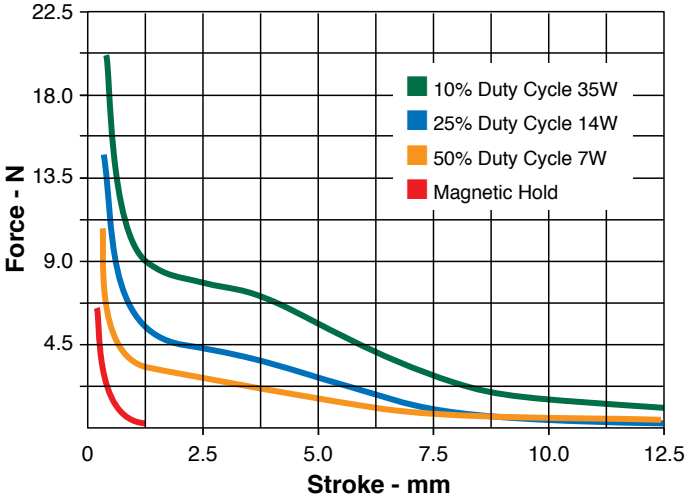
Select the part number from the table provided. (For example, to order a 25% duty cycle unit with a 40° reverse conical plunger pole face rated at 48 VDC, specify C8M-L-271-M-36.

Please see www.ledex.com for our list of stock products available through our North American distributors.

Typical Force with Flat Face (net with spring @ 20°C

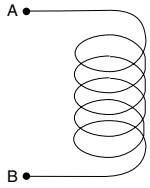


Typical Force with 40° Reverse Conical (net with spring @ 20°C



Coil Polarity

Latch: A+ B-
Unlatch: A- B+
(A) 1/4" QC terminal
(B) 3/16" QC terminal



All specifications subject to change without notice.

Force values for reference only.

Ledex® Magnetic Latching C Frame Size C8M-L

Dimensions

mm

All solenoids are illustrated in energised state