IDAM

INA Drives & Mechatronics

LDDM

Linear Direct Drive Motors

UPL Series

SCHAEFFLER

LuK INA FAG

The Perfect Drive for Every Application.

INA – Drives & Mechatronics GmbH & Co. KG, a member of the Schaeffler Group, is a specialist in linear and rotary direct drives. To complement these products, we also offer directly driven positioning systems and all the necessary controllers and mechatronic assemblies.
In addition to standard products, IDAM also develops and produces customised drive solutions.
In modern machines and equipment, direct drives are increasingly replacing standard drive solutions because of ever-stricter requirements for dynamics, precision and cost-effectiveness.
Directly linking the motor and the moving mass increases the dynamic and static rigidity, enabling high-performance positioning movements.

Direct drives are low wearing. This allows maintenance and operating costs to be reduced whilst also increasing availability.
For more than 20 years, teams at IDAM have been developing and producing direct drives and complex drive systems for the following sectors: machine tools and production machinery, automation, productronics/semicon, measuring technology and medical engineering.
Models and simulations are integrated into the development process for direct drives and positioning systems, making the process more efficient.
IDAM has a cutting-edge quality management system. At IDAM, quality management is a dynamic process that is checked daily and continuously improved. IDAM is certified to DIN EN ISO 9001:2008.

ZERTIFIKAT ◆ CERTIFICATE ◆

TÜV SÜD Management Service

CERTIFICATE
ISO 9001:2008

EMAS
VERIFIED
ENVIRONMENTAL
MANAGEMENT
DE-158-00016

INTECHNICA
FUTURE SECURE BUSINESS GROWTH

Certificate
ISO 14001

IDAM uses specially developed tools to develop and design the motors, including tools for mechanical and thermal simulation. This produces results that our customers can use to optimise their subsequent designs.

Contents

Product Range

General Information

Benefits of Linear Direct Drives

Performance

1. No transformation of the movement pattern

There is no elasticity, no play, no friction and no hysteresis in the drive train resulting from transmission or coupling elements.

2. Compact motor

The large feed force for a relatively small moving mass means very high acceleration is possible. The force can be used from speed o up to the velocity limit.

3. Direct position measurement

Direct position measurement and the rigid mechanical structure enable highly precise, dynamic positioning operations.

Operating costs

1. No additional moving parts

This reduces the effort of installing, adjusting and maintaining the drive assembly.

2. Minimal wear in the drive train

The drive train has a very long service life, even if subjected to extreme alternating loads. This reduces machine downtime.

3. High availability

In addition to the longer service life and reduced wear, the sturdiness of the linear motors increases their availability.

Design

1. Small installation space

A compact design makes it possible to create low volume drive modules.

2. Few parts

The well-engineered design makes it easier to integrate the motor parts into the machine concept.
There are only a few, very sturdy parts, which reduces the fail rate.

3. Variety of design variants

This optimises the integration of the motor parts design in the machine concept.

UPL Linear Motors
Applications, benefits

Applications

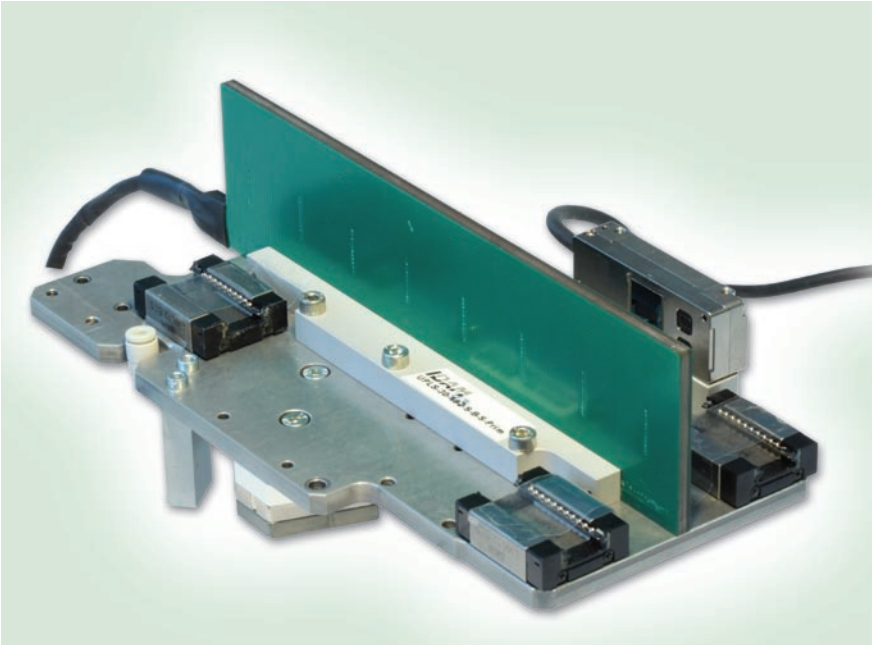
- Pick and place tasks
- Vertical installation (Z axis) because of small own mass moved
- Applications that require maximum path precision or a constant speed

The UPL linear motors are ideal for applications in the following areas:

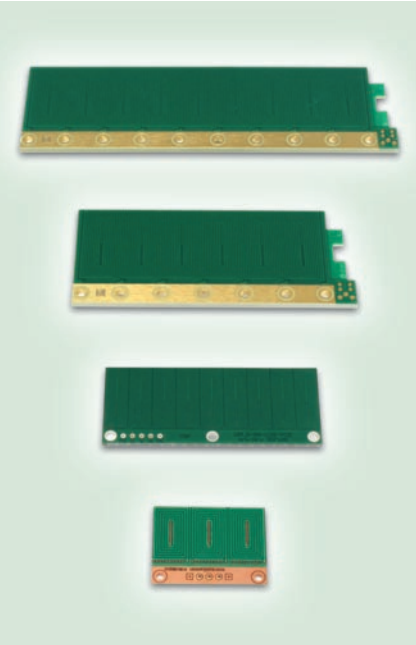
- Semiconductor production
- Electronics assembly
- Measuring and inspection systems
- Precision automation
- Medical engineering
- Low-cost applications in the mass market

Benefits

- Minimum current rise times thanks to ironless primary part (good power/mass ratio)
- High acceleration rate
- Very high end speed
- Highly efficient
- Very good synchronisation (no cogging forces, very low load pulsation)
- Compact design
- High performance and low cost
- Excellent static and dynamic load rigidity
- Precise positioning without overshoot
- High reliability and long service life
- Non-contact operation without wear
- Easy to adapt, making it adjustable to special solutions
- Automatic production means high quality standards



UPL system solution



UPL primary parts

Safety Instructions for Handling UPL Linear Motors

LIFE THREATENING
Dangerous magnetic fields!

Magnetic fields can cause serious health problems or death in persons with active implants.
Persons with pacemakers and/or metal implants, pregnant women and persons with hearing devices should not come any closer than 120 mm to the linear direct drive.

RISK OF BURNS
Dangerous temperatures!

In operation the UPL linear motor may heat up to max. 140 °C.
There is a very high risk of burns.
Never touch the motor when in operation or soon after switching off.

LIFE THREATENING
Dangerous voltages!

If the coil system is mechanically damaged, life-threatening voltages of up to the operating voltage may be present on the motor or magnet base.
The surfaces of the motors must not be damaged.
To protect against dangerous voltages, all primary and secondary parts must be connected to the protective earth conductor, especially in the case of non-conductive assemblies. In accordance with DIN EN 60204, a protective earth system shall be set up for the entire machine in order to connect all the conductive structural components.

WARNING
Strong magnetic fields!

Strong forces may arise when handling secondary parts. There is a risk of crushed limbs.
Ensure that there is enough space between secondary parts and between secondary parts and ferromagnetic parts.
When stacking, separate the secondary parts by rotating the assemblies. The spacers must remain on the magnets until the individual secondary parts are securely separated. Warning, sharp edges!
Keep ferromagnetic material away from the motors. When working on motors, only use tools with no ferromagnetic properties.
Also keep electronic devices and data carriers away from the secondary parts' magnetic fields.

UPL linear motors are only intended to be used as direct drives in industrial applications. In particular, the motors must not be operated underwater, in oil, in refrigerants or in explosive environments. They must only be operated in the expressly specified configuration and combination of components. Any other use is considered contrary to the intended use. The operator bears sole liability for any resultant damages.

Installation and Insulation Coordination for UPL Linear Motors

UPL linear motors are not designed to be connected directly to the mains supply; instead, they have to be operated via an electronics assembly, generally a servo amplifier. Connecting the motors directly to the mains will destroy them.

The motors must not be used in potentially explosive areas or in the vicinity of oils, gases, acids, vapours, dust, etc.

The manufacturer of the machine or plant should compile a risk assessment and derive measures to ensure safe operation of the entire system.

Installation work must be carried out when the system is de-energised only, and measures must be taken to prevent accidental restoration of power.

The maximum permissible rated voltage must not be exceeded.

Use shielded lines and connect the shielding to the earth potential on the servo amplifier as extensively as possible.

The start of designated operation for a whole system or machine that integrates one or more UPL linear motors must not take place until it has been established that all the relevant provisions of the EU Directives and all the country-specific accident prevention regulations are fulfilled. This primarily involves EU Machinery Directive 2006/42/EC and EU Directive on EMC 2004/108/EC.

Furthermore, DIN EN 60664-1 (VDE 0110-1): 2008-01 on insulation coordination shall be observed. According to DIN EN 60664-1, UPL linear motors are operating equipment that is not supplied directly from the low voltage grid. The maximum effective voltage that can occur in the system shall be used to dimension the basic insulation. The rate impulse voltage is specified as 0.8 kV, resulting in the following minimum requirements: Clearance L_S = 0.2 mm, creepage distance L_K = 0.75 mm

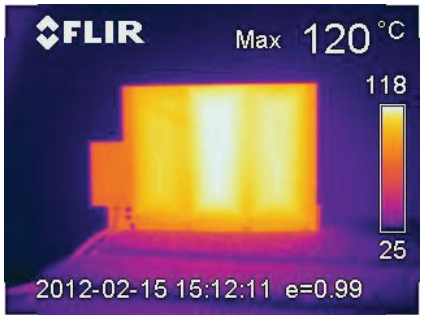
Personnel who work with UPL linear motors should fulfil the following technical requirements:

Transport: knowledge of handling electrostatically sensitive components

Installation: specialists with electrotechnical training and knowledge of safety guidelines for electrical and automation technology

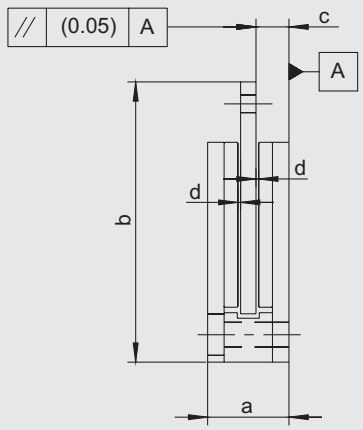
Commissioning: comprehensive knowledge of electrical, automation and drive technology

Knowledge of the machine safety laws is essential.



Assembly

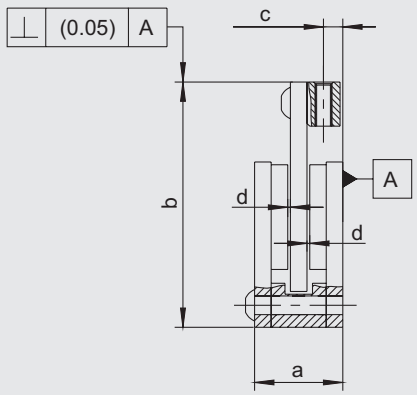
Assembling primary and secondary parts: UPLX-L-D-O and UPLX-L-O-O

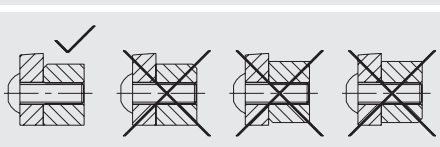


Type	a [mm]	b [mm]	c [mm]	d [mm]
UPL1-L-D-O / -O-O	16.0	44.5	6.5 ± 0.05	0.5
UPL2-L-D-O / -O-O	14.8	51.0	5.9 ± 0.05	0.4
UPL3-L-D-O / -O-O	21.4	70.0	8.5 ± 0.05	0.5

Notes on assembly: Clear the area of the solder contacts in the adjacent construction by at least 1 mm in depth.

Assembling primary and secondary parts: UPLX-L-D-T and UPLX-L-O-T





Type	a [mm]	b [mm]	c [mm]	d [mm]	M_T* [Nm]
UPL1-L-D-T / -O-T	16.0	44.5	3.5 ± 0.1	0.5	0.5
UPL2-L-D-T / -O-T	14.8	51.0	2.9 ± 0.1	0.4	0.5
UPL3-L-D-T / -O-T	21.4	70	4.8 ± 0.1	0.5	1.0

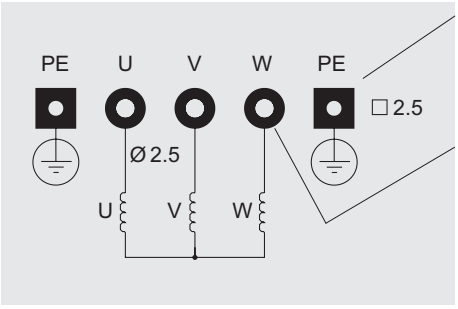
*M_T: Fastening torque for gib

The gib can be mounted on the left or right side, as desired. The chamfer and slot have to be placed on the motor side. The gib and fastening screws are included in the delivery. Use only the stainless screws provided to attach the gib.

The type plate with serial number is enclosed and has to be attached visible near the primary part to ensure clear identification.

Pin Assignment

For UPL1-50-X-X-PRIM, UPL1-100-X-X-PRIM, UPL2-34-X-X-PRIM

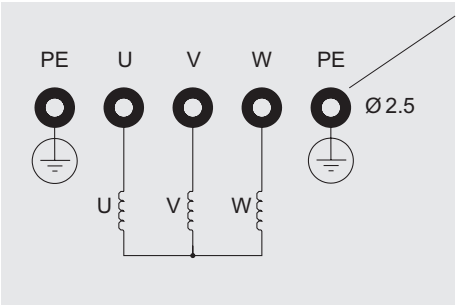


Through-hole terminal Ø 1.0 mm
0.14 - 0.34 mm^2/AWG22-26

Through-hole terminal Ø 1.25 mm
0.14 - 0.50 mm^2/AWG20-26

Mounting holes are contacted with PE.

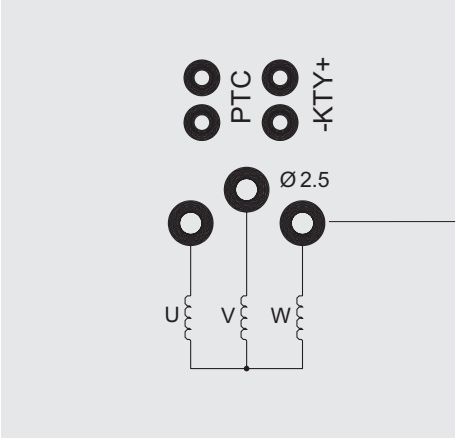
For UPL2-67-X-X-PRIM, UPL2-100-X-X-PRIM



Through-hole terminal Ø 1.25 mm
0.14 - 0.50 mm^2/AWG20-26

Mounting holes are contacted with PE.

For UPL3-L-D-O-PRIM, UPL3-L-D-T-PRIM

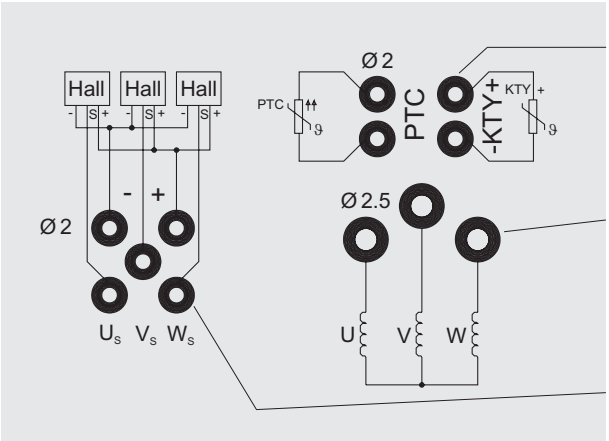


Through-hole terminal Ø 1.25 mm
0.14 - 0.50 mm^2/AWG20-26

Sensor connections are not allocated for this variant.

Pin Assignment

For UPL3-L-O-O-PRIM, UPL3-L-O-T-PRIM



Through-hole terminal Ø 1.00 mm
0.08 - 0.25 mm^2/AWG24-28

Through-hole terminal Ø 1.25 mm
0.14 - 0.50 mm^2/AWG20-26

Through-hole terminal Ø 1.00 mm
0.08 - 0.25 mm^2/AWG24-28

The electrical connection should be set up by a trained electrician in accordance with the cable or pin allocation. Electrical connections shall be checked in line with the electrical and technical regulations. Correct wiring is essential. Faulty connections can cause unexpected and uncontrolled motor movements, or destroy electrical or electronic components.

UPL linear motor: primary and secondary part

Storing UPL Linear Motors

General

The UPL linear motors developed by IDAM have a design comparable to a multi-layered circuit board. As with circuit board technology, there are special requirements for handling and storing the motors in order to ensure the longest possible service life. The length of time and conditions under which UPL linear motors can be stored depend on many factors.

Approximate storage time

The approximate storage time is 12 months.

Storage conditions

The motors must be stored in their sealed original packaging (PE bag sealed with dry pack) and as close to indoor climate as possible (25 °C ± 5 °C, max. 60% humidity). Deviations from this affect the surface, which in turn affects the ability to form solder joints for the motor connections. Higher temperatures accelerate aging processes. Temperature fluctuation can lead to condensation on the packaging and motors. The soldering surface should not be touched or contaminated.

To protect their geometry, UPL linear motors should be stored level and in their original packaging, where possible.

Keep storage times to a minimum. Use a first in, first out principle in your warehouse and during further processing. During processing, give preference to packages that have already been opened.

Choose order/released quantities that ensure processing within the shortest possible space of time.

Packaging should only be opened immediately before installing the UPL linear motor.

Type Designation

UPLX - L - X - X - PRIM

Short designation of motor type

UPL Ironless multilayer PCB linear motor, primary part

Design characteristics number

1 $2\tau_p = 25$ mm

2 $2\tau_p = 16.5$ mm

3 $2\tau_p = 30$ mm

Length of coil system [mm]

Temperature monitoring, commutation type

D Without sensors

O With sensors (on request)

Mounting type

O Through-hole on side

T Threaded hole vertically in enclosed gib

Motor part

PRIM Primary part

UPLX - L - SEK

Short designation of motor type

UPL Ironless multilayer PCB linear motor, secondary part

Design characteristics number

1 $2\tau_p = 25$ mm

2 $2\tau_p = 16.5$ mm

3 $2\tau_p = 30$ mm

Length of secondary part [mm]

Depending on design 1, 2, 3

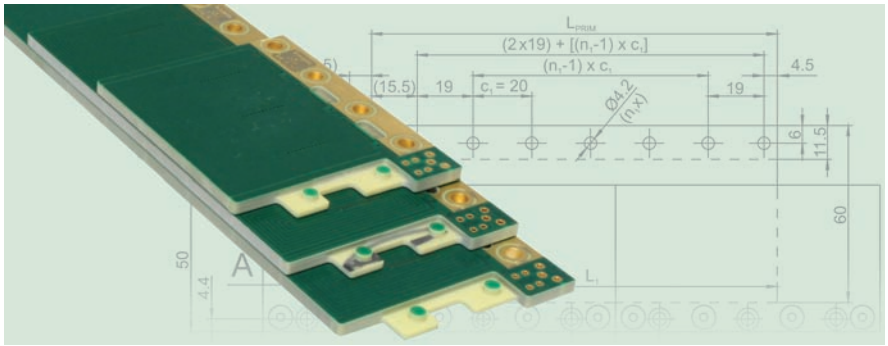
Motor part

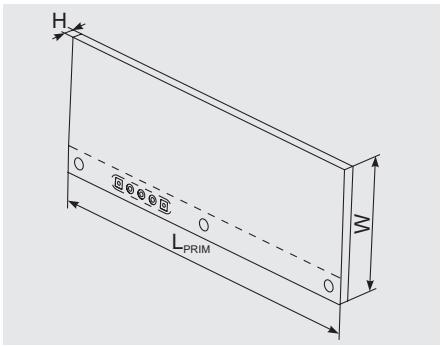
SEK Secondary part

UPL Overview

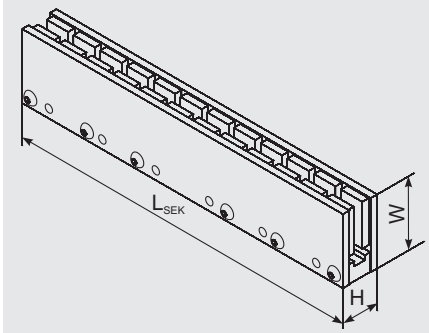
Sizes

Primary part type	Length L_{PRIM} [mm]	Width W [mm]	Height H [mm]	Peak force F_p [N]	Continuous force F_c [N]
UPL1-50-PRIM	50	38	3.0 ± 0.2	10.4	5
UPL1-100-PRIM	100	38	3.0 ± 0.2	20.6	9
UPL2-34-PRIM	34	42.2	3.0 ± 0.2	13.8	4.7
UPL2-67-PRIM	67	42.2	3.0 ± 0.2	27.5	8.0
UPL2-100-PRIM	100	42.2	3.0 ± 0.2	41.5	12.4
UPL3-78-PRIM	78	60	4.4 ± 0.3	50	15
UPL3-138-PRIM	138	60	4.4 ± 0.3	100	30
UPL3-198-PRIM	198	60	4.4 ± 0.3	150	45
UPL3-258-PRIM	258	60	4.4 ± 0.3	200	60

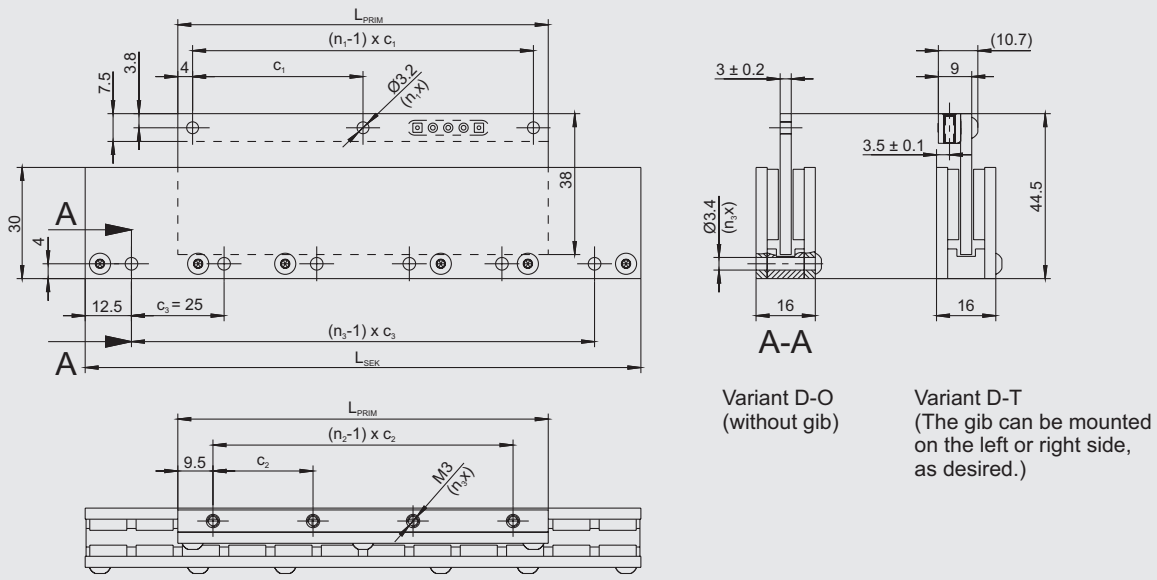




Secondary part type	Length L_{SEK} [mm]	Width W [mm]	Height H [mm]
UPL1-100-SEK	100	30	16
UPL1-150-SEK	150	30	16
UPL2-66-SEK	66	40	14.8
UPL2-99-SEK	99	40	14.8
UPL3-90-SEK	90	50	21.4
UPL3-120-SEK	120	50	21.4
UPL3-390-SEK	390	50	21.4



UPL1
Technical data I



Primary part	Symbol	Unit	UPL1-50	UPL1-100
Block length	L_{PRIM}	mm	50	100
Variant D-O (without gib)				
Mass	m	g	22	44
Hole spacing	c_1	mm	42	46
Number of holes	n_1	piece	2	3
Variant D-T (with gib)				
Mass	m	g	30	57
Hole spacing	c_2	mm	31	27
Number of holes	n_2	piece	2	4

Secondary part	Symbol	Unit	UPL1-100-SEK	UPL1-150-SEK
Length	L_{SEK}	mm	100	150
Mass	m	g	230	345
Number of holes	n_3	piece	4	6
Length grid	$2\tau_p$	mm	25	25

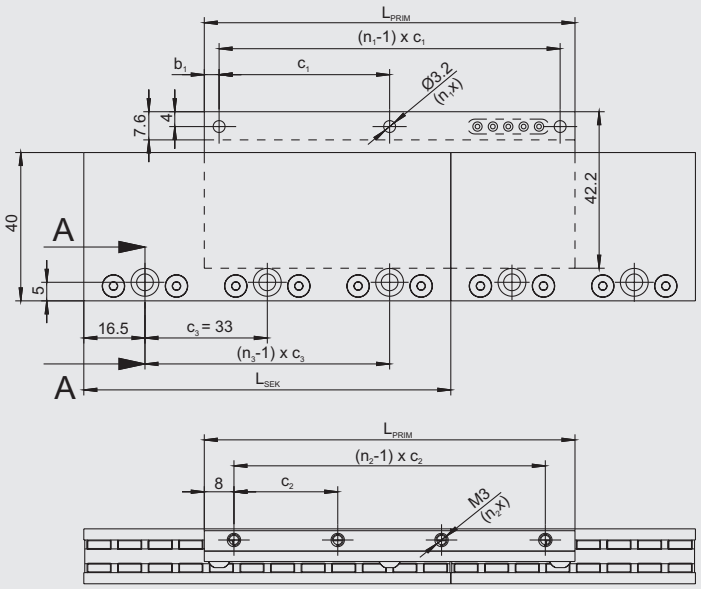
Tolerance range of values: ±10% • Subject to changes without advance notification, according to technical progress.

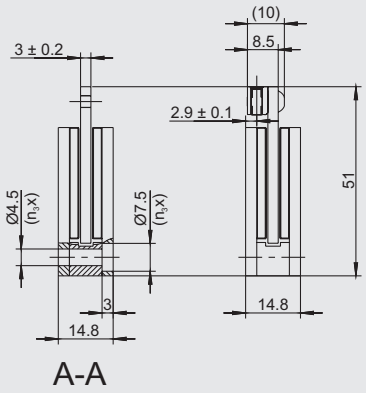
UPL1
Technical data II

Performance data	Symbol	Unit	UPL1-50	UPL1-100
Max. impulse force (1 s) at I_{mp}	F_{mp}	N	13.0	25.8
Peak force (3 s) at I_p	F_p	N	10.4	20.6
Continuous force not cooled at I_c	F_c	N	5	9
Power loss at F_p (25 °C)	P_{lp}	W	35	70
Power loss at F_c (25 °C)	P_{lc}	W	7.9	13.2
Motor constant (25 °C)	k_m	N/√W	1.75	2.50
Electric time constant	τ_{el}	ms	0.075	0.075
Attraction force between PRIM and SEK	F_a	N	0	0
Ripple force (cogging)	F_r	N	0	0
Temperature sensors			none	none
Pole pair width	$2\tau_p$	mm	25	25
Winding data	**Symbol**	**Unit**	**UPL1-50**	**UPL1-100**
Force constant	k_f	N/A_{rms}	4.3	8.6
Back EMF constant, phase-to-phase	k_u	V/(m/s)	3.5	7.0
Linear limit speed at F_p and U_{DCL}	v_{lim}	m/s	10	5
Electric resistance, ph-to-ph (25 °C)	R_{25}	Ω	4	8
Inductance, phase-to-phase	L	mH	0.3	0.6
Max. impulse current (1 s)	I_{mp}	A_{rms}	3.0	3.0
Peak current (3 s)	I_p	A_{rms}	2.4	2.4
Continuous current not cooled	I_c	A_{rms}	1.15	1.05
Permissible winding temperature	ϑ	°C	140	140
Thermal time constant	τ_{th}	min	11.5	14.0
DC link voltage (maximum)	U_{DCL}	V	120	120

Tolerance range of values: ±10% • Subject to changes without advance notification, according to technical progress.

UPL2
Technical data I





A-A

Variant D-O
(without gib)

Variant D-T
(The gib can be mounted on the left or right side, as desired.)

Primary part	Symbol	Unit	UPL2-34	UPL2-67	UPL2-100
Block length	L_{PRIM}	mm	34	67	100
Variant D-O (without gib)					
Mass	m	g	15	30	45
Hole spacing	c_1	mm	28	59	46
Number of holes	n_1	piece	2	2	3
Edge spacing	b_1	mm	3	4	4
Variant D-T (with gib)					
Mass	m	g	20	38	57
Hole spacing	c_2	mm	18	51	28
Number of holes	n_2	piece	2	2	4

Secondary part	Symbol	Unit	UPL2-66-SEK	UPL2-99-SEK
Length	L_{SEK}	mm	66	99
Mass	m	g	193	290
Number of holes	n_3	piece	2	3
Length grid	$2\tau_p$	mm	16.5	16.5

Tolerance range of values: ±10% • Subject to changes without advance notification, according to technical progress.

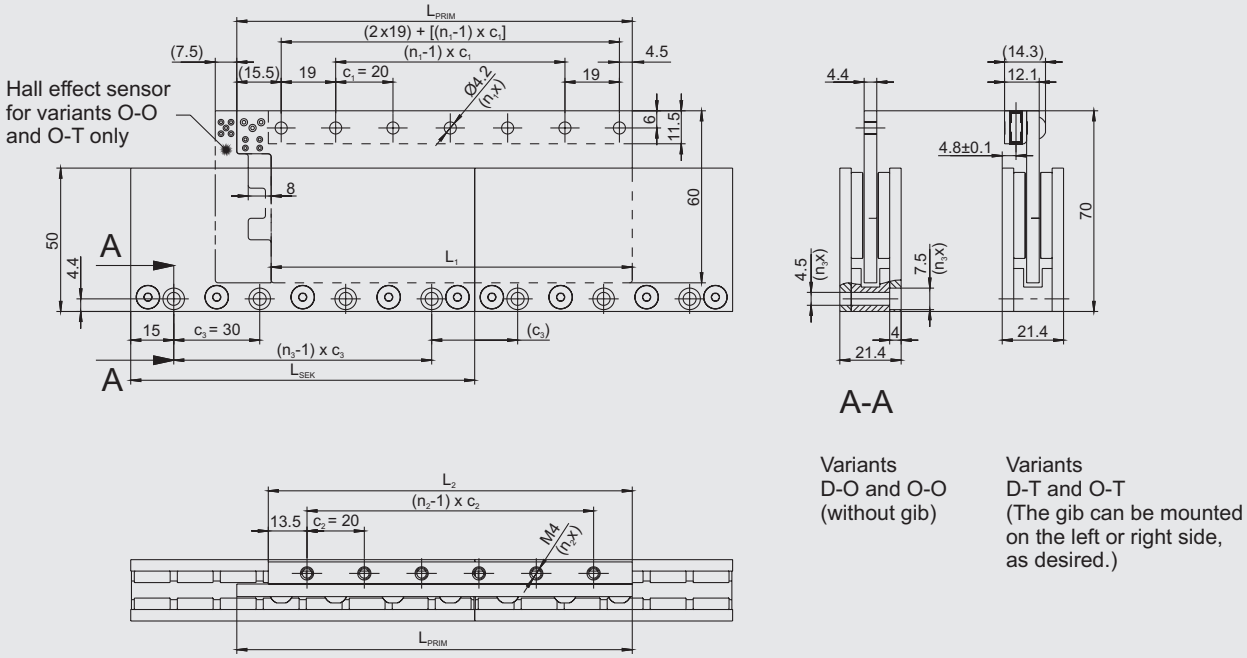
UPL2
Technical data II

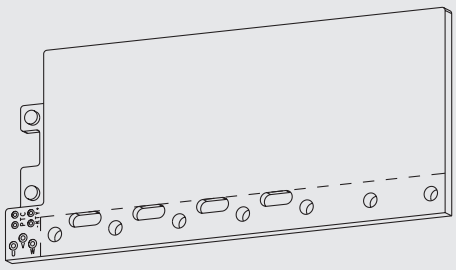
Performance data	Symbol	Unit	UPL2-34	UPL2-67	UPL2-100
Max. impulse force (1 s) at I_{mp}	F_{mp}	N	17.2	35.0	51.0
Peak force (3 s) at I_p	F_p	N	13.8	27.5	41.5
Continuous force not cooled at I_c	F_c	N	4.7	8.0	12.4
Power loss at F_p (25 °C)	P_{lp}	W	52	104	156
Power loss at F_c (25 °C)	P_{lc}	W	5.96	8.64	14.10
Motor constant (25 °C)	k_m	N/√W	1.9	2.7	3.3
Electric time constant	τ_{el}	ms	0.05	0.05	0.05
Attraction force between PRIM and SEK	F_a	N	0	0	0
Ripple force (cogging)	F_r	N	0	0	0
Temperature sensors			none	none	none
Pole pair width	$2\tau_p$	mm	16.5	16.5	16.5
Winding data	**Symbol**	**Unit**	**UPL2-34**	**UPL2-67**	**UPL2-100**
Force constant	k_f	N/A_{rms}	9.9	9.9	9.9
Back EMF constant, phase-to-phase	k_u	V/(m/s)	8.1	8.1	8.1
Linear limit speed at F_p and U_{DCL}	v_{lim}	m/s	3.9	3.9	3.9
Electric resistance, ph-to-ph (25 °C)	R_{25}	Ω	18	9	6
Inductance, phase-to-phase	L	mH	0.90	0.45	0.30
Max. impulse current (1 s)	I_{mp}	A_{rms}	1.73	3.50	5.20
Peak current (3 s)	I_p	A_{rms}	1.39	2.80	4.17
Continuous current not cooled	I_c	A_{rms}	0.47	0.80	1.25
Permissible winding temperature	ϑ	°C	140	140	140
Thermal time constant	τ_{th}	min	7.1	8.0	8.5
DC link voltage (maximum)	U_{DCL}	V	120	120	120

Tolerance range of values: ±10% • Subject to changes without advance notification, according to technical progress.

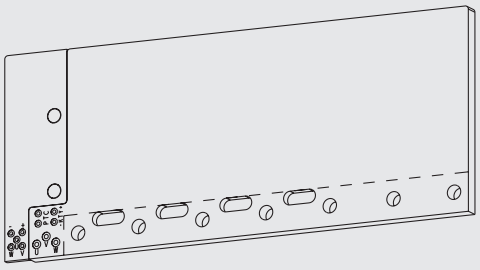
UPL3

Technical data I

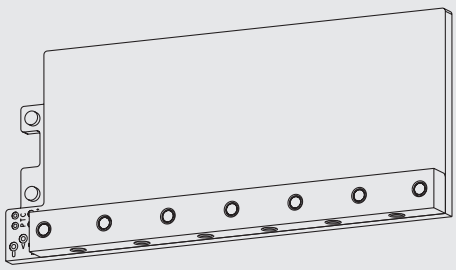




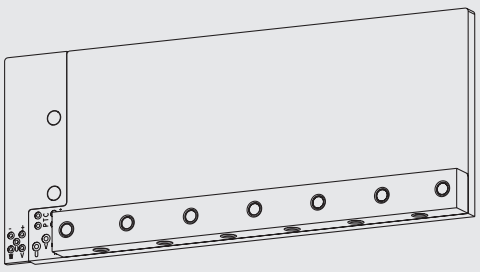
Variant D-O (without sensors, with through-hole)



Variant O-O (with sensors, with through-hole)



Variant D-T (without sensors, with gib)



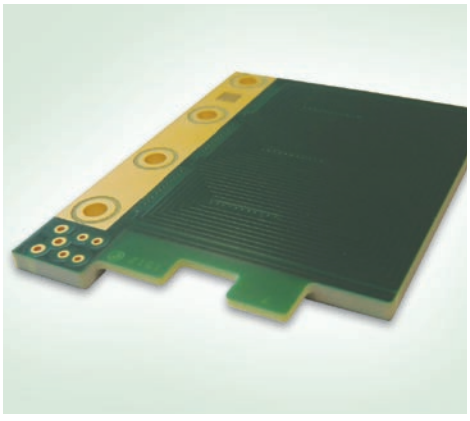
Variante O-T (with sensors, with gib)

UPL3
Technical data II

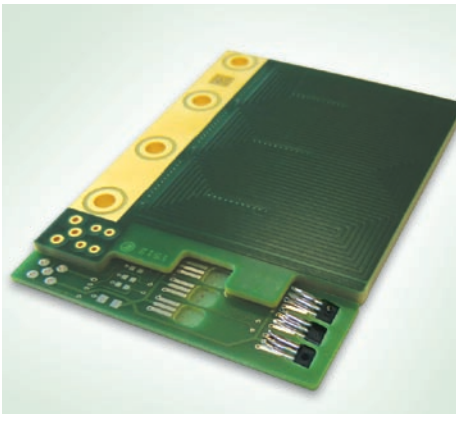
Primary part	Symbol	Unit	UPL3-78	UPL3-138	UPL3-198	UPL3-258
Block length	L_{PRIM}	mm	78	138	198	258
Variants D-O & O-O (without gib)						
Mass	m	g	60	120	180	240
Blade length – variant D-O	L_1	mm	66	126	186	246
Blade length – variant O-O	L_1	mm	85.5	145.5	205.5	265.5
Number of holes	n_1	piece	4	7	10	13
Variants D-T & O-T (with gib)						
Mass	m	g	80	160	235	315
Length of gib	L_2	mm	67	127	187	247
Number of holes	n_2	piece	3	6	9	12

Secondary part	Symbol	Unit	UPL3-90-SEK	UPL3-120-SEK	UPL3-390-SEK
Length	L_{SEK}	mm	90	120	390
Mass	m	g	450	600	1950
Number of holes	n_3	piece	3	4	13
Length grid	$2\tau_p$	mm	30	30	30

Tolerance range of values: ±10% • Subject to changes without advance notification, according to technical progress.



UPL3 primary part without sensors



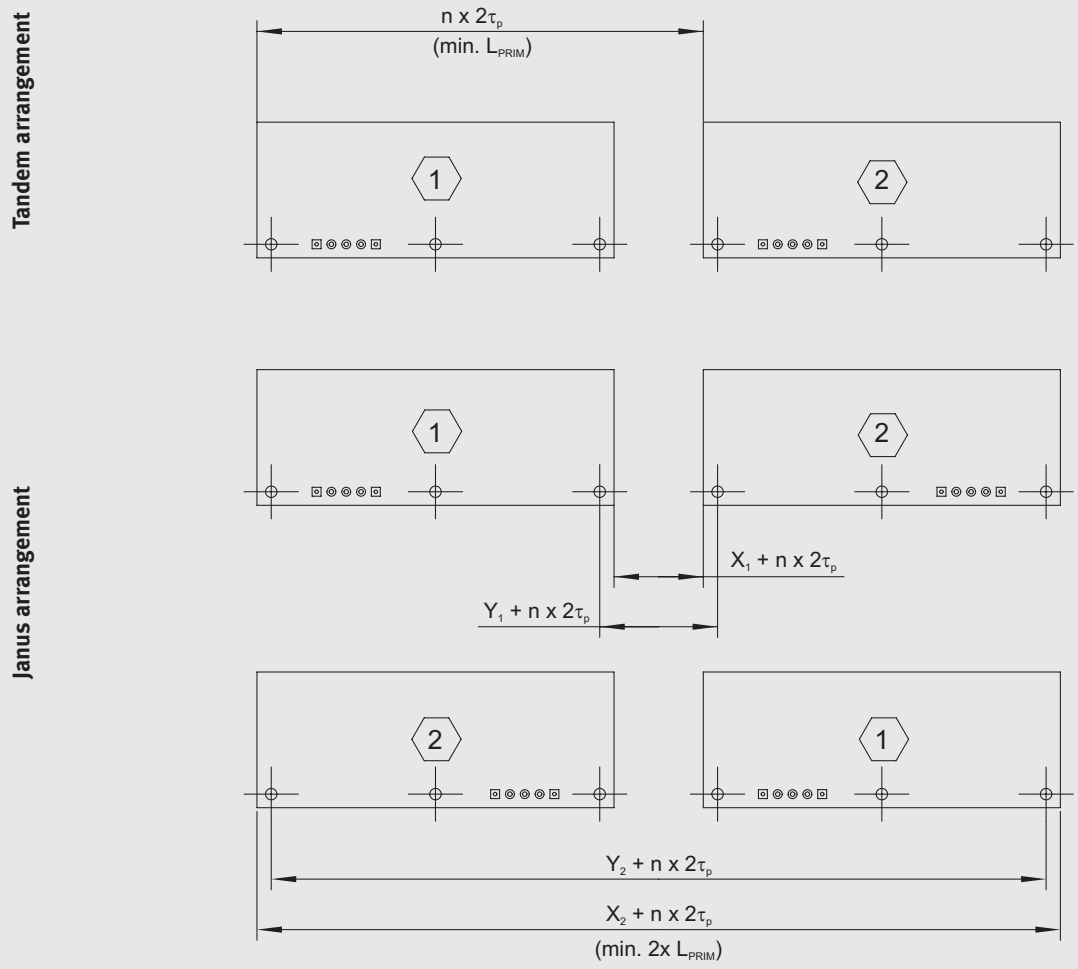
UPL3 primary part with sensors

UPL3
Technical data III

Performance data	Symbol	Unit	UPL3-78	UPL3-138	UPL3-198	UPL3-258
Max. impulse force (1 s) at I_{mp}	F_{mp}	N	60	120	180	240
Peak force (3 s) at I_p	F_p	N	50	100	150	200
Continuous force not cooled at I_c	F_c	N	15	30	45	60
Power loss at F_p (25 °C)	P_{lp}	W	244	494	739	985
Power loss at F_c (25 °C)	P_{lc}	W	22.1	44.7	66.9	89.1
Motor constant (25 °C)	k_m	N/√W	3.2	4.5	5.5	6.4
Electric time constant	τ_{el}	ms	0.125	0.125	0.125	0.125
Attraction force between PRIM and SEK	F_a	N	0	0	0	0
Ripple force (cogging)	F_r	N	0	0	0	0
Temperature sensors:						
For variants D-T and D-O			none	none	none	none
For variants O-O and O-T			1x KTY, 1x PTC	1x KTY, 3x PTC	1x KTY, 3x PTC	1x KTY, 3x PTC
Pole pair width	$2\tau_p$	mm	30	30	30	30
Winding data	**Symbol**	**Unit**	**UPL3-78**	**UPL3-138**	**UPL3-198**	**UPL3-258**
Force constant	k_f	N/A_{rms}	13.5	13.5	13.5	13.5
Back EMF constant, phase-to-phase	k_u	V/(m/s)	11	11	11	11
Linear limit speed at F_p and U_{DCL}	v_{lim}	m/s	6.4	6.4	6.4	6.4
Electric resistance, ph-to-ph (25 °C)	R_{25}	Ω	12	6	4	3
Inductance, phase-to-phase	L	mH	1.50	0.75	0.50	0.38
Max. impulse current (1 s)	I_{mp}	A_{rms}	4.5	8.9	13.4	17.8
Peak current (3 s)	I_p	A_{rms}	3.7	7.4	11.1	14.8
Continuous current not cooled	I_c	A_{rms}	1.1	2.2	3.3	4.4
Permissible winding temperature	ϑ	°C	140	140	140	140
Thermal time constant	τ_{th}	min	14.8	14.5	14.3	14.2
DC link voltage (maximum)	U_{DCL}	V	120	120	120	120

Tolerance range of values: ±10% • Subject to changes without advance notification, according to technical progress.

Planning Note for Operating UPL Motors in Parallel



Only motors of the same type can be interconnected.

Type	Distances [mm]					Pin assignment	
	$2\tau_p$	X_1	Y_1	X_2	Y_2	Tandem	Janus
UPL1-50 UPL1-100	25	12.5	20.5	12.5	4.5	$U_1 - U_2$	$U_1 - W_2$
UPL2-34	16.5	7.25	13.25	9.25	3.25		
UPL2-67			15.25		1.25	$V_1 - V_2$	$V_1 - V_2$
UPL2-100			15.25		1.25		
UPL3-78 UPL3-138 UPL3-198 UPL3-258	30	9	18	21	12	$W_1 - W_2$	$W_1 - U_2$

Check List for Your Enquiry

Send by fax to: +49 3681 7574-30

Company	Contact person	Industry / project name
Telephone	**Fax**	**E-mail**

Brief description

Motor ☐ **System** ☐ **Axis within a multi-axis system** ☐

Spatial position of drive axis

Type of weight compensation: _____

Installation conditions for drive

(sketch or drawing, if appropriate)

Max. installation dimensions [mm]: _____

(length/width/height)

Mechanical interface: _____

Required cable length from motor [m]: _____

Ambient conditions

Temperature [K]: _____

Contamination: _____

Protection class (IP): _____

Motion variables

Stroke s [mm]: _____

Payload [kg]: _____

External forces [N]: _____

Maximum speed [m/s]: _____

Constant velocity fluctuations [%] at: _____

Shortest acceleration

and/or deceleration time [ms]: _____

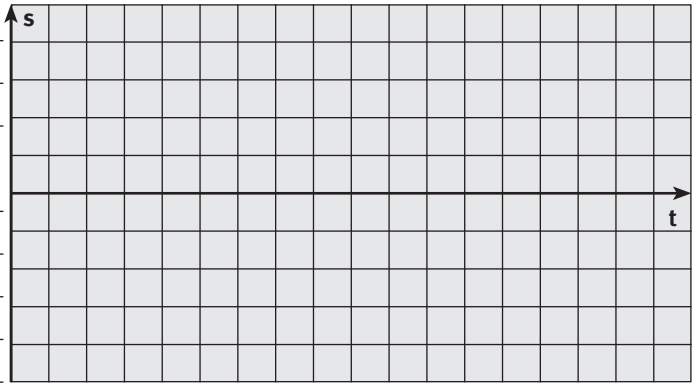
Overshoot in position [µm]: _____

Settling time [ms]: _____

Typical cycle per time (diagram): _____

Service life/operating hours [h]: _____

sketch



Required accuracies

(sketch or drawing, if appropriate)

Positioning accuracy [µm]: _____

Repeatability [µm]: _____

Cooling

Cooling permissible?

Yes ☐ No ☐

Oil ☐ Water ☐ Air ☐

Maximum permissible temperature of

primary part [K]: _____

secondary part [K]: _____

Controller

Present? yes ☐ no ☐

DC link voltage [V_{DC}]: _____

Controller type:

Components: Servo controller only ☐

Complete controller ☐

Positioning: Point-to-point control ☐

Continuous path control ☐

Total cable length from motor to controller [m]: _____

sketch

Interfaces: _____

Options: _____

General information

Accessories: _____

Single unit ☐ Series ☐ Prototype for series ☐

Expected annual need: _____

Planned series-production start: _____

Price suggestion or costs of

previous solution: _____

Desired date of quotation: _____

Technical documentation

Medium: Paper ☐ CD ☐

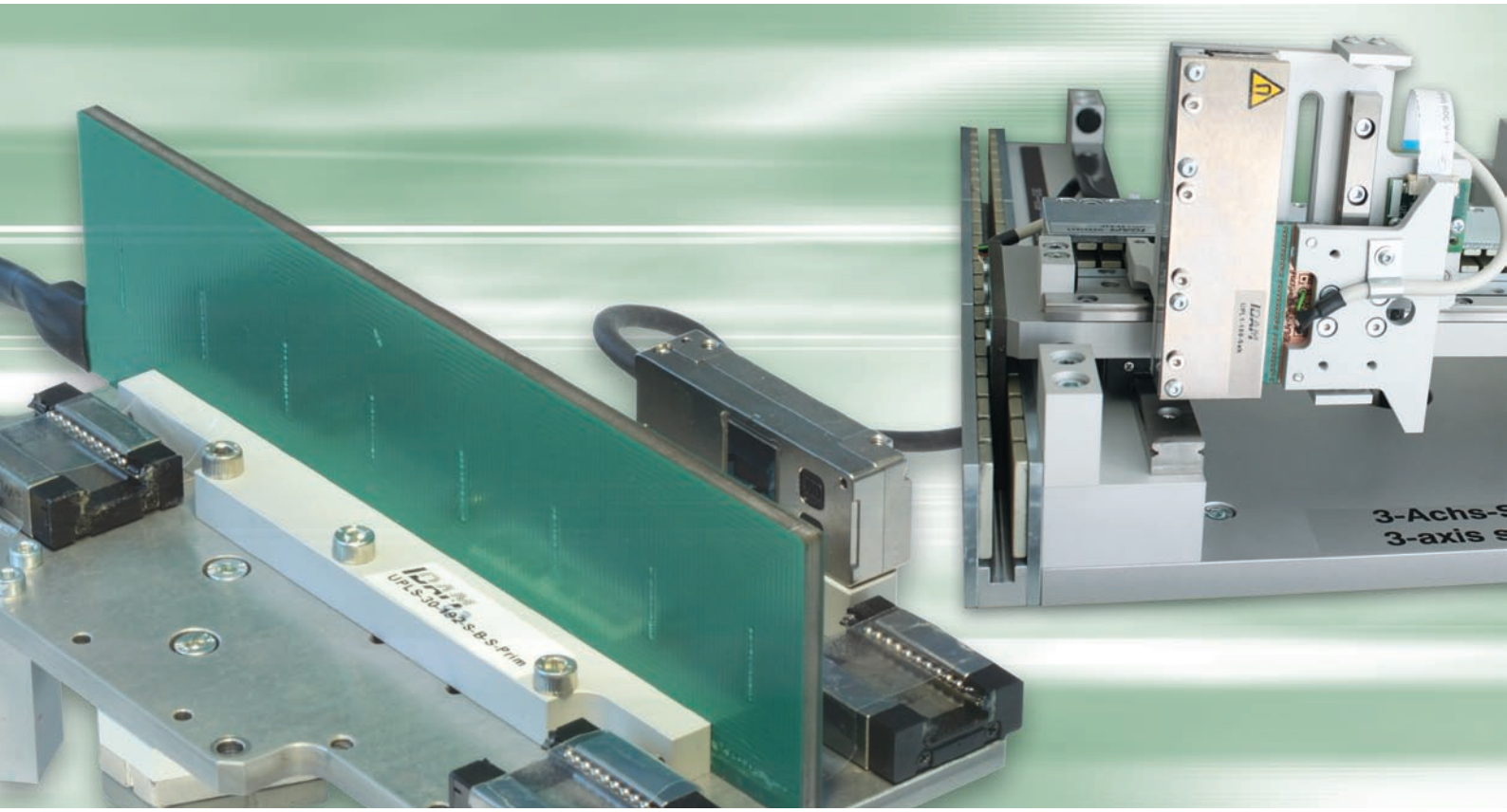
Language: _____

Further processing by: _____ Date: _____

Created by: _____ Date: _____

Feasibility checked by: _____ Date: _____

Technical Information and Consulting Services



IDAM offers you cutting-edge technology and expert advice.
The IDAM application technicians will be happy to help you select the perfect drive for your application.

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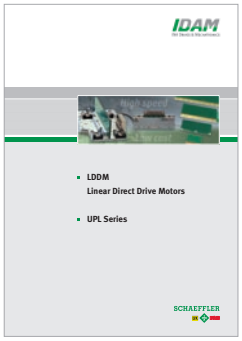
Notes

Overview of Publications

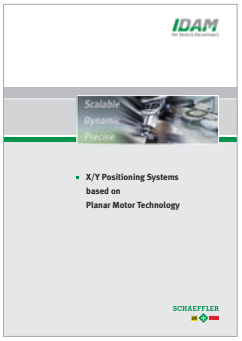
Are you interested in detailed technical information?
We would be happy to send you our product brochures. Contact us: idam@schaeffler.com

LDDM – Linear Direct Drive Motors: L1 Series

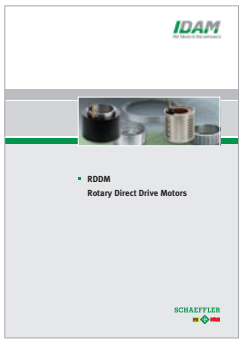
LDDM – Linear Direct Drive Motors: L2U Series



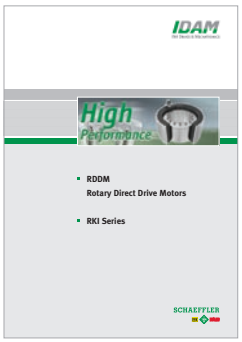
LDDM – Linear Direct Drive Motors: UPL Series



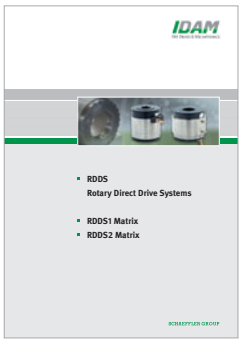
X/Y Positioning Systems based on Planar Motor Technology



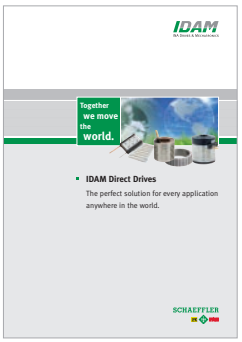
RDDM – Rotary Direct Drive Motors



RDDM – Rotary Direct Drive Motors: RKI Series



RDDS – Rotary Direct Drive Systems: RDDS1, RDDS2 Matrix



Product Overview: IDAM Direct Drives

We would be happy to provide you with product brochures for our electronic assemblies and system solutions.

All information about our motors and systems can also be found on our website at www.idam.de.

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