



# FLEXCONTROL FAMILY

The flexible and powerful brake control system family **FlexControl** provides mainly brake cylinder pressure control for central (per-car control) and decentralized (per-bogie control) systems. Its modular design of electronic and pneumatic modules makes it configurable for most train applications. Anti-skid valves as well as different auxiliary control functions can be integrated into the module as an option.

## Customer benefits

- Market-proven technology
- Flexible and extensible system layout for numerous system configurations
- Maximum economy thanks to standardized modules
- Straightforward service and maintenance concept
- Discrete but highly integrated components

## Applications

- High-speed trains
- Metros
- Regional & commuter trains

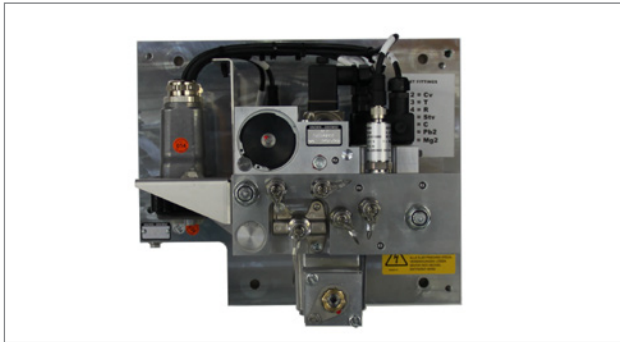


**KNORR-BREMSE**

## Exemplary standard pneumatic units for Brake Cylinder Pressure Control

### FlexControl Modular

- based on PU-x = highly-integrated electro-pneumatic modules
- PU-C: brake cylinder pressure control with continuous load correction
- Optional modules attached to PU-C achieve outstanding functional integration:
  - PU-W: wheel slide protection
  - PU-P: parking brake
  - PU- M: magnetic track brake control
  - KKL2: distributor valve (indirect brake)
- Further extendable by PLUS modules



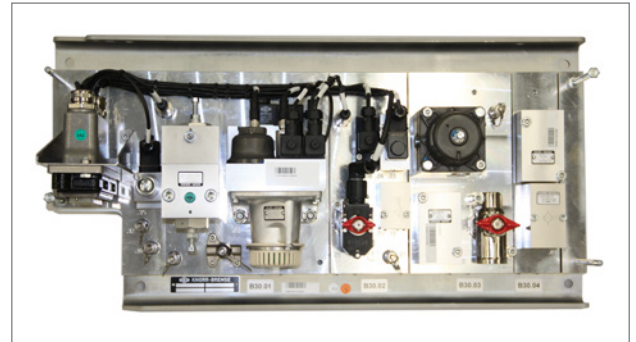
Core FlexControl Modular (PU-C only) for detached electronics

### FlexControl Lite

- Reduced level of functional integration by using discrete components
- Core function: brake cylinder pressure control with pneumatic load limitation
- Extendable by PLUS modules

### PLUS modules

- Standardized extension boards with a common form factor for various auxiliary functions, e.g. sanding, pantograph, MTB, WSP, air suspension, ... or any special need if required



FlexControl Lite extended with 3 PLUS modules for detached electronics

## Integration with electronic units

### Detached electronic unit ...

- ... allows separate positioning of pneumatic & electronic units in tight installation space situations
- Electronic unit can be placed in an underfloor or indoor housing, or in an industry-standard 19" rack

### Attached electronic unit ...

- ... allows compact all-in-one solutions to minimize final-assembly (cabling) effort
- Different underfloor electronic units keep pace with the functional variability

### Knorr-Bremse Systeme für Schienenfahrzeuge GmbH

Moosacher Straße 80  
 80809 Munich  
 Germany  
 Phone: +49 89 3547-0  
 Fax: +49 89 3547-2767  
 rail.knorr-bremse.com



 **KNORR-BREMSE**

 **NEW YORK AIR BRAKE**

 **IFE**

 **MERAK**

 **MICROELETTRICA**

 **KIEPE ELECTRIC**

 **SELECTRON**

 **ZELISKO**

 **RAILSERVICES**