
igus® data sheet

roboLink® Apiro®



General properties:

- Worm gear with tribologically optimised material compounds
- Inverted gearbox available
- Motor drive or manual drive
- Modules can be connected in series or in parallel
- INI kit available for all options
- Max. humidity: 85%, non-condensing
- Application temperature: +5°C to +50°C
- Suitable for splash water applications
- Couplings available
- Lightweight
- Lubrication-free
- Cost-effective
- Low clearance
- Long service life

... possible options

... Single joints

- | | |
|----------------------------------|--------|
| 1. Worm gear RL-A10 | Page 3 |
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... Accessories

- | | |
|--------------------------------------------------|---------|
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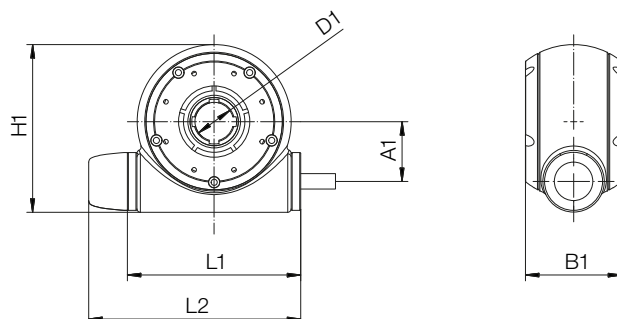
Application examples	Page 15
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Basic worm gear without profile RL-A10.0100



... Technical data

Shaft diameter (D2)	8mm
Axis distance (A1)	31mm
Backlash	< 0.5°
Weight	230g



... Dimensions [mm]

L1	L2	H1	B1	D1	D2	A1
90	110	87	50	20	8	31

... available transmission ratios

Part No.	RL-A10.0105	RL-A10.0106	RL-A10.0107
Transmission	1:4	1:32	1:64
Self-locking	X	X	✓
Output torque	2.5Nm	2.5Nm	1.5Nm
Max. moment	15Nm	20Nm	10Nm

Axial load, static = 250Nm

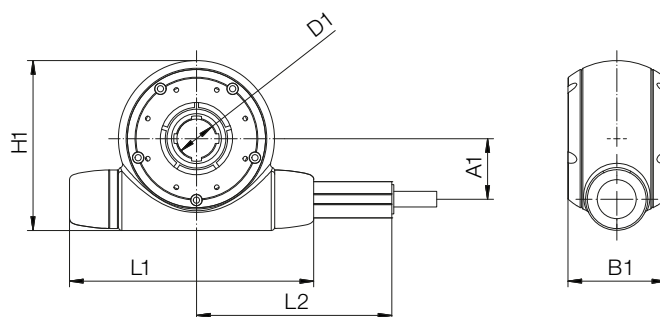
Other transmission ratios also available: 1:3, 1:8, 1:16

Basic worm gear with profile RL-A10.0101



... Technical data

Shaft diameter (D2)	8mm
Axis distance (A1)	31mm
Backlash	< 0.5°
Weight	270g
Length profile to middle L2	1,000mm



... Dimensions [mm]

L1	L2	H1	B1	D1	D2	A1
125	100 – 1,000	87	50	20	8	31

... available transmission ratios

Part No.	RL-A10.0108.X	RL-A10.0109.X	RL-A10.0110.X
Transmission	1:4	1:32	1:64
Self-locking	X	X	✓
Output torque	2.5Nm	2.5Nm	1.5Nm
Max. moment	15Nm	20Nm	10Nm

Axial load, static = 250Nm

X = Length of profile

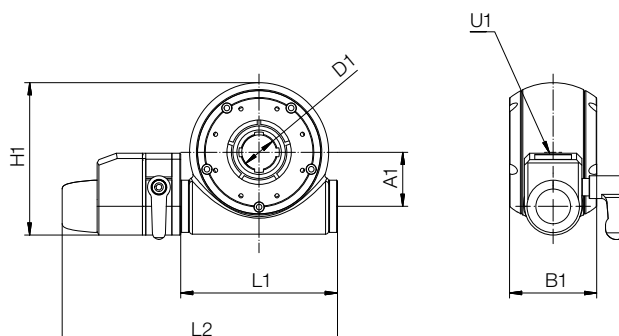
Other transmission ratios also available: 1:3, 1:8, 1:16

Basic worm gear with manual clamp and position indicator RL-A10.0102



... Technical data

Shaft diameter (D2)	8mm
Axis distance (A1)	31mm
Backlash	< 0.5°
Weight	420g



... Dimensions [mm]

L1	L2	H1	B1	D1	D2	A1	U1
90	158	87.5	50	20	8	31	0.1mm/rev

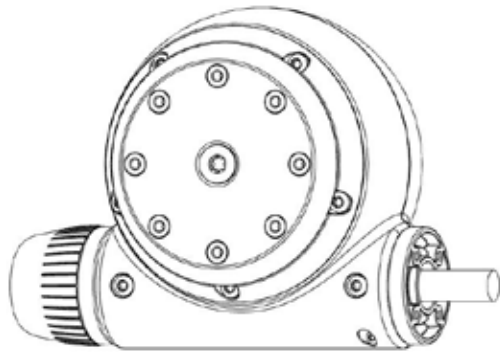
... available transmission ratios

Part No.	RL-A10.0111	RL-A10.0112	RL-A10.0113
Transmission	1:4	1:32	1:64
Self-locking	X	X	✓
Output torque	2.5Nm	2.5Nm	1.5Nm
Max. moment	15Nm	20Nm	10Nm

Axial load, static = 250Nm

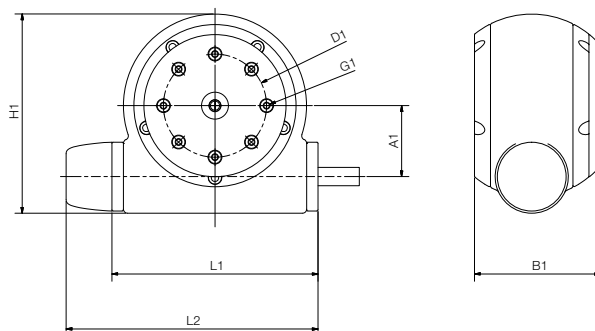
Other transmission ratios also available: 1:3, 1:8, 1:16

Basic worm gear with articulated turntable RL-A10.0114



... Technical data

Shaft diameter (D2)	8mm
Axis distance (A1)	31mm
Backlash	< 0.5°
Weight	240g



... Dimensions [mm]

L1	L2	H1	B1	D1	D2	A1	G1
90	110	87	55	45	8	31	M3

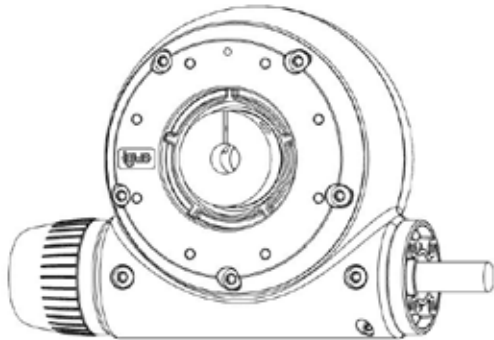
... available transmission ratios

Part No.	RL-A10.0138	RL-A10.0114	RL-A10.0139
Transmission	1:4	1:32	1:64
Self-locking	X	X	✓
Output torque	2.5Nm	2.5Nm	1.5Nm
Max. moment	15Nm	20Nm	10Nm

Axial load, static = 250Nm

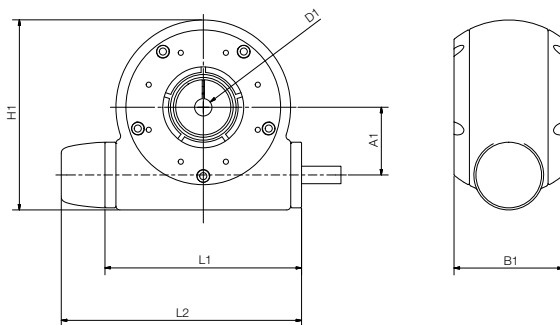
Other transmission ratios also available: 1:3, 1:8, 1:16

Basic worm gear with profile and articulated shaft coupling RL-A10.0118



... Technical data

Shaft diameter (D1)	8mm
Axis distance (A1)	31mm
Backlash	< 0.5°
Weight	240g



... Dimensions [mm]

L1	L2	H1	B1	D1	A1
90	110	87	50	8	31

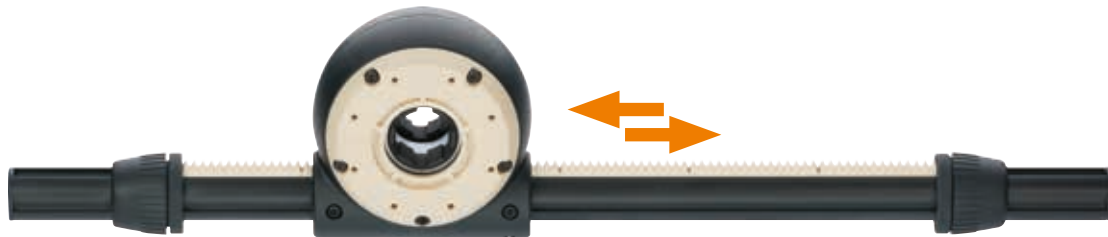
... available transmission ratios

Part No.	RL-A10.0117	RL-A10.0118	RL-A10.0119
Transmission	1:4	1:32	1:64
Self-locking	X	X	✓
Output torque	2.5Nm	2.5Nm	1.5Nm
Max. moment	15Nm	20Nm	10Nm

Axial load, static = 250Nm

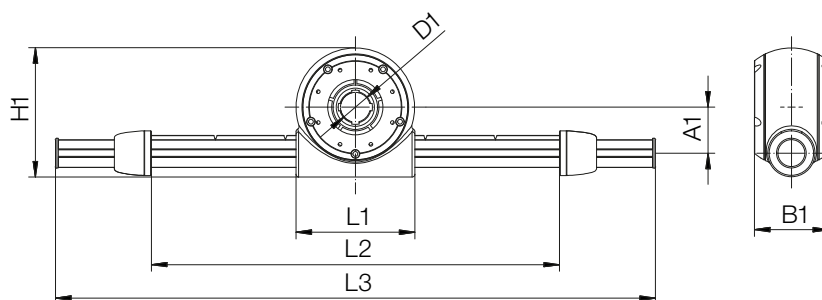
Other transmission ratios also available: 1:3, 1:8, 1:16

Basic cantilever axis RL-A14.0100



... Technical data

Profile diameter (D1)	20mm
Axis distance (A1)	31mm
Backlash	< 0.5°
Weight	from 330g
Feed rate/rotation	125.66mm
Load	25N
Stroke	53mm – 1,042mm



... Dimensions [mm]

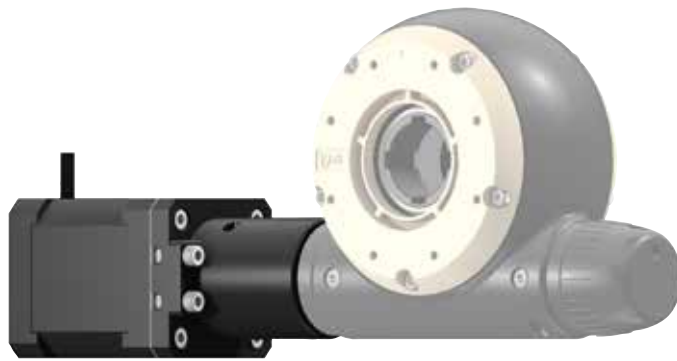
L1	L2*	L3*	H1	B1	D1	A1
80	133 – 1,122	250 – 1,300	87	50	20	31

* varies depending on stroke

Motor kit

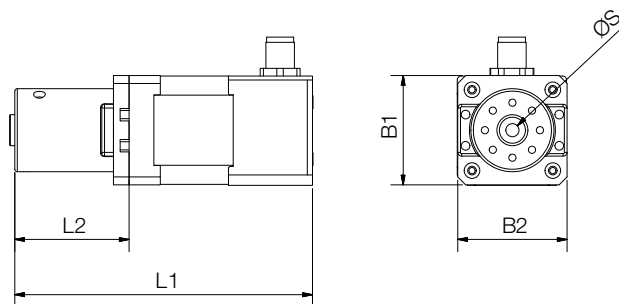
RL-A51

available for: worm gear RL-A10



... Technical data

Part No.	Connection	Weight
RL-A51.0101	NEMA17 + stranded wires	440g
RL-A51.0102	NEMA17 + connector	490g
RL-A51.0103	NEMA 17 + connector + encoder	510g
RL-A51.0104	NEMA 17 + connector + encoder + brake	650g
RL-A51.0105	NEMA23 + connector	1,200g



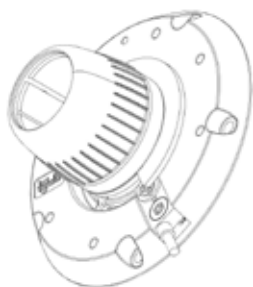
... Dimensions [mm]

Part No.	L1	L2	B1	B2	S
RL-A51.0101	93	44	42	42	8
RL-A51.0102	114	44	42	42	8
RL-A51.0103	114	44	42	42	8
RL-A51.0104	150	44	42	42	8
RL-A51.0105	144	46	56	56	8

INI kit

RL-A52.0100

available for: worm gear RL-A10



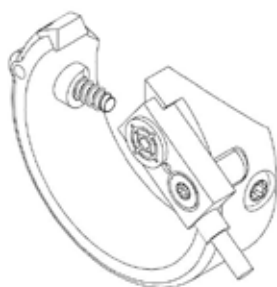
... Technical data

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

INI kit

RL-A52.0101

available for: cantilever axis RL-A14



... Technical data

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

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	Connector
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	Connector
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 at:

www.igus.eu/info/drive-technology-drylin-e-faq-data-sheets

Motor control D1 dryve



... At a glance

- A wide range of automation tasks by simple parameterisation , no programming necessary
- For single axes, line, low-profile 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 at: www.igus.eu/D1

**Assembly option
vertical**
Flange

RL-A54.0100



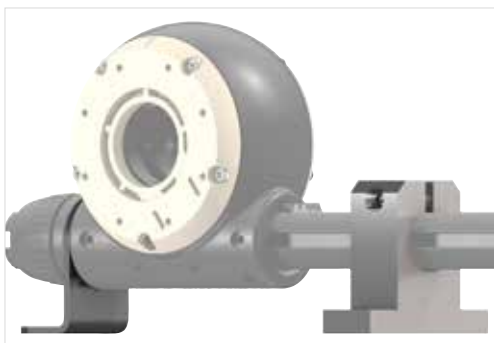
**Assembly option
axial**
Bracket set

RL-A54.0101



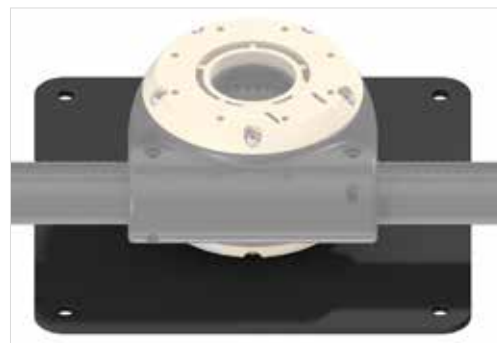
**Assembly option
axial**
Lead screw support block

RL-A54.0102



**Assembly option
horizontal**
Plate

RL-A54.0103



**Assembly option
Profile stop**

RL-A50.100



**Assembly option
Profile end cap**

RL-A200.0103



Assembly option
Parallel connector

RL-A220.0104



Assembly option
Feather key element

RL-A220.0105



Assembly option
Spacer element

RL-A220.0106



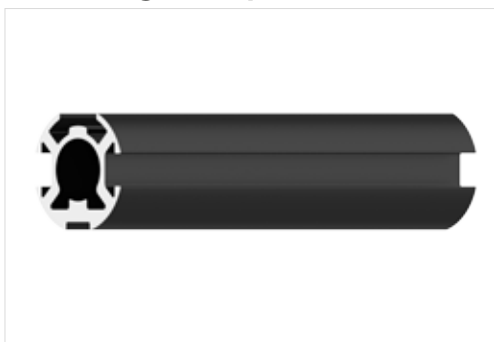
Assembly option
Slot nut M3

RL-A320.0101



Assembly option
Multi-functional profile
diameter 20mm

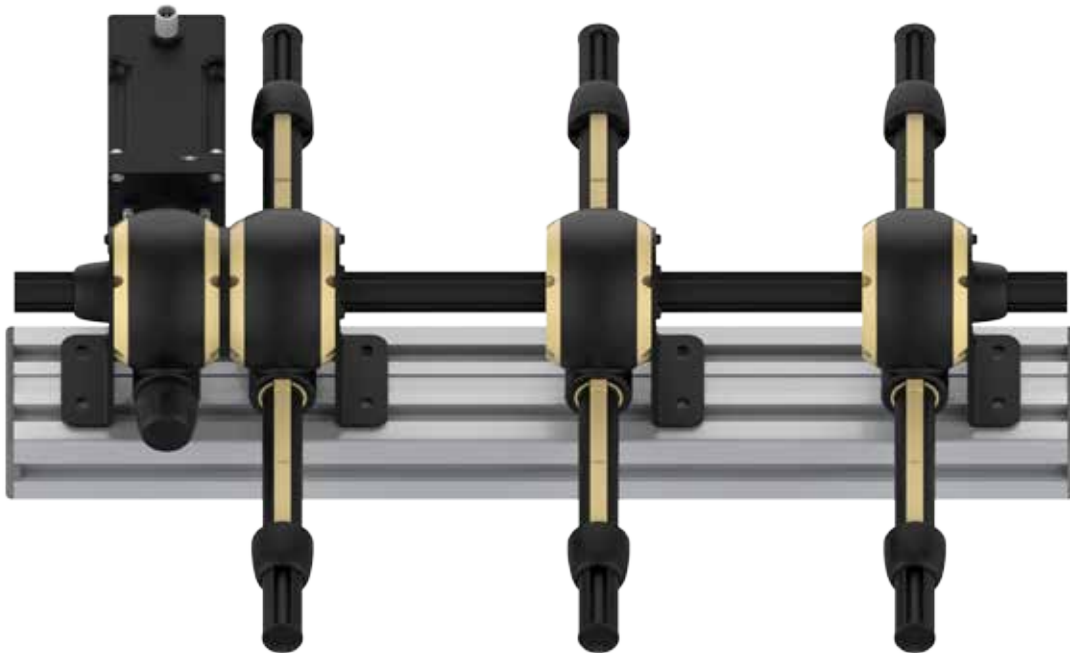
RL-A400.0100.X
X = Length of profile



Assembly tool
RL-A55.0100



Lane adjustment RL-A30.0101



Series connection for different transmissions RL-A30.0101



More information at www.igus.eu/apiro

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