



# DREHMO

## VALVE ACTUATORS

keeping it safe ...



***X-matic***

Explosion protected actuators for oil, gas and petrochem applications

Our World relies on a constant flow. Without this permanent motion we would not be here. Sometimes though it is necessary for us to take control over the flow of the elements we rely upon.

That's where DREHMO comes in.

Our valve actuators make sure that media only flow when supposed to, and that only the exact amount that's needed leaves its place. No more and no less.

But it's about more than just on and off. Actuators used in hazardous conditions for oil, gas or petrochemicals must not only be reliable and accurate – they must be absolutely safe.

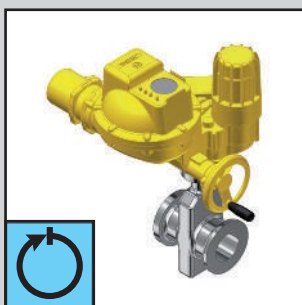
On the following pages we will show you reasons why our x-matic actuators are the ideal choice for keeping the flow and keeping it safe!

keeping it safe ...

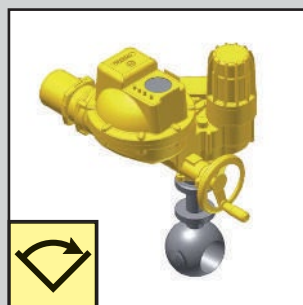
Made in Germany –  
explosion protected  
valve actuators ...



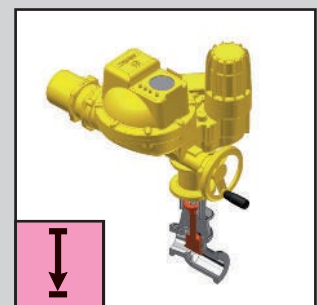
... for every application  
and any kind of valve



Multi-turn



Part-turn



Linear

### keeping it safe ...

- 2/3 ... in oil, gas and petrochem applications
- 4/5 ... with quality from design to start-up
- 6/7 ... with unique DREHMO design
- 8/9 ... with easy setting and operation
- 10/11 ... with minimized life-cycle costs
- 12/13 ... with high flexibility for every environment
- 14/15 ... with perfect integration
- 16/17 ... with valve actuation from one source
- 18/19 ... with appropriate tools and options
- 20/21 ... with an ambitious team of experts
- 22/23 ... with (more than) ten good reasons

- High quality valve actuators, designed and produced in Germany
- Developed and built especially for use in oil, gas and petrochemical applications
- Part-turn, multi-turn and thrust actuators available, suiting every type of valve design
- Easy system integration with open communication interfaces

... in oil, gas and petrochem applications



Always the perfect actuator – Whether it's about oil ...



... or gas, being transported all around the globe ...



... or the petrochemical industry.

Safety isn't something you can directly produce, it's a mixture of passive and active elements. Our main aim is to make our products as safe as possible in both of these areas.

Passive safety concerns the design, construction and planning of each part involved in our actuators. That includes in-depth analysis of every single supplier and their respective safety and quality guidelines and certifications. It also means producing our products with state-of-the-art technology and well-trained staff and documenting every single step throughout the design and production process.

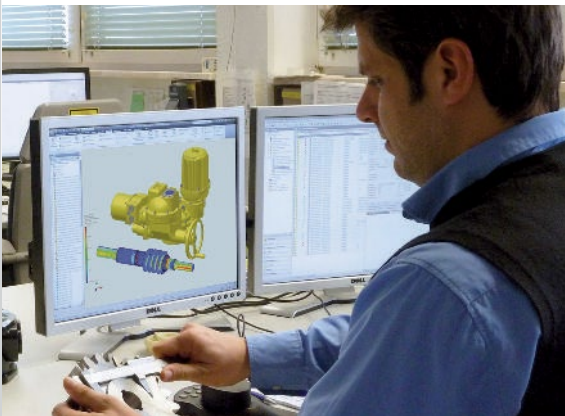
But for us safety doesn't end when our actuators leave our factory. Active safety requires easy, user-friendly design as well as specific briefing and training in the commissioning process.

Keeping it safe is way more to us than just a headline!

## keeping it safe ...

### Quality in design and development

- German design according to international ex-proofing norms and standards
- Thorough type testing of every design both virtually and with prototypes
- External control of every design



### Quality in every single process

- Quality management according to ISO 9001 throughout the whole company
- Frequent checks and audits by external accredited labs
- Production "Made in Germany"





- Safety by design and selected suppliers
- Safety through well-documented production by highly-qualified staff in state-of-the-art production facilities
- Safety thanks to detailed training and briefing in the commissioning process

... with quality from design to start-up

### Quality in every produced part

- Well-documented one-off testing and calibration of every actuator according to each customer's requirements



### Quality throughout commissioning

- Every step of the start-up is attended by our qualified technicians
- "Plug & play" – functionality for minimized downtimes and costs
- Comprehensive after-sales service



### Enclosed motor

- Sturdy asynchronous design
- Amply dimensioned with high reserves
- Special coil layout for safe start-up
- TENV (totally enclosed not ventilated) motor according to protection class IP68
- Integrated temperature monitoring

### Handwheel

- Operation at any time without changeover mechanism
- Safe stop during motor operation
- Redundant to motor operation -> high availability
- Easily adaptable (extension, square end etc.)

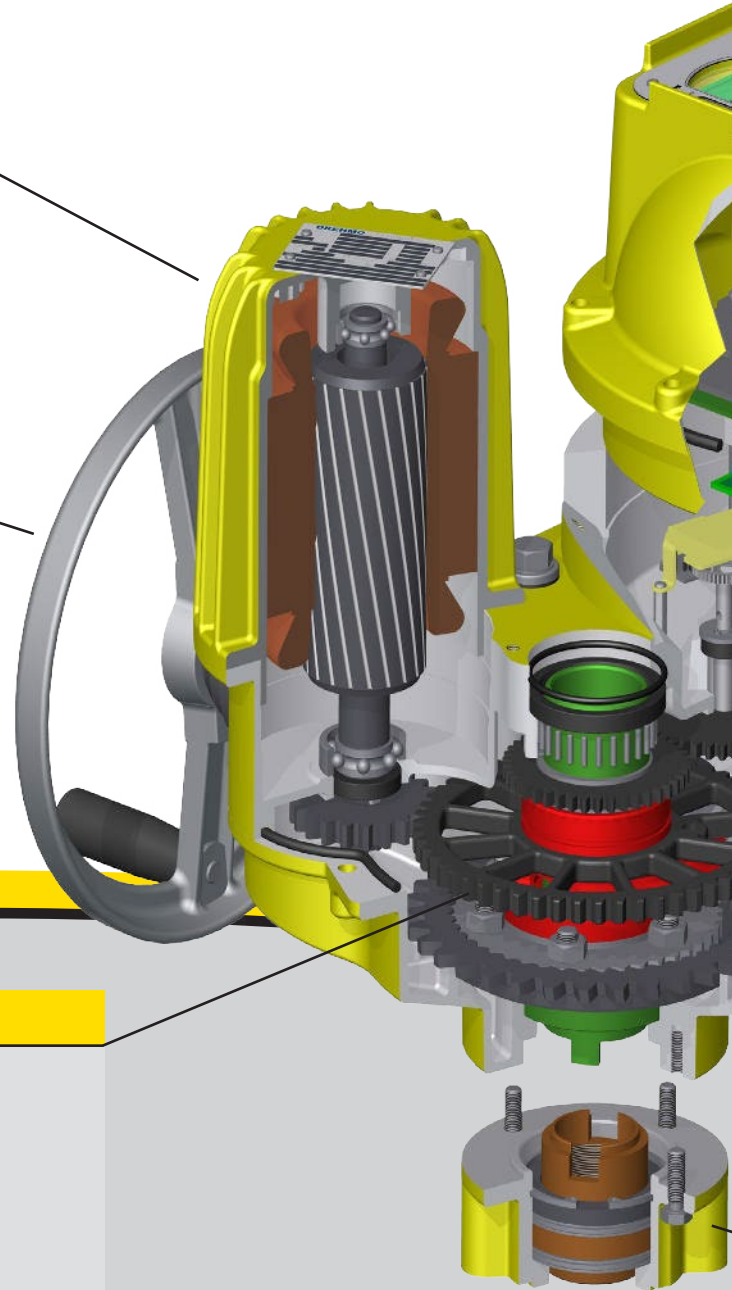
keeping it safe ...

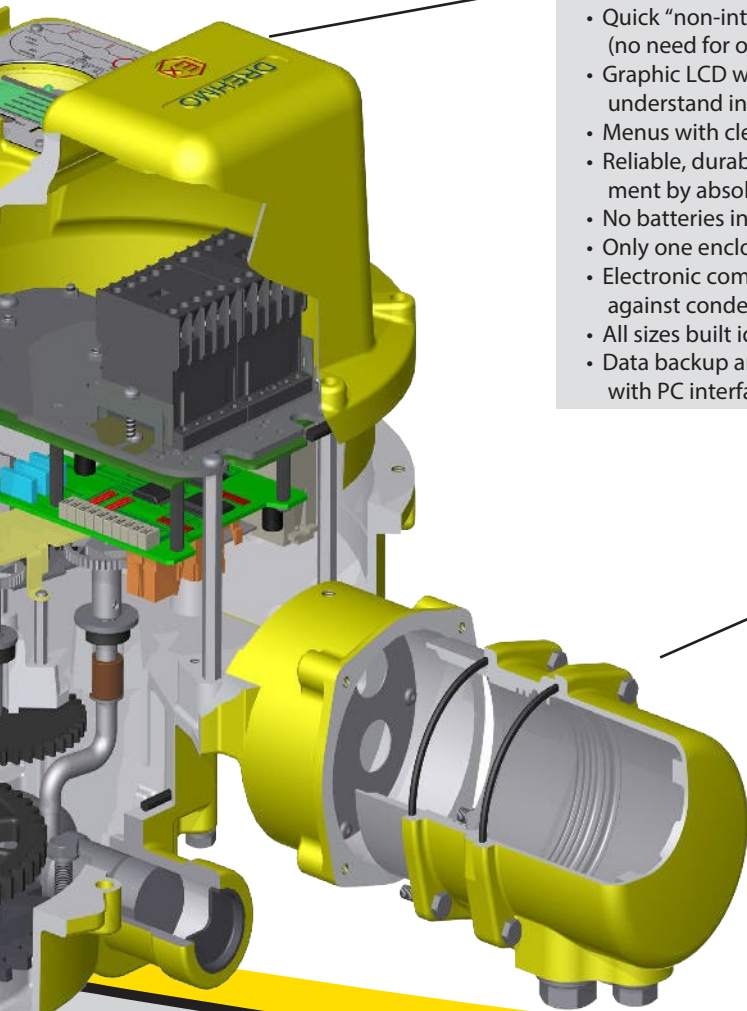
### Transmission

- Low-wear LongLife DREHMO planetary gear box
- Safe start-up across all temperatures
- Arbitrary mounting position
- Maintenance-free due to lifetime lubrication
- Sturdy metal casing
- High speed range for closing time adjustment

The roots of DREHMO date back to the beginning of the last century when the prestigious German "AEG" corporation began with the design and production of valve actuators.

After decades of development and success with worm gears, the aim was to find a compact gear design that would overcome the limitations of the worm gear (one drive train for motor and manual operation) while still providing safe and reliable actuation for all valve applications, even under the most extreme conditions.





### Controls / sensors

- Quick "non-intrusive" settings (no need for opening)
- Graphic LCD with clear, easy-to-understand information
- Menus with clear text messages
- Reliable, durable position measurement by absolute encoder
- No batteries in the unit
- Only one enclosed electric compartment
- Electronic compartment protected against condensate by heating
- All sizes built identically
- Data backup and documentation with PC interface

### Electrical connection

- Plug-and-play connector for power and control lines
- Cable entries according to international preface standards (M, NPT, G, ...)
- Adjusted solutions for bus systems

### Valve connection

- Connections available for all kinds of valves
- Easily interchangeable
- Many special forms available
- Connections according to ISO standards

## ... with unique DREHMO design

The result of this search was the LongLife planetary gearbox with separate power flow for motor and manual operation and a compact, convenient form factor.

A gear drive that has proven its exceptional sturdiness in hundreds of thousands of appliances all around the world for several decades and still goes stronger than ever.

High accessibility of the controls, easy handling and efficient, robust components have always been the key to trouble-free and safe operation of devices and appliances, so of course these features have also been our main focus in the development of the x-matic series.

Keeping things safe is also about keeping them clear and easy. Especially in potentially hazardous surroundings it's important to make the operation of technical equipment as logical and easy as possible.

That's why we have fitted our actuators with large, backlit graphical displays giving information in clear text and icons, not codes or numbers. This allows for quick and easy setting without the need for a handbook.

All local controls can be set via sturdy push-buttons or our magnetic pen system. If the actuator isn't directly accessible it can be controlled and programmed by a Bluetooth device such as a PDA. Even software upgrades and firmware updates can be installed via Bluetooth or Infrared. It's also possible to permanently place the control unit separated from the actuator itself for further independence.

That makes control, updates, maintenance and diagnostics as easy as possible. And keeping it easy is keeping it safe!

keeping it safe ...



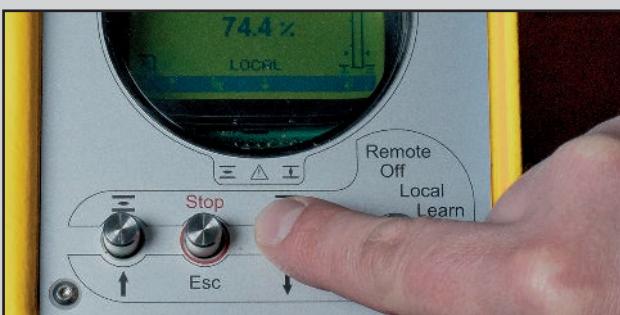
Wireless control by PDA via bluetooth

# DREHMO!

## REASONS

- Large multilingual backlit graphic display with clear text and icons instead of codes and numbers
- Easy, non-intrusive setting
- Easy firmware updates, diagnosis and maintenance functions
- Easy separation of the control unit from the actuator
- Easy handling due to big, sturdy push-buttons or magnetic pen system

... with easy setting and operation



Control via push-buttons ...



... or with the magnetic pen system



Large backlit graphic display gives clear information in several languages

Our products are best when you gradually forget they're even there. That means you don't have to care about maintenance, errors or replacements – they just work.

Apart from the inconvenience, every additional action also means additional costs, which over the lifespan of the actuator can easily add up.

So our goal is to make actuators you don't need to care (or pay) for beyond the process of installation and commissioning. Our x-matic actuators actually care for themselves due to their sophisticated automatic self-monitoring system. It continuously checks the actuator for any defects or faults and reports them immediately.

Modular design with minimal need for spare parts and the nearly life-long lubrication make it easy to forget about an x-matic actuator, especially as it has no battery that would need to be changed.

Safety to us also means having nothing to worry about.

keeping it safe ...



Typical gas-oriented application with x-matic actuators mounted on ball valves

+++ MINIMAL NEED FOR SPARE PARTS



+++ ACTUATOR-REPAIR-PARTS



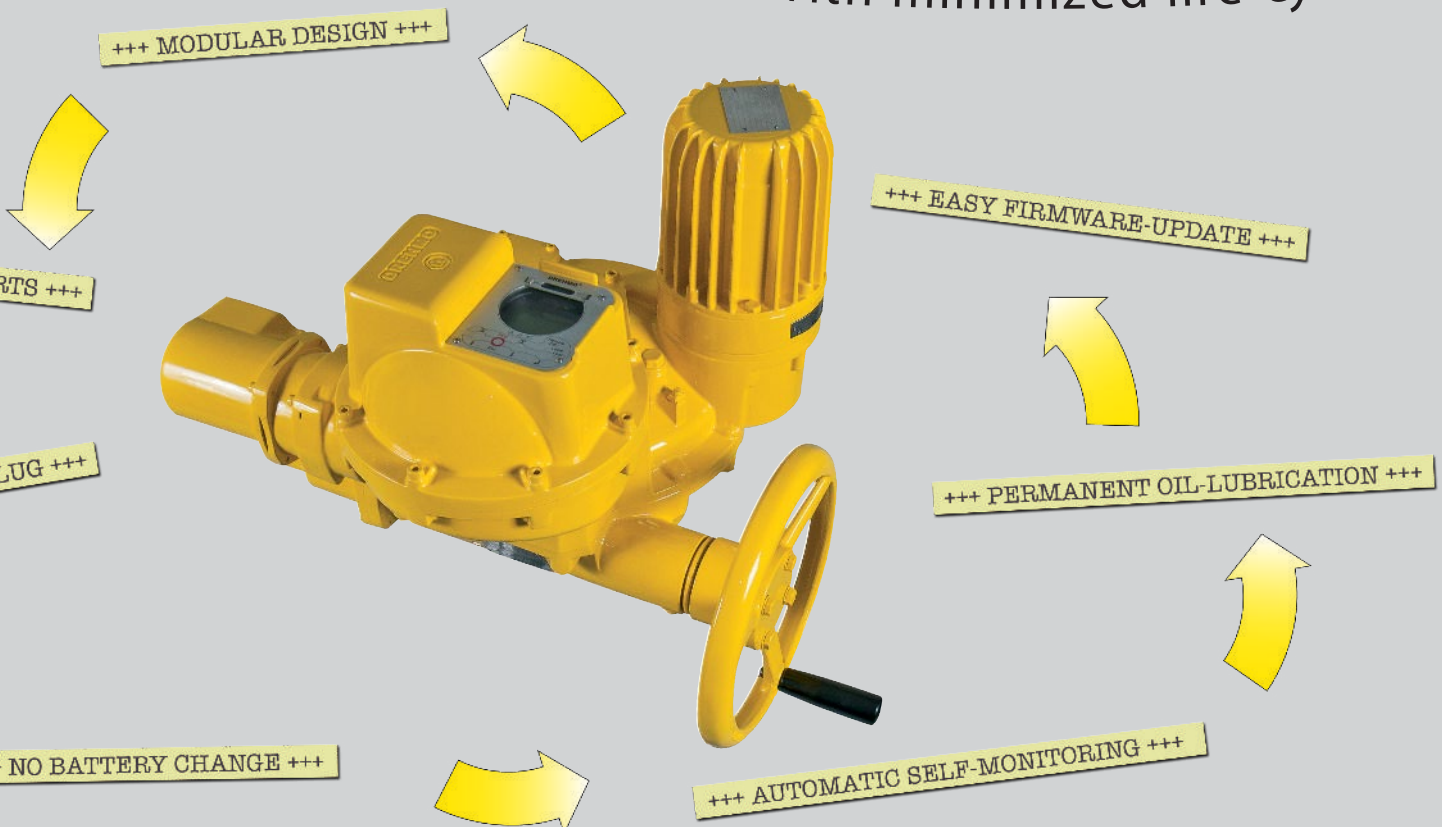
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# DREHMO!

## REASONS

- Maintenance-free
- No battery – no change required
- Error prevention due to constant self-monitoring
- Lifetime gear-design
- Always enhanceable thanks to easy firmware upgrades
- Constant technical development
- Long-term availability of spare parts

... with minimized life-cycle costs



Our actuators are made for operation in critical areas both in terms of safety and ambient conditions. To be suitable for use in oil, gas and petrochemical applications, they must not only be explosion proof and extremely sturdy but also safe for extreme heat, permafrost or moisture.

Offshore applications for example combine drastic climatic conditions with the need for absolute safety due to the media involved. Our x-matic actuators meet even the highest of standards, optionally equipped with safety functions to conform with SIL1 / SIL2 levels.

The explosion protection is guaranteed through pressure resistant enclosures stopping the outward transfer of an explosion. Other causes of danger, such as friction, electrostatic charge or impact sparks are minimized due to several constructional features.

Keeping it safe to us is to keep out danger from the start.

## keeping it safe ...

### Corrosion protection:

We offer you actuators for any kind of application, surrounding and atmosphere, according to DIN EN ISO 12944!

Our x-matic actuators comply with the durability levels from "C1" (heated buildings with neutral atmosphere) up to "C5-I" (high humidity and aggressive atmosphere) and "C5-M" (coastal and offshore areas).



Made to work anywhere

### Protection class:

Every x-matic actuator is designed and built to meet the highest possible protection class IP68, keeping the motor and controller units free from dust and moisture.



Protection class IP68 – no chance for dust or moisture

- Compliant with SIL ratings
- Suitable for all oil, gas and petrochem-related applications
- Immune to heat, coldness, moisture and hazardous ambient conditions
- Compliant with ATEX norms (EN 13463, EN 60079-1 and EN 60079-7)

... with high flexibility for every environment



### Ex-protection:

Our company has been certified by external inspection authorities worldwide such as ATEX 94/9/EG und GOST for ex-proof products and applications. The explosion protection is designed to allow the use of any media from oil to highly processed substances such as acetylene or hydrogen.

### Temperature:

Whether in extreme coldness or heat – our actuators provide safe operation of your valves – from the north pole to the sahara desert.



© eon Ruhrgas, con-ruhrgas.com

Extreme ambient conditions like heat ...



© eon Ruhrgas, con-ruhrgas.com

... coldness / permafrost ...



© BP, deutschebp.de

... or moist and salty air are no problem for x-matic actuators

An actuator doesn't work alone, it's always part of an automation system. It's an important, reliable and safe part – but only if it is perfectly integrated into the surrounding system.

Keeping it safe means making sure that each of our actuators "understands" the language of the complex array of pipes, valves and electronics that it's put into. And the other way around. Therefore we offer a multitude of field bus connections, including Modbus, Profibus, Device Net and even the Profisafe protocol, allowing for SIL 2 safety applications.

All field buses can be delivered with the common redundancies adding further to the safety and reliability of the whole system.

The communication with the x-matic is independent from the platform you use as the information structure is always stored within the actuator and therefore available to any given system.

So it's safe to say that our actuators will just fit in everywhere.

## keeping it safe ...

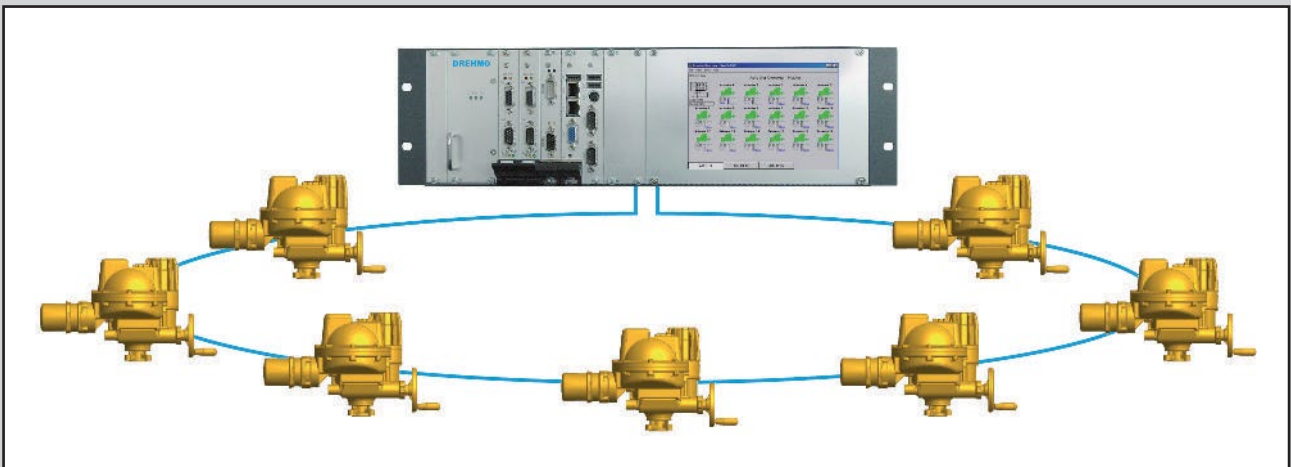
### System integration via fieldbus

To make sure our x-matic actuators perfectly and effortlessly fit into your existing control and communication system, we have teamed up with several well-known developers and producers of these systems.

Together with them we have conducted a variety of integrational tests with x-matics, all of which have been passed successfully.

Our actuators can be integrated into various bus topologies.

- • Profibus DP V0 -V1 -V2
- • PROFIsafe
- • Modbus RTU Loop
- • DeviceNet
- • Foundation Fieldbus



Modbus RTU Loop topology



# DREHMO! REASONS

- Hard-wired programmable relais interface
- Many field bus systems like Profibus, Modbus RTU, DeviceNet, Foundation Fieldbus available
- SIL functions for safety control systems
- Emergency shut-down function (ESD)
- Data acquisition for asset management

## ... with perfect integration



The safety of your appliance, of the people working there and of the environment are becoming increasingly important. To guarantee you this safety, we offer actuators of the highest standards in safety and quality.

The level of functional safety in safety-relevant systems is defined by the SIL standard. Whether a parallel interface or PROFIsafe via Profibus is used, we offer you SIL1 and SIL2 according to DIN EN 61508.

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-  
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Keeping it safe means keeping everything under control – at every time! Therefore we have developed the new DIMA Masterstation.

Within its 19“ rackmount case it combines all functionality you could possibly need when working with valve actuators. It's a central control unit combining easy operation, control, parameterization, maintenance and diagnosis services into an easy to use device.

Several field bus systems with redundancy concepts are supported by the Masterstation which is the ideal connection between x-matic actuators and your existing process control system. A multitude of communication ports allows for integration into every system, even featuring compact-PCI technology for industrial applications.

And the best – all of these features can be accessed and executed through the high-resolution colour display that makes it easy to keep everything safe and controlled!

## keeping it safe ...

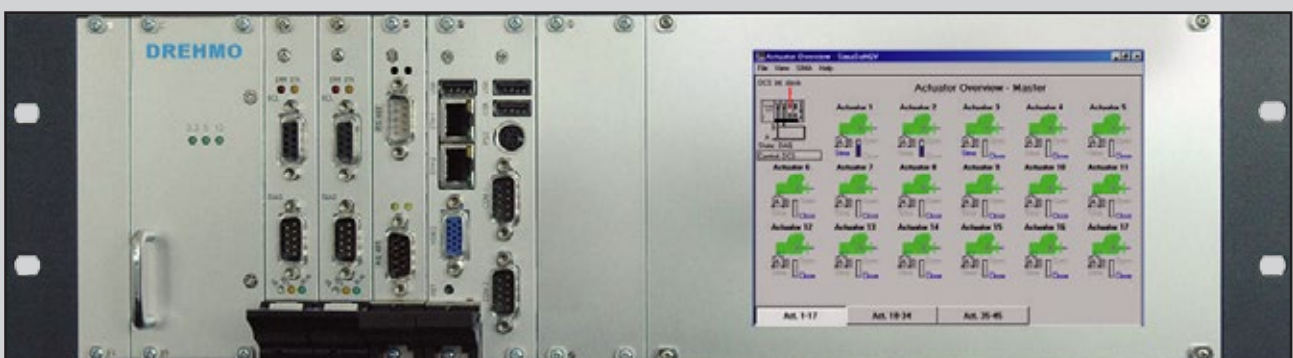
### System integration:

DIMA integrates field devices like x-matic actuators into an automation environment. Therefore, a variety of open fieldbus protocols such as Profibus DP or Modbus RTU are supported by the DIMA.

For the integration into a higher automation system RS 485, Ethernet or RS 232 are available additionally.

### Data concentrator:

Besides the essential feedback information, x-matic actuators provide a wide variety of information data, e.g. diagnostic information, which can be used by the DIMA for quick and easy diagnostics, without stressing the DCS.



DIMA Masterstation

# DIMA Masterstation

**DREHMO!**  
REASONS

- Easy engineering of actuators
- Control, maintenance and diagnosis functionality built into one device
- Ready for every kind of existing process control technology and wiring
- Easy to use and compact unit with colour display in a 19" case
- Safe data transfer up to 296 km

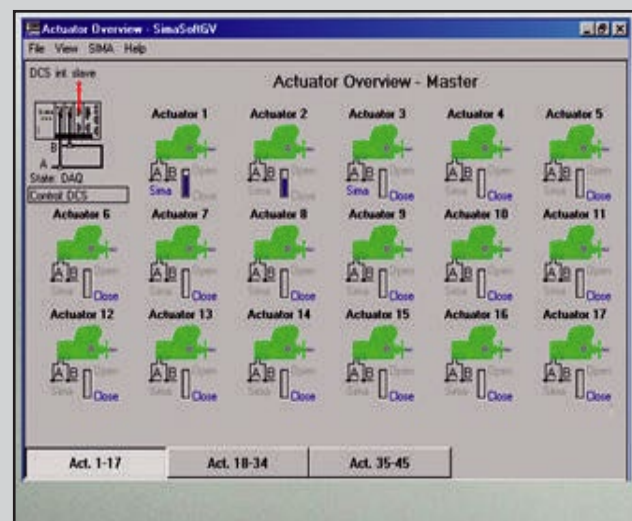
... with integrated valve actuation from one source

## Commissioning tool:

The DIMA also functions as a standalone automation system, allowing the actuator to be operated and commissioned autonomously from a higher automation system. Actuator and communication parameter settings can be performed and tested.

## Safety by design:

To allow for the safest possible operation the DIMA Masterstation has been designed as a highly redundant unit with both the master and the cables being redundant in case of a failure.



Everything under control – The DIMA Masterstation with clear text display and touch screen for easy operation

Keeping things safe becomes more important with every element that is added to a system. And with this rising complexity it becomes increasingly difficult to monitor every single part and its safety.

During commissioning we need to make sure that every single actuator, cable or plug works exactly as it's supposed to. And these checks have to be repeated frequently to maintain the highest possible safety standard throughout your facility.

Therefore we have developed a multitude of helpful hard- and software tools that make these checks easier and quicker, saving time and money.

Together with our high-quality actuators, these DREHMO tools keep non-operational periods at a minimum and safety at a maximum!

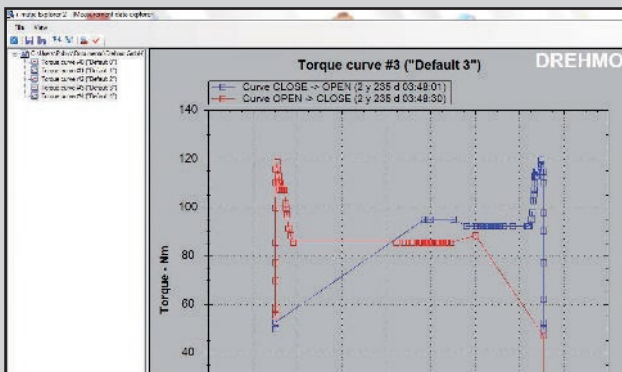
## keeping it safe ...

IrDA and Bluetooth make it easy and comfortable to gather, change and write parameters of actuators. Tag-oriented documentation of data allows for quick and safe unit start-up.

The free Windows application "i-matic Explorer" is there to assist you with these actions. Many help functions within the program save time and enhance safety. Furthermore, the firmware update functionality keeps the actuators up-to-date, securing your investment.

Bus systems which support noncyclical data exchange allow the comfortable management of unit data and parameters from a single maintenance point.

DREHMO offers modules (for the open standard FDT and others) that ease the use and handling of valve actuators. These modules are the basis for the functionality and benefits of the i-matic Explorer.



i-matic Explorer

i-matic Explorer:

- Documentation and storage of parameters
- Firmware download
- Visualisation of the valve's torque requirements
- Comparison of two units' parameters
- Comprehensive information and help for each parameter
- Multilingual GUI
  
- Optionally pre-installed onto PDA in ex-proof case for mobile use

- More than the actuator – our tools secure your investments by keeping the actuators safe and operational
- Preventive maintenance, such as the documentation of valve torques prevent system failures and down-times
- Insulating output drives allow for the integration into cathodic protection systems (CP or ICCP)

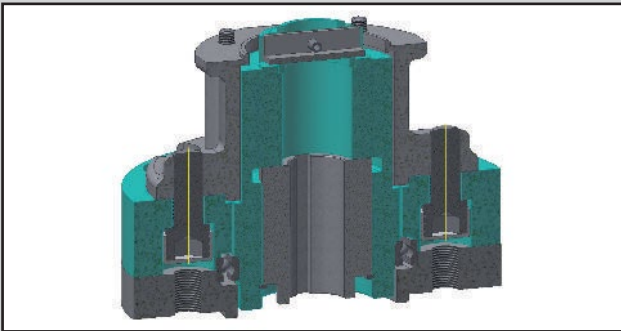
### ... with appropriate tools and options

#### Separated Control Unit:

In case of difficult environments (e. g. extreme vibrations, difficult access to the local control unit) the control unit can be separated from the actuator up to a distance of 200 m. This ensures an easy integration in existing plants and a higher protection of the operating staff against dangerous ambient conditions.

#### Cathodic protection:

Due to the use of insulating output drives, x-matic actuators can be integrated into both cathodic protection (CP) systems as well as impressed current cathodic protection (ICCP) systems to prevent corrosion.

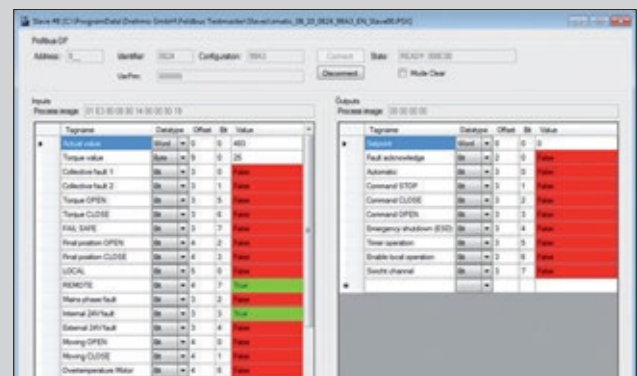


Cathodic protection

#### - Fieldbus-Testmaster:

Bus systems nowadays often form the nerve net of a system as they offer several benefits. The start-up, however, requires specialised knowledge and modern equipment to provide a smooth commissioning process.

The DREHMO Profibus-Testmaster assists you with all necessary communication checks during commissioning and later use.



Fieldbus-Testmaster

No matter how brilliant and how safe a product may be, in the end safety also depends a lot on human beings.

At DREHMO we have gathered a group of highly motivated and well-trained people in all areas of our business. From design and construction, manufacturing and process monitoring to our sales team, all of us are committed to safety and the satisfaction of our customers.

Our actuators are “Made in Germany” but they don’t stay there, they go out into all parts of the world through our sales network with partners in 78 countries.

From the initial stages of planning to the commissioning process and aftersales services, our team of experts is always at your side. When- and wherever you want.

To us, keeping it safe is teamwork!

## keeping it safe ...



Always at your side

We care for valve actuators.

That doesn’t stop when they leave our production, so we offer a lot of individual services and support throughout the whole life-cycle of every unit.

- Consultation and advice
- Start-up service
- On site service
- Hands-on training
- Retrofit services
- Hotline



Training



We take the quickest route if you need us

- Certified quality "Made in Germany"
- Flexible team of technically experienced and highly motivated engineers and technicians
- Committed after-sales service
- Sales and service worldwide and at any time due to a network with bases in 78 countries

... with an ambitious team of experts



Our dedication for actuators doesn't end with the sale



On site support



### 1. Made in Germany

DREHMO x-matic actuators are high quality actuators designed and produced in Germany. Made and approved for use in any oil-, gas- or petrochemical application.



### 2. Quality at any time

DREHMO x-matic actuators offer high safety and quality through well-documented production by highly qualified staff in state-of-the-art production facilities.

keeping it safe ...



### 6. Ex-proof. Proven.

DREHMO x-matic actuators have been tested for safety and quality by several international inspection authorities such as ATEX and GOST. They are compliant to the SIL ratings as well as the highest possible protection class IP68.



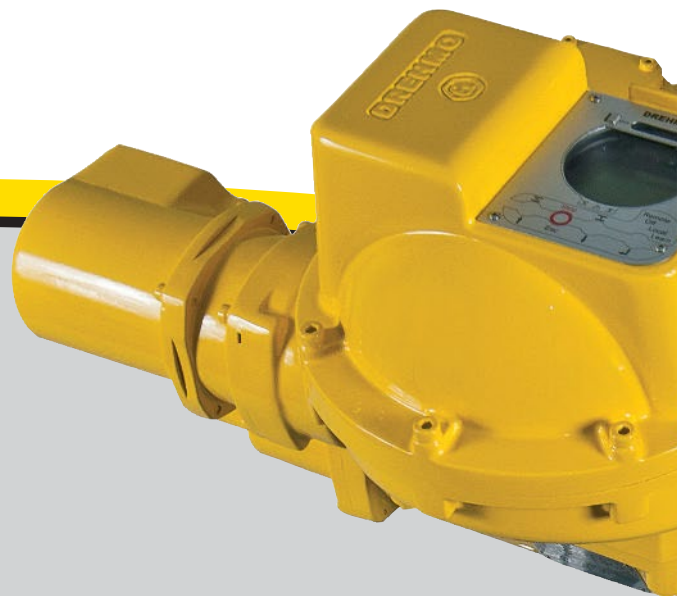
### 7. No limitations

DREHMO x-matic actuators are made and approved for use in any oil-, gas- or petrochemical application at just about everywhere in the world from the north pole to the sahara desert.



### 8. Excellent communication

DREHMO x-matic actuators can easily be integrated into an existing control and communication system topology. Both a hard-wired interface or many different field bus options such as Profibus, Modbus RTU or DeviceNet are supported.





### 3. High usability

DREHMO x-matic actuators feature large, multilingual graphic displays with clear text for easy, non-intrusive control, updates, diagnosis and maintenance.



### 4. Long life and low wear

DREHMO x-matic actuators include the trusted LongLife planetary gear box that is not only exceptionally sturdy and reliable, but also maintenance-free due to its lifetime lubrication.



### 5. Always thinking forward

DREHMO x-matic actuators are built to last. They constantly monitor themselves to prevent errors and are always enhanceable with easy firmware upgrades.



... with (more than) ten good reasons



### 9. More than the actuator

DREHMO x-matic actuators are backed by an extensive range of tools and services that make the operation easy and secure your investments by keeping your actuators safe and in operation.



### 10. DREHMO worldwide

DREHMO x-matic actuators come with the competence and dedication of our network of sales and service bases in 78 countries with actuator experts highly trained in ...

... keeping it safe!

# DREHMO

VALVE ACTUATORS



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FLUID CONTROL



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