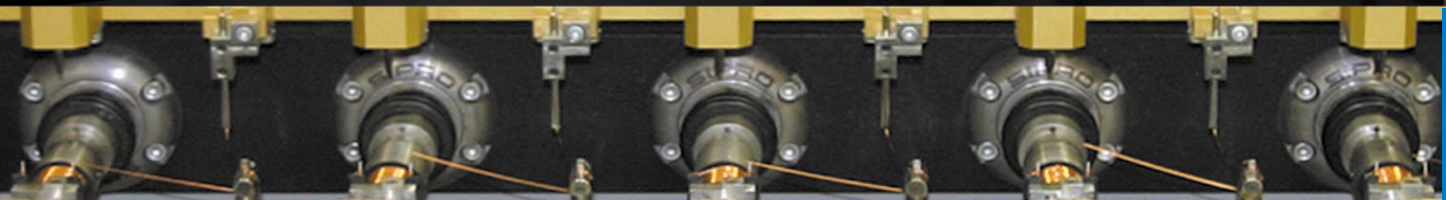
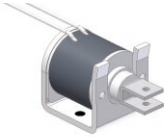


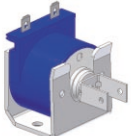




Solenoids
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C-Frame

Model	Size (in) LxWxH	Coil Treatment (1)	Maximum Stroke (in)	Voltage Type (2)	Duty Cycle (3)	Typical Force (oz) 100% Voltage, 77° F, at the following strokes (in)			
						0.000	0.125	0.250	0.500
	0.768 x 0.687 x 0.765	TW	0.300	DC	Cont, 3.5 W	18.0	2.2	0.8	
				DC	Int, 8 W	27.0	5.0	2.0	
				DC	Pulse, 35 W	46.0	15.0	6.0	
				AC	Cont, 4.5 VA	23.0	2.4	0.8	
				AC	Int, 12 VA	45.0	5.0	1.7	
				AC	Pulse, 45 VA	90.0	15.0	5.0	
	0.969 x 0.734 x 0.812	TW	0.400	DC	Cont, 3.7 W	25.0	3.0	1.5	
				DC	Int, 11 W	38.0	12.0	5.0	
				DC	Pulse, 42W	62.0	34.0	19.0	
				AC	Cont, 4.7 VA	24.0	3.5	2.0	
				AC	Int, 14 VA	50.0	9.5	5.5	
				AC	Pulse, 47 VA	86.0	25.0	15.0	
	1.126 x 0.860 x 0.839	ENC	0.500	DC	Cont, 4.7 W	38.0	4.0	1.9	0.5
				DC	Int, 12 W	50.0	11	5.0	2.0
				DC	Pulse, 45 W	68.0	34.0	17.0	6.0
				AC	Cont, 6.8 VA	33.0	5.9	4.0	2.0
				AC	Int, 19.6 VA	57.0	13.0	9.0	4.5
				AC	Pulse, 68 VA	95.0	32.0	24.0	10.0
	1.140 x 1.062 x 1.025	ENC	0.500	DC	Cont, 5 W	42.0	6.5	3.0	1.0
				DC	Int, 11.5 W	60.0	16.0	8.0	2.5
				DC	Pulse, 50 W	93.0	60.0	40.0	15.0
				AC	Cont, 7.8 VA	42.0	9.0	7.0	4.0
				AC	Int, 21 VA	66.0	20.0	16.0	8.0
				AC	Pulse, 78 VA	110.0	52.0	42.0	21.0
	1.187 x 1.280 x 1.261	ENC	0.500	DC	Cont, 6.5 W	65.0	12.0	5.5	2.5
				DC	Int, 16 W	79.0	27.0	14.0	5.0
				DC	Pulse, 65 W	103.0	74.0	53.0	24.0
				AC	Cont, 9.5 VA	50.0	12.0	8.0	6.0
				AC	Int, 25 VA	90.0	25.0	20.0	15.0
				AC	Pulse, 95 VA	134.0	53.0	42.0	30.0
	1.062 x 1.375 x 1.413	ENC	0.500	DC	Cont, 8.6 W	75.0	18.0	10.0	3.0
				DC	Int, 15.5 W	84.0	30.0	17.0	6.0
				DC	Pulse, 86 W	156.0	105.0	76.0	30.0
				AC	Cont, 13.7 VA	59.0	17.0	14.0	10.0
				AC	Int, 52 VA	137.0	45.0	36.0	27.0
				AC	Pulse, 137 VA	181.0	85.0	75.0	57.0
	1.734 x 0.844 x 0.942	ENC	0.800	DC	Cont, 7.4 W	53.0	16.0	7.5	3.0
				DC	Int, 19 W	59.0	32.0	17.0	7.0
				DC	Pulse, 74 W	70.0	33.0	23.0	13.0
				AC	Cont, 12 VA	41.0	11.0	8.0	7.0
				AC	Int, 26 VA	75.0	17.0	14.0	12.5
				AC	Pulse, 120 VA	102.0	44.0	35.0	30.0


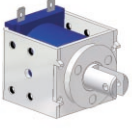
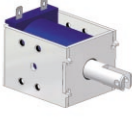
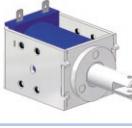
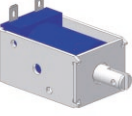

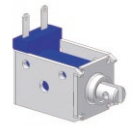
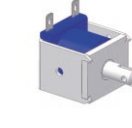
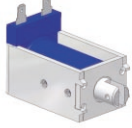
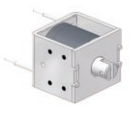

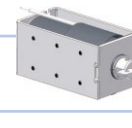

(1) Coil Treatment: TW = Tape Wrapped with Lead Wires, ENC = Polyester Encapsulated with Spade Terminals

(2) Typical DC voltages are 6, 12, 24, 110. Typical AC voltages are 6, 12, 24, 120, 240. Other voltages may be available upon request.

(3) Duty Cycle: Cont = Continuous Duty (100%), Int = Intermittent Duty, Pulse Duty (10%, 100 ms on)

Specifications subject to change without notice.

D-Frame

	Model	Size (in) LxWxH	Coil Treatment (1)	Maximum Stroke (in)	Voltage Type (2)	Duty Cycle (3)	Typical Force (oz) 100% Voltage, 77° F, at the following strokes (in)			
							0.000	0.250	0.500	0.750
	D-2	1.558 x 1.437 x 1.625	ENC	1.000	DC	Cont, 11 W	107.0	24.0	9.0	4.0
					DC	Int, 29 W	127.0	55.0	20.0	9.0
					DC	Pulse, 115 W	158.0	140.0	70.0	30.0
					AC	Cont, 13 VA	64.0	15.0	13.0	6.0
					AC	Int, 59 VA	131.0	44.0	40.0	21.0
					AC	Pulse, 135 VA	180.0	80.0	72.0	41.0
	D-3HD	1.737 x 1.437 x 1.625	ENC	1.000	DC	Cont, 11 W	153.0	30.0	10.0	4.0
					DC	Int, 27 W	165.0	70.0	26.0	10.0
					DC	Pulse, 110W	207.0	180.0	90.0	40.0
					AC	Cont, 21 VA	87.0	20.0	18.0	10.0
					AC	Int, 120 VA	205.0	65.0	58.0	34.0
					AC	Pulse, 210 VA	254.0	100.0	90.0	63.0
	D-4	1.996 x 1.437 x 1.625	ENC	1.000	DC	Cont, 11.5 W	112.0	32.0	12.0	8.0
					DC	Int, 47 W	134.0	90.0	50.0	30.0
					DC	Pulse, 105 W	155.0	122.0	80.0	55.0
					AC	Cont, 10 VA	50.0	9.0	10.0	11.0
					AC	Int, 59 VA	123.0	33.0	36.0	41.0
					AC	Pulse, 100 VA	155.0	52.0	59.0	65.0
	D-4HD	2.175 x 1.437 x 1.625	ENC	1.000	DC	Cont, 11.5 W	141.0	41.0	15.0	9.0
					DC	Int, 38 W	163.0	95.0	48.0	25.0
					DC	Pulse, 115 W	201.0	175.0	105.0	62.0
					AC	Cont, 31 VA	92.0	20.0	23.0	27.0
					AC	Int, 145 VA	192.0	58.0	65.0	75.0
					AC	Pulse, 310 VA	254.0	105.0	108.0	125.0
	D-11	1.851 x 0.938 x 1.190	ENC	0.800	DC	Cont, 8 W	61.0	8.0	4.0	2.0
				DC	Int, 19 W	65.0	22.0	10.0	5.0	
				DC	Pulse, 80 W	77.0	53.0	34.0	21.0	
				1.000	AC	Cont, 12.5 VA	54.0	11.0	10.0	8.0
				AC	Int, 39 VA	92.0	23.0	23.0	20.0	
				AC	Pulse, 125 VA	116.0	40.0	38.0	34.0	
	D-17	1.624 x 0.875 x 1.062	ENC	0.800	DC	Cont, 6 W	53.0	5.0	1.8	0.8
				DC	Int, 14.5 W	63.0	12.0	4.5	2.0	
				DC	Pulse, 60 W	76.0	38.0	19.0	7.0	
				AC	Cont, 9.4 VA	58.0	9.0	7.0	3.0	
				AC	Int, 23 VA	81.0	16.0	12.0	7.0	
				AC	Pulse, 93 VA	113.0	36.0	27.0	14.0	
	D-22	1.130 x 0.750 x 0.750	ENC	0.400	DC	Cont, 4.2 W	30.0	1.8		
				DC	Int, 9.6 W	38.0	4.0			
				DC	Pulse, 40 W	49.0	15.0			
				0.500	AC	Cont, 6.5 VA	31.0	2.4	1.0	
				AC	Int, 8.5 VA	53.0	3.3	1.5		
				AC	Pulse, 60 VA	73.0	14.0	7.0		
	D-28	1.125 x 0.938 x 1.188	ENC	0.750	DC	Cont, 5.5 W	61.0	8.0	4.0	2.5
				DC	Int, 11.5 W	65.0	22.0	10.0	6.0	
				DC	Pulse, 55 W	77.0	54.0	34.0	21.0	
				AC	Cont, 8 VA	54.0	11.0	11.0	8.0	
				AC	Int, 21 VA	92.0	23.0	23.0	20.0	
				AC	Pulse, 80 VA	116.0	40.0	38.0	35.0	
	D-30	2.015 x 1.000 x 1.218	ENC	1.000	DC	Cont, 8.5 W	110.0	15.0	6.0	
				DC	Int, 21 W	133.0	40.0	16.0		
				DC	Pulse, 85 W	185.0	97.0	55.0	23.0	
				AC	Cont, 13 VA	65.0	13.0	11.0		
				AC	Int, 37 VA	108.0	21.0	17.0		
				AC	Pulse, 120 VA	176.0	40.0	33.0		
	D-50	1.625 x 1.562 x 1.828	TW	0.850	DC	Cont, 10 W	158.0	25.0	8.0	4.0
				DC	Int, 25 W	183.0	65.0	21.0	9.0	
				DC	Pulse, 100 W	226.0	180.0	82.0	35.0	
				1.000	AC	Cont, 14 VA	84.0	21.0	19.0	10.0
				AC	Int, 53 VA	151.0	46.0	40.0	24.0	
				AC	Pulse, 140 VA	227.0	94.0	90.0	54.0	
	D-70	2.625 x 1.562 x 1.828	TW	1.000	DC	Cont, 13 W	150.0	62.0	30.0	15.0
				DC	Int, 48 W	211.0	112.0	82.0	50.0	
				DC	Pulse, 130 W	247.0	165.0	135.0	100.0	
	D-90	3.540 x 1.750 x 1.940	TW	1.500	DC	Cont, 23 W	150.0	108.0	80.0	50.0
				DC	Int, 58 W	202.0	158.0	133.0	100.0	
				DC	Pulse, 230 W	303.0	275.0	235.0	205.0	
	PS-75	2.625 x 1.562 x 1.828	TW	0.900	DC	Cont, 12/150 W	200.0	205.0	125.0	80.0









(1) Coil Treatment: TW = Tape Wrapped with Lead Wires, ENC = Polyester Encapsulated with Spade Terminals

(2) Typical DC voltages are 6, 12, 24, 110. Typical AC voltages are 6, 12, 24, 120, 240. Other voltages may be available upon request.

(3) Duty Cycle: Cont = Continuous Duty (100%), Int = Intermittent Duty (25% 3 min on), Pulse Duty (10%, 100 ms on)

Specifications subject to change without notice.

Tubular

Model	Size (in) Dia x L	Coil Treatment (1)	Maximum Stroke (in)	Voltage Type (2)	Duty Cycle (3)	Typical Force (oz) 100% Voltage, 77° F, at the following strokes (in)				
						0.000	0.250	0.500	0.750	
	MED 8 x 1	Ø0.500 x 1.000	TW	0.300	DC	Cont, 4 W	18	1		
					DC	Int, 12 W	22	2.5		
					DC	Pulse, 42 W	31	7.5		
	MED 8 x 1.5	Ø0.500 x 1.500	TW	0.350	DC	Cont, 5 W	18	2		
					DC	Int, 15 W	20	4		
					DC	Pulse, 50 W	28	7.5		
	MED 12 x 1.5	Ø0.750 x 1.500	TW	0.600	DC	Cont, 6 W	38	3	1.5	
					DC	Int, 15 W	50	10	4	
					DC	Pulse, 58 W	64	26	16	
	MED 16 x 1.125	Ø1.000 x 1.125	TW	0.400	DC	Cont, 8 W	94	4		
					DC	Int, 19 W	126	10		
					DC	Pulse, 77 W	180	50		
	MED 16 x 2	Ø1.000 x 2.000	TW	0.800	DC	Cont, 10 W	129	18	8	5
					DC	Int, 24 W	149	36	15	8
					DC	Pulse, 96 W	201	115	77	60
	MED 19 x 2.7	Ø1.187 x 2.700	TW	1.400	DC	Cont, 12 W	116	25	16	14
					DC	Int, 30 W	133	35	25	22
					DC	Pulse, 116 W	165	75	56	52
	MED 24 x 1.7	Ø1.500 x 1.700	TW	0.800	DC	Cont, 12 W	173	26	8	
					DC	Int, 33 W	251	60	20	7
					DC	Pulse, 120 W	358	185	75	22
	MED 24 x 2.4	Ø1.500 x 2.400	TW	1.000	DC	Cont, 14 W	200	52	25	17
					DC	Int, 40 W	265	120	63	35
					DC	Pulse, 140 W	328	210	140	85

(1) Coil Treatment: TW = Tape Wrapped with Lead Wires, ENC = Polyester Encapsulated with Spade Terminals

(2) Typical DC voltages are 6, 12, 24, 110, 115. Other voltages may be available upon request.

(3) Duty Cycle: Cont = Continuous Duty (100%), Int = Intermittent Duty (25% 1 min on), Pulse Duty (10%, 100 ms on)

Specifications subject to change without notice.



Our Standard Solenoid Product Line

This product brochure provides general information on our standard product line of solenoids. Complete product information can be obtained by visiting our web site at www.deltrol-controls.com.

Custom Solenoid Models

At Deltrol Controls we take pride in our ability to customize a standard product or design an entirely new product specific for your application. Please contact Deltrol Controls directly to discuss your application with a Sales Engineer.

UL Approval

Most of our continuous duty solenoids have UL approval, and are listed in UL File No. E57982. Most of our solenoids utilize UL approved insulation systems and are listed in UL File No. E74443. Refer to our online catalog at www.deltrol-controls.com for specific information on UL approvals.

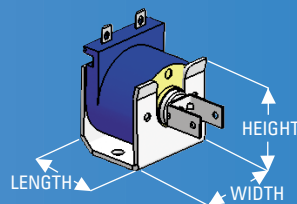
Typical Applications

Our solenoids are being successfully used in a multitude of applications. Some of the more common applications are as follows:
Appliances - Generators - Printing Equipment - HVAC - Security
Beverage Dispensing Equipment - Commercial Laundry Equipment
Medical Equipment - Small Engines - Electric Door Locks
Motorcycle Aftermarket - Valves - Gaming Equipment
Office Equipment - Vending Equipment

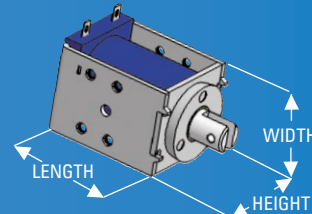
Solenoid Models

The information on the following pages refers to 3 types of solenoids, C-Frames, D-Frames, and Tubular. The following illustrates each of these types of solenoids. (Note: Models shown are pull-type versions, and may also be available in push-type versions.)

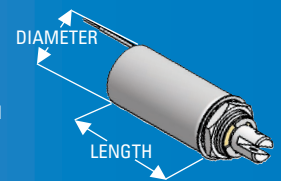
C-Frame



D-Frame



Tubular



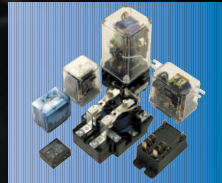
Other Deltrol Controls Products

In addition to our solenoids, Deltrol Controls also designs and manufactures liquid dispensing valves, relays, and custom assemblies. We offer an extensive line of standard products, and have an in-house engineering staff that will work with you to design a custom product specific to your application.

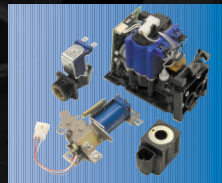
Please visit www.deltrol-controls.com for further information.



Dispensing Valves



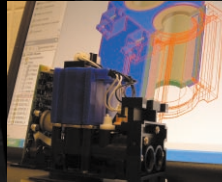
Relays



Custom Assemblies

Deltrol Controls Overview

Deltrol Controls has supplied world-class products to industries for over 40 years. Our products are made at our 110,000-sq. ft. manufacturing facility in Milwaukee, WI, and other ISO-compliant facilities worldwide. We have extensive in-house engineering and manufacturing capabilities that allow us to design and manufacture products that exceed our customers' expectations. Please feel free to contact us to discuss your specific application.



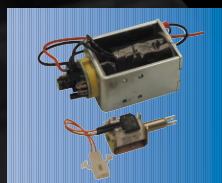
Custom Product Engineering/Manufacturing



On-Site Product Testing



Product Manufacturing



Value Added Assembly