



eHydroCOM

Electric Stepless Capacity Control System

Achieve precise and fast process control
while saving energy


HOERBIGER

Solve stepless control tasks precise and fast

Many reciprocating compressors need to deliver less than their rated capacity, and this typically requires excess compressed gas to be returned to the suction side via a recycle valve. When this happens, the energy used to compress this recycled gas is wasted.

HOERBIGER's eHydroCOM is an all-electric stepless volume control system available today for reciprocating compressors. The fully standardized, 100% oil-free system is the ideal way to achieve and maintain stable capacity control of dynamic processes.

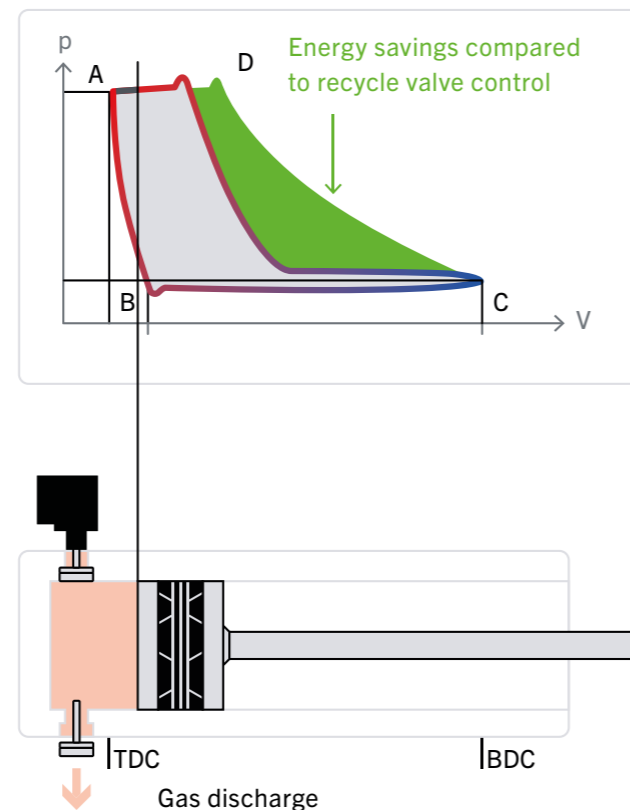
Precise capacity control

eHydroCOM continuously adjusts the compressor's delivery rate to match the amount required by the downstream process. Precise control of the suction valves eliminates the need for a bypass valve. This not only saves energy and reduces CO2 emissions, but also improves your process controls at the same time.

One system – many possibilities

Conventional capacity control systems waste energy because they either require gas to be compressed unnecessarily (bypass valves) or cannot accurately match the required flow rate (stepwise capacity control, which is also time-consuming to adjust).

eHydroCOM, in contrast, offers a wide and stepless control range, from below 10% (depending on the application) up to 100%. Delivery rate can be adjusted continuously and automatically, with no time lag. Together with the wide turndown, this means you can operate your compressors more flexibly, cover your needs with a smaller fleet, react quickly and avoid overcapacity issues.



Test your energy savings here
ehydrocom-animations.hoerbiger.com

The best solution for your challenges

Standardized and ready for use immediately

The patented eHydroCOM actuator is a smart device that combines a range of electronic and electric drive technologies to increase the reliability, efficiency and lifetime of your compressor. With no hydraulic oil to leak, and a design that is almost wear-free in operation, eHydroCOM reduces potential points of failure and keeps downtime to a minimum.

Failure prevention through real-time monitoring of the actuator

Digital networking capabilities allow you to monitor your actuator in real time and thus detect failures early – or even avoid them altogether. And, thanks to our remote maintenance system, any problems that do arise can be quickly assessed by HOERBIGER experts if necessary. If spare parts are required, HOERBIGER always has semi-finished products ready, reducing or eliminating the need for you to carry spares.

Reduced operating costs with eHydroCOM

Taking advantage of plug-and-play connections, eHydroCOM XD – our most powerful and compact system for extreme duties – can be easily retrofitted to your existing compressors with minimal downtime. The self-calibration feature means that even untrained personnel with less experience can install and commission eHydroCOM. In line with the motto “one size fits all”, it's easy to replace the actuators. For you this means less inventory and less downtime. Your compressor is ready for use again immediately after maintenance.



With eHydroCOM, our employees – even those without years of operating experience – are able to start and stop the compressors. Thanks to the significantly more robust controls, pressure fluctuations in the hydrogen systems are almost imperceptible, and so we avoid unplanned downtime. The support through remote maintenance works perfectly.

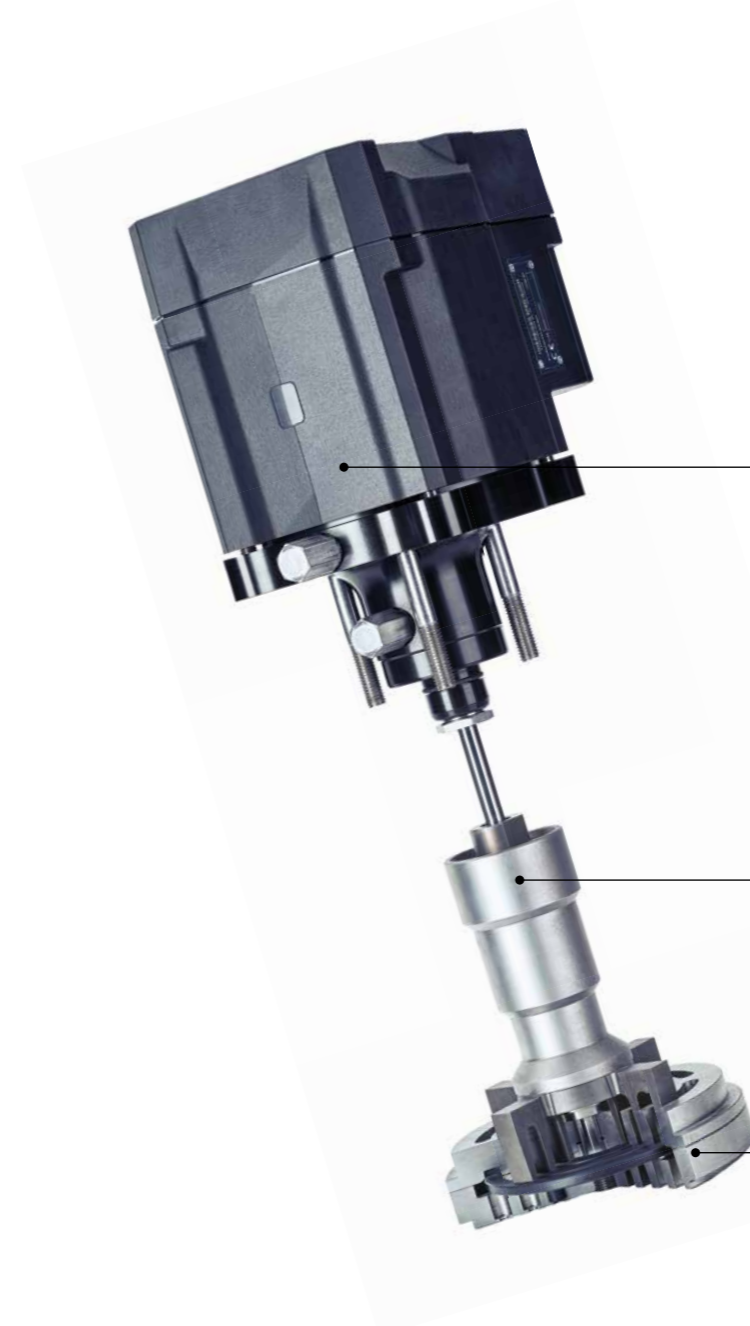
Chemical park, Germany

Benefits at a glance

Feature	Advantage	Benefit
Reverse flow control: The delivery rate of the compressor adjusts continuously to process requirements	No need for energy-wasting bypass valves	Saves energy while improving process control Reduces OPEX and CO2 emissions (Scope 1 or 2)
Reverse flow control: Wider control range, and ability to assign new duties to individual compressors	Flexibility in the compressor fleet and increased versatility, allowing precise and fast control of flow and pressure	Prevents overcapacity due to smaller fleet and fast response to changes
System architecture allows highest standardization: "One size fits all"	Simple and quick maintenance, repair, and asset management	Increases compressor availability and improves reliability due to long mean time between maintenance (MTBM) and short mean time to repair (MTTR) Reduces the risk of lost production (LPO)
100% oil-free and all-electric operating principle	Capacity control easier than ever before Simple and quick installation, commissioning, and maintenance	Lower total cost of ownership (TCO) and better economics (ROI) due to obsolete hydraulics and lower lifetime costs at competitive investment (CAPEX)
Fully digitalized system design and real-time monitoring of the actuator	All data at your fingertips, allowing valuable insights and enabling quick diagnosis	Increases availability due to instant access to all relevant data via webUI* or GUI, also remotely, if preferred

* only available for eHydroCOM HD

eHydroCOM



Actuator

Microprocessors control the electromagnetic application of the opening force to the unloader with precise timing.

Unloader

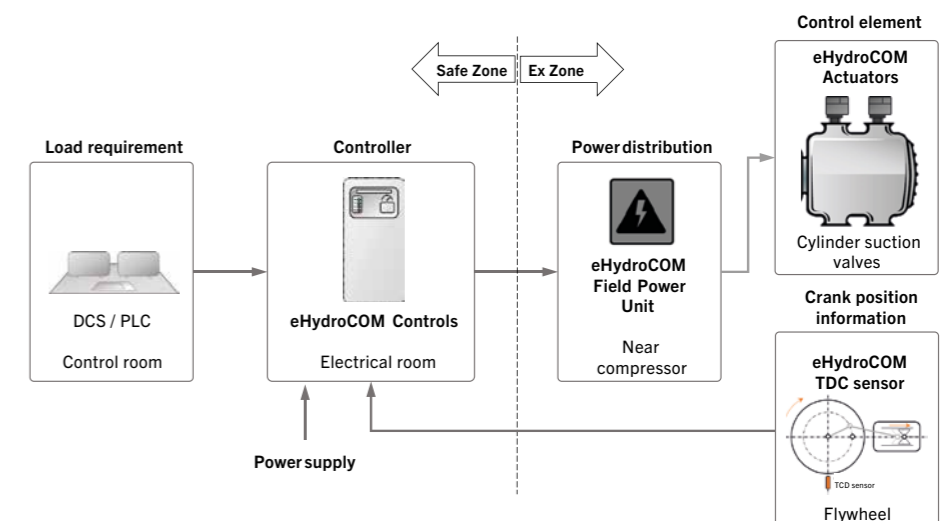
The unloader transmits the opening force from the actuator to the valve so that it does not close until the desired compression volume is reached.

Suction Valve

HOERBIGER ring or plate type suction valve with non-metallic sealing elements ensures long lifetime and best efficiency.



- Actuator
- Field Power Supply Unit (FPSU)
- Control room (DCS / PLC)
- Bus and power cables
- Top Dead Center sensor (TDC)



eHydroCOM HD

Feature

Actuator layout	Single magnetic coil stack
Application limits	Up to 2.5kN unloading force, 800rpm, 70bara suction pressure
Application range	Majority of applications
IP	Actuator: IP65 FPSU: IP65
Actuator height / weight	267mm / 20.5kg (NACE 23.5kg)
EX-certificates*	ATEX Zone 1 IIC
Power supply	Actuator: 60VDC FPSU input: 3 x 400VAC
Electrical connections	Terminals
Maintenance intervals	<400rpm: 32,000 operating hours 400 to 800rpm: 24,000 operating hours
Standardization	Same actuator for all stages / compressors
Automatic clearance compensation	Yes
Automatic wear compensation while compressor runs	Yes
Separate enclosure required for FPSU / ePU	No



eHydroCOM XD

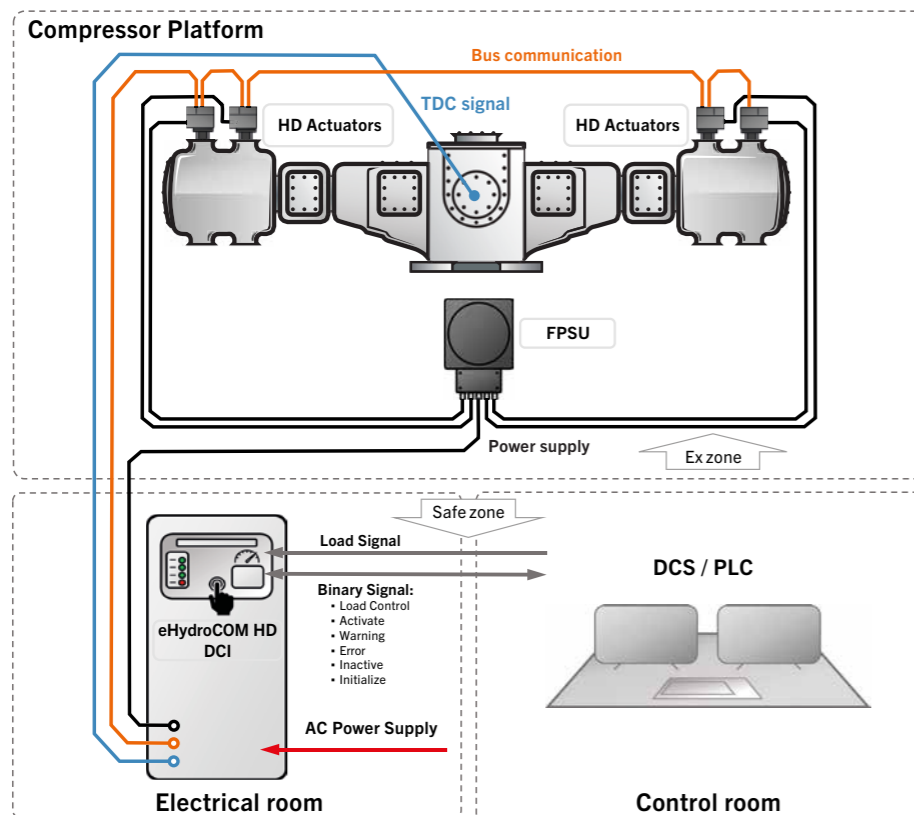
Feature

Actuator layout	Dual magnetic coil stack
Application limits	Up to 6.5kN unloading force, 1,200rpm, 160bara suction pressure
Application range	All HydroCOM applications incl. dia 17mm high force
IP	Actuator: IP65 ePU: IP67
Actuator height / weight	232mm / 20.0kg (NACE 23.0kg)
EX-certificates*	ATEX / IECx Zone 1 IIC, CSA C1/D2, TIIS, CCC
Power supply	Actuator: 560VDC ePU input: 3 x 400VAC
Electrical connections	Ex-connector
Maintenance intervals	<400rpm: 32,000 operating hours 400 to 800rpm: 24,000 operating hours 800 to 1,200rpm: 16,000 operating hours
Standardization	Same actuator for all stages / compressors
Automatic clearance compensation	Yes
Automatic wear compensation while compressor runs	Yes
Separate enclosure required for FPSU / ePU	No

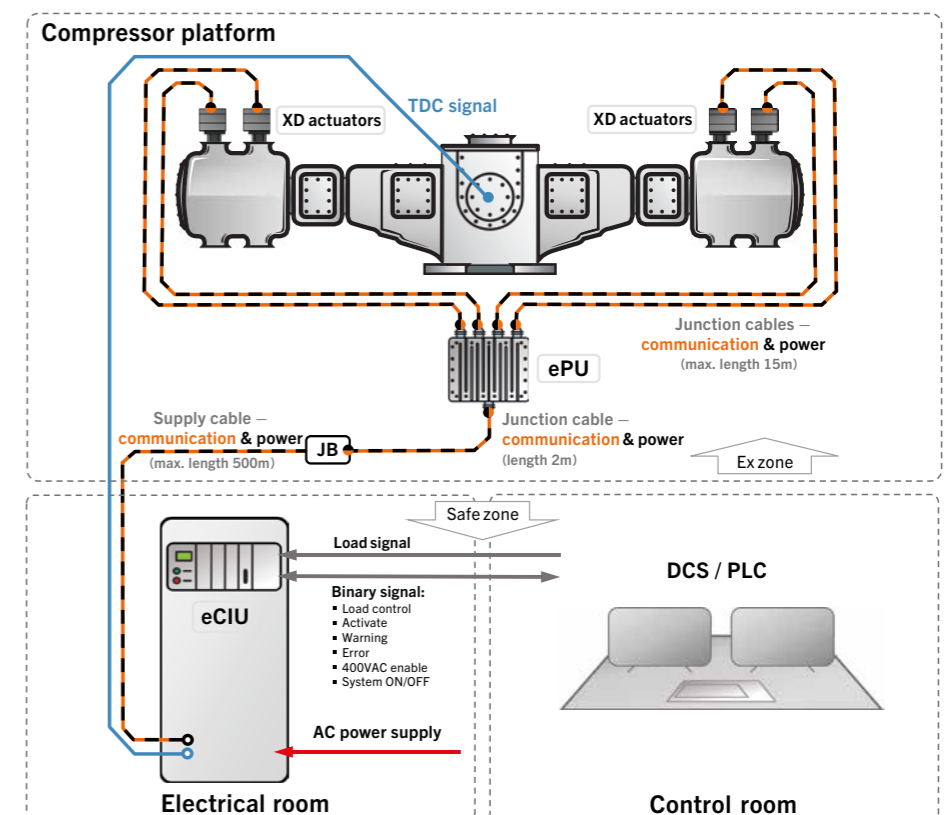


* Status correct at the time of printing. Further approvals may already be available. Please contact us for details.

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- FPSU: Field Power Supply Unit
- DCI: Digital Compressor Interface
- TDC: Top Dead Center



- ePU: eHydroCOM Power Unit
- eCIU: Compressor Interface Unit
- TDC: Top Dead Center
- JB: Junction Box



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today!



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Locally close to the customers – globally successful: HOERBIGER is active worldwide in 43 countries on all continents. 6,174 employees at 133 locations – including 30 production plants – deliver reliable solutions for better performance, increased safety, and fewer emissions. In 2023, they generated sales of 1.416 billion euros. For renowned customers from the energy sector, the process industry, the automotive industry, the mechanical engineering industry, safety technology, and the electronics industry, performance-determining products and services from HOERBIGER make the difference. With innovations for decarbonization and energy transition, HOERBIGER is already enabling change today for a better tomorrow. As majority shareholder, the HOERBIGER Foundation preserves the 129-year-old entrepreneurial heritage and guarantees stability, independence, and a future-oriented strategy.

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