AKON®
mobile valves

Proportional Valves

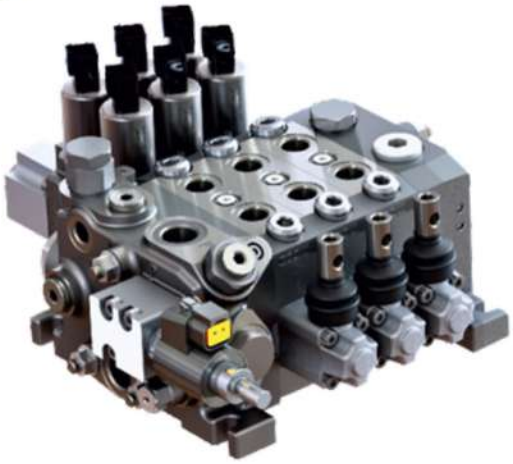
Directional Control Valve Range

Proportional Valves
5 – 130 lt/min

Our proportional range covers the full spectrum–from simple open-center solutions to advanced load-sensing architectures–with both pre-compensated and post-compensated (flow-sharing) options that enable smooth, simultaneous, load independent multi-function control. With our hybrid design approach, the valves combine cost efficiency with application-oriented precision, ensuring stable performance across diverse mobile hydraulic systems.

Open/closed-center compatibility together with flexible actuator options ensures seamless integration into a wide range of hydraulic applications.

Sectional Valves



LS50

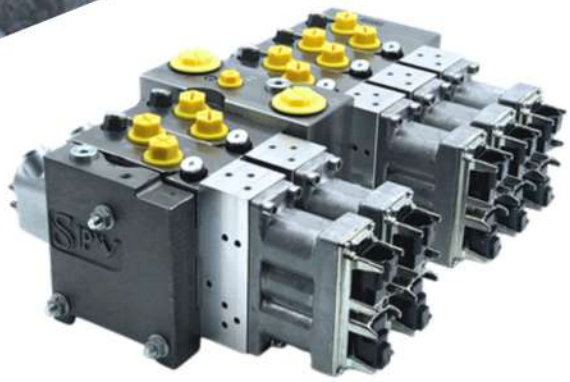
The LS50 is the load-sensing version of S50 series, designed to provide precise flow control and improved system efficiency. By regulating pump delivery according to demand, it ensures smoother multi-function operation and reduced energy losses compared to conventional open-centre systems. The LS50 can be combined in hybrid configurations with SPV120 or SPX80 valves, offering cost-effective load-sensing architecture for both simple and advanced applications.

Key Features

- Maximum flow up to 60 L/min
- Integrated, adjustable main relief valve, load hold check valves in each section
- Inlet options for fixed and variable displacement pumps
- Load-sensing architecture for efficient and demand-based flow control
- Wide range of antishock & anticavitation valves
- Multiple spool and positioner options; manual, pneumatic, electro-pneumatic, hydraulic, electro-hydraulic proportional, solenoid
- Manual lever, remote cable control and mechanical joystick
- Ideal for compact mobile machinery, agricultural equipment, municipal machinery, requiring efficient control in space-restricted systems

Flow Rate	Number of Sections	Port Threads
5 – 40 L/min 1 US gpm – 11 US gpm	1 – 12	BSP G3/8” UNF 3/4–16 (SAE 8)

Proportional Valves



SPV120

The SPV120 is a pre-compensated load-sensing proportional valve designed for advanced mobile hydraulic systems requiring smooth, accurate and simultaneous multi-function control. With load-independent metering characteristics, it delivers precise actuator control under varying load conditions. Its modular architecture making the SPV120 suitable for medium-to-high performance mobile machinery transitioning to full proportional load-sensing systems.

Key Features

- Pre-compensated LS valve with independent metering for each section
- Stable actuator speed control regardless of load pressure fluctuation
- Inlet options for fixed and variable displacement pumps
- Unloading valve option for higher efficiency and safety
- LSA/B relief valves and wide range of antishock & anticavitation valves
- Optimized spools for proportional, fine-control operation between 5 - 125 L/min
- Available with various control types: mechanical, friction detent, hydraulic pilot, open loop PWM proportional, electro-mechanical actuator (EMA) and closed loop CAN-Bus, analog signals (0-5V, 0-10V, Ratiometric) and PWM signals

Flow Rate	Number of Sections	Port Threads
Compensated - 125 L/min 33 US gpm	1 - 12	BSP G1/2" UNF 7/8-14 (SAE 10)
Non-Compensated - 140 L/min 37 US gpm		

Proportional Valves

SPX80

The SPX80 is a post-compensated, flow-sharing proportional valve designed for advanced mobile hydraulic systems requiring smooth, precise and simultaneous multi-function control. Offers load-independent distribution between 5 - 80 L/min flow rating, the SPX80 maintains accurate actuator speeds even when pump flow is insufficient to supply all functions at once. Its modular architecture, making it suitable for compact and mid-size machinery that require enhanced controllability, stability and operator comfort under varying load conditions.

Key Features

- Pre & post compensation option with independent metering for each section
- Maintains proportional actuator speed even under pump flow deficit
- Inlet options for fixed and variable displacement pumps
- Unloading valve option for higher efficiency and safety
- Wide range of antishock & anticavitation valves
- Optimized spools for proportional, fine-control operation between 5 - 80 L/min
- Can be integrated in hybrid architectures with LS50 series
- Available with various control types: mechanical, friction detent, hydraulic pilot, open loop PWM proportional and closed loop CAN-Bus, analog signals (0-5V, 0-10V, Ratiometric) and PWM signals.

Flow Rate	Number of Sections	Port Threads
Pre-Compensated - 65 L/min 17 US gpm	1 - 12	BSP G1/2" UNF 7/8-14 (SAE 10)
Post-Compensated - 80 L/min 21 US gpm		

Integrated System Components

AKON CLOSED LOOP ACTUTATOR SYSTEM

ACAS (Akon Close Loop Actuator System) is an advanced actuator system that performs position control of hydraulic valves based on the closed-loop principle.

ACAS ensures precise positioning to the target by measuring the real-time position of the valve spool and continuously monitoring this position.

In this way, high accuracy, safety, and system stability are achieved. ACAS communicates using CANopen and SAE J1939 protocols in compliance with industry standards.

It also offers control options through analog signals (0-5V, 0-10V, Ratiometric) and PWM signals.

It is designed to withstand harsh operating conditions with an IP69K protection rating.

It has successfully completed EMC and extensive electrical safety testing and is certified accordingly.

Integrated System Components

PROTECTION AND KEY FEATURES

High Protection Level

Resistant to water, dust, and impacts with an IP69K protection rating.

Electrical Protection

Reverse polarity, overvoltage, short-circuit, open-circuit, and temperature protection. EMC certification is available.

Fast Installation

Plug and Play

Intelligent Error Monitoring

Intelligent Error Monitoring: Fault codes and status messages are transmitted over the CAN network.

Customizable Parameters

PID, ramp, etc.

Integrated System Components

COVER FEATURES

UP

DOWN

		CAN-BUS		ANALOG-VOLTAGE		PWM
UP	1	VDC	1	VDC	1	VDC
	2	GND	2	GND	2	GND
	3	CAN-H	3	ALARM	3	PWM-A
	4	CAN-L	4	ANALOG INPUT	4	PWM-B
DOWN	1	VDC	1	MICROSWITCH-A	1	MICROSWITCH-A
	2	GND	2	MICROSWITCH-B	2	MICROSWITCH-B
	3	CAN-H	3	CAN-H	3	CAN-H
	4	CAN-L	4	CAN-L	4	CAN-L

1- Only the cover configuration shown above changes to enable different drive modes.
2- The drive mode depends on the type of cover mounted on the housing.
3- A laser marking on the cover indicates which configuration is active.

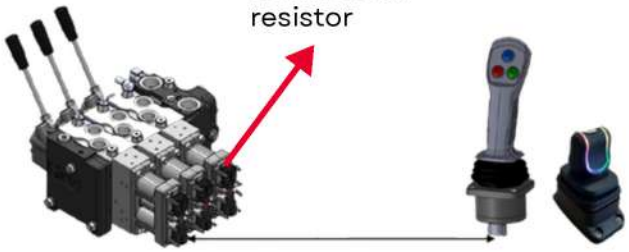
The markings are as follows:

C - for CANbus mode A for Analog mode

R - for Ratiometric mode

P - for PWM mode

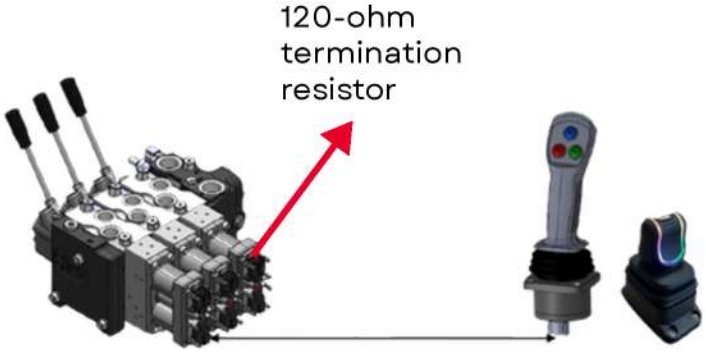
Integrated System Components



ACAS ADVANTAGES

Thanks to its easy installation and plug-and-play features, ACAS offers users rapid integration and effortless commissioning. This way, you will directly experience the ease of use provided by the ACAS ecosystem.

ACAS operates without the need for an external ECU. Equipped with an advanced STM32 microcontroller, it is capable of independently managing drive operations and functioning autonomously.



ACAS units are interconnected via a daisy chain configuration, with a 120-ohm termination resistor placed at the end of the network.

Integrated System Components

ELECTROMECHANICAL ACTUATOR

The latest intelligent pilot control unit guarantees excellent pilot control of the main spool thanks to the high degree of precision and speed. The elimination of an additional low-pressure supply circuit, contributes not only a simplified installation process, but also ensures that the system is robust against external influences such as pressure and temperature fluctuations, viscosity, or contamination.

Performance Data

Temperature range for normal operation	- 40 °C to + 100 °C (ambient temp. with circulating air. EMA mounted to a sectional valve)
Temperature range for reduced operation	+ 100 °C to + 120 °C (ambient temp. with circulating air. EMA mounted to a sectional valve)
Working stroke	22 mm
Speed	up to 90 mm/s
Forces **typ. max. actuation:** **typ. max. holding:** **typ. dyn. start up:**	 315 N @ 7 A 410 N @ 7 A 410 N @ 8,5 A
Repeatability	± 16 µm
Resolution	6 µm

Electrical Data

Voltage	12 V	24 V
Operating voltage	U_{min} = 9 V U_{max} = 16 V	U_{min} = 15,5 V U_{max} = 33 V
Idle current (without holding current)	80 mA	60 mA
Holding current Extend / Retract Neutral	 ~ 470 mA ~ 180 mA	 500 mA 300 mA

Additional data

Weight	1027 g (without gear rack)
Protection class	IP6K6 / IPX9K

Integrated System Components

WIFI-CAN

WIFI-CAN controls messages on the CAN bus and brings the power of IoT technology to the field.

The device enables provides real-time notifications for technical issues. It is specifically designed for valve systems use ACAS and supports UNIQUE ID assignments for efficient identification.

TECHNICAL SPECIFICATIONS

IoT Integration

Real-time message monitoring over the CAN bus.
Remote access and management via IoT technology.

Real-Time Fault Notifications

Identifies which actuator within the valve system has an issue.
Provides instant alerts for quick troubleshooting.

Unique ID Support

Assigns a unique ID to each connected device for simplified identification and management.
Enables efficient device tracking and communication in complex systems.

Quality

Global Availability and Remote Support

AKON®
mobile valves

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