

Elettromagneti Series NT

Elettromagneti Lineari



This Solenoid Series has been specifically designed for maximum AC performance, with both the frame and plunger of laminated steel construction, made of special magnetic steel featuring high magnetic permeability and low magnetic losses. Designed to be used in any position, they are able to transform an electric power into an axial pull action.

Coils have Class F insulation. Performance, as shown in the force diagrams, is normally referred to a temperature rise of 80°C in open air, with 35°C ambient temperature and coils fed at 105% of rated supply voltage (as per VDE 0580).

Elettromagneti Series NT

Selection Guide

To select the best solenoid suiting your application you must always know the force required, as well as stroke, maximum ON time, minimum OFF time, maximum ambient temperature, and supply voltage.

Since the mechanical energy produced by solenoids is constant, any amount of this force eventually unutilised by relevant application will be expended under form of impact force. As a consequence, every application should correctly use the smallest available solenoid performing the required work without exceeding the maximum admitted working temperature.

An exact determination of duty cycle is equally essential to select the right solenoid. Whenever a continuously or an intermittently rated coil is required, please refer to the table included in the section dedicated to relative duty factor.

Every AC solenoid, due to its high power rating (VA), would rapidly overheat and fail to operate, whenever its plunger is prevented from seating properly. To avoid this, an adequate spring should be mounted between plunger and application. When mounting a solenoid please bear always in mind the following:

1. Any load must be absolutely applied along the main plunger axis (to avoid wear due to excessive friction, and amplification of noise due to vibration of AC power supply).
2. All mechanical stroke-limiting devices, if any, should be made of non magnetic material.
3. Expected life of solenoid will be dramatically increased as much as the impact force will be absorbed by any fixing device.

When a continuously rated solenoid is required but space is at premium, a resistor and/or an impedance could be used to feed a smaller intermittently rated solenoid, to limit the current after the plunger is fully seated inside. Types NT1, NT2 and NT5 are supplied with fixing brackets included, while NT3 and NT4 are not including any bracket, even if they can be added as an optional kit.

If you are in doubt of selecting the right solenoid for your application, please don't hesitate contacting us to help you with the right choice, supplying us with all required data as indicated above. Also, if you can't find the solenoid you require in our range, please get in touch with us, as we do have both the experience and the technical knowledge to provide any solution to your problems in this field.

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Duty Factor

Duty Service (ED%)									
Operations per hour	Total cycle	ED 40		ED 25		ED 15		ED 5	
	(seconds)	ON time	OFF time	ON time	OFF time	ON time	OFF time	ON time	OFF time
12	300	120	180	75	225	45	255	15	285
120	30	12	18	7,5	2,25	4,5	25,5	1,5	28,5
300	12	4,8	7,2	3	9	1,8	10,2	0,6	11,4
600	6	2,4	3,6	1,5	4,5	0,9	5,1	0,3	5,7
1200	3	1,2	1,8	0,75	2,25	0,45	2,55	0,15	2,85
1800	2	0,8	1,2	0,5	1,5	0,3	1,7	0,1	1,9
3000	1,2	0,48	0,72	0,3	0,9	0,18	1,02	0,06	1,14

Whenever the maximum cycle time is exceeding 300 seconds, a continuously rated solenoid (ED=100) should be used.

Otherwise, the relative duty factor is resulting as follows:

$$ED\% = [T_i / (T_i + T_r)] \times 100$$

(where: T_i = ON time and T_r = OFF time)

The table above is showing ON and OFF times corresponding to intermittently rated coils (ED lower than 100) for standard ED values.

Environmental compatibility
(European Directive 2011/65/EU)

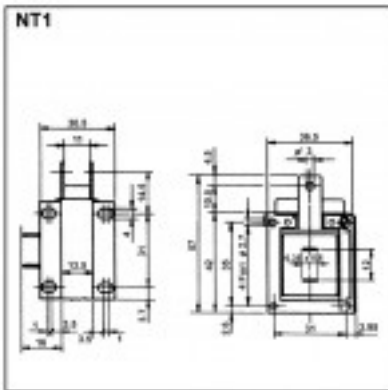


Elettromagneti Series NT

Type NT1

Axial Force Vs. Stroke and Duty Service					
Duty Service	Stroke				
ED	2 mm	5 mm	10 mm	15 mm	
100 %	11.0 N	7.0 N	5.5 N	4.5 N	
40 %	18.1 N	12.2 N	9.3 N	7.5 N	
25 %	20.1 N	14.2 N	10.3 N	8.3 N	
15 %	23.5 N	16.7 N	11.8 N	9.3 N	
5 %	28.0 N	19.1 N	13.7 N	10.3 N	

Current values shown in diagrams are at rated voltage. Forces shown are referring to solenoids fed at 90% of rated voltage, with 'hot' coil and 20°C ambient temperature.



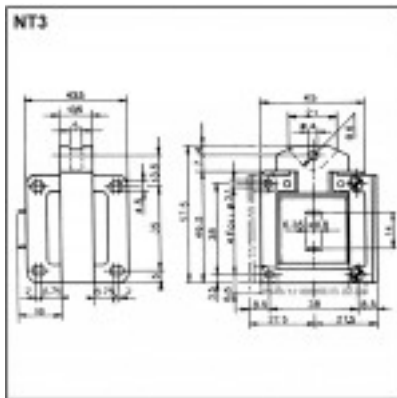
Coil supply voltages: 12-24-110-230 VAC (50 or 60 Hz)
 Insulating resistance: > 100 Mohm at 500 V DC
 Dielectric strenght: 2 KV
 Coil terminals: Faston 0.25 (6.35x0.8 mm) or 150 mm long leads
 Total weight: 190 grams
 Plunger weight: 50 grams

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Type NT3

Axial Force Vs. Stroke and Duty Service					
Duty Service	Stroke				
ED	2 mm	5 mm	10 mm	15 mm	20 mm
100%	21 N	16 N	10 N	8 N	7 N
40%	27 N	20 N	13 N	10 N	9 N
25%	29 N	22 N	14 N	12 N	10 N
15%	31 N	23 N	15 N	13 N	11 N
5%	40 N	29 N	18 N	15 N	13 N

Current values shown in diagrams are at rated voltage. Forces shown are referring to solenoids fed at 90% of rated voltage, with 'hot' coil and 20°C ambient temperature.



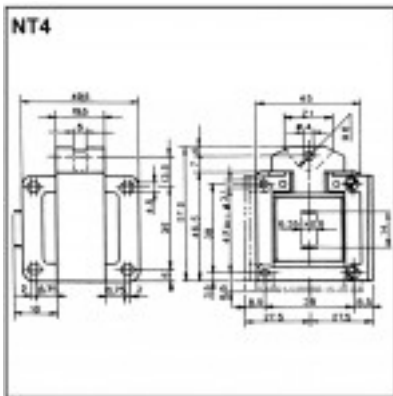
Coil supply voltages: 12-24-110-230 VAC (50 or 60 Hz)
 Insulating resistance: > 100 Mohm at 500 V DC
 Dielectric strenght: 2 KV
 Coil terminals: Faston 0.25 (6.35x0.8 mm) or 150 mm long leads
 Total weight: 260 grams
 Plunger weight: 75 grams

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Type NT4

Axial Force Vs. Stroke and Duty Service					
Duty Service	Stroke				
ED	2 mm	5 mm	10 mm	15 mm	20 mm
100%	33 N	27 N	18 N	13 N	11 N
40%	40 N	32 N	21 N	17 N	14 N
25%	43 N	34 N	24 N	18 N	15 N
15%	46 N	36 N	25 N	19 N	16 N
5%	53 N	42 N	29 N	21 N	18 N

Current values shown in diagrams are at rated voltage. Forces shown are referring to solenoids fed at 90% of rated voltage, with 'hot' coil and 20°C ambient temperature.



Coil supply voltages: 12-24-110-230 VAC (50 or 60 Hz)
 Insulating resistance: > 100 Mohm at 500 V DC
 Dielectric strenght: 2 KV
 Coil terminals: Faston 0.25 (6.35x0.8 mm) or 150 mm long leads
 Total weight: 340 grams
 Plunger weight: 110 grams

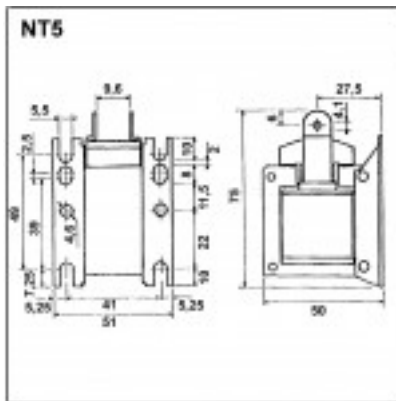
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Type NT5 - NEW!

Axial Force Vs. Stroke and Duty Service							
Duty Service	Stroke						
ED	2 mm	5 mm	10 mm	15 mm	20 mm	(25 mm)	(30 mm)
100%	48 N	38 N	28 N	22 N	18 N	9 N	4 N
25%	80 N	70 N	60 N	57 N	56 N	54 N	40 N

All current values given in the diagrams are at rated voltage. Forces shown are referring to solenoids fed at 90% of rated voltage, with 'hot' coil and 20°C ambient temperature.

(*) Removing the retaining stop of plunger, max stroke can be extended to 30 mm.



Coil supply voltages: 12-24-110-230 VAC (50 or 60 Hz)

Max stroke: 20 mm - 30 mm (*)

Insulating resistance: > 100 Mohm at 500 V DC

Dielectric strenght: 1.5 KV

Coil terminals: Faston 0.25 (6.35x0.8 mm) or 150 mm long leads

Total weight: 4.60N (470 grams)

Plunger weight: 1,37N (140 grams)