rexroth
A Bosch Company

M4+EDC+ED - Hybrid Solution

THE HYBRID BLOCK IS A DIRECTIONAL CONTROL VALVE WITH MODULAR CONSTRUCTION DESIGNED TO BE CUSTOMIZABLE IN RESPONSE TO THE DIFFERENT NEEDS OF FLOW, PRESSURE AND CONTROL OF ALL THE ACTUATORS IN A CONSTRUCTION OR AGRICULTURAL MACHINE.

CUSTOMER BENEFITS

- Flexible solution: Rexroth M4 valves range (LS) with the EDC (LUDV) and ED (LS) valve range.
- Modular system.
- Flow sharing (LUDV) system for simultaneous multiple movements.
- For mobile applications that require high flow (M4) and low flow (EDC and ED).

TECHNICAL DATA

- Flow: up to 150 l/min (40 gpm)
- Pressure: up to 420 bar (6000 psi)
- Operated: electro-hydraulic

APPLICATIONS

- Construction machines
- Agricultural machines

The hybrid block is a modular system that consists in the assembly of different directional valve elements capable of providing different flow rates according to the requirement of the different functions of the machine.
The flexibility in combining different modular elements always permits to create optimized blocks for the control of motors or cylinders in open circuits, since each element is right-sized according to the flow rate required by the corresponding actuator.
This hybrid solution is designed to serve all the functions of a construction machine, both the main functions (requiring high flow and high pressure) and the auxiliary functions (requiring low flow and low pressure). In fact, it combines slices of M4-12 with a “bankable” made of directional valves belonging to the EDC and ED range. The M4-12 slices are electro-hydraulic directional valve elements designed for high flow (up to 150 l/min) and high pressure (up to 420 bar). The bankable slices, instead, are direct acting, solenoid operated directional spools for limited flow (up to 60 l/min with EDC valves) and limited pressure (up to 310 bar).
In this hybrid block the M4-12 slices offer a load sensing control for the main functions of the machine, while the EDC bankable slices apply the LUDV principle on some other actuators that are always supposed to be in motion even in case of flow saturation. With a similar design, the flow distribution is always the same no matter what the load or how many functions are in operation at the same time.
In case of simultaneous movements, if the pump is not able to supply all the required flow (flow saturation condition), the most loaded actuators may stop, but the ones connected to the EDC slices continue to move more slowly, maintaining one another the same flow proportion.

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