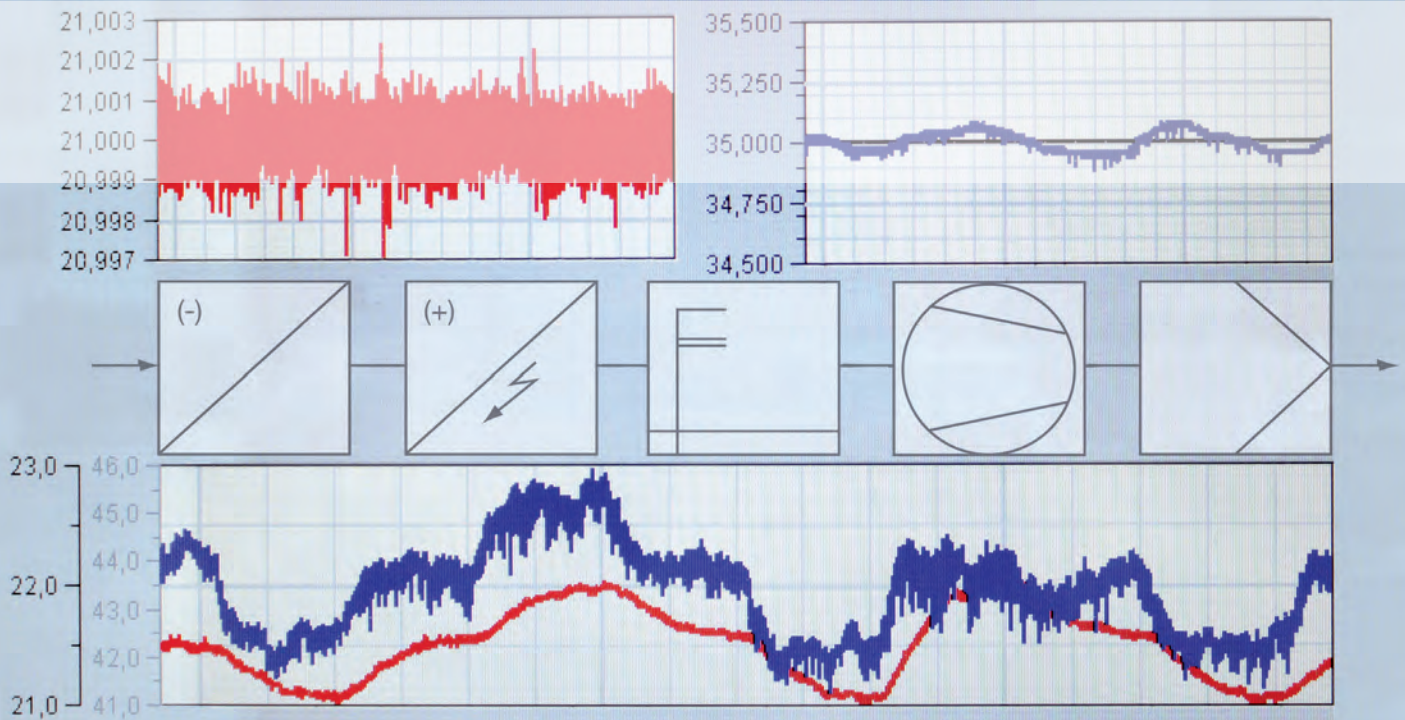




M+W GROUP



## Precision Climate-Control Systems for Controlled Process Environments

# Flexibility and Precision ...

... from a single Source

## ... through M+W Products' precise Climate-Control Systems

- Extensive standard product range
- Options to adapt existing systems to new requirements
- Solutions for all manufacturing processes with critical requirements for temperature, humidity, sound, and purity in high-end manufacturing areas

## ... and decisive Project and Process Support

- Experienced design team for solutions that meet new, demanding customer requirements
- Consulting and collaboration in all phases of the customer project
- Comprehensive project understanding through full mapping of customer requirements

## ... to meet your exact Needs

- Relevant experience in the semiconductor, flat-panel, life science, automotive, IT, and food industries
- Each process step helps our customers toward success: Consulting, engineering, manufacturing, commissioning, and customer support are our strengths



# Challenges

## Example: Precision Surface Processing



The production of very small surface structures and consistent reproducibility of process results requires consistent and highly precise process environments

Photo left: Infineon Technologies AG  
Photo right: SÜSS MicroTec AG

Surface processing for the semiconductor industry, nanotechnology and the production of optical storage media requires a consistent development environment. The right climate ensures quality and reduces the rejection rate in production.

Smaller structures combined with increasing information density and the highest requirements for surface conditions, make it indispensable to minimize and reproducibly control external influences in the respective manufacturing process.

Decisive parameters are:

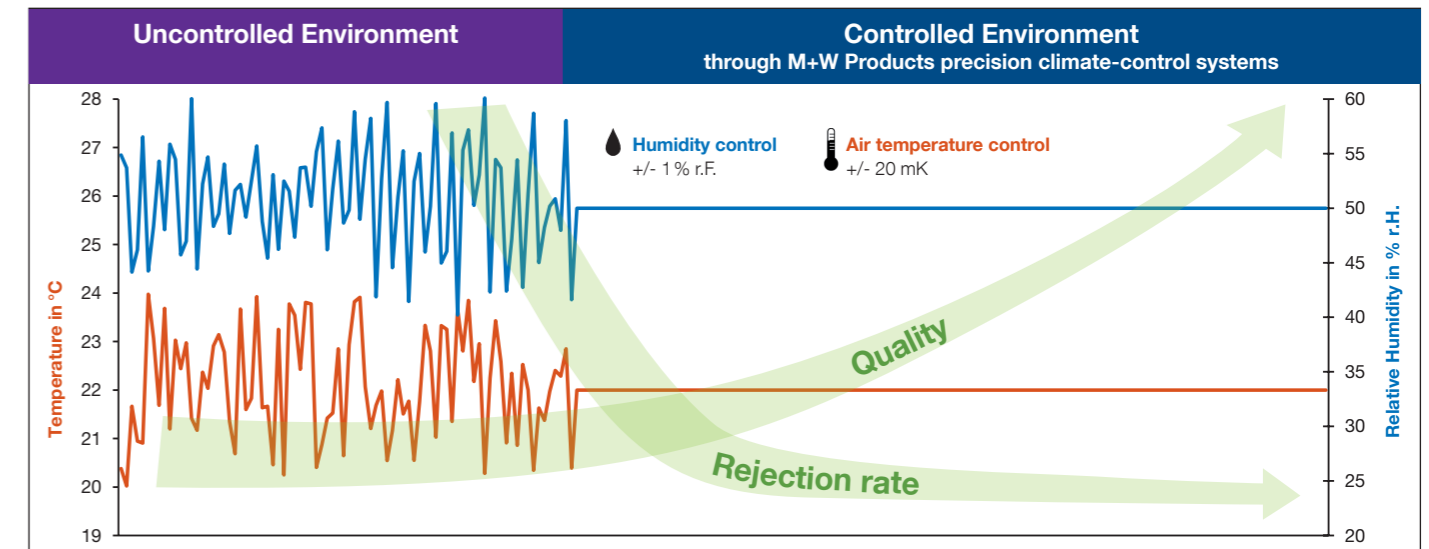
- the highly precise stabilization of temperature and humidity
- the assurance of air purity
- the exclusion of sound and vibration influences

For the entire process chain the general design requirements are the cost/benefit ratio and the capability for worldwide system integration. Different standard systems as well as different supply media, requirements for serviceability, and country and industry specific safety requirements are just as important as the specified parameters of the process environment.

Our systems and applications meet the individual requirements of our customers in every regard and ensure that they have decisive advantages in research and development as well as in process and product quality.

The decisive factors provided by M+W Products include comprehensive process understanding, many years of experience in the area of process climate control, and the right knowledge of customized solutions.

# Outstanding Product Quality through a Controlled Process Climate

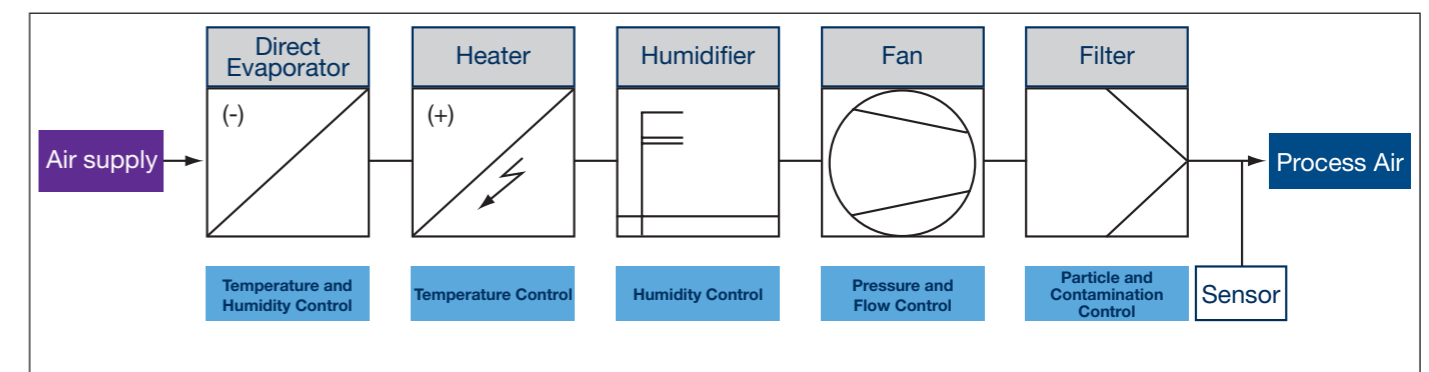


Scheme of temperature and humidity control when using precision climate-control systems from M+W Products

## Our Services

The most demanding and critical production processes often require a precise climate, combined with an ultraclean production environment. Whether a total package or individual services are requested, we offer customized solutions for all kinds of process steps. With these solutions and services we maintain and precisely control

physical parameters such as air temperature, humidity, and chemical contamination in process air. Our capabilities in consulting, development and manufacturing are based on our 100 years of experience in climate-control technology and more than 40 years of experience in cleanroom technology.



M+W Products collaborates with customers to develop solutions to monitor and to control the following parameters:

- **Air Temperature** (Kelvin)
- **Humidity** (% r.H.)
- **Dew Point** (°C)
- **Air Quality (Particles)** ISO (FED STD)
- **Air Quality (Bacteria)** GMP
- **AMC (Acids, Bases, and Dopants)** ppb
- **AMC (Condensables)** ppb
- **Water Temperature** (Kelvin)
- **Differential Pressure** Pascal

Application example: precision climate-control system



# Precision Climate-Control System KS

## – Proven Compact and Versatile Design



Precision Climate-Control System KS

### Special Features

- Compact design
- Plug and play
- High power reserve
- Individualized configuration
- Full-featured climate control (heating, cooling, drying, humidifying)
- High market penetration, mature product
- SEMI-certified

### Advantages

- Small footprint
- Simple installation and commissioning
- Low infrastructure requirements
- Modular application
- Adaptable to different processes

### Customer Benefits

- Flexible set-up options
- Highly independent of climatic set-up conditions
- Highly reliable system, low installation effort on-site
- Many options available as add-ons
- Fast delivery times, dense service network

# Precision Climate-Control System TCS

## – for High Precision Temperature Control



Precision Climate-Control System TCS

### Special Features

- High-precision temperature control
- Vibration and sound damped
- Modular design
- High capacity reserve
- SEMI-certified

### Advantages

- Future-proof product (high-precision temperature control, damping vibration and sound)
- Stand-alone system
- Subsequent modifications possible to meet change requests
- Service-friendly

### Customer Benefits

- Best results for temperature-critical applications
- Perfect for vibration and sound critical applications
- Variable configurations
- Wide range of applications independent of local influences

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