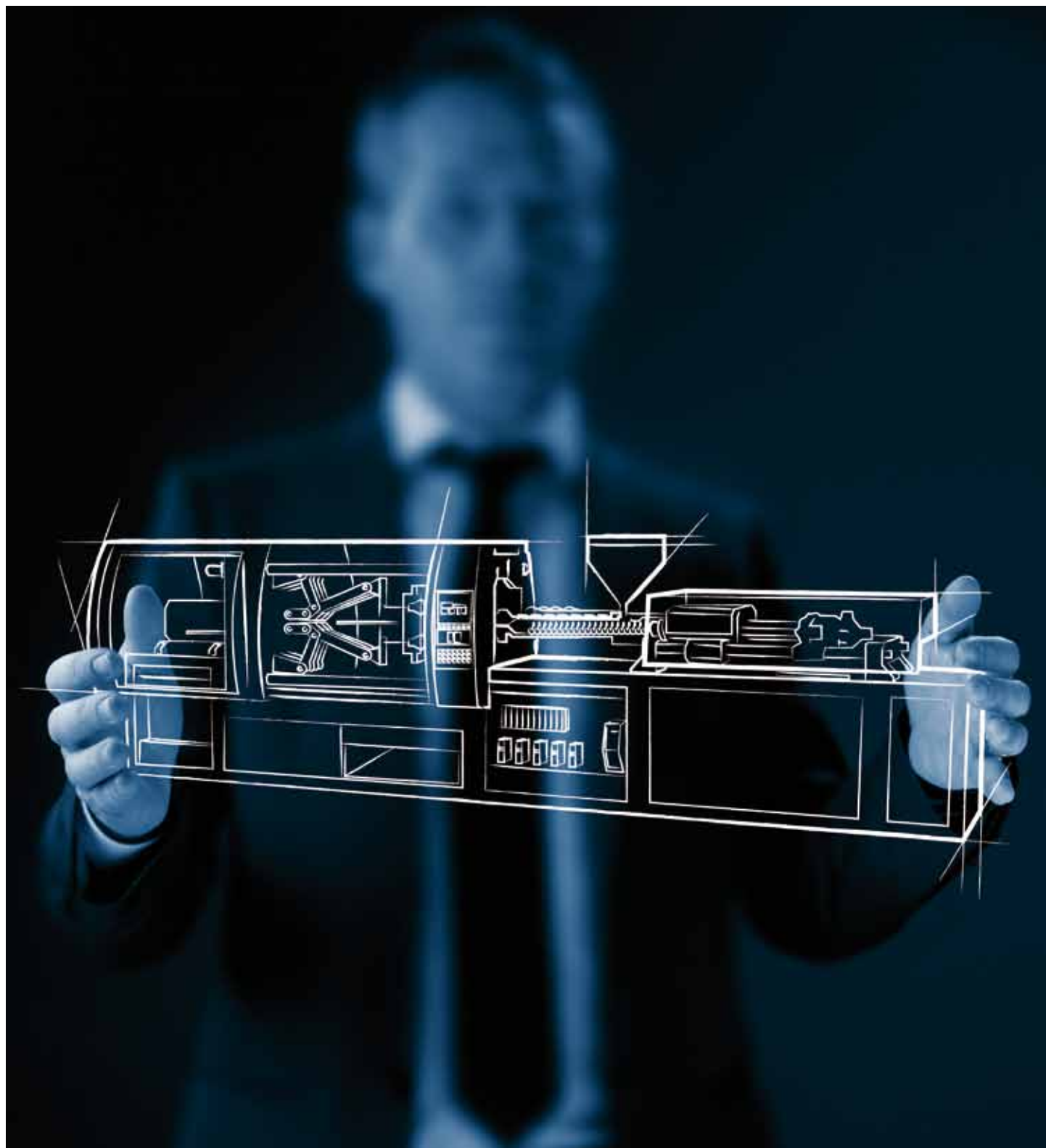


APPLICATIONS

THE GEFRAN SOLUTION FOR INJECTION MOLDING

GEFRAN

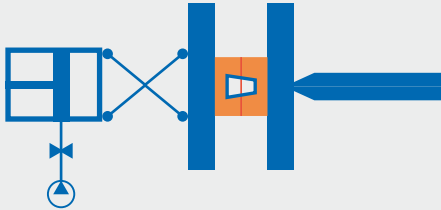


HYDRAULIC

COST-EFFECTIVE AND EFFICIENT

- > Load cells: new range of load cells for mold protection and clamping force measurement - one sensor for for two applications.
- > Linear potentiometric transducers: in-depth application know-how for high performance.
- > Industrial pressure transducers: state-of-the-art products to guarantee superior safety standards. KS transmitters have SIL2 third-party certification. Ideal for standard injection molding machines, offering a traditional sensor solution combined with the latest technology for system control.
- > Approaching a basic IMM offering a combination of latest technology in matter of system control in combination of traditional solution about sensors .

- > Powerful solution (ultimate CPU technology).
- > Dedicated built-in switch-over function (patent pending).
- > New injection template : easy and smart pages layout.
- > Integrated operator panel with dedicated machine function keys.
- > The servodrive AXV300 optimizes spaces and it is a technological solutions for injection molding.

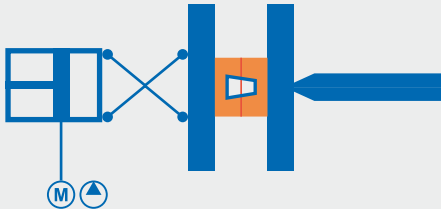


HYBRID

ENERGY SAVING SOLUTION

- > Linear contactless transducers for highly accurate measurement of displacement over time, as well as simple installation.
- > Load cells: new range of load cells for tie-bar and clamping-force monitoring. No mounting hole needed. Highly accurate, with tie-bar bending compensated system.
- > Industrial pressure transducers: accurate, reliable and SIL2 certified KS sensors: all this in a compact size.
- > Energy saving with flexibility in system control, combined with a dedicated built-in PID function and standard ADV200 drive and AXV300.
- > New injection template: smart page layout.

- > High performance solution (GDnet fieldbus/contactless technology, with dedicated PID control for pump).
- > Integrated operator panel with dedicated machine function keys.

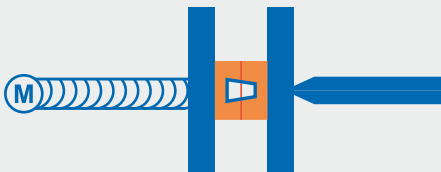


ALL-ELECTRIC INJECTION

HIGH-PERFORMANCE RELIABILITY

- > Wireless load cells:
 - new wireless range of load cell for highly accurate monitoring of injection pressure, measuring axial force and torque (optional); optimum location behind the screw.
 - wireless transmission from sensing element to amplifier.
- > New injection template: smart page layout.
- > High performance with specific features such as closed-loop injection pressure as standard on the AXV300.

- > Highly accurate and repeatable production, as a result of the AXV300's in-built fast and efficient switch-over functionality.
- > Integrated operator panel with dedicated machine function keys.





GEFRAN. YOU KNOW WE ARE THERE

WE ARE THERE ... IN PLASTICS

For Gefran, plastics is a passion. We were established as a producer of electronic devices to control industrial process variables, and entered the plastics processing market 40 years ago, developing and delivering technological solutions for related industrial processes. This experience has given Gefran comprehensive knowledge of the market's needs, making us a reliable and effective partner for plastics OEMs and end users.

WE ARE THERE ... IN PRODUCTS

Every Gefran product is conceived and built in-house by our own technical personnel, who **design and produce the devices we ship all over the world every day.**

Total knowledge of our products and how they are made guarantees their reliability and, above all, ensures the flexibility with which we immediately respond to our customers' needs and to market demands.

WE ARE THERE ... IN MEASUREMENT AND CONTROL SOLUTIONS

Gefran **solutions range from systems for measuring of physical variables to products for machine, heat, and movement control.** We make sensors for position, pressure, force, and temperature, hardware and software automation platforms, inverters, and drives - and they are all produced with passion.

WE ARE THERE ... IN CUSTOMER RELATIONS

Our customers are consistently supported by **highly qualified** staff in choosing the right product - each with special and unique features - for their application.

In addition, Gefran's after-sales support delivers reliable and dynamic service to resolve any issue with our products and their application.

WE ARE THERE ... ALL OVER THE WORLD

Gefran has **nine production plants** (in Italy, Germany, Switzerland, United States, Brazil, China, and South Africa) and **seventeen branches all over the world.** A network of about **80 distributors** completes a worldwide presence that guarantees truly global customer service.

MACHINE CONTROL

GCube Performa platform

The complete and integrated solution for control, monitoring, communication and management of machine automation.

- > CONFIGURED AND TESTED
- > LOCALLY EXPANDABLE
- > SCALABLE SOLUTION



GCube Modula platform

Enables the construction of high-performance, multi-protocol applications that are easily integrated into company networks.

Solution based on integrated control (PLC and HMI) and remote I/O modules connected via a real-time Ethernet fieldbus.

- > ETHERNET REAL-TIME
- > SCALABLE
- > MULTI-PROTOCOL



GF_Project VX programming platform

GF_Project VX is an integrated development environment (IDE) for real-time control applications including Gefran Automation, Power control, Drive and Sensor product ranges. GF_Project VX is a complete suite offering all the necessary tools and libraries for configuring a wide range of automation projects. GF_Project VX also includes all the features for commissioning, software maintenance, service and remote control.



- » Project manager
- » Hardware architecture
- » Control
- » Code Library
- » Operator Interface
- » Diagnostic
- » Connectivity

- > One tool for many different automation projects.
- > Short learning-curve thanks to graphics and standardised configuration.
- > Less development time = cost saving.
- > Efficient project reusability = durable investment.

MEASUREMENT

Industrial pressure transducers

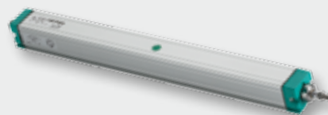
Compact design, suitable for hydraulic and pneumatic pressure measurements, wide choice of ranges up to 0-1000 bar, voltage or current output, high accuracy, SIL2 certified version available for safety applications.



Linear potentiometric transducers

A proven technology over the years for measuring displacement of moving mechanical parts.

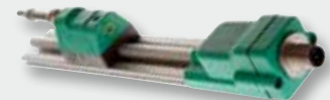
Sturdy and versatile, ideal for the majority of industrial applications, even under very harsh conditions.



Linear magnetostrictive transducers

A development of linear potentiometers, Gefran magnetostrictive sensors utilise new ONDA technology.

A complete range of sensors is available for position measurement: from ONPI-A, offering simplicity of installation, to the MK4-A, with its high level of accuracy



Thermocouples and Thermoresistances

A wide range of simple and reliable temperature sensors to suit different applications, ambient conditions, work, temperature range and precision.



Load cells with Sensormate technology

Increasing demands for improved performance and better component quality call for faster and more reliable molding machines with sophisticated controls.

Sensormate products are part of this control and help to achieve continuously higher quality levels.

Sensormate strives for products which offer maximum ease-of-use in order to make the job of the molder as simple as possible.



HEATING CONTROL

Solid State Relay

The Solid State Relay GQ series, for loads up to 600V AC, offers control solutions for heating resistances with current up to 90A, in standard compact sizes.

The "zero crossing" firing mode eliminates EMC noise, and a red LED at the front shows the relay status. Models are available with DC and AC commands, and universal models are also available.

The wide range of input signal connectors, embedded or plug-in, offers the best wiring flexibility.



Solid-state Contactors

The GTS and GTD series of solid-state contactors provides correct thermal dissipation to ensure heat resistance with currents of up to 120 Amps. It is available in a range of compact, space-saving sizes.

The alarm options such as "over-temperature" and "partial/total load break" allow continuous monitoring of heating systems to enable effective preventative maintenance.



MOTION CONTROL

Inverters

With a wide range of technological variants, the ADV200 inverter series meets the demands of systems integrators and machine builders, for solutions at the forefront of technology featuring high-level configurations.

The modular and compact mechanics integrates accessories such as EMC filters and input chokes. This means that the system takes up significantly less space and wiring costs are optimised.

The man/machine interface is totally intuitive and "open", thanks to the powerful programming platform. Customised menus, dedicated application software or specific functions for any machine management, are available at all levels in IEC61131-3 programming environment.

The ADV series offers a power ratings up to 1.2mW, making it suitable for asynchronous and synchronous motor control. It is compatible with all AC mains supplies including 230V, 400V, 460V and 690V.



Brushless Motors

The SBM series of permanent magnet synchronous servomotors along with the relevant electronic drive, represents a servo system suitable for driving a shaft at high performance, particularly when dynamic control during transients or steady state stability is required.

This gives high performance for limited dimensions, excellent reliability and reduced maintenance procedures.

SBM Brushless servomotors are used in a wide range of applications. They can operate with an almost constant torque and withstanding overloads several times higher than rated current.



Servodrives

The Modular Servodrives AXV300 offer maximum performance for controlling brushless synchronous motors in high precision, dynamic applications.

Modular engineering and optimisation results in an extremely compact mechanical footprint.

The AXV300 implements advanced application solutions based on positioning and electrical line shaft, structured in IEC61131-3 and specific "high level functional blocks" for the injection molding machines.

Communication via GNet, Ethernet or CAN bus enables total integration into the most commonly-used PLC system architectures.



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