



A. C. Solenoid

Range up to
8 mm and 4,8 Ncm

2

Product group

July 1996

Type

W HD

- According to VDE 0580 and ISO 9001 (conform with article 10 of direction 73/23/EEC – according to CENELEC memorandum no. 3 of March 1987).
- Increasing force characteristic (Fig. 2)
- Small dimensions – one size
- Pulling arrangement
- Flange mounting
Suitable for mounting and operation at any attitude
- Armature in brass guides
- Coil with insulation to class F for voltages up to 250 Volts A. C.
- Spade connections DIN 46427
Special version with free leads
- Protection classification – DIN VDE 0470/EN 60529
Electrical connection – IP 00
- Tropical protection comprising special coil and paint finish can be provided
- Modifications and special designs on request
- General-purpose, light-duty solenoid for service on:
Machine tools Remote control
Automation Office machines
Packaging and coin equipment
Textile machinery

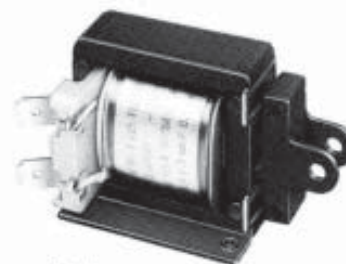


Fig. 1
Type W HD X 025 E 00 D 01

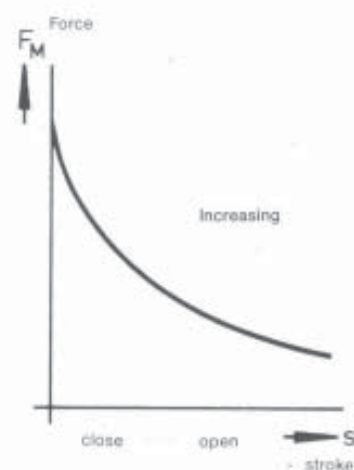


Fig. 2
Force characteristic
MSM - Fo 0804 1242

Performance and dimension tables for type W HD X 025 E 00 D 01

W HD X		025							
Duty rating ED (%)		100	40	25	15				
Force F_M		N	N	N	N				
Power consumption P_S		- VA	- VA	- VA	- VA				
Stroke s (mm)	0	19	26	21	43	23	60	25	95
	1	19	45	22	68	25	84	30	117
	2	12,5	61	16	82	18	100	23	135
	3	9,7	72	12	92	13,5	110	17,5	145
	5	7,0	84	8,8	105	10	125	12,5	160
8	5,9	99	7,2	125	8,0	145	10,5	180	
Work rating A_N (Ncm)		4,8	5,8	6,4	8,4				
Frequency of oper. S_n (1/s)		120	120	120	120				
Closing time t_1 (ms)		85	85	85	85				
Opening time t_2 (ms)		75	72	70	65				
Armature wt. m_A (kg)		0,040	0,040	0,040	0,040				
Solenoid wt. m_M (kg)		0,165	0,165	0,165	0,165				

Note: - 0 mm is completion of energized stroke.

PERFORMANCE TABLE terms are explained in Technical Bulletin W XX & VDE 0580/35.

TABLE BASIS

- 220 V/50 Hz/15 - 100 % duty. - 120 rated strokes/hr.
 - Ambient temperature 35° C. - Heat insulated mounted.
 - Horizontal - Pull arrgt. - In free air.
 - Tolerance $\pm 10\%$ (inherent & manufacture)

MAGNETIC FORCE (F_M) is listed for HOT condition at 90 % of rated voltage and will increase by approx. 20 % at rated voltage.

Force should be adjusted for armature weight.

POWER CONSUMPTION (P_S) is listed for coil temperature of 20° C at rated voltage.

OPERATING TIMES (t_1/t_2) are averaged relative to supply phase cycle variation at switch time ($\pm 15\%$). Times are listed for HOT condition at rated voltage with "weight" load of 70 % of force (F_M) at and over rated stroke.

DUTY RATING (ED %) - % of energized time per operation cycle: $\frac{t_{on}}{t_{on} + t_{off}} \times 100$.

Max. energized time per cycle of: -
 100 % - continuous: 40 % - 120 secs., 25 % - 75 secs., 15 % - 45 secs.

RATE OF OPERATION (S/hr.) is limited to 120 strokes (cycles)/hour at rated stroke and force. **Increase** by reduction of **stroke, duty rating, force** (special coil winding) or any combination together with heat sink and cooling within the maximum coil temperature limit - 150° C.

SUPPLY VOLTAGE - Standard voltages are: -24 V, 110 V, 220 V, 230 V and 240 V (+ 5 % / - 10 %) at 50 Hz. Maximum voltage - 250 V, 50/60 Hz 60 Hz/50 Hz coil - force/temperature - reduced - 50/60 Hz - increased - Beware! 60 Hz coil available with listed Magnetic force (F_M).

NOISE - A.C. solenoids may develop unacceptable noise (hum) especially if resonantly mounted. Consider D.C. solenoid/rectifier or A.C./D.C. Economiser.

LOAD must allow armature to limit travel with FREE coupling for movement within guides, and should NOT be too large or less than 60 % to obviate "burn-out" or "hammer" damage.

A.C./D.C. ECONOMISER provides, after a timed period D.C. for "hold" preventing "hum", allowing long stroke, high operation rate, with power economy.

SPARE coils, guides and armatures are available with fitting instructions.

PROTECTION - solenoids may be provided with tropical protection, comprising special coil and paint finish.

Conversion Factors

1 N = 0.102 kp \approx 0.1 kg
 1 kg = 2.2 lb
 1 mm = 0.039 in
 1 Ncm = 0.086 in lb

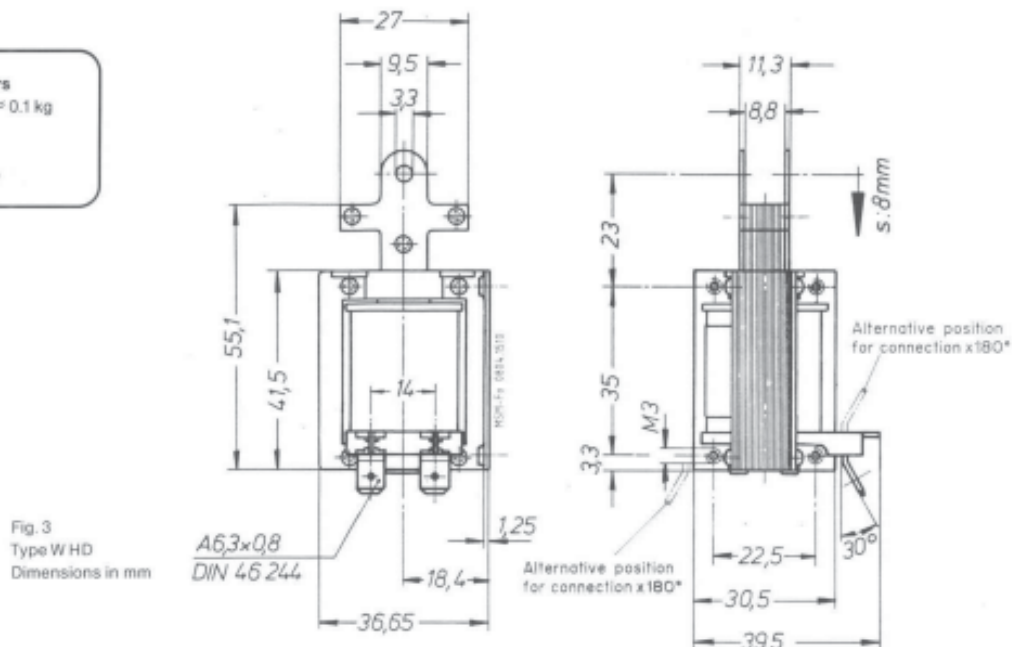


Fig. 3
 Type W HD
 Dimensions in mm

A6,3x0,8
 DIN 46 244

Alternative position
 for connection x180°

Type code

	W	HD	X	025	E	00	D 01
Equipment group							
Basic construction							
Standard design							
Size							
Arrangement							
Basic protection							
Execution sign							

Order Example

Type **W HD X 025 E 00 D 01**
 Add - Voltage (V)
 Frequency (Hz)
 Duty rating (ED) %
 Frequency of operation s/hr
 Tropical protection if required