Controlling motors the easy way

dryve...

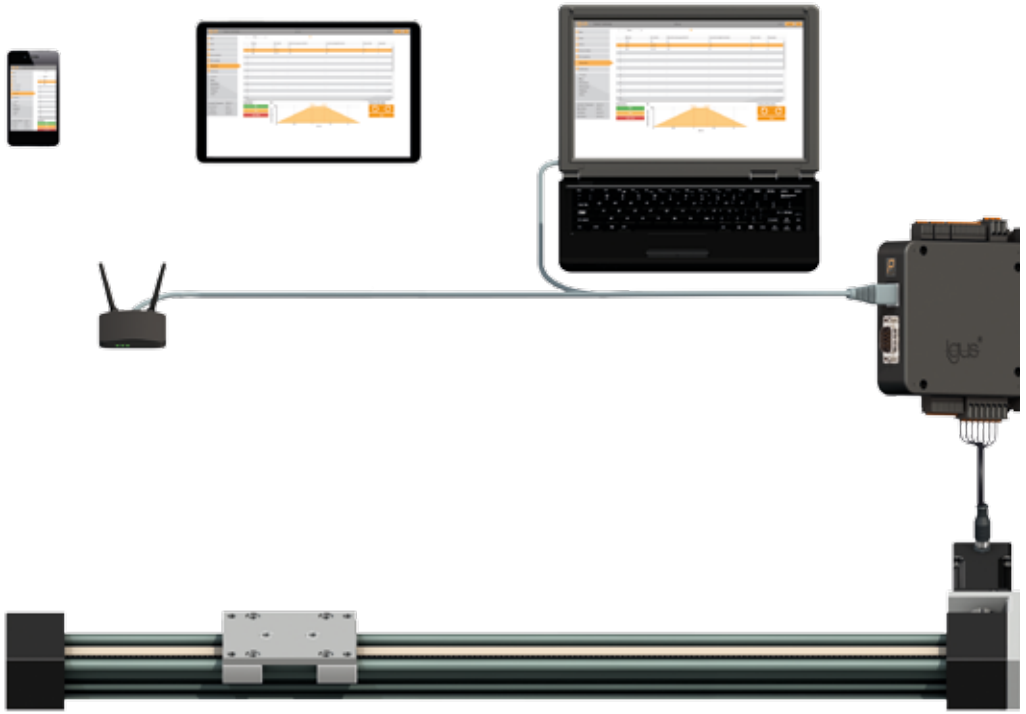
Motor control system for the drylin® E drive technology

plastics for longer life®... igus

control

www.igus.eu/dryve

"dryve" control unit ...



drylin® linear system supplemented with the addition of the motor control. Easy to operate via web-based user interface, without installation of any software or app.

Travel distances, positions, speeds, operating times – easily defined in the new web-based control system from igus®. A simple and intuitive browser-based user interface, extensive functionality with the option of "remote control" via Ethernet (Intranet) or bus system - "dryve" is the simple motor control method from igus® for your linear guide system.

- Control via laptop, tablet or smartphone
- Suitable for all drylin® E axes
- For DC, EC and stepper motors
- Communication by means of CANopen, Ethernet and digital inputs and outputs
- Compatible with many industrial control systems
- Cost-effective

... detailed

Ready to use immediately

The dryve motor control system can either be connected to your network or you can connect it directly to the control unit (PC or PLC) by means of a network cable. You can then start the control system directly in the browser without software installation. Settings can be changed quickly.

Easy control

You can use the simple intuitive user interface to parameterise travel distances, position, feed and operating time of your linear axis even as an amateur.

Movements that are continuously repeated are known as looping can be set in just a few seconds. A teach function enables position settings to be made with just one mouse click.

Industry standards

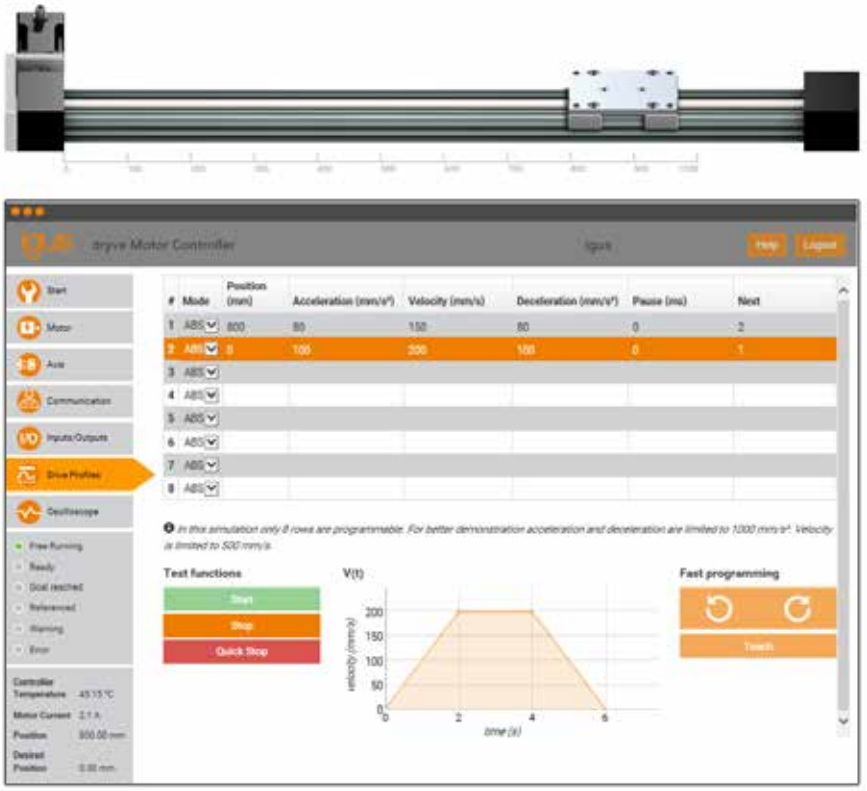
Due to standardised communication protocols such as CANopen or Modbus TCP, it is very easy to connect the system to industrial controllers such as the Siemens S7 or Beckhoff.
The ten digital inputs and outputs enable extremely easy communication with industrial controllers but also with low-price open-source modules such as Arduino or Raspberry Pi.

Powerful technology

dryve supports DC, EC and stepper motors in open loop and closed loop technology.

The supply voltage of up to 48 V ensures high motor speeds. The nominal current of 7 A and the peak current of 20 A results in powerful and dynamic movements.

Test online ...

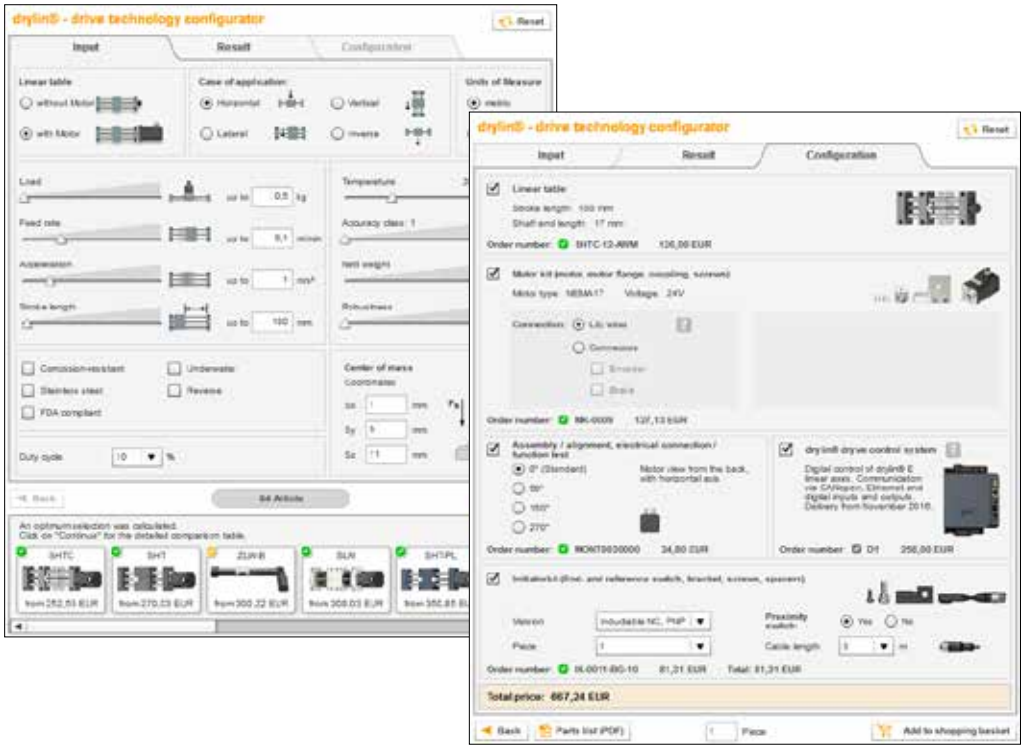


Try out the user interface

By using the simple browser-based user interface, you can set the travel mode, positions, rates of acceleration, speed and pause times of your linear axis without having to have any previous knowledge.
Test the user interface here, using a simulated linear axis. In exactly the same way as in this simulator, your input is transmitted directly when you use the real control system. There is no separate upload.

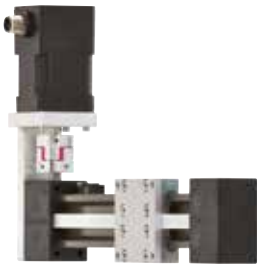
www.igus.eu/dryve

... configure online



Product finder and service life calculation

drylin® E linear axis – with lead screw or toothed belt drive, including motor, connecting cables and built-on parts – can be configured online and delivered ready to install. You can also order the dryve control system at the same time with just one click.



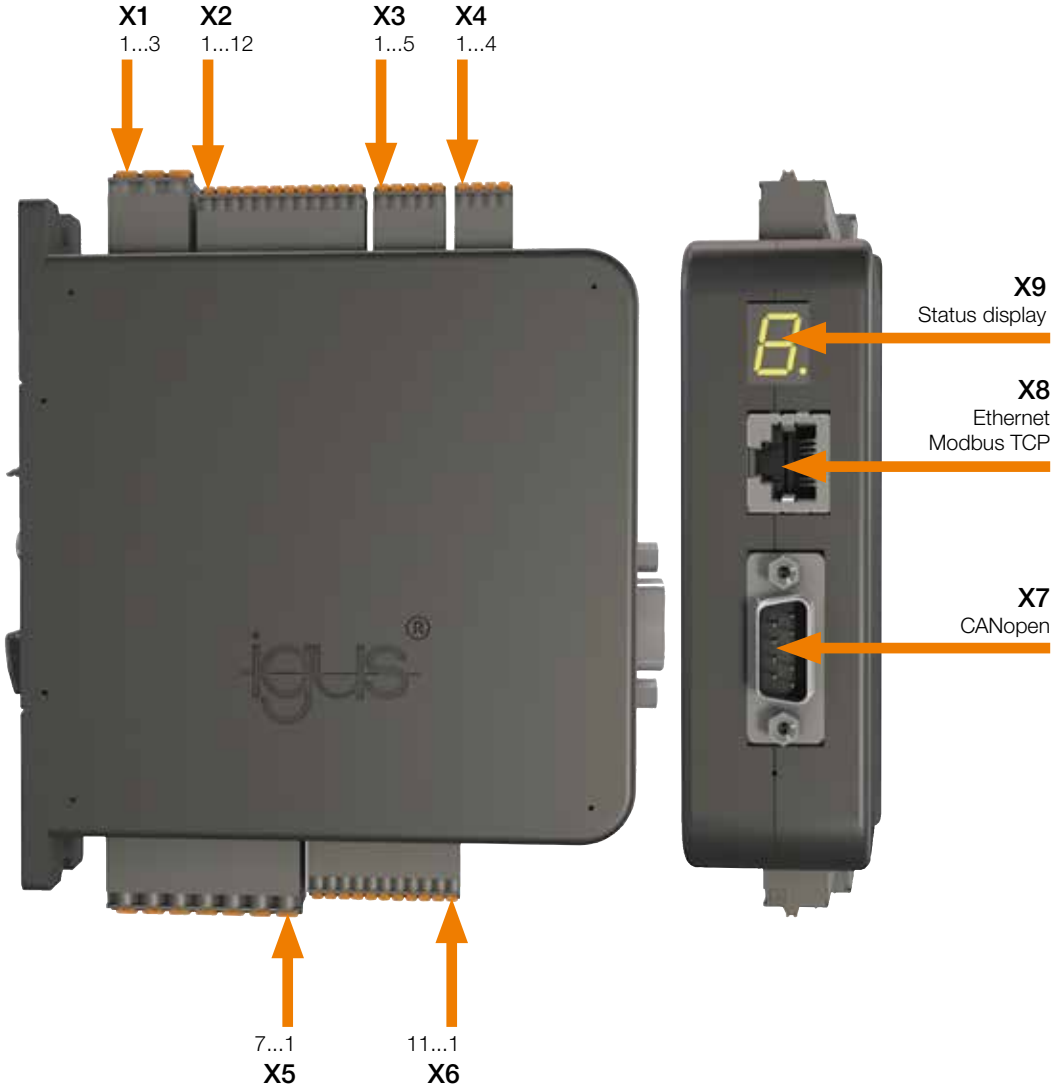
www.igus.eu/drylinE-finder

Technical data ...

1. Voltage supply
2. Digital inputs
3. Digital outputs
4. Analogue inputs
5. Motor & brake connection
6. Encoder
7. CANopen
8. Ethernet
9. Status display

Nominal voltage of logic supply	12 – 24 VDC
Nominal voltage of load supply	12 – 48 VDC
Motor types	2 -phase stepper motor, bipolar (ST), direct current motor (DC), electrically commutated motor (EC)
Continuous motor current	7A
Peak motor current	ST: 10A, DC: 14A, EC: 21A max. 2 sec depending on frequency of movement
Load power output	max. 340 W continuous
Output current of digital outputs	max. 200 mA per output
Holding brake	24VDC / 1A
Encoder	Hall sensor (2 or 3 pole), encoder (line driver-RS422 or single ended) analogue feedback via analogue inputs
Digital inputs	10 digital inputs, pre-assigned function, choice of NPN or PNP, short-circuit-proof, electrically separated, 5 – 24 V DC (external)
Digital outputs	5 digital outputs, pre-assigned function, choice of NPN or PNP, short-circuit-proof, electrically separated, 5 – 24 V DC (external)
Analogue inputs	2 analogue inputs, ±10 V DC signal (12 bit), 0-10 V DC signal (11 bit), 10 V DC voltage supply
Interfaces	CANopen (DS402), Modbus TCP, Ethernet, bit coding, step/direction
Operating modes (motor)	Open-loop with/without position monitoring, closed-loop
Travelling modes	Binary: 32 travelling movements Jog/teach: 8 travelling movements with external teaching mode step/direction
CE symbol	Acc. to EMC guideline
Ambient temperature	-20 °C to +45 °C
Relative humidity	≤ 90 %, non-condensating
Maximum temperature of the power unit	90 °C
Bearing temperature	-40 °C to +60 °C
Protection class	IP 30
Protective functions	I^2t monitoring, power-unit temperature monitoring, current monitoring, undervoltage and overvoltage protection, contouring error detection, encoder control
Mounting	Screwed on, DIN rail mounting
D x W x H in mm (incl. connectors and mounting elements)	123.5 x 31.2 x 139

Technical data ...

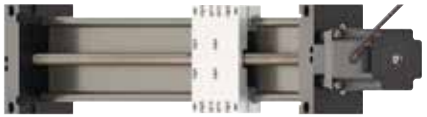


The arrows indicate Pin 1 of the respective connector.

Socket		PIN	Layout	Bezeichnung		
X1	Logic/load voltage	1	12-48 VDC load	Power supply motors (neccessary for operation)		
		2	0 VDC load/logic	Common mass (neccessary for operation)		
		3	12-24 VDC logic	Power supply control unit (neccessary for operation)		
				Binary	**Tipp/Teach**	**Step/direction**
X2	Digital inputs	1	Digital input 1	Bit 0	Bit 0	Step
		2	Digital input 2	Bit 1	Bit 1	Direction
		3	Digital input 3	Bit 2	Bit 2	-
		4	Digital input 4	Bit 3	Tipp left	-
		5	Digital input 5	Bit 4	Tipp right	-
		6	Digital input 6	Start	Start/teach	-
		7	Digital input 7	Enable	Enable	Enable
		8	Digital input 8	Ref/LS positive	Ref/LS positive	Ref/LS positive
		9	Digital input 9	Ref/LS negative	Ref/LS negative	Ref/LS negative
		10	Digital input 10	Stopp/Reset	Stopp/Reset	Reset
		11	5-24 VDC	Power supply external (neccessary for operation)		
		12	0 VDC	Power supply external (neccessary for operation)		
X3	Digital outputs	1	Digital output 1	Ready		
		2	Digital output 2	Active		
		3	Digital output 3	Referenced		
		4	Digital output 4	Alert		
		5	Digital output 5	Error		
X4	Analogue inputs	1	10 VDC	Provided by control unit		
		2	Signal 1	Speed and position		
		3	Signal 2	Position feedback, mechanics		
		4	0 VDC	Provided by control unit		
X5	Motor/brake	1	A (ST), U (EC), +(DC)	Connection motor		
		2	A/(ST), V (EC), -(DC)	Connection motor		
		3	B (ST), W (EC)	Connection motor		
		4	B/(ST)	Connection motor		
		5	Mass	Mass		
		6	24 VDC motor stop brake	Connection motor stop brake		
		7	0 VDC motor stop brake	Connection motor stop brake		
X6	Encoder	1	5 VDC	Power supply rotary encoder		
		2	0 VDC	Power supply rotary encoder		
		3	A	Rotary encoder		
		4	A/	Rotary encoder		
		5	B	Rotary encoder		
		6	B/	Rotary encoder		
		7	N	Rotary encoder		
		8	N/	Rotary encoder		
		9	H1 EC, +DC	Hall sensor		
		10	H2 EC, - DC	Hall sensor		
		11	H3 EC	Hall sensor		
X7	CANopen	1	-	Not use		
		2	CAN_L	CAN Signal Low		
		3	CAN_GND	CAN Mass		
		4	-	Not use		
		5	-	Not use		
		6	-	Not use		
		7	CAN_H	CAN Signal High		
		8	-	Not use		
		9	-	Not use		
X8	Ethernet Modbus TCP		Standard assignment in acc. with TIA-568A and TIA-568B			
X9	Status display					

drylin® E drive technology ...

drylin® E drive technology includes completely lubrication-free linear modules, ready to install as single-axis or multi-axis systems. A self-locking trapezoidal thread, a fast high helix thread or toothed belts and dynamic racks serve as the drive. The stroke length can be freely selected and each system can be delivered ready for connection, together with the appropriate motor.



Linear axes with motor from 24h

- Pre-configured linear axes available from stock
- Drive: lead screw or toothed belt
- NEMA stepper motor included

Individual linear axes with motor

- Online configurable linear axes
- Drive: lead screw, toothed belt or rack
- With stepper and DC motors

GRW cantilever axis

- Direct drive via rack
- Stroke lengths up to 300 mm
- Ideal as z axis in multi-axis gantries

GRQ in lift/swivel unit

- GRQ in lift/swivel unit HSQ
- Compact unit for lifting and swivelling tasks
- Ready to install with NEMA stepper motors

Cartesian robots

- Pre-configured assembly kits available from stock
- 3 different types: linear / flat / room
- Workspaces up to 500 x 500 x 100 mm

Lead screw motors

- Precise and efficient
- Compact structure, variable lead screw pitches
- Stepper motors with/without encoder

... intelligent linear guide

Intelligent drylin® predicts the date when in needs to be replaced while it runs

Predictive manintenance becomes reality with smart drylin®. The intelligent linear slide monitors its life autonomously. If isense DL.W (intelligent sensor module) recognises that a failure due to wear is likely, the user is automatically informed. Machine availability rises while maintenance costs decrease.

For the world's largest system for linear guides with sliding plastic components, there are already numerous configurators for calculating service life. The data for the calculation come from the igus® test laboratory. In an area of more than 2,700 m², approx. 15,000 tests with bearings are performed every year. The results are incorporated into the igus® database, thus forming the basis for service life calculation and continuous improvement of the products. With its new smart plastics, igus® is now taking the next steps for even more protection against sudden, unexpected failures.

Reduce costs:

- Predictable maintenance
- Prevention of unplanned down-times
- Optimal machine availability

/9001:2008
/16949:2009

igus® is certified in accordance with ISO 9001:2008 and ISO/TS 16949:2009 in the field of energy supply systems, cables and harnessing, as well as plastic bearings.

/contact

René Erdmann
Head of Business Unit
drylin® E Drive Technology
Phone: +49-2203 9649-7206
e-mail: rerdmann@igus.de

/dryve support

For your technical questions please contact our dryve support team.
Phone: +49-2203 9649-845
e-mail: dryve@igus.de

igus® GmbH
Spicher Str. 1a
51147 Cologne
Phone +49-2203 9649-145
Fax +49-2203 9649-334
info@igus.de www.igus.eu

MAT0073800.20 Issue 11/2016
Subject to technical alterations.

Drive technology