

# Pump solutions

Industrial drives and controls  
for pumping applications



**AC Variable Frequency Drives**  
**Electro-Mechanical Drives**  
**Servo Motors & Drives**  
visit [lenze-actech.com](http://lenze-actech.com)

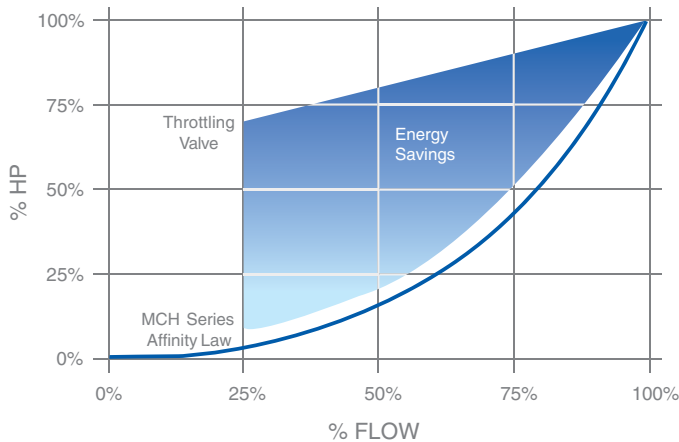
**Lenze**  
**AC Tech**

# achieve significant energy savings

VFD's have gone green!

## Centrifugal pumps

Centrifugal or variable torque pumps are used in a wide variety of commercial, industrial and municipal applications. Throttling valves are a common flow control method. Compare the power requirements of a throttling valve to that of the SMVector or MCH Series VFD and the theoretical power requirement defined by the Affinity Laws.

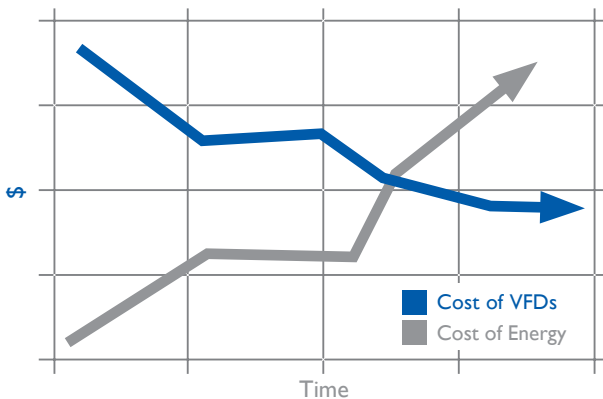


### Typical applications

- Chilled and Hot Water Pumps
- Condenser Water Pumps
- Booster Pumps
- Potable Water Pumps
- Chemical Pumps

### Fast Payback

Operating at 75% flow reduces power demand by over 50% with an SMVector or MCH Drive, while a throttling valve requires about 90%. With the price of VFDs going down and the price of energy going up, this tremendous energy savings potential results in typical payback periods of just a few months.



## Constant Torque pumps

Most Constant Torque applications are also referred to as Positive Displacement (PD) and Progressive Cavity Pumps.

### Typical applications

- Metering pumps
- Dosing pumps
- Pumping highly viscous fluids or high frictional loads

### Eliminate waste

The advantage of using a VFD in these applications is simple — the VFD can control the volume pumped, eliminating waste.

### Decrease motor cost

While most VFDs are close to 100% starting torque, the SMVector Series offers 200% starting torque, allowing you to overcome the initial load. As a result, you can significantly decrease the size of motor you are using thus reducing the cost of the application.

## NEMA ratings for the VFD market

**NEMA 1:** For indoor installation in a relatively clean environment, provides limited protection against falling dirt.

**NEMA 12:** For indoor installation, provides protection against circulating dust, falling dirt and dripping, non-corrosive liquids.

**NEMA 4:** For indoor installation, provides protection against windblown dust and rain, splashing water, hose-directed water and damage from external ice formation.

**NEMA 4X for Indoor Installation:** NEMA 4 protection plus protection against corrosive or caustic agents.

**NEMA 4X for Indoor/Outdoor Installation:** NEMA 4 protection plus protection against corrosive or caustic agents. We are the only NEMA 4X supplier to offer an outdoor choice!



efficient • hassle-free • green

### Across the board

No challenge is too great. From small industrial plants to OEMs; to municipal water & wastewater treatment facilities and HVAC installations, Lenze-AC Tech pump solutions are hard at work. Versatile and robust, our industrial drives and controls provide cost-effective, low-maintenance pump solutions.

### Dedicated

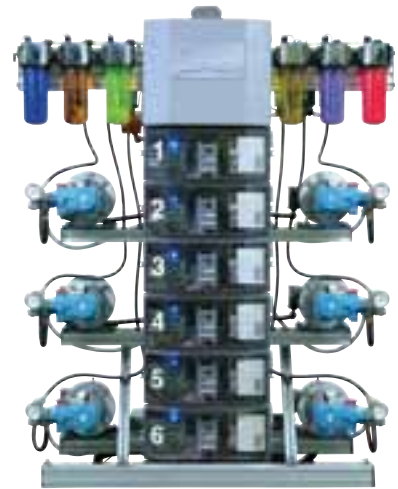
Our acute focus on variable speed flow/pressure control allows us to offer a complete range of solutions. Whatever the requirements of your specific application, Lenze-AC Tech has the drives and controls to match form, fit and function. Our products offer unparalleled value in their efficient feature-centric design and realistic pricing.

The advantages to a Lenze-AC Tech pump solution are many. The solid, easily programmable intelligent drives and controls have a surprisingly low cost of ownership. Easy access to knowledgeable sales personnel and product information is just a click away. And quick delivery, expert service and global support are standard operating procedure.

### Successful pump applications

- Laboratories
- OEMs
- Municipalities
- Wastewater
- HVAC

To see the positive results our customers have obtained, just check on our website for articles describing the success of Lenze-AC Tech drives and controls in pumping applications. Go to [www.lenze-actech.com](http://www.lenze-actech.com) and check them out in the 'Support & Library' section under 'Application Stories.'





## AC Variable Frequency Drives—featuring the SMVector Series

### Advantages

Feature	Benefit
200% Torque Capability	Great for starting pumps with highly viscous fluids; also provides tight speed regulation with dynamically changing viscosities
Built-in PID Setpoint Control	Maintain desired pressure, temperature, and flow by constantly adjusting pump speed
Programmability	Hassle-free installation and quick commissioning; parameters logically grouped based on function
Compact Enclosure	Eliminates costly cabinet space; NEMA 1 and NEMA 4X availability allow for mounting outside the cabinet
Low Cost	Vector performance for the price of V/Hz; NEMA 4X performance for the price of NEMA 1
Remote Keypad	Flexible installation; Capability to mount the drive in an area with limited access
Multiple Communication Options	Global communication flexibility, plug and go
UL, cUL, CE, RoHS	Can ship machine anywhere
Optional Disconnect Switch	Disconnect motor right at the pump for service and maintenance (NEMA 4X indoor models)
Optional Built-in EMC Filter	Can ship machines to Europe without external filters—saves money (on select models)

### Technical Specifications

Power	Up to 30 HP
Input Voltages	120V, 208/240V, 400/480V, 600V
Enclosures	IP20, NEMA 1 (IP31), NEMA 4X (IP65); IP20 in preparation
Communication Options	Modbus RTU, CANopen, DeviceNet, PROFIBUS-DP, EtherNet/IP, Modbus TCP/IP
Operation Modes	V/Hz (constant or variable) through open-loop vector control

The EPM is the memory chip that can be easily removed, copied and installed into all SMVector Drives. This memory structure provides significant benefits for OEMs and end users alike:

### Archive

Once the drive is programmed, remove the EPM and save it to the EPM Programmer for a reliable back up. For even greater security, connect the EPM Programmer to any PC and save the program to the PC hard drive. New programs can also be initially created using the EPM Programmer.



### Clone

In only two seconds, copy a drive's configuration from one EPM to another or from the Programmer's memory to a blank EPM. Since the memory is removed from the drive, an SMV drive does not need to be powered in order to be programmed!

### Back up

When a drive program is saved to an EPM using the EPM Programmer, the program is saved in the "User Memory" that can be changed from the front of the drive, and also in the "OEM Default" memory which is non-volatile and cannot be changed unless overwritten with the EPM Programmer.

### Reduce downtime

If, after many years of service, your drive gets damaged or fails—all you do is remove the EPM memory chip and put it into the replacement drive. You're all set!

our options are focused on your success



### AC Variable Frequency Drives—featuring the MC and MCH Series

#### Advantages

Feature	Benefit
Built-in PID Setpoint Control	Maintain desired pressure, temperature, and flow by constantly adjusting pump speed
Focused, Easy-To-Use Parameters	Hassle-free installation and quick commissioning for the majority of applications
Intuitive Operator Interface	Save time with easily viewed plain English displays that make sense
Rugged Steel Enclosures	Obtain superior heat transfer and greater structural integrity
Application Integrity	Proven long-term dependability

#### Technical Specifications

Power	Up to 250 HP
Input Voltages	120, 208/240V, 400/480V, 600V
Enclosures	NEMA 1 (IP31), NEMA 12, NEMA 4/4X (IP65), Stainless Steel (NEMA4X)
Communication Options	RS485, Modbus RTU, Metasys, BACnet, Siemens PI, LonWorks
Operation Modes	V/Hz (constant or variable)



### Electro-Mechanical Drives—G-Motion

#### Advantages

Solution	Benefit
Higher Torque, Compact Design	Greater performance in a smaller package
Modular Construction	Form, fit and function to meet multiple applications
Highly Efficient Design	Delivers low noise and reduced energy consumption
Numerous Input/Output Options	Eliminates custom-builds for electro-mechanical compatibility

#### Technical Specifications

Torque	Up to 11,800 Nm (8708 ft-lbs)
Gearmotor Types	Helical, shaft-mounted helical, bevel, helical-bevel, helical-worm, servo planetary gearboxes

[www.lenze-actech.com](http://www.lenze-actech.com)

# Worldwide Coverage | We're everywhere you are



*Growth requires drive. Competitive, committed and consistent drive. At Lenze-AC Tech we concentrate 110% of our energies on providing our Customers with everything “from the load up.”*

*Customer Service has always been and will always be our number one commitment. Our success depends on it.*



*Driving design technology forward means we never stop thinking about process improvements. Did we deliver a quality product to market that meets the Customer's needs? That is the key.*



*Innovation takes art and skill to combine what's new and what's proven to produce a product with exceptional form, fit and function.*

**Industrial Drives and Controls...That's All We Do!**

**Lenze**  
**AC Tech**

**A Global Drives Company**

[www.lenze-actech.com](http://www.lenze-actech.com)

1-800-217-9100

1-508-278-9100

+44 (0) 1743 464309