



# Motion Control

ACCURET Modular

**ETEL**

## ACCURET POSITION CONTROLLERS

ETEL's position controllers range is widely used in leading edge machines of various high-tech industries. A broad power range is available to allow machine builders to drive any kind of motors with the best performance in a minimal footprint.

ACCURET position controllers are based on a decentralized architecture. This allows an important part of the machine control software to be located at axis level. In addition, the decentralized architecture ensures the same level of performance and real-time

communication speed regardless of the number of axes controlled in the machine. With high computation power, fast real-time communication bus and state of the art control algorithms, ETEL's controllers are successfully used in areas such as:

- Wafer process control
- Lithography
- Wafer and die level packaging
- Photovoltaic
- Test and control equipment
- Printing / scanning
- Placement machines
- Flat panel display (FPD)

## ADVANCED FEATURES

ETEL has always focused on developing advanced control features to make its position controllers unique in the market. From the first prototype commissioning to the serial production of machines, ETEL advanced features provide a simple access to major time savings, throughput enhancement and increased precision.

ETEL advanced features start to bring advantages at a very early stage of a machine design. For instance, **Identification Tools**, are available to allow a one-click evaluation of machine mechanical design, identify resonances and adapt controller settings. While commissioning the machine, other tools like **Friction Compensation** and **Stage Protection** can be used to cancel out repeatable errors and to secure system behavior in case of unexpected events.

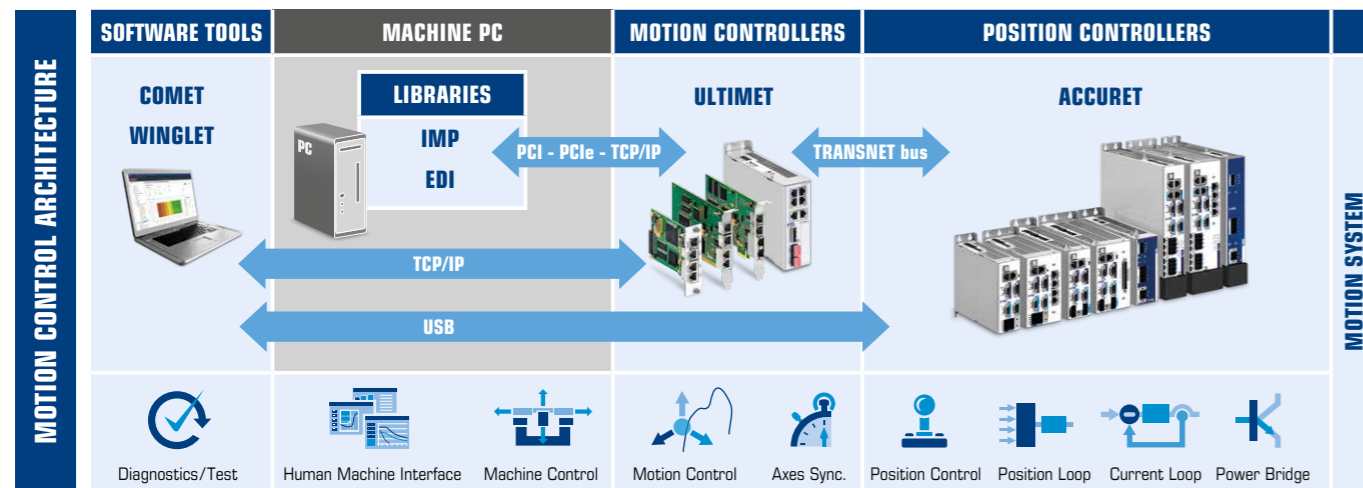
In addition, the core of ETEL unique features is designed to bring higher throughput together with the most stringent position

accuracy levels. **Trajectory Filters** have the ability to adapt trajectory shapes to minimize settling times. In combination with **Dual Encoder Feedback** capabilities and/or **Gantry Control** functions, outstanding performance can be reached with minimal tuning effort.

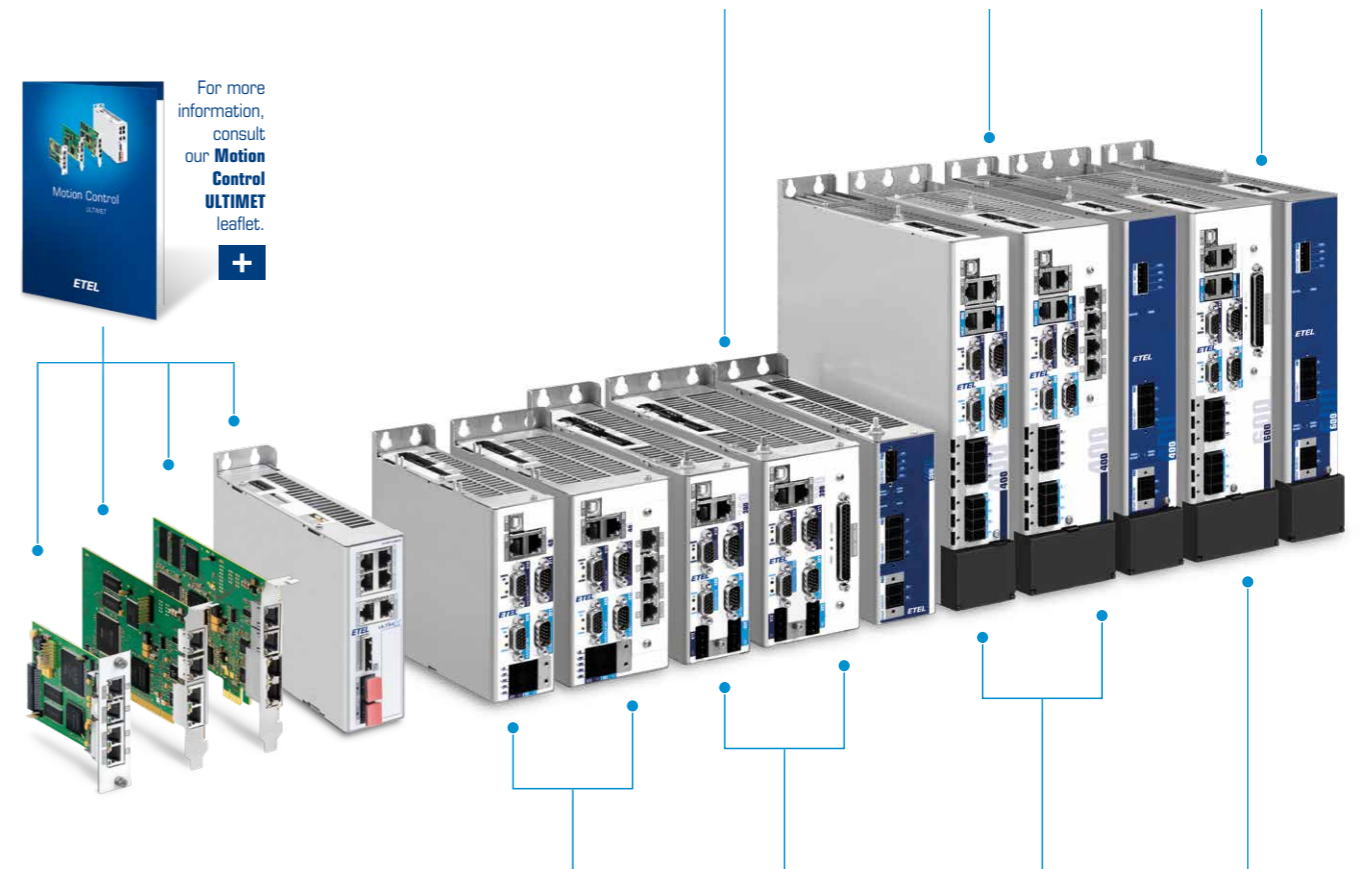
ETEL develops functions that are continuously setting the next milestones in motion control. In fact, with the **Fast Trigger** feature, ACCURET controllers can react to a real position crossing event in 1D or 2D within a few nanoseconds. This opens new possibilities at the machine control level.

Last but not least, ETEL **Force Control** algorithm is the flagship of advanced software features. With zero stop time and millinewton accuracy levels, accurate placement with force control can be performed at the highest ever throughput and with a precision never achieved till now.

## MOTION CONTROL ARCHITECTURE



POWER SUPPLY	SPECIFICATIONS	ACCURET 300	ACCURET 400	ACCURET 600
	Number of phases supported	1	1 or 3	3
	Input voltage range (VAC)	71-240	71-280	142-420
	Max. input current (A rms)	10	10	10
	Max. output voltage (VDC)	340	400	600
Output voltage via connectors / busbar	Connectors	Busbar	Busbar	



POSITION CONTROLLERS	SPECIFICATIONS	ACCURET 48	ACCURET 300	ACCURET 400	ACCURET 600
	Number of axes	2	2	2	2
	Bus voltage (VDC)	48	340	400	600
	Current continuous / peak (A rms)	2.5 / 5 5 / 10	4 / 7.5 7 / 15	5 / 10 10 / 20 15 / 40	15 / 40
	Size H x D x W (mm) without optional board	130 x 180 x 50	130 x 217 x 50	5 / 10 Arms: 260 x 240 x 50 10 / 20 Arms: 260 x 240 x 75 15 / 40 Arms: 260 x 240 x 75	260 x 240 x 75
	Size H x D x W (mm) with optional board	130 x 180 x 75	130 x 217 x 75	260 x 240 x 75	260 x 240 x 75
	Encoder	Incremental analog (1 Vpp), Absolute EnDat 2.1 and 2.2, TTL			
	Structured programming language sequences	2 threads of structured programming language sequences			
	Regulator type	Position state regulator with feedforward and advanced second order filters			
	Advanced control features	<ul style="list-style-type: none"> <li>• Fast triggers (1D and 2D)</li> <li>• Force control</li> <li>• Identification tools</li> <li>• Gantry control</li> <li>• Stage protection</li> <li>• Cogging and friction compensation</li> <li>• Dual encoder feedback</li> <li>• RTV (Real Time Values)</li> <li>• Trajectory filters</li> </ul>			



## HEADQUARTERS

### ETEL S.A.

Zone Industrielle  
CH - 2112 Môtiers  
Switzerland

T +41 (0)32 862 01 00  
F +41 (0)32 862 01 01  
etel@etel.ch · www.etel.ch

## GROUP SUBSIDIARIES AND SALES OFFICES

AMERICAS • info@heidenhain.com  
BELGIUM • sales@heidenhain.be  
CHINA • sales@heidenhain.com.cn  
CZECH REPUBLIC • heidenhain@heidenhain.cz  
FRANCE • sales@heidenhain.fr  
GERMANY • tbsw.etel@heidenhain.de  
GREAT BRITAIN • sales@heidenhain.co.uk  
ITALY • info@heidenhain.it  
JAPAN • sales@heidenhain.co.jp  
KOREA • etelsales@heidenhain.co.kr  
SCANDINAVIA • sales@heidenhain.se  
SINGAPORE • info@heidenhain.com.sg  
SWITZERLAND • verkauf@heidenhain.ch  
TAIWAN • info@heidenhain.tw  
THE NETHERLANDS • verkoop@heidenhain.nl

OTHER COUNTRIES • internationalsales@etel.ch

## REPRESENTATIVES

ISRAEL • comotech@medital.co.il  
SPAIN • farresa@farresa.es

# ETEL