

# New Standards in Performance & Flexibility

EtherCAT® Product Selection Guide



**AUTOMATION & CONTROL**



**PAC 100**

Programmable Automation Controller

**ETG.5003.2060**

- Modular, scalable, and configurable programmable control solution
- Supports standard IEC 61131-3 environment
- Seamless interface with HMI, supporting OPC UA



**MultiTherm™ 2000**

Modular Temperature Controller

**ETG.5003.2060**

- Easily configured for single zone or multi-zone temperature control (48+)
- Ideal for dynamic control applications requiring tight temperature stability
- Precision sensor input channels, accepting RTDs, all thermocouple types, voltage and current inputs
- PID or external Model-Based Control down to 10ms



**CM**

Communication Fieldbus Coupler Module

**ETG.5003.2060**

- Compact, customizable solution for standalone manual control, data logging, or distributed I/O, or ECAT gateway
- Scalable to any number of MKS I/O slices to create a distributed I/O support for up to hundreds of I/O channels



**Analog IO**

Analog Input/Output Module

**ETG.5003.1**

- Compact and high density solution for a variety of input and output ranges
- Each AIO module supports 8 analog inputs and 4 analog outputs
- Supporting voltage inputs and outputs are configurable: 0-5V, 0-10V, ±5V, ±10V, 0-20mA, 4-20mA (ranges)

## AUTOMATION & CONTROL



### Digital IO

Digital Input/Output Module

**ETG.5003.1**

- Integrates digital input and output channels with MKS PAC or CM modules
- Each DIO module supports 12 digital inputs and outputs



### MicroNode™ Combo

Programmable Automation Controller

**ETG.5003.1**

- Each MicroNode module supports 8 DIO
- Each module supports 16-bit, 8 analog inputs, 4 analog outputs,  $\pm 10V$



### HyperPAC

Programmable Industrial PC

**ETG.5003.1**

- Ease of fieldbus protocols integration with IIoT solution
- Compact form factor
- Robust IPC
- Flexible configuration



**FLOW/GAS DELIVERY**



**G Series**

Mass Flow Controllers and Meters

**ETG.5003.2020**

- Full Scale flow rates from 5 sccm to 300 slm
- Proven, patented thermal sensor and mechanical design
- Multi-range/multi-gas capability; 1% of set point accuracy



**G Series**

Pressure Controllers

**ETG.5003.2025**

- Pressure control for Full Scale from 500 Torr to 100 psia
- Thermally stable pressure sensor for 1% of set point accuracy
- Digital flow control algorithm for fast response to set point



**P Series**

Pressure Controllers

**ETG.5003.2025**

- Pressure control for Full Scale from 10 to 1000 Torr
- Thermally stable pressure sensor for 1% of set point accuracy
- Flow meter option for backside wafer pressure control applications



**DELTA™**

Flow Ratio Controllers

- Accurate and repeatable flow ratio control for better process optimization
- For use in cascade configurations
- Operates to temperatures up to 60°C ambient

*ETG profile: in Definition Stage*

## FLOW/GAS DELIVERY



### HA-MFV

#### High Accuracy In-Situ Mass Flow Verifier

- Flow rates up to 3000 sccm
- External volume insensitivity
- Reading measurement accuracy of 1.0% or better

ETG profile: MKS-specific

## PLASMA SOURCES



### Paragon<sup>®</sup>

#### Remote Plasma Sources

ETG.5003.201x

- For high gas dissociation rates (>98%) of  $\text{NF}_3$
- Gas flows up to 8 slm and pressures up to 10 Torr
- Compatible with  $\text{O}_2$  and  $\text{NF}_3$  mixed gases



### R\*evolution<sup>®</sup>

#### Remote Plasma Sources

ETG.5003.201x

- Integrated, self-contained unit for on-chamber installation
- Quartz plasma applicator, high density for oxygen species
- Up to 6 kW of plasma power

## PRESSURE/VACUUM MEASUREMENT



### DA02A

Baratron® Capacitance Manometer

[ETG.5003.2080](#)

- Unheated or temperature-controlled at 45°C, 80°C, 100°C
- Industry-leading accuracy and repeatability
- Inconel®-based sensor offers superior corrosion resistance to common process gases



### DA03B

Baratron® Capacitance Manometer

[ETG.5003.2080](#)

- High temperature-controlled at 150°C to 200°C
- Optional internally-mounted solid state process relays
- Compact design



### 901P

Load Lock Transducer

[ETG.5003.2080](#)

- Designed specifically for semiconductor load lock applications
- Providing medium vacuum measurement and atmospheric switching
- Fast and accurate pressure measurement for improved cycle time and particle reduction



### 902B

Vacuum Transducer

[ETG.5003.2080](#)

- 1000 Torr Full Scale range
- Piezo resistive diaphragm sensor
- Stainless steel diaphragm

## PRESSURE/VACUUM MEASUREMENT



### 925 MicroPirani™

Vacuum Transducer

[ETG.5003.2080](#)

- MEMS-based technologies, including MicroPirani™ technology
- Applicable for foreline and general vacuum measurement applications
- Fast and accurate pressure measurement



### 972B DualMag™

Cold Cathode Transducer

[ETG.5003.2080](#)

- Single transducer with wide pressure measurement range from atmosphere to ultra-high vacuum
- MEMS-based MicroPirani technology combined with cold cathode ionization technology
- Small footprint design provides a compact transducer solution, saving tool real estate

## VALVES



### T2B

Exhaust Throttle Valve

[ETG.5003.2030](#)

- Advanced model-based pressure control algorithm
- High-speed configurations available (<250 msec. open to close)
- Selectable high torque drives with soft-sealing available





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