Integrated Electronics
Perfect Links on Every Level
Integrated Electronics from Bosch Rexroth

From conventional wiring to field bus technology. As a leading provider in pneumatics worldwide, Bosch has played a major role in every development for electrical connection technology. All of these systems have been continually improved and each has a special area of application.

**Single Wiring**
Single wiring is a simple and reliable electrical solution for systems that are not very complex. Bosch Rexroth offers a wide range of individually wired products. Examples are the Series TC08 valve with an M8 plug, and the Series TC15 and Series LS04-SW manifolds with individual wiring.

**Multi-pin Plug Units**
Installation time is reduced for valve units with multi-pin plugs in comparison to single wiring. The versatility and flexibility of our valve systems with multi-pin plugs helps to quickly find solutions for customer-specific automation tasks. Manifolds are delivered fully assembled and tested. Multi-pin manifolds reduce cabling and improve aesthetics, making for a cleaner system. Thanks to its modular design, an existing system can be expanded or modified at any time.

**Field Bus Systems**
The more sophisticated the controls of a system, the more it pays to use field bus systems. These systems minimize cabling, increase diagnostic capabilities, and reduce the number of potential errors in a system. Modern data structures not only make fast and secure data transmission possible, they also allow diagnostics down to individual valve coils. Each application requires a suitable field bus system solution to get the job done. That’s why Rexroth has organized its extensive range of field bus systems into three different architectures.
Three Field Bus Concepts

BDC-Bus Direct Control
BDC is the direct link from your pneumatic valves to the field bus. The decisive issue is to find the best solution for your requirements and priorities. This is the most simple, yet very flexible solution when only output devices need to be controlled. Input devices can not be added. The field bus connection runs from unit to unit and a maximum of 32 coils or discrete outputs can be controlled per valveunit.

CMS-Central Mounted System
The modular and configurable valve block system with integrated bus module and input/output modules offers a mechanically complete unit, utilizing one bus address per assembly, for applications without additional cabling.

DDL – Drive & Diagnostic Link
This structure consists of a bus module for communication with the PLC field bus and up to 14 additional participants in the distributed DDL line, all on a single bus address. Sophisticated diagnostic functions make it possible to quickly recognize and find errors, significantly reducing downtime in production systems. Independent of bus protocol, each DDL branch can process 128 inputs and 128 outputs. Analog input and output signals can also be linked.
## B-Design Valve Families

### Direct connection to Valve family, or Driver
Module daisy-chained to DDL S-Design Node

- **HF04 / HF04 - XF**
  - M7 / M7 or Ø1/4”
  - Ø1/4” or Ø5/16”
  - 0.4 Cv

- **HF03-LG**
  - 1/8” to 1/4”
  - 0.6 to 1.2 Cv

- **CD01/02-PI**
  - Metric only
  - 1.4 Cv

- **HF02-LG**
  - 1/4” to 3/4”
  - 1.4 to 4.8 Cv

- **CD10/20/30-PI**

### Valve Families with Integrated Fieldbus

- **CA44**
  - M7
  - 0.2 Cv

- **LP04**
  - Ø1/8” or Ø1/4”
  - 0.35 Cv

- **CL03**
  - Ø3/8” to Ø5/16”
  - 0.85 Cv
Increased Flexibility and Modularity

**B-Design Electronics with Control Units**

Control Unit extension allows multiple valve manifolds and individual valves to be controlled via a single B-Design bus module. This allows control of up to four valve manifolds by one bus module and three unit extensions. The Control Units transmit discrete 24vdc signals via 25-pin D-sub (8- or 16-outputs), M8 connectors (8-outputs), or M12 connector (2-outputs). A maximum of 3 Control Unit extensions can be connected to a single B-Design bus module, with two different installation situations:

- ▲ Unit extension installed with bus module and valve manifold
- ▲ Unit extension installed with bus module as stand alone electronics

**S-Design DDL Link Structure**

The Drive & Diagnostic Link (DDL) from Bosch Rexroth controls solenoid valves and/or valve manifolds ranging in size from 10mm to 3/4” ports, from IP20 rating to the Series CL03 IP69K rated sanitary design manifold, along with the Series ED05 and ED07 pressure control valves, and digital and analog I/O-modules with different field bus systems. DDL provides, independent of fieldbus, 128 inputs and 128 outputs per bus module. With increased diagnostic functionality, DDL participant devices I/O and supply voltages are monitored and reported. Furthermore, the coils of valve units are observed to detect open and short circuit situations. Errors are quickly detected, the affected valve identified, and corrective measures initiated.
Bosch Rexroth Online Tools

Bosch Rexroth offers an extensive range of online configurators, calculation programs, and energy saving calculators. Product configurators allow customers to easily customize devices, and receive completely built and tested units. Calculation programs and energy saving calculators make it possible to determine the correct dimensions easily and reliably.

For those customers who prefer the flexibility to build their own manifolds, Rexroth also offers valve series which are purchased as individual components for on-site assembly.

**Welcome to our Product Configurator**

*Piston Rod Cylinders*  
*Rodless Cylinders*  
*Easy-2-Combine*  
*Cylinder Valve Units*  
*Valve Terminal Systems*  
*Maintenance Units*

**Product Calculation System**

**Product CAD Drawings**
Bosch Rexroth
for all your Drive & Control Needs