

# Stepper Motors – Rotational UBD

## UBD1/2/5/6

Dimensions (mm)	∅ 36 x 21
Step angle (grad)	7.5
Holding torque (cNm)	1.3 - 1.9
Detent torque (cNm)	0.22/0.27
Resistance per winding bipolar/unipolar	
6 V (Ω)	18.5 (UBD1/5); 28 (UBD2/6)
12 V (Ω)	100 (UBD1/5); 120 (UBD2/6)
24 V (Ω)	460 (UBD1/5); 500 (UBD2/6)
Gear combination	A, D, M, B, F, V



## Standard Data

Climatic class	wide-spread according to IEC 721, part 2-1
Ambient temperature operation	°C -15...+55
Ambient temperature storage	°C -20...+100
Thermal resistance at f=0 R <sub>therm</sub>	27 K/W
Thermal class	A according to IEC 85
Approval	Standard/UL/CSA
Mounting	any position
Electrical connection	wire
Protection	IP 40 according to DIN 40 050/DIN EN 60034-5
Weight	60 g
Rotor stalling	motor can be stopped when voltage is applied, without being overheated
Bearings	sintered bronze, self-lubricating
Surge voltage strength	according to EN 60 034-1/EN 60-335-1

## Order Reference – How to Build a Part Number

Type	Stepper Motor		UBD	1	0	N	18.5 Ω	R	E	
Configuration	1	bipolar, standard magnet	5	bipolar, stronger magnet	6	unipolar, stronger magnet				
Rotor shaft, mounting	0	center bolt 8 mm, shaft 2.0 mm, clip	A	center bolt 10 mm, shaft 2.0 mm, clip	C	center bolt 10 mm, shaft 1.5 mm, clip	E	center bolt 10 mm, shaft 2.0 mm, screw plate	K	center bolt 10 mm, shaft 1.5 mm, screw plate
Approval	N	Approval Standard	UL	Approval UL	CSA	Approval UL/CSA				
Resistance	See page 36									
Direction	reversible									
Cable	E	wire 150 mm (other on request)								

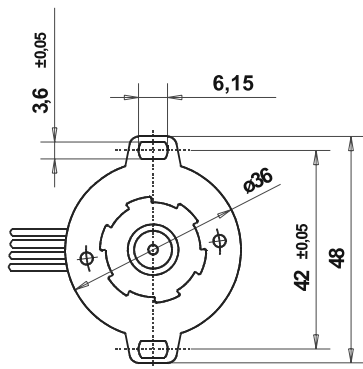
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## Technical Data

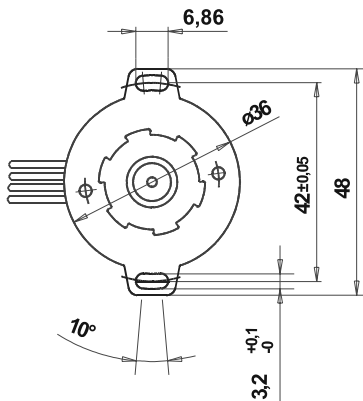
bipolar (UBD1/5)	Rated voltage $U_N$	V	3	6	12	24
	Resistance per winding	$R_{20}$	11.5	18.5	100	460
	Holding torque $M_H$	cNm	1.8 (UBD1); 1.9 (UBD5)			
	Detent torque $M_S$	cNm	0.22 (UBD1); 0.27 (UBD5)			
	Rotor inertia $J_R$	$\text{gcm}^2$	2.8 (UBD 1); 2.9 (UBD 5)			
bipolar (UBD2/6)	Rated voltage $U_N$	V	3	6	12	24
	Resistance per winding	$R_{20}$	12	28	120	500
	Holding torque $M_H$	cNm	1.3 (UBD2); 1.6 (UBD6)			
	Detent torque $M_S$	cNm	0.22 (UBD2); 0.27 (UBD6)			
	Rotor inertia $J_R$	$\text{gcm}^2$	2.8 (UBD2); 2.9 (UBD6)			
	Steps per revolution		48			
	Winding temperature $T_{\text{max}}$		105° C			
	Duty cycle		100%			
	Direction of rotation		reversible			

Dimensions (mm)

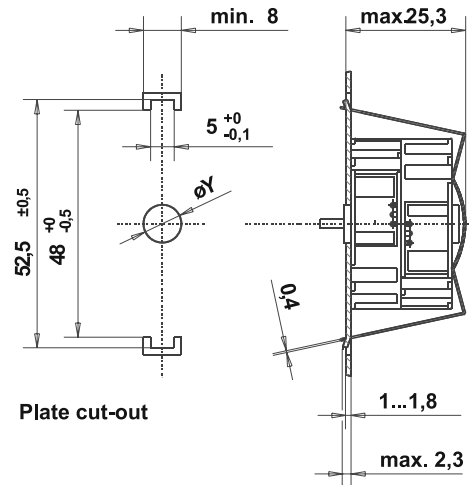
### Mounting with screw plate



### Mounting with screw plate



### Mounting with snap on clip



$\varnothing D$  Rotor shaft

$\varnothing 2 \text{ h6}$

$\varnothing 1.5 \text{ js8}$

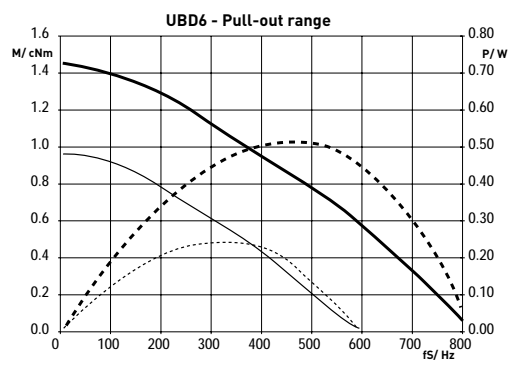
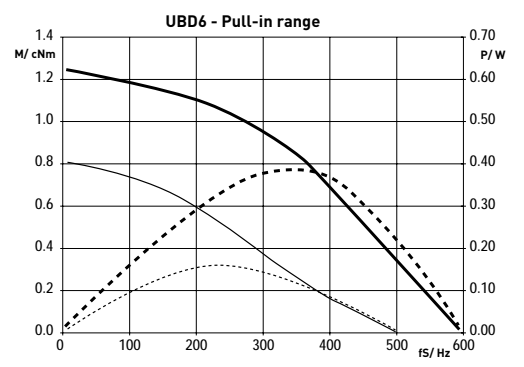
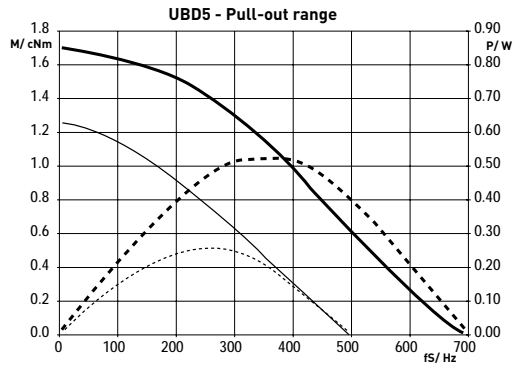
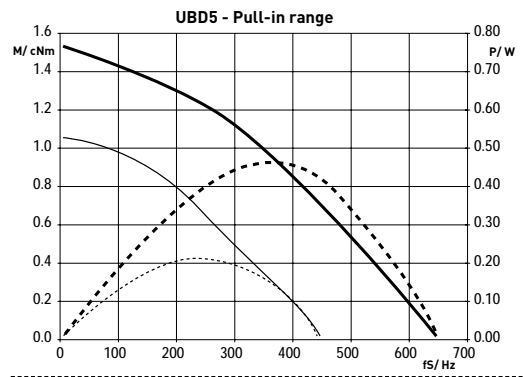
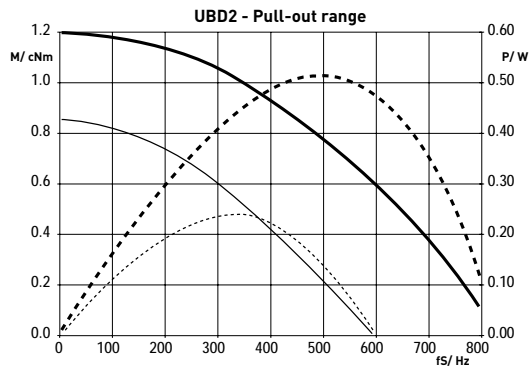
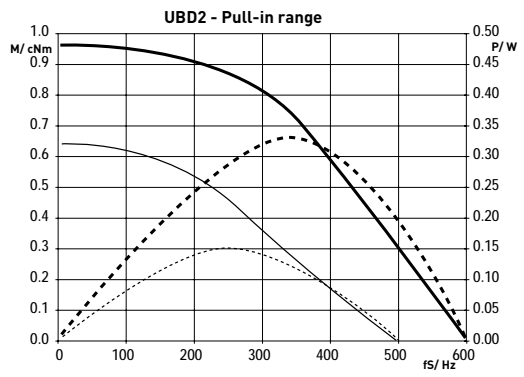
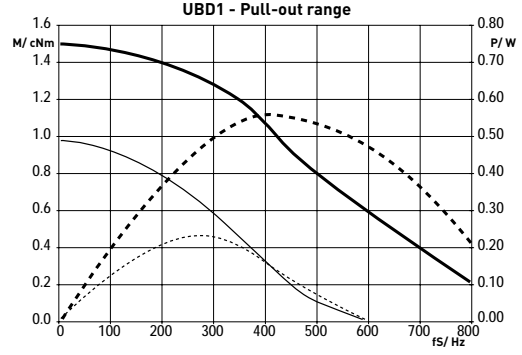
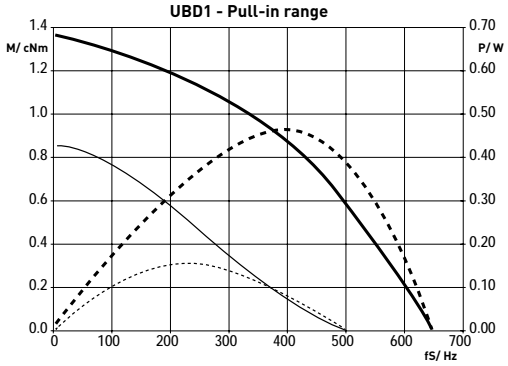
$\varnothing Z$   $\varnothing Y$

8 8F8

10 10F8

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## Performance Chart



— M - ED 100 %  
 — M - ED 30 %

..... P - ED 100 %  
 - - - - - P - ED 30 %