Railway Technology
Products, systems and applications

**Cylinders**

**Cylinders – ISO cylinder PRA/TRB Rail**
Profile and tie rod cylinders for linear actuation
- Many variants, strokes and accessories
- Integrated end of stroke cushioning

**Cylinders – CCI Rail**
Compact cylinder for restricted envelope
- Many variants, strokes and accessories
- Optional sensors

**Cylinders – freight car actuator**
Cylinder for freight car bottom door discharge (hopper doors)
- Large bore sizes up to 14", NPTF connecting threads
- Reinforced composite, flexible cylinder barrels to protect against ballast and debris

**Cylinders – RTC-TD**
Door cylinder for internal and external train doors
- Compact design with integrated control valves
- Pre-set cushioning and speed control based on door weight and kinematics
**Valves**

**EP Valves – ED05 Rail**
Proportional valve for dynamic pressure control in applications like pantograph, brake and suspension control systems

- Nominal flow: Qn 1200 l/min
- Operating pressure: 11 bar
- Temperature: -40 to +70 °C
- Power supply: 24 VDC +/-30%
- Norms: EN50155, ISO 9227 (240h), EN 61373 (Cat.1, cl. B), EN 50121-3-2, EN 45545 (HL3)

**Valves – 579 Rail**
Stackable 3/2-poppet valve for compact and cost efficient control of toilet systems

- Direct controll poppet valve with proportional solenoid
- Temperature: -40 to +70 °C
- Power supply: 24 and 110 VDC +/-25/-30%
- Norms: EN 61373 (Cat.1, cl. B), EN 45545 (HL3)

**Valves – 563, 565 and 567**
3/2-poppet valve for demanding conditions and high flow

- Nominal flow: Qn 1350 - 13620 l/min
- Operating pressure: 3.5 - 10 bar
- Temperature: -25 to +50 °C (optional -40 bis +70 °C)
- Power supply: 24 and 110 VDC +25/-30%
- Norms: EN 61373 (Cat.1, cl. B), EN 45545 (HL3)

**Valves – 32mm pilot valve**
3/2-Quick acting, direct operating poppet valve for applications like doors, couplers, HVAC and auxiliary control

- Nominal flow: up to Qn 140 l/min
- Operating pressure: 2.5 - 10 bar
- Temperature: -40 to +70 °C
- Power supply: 24 and 110 VDC +25/-30%
- Norms: EN 50155, EN 61373 (Cat.1, cl. B), EN 60068, EN 45545 (HL3)

**Valves – CD07 sub-base**
3/2 and 5/2-Sub-base mounted spool valve for various rail applications

- Nominal flow: Qn 1200 - 1400 l/min
- Operating pressure: 3.5 - 10 bar
- Temperature: -40 to +70 °C
- Power supply: 24 and 110 VDC +25/-30%
- Norms: EN 50155, EN 61373 (Cat.1, cl. B), EN 60068, EN 45545 (HL3)

**Valves – CD07**
3/2 and 5/2-Pipe mounted spool valve for various rail applications

- Nominal flow: Qn 3800 - 4100 l/min
- Operating pressure: 2 - 10 bar
- Temperature: -40 to +70 °C
- Power supply: 24 and 110 VDC +25/-30%
- Norms: EN 50155, EN 61373 (Cat.1, cl. B), EN 60068, EN 45545 (HL3)

**Valves – CD12**
3/2 and 5/2-High flow spool valve for various rail applications

- Nominal flow: Qn 1200 l/min
- Operating pressure: 11 bar
- Temperature: -40 to +70 °C
- Power supply: 24 VDC +/-30%
- Norms: EN50155, ISO 9227 (240h), EN 61373 (Cat.1, cl. B), EN 50121-3-2, EN 45545 (HL3)

**Valves – 597 Rail**
Robust direct acting poppet valve

- Nominal flow: Qn 600 l/min
- Operating pressure: 3.8 - 10 bar
- Temperature: -25 to +55 °C
- Power supply: 24 VDC +/-10%
- Norms: EN 61373 (Cat.1, cl. B), EN 45545 (HL3)

**Valves – 30mm pilot valve**
Robust poppet valve design, resistant to contaminated air

- Nominal flow: Qn 3800 - 4100 l/min
- Operating pressure: 2 - 10 bar
- Temperature: -40 to +70 °C
- Power supply: 24 and 110 VDC +25/-30%
- Norms: EN 50155, EN 61373 (Cat.1, cl. B), EN 60068, EN 45545 (HL3)

**Valves – 579 Rail**
Robust direct acting poppet valve

- Nominal flow: Qn 600 l/min
- Operating pressure: 3.8 - 10 bar
- Temperature: -25 to +55 °C
- Power supply: 24 VDC +/-10%
- Norms: EN 61373 (Cat.1, cl. B), EN 45545 (HL3)

**Valves – CD07 sub-base**
Robust direct acting poppet valve

- Nominal flow: Qn 1200 - 1400 l/min
- Operating pressure: 3.5 - 10 bar
- Temperature: -40 to +70 °C
- Power supply: 24 and 110 VDC +25/-30%
- Norms: EN 50155, EN 61373 (Cat.1, cl. B), EN 60068, EN 45545 (HL3)

**Valves – 579 Rail**
Compact and lightweight design through polymer valve body (EN 45545 compliant)

- Nominal flow: Qn 1200 l/min
- Operating pressure: 1 bar
- Temperature: 0 to +70 °C
- Power supply: 24 VDC +/-30%
- Norms: EN50155, ISO 9227 (240h), EN 61373 (Cat.1, cl. B), EN 50121-3-2, EN 45545 (HL3)
Valves and auxiliaries

Valves – CD ISO 2
3/2 and 5/2-High flow sub-base mounted spool valve for various rail applications
- Long life and low leakage at sub-zero temperatures
- Sub-base mounted design with pilot valves located on top for easy access
- Nominal flow: Qn 3000 l/min
- Operating pressure: 2 - 10 bar
- Temperature: -40 to +70 °C
- Power supply: 24 and 110 VDC +25/-30%
- Norms: EN 61373 (Cat.1, cl. B), EN 45545 (HL3)

Valves – 531 sub-base
3/2 and 5/2-Sub-base mounted spool valve for various rail applications
- High life and compact design
- Sub-base mounted design for manifold solutions
- Nominal flow: Qn 860 l/min
- Operating pressure: 2 - 10 bar
- Temperature: -40 to +70 °C
- Power supply: 24, 48, 72 and 110 VDC +/-30%
- Norms: EN 61373 (Cat.1, cl. B), EN 60068

Valves – Superspool RCV-V
5/2-Sub-base mounted spool valve for freight car bottom door discharge (hopper doors) control
- Very robust and durable design for external freight car applications
- Combined position indication / manual override
- Nominal flow: Qn 7400 l/min
- Operating pressure: 2 - 10 bar
- Temperature: -30 bis +70 °C
- Power supply: various (on demand), special power supply unit with integrated diodes for easy replacement

Auxiliaries – tubing
Pneumatic tubing for applications in railway
- Improved flexibility for easy installation compared to what exists on the market for rail
- Complies to EN45545 (HL2)
- Tube sizes (outer diameter): 6, 8, 10 and 12mm
- Operating pressure: 0 - 12 bar
- Temperature: -40 to +70 °C
- Material: PA12 based
- Norms: EN 61373 (Cat.1, cl. B), EN 45545 (HL3)

Auxiliaries – non-return valves
Pipe and sub-base mounted non-return valves for various rail applications
- Robust design and low leakage at sub-zero temperatures
- Various sizes and low switch-over pressure
- Nominal sizes: 3, 6, 12, 19, 25mm
- Switch-over pressure: <0.2 bar
- Max. operating pressure: 10 bar
- Temperature: -40 bis +80 °C
- Norms: EN 61373 (Cat.1, cl. B), ISO 9227 (500h), EN 45545 (HL3)

Auxiliaries – ball valves
2/2 and 3/2-Sub-base mounted ball valves
- Low leakage at sub-zero temperatures
- Optional position feedback
- Nominal size: 10mm
- Operating pressure: 0 - 10 bar
- Temperature: -40 to +80 °C
- Power supply (for position switch): 24 and 110 VDC +25/-30%
- Norms: EN 61373 (Cat.1, cl. B), ISO 9227 (240h), EN 45545 (HL3)

Auxiliaries – fittings QR2
Push-in fittings for pneumatic components
- Easy and reliable push-in assembly
- Wide temperature range and low leakages
- Size: for tube sizes 6, 8, 10 and 12mm (polymer tubes)
- Operating pressure: -0.95 - 16 bar
- Temperature: -40 to +80 °C
- Optional: -40 to +80 °C
- Norms: EN 61373 (Cat.1, cl. B), EN 45545 (HL3)
**Auxiliaries, air supply and pressure sensing**

**Fittings – fittings NU 2**
- Push-on fittings for pneumatic components
- Size: for tube sizes 6, 8, 10 and 12mm (polymer tubes)
- Nominal flow: 1100 - 2700 l/min
- Operating pressure: 2 - 16 bar
- Temperature: -10 to +60 °C (optional -40 to +60 °C)
- Norms: EN 61373 (Cat.1, cl. B), EN 45545 (HL3)
- Temperature range and low leakages

**Air supply – MH1**
- Flange mounted pressure regulator for various rail applications
- Precise and accurate pressure control across the whole temperature range
- Sub-base mounted design, relieving and non-relieving option
- Nominal flow: Qn 370 l/min
- Input pressure: 0.5 - 12 bar
- Output pressure: 0.5 - 9 bar
- Temperature: -40 to +70 °C
- Norms: EN 61373 (Cat.1, cl. B), ISO 9227 (240h), EN 45545 (HL3)

**Air supply – PR1-RGP**
- Precision pressure regulator for air bellow pressure control on pantograph system and other rail applications
- Precise and fast pressure control across the whole temperature range
- Wide temperature and flow range
- Nominal flow: Qn 2200 - 6500 l/min
- Input pressure: 0.5 - 18 bar
- Output pressure: 0.05 - 7 bar
- Temperature: -35 to +60 °C
- Norms: EN 61373 (Cat.1, cl. B), ISO 9227 (240h), EN 45545 (HL3)

**Air supply – NL2**
- FRL units for air preparation tasks in rail applications
- High number of variants and extensive accessories
- Easy combination of elements to one complete assembly, ready to install
- Nominal flow: Qn 1100 - 2700 l/min
- Operating pressure: 2 - 16 bar
- Temperature: -10 to +60 °C (optional -40 to +60 °C)
- Norms: EN 61373 (Cat.1, cl. B), EN 45545 (HL3)

**Pressure sensing – pressure switch**
- Pressure switch for demanding environmental conditions
- Very low leakage and suitable for -50 °C
- Pipe and sub-base mounted design
- Operating pressure: -1 - 20 bar
- Temperature: -50 to +85 °C
- Power supply: 24 to 110 VDC +25/-30%
- Norms: EN 50155, EN 61373 (Cat.1, cl. B), EN 60068, EN 45545 (HL3)

**Pressure sensing – pressure sensor**
- Pressure sensor for various applications in rail with demanding requirements for accuracy and robustness
- High accuracy over a wide temperature range
- Electrical connection via M12 or Form A connector according to DIN EN 175301-803
- Operating pressure: 0 - 25 bar
- Temperature: -40 to +125 °C
- Power supply: 9 to 32 VDC
- Output signal: 4 to 20mA
- Electrical connection: M12 or Form A according to DIN EN 175301-803
- Norms: EN 50155, EN 61373 (Cat.1, cl. B), ISO 9227 (500h), EN 60068, EN 50121-3-2, EN 45545 (HL3)