# UCD

## UCD1/7; UCD2/8

| | |
|---|---|
| Dimensions (mm) | ∅ 28 x 24 |
| Step angle (°) | 7,5 |
| Holding torque * (cNm) | 1,6–2,7 |
| Detent torque (cNm) | 0,26–0,42 |
| Winding | bipolar/unipolar |
| Gear combination | on request |

* values for lead wire version (connection N) / connector versions up to 15 % higher

## Standard Data

| | |
|---|---|
| Climatic class | wide-spread according to DIN IEC 60721-2-1 |
| Ambient temperature operation | °C -15 ... +60 |
| Ambient temperature storage | °C -20 ... +100 |
| Thermal resistance at f=0 $R_{therm}$ | 29 K/W |
| Thermal class | B according to DIN EN 60085 |
| Approval | standard |
| Mounting | any position |
| Electrical connection | connector type D or N |
| Protection | IP 30 according to DIN EN 60529 |
| Weight | 54 g |
| Rotor stalling | motor can be stopped when voltage is applied, without being overheated |
| Bearings | Sintered bronze, self- lubricating |

## Order Reference

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Type | Stepper Motor | | | | UCD | 1 | 0 | N | 24 Ω | R | B |
| Configuration | 1 | bipolar, standard magnet | 7 | bipolar, stronger magnet | | | | | | | |
| | 2 | unipolar, standard magnet | 8 | unipolar, stronger magnet | | | | | | | |
| Rotor shaft, mounting | 3 | centring 8 mm, shaft 2,0 mm, screw plate | E | centring 10 mm, shaft 2,0 mm, screw plate | | | | | | | |
| | 4 | centring 8 mm, shaft 1,5 mm, screw plate | K | centring 10 mm, shaft 1,5 mm, screw plate | | | | | | | |
| | 0 | centring 8 mm, shaft 2,0 mm, clip | A | centring 10 mm, shaft 2,0 mm, clip | | | | | | | |
| | 1 | centring 8 mm, shaft 1,5 mm, clip | C | centring 10 mm, shaft 1,5 mm, clip | | | | | | | |
| Approval | N | Approval Standard | | | | | | | | | |
| Resistance | | see next pages; Resistance per winding for bipolar or unipolar | | | | | | | | | |
| Direction | R | reversible | | | | | | | | | |
| Connection | D | see next pages „Connection Types“ | | | | | | | | | |
| | N | | | | | | | | | | |

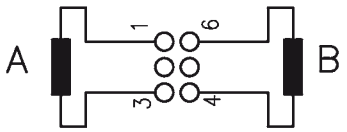
## Technical Data

| | | | | | |
|---|---|---|---|---|---|
| bipolar | | | UCD1 | | UCD5 |
| | Holding torque $M_H$ * | cNm | 2 | | 2,7 |
| | Detent torque $M_S$ | cNm | 0,26 | | 0,42 |
| | Rotor inertia $J_R$ | gcm² | 2,2 | | 2,4 |
| | Rated voltage $U_N$ | V | 6 | 12 | 24 |
| | Resistance per winding $R_{20}$ | Ω | 24 | 90 | 380 |
| | Steps per revolution | | 48 | | |
| | Duty cycle | | 100% | | |
| | Direction of rotation | V | reversible | | |
| unipolar | | | UCD2 | | UCD6 |
| | Holding torque $M_H$ | cNm | 1,6 | | 2,3 |
| | Detent torque $M_S$ | cNm | 0,26 | | 0,42 |
| | Rotor inertia $J_R$ | gcm² | 2,2 | | 2,4 |
| | Rated voltage $U_N$ | V | 3 | 6 | 24 |
| | Resistance per winding $R_{20}$ | Ω | 24 | 90 | 380 |
| | Steps per revolution | | 48 | | |
| | Duty cycle | | 100% | | |
| | Direction of rotation | V | reversible | | |

* values for lead wire version (connection N) / connector versions up to 15 % higher

Circuit diagram

bipolar

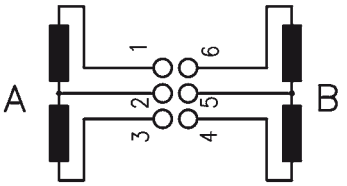



| | 0 | I | II | III | IV |
|---|---|---|---|---|---|
| 1 | + | + | – | – | + |
| 3 | – | – | + | + | – |
| 4 | – | + | + | – | – |
| 6 | + | – | – | + | + |

counter clockwise rotation

clockwise rotation

unipolar

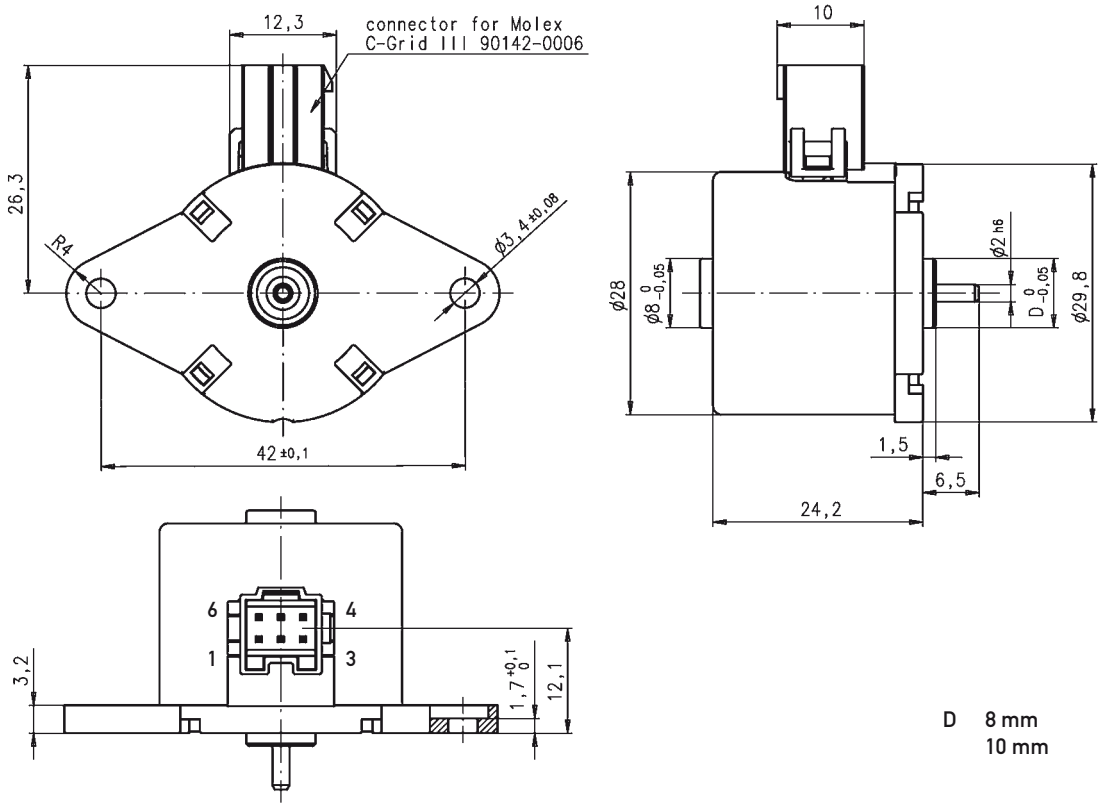



| | 0 | I | II | III | IV |
|---|---|---|---|---|---|
| 1 | – | – | | | – |
| 2 | + | + | + | + | + |
| 3 | | | – | – | |
| 4 | | – | – | | |
| 5 | + | + | + | + | + |
| 6 | – | | | – | – |

counter clockwise rotation

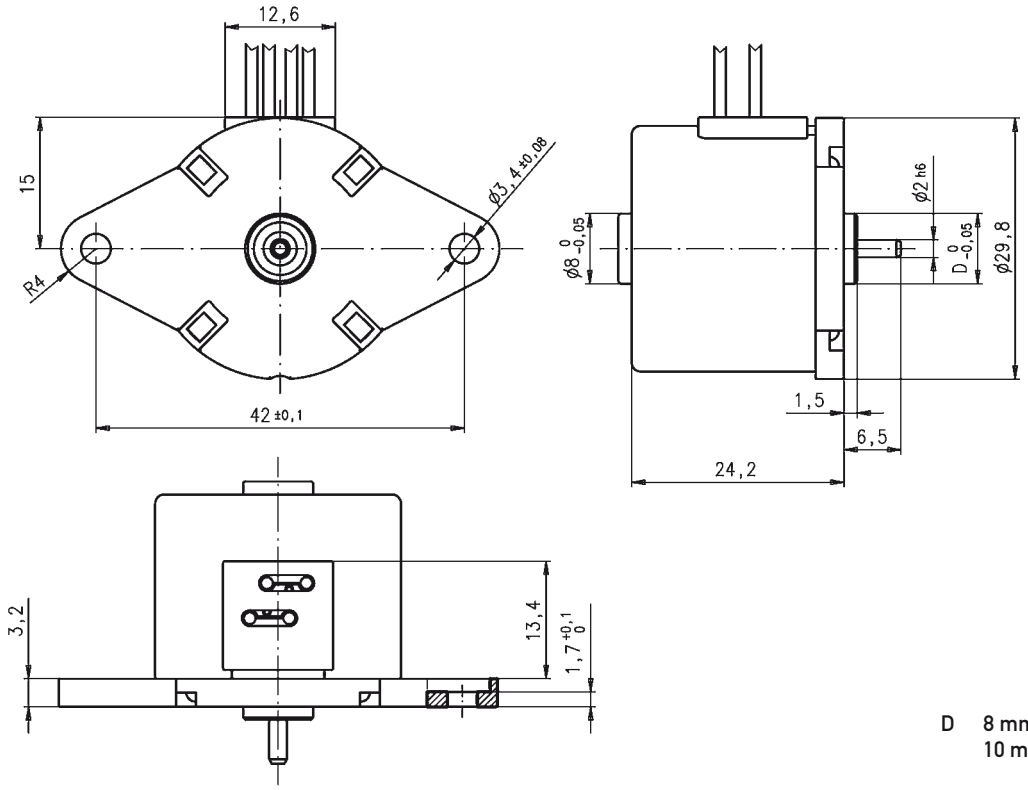
clockwise rotation

Dimensions **Version with Connector D**



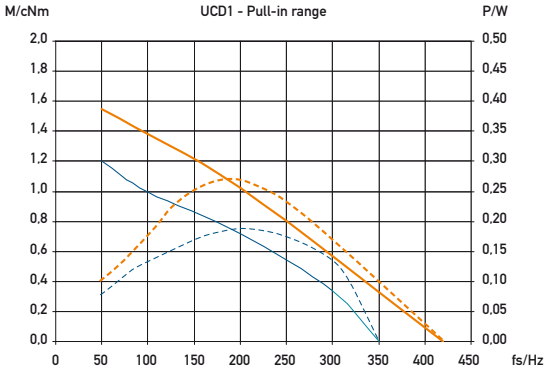

D 8 mm
10 mm

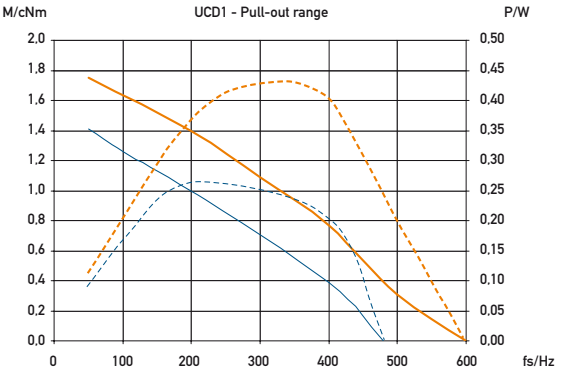
**Version with Connector N**

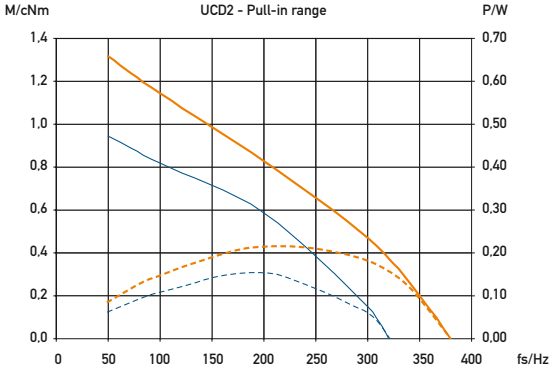


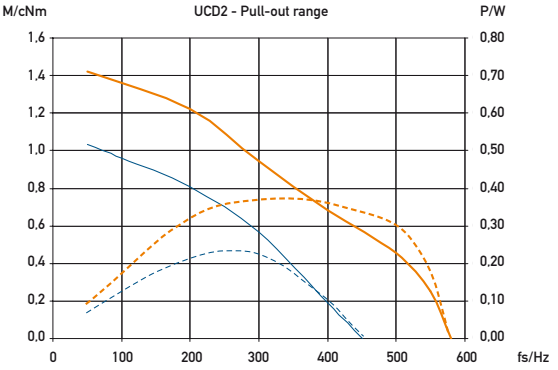

D 8 mm
10 mm

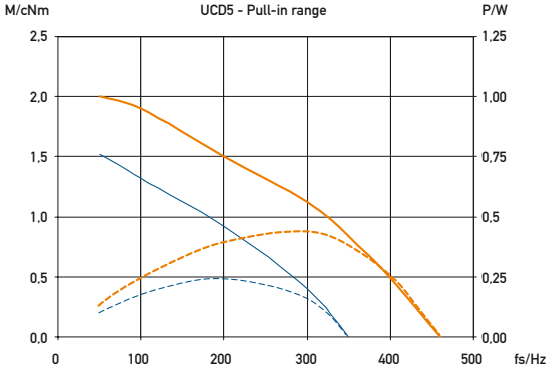
## Performance Chart

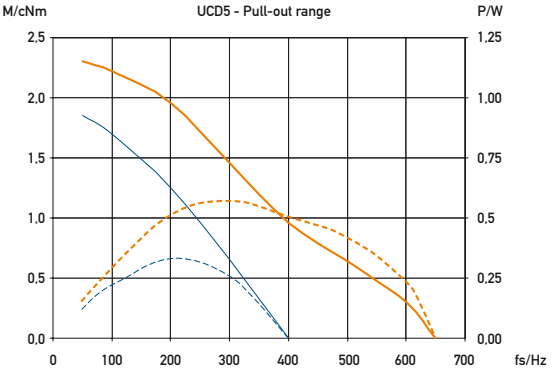


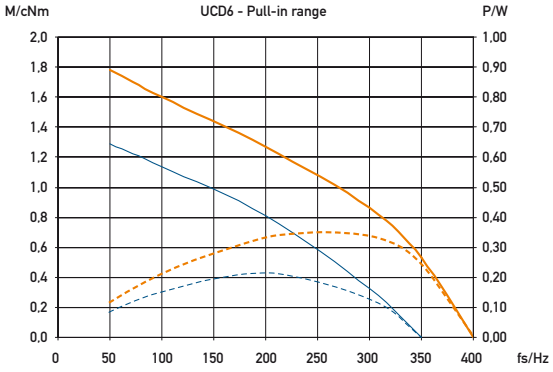



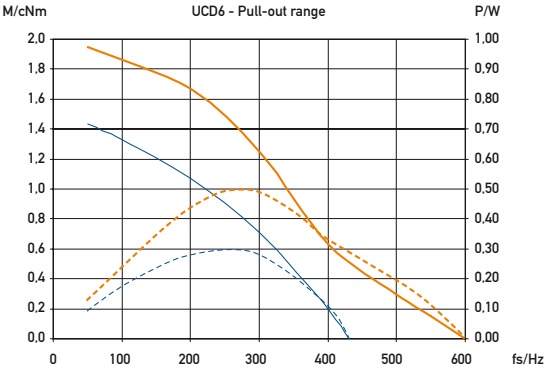




M - Duty cycle 30 %
M - Duty cycle 100%
P - Duty cycle 30 %
P - Duty cycle 100 %