lead screw stepper motors

- 2-phase hybrid motor (bipolar)
- with stranded wires
- exact lead screw assembly by H7 fit
- lead screw assembly possible on both sides
- optional with encoder

part number

MOT – ST – 28 – L – A – A

specifcs	
A	standard

options	
A	without
C	incremental encoder

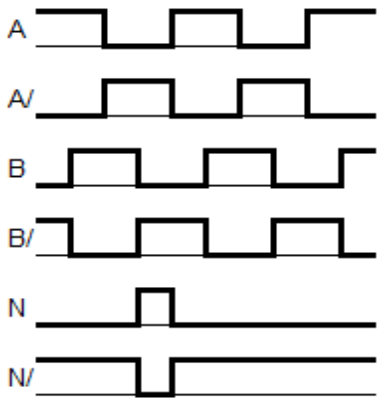
motor connection	
L	stranded wire

flange dimension	
28	28mm (NEMA11)
42	42mm (NEMA17)
56	56mm (NEMA23)

type	
ST	stepper motor

product group	
MOT	motor

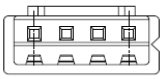
technical data						
flange dimension		**28(NEMA11)**	**42(NEMA17)**	**56(NEMA23)**		
motor						
max. voltage	[VDC]	60	60	60		
nominal voltage	[VDC]	24-48	24-48	24-48		
nominal current	[A]	1,0	1,8	4,2		
holding torque	[Nm]	0,12	0,5	2,0		
detent torque	[Nm]	0,004	0,022	0,068		
step angle	[°]	1,8 ±5%	1,8 ±5%	1,8 ±5%		
resistance / phase	[Ω]	2,30 ±15%	1,75 ±15%	0,50 ±10%		
inductance / phase	[mH]	1,80 ±20%	3,30 ±20%	2,20 ±20%		
moment of inertia / rotor	[kgcm²]	0,018	0,082	0,48		
max. shaft load axial	[N]	50	100	500		
max. shaft load radial	[N]	-	-	-		

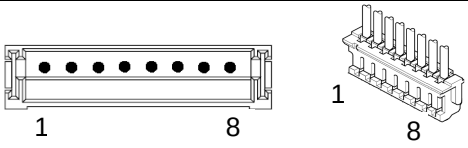
encoder		
operating voltage	[VDC]	5
impulse / turn		500
zero impulse / index		yes
line-driver		RS422 protocol
signal sequence (motor rotation clockwise)	CW	

weight						
stranded wire	[kg]	0,25	0,34	1,00		
encoder	[kg]	0,27	0,36	1,02		

operating data		
ambient temperature	[°C]	-10 …+50
max temperature rise	[°C]	80
insulation class		B
humidity (not condensing)	[%]	85
protection class engine case		IP40
CE		EMV guideline

pin assignment stepper motor
flange dimension 28,42,56 (NEMA11,17,23)

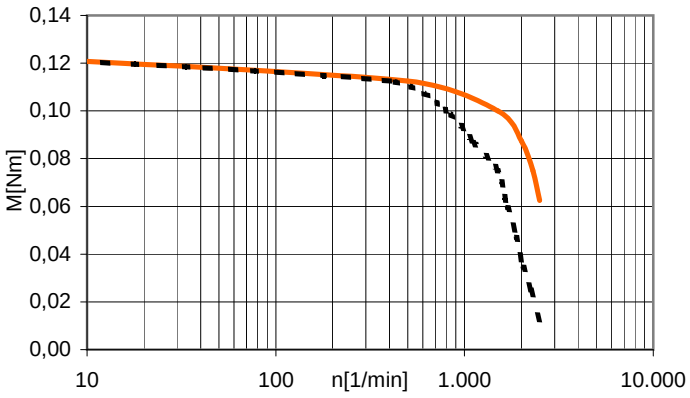




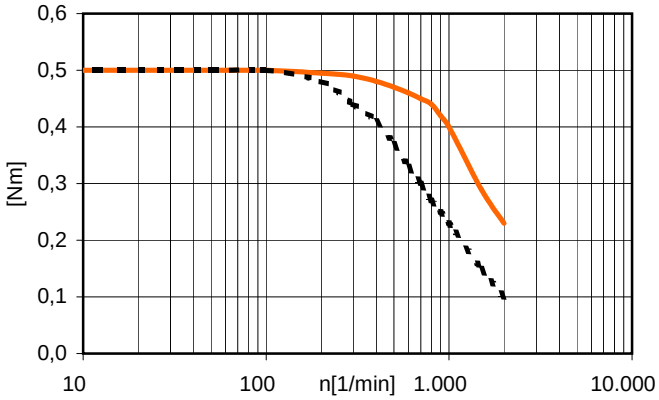
motor bipolar		
JST XHP-4		Litzen
pin	signal	color
1	A	white
2	A/	brown
3	B	blue
4	B/	black

encoder connector		**encoder plug**
JST / B8B-ZR-SM4-TF		JST / ZHR-8
pin	signal	color
1	GND	-
2	5V DC	-
3	A	-
4	A/	-
5	B/	-
6	B	-
7	I/	-
8	I	-

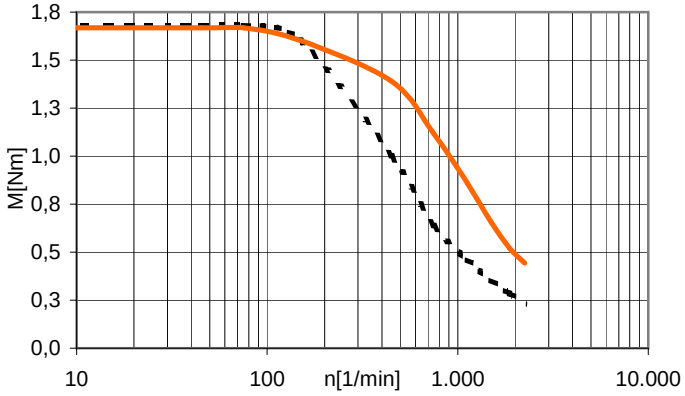
characteristic
flange dimension 28 (NEMA11)
MOT-ST-28-L-A-A



flange dimension 42 (NEMA17)
MOT-ST-42-L-A-A

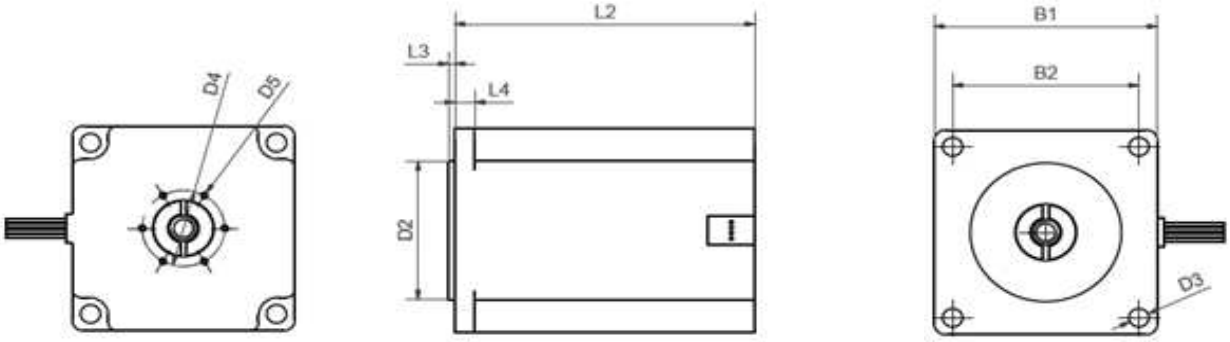


flange dimension 56 (NEMA23)
MOT-ST-56-L-A-A

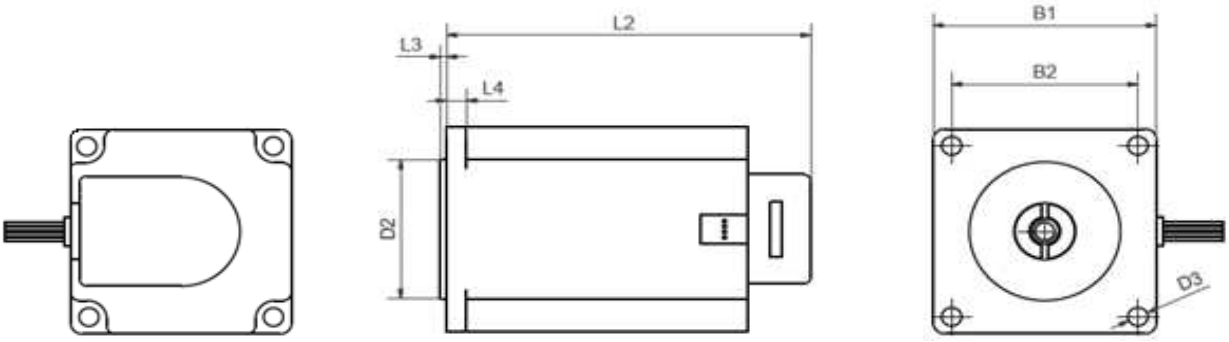


- - - - - - 24VDC ——— 48 VDC characteristic based on quarter step mode

dimension
MOT-ST-..-L-A-A



MOT-ST-..-L-C-A



type

without Encoder	B1 [mm]	B2 [mm] ±0,2	D2 Ø [mm] ±0,025	D3 Ø [mm]	D4 Ø [mm]	D5 Ø [mm]	L2 [mm] ±1	L3 [mm]	L4 [mm]
MOT-ST-28-L-A-A	28,2	23,00	22,00	M2,5	19,05	2x M2-2	51	2,0	0
MOT-ST-42-L-A-A	42,3	31,00	22,00	M3	19,05	2x M2-2	49	2,0	0
MOT-ST-56-L-A-A	56,4	47,14	38,10	5	20,9	6x M2-2	76	1,6	5

with Encoder	B1 [mm]	B2 [mm] ±0,2	D2 Ø [mm] ±0,025	D3 Ø [mm]	D4 Ø [mm]	D5 Ø [mm]	L2 [mm] ±1	L3 [mm]	L4 [mm]
MOT-ST-28-L-C-A	28,2	23,00	22,00	M2,5	-	-	66,2	2,0	0
MOT-ST-42-L-C-A	42,3	31,00	22,00	M3	-	-	65	2,0	0
MOT-ST-56-L-C-A	56,4	47,14	38,10	5	-	-	92	1,6	5

component part spindle type part number	size	thread type	spindle Ø [mm]	pitch [mm]	max. length [mm]	material
PTGSG-MOT-M5X0,8-R-XXX-ES	28 (NEMA11)	M5	5	0,8	250	stainless steel
PTGSG-MOT-08X1,5-R-XXX-ES	42 (NEMA 17) 56 (NEMA 23)	TR	8	1,5	300	stainless steel
PTGSG-MOT-10X2-R-XXX-ES	42 (NEMA 17) 56 (NEMA 23)	TR	10	2	500	stainless steel
PTGSG-MOT-12X3-R-XXX-ES	42 (NEMA 17) 56 (NEMA 23)	TR	12	3	500	stainless steel
PTGSG-MOT-12X6P3-R-XXX-ES	42 (NEMA 17) 56 (NEMA 23)	TR	12	6P3	500	stainless steel
PTGSG-MOT-05X5-R-XXX-ES	28 (NEMA11)	SG	5	5	250	stainless steel
PTGSG-MOT-06.35X12.7-R-XXX-ES	28 (NEMA11)	SG	6,35	12,7	300	stainless steel
PTGSG-MOT-08X15-R-XXX-ES	42 (NEMA 17) 56 (NEMA 23)	SG	8	15	300	stainless steel
PTGSG-MOT-10X12-R-XXX-ES	42 (NEMA 17) 56 (NEMA 23)	SG	10	12	500	stainless steel
PTGSG-MOT-10X50-R-XXX-ES	42 (NEMA 17) 56 (NEMA 23)	SG	10	50	500	stainless steel
PTGSG-MOT-12X25-R-XXX-ES	42 (NEMA 17) 56 (NEMA 23)	SG	12	25	500	stainless steel

dryspin technology part number	size	thread type	spindle Ø [mm]	pitch [mm]	max. length [mm]	material
DST-LS-MOT-6.35X2.54-R-XXX-ES	28 (NEMA11)	DST	6,35	2,54	300	stainless steel
DST-LS-MOT-6.35X25.4-R-XXX-ES	28 (NEMA11)	DST	6,35	25,4	300	stainless steel
DST-LS-MOT-10X12-R-XXX-ES	42 (NEMA 17) 56 (NEMA 23)	DST	10	12	500	stainless steel
DST-LS-MOT-10X25-R-XXX-ES	42 (NEMA 17) 56 (NEMA 23)	DST	10	25	500	stainless steel
DST-LS-MOT-10X50-R-XXX-ES	42 (NEMA 17) 56 (NEMA 23)	DST	10	50	500	stainless steel

XXX: length of spindel
Spindle securing required via adhesive bond (Loctite 648)!
Curing time: after 6 hour approx. 50%, after 24 hour 100%

If required from the factory, please order with the following assembly number:

Installation in front: MONT004F000 (flange side)
Installation at the back: MONT004B000 (assembly not possible by motor with encoder)