

AC solenoids

2

Product group

W BA

- According to DIN VDE 0580
- Increasing force vs. stroke characteristic for type W BA X 006 up to 010 almost linear force vs. stroke characteristic for type W BA X 030 up to 070
- Pull type or push type
- Armature in wear-resistant armature guidances
- Exciter coil corresponds to insulation class F
- Electrical connection and protection class with duly executed installation:
 - Execution A01 bipolar terminal Protection class according to DIN VDE 0470 / EN 60529 - IP 00
 - Execution A04 blade connectors A6,3x0,8 DIN 46244 Protection class according to DIN VDE 0470 / EN 60529 - IP 00
- Only for installation protected against contact
- Fastening with universal frame or dedendum angle
- Modifications and special designs on request
- Please take into consideration that the noise caused by physical conditions of AC solenoids may be perceived as annoying in quiet rooms especially with mounting on resonant bases!
- Application examples:
Machine tools, packing machines, office machines, textile machinery, control technology



Fig. 1: Type W BA X 030 A 00 A01

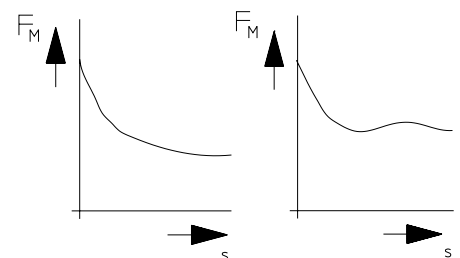


Fig. 3: force vs. stroke characteristic



Technical data

W BA X	006								010										
Operating mode	S1 100%	S3 40%	S3 25%	S3 15%	S1 100%	S3 40%	S3 25%	S3 15%	S1 100%	S3 40%	S3 25%	S3 15%	S1 100%	S3 40%	S3 25%	S3 15%			
Magnetic force F_M	N -	N -	N -	N -	N -	N -	N -	N -	N -	N -	N -	N -	N -	N -	N -	N -			
Apparent power	- VA	- VA	- VA	- VA	- VA	- VA	- VA	- VA	- kVA	- kVA	- kVA	- kVA	- kVA	- kVA	- kVA	- kVA			
Stroke s (mm)	0	12 26	20 55	22 72	23 104	17 0,04	34 0,08	37 0,11	41 0,15	3	6,9 57	9,0 86	10 103	12 135	15,6 0,10	20 0,15	24 0,18	28 0,23	
		5	5,3 68	7,1 98	8,1 116	9,9 145	11,6 0,12	12 0,17	14 0,21	17 0,26	8	4,4 78	6,3 110	7,1 130	8,7 160	9,7 0,15	11 0,20	13 0,24	15 0,29
		10	4,1 85	5,8 118	6,7 136	8,0 166	9,7 0,17	11 0,22	13 0,27	15 0,32	15	3,4 100	5,8 136	6,7 157	8,1 179	7,9 0,20	11 0,27	13 0,32	15 0,37
		20	2,4 110	4,4 150	5,6 171	6,9 210	5,8 0,23	10,2 0,30	12 0,34	14 0,40	Rated work A_N (Ncm)	4,8	8,8	11,2	13,8	11,6	20,4	24	28
Actuation time t_1 (ms)	89								98										
Fall time t_2 (ms)	85								97										
Armature weight m_A (kg)	0,047								0,065										
Solenoid weight m_M (kg)	0,227								0,315										
W BA X	030								050										
Operating mode	S1 100%	S3 40%	S3 25%	S3 15%	S1 100%	S3 40%	S3 25%	S3 15%	S1 100%	S3 40%	S3 25%	S3 15%	S1 100%	S3 40%	S3 25%	S3 15%			
Magnetic force F_M	N -	N -	N -	N -	N -	N -	N -	N -	N -	N -	N -	N -	N -	N -	N -	N -			
Apparent power	- kVA	- kVA	- kVA	- kVA	- kVA	- kVA	- kVA	- kVA	- kVA	- kVA	- kVA	- kVA	- kVA	- kVA	- kVA	- kVA			
Stroke s (mm)	0	74 0,06	95 0,12	103 0,18	109 0,24	108 0,08	130 0,17	140 0,25	147 0,37	3	24 0,13	41 0,25	51 0,34	60 0,42	29 0,17	54 0,33	66 0,46	77 0,63	
		5	19 0,18	32 0,32	40 0,44	46 0,51	23 0,20	43 0,40	52 0,54	61 0,75	8	17 0,23	29 0,41	36 0,53	41 0,63	19 0,26	36 0,51	44 0,70	52 0,92
		10	17 0,26	28 0,46	35 0,58	40 0,70	19 0,31	35 0,60	43 0,80	50 1,04	15	18 0,34	29 0,58	36 0,73	41 0,85	21 0,40	37 0,79	45 1,03	53 1,32
		20	18 0,45	30 0,70	37 0,86	43 0,99	22 0,54	40 1,01	48 1,29	56 1,60	25	19 0,50	31 0,81	38 0,97	43 1,11	22 0,66	42 1,18	52 1,49	59 1,84
		30	16 0,57	28 0,93	34 1,11	40 1,26	25 0,80	46 1,38	55 1,71	64 2,10	35					24 0,90	43 1,57	52 1,94	60 2,35
		40					20 1,03	36 1,78	44 2,18	56 2,61	Rated work A_N (Ncm)	48	84	102	120	80	144	176	224
Actuation time t_1 (ms)	112								117										
Fall time t_2 (ms)	115								124										
Armature weight m_A (kg)	0,15								0,19										
Solenoid weight m_M (kg)	0,65								1,10										

W B A X	070							
	S1 100%		S3 40%		S3 25%		S3 15%	
Operating mode	N -		N -		N -		N -	
Magnetic force F_M	N -		N -		N -		N -	
Apparent power	- kVA		- kVA		- kVA		- kVA	
Stroke s (mm)	0	84 0,12	112 0,30	123 0,46	129	0,62		
	3	46 0,27	73 0,52	91 0,73	102	0,91		
	5	34 0,33	56 0,61	70 0,85	79	1,04		
	8	29 0,40	48 0,77	60 1,06	69	1,27		
	10	28 0,46	47 0,88	59 1,20	66	1,42		
	15	28 0,59	47 1,10	59 1,49	66	1,73		
	20	30 0,76	50 1,39	62 1,80	69	2,10		
	25	32 0,91	53 1,64	65 2,12	74	2,42		
	30	34 1,12	56 1,95	69 2,45	77	2,79		
	35	37 1,31	60 2,22	72 2,79	81	3,13		
	40	41 1,52	65 2,51	77 3,10	86	3,48		
	45	41 1,79	65 2,84	77 3,47	86	3,88		
Rated work A_N (Ncm)		184	292	347		387		
Actuation time t_1 (ms)		126						
Fall time t_2 (ms)		143						
Armature weight m_A (kg)		0,26						
Solenoid weight m_M (kg)		1,70						

For type W B A X 006 series "B" and only for S1 the magnetic force is reduced about approx. 30%.

Rated voltage 230 V/50 Hz, the exciter coil can be adjusted to other rated voltages on request.


The force values indicated in the tables refer to 90% of the rated voltage ($U_N = 230 \text{ V} / 50 \text{ Hz}$, for other voltages deviations of the magnetic force may occur) and to the normal operating temperature. Due to natural dispersion the force values and the force values of the spring may deviate by $\pm 10\%$ from the values indicated in the tables.

The normal operating temperature is based on:

- Mounting on heat-insulating base
- Rated voltage 230 V, 50 Hz
- Operating mode S1 (100 %) - S3 (15%)
- Reference temperature 35° C
- Operating frequency 120 1/h (higher operating frequency on request)

At the operation of the devices DIN 31000 / VDE 1000 und DIN VDE 100 part 420 must be respected.

This part list is a document for technically qualified personnel. The present publication is for informational purposes only and shall not be construed as mandatory illustration of the products unless otherwise confirmed expressively.

Please make sure that the described devices are suitable for your application. Supplementary information concerning its duly assembly can be found also in -Technical Explanations, in the effective DIN VDE0580 as well as in the relevant specifications.

Information and remarks concerning European directives can be taken from the correspondent information sheet which is available under Produktinfo.Magnet-Schultz.com.

Note on the RoHS Directive

The devices presented in this document do not fall into the scope of RoHS Directive and to our knowledge they do not become part of products which fall into this scope. In case of surfaces zinc coating with yellow chromating and zinc iron with black chromating separate agreements are necessary for applications within the scope of RoHS.

Dimension tables of the series W BA

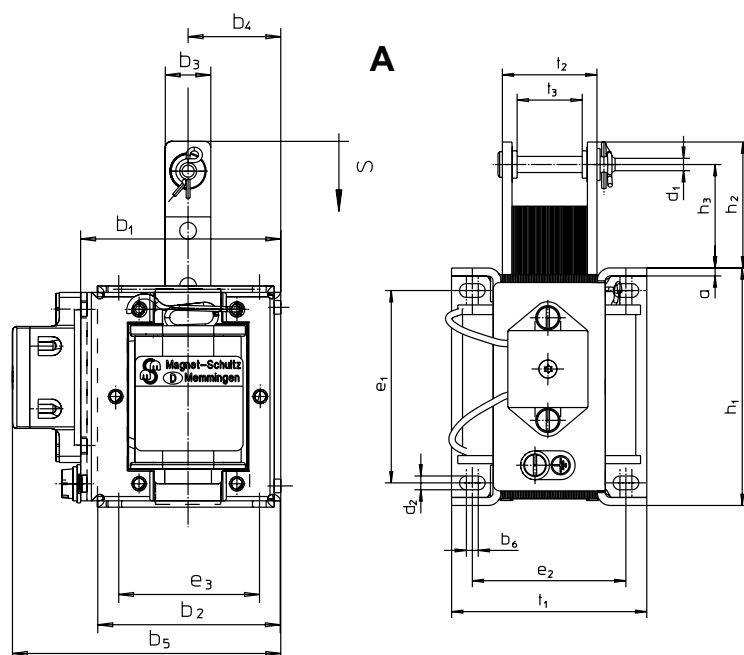


Fig. 3:
Type W BA X 006 A00 A01
W BA X 050 A00 A01
(Pull type)

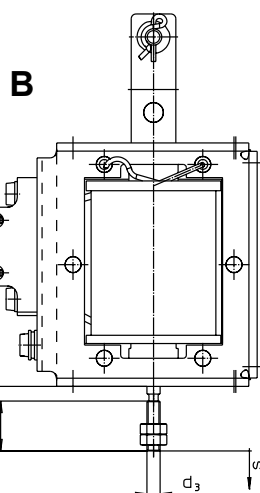


Fig. 4:
Type W BA X 006 B00 A01
W BA X 050 B00 A01
(Push type,
dimensions see fig. 3)

Type	W BA X Arrangement A and B			
Size	006	010	030	050
Dimension	Dimensions in mm			
a	1,5	1,5	2	2,5
b ₁	47	47	57	67
b ₂	43	43	51,5	61
b ₃	10,8	10,8	14,8	13,6
b ₄	21,75	21,75	26,5	31,5
b ₅	63	63	77	87
b ₆	2,8	2,8	2,7	3,7
d ₁	4	4	5	5
d ₂	3,2	3,2	3,2	4,3
d ₃	M4	M4	M5	M5
e ₁	42	42	48	60
e ₂	24	32,5	42	48
e ₃	34	34	40	45
e ₄	13	13	13	13
h ₁	52	52	65	74
h ₂	34	34	46,5	58
h ₃	27	27	38,5	51
l ₁	15	15	15	15
l ₂	20	20	17	17
s	20	20	30	40
t ₁	32	40,5	53	61
t ₂	12,6	21	23,5	29,5
t ₃	6,6	15	14,3	20,3
t ₄	40,5	49	61	69,5

Table 1 referring to fig. 3 up to 6

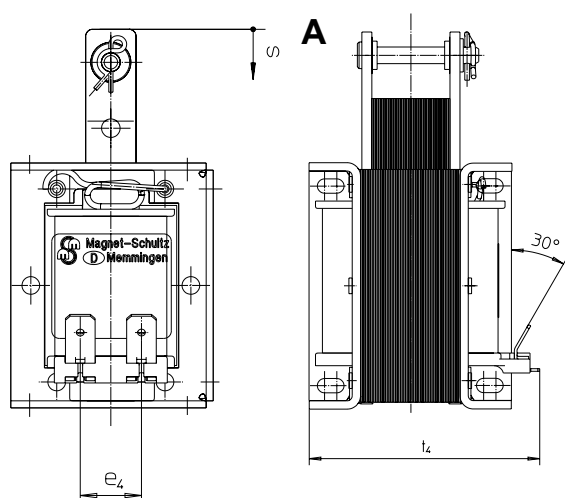


Fig. 5:
Type W BA X 006 A00 A04
W BA X 050 A00 A04
(Pull type,
dimensions see fig. 3)

Protective conductor connection has to be ensured at the mounting by the customer

Blade connectors A 6.3 x 0,8 DIN 46244 may not be bent out of their position.

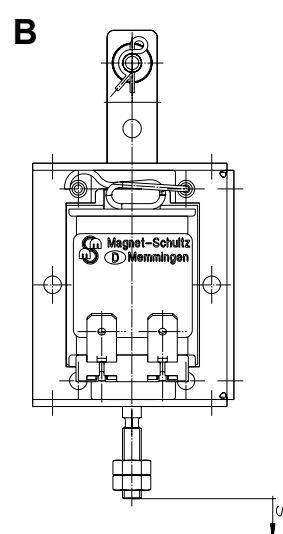


Fig. 6:
Type W BA X 006 B00 A04
W BA X 050 B00 A04
(Push type,
dimensions see fig. 4)

Dimension table of the series W BA

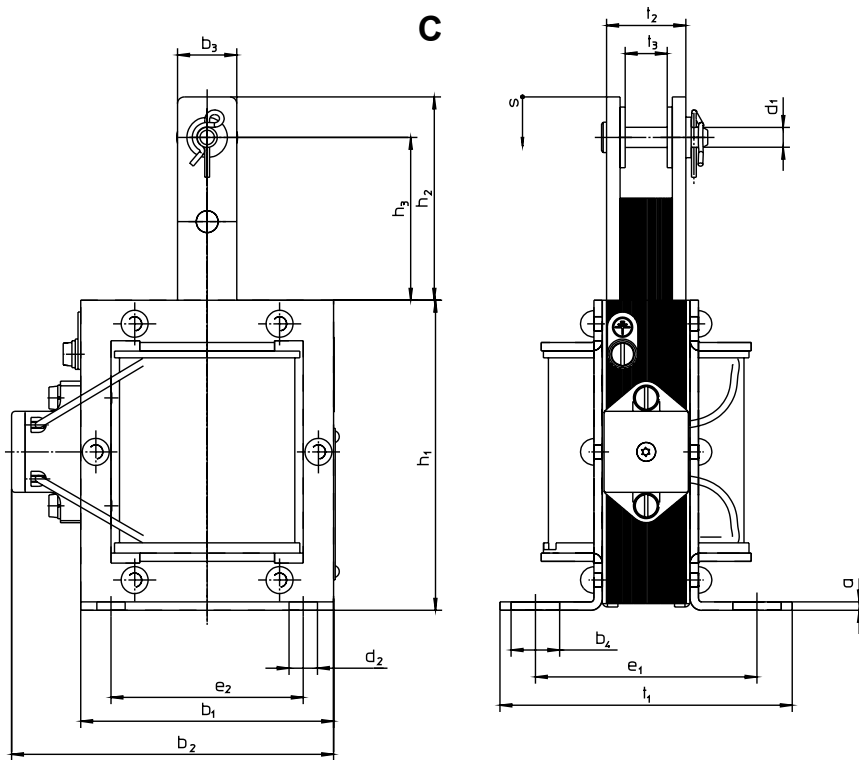


Fig. 7:
Type W BA X 070 C00 A01 to W BA X 070 C00 A01
(pull type)

Type	W BA X Arrangement C
Size	070
Dimension	Dimensions in mm
a	2,5
b ₁	75
b ₂	95
b ₃	17,5
b ₄	6
d ₁	6
d ₂	8,4
e ₁	66
e ₂	57
h ₁	92
h ₂	75
h ₃	63
s	45
t ₁	87
t ₂	23,5
t ₃	12

Table 2 referring to fig. 7

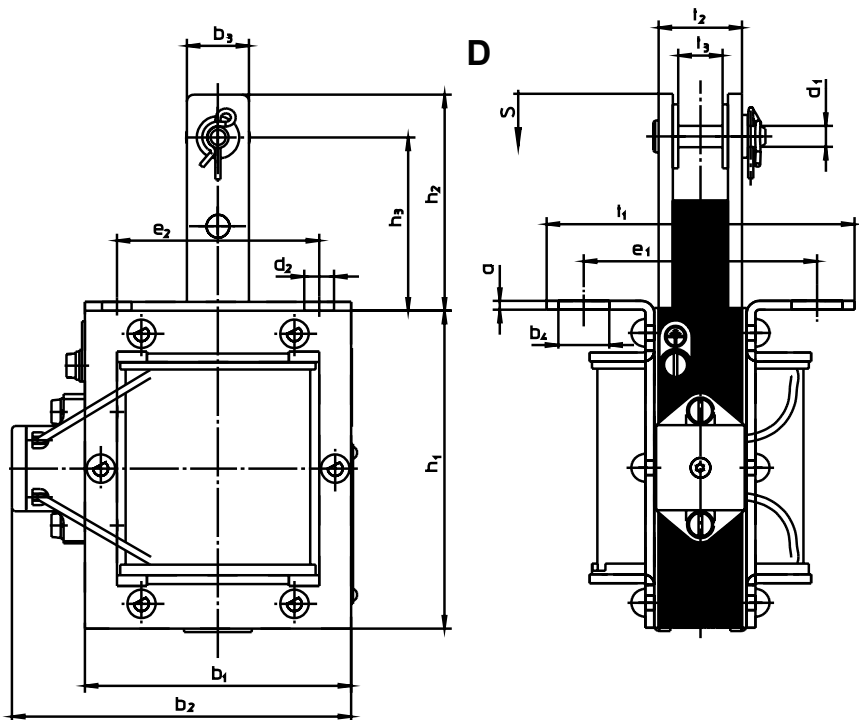


Fig. 8:
Type W BA X 070 D00 A01
(Pull type)

Type	W BA X Arrangement D
Size	070
Dimension	Dimensions in mm
a	2,5
b ₁	75
b ₂	95
b ₃	17,5
b ₄	6
d ₁	6
d ₂	8,4
e ₁	66
e ₂	57
h ₁	92
h ₂	73
h ₃	61
s	45
t ₁	87
t ₂	23,5
t ₃	12

Table 3 referring to fig. 8

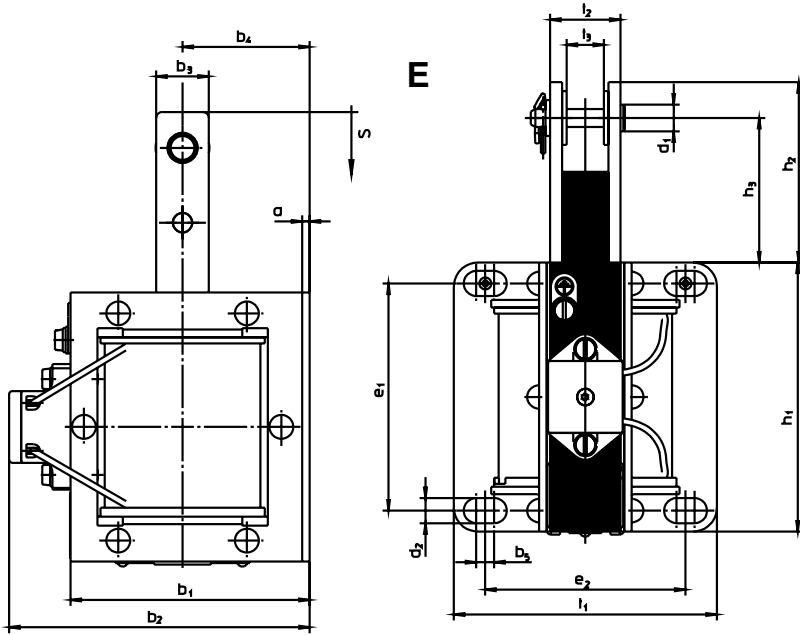


Fig. 9:
Type W BA X 070 E00 A01
(Pull type)

Type	W BA X Arrangement E
Size	070
Dimension	Dimensions in mm
a	2,5
b ₁	80
b ₂	100
b ₃	17,5
b ₄	42,5
b ₅	6
d ₁	6
d ₂	8,4
e ₁	76
e ₂	67
h ₁	90
h ₂	75
h ₃	63
s	45
t ₁	88
t ₂	23,5
t ₃	12

Table 4 referring to fig. 9

Arrangement A and B with universal mounting frame only for type W BA X 006 up to W BA X 050

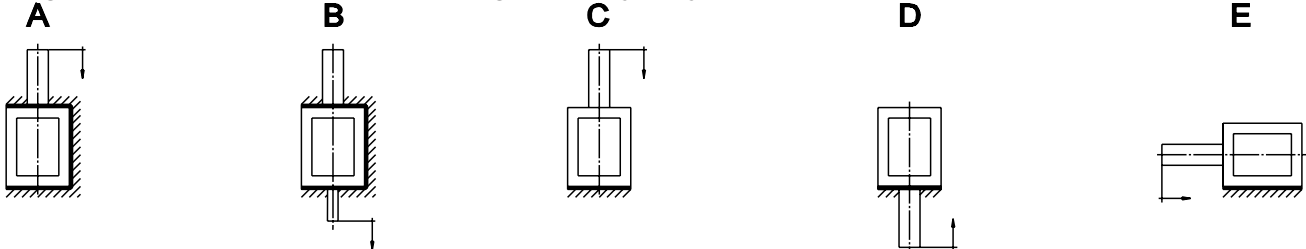
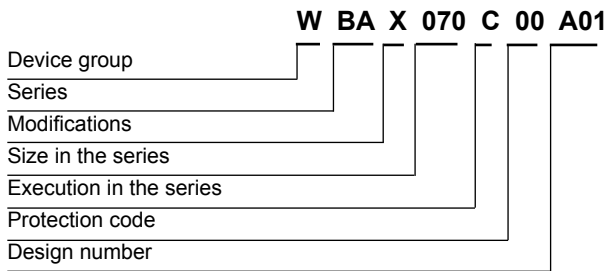


Fig. 10: Series design (arrangement possibilities)

Without indication of the arrangement type the most used arrangement "C" (fig. 7) will be delivered. This applies only to type W B AX 070 to W BA X 090.

Type code



Order example

Type W BA X 070 C 00 A01
Voltage 230 V, 50 Hz
Operating mode S1 (100 %)

Special designs

Please do not hesitate to ask us for application-oriented problem solutions. In order to find rapidly a reliable solution we need complete details about your application conditions. The details should be specified as precisely as possible in accordance with the relevant -Technical Explanations.

If necessary, please request the support of our corresponding technical office.