

## Linear Solenoids

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# OECM

## Linear Solenoid

Low Profile, Conical Face

### OECM

Dimensions (mm)	∅ 19 x 13
Duty cycle	continuous or intermittent
Max. Stroke	3,8 mm
Operation	Push or pull operations Pull use: Opposite of mounting pegs
Max. force (N)	9,2 N (@10% Duty Cycle)
Life	5 M cycles
Power (W)	4,5–45
Supply (V)	1,6–78 VDC
Functional Advantages	Ideal for high force, medium stroke applications: on/off operation



### Technical Data

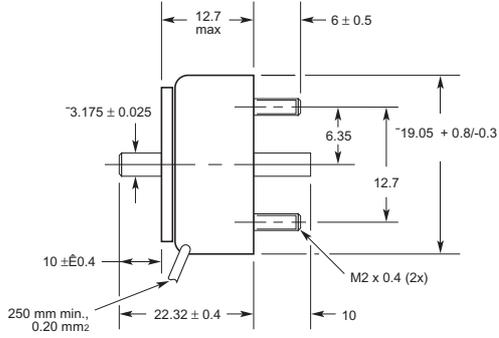
Dielectric Strength	1000 VRMS
Recommended Minimum Heat Sink	Maximum watts dissipated by solenoid are based on an unrestricted flow of air at 20°C, with solenoid mounted on the equivalent of an aluminium plate measuring 51 x 3,2 mm
Coil Resistance	±10% tolerance on all coil awg (wire diameter) sizes
Weight	24,8 g
Holding Force	7,6 N @ 105°C

### Preferred Range

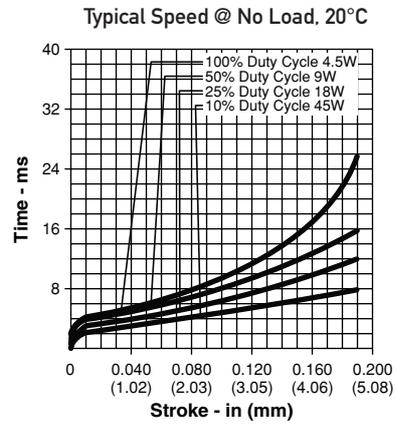
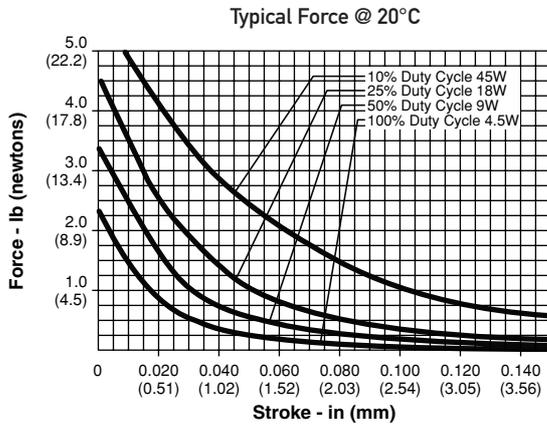
Type	Size	Nominal voltage	Duty Cycle	Force@Nominal Stroke	Nominal power	max. "On time"
282340-033	∅ 19 X 13 mm	8 VDC	100%	0,9 N	4,5 W @20°C	∞ sec

# Low Profile OEMC

## Dimensions



## Performance chart



## Low Profile OECM

### Ordering Reference

Type 282340-(0XX) Coil Data awg (wire diameter)

Performance		100%	50%	25%	10%		
Maximum ON Time (sec) when pulsed continuously <sup>1</sup>		∞	100	36	7		
Force@Nominal Stroke (N)		0.9	2	4.2	9.2		
Watts (@20°C)		4.5	9	18	45		
Ampere Turns (@20°C)		285	403	570	901		
Coil Data	awg (0XX) <sup>2</sup>	Resistance (@20°C)	# Turns <sup>3</sup>	VDC (Nom)	VDC (Nom)	VDC (Nom)	VDC (Nom)
	026	0.50	90	1.6	2.3	3.2	5.1
	027*	0.97	136	2.0	2.8	3.9	6.3
	028	1.33	152	2.6	3.7	5.1	8.1
	029*	2.40	215	3.2	4.4	6.2	9.9
	030	3.29	240	4.1	5.7	8.0	12.7
	031	5.61	324	5.0	7.1	9.9	15.8
	032	9.09	420	6.3	8.9	12.4	19.7
	033	14.95	544	8.0	11.3	15.7	25.0
	034	24.06	684	10.2	14.4	20.0	32.0
	035	37.10	840	12.8	18.1	25.0	40.0
	036	58.51	1056	16.1	23.0	32.0	50.0
	037	78.70	1109	19.8	28.0	39.0	62.0
	038	123.00	1370	25.0	35.0	49.0	78.0

<sup>1</sup> Continuously pulsed at stated watts and duty cycle

<sup>2</sup> Other coil awg (wire diameter) sizes available — please enquire

<sup>3</sup> Reference number of turns

All data is at 20°C coil temperature. Force outputs degrade with increased temperatures

# 1ECM

## Linear Solenoid

Low Profile, Conical Face

### 1ECM

Dimensions (mm)	∅ 25 x 14
Duty cycle	continuous or intermittent
Max. Stroke	6,1 mm
Operation	Push or pull operations Pull use: Opposite of mounting pegs
Max. force (N)	14,2 N (@10% Duty Cycle)
Life	5 M cycles
Power (W)	5–50
Supply (V)	2,1–83 VDC
Functional Advantages	Ideal for high force, medium stroke applications: on/off operation



### Technical Data

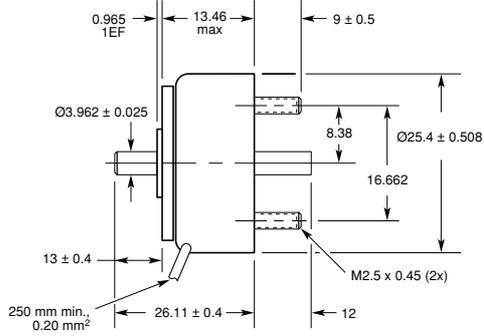
Dielectric Strength	1000 VRMS
Recommended Minimum Heat Sink	Maximum watts dissipated by solenoid are based on an unrestricted flow of air at 20°C, with solenoid mounted on the equivalent of an aluminium plate measuring 76 x 3,2 mm
Coil Resistance	25-35 awg (wire diameter), ±5%; 36 awg (wire diameter), ±10%
Weight	42,5 g
Holding Force	24 N @ 105° C

### Preferred Range

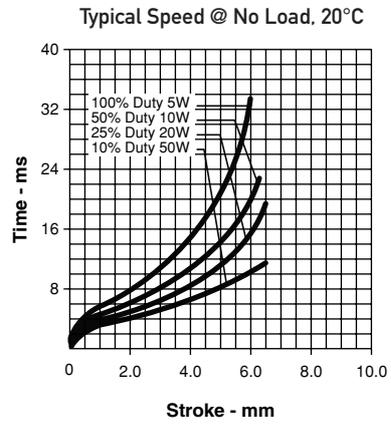
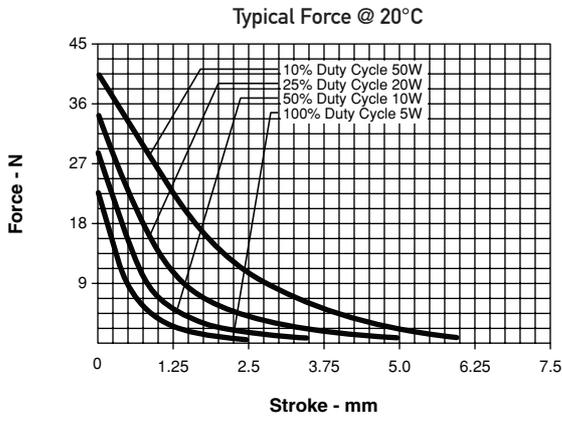
Type	Size	Nominal voltage	Duty Cycle	Force@Nominal Stroke	Nominal power	max. "On time"
282342-031	∅ 25 X 14 mm	8,2 VDC	100%	1,1 N	5 W @20°C	∞ sec

# Low Profile 1ECM

## Dimensions



## Performance chart



# Low Profile 1ECM

## Ordering Reference

Type 282342-(0XX) Coil Data awg (wire diameter)

Performance		100%	50%	25%	10%		
Maximum ON Time (sec) when pulsed continuously <sup>1</sup>		∞	100	36	7		
Force@Nominal Stroke (N)		1.1	2.2	5.6	14.2		
Watts (@20°C)		5	10	20	50		
Ampere Turns (@20°C)		340	480	680	1075		
Coil Data	awg (0XX) <sup>2</sup>	Resistance (@20°C)	# Turns <sup>3</sup>	VDC (Nom)	VDC (Nom)	VDC (Nom)	VDC (Nom)
	025	0.83	140	2.1	2.9	4.1	6.5
	026	1.38	186	2.6	3.7	5.2	8.2
	027	1.91	210	3.2	4.5	6.3	10.1
	028	3.17	273	4.1	5.7	8.1	12.8
	029	5.17	352	5.1	7.2	10.2	16.2
	030	8.25	441	6.5	9.2	13.0	21.0
	031	12.95	550	8.2	11.6	16.4	26.0
	032	20.71	682	10.6	14.9	21.0	34.0
	033	30.60	828	12.7	18.2	26.0	41.0
	034	50.95	1078	16.5	23.0	33.0	52.0
	035	83.92	1392	21.0	30.0	42.0	67.0
	036	112.00	1500	26.0	37.0	52.0	83.0

<sup>1</sup> Continuously pulsed at stated watts and duty cycle

<sup>2</sup> Other coil awg (wire diameter) sizes available — please enquire

<sup>3</sup> Reference number of turns

All data is at 20°C coil temperature. Force outputs degrade with increased temperatures

# 2EFM

## Linear Solenoid

Low Profile, Flat Face

### 2EFM

Dimensions (mm)	∅ 29 x 15
Duty cycle	continuous or intermittent
Max. Stroke	1.9 mm
Operation	Push or pull operations Pull use: Opposite of mounting pegs
Max. force (N)	60 N (@10% Duty Cycle)
Life	5 M cycles
Power (W)	7–70
Supply (V)	2.2–56 VDC
Functional Advantages	Ideal for high force, medium stroke applications: on/off operation



### Technical Data

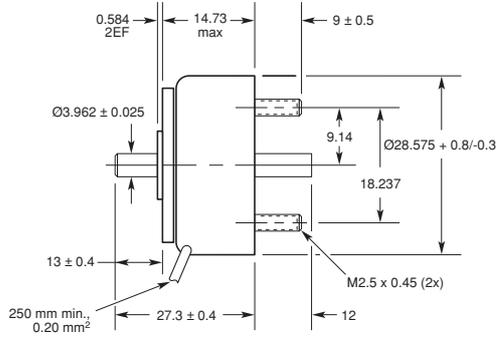
Dielectric Strength	1000 VRMS
Recommended Minimum Heat Sink	Maximum watts dissipated by solenoid are based on an unrestricted flow of air at 20° C, with solenoid mounted on the equivalent of an aluminium plate measuring 86 x 3.2 mm
Coil Resistance	24-33 awg (wire diameter), ±5%
Weight	63.8 g
Holding Force 2EF	53.4 N @105°C
Holding Force 2EC	25.4 N @105°C

### Preferred Range

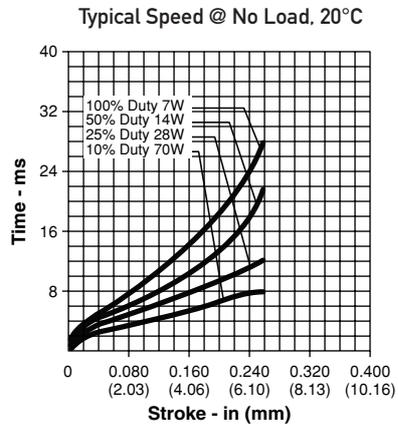
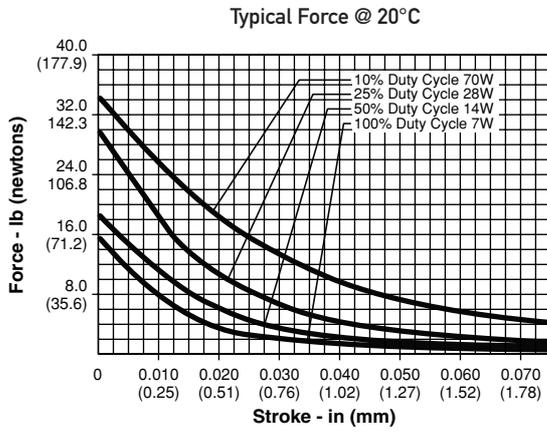
Type	Size	Nominal voltage	Duty Cycle	Force@Nominal Stroke	Nominal power	max. "On time" (sec)
282343-030	∅ 29 X 15 mm	8.8 VDC	100%	8.9 N	7 W @20°C	∞ sec

# Low Profile 2EFM

## Dimensions



## Performance chart



## Low Profile 2EFM

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### Ordering Reference

Type 282343-(0XX) Coil Data awg (wire diameter)

Performance		100%	50%	25%	10%		
Maximum ON Time (sec) when pulsed continuously <sup>1</sup>		∞	100	36	7		
Force@Nominal Stroke (N)		8.9	15.6	31.2	60		
Watts (@20°C)		7	14	28	70		
Ampere Turns (@20°C)		425	602	849	1350		
Coil Data	awg (0XX) <sup>2</sup>	Resistance (@20°C)	# Turns <sup>3</sup>	VDC (Nom)	VDC (Nom)	VDC (Nom)	VDC (Nom)
	024	0.68	130	2.2	3.2	4.5	7.1
	025	1.16	174	2.8	4.0	5.7	9.0
	026	1.96	231	3.6	5.1	7.2	11.5
	027	3.16	296	4.5	6.4	9.0	14.4
	028	5.10	378	5.7	8.1	11.5	18.2
	029	6.94	423	7.0	9.9	13.9	22.0
	030	11.03	530	8.8	12.5	17.7	28.0
	031	16.85	649	11.0	15.6	22.0	35.0
	032	28.15	858	13.9	19.8	28.0	44.0
	033	42.75	1036	17.5	25.0	35.0	56.0

<sup>1</sup> Continuously pulsed at stated watts and duty cycle

<sup>2</sup> Other coil awg (wire diameter) sizes available — please enquire

<sup>3</sup> Reference number of turns

All data is at 20°C coil temperature. Force outputs degrade with increased temperatures

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# 2ECM

## Linear Solenoid

Low Profile, Conical Face

### 2ECM

Dimensions (mm)	∅ 29 x 15
Duty cycle	continuous or intermittent
Max. Stroke	6,1 mm
Operation	Push or pull operations Pull use: Opposite of mounting pegs
Max. force (N)	16,7 N (@10% Duty Cycle)
Life	5 M cycles
Power (W)	7–70
Supply (V)	2,2–56 VDC
Functional Advantages	Ideal for high force, medium stroke applications: on/off operation



### Technical Data

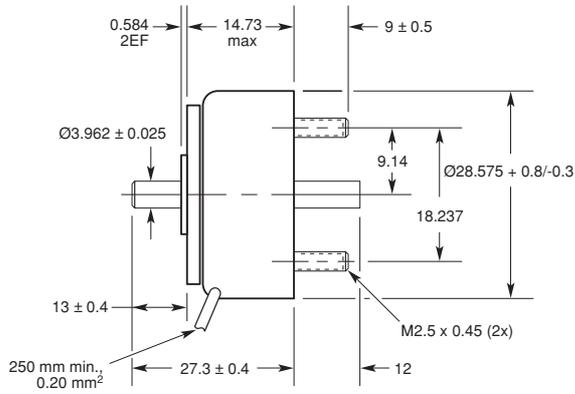
Dielectric Strength	1000 VRMS
Recommended Minimum Heat Sink	Maximum watts dissipated by solenoid are based on an unrestricted flow of air at 20°C, with solenoid mounted on the equivalent of an aluminium plate measuring 86 x 3.2 mm thick
Coil Resistance	24-33 awg (wire diameter), ±5%
Weight	63,8 g
Holding Force 2EF	53,4 N @105°C
Holding Force 2EC	25,4 N @105°C

### Preferred Range

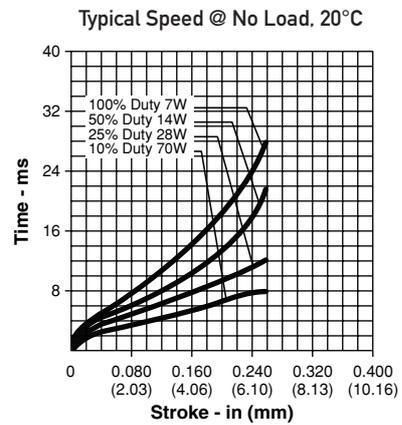
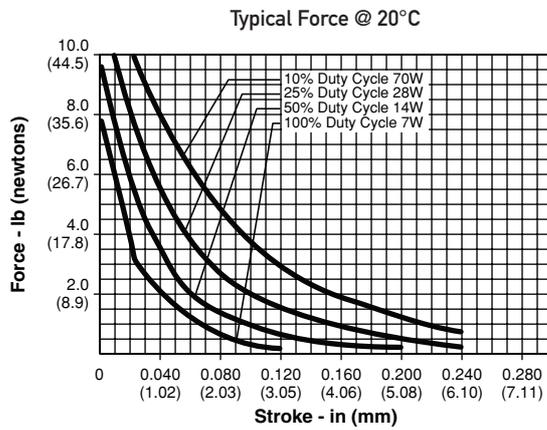
Type	Size	Nominal voltage	Duty Cycle	Force@Nominal Stroke	Nominal power	max. "On time"
282344-030	∅ 29 X 15 mm	8,8 VDC	100%	1,1 N	7 W @20°C	∞ sec

# Low Profile 2ECM

## Dimensions



## Performance chart



# Low Profile 2ECM

## Ordering Reference

Type 282344-(0XX) Coil Data awg (wire diameter)

Performance		100%	50%	25%	10%		
Maximum ON Time (sec) when pulsed continuously <sup>1</sup>		∞	100	36	7		
Force@Nominal Stroke (N)		1.1	4.5	8.9	16.7		
Watts (@20°C)		7	14	28	70		
Ampere Turns (@20°C)		425	602	849	1350		
Coil Data	awg (0XX) <sup>2</sup>	Resistance (@20°C)	# Turns <sup>3</sup>	VDC (Nom)	VDC (Nom)	VDC (Nom)	VDC (Nom)
	024	0.68	130	2.2	3.2	4.5	7.1
	025	1.16	174	2.8	4.0	5.7	9.0
	026	1.96	231	3.6	5.1	7.2	11.5
	027	3.16	296	4.5	6.4	9.0	14.4
	028	5.10	378	5.7	8.1	11.5	18.2
	029	6.94	423	7.0	9.9	13.9	22.0
	030	11.03	530	8.8	12.5	17.7	28.0
	031	16.85	649	11.0	15.6	22.0	35.0
	032	28.15	858	13.9	19.8	28.0	44.0
	033	42.75	1036	17.5	25.0	35.0	56.0

<sup>1</sup> Continuously pulsed at stated watts and duty cycle

<sup>2</sup> Other coil awg (wire diameter) sizes available — please enquire

<sup>3</sup> Reference number of turns

All data is at 20°C coil temperature. Force outputs degrade with increased temperatures

# 3EFM

## Linear Solenoid

Low Profile, Flat Face

### 3EFM

Dimensions (mm)	∅ 33 x 18
Duty cycle	continuous or intermittent
Max. Stroke	1,9 mm
Operation	Push or pull operations Pull use: Opposite of mounting pegs
Max. force (N)	89 N (@10% Duty Cycle)
Life	5 M cycles
Power (W)	9–90
Supply (V)	2,6–83 VDC
Functional Advantages	Ideal for high force, medium stroke applications: on/off operation



### Technical Data

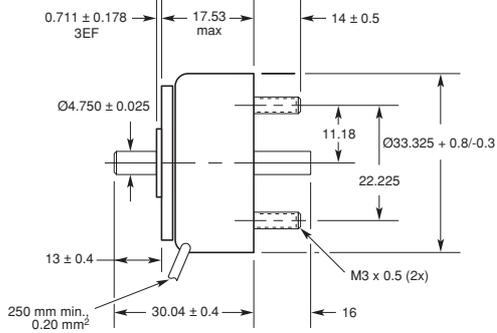
Dielectric Strength Recommended	23-27 awg (wire diameter), 1000 VRMS; 28-33 awg (wire diameter), 1200 VRMS
Minimum Heat Sink	Maximum watts dissipated by solenoid are based on an unrestricted flow of air at 20°C, with solenoid mounted on the equivalent of an aluminium plate measuring 118 x 3,2 mm
Coil Resistance	23-33 awg (wire diameter), ±5%
Weight	106,3 g
Holding Force 3EF	115,6 N @105°C
Holding Force 3EC	53,4 N @105°C

### Preferred Range

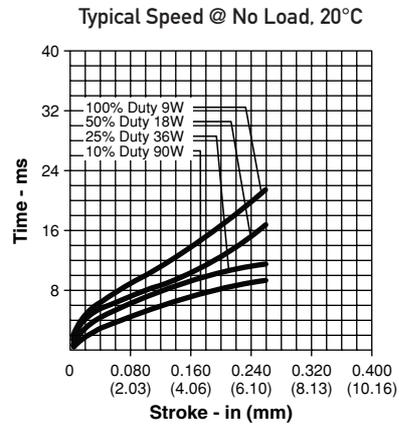
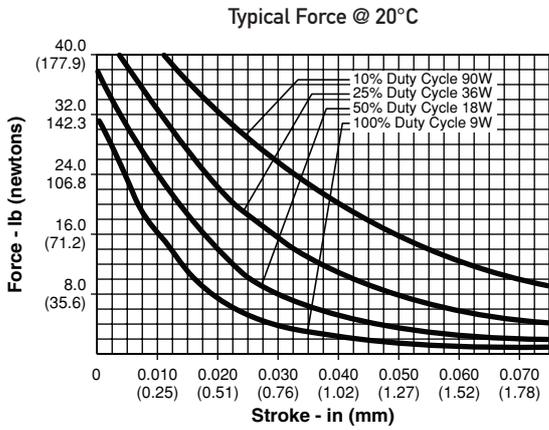
Type	Size	Nominal voltage	Duty Cycle	Force@Nominal Stroke	Nominal power	max. "On time"
282345-028	∅ 33 X 18 mm	8,4 VDC	100%	11,1 N	9 W @20°C	∞ sec

# Low Profile 3EFM

## Dimensions



## Performance chart



# Low Profile 3EFM

## Ordering Reference

Type 282345-(0XX) Coil Data awg (wire diameter)

Performance		100%	50%	25%	10%		
Maximum ON Time (sec) when pulsed continuously <sup>1</sup>		∞	100	36	8		
Force@Nominal Stroke (N)		11.1	22.3	49	89		
Watts (@20°C)		9	18	36	90		
Ampere Turns (@20°C)		535	756	1070	1690		
Coil Data	awg (0XX) <sup>2</sup>	Resistance (@20°C)	# Turns <sup>3</sup>	VDC (Nom)	VDC (Nom)	VDC (Nom)	VDC (Nom)
	023	0.70	145	2.6	3.7	5.2	8.2
	024	1.18	192	3.3	4.6	6.6	10.4
	025	1.97	252	4.2	5.9	8.4	13.2
	026	3.26	328	5.3	7.5	10.6	16.8
	027	5.04	405	6.7	9.4	13.3	21.0
	028	8.02	510	8.4	11.9	16.8	27.0
	029	12.21	627	10.4	14.7	21.0	33.0
	030	19.20	780	13.2	18.6	26.0	42.0
	031	31.84	1008	16.9	24.0	34.0	53.0
	032	46.97	1215	21.0	29.0	41.0	65.0
	033	75.30	1530	26.0	37.0	53.0	83.0

<sup>1</sup> Continuously pulsed at stated watts and duty cycle

<sup>2</sup> Other coil awg (wire diameter) sizes available — please enquire

<sup>3</sup> Reference number of turns

All data is at 20°C coil temperature. Force outputs degrade with increased temperatures.

# 3ECM

## Linear Solenoid

Low Profile, Conical Face

### 3ECM

Dimensions (mm)	∅ 33 x 18
Duty cycle	continuous or intermittent
Max. Stroke	7,6 mm
Operation	Push or pull operations Pull use: Opposite of mounting pegs
Max. force (N)	24,9 N (@10% Duty Cycle)
Life	5 M cycles
Power (W)	9–90
Supply (V)	2,6–83 VDC
Functional Advantages	Ideal for high force, medium stroke applications; on/off operation



### Technical Data

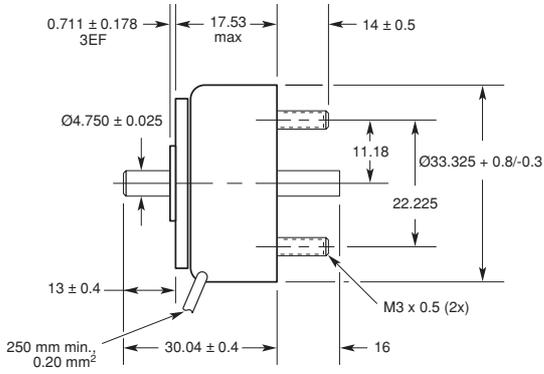
Dielectric Strength	23-27 awg (wire diameter), 1000 VRMS; 28-33 awg (wire diameter), 1200 VRMS
Recommended Minimum Heat Sink	Maximum watts dissipated by solenoid are based on an unrestricted flow of air at 20°C, with solenoid mounted on the equivalent of an aluminium plate measuring 118 x 3,2 mm
Coil Resistance	23-33 awg (wire diameter), ±5%
Weight	106,3 g
Holding Force 3EF	115,6 N @105°C
Holding Force 3EC	53,4 N @105°C

### Preferred Range

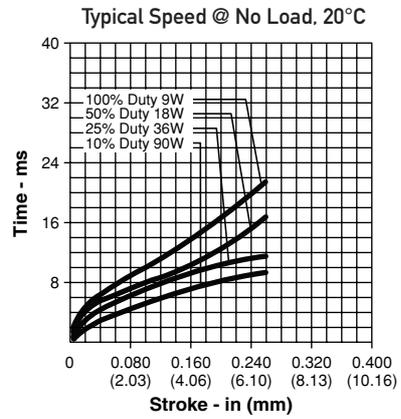
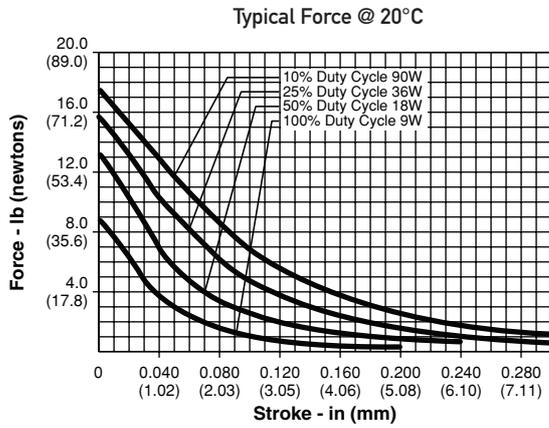
Type	Size	Nominal voltage	Duty Cycle	Force@Nominal Stroke	Nominal power	max. "On time"
282346-028	∅ 33 X 18 mm	8,4 VDC	100%	3,6 N	9 W @20°C	∞ sec

# Low Profile 3ECM

## Dimensions



## Performance chart



# Low Profile 3ECM

## Ordering Reference

Type 282346-(0XX) Coil Data awg (wire diameter)

Performance		100%	50%	25%	10%		
Maximum ON Time (sec) when pulsed continuously <sup>1</sup>		∞	100	36	8		
Force@Nominal Stroke (N)		3.6	8.9	16.9	24.9		
Watts (@20°C)		9	18	36	90		
Ampere Turns (@20°C)		535	756	1070	1690		
Coil Data	awg (0XX) <sup>2</sup>	Resistance (@20°C)	# Turns <sup>3</sup>	VDC (Nom)	VDC (Nom)	VDC (Nom)	VDC (Nom)
	023	0.70	145	2.6	3.7	5.2	8.2
	024	1.18	192	3.3	4.6	6.6	10.4
	025	1.97	252	4.2	5.9	8.4	13.2
	026	3.26	328	5.3	7.5	10.6	16.8
	027	5.04	405	6.7	9.4	13.3	21.0
	028	8.02	510	8.4	11.9	16.8	27.0
	029	12.21	627	10.4	14.7	21.0	33.0
	030	19.20	780	13.2	18.6	26.0	42.0
	031	31.84	1008	16.9	24.0	34.0	53.0
	032	46.97	1215	21.0	29.0	41.0	65.0
	033	75.30	1530	26.0	37.0	53.0	83.0

<sup>1</sup> Continuously pulsed at stated watts and duty cycle

<sup>2</sup> Other coil awg (wire diameter) sizes available — please enquire

<sup>3</sup> Reference number of turns

All data is at 20°C coil temperature. Force outputs degrade with increased temperatures.

# 4EFM

## Linear Solenoid

Low Profile, Flat Face

### 4EFM

Dimensions (mm)	∅ 40 x 21
Duty cycle	continuous or intermittent
Max. Stroke	3,0 mm
Operation	Push or pull operations Pull use: Opposite of mounting pegs
Max. force (N)	111,3 N (@10% Duty Cycle)
Life	5 M cycles
Power (W)	12,5–125
Supply (V)	4,3–132 VDC
Functional Advantages	Ideal for high force, medium stroke applications: on/off operation



### Technical Data

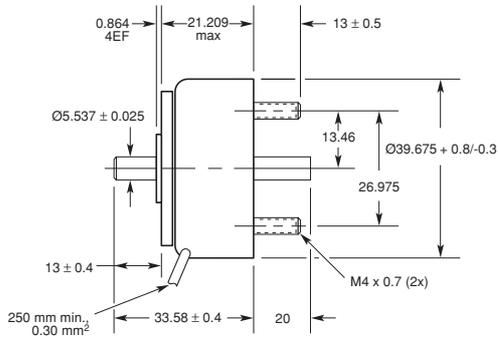
Dielectric Strength Recommended	23-24 awg (wire diameter), 1000 VRMS; 25-33 awg (wire diameter), 1200 VRMS
Minimum Heat Sink	Maximum watts dissipated by solenoid are based on an unrestricted flow of air at 20°C, with solenoid mounted on the equivalent of an aluminium plate measuring 159 x 3,2 mm
Coil Resistance	23-33 awg (wire diameter), ±5%
Weight	170 g
Holding Force 4EF	164,6 N @105°C
Holding Force 4EC	71,2 N @105°C

### Preferred Range

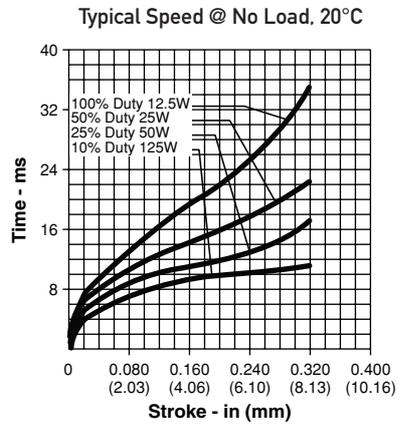
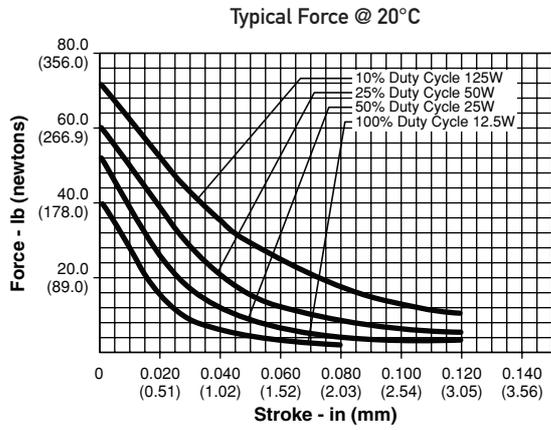
Type	Size	Nominal voltage	Duty Cycle	Force@Nominal Stroke	Nominal power	max. "On time"
282347-026	∅ 40 X 21 mm	8,3 VDC	100%	13,4 N	12,5 W @20°C	∞ sec

# Low Profile 4EFM

## Dimensions



## Performance chart



## Low Profile 4EFM

### Ordering Reference

Type 282347-(0XX) Coil Data awg (wire diameter)

Performance		100%	50%	25%	10%		
Maximum ON Time (sec) when pulsed continuously <sup>1</sup>		∞	100	36	9		
Force@Nominal Stroke (N)		13.4	28.9	53.4	111.3		
Watts (@20°C)		12.5	25	50	125		
Ampere Turns (@20°C)		714	1000	1425	2250		
Coil Data	awg (0XX) <sup>2</sup>	Resistance (@20°C)	# Turns <sup>3</sup>	VDC (Nom)	VDC (Nom)	VDC (Nom)	VDC (Nom)
	023	1.59	266	4.3	6.0	8.5	13.4
	024	2.20	301	5.2	7.3	10.4	16.4
	025	3.54	384	6.6	9.2	13.1	21.0
	026	5.67	486	8.3	11.7	16.6	26.0
	027	8.76	600	10.4	14.6	21.0	33.0
	028	13.80	748	13.2	18.5	26.0	42.0
	029	22.60	975	16.6	23.0	33.0	52.0
	030	34.80	1190	21.0	29.0	42.0	66.0
	031	56.70	1520	27.0	37.0	53.0	84.0
	032	88.30	1908	33.0	46.0	66.0	104.0
	033	138.00	2360	42.0	59.0	83.0	132.0

<sup>1</sup> Continuously pulsed at stated watts and duty cycle

<sup>2</sup> Other coil awg (wire diameter) sizes available — please enquire

<sup>3</sup> Reference number of turns

All data is at 20°C coil temperature. Force outputs degrade with increased temperatures.

# 4ECM

## Linear Solenoid

Low Profile, Conical Face

### 4ECM

Dimensions (mm)	∅ 40 x 21
Duty cycle	continuous or intermittent
Max. Stroke	6,3 mm
Operation	Push or pull operations Pull use: Opposite of mounting pegs
Max. force (N)	51,2 N (@10% Duty Cycle)
Life	5 M cycles
Power (W)	12,5–125
Supply (V)	4,3–132 VDC
Functional Advantages	Ideal for high force, medium stroke applications: on/off operation



### Technical Data

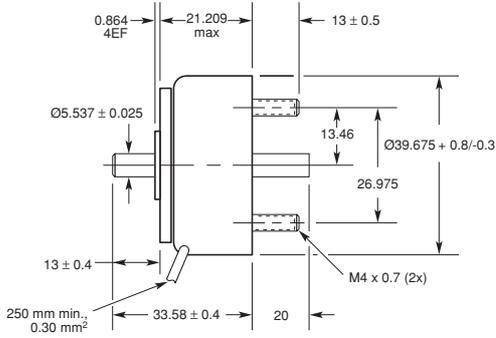
Dielectric Strength	23-24 awg (wire diameter), 1000 VRMS; 25-33 awg (wire diameter), 1200 VRMS
Recommended Minimum Heat Sink	Maximum watts dissipated by solenoid are based on an unrestricted flow of air at 20°C, with solenoid mounted on the equivalent of an aluminium plate measuring 159 x 3,2 mm
Coil Resistance	23-33 awg (wire diameter), ±5%
Weight	170 g
Holding Force 4EF	164,6 N @105°C
Holding Force 4EC	71,2 N @105°C

### Preferred Range

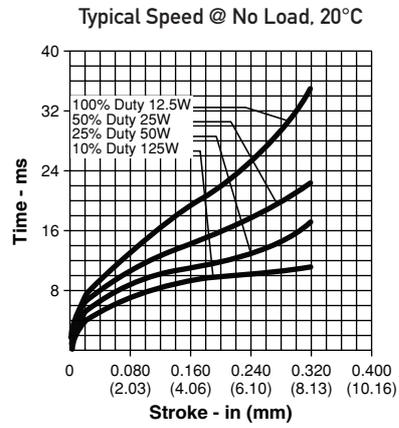
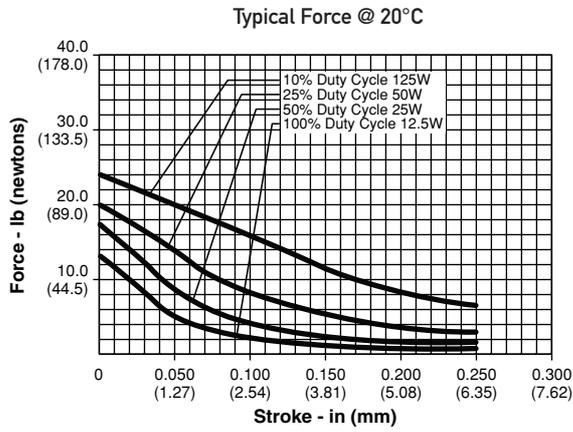
Type	Size	Nominal voltage	Duty Cycle	Force@Nominal Stroke	Nominal power	max. "On time"
282348-026	∅ 40 X 21 mm	8,3 VDC	100%	4,5 N	12,5 W @20°C	∞ sec

# Low Profile 4ECM

## Dimensions



## Performance chart



## Low Profile 4ECM

### Ordering Reference

Type 282348-(0XX) Coil Data awg (wire diameter)

Performance		100%	50%	25%	10%		
Maximum ON Time (sec) when pulsed continuously <sup>1</sup>		∞	100	36	9		
Force@Nominal Stroke (N)		4.5	10	24.5	51.2		
Watts (@20°C)		12.5	25	50	125		
Ampere Turns (@20°C)		714	1000	1425	2250		
Coil Data	awg (0XX) <sup>2</sup>	Resistance (@20°C)	# Turns <sup>3</sup>	VDC (Nom)	VDC (Nom)	VDC (Nom)	VDC (Nom)
	023	1.59	266	4.3	6.0	8.5	13.4
	024	2.20	301	5.2	7.3	10.4	16.4
	025	3.54	384	6.6	9.2	13.1	21.0
	026	5.67	486	8.3	11.7	16.6	26.0
	027	8.76	600	10.4	14.6	21.0	33.0
	028	13.80	748	13.2	18.5	26.0	42.0
	029	22.60	975	16.6	23.0	33.0	52.0
	030	34.80	1190	21.0	29.0	42.0	66.0
	031	56.70	1520	27.0	37.0	53.0	84.0
	032	88.30	1908	33.0	46.0	66.0	104.0
	033	138.00	2360	42.0	59.0	83.0	132.0

<sup>1</sup> Continuously pulsed at stated watts and duty cycle

<sup>2</sup> Other coil awg (wire diameter) sizes available — please enquire

<sup>3</sup> Reference number of turns

All data is at 20°C coil temperature. Force outputs degrade with increased temperatures.

# 5SFM

## Linear Solenoid

Low Profile, Flat Face

### 5SFM

Dimensions (mm)	∅ 48 x 22
Duty cycle	continuous or intermittent
Max. Stroke	3,6 mm
Operation	Push or pull operations Pull use: Opposite of mounting pegs
Max. force (N)	173,6 N (@10% Duty Cycle)
Life	5 M cycles
Power (W)	21–210
Supply (V)	6,1–192 VDC
Functional Advantages	Ideal for high force, medium stroke applications: on/off operation



### Technical Data

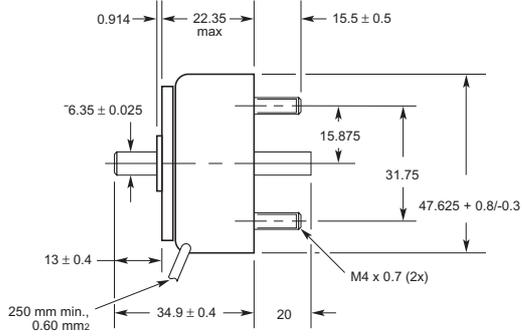
Dielectric Strength Recommended	23 awg (wire diameter), 1000 VRMS; 24-33 awg (wire diameter), 1200 VRMS
Minimum Heat Sink	Maximum watts dissipated by solenoid are based on an unrestricted flow of air at 20°C, with solenoid mounted on the equivalent of an aluminium plate measuring 191 x 3,2 mm
Coil Resistance	23-33 awg (wire diameter), ±5%
Weight	255 g
Holding Force	258 N @105°C

### Preferred Range

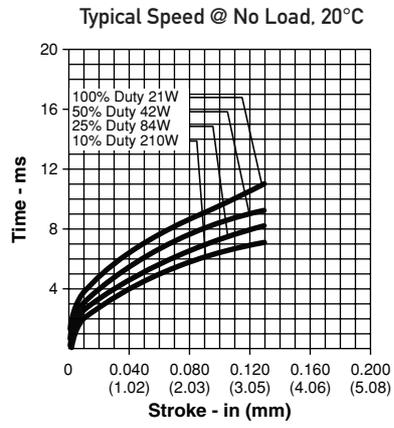
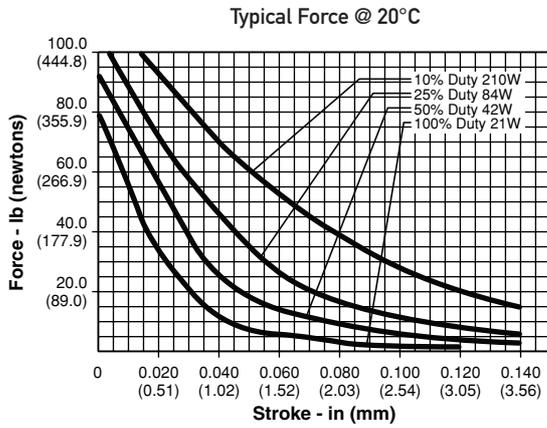
Type	Size	Nominal voltage	Duty Cycle	Force@Nominal Stroke	Nominal power	max. "On time"
282349-024	∅ 48 X 22 mm	7,6 VDC	100%	13,4 N	21 W @20°C	∞ sec

# Low Profile 5SFM

## Dimensions



## Performance chart



## Low Profile 5SFM

### Ordering Reference

Type 282349-(0XX) Coil Data awg (wire diameter)

Performance		100%	50%	25%	10%		
Maximum ON Time (sec) when pulsed continuously <sup>1</sup>		∞	100	36	10		
Force@Nominal Stroke (N)		13.4	42.3	75.7	173.6		
Watts (@20°C)		21	42	84	210		
Ampere Turns (@20°C)		860	1220	1720	2730		
Coil Data	awg (0XX) <sup>2</sup>	Resistance (@20°C)	# Turns <sup>3</sup>	VDC (Nom)	VDC (Nom)	VDC (Nom)	VDC (Nom)
	023	2.03	288	6.1	8.6	12.1	19.2
	024	3.20	360	7.6	10.8	15.3	24.0
	025	4.91	440	9.6	13.6	19.2	31.0
	026	7.72	550	12.1	17.1	24.0	38.0
	027	11.12	636	15.0	21.0	30.0	48.0
	028	18.79	840	19.2	27.0	39.0	61.0
	029	30.48	1088	24.0	34.0	48.0	77.0
	030	44.86	1275	30.0	43.0	61.0	96.0
	031	70.90	1596	38.0	54.0	76.0	121.0
	032	109.00	1974	47.0	67.0	95.0	150.0
	033	175.00	2496	60.0	86.0	121.0	192.0

<sup>1</sup> Continuously pulsed at stated watts and duty cycle

<sup>2</sup> Other coil awg (wire diameter) sizes available — please enquire

<sup>3</sup> Reference number of turns

All data is at 20°C coil temperature. Force outputs degrade with increased temperatures.

# 5ECM

## Linear Solenoid

Low Profile, Conical Face

### 5ECM

Dimensions (mm)	∅ 48 x 26
Duty cycle	continuous or intermittent
Max. Stroke	10,2 mm
Operation	Push or pull operations Pull use: Opposite of mounting pegs
Max. force (N)	93,5 N (@10% Duty Cycle)
Life	5 M cycles
Power (W)	21–210
Supply (V)	7,2–226 VDC
Functional Advantages	Ideal for high force, medium stroke applications: on/off operation



### Technical Data

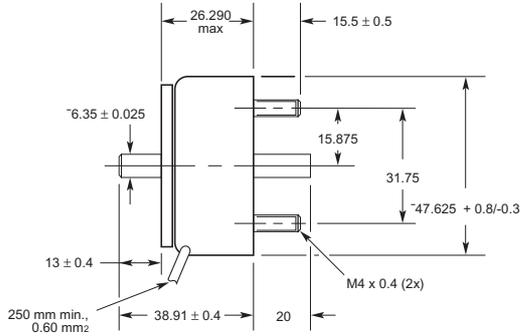
Dielectric Strength	23 awg (wire diameter), 1000 VRMS; 24-33 awg (wire diameter), 1200 VRMS
Recommended Minimum Heat Sink	Maximum watts dissipated by solenoid are based on an unrestricted flow of air at 20°C, with solenoid mounted on the equivalent of an aluminium plate measuring 191 x 3.2 mm
Coil Resistance	23-33 awg (wire diameter), ±5%
Weight	326 g
Holding Force	120,1 N @105°C

### Preferred Range

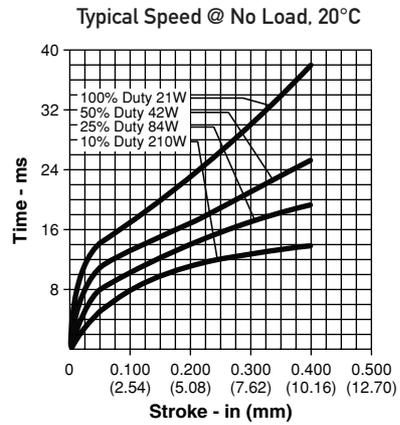
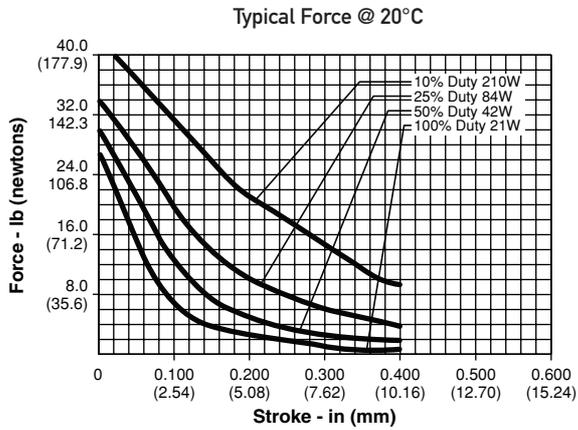
Type	Size	Nominal voltage	Duty Cycle	Force@Nominal Stroke	Nominal power	max. "On time"
282350-024	∅ 48 X 26 mm	9 VDC	100%	11,1 N	21 W @20°C	∞ sec

# Low Profile 5ECM

## Dimensions



## Performance chart



## Low Profile 5ECM

### Ordering Reference

Type 282350-(0XX) Coil Data awg (wire diameter)

Performance		100%	50%	25%	10%		
Maximum ON Time (sec) when pulsed continuously <sup>1</sup>		∞	100	36	10		
Force@Nominal Stroke (N)		11.1	22.3	44.5	93.5		
Watts (@20°C)		21	42	84	210		
Ampere Turns (@20°C)		1015	1440	2030	3210		
Coil Data	awg (0XX) <sup>2</sup>	Resistance (@20°C)	# Turns <sup>3</sup>	VDC (Nom)	VDC (Nom)	VDC (Nom)	VDC (Nom)
	023	2.70	384	7.2	10.1	14.3	23.0
	024	4.30	486	9.0	12.7	18.0	28.0
	025	6.66	590	11.5	16.2	23.0	36.0
	026	10.30	737	14.0	20.0	28.0	44.0
	027	15.70	900	17.7	25.0	35.0	56.0
	028	26.60	1190	23.0	32.0	45.0	72.0
	029	38.00	1380	28.0	40.0	56.0	89.0
	030	62.10	1768	36.0	51.0	71.0	113.0
	031	96.10	2166	45.0	64.0	90.0	143.0
	032	157.00	2816	57.0	80.0	113.0	179.0
	033	241.00	3432	71.0	101.0	143.0	226.0

<sup>1</sup> Continuously pulsed at stated watts and duty cycle

<sup>2</sup> Other coil awg (wire diameter) sizes available — please enquire

<sup>3</sup> Reference number of turns

All data is at 20°C coil temperature. Force outputs degrade with increased temperatures.

# 6SFM

## Linear Solenoid

Low Profile, Flat Face

### 6SFM

Dimensions (mm)	∅ 57 x 29
Duty cycle	continuous or intermittent
Max. Stroke	4,6 mm
Operation	Push or pull operations Pull use: Opposite of mounting pegs
Max. force (N)	356 N (@10% Duty Cycle)
Life	5 M cycles
Power (W)	32–320
Supply (V)	10,3–331 VDC
Functional Advantages	Ideal for high force, medium stroke applications: on/off operation



### Technical Data

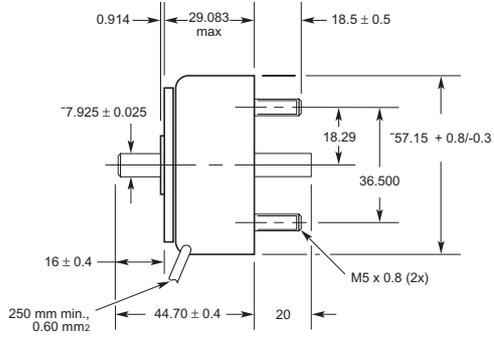
Dielectric Strength	23-31 awg (wire diameter), 1200 VRMS; 32-33 awg (wire diameter), 1500 VRMS
Recommended Minimum Heat Sink	Maximum watts dissipated by solenoid are based on an unrestricted flow of air at 20°C, with solenoid mounted on the equivalent of an aluminium plate measuring 314 x 3,2 mm
Coil Resistance	23-33 awg (wire diameter), ±5%
Weight	510,3 g
Holding Force	391,4 N @105°C

### Preferred Range

Type	Size	Nominal voltage	Duty Cycle	Force@Nominal Stroke	Nominal power	max. "On time"
202351-023	∅ 57 X 29 mm	10,3 VDC	100%	44,5 N	32 W @20°C	∞ sec

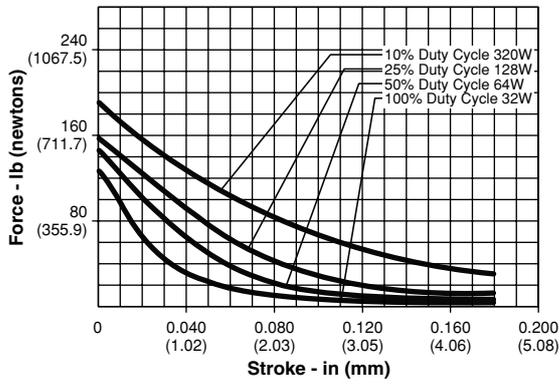
# Low Profile 6SFM

## Dimensions

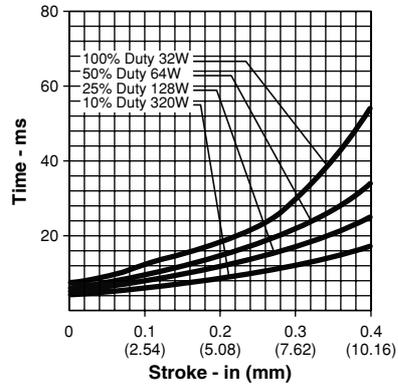


## Performance chart

Typical Force @ 20°C



Typical Speed @ No Load, 20°C



## Low Profile 6SFM

### Ordering Reference

Type 202351-(0XX) Coil Data awg (wire diameter)

Performance		100%	50%	25%	10%		
Maximum ON Time (sec) when pulsed continuously <sup>1</sup>		∞	87	36	13		
Force@Nominal Stroke (N)		44.5	89	178	356		
Watts (@20°C)		32	64	128	320		
Ampere Turns (@20°C)		1240	1760	2490	3920		
Coil Data	awg (0XX) <sup>2</sup>	Resistance (@20°C)	# Turns <sup>3</sup>	VDC (Nom)	VDC (Nom)	VDC (Nom)	VDC (Nom)
	023	3.59	432	10.3	14.6	21.0	33.0
	024	5.24	500	13.0	18.4	26.0	41.0
	025	9.51	708	16.7	24.0	33.0	53.0
	026	14.44	858	21.0	30.0	42.0	66.0
	027	23.69	1110	27.0	38.0	53.0	84.0
	028	38.27	1411	34.0	48.0	68.0	106.0
	029	54.62	1638	41.0	59.0	83.0	131.0
	030	93.67	2184	53.0	76.0	107.0	168.0
	031	143.00	2645	67.0	95.0	134.0	211.0
	032	223.00	3328	83.0	118.0	167.0	262.0
	033	338.00	4004	105.0	149.0	210.0	331.0

<sup>1</sup> Continuously pulsed at stated watts and duty cycle

<sup>2</sup> Other coil awg (wire diameter) sizes available — please enquire

<sup>3</sup> Reference number of turns

All data is at 20°C coil temperature. Force outputs degrade with increased temperatures.

# 6ECM

## Linear Solenoid

Low Profile, Conical Face

### 6ECM

Dimensions (mm)	∅ 57 x 34
Duty cycle	continuous or intermittent
Max. Stroke	10.1 mm
Operation	Push or pull operations Pull use: Opposite of mounting pegs
Max. force (N)	191.4 N (@10% Duty Cycle)
Life	1 million cycles
Ratings (W)	32–320
Supply (V)	12.3–394 VDC
Functional Advantages	Ideal for high force, medium stroke applications: on/off operation



### Technical Data

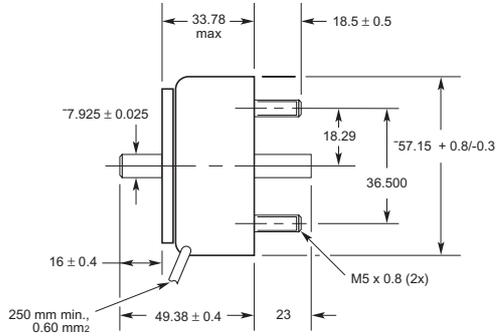
Dielectric Strength	23-31 awg (wire diameter), 1200 VRMS; 32-33 awg (wire diameter), 1500 VRMS
Recommended Minimum Heat Sink	Maximum watts dissipated by solenoid are based on an unrestricted flow of air at 20°C, with solenoid mounted on the equivalent of an aluminium plate measuring 314 x 3.2 mm
Coil Resistance	23-33 awg (wire diameter), ±5%
Weight	609.5 g
Holding Force	218 N @105°C

### Preferred Range

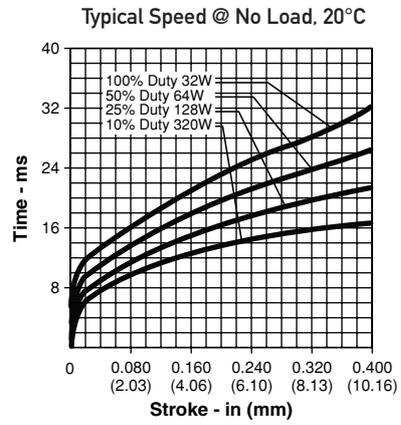
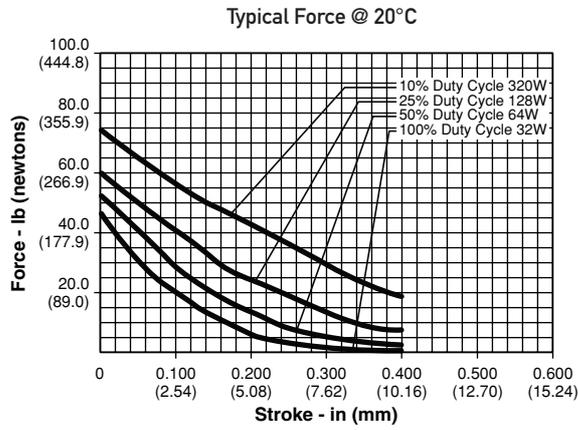
Type	Size	Nominal voltage	Duty Cycle	Force@Nominal Stroke	Nominal power	max. "On time"
282352-023	∅ 57 X 34 mm	12.3 VDC	100%	26.7 N	32 W @20°C	∞ sec

# Low Profile 6ECM

## Dimensions



## Performance chart



# Low Profile 6ECM

## Ordering Reference

Type 282352-(0XX) Coil Data awg (wire diameter)

Performance		100%	50%	25%	10%		
Maximum ON Time (sec) when pulsed continuously <sup>1</sup>		∞	87	36	13		
Force@Nominal Stroke (N)		26.7	57.9	106.8	191.4		
Watts (@20°C)		32	64	128	320		
Ampere Turns (@20°C)		1480	2080	2940	4620		
Coil Data	awg (0XX) <sup>2</sup>	Resistance (@20°C)	# Turns <sup>3</sup>	VDC (Nom)	VDC (Nom)	VDC (Nom)	VDC (Nom)
	023	4.69	567	12.3	17.2	24.0	38.0
	024	7.43	710	15.5	22.0	31.0	48.0
	025	12.90	960	19.9	28.0	39.0	62.0
	026	19.70	1170	25.0	35.0	49.0	78.0
	027	32.00	1500	32.0	44.0	63.0	99.0
	028	51.60	1904	40.0	56.0	79.0	125.0
	029	74.40	2232	49.0	69.0	98.0	154.0
	030	126.00	2940	63.0	89.0	126.0	198.0
	031	195.00	3611	80.0	112.0	159.0	250.0
	032	288.00	4350	98.0	138.0	195.0	306.0
	033	427.00	5010	126.0	177.0	251.0	394.0

<sup>1</sup> Continuously pulsed at stated watts and duty cycle

<sup>2</sup> Other coil awg (wire diameter) sizes available — please enquire

<sup>3</sup> Reference number of turns

All data is at 20°C coil temperature. Force outputs degrade with increased temperatures.