Evo-10

Smart and scalable product range for all your single-axis needs.

Motion simulators are a strategic element in the design of a successful sensor, whether to ensure that a development roadmap is going according to plan or that a fielded sensor is still up to specifications.

Today, iXblue is a recognized provider of inertial navigation systems and one can find its sensors in the deepest ocean as well as far away in space. Evo Series is the payoff of this need for practical and more than performant motion simulators leading to the design of several cutting-edge technologies and smart functionalities.

Sharing the same electro-mechanical base, Evo-10s are co-designed by iXblue's team and the final user to ensure that his needs are met in the most effective fashion.

Every EVO-10 includes the patented iXblue's Ngine controller and iXblue's ProAxe graphical user interface (GUI). These smart innovations help reducing integration time and non-recurring costs.

FEATURES

- Direct drive brushless electric motors
- High accuracy optical encoders
- iXblue Ngine controller including:
  - Patented auto-tuning
  - Patented adaptive sine
  - Advanced anti-cogging techniques
  - Auto-tuned look-up-table-based anti-cogging
  - Real-time built-in-test
  - Advanced unbalance and fault detection
- iXblue ProAxe graphical user interface
- Climatic chamber on demand
- Modular design with vertical and/or horizontal operation
- Wide variety of quality slip rings and rotary joints

BENEFITS

- Adaptive features and performances for different payloads
- Highest accuracy
- Highest compacity
- Unrivalled dynamic performances
- Lowest cost of ownership

APPLICATIONS

Evo-10s are motion simulators designed to rate and position less complex devices like MEMS or components of an inertial system:

- Accelerometers
- Gyroscopes
- AHRS/Gyrocompass
- IMU/INS
- Optical seekers and sensors
- Radar systems

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MAIN SPECIFICATIONS

Nominal Payload

Maximal weight (kg)	From <1 to 100 kg
Inertia Range	Not limited thanks to Auto-tuning feature

Dynamics performances[1]

Maximum Rate	± 3,000 deg/s
Rate accuracy over 360 deg	< 1 ppm < 0,0001%
Rate stability over 360˚	< 1 ppm < 0.0001%
Rate command resolution	Up to 0.00001 deg/s
Maximum acceleration	From ± 1,000 deg/s^2 to ± 40,000 deg/s^2
Bandwidth at ±1dB and ±5 deg-phase	100 Hz

Geometrics

Angular Freedom	Unlimited
Position Accuracy	< ± 2 arc sec (better than 0.7 arc sec RSS)
Positioning repeatability, bidirectional	< ± 1 arc sec or custom
Mechanical Wobble	< 1 arc sec or custom

Interface

Table-top	Standard diameter Custom diameter Table-top flatness	from 250mm to 700 mm on request 50 µm
Remote communication interfaces	RS-232 or RS-422, Ethernet IEEE-488 (GPIB) on demand	
Inputs	1 input per axis, BNC receptacle on front panel ±10 V with configurable sensitivity	
Outputs	2 outputs per axis, BNC receptacle on front panel ± 10 V with configurable sensitivity	
Slip-rings	Depends on customer requirements: No slip-rings SR30 (30 ways 2 A / 210 V) SR50 (50 ways 2 A / 210 V) SR80 (80 ways 2 A / 210V) SRSPE (Custom slip-rings based on customer requirements)[2]	
Power supply	Single-phase and/or three-phase suited with local requirements	

[1] These performances are measured with no payload and may not be compatible with some of the other configurations. Higher values are also possible on custom design. Please contact iXblue for more details.
[2] Please contact iXblue for more details.

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