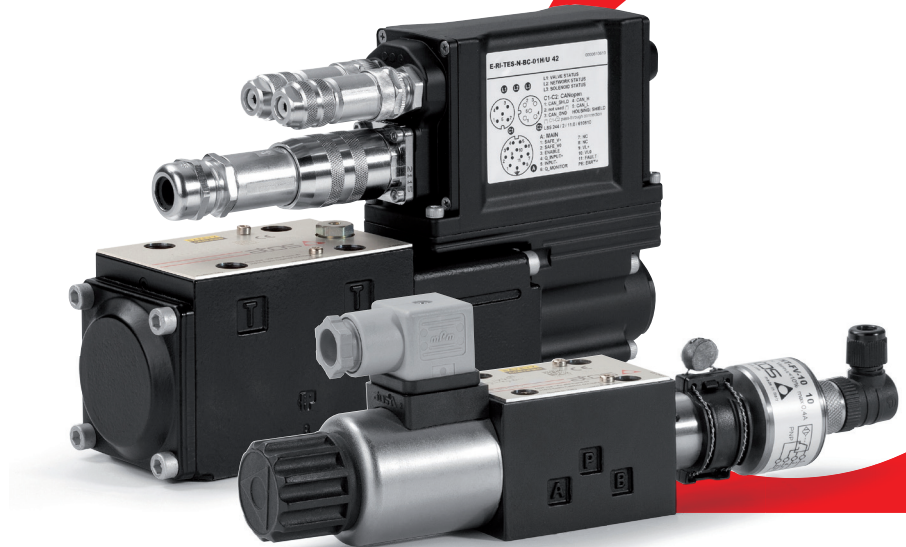


# Safety electrohydraulics

Proportional & on-off valves, cartridges, cylinders and servocylinders certified according to safety directives

**SAFETY**  
**CERTIFIED**

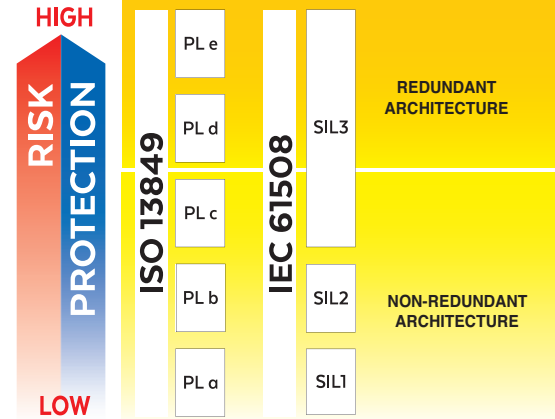
**atos**   
the **smart** electrohydraulics



# Safety components range

Atos is the only worldwide brand offering a full range of electrohydraulics safety components  
TÜV certified to Machine Directive 2006/42/EC, IEC 61508, ISO 13849

- digital proportional directional valves
- solenoid valves
- ISO and screw-in cartridges
- cylinders & servocylinders



Safety Integrity Level (SIL) & Performance Level (PL) states the max acceptable level of risk in process control systems, in order to reduce hazardous events

## Safety proportional valves

Proportional directional valves combining safety functions to standard functionalities



DIRECT & PILOTED

### Safety by double power supply

The separate power supply for electronics and coils allows the electronics to remain active and monitor the spool safety position when coils power supply is externally cut, to operate in safety conditions

### Safety by acknowledge signal

Upon valve's disable command input, to operate in safety conditions, the electronics monitor remains active to detect the spool safety position and confirm it through on-off output signal

ISO sizes 06 • 10 • 16 • 25 • 27 • 32 • 35  
Q<sub>max</sub> 70 ÷ 3.500 l/min • P<sub>max</sub> 350 bar

IEC 61508 up to SIL 2 / SIL 3  
ISO 13849 up to category 4, PL e

# Inductive safety sensors

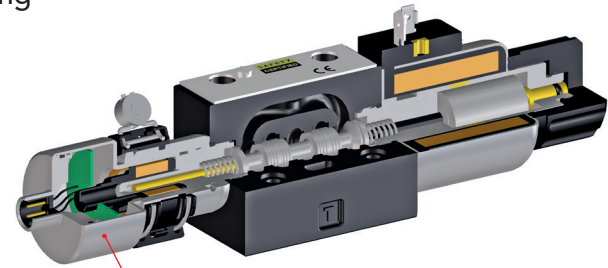
Contactless sensors for spool or poppet position monitoring

## FV inductive position switch

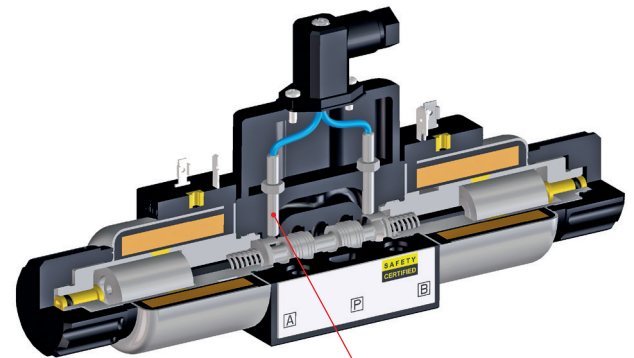
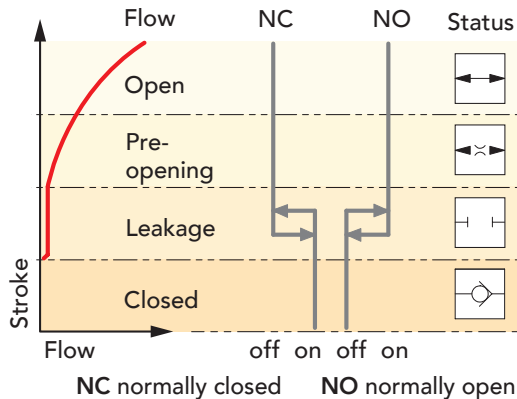
- NC and NO output
- Pmax 400 bar

## FI inductive proximity sensor

- NC or NO output
- Pmax 100 bar for valves, 500 bar for cartridges



FV INDUCTIVE POSITION SWITCH



FI INDUCTIVE PROXIMITY SENSOR

The spool position monitor signal switches its status from safe condition to unsafe condition

Machine Directive 2006/42/EC

# Safety solenoid valves

Machine Directive 2006/42/EC

On-off directional valves with inductive safety sensors that monitor the spool position to operate in safety conditions



DIRECT

ISO sizes 06 • 10

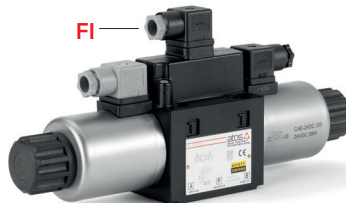
Qmax 80 ÷ 150 l/min • Pmax 350 bar



MODULAR

ISO size 06

Qmax 60 l/min • Pmax 350 bar



DIRECT

ISO sizes 06 • 10

Qmax 80 ÷ 150 l/min • Pmax 350 bar



PILOTED

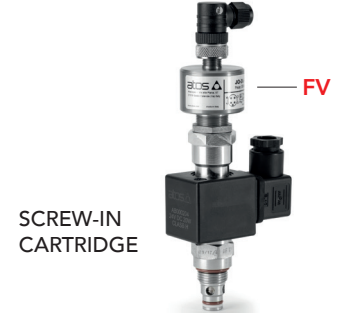
ISO sizes 10 • 16 • 25

Qmax 160 ÷ 700 l/min • Pmax 350 bar

# Safety cartridges

Machine Directive 2006/42/EC

On-off cartridges with inductive safety sensors that monitor the poppet position to operate in safety conditions



ISO sizes 3/4" • 7/8" • 1 5/16"  
Qmax 40 ÷ 300 l/min • Pmax 350 bar

ISO sizes 16 • 25 • 32 • 40 • 50 • 63 • 80 • 100  
Qmax 290 ÷ 16.000 l/min • Pmax 420 bar

ISO MODULAR ELEMENT



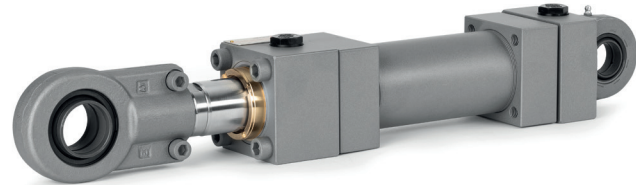
ISO sizes 16 • 25 • 32 • 40 • 50  
Qmax 290 ÷ 4.000 l/min • Pmax 420 bar

# Safety cylinders and servocylinders

Cylinders & servocylinders successfully fulfil the highest safety requirements

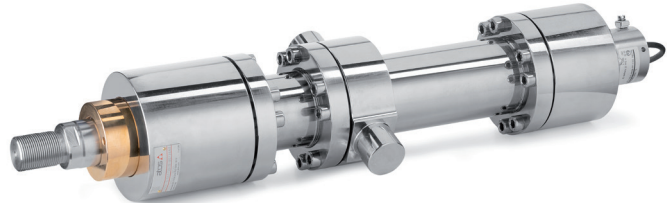
## Cylinders construction method

SC3 certification up to SIL3, achieved due to excellent design procedures and production processes, aimed at ensuring the highest level of quality and preventing the systematic failures



## Position transducers

Magnetostrictive or magnetosonic, certified IEC 61508 up to SIL2. Optional redundancy of transducer measurement stage with single output or with multiple output signals



## Rod locking systems

Bi-directional units, with optional inductive sensors, used as functional clamps for precision locking or to prevent undesired rod movement, according to ISO 16092 for machine tools safety



## Worldwide Sales Organization

A sales network with 25 branches, 120 sales professionals and distributors in more than 80 countries, together with great responsiveness and focus on customers.



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