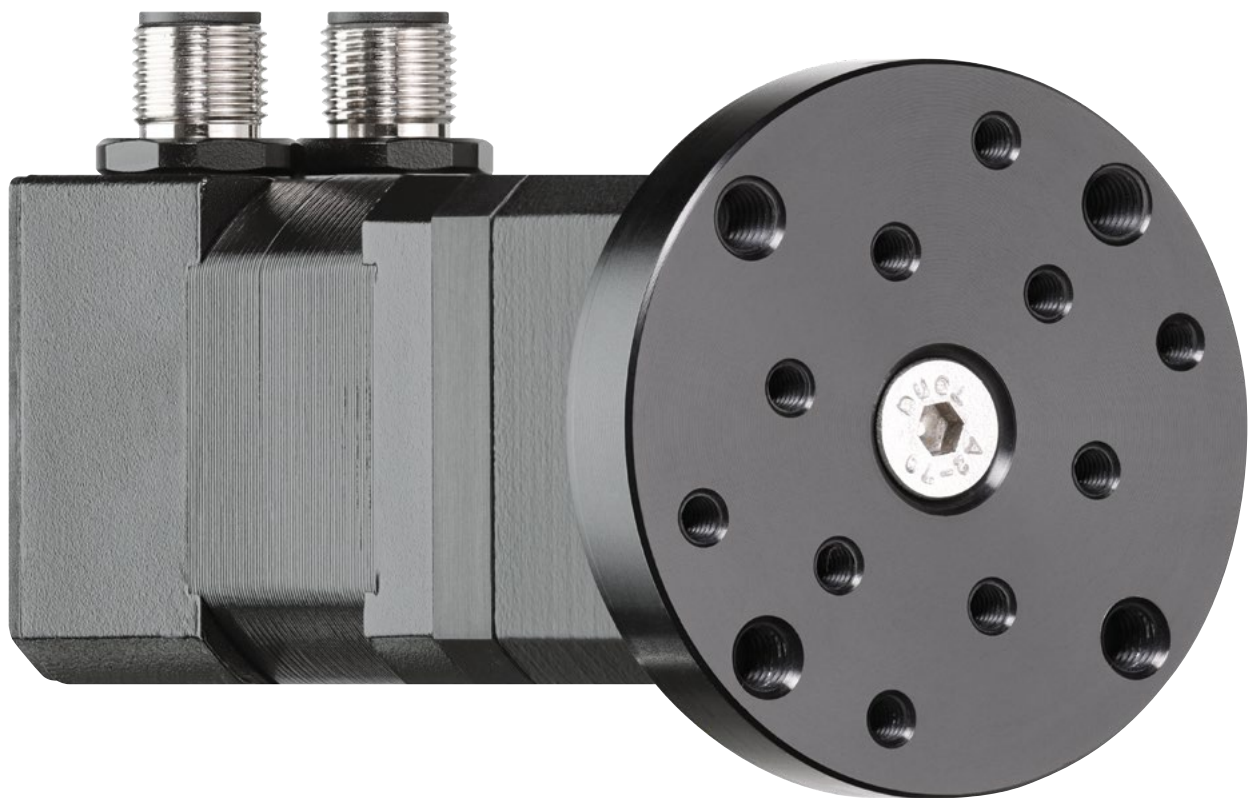


igus® data sheet

drygear® RL-S

Strain wave gear installation size 17



General properties

- Compact design
- 2-20rpm in continuous operation (with NEMA17 stepper motor)
- Max. 4Nm (with NEMA17 stepper motor)
- Transmission 28:1
- Lightweight
- Lubrication-free
- Cost-effective
- Low clearance
- Motor type: stepper motor

... Components

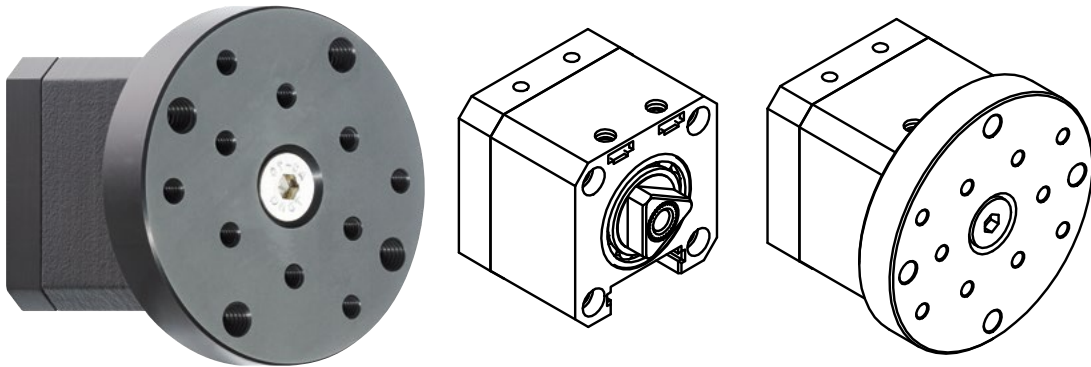
- | | |
|--|---------|
| 1. Strain wave gear installation size 17 RL-S-17-28-AA | page 03 |
| 2. Strain wave gear installation size 17, with N17 stepper motor RL-S-17-28-AA-N17 | page 04 |
| 3. Strain wave gear installation size 17, with N11 stepper motor RL-S-17-28-AA-N11 | page 05 |
| 4. Strain wave gear installation size 17, with adapter kit for N11 stepper motor
RL-S-17-28-AA-N11-NM | page 06 |

Efficiency, torque fluctuation, breakaway torque and service life comparison
with previous version page 07

... Options

Initiator kit for drygear® strain wave gear installation size 17	page 08
Cables	page 09
dryve D1 motor control system	page 11

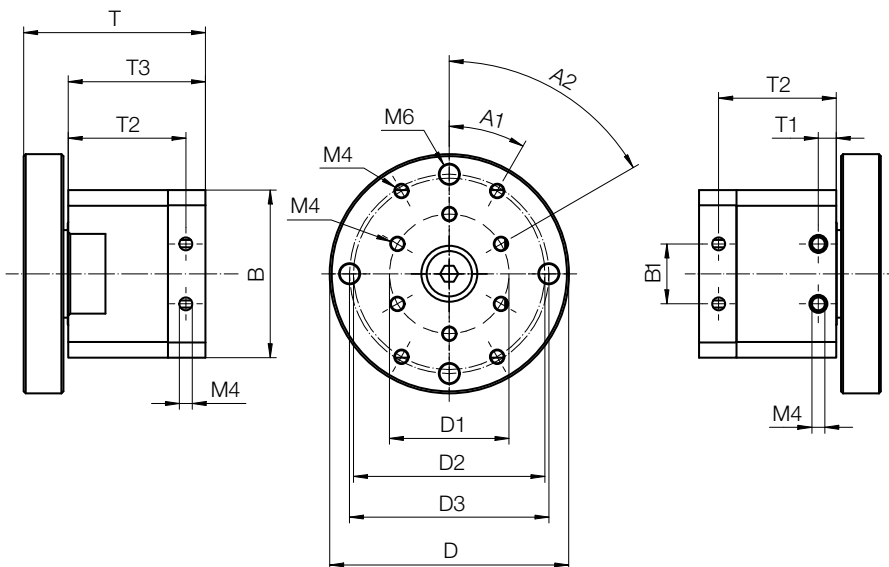
Strain wave gear installation size 17 RL-S-17-28-AA



... Technical data

Transmission	28:1
Efficiency	40%
Backlash	0.2°
Failure torque*	10Nm
Service life	1 million (at 1.5Nm and 20rpm)

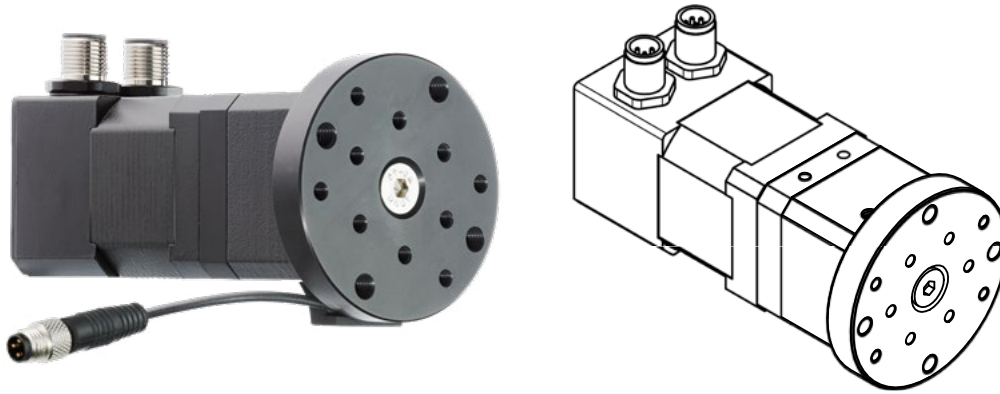
* Slipping of the gearbox



... Dimensions [mm]

B	B1	T	T1	T2	T3
42	15	45.6	4.5	29.5	34.4
D	D1	D2	D3	A1	A2
Ø60	Ø30	Ø48	Ø50	30°	6x 60°

Strain wave gear installation size 17, with N17 stepper motor RL-S-17-28-AA-N17

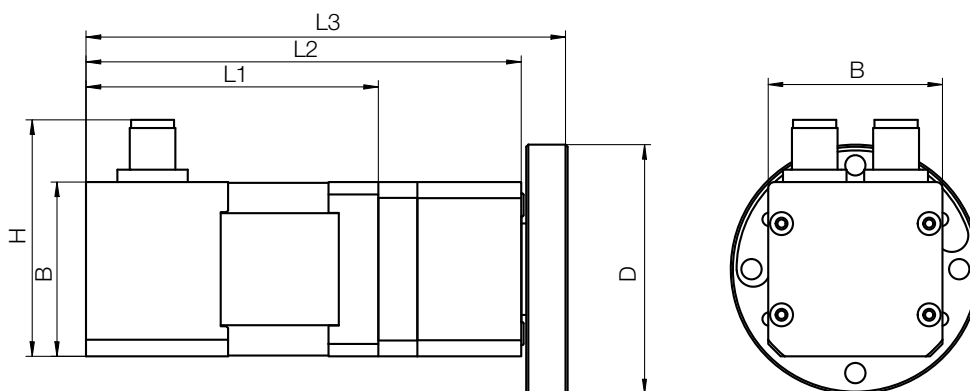


... Technical data

Max. output torque	4Nm
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Mounting brackets

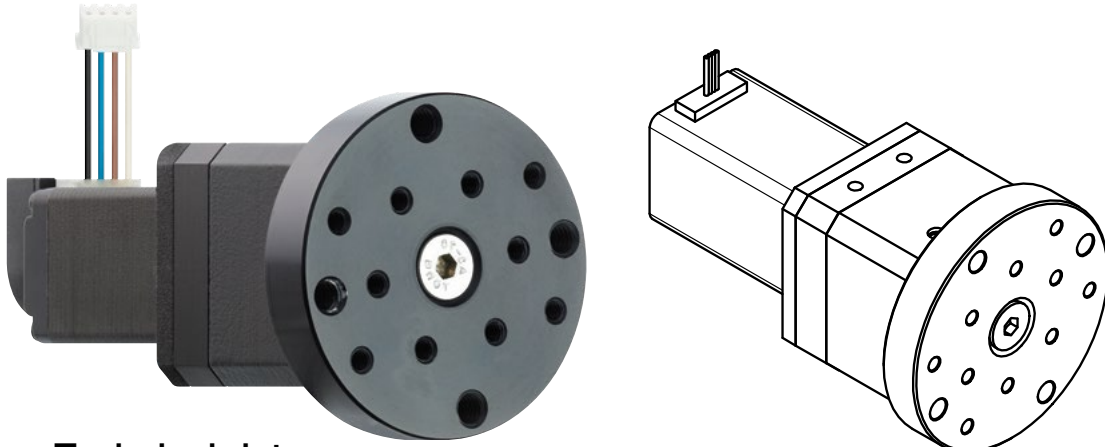
Part No.	Connection	Weight
RL-S-17-28-AA-N17-00	Stranded wire	553g
RL-S-17-28-AA-N17-01	Connectors	602g
RL-S-17-28-AA-N17-02	Connector + encoder	629g
RL-S-17-28-AA-N17-03	Connector + encoder + brake	759g



... Dimensions [mm]

Part No.	B	D	L1	L2	L3	H
RL-S-17-28-AA-N17-00	42	Ø60	49.0	83.4	94.6	46
RL-S-17-28-AA-N17-01	42	Ø60	70.4	104.8	116.0	55
RL-S-17-28-AA-N17-02	42	Ø60	70.4	104.8	116.0	55
RL-S-17-28-AA-N17-03	42	Ø60	106.4	140.8	152.0	55

Strain wave gear installation size 17, with N11 stepper motor RL-S-17-28-AA-N11

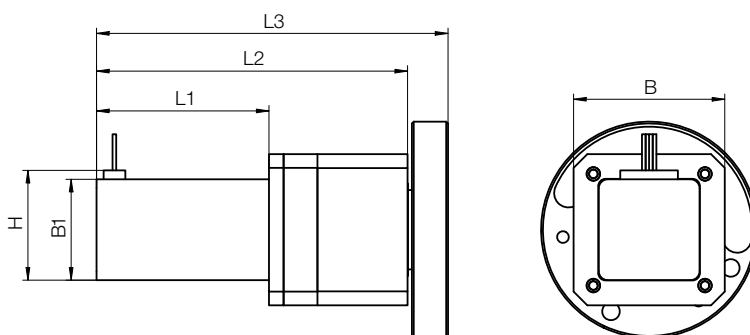


... Technical data

Max. output torque	0.8Nm
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Mounting brackets

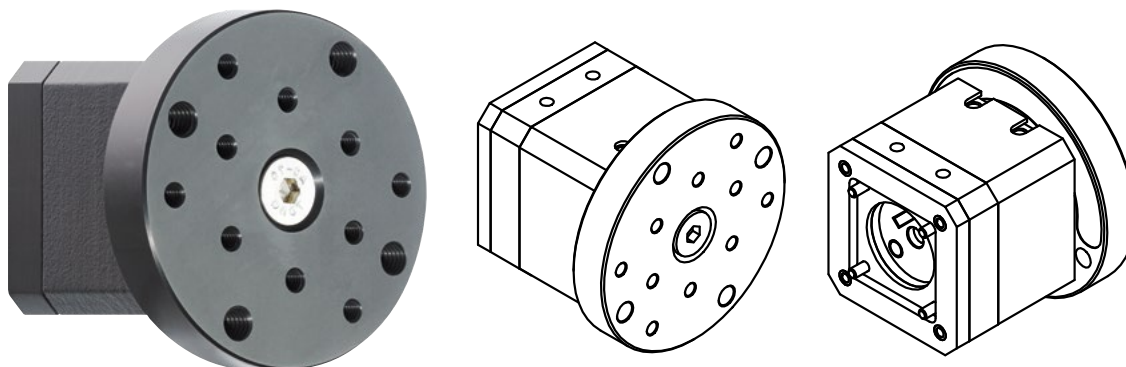
Part No.	Connection	Weight
RL-S-17-28-AA-N11-00	Stranded wire	352g
RL-S-17-28-AA-N11-01	Connectors	375g
RL-S-17-28-AA-N11-02	Stranded wire + encoder	361g



... Dimensions [mm]

Part No.	B	B1	L1	L2	L3	H
RL-S-11-28-AA-N11-00	42	28	47.5	87.4	98.6	30.5
RL-S-11-28-AA-N11-01	42	28	67.5	107.4	118.6	41.0
RL-S-11-28-AA-N11-02	42	28	57.5	97.4	108.6	30.5

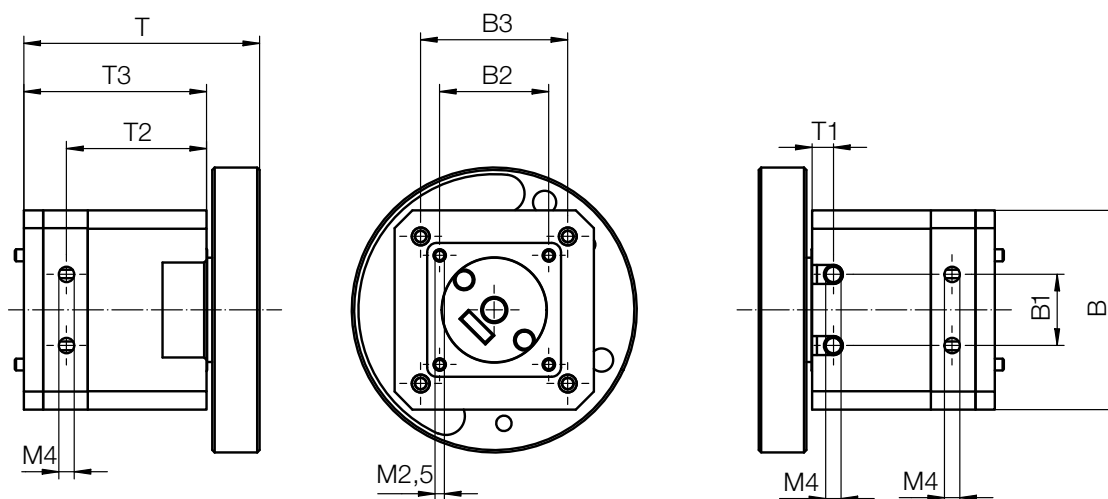
Strain wave gear installation size 17, with adapter for N11 RL-S-17-28-AA-N11-NM



... Technical data

Transmission	28:1
Efficiency	40%
Backlash	0.2°
Failure torque*	10Nm
Service life	1 million (at 1.5Nm and 20rpm)

* Slipping of the gearbox



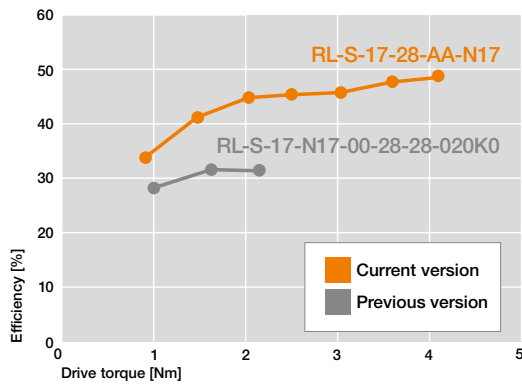
... Dimensions [mm]

B	B1	B2	B3	T	T2	T3
42	15	23	31	49.7	29.5	38.5

Technical comparison with the previous version

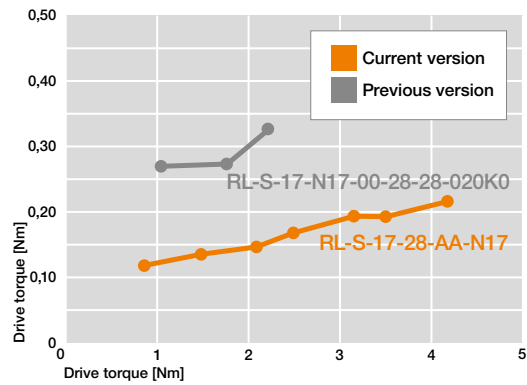
Efficiency comparison

Current and previous version of the strain wave gear



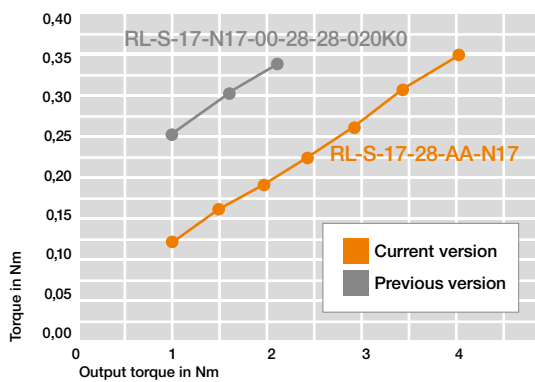
Torque fluctuation comparison

Current and previous version of the strain wave gear

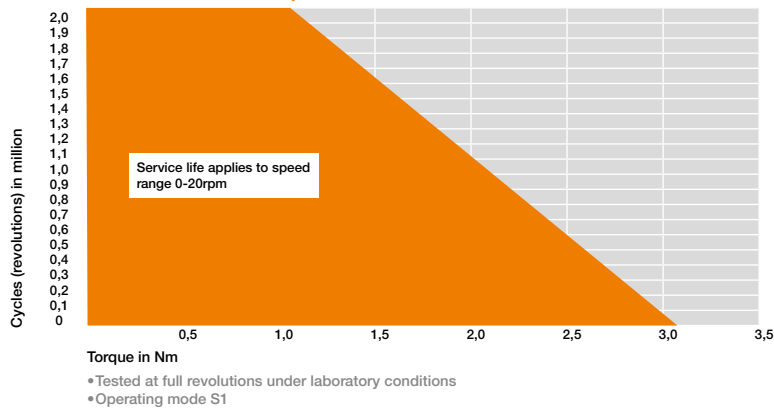


Breakaway torque comparison

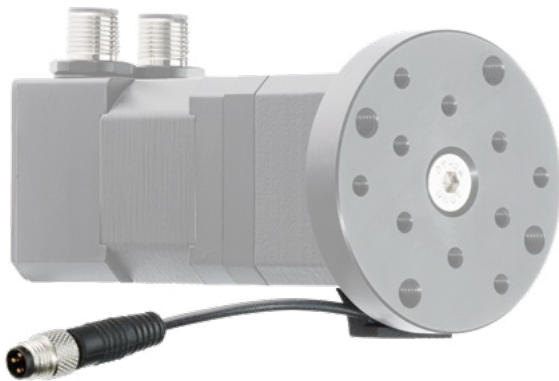
Current and previous version of the strain wave gear



Service life in continuous operation

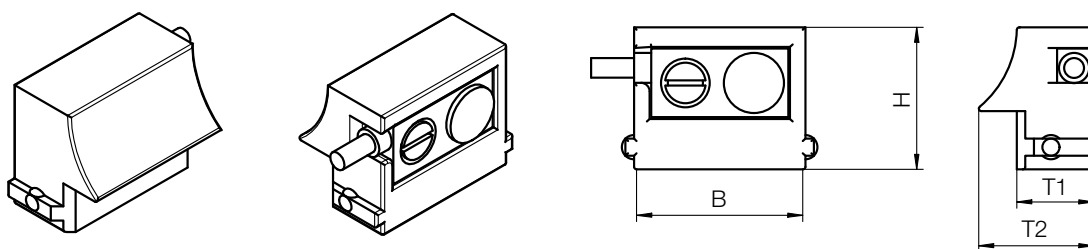


INI kit for drygear® strain wave gear installation size 17 RL-S-17-IK-01



... Technical data

Connection	M8x1
Switching output	PNP
Switching function	NO (Normally closed)
Operating voltage	10...30VDC
Max. switching current	100mA



... Dimensions [mm]

B	H	T1	T2
19.4	16.6	9	13.4

Cables

Motor, INI and encoder cables

... At a glance

- Suitable for energy chains
- Shielded and oil-resistant
- Straight connector



... Motor cables

Cable Ø: 5.5mm/Bend radius moved<10m Travel: min. 5xd Flange size 28 (NEMA11), 42 (NEMA17), 56 (NEMA23), 60 (NEMA23XL)

Part No.	Ø	Jacket	Type	Cable length	Connector
MAT90490015-3	5.5mm	TPE	CF9.INI	3m	straight
MAT90490015-5	5.5mm	TPE	CF9.INI	5m	straight
MAT90490015-10	5.5mm	TPE	CF9.INI	10m	straight



... Encoder cables

Cable Ø: 7.5mm/Bend radius moved<10m Travel: min. 6.8xd

Part No.	Ø	Jacket	Type	Cable length	Connector
MAT90450903-3	7.5mm	TPE	CF11	3m	straight
MAT90450903-5	7.5mm	TPE	CF11	5m	straight
MAT90450903-10	7.5mm	TPE	CF11	10m	straight

More information:

www.igus.eu/drylinE-FAQ

Cables

Motor, INI and encoder cables

... At a glance

- Suitable for energy chains
- Shielded and oil-resistant
- Straight and angled connectors

... Motor cables



Flange size: 28mm (NEMA11), 42mm (NEMA17), 56mm (NEMA23), 60mm (NEMA23XL)
Bend radius moved<10m travel: min. 5xd

Part No.	Ø	Jacket	Type	Length	Connector
MAT9043737	5.5mm	TPE	CF9.INI	3m	straight
MAT9043738	5.5mm	TPE	CF9.INI	5m	straight
MAT9043740	5.5mm	TPE	CF9.INI	10m	straight
MAT9043742	5.5mm	TPE	CF9.INI	3m	angled
MAT9043743	5.5mm	TPE	CF9.INI	5m	angled
MAT9043745	5.5mm	TPE	CF9.INI	10m	angled

... INI cables (brake)



Flange size: 42mm (NEMA17), 56mm (NEMA23), 60mm (NEMA23XL)
Bend radius moved<10m travel: min. 5xd

Part No.	Ø	Jacket	Type	Length	Connectors
MAT9043716	4.5mm	TPE	CF9.INI	3m	straight
MAT9043717	4.5mm	TPE	CF9.INI	5m	straight
MAT9043719	4.5mm	TPE	CF9.INI	10m	straight
MAT9043724	4.5mm	TPE	CF9.INI	3m	angled
MAT9043725	4.5mm	TPE	CF9.INI	5m	angled
MAT9043727	4.5mm	TPE	CF9.INI	10m	angled

... Encoder cables



Bend radius moved<10m travel: min. 10xd

Part No.	Ø	Jacket	Type	Length	Connectors
MAT90432594-3	7mm	PVC	CF240	3m	straight
MAT90432594-5	7mm	PVC	CF240	5m	straight
MAT90432594-10	7mm	PVC	CF240	10m	straight
MAT90436430-3	7mm	PVC	CF240	3m	angled
MAT90436430-5	7mm	PVC	CF240	5m	angled
MAT90436430-10	7mm	PVC	CF240	10m	angled

More information:

www.igus.eu/drylinE-FAQ

Motor control D1 dryve



... At a glance

- A wide range of automation tasks by simple parameterisation, no programming necessary
- For single axes, line, flat, linear and room linear robots and delta robots
- No software installation or app required
- Use with PC, tablet or smart phone
- Stepper (ST), DC and EC/BLDC motors with up to 21A peak currents and 48V
- Digital inputs/outputs, analogue inputs, CANopen, ModbusTCP (Gateway) for connection to master control systems such as Siemens or Beckhoff

... Technical data

Voltage supply	12-24V DC logic, 12-48V DC load
Motor type	Stepper, DC, EC/BLDC motor
Power supply	7A nominal current, 21A peak

More information:
www.igus.eu/D1

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