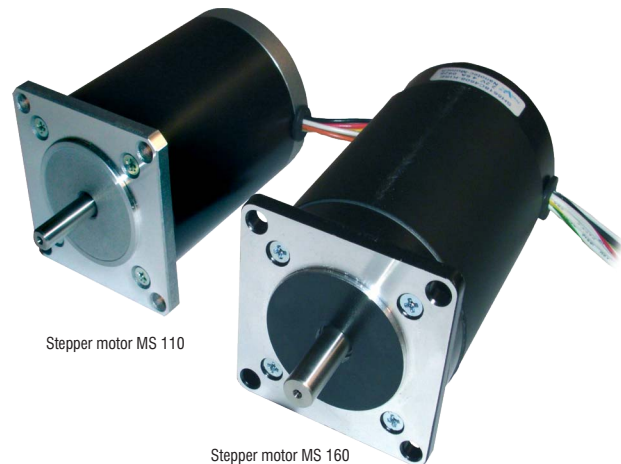


Characteristics

- Hybrid stepper motors with energy density in various power classes
- Unipolar and bipolar modes thanks to 8-wire connection
- Speed control via step sequence frequency in the open control loop
- small step angle error, non cumulative
- Angle of rotation of the motor shaft is directly proportional to the number of input pulses
- Second shaft end for optional attachment of brake and encoder (Typ HEDS 55..., Fab.: HP)



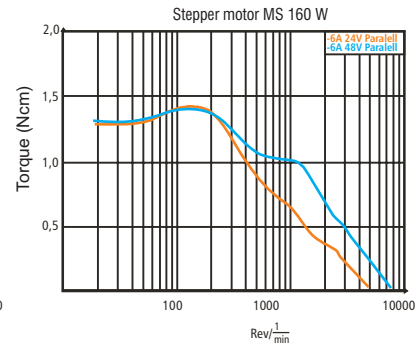
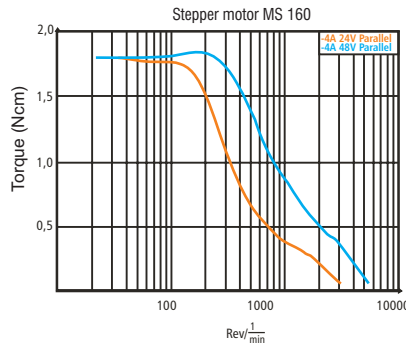
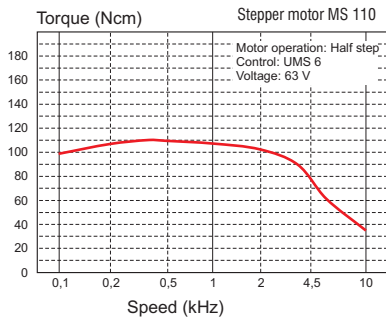
Technical Data

Description		MS 110	MS 160	MS 160W
Holding torque bipolar	Nm	1,1	1,84	1,84
Winding current per phase serial / parallel	A	2,0 / 4,0	2,0 / 4,0	3,25 / 6,5
Coil voltage per phase serial / parallel	V	5,6 / 2,8	4,82 / 2,41	3,12 / 1,56
Winding resistance per phase at 25°C serial / parallel	Ω	2,0 / 0,5 ± 15%	2,4 / 0,6 ± 15%	0,96 / 0,24 ± 15%
Winding inductivity per phase at 1 kHz serial / parallel	mH	7,6 / 1,9 ± 20%	8,4 / 2,5 ± 20%	4,0 / 2,0 ± 20%
Rotor inertia	kg·m²	3,5 x 10 ⁻⁵	3,5 x 10 ⁻⁵	3,5 x 10 ⁻⁵
Step angle / angle error	° / %	1,8° / ±5%	1,8° / ±5%	1,8° / ±5%
Connection cables		8	8	8
Weight	kg	1,0	1,4	1,4
Item-No.		473030	473041	473043

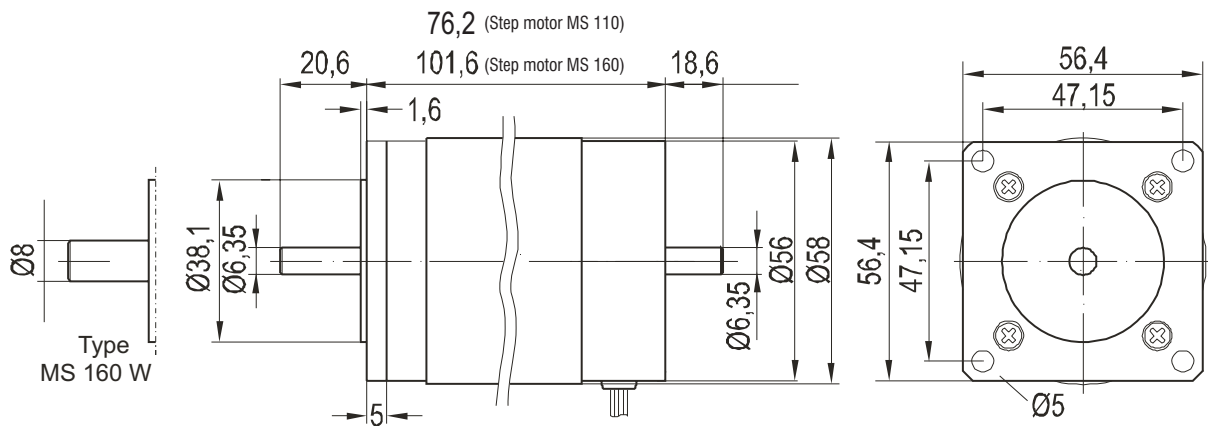
Maximum permissible radial load: 90 N (at 10mm)
ISO-cass: B (130°)
Protection class: IP40
Ambient temperature: -10°C ... +50°C
Insulation resistance: 100 MΩ

Technical specification subject to change !.

Torque characteristics

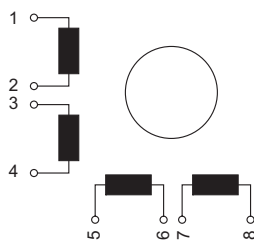


Scale drawings



Type MS 160 W: strengthened shaft end at the output side, Ø 8 mm

Connection consignment



Type of connection (extern)				motor		
unipolar	bipolar			Leads MS110	Leads MS160	Winding
	1 Winding	serial	parallel			
A	A	A	A	1 black / white	red	
COM				2 black / white	red / white	
A\	A\	A\	A\	3 orange / white	black / white	
B	B	B	B	4 orange	black	
COM				5 red	green	
B\	B\	B\	B\	6 red / white	green / white	
				7 yellow / white	yellow / white	
				8 yellow	yellow	

STEP	A	B	A\	B\		
1	+	+	-	-		CW CCW
2	-	+	+	-		
3	-	-	+	+		
4	+	-	-	+		

Technical specification subject to change !.