

Electronics for Hydraulic Valves and Pumps Index



Make hydraulics system monitoring and control easier and more effective with Bosch Rexroth electronics for intelligent hydraulics. Electrical amplifiers convert low-current control signals into signals to drive solenoids or proportional pressure controllers. Regulators and monitors, including speed, temperature, and pressure sensors, help close the control loop to provide precise solutions.

To go directly to a specific type click on one of the titles below.



Proportional Amplifiers



Servo Amplifiers



Control System Components



Card Holders, Power Supplies & Accessories

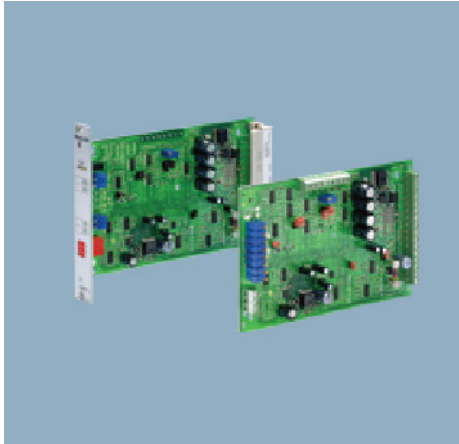


Test Units



Pump Electronics

Electronics for Hydraulic Valves and Pumps








Proportional Amplifiers

Flexible Hydraulic Systems with More Reliability

Proportional solenoids on hydraulic valves use electronic amplifiers to regulate the variable power through the full range of control. Intelligent proportional amplifiers can also provide ramp time settings to limit acceleration, preset potentiometers, and fault detection features – all designed to make your hydraulic system more flexible and operate with the highest levels of reliability and uptime.

Click the data sheet numbers to open the PDF file.

Proportional Amplifiers			
Product Photo	Model	Description	Data Sheet
	MDS-2X	Proportional Amplifier Mobile dual solenoid driver (MDS) – Series 2X A high current amplifier that controls proportional valves with one or two force solenoids.	RA 29 864
	VT 2000	Electrical Proportional Amplifier – Series 5X A proportional amplifier suitable for controlling direct and pilot operated proportional pressure control valves without electrical position feedback.	RA 29 904
	VT 5035	Electrical Proportional Flow Control Amplifier – Series 1X Used for adjusting the flow of Rexroth A4VSO and A4VSG variable displacement pumps.	RE 29 955
	VT-VVRA1	Electrical Proportional Amplifier – Series 2X Designed for use with directly operated servo solenoid valves with non-linear curve motion characteristics in open and closed-loop applications.	RE 30 040 RE 30 042 RE 30 043
	VT-VVRA1	Electrical Proportional Amplifier – Series 2X Suitable for applications actuating pilot operated servo solenoid valves (type 4WRL, series 3X)	RE 30 044 RE 30 045

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Proportional Amplifiers – continued			
Product Photo	Model	Description	Data Sheet
	VT-VVRA1	Electrical Proportional Amplifier – Series 2X Designed for driving directly operated pilot-operated servo solenoid valves with linear curve (type 4WRPH)	RE 30 046
	VT-VVRA1 and VT-VRPA1	Electrical Proportional Amplifiers – Series 2X Suitable for directly operated servo solenoid valves with linear curve motion characteristics in open and closed-loop applications.	RE 30 041
	VT-VRPA2	Electrical Proportional Amplifier – Series 1X Suitable for operating directly operated servo solenoid valves (type 4WRP). External voltage-controlled ramp adjustment via differential inputs	RE 30 047 RE 30 048
	VT-KVRA2	Electrical Proportional Amplifier – Series 2X For use in circuits with directly operated servo solenoid valves (type 4WRPH). Synchronous running in presses and forming machines, and 2-axis control systems in machine tools.	RE 30 049
	VT-VSPA1-1 and VT-VSPA1K-1	Electrical Proportional Amplifiers – Series 1X Suitable for controlling all direct and pilot operated proportional pressure control valves without electrical position feedback and featuring only one solenoid as actuator	RE 30 111
	VT-VSPA2-1	Electrical Proportional Amplifiers – Series 1X Suitable for controlling direct operated proportional directional valves without electrical position feedback (type 4WRA, sizes 6 and 10, from series 2X)	RE 30 112
	VT-VRPA1-50 to VT-VRPA1-52	Analog Electrical Proportional Amplifiers – Series 1X Designed for controlling pilot operated proportional flow control throttle valves with electrical position feedback, types FE (sizes 6 and 25) and FES (sizes 25 to 63)	RE 30 117
	VT-VRPA1	Analog Electrical Proportional Amplifier – Series 1X Suitable for controlling direct operated proportional pressure control valves with electrical position feedback, type DBETR, and proportional flow control valves with electrical position feedback, type 2FRE	RE 30 118
	VT-VRPD-2	Digital Valve Proportional Amplifier Digital valve amplifier for valve types 4WRE6, Series 2X and 4WRE10, Series 2X	RE 30 126

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Proportional Amplifiers – continued			
Product Photo	Model	Description	Data Sheet
	VT-VRPA2-1X	Analog Proportional Control Amplifier – Series 1X Suitable for controlling valves with position feedback, type 4WRE, sizes 6 and 10, series 2X	RE 30 119
	VT-VRPA1	Electrical Proportional Control Amplifier Series 1X	RE 30 052
	VT-VRPA1-527-2X/V0/RTS-2/2V	Electrical Proportional Control Amplifier – Series 2X Designed for use with proportional cartridge throttle valves	RE 30 053
	VT-VRPA1...RTP	Electrical Proportional Control Amplifier – Series 1X	RA 30 054
	VT-VRPA1-527-2X/V0/2/2V	Electrical Proportional Control Amplifier – Series 1X Suitable for control of proportional cartridge throttle valves	RE 30 055
	VT-VRPA1...RTS	Electrical Proportional Control Amplifier – Series 1X	RE 30 056
	VT-VSPA1	Electrical Proportional Control Amplifier – Series 1X	RE 30 109
	VT-SSPA1-5	Plug Amplifier Module for Proportional Valves	RE 30 264

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Servo Amplifiers

Servo amplifier cards convert an input signal to a proportional current to drive the servo valve torque motor. On industrial hydraulics systems several servo amplifiers feature an integrated PID (proportional, integrator, derivative) control circuit, which allows tuning for optimum performance of position control, or constant velocity circuits.

With the added ability to combine the PI, PD, or PID controls for any circuit, a wider range of electrohydraulic motion control sequences can be engineered, for sophisticated applications in automotive, plastics, machine tool, heavy industry and other applications.

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Servo Amplifiers			
Product Photo	Model	Description	Data Sheet
	VT1600	Servo Amplifier – Series 3X An electrohydraulic control component used to control hydraulic servo valves.	RE 29 716
	VT1610	Servo Amplifier – Series 3X An electrohydraulic control component used to control servo valves, or proportional valves with servo valve pilot stages and electrical feedback of the main spool position.	RE 29 717
	VT-SR1	Servo Amplifier – Series 1X For servo valves with electrical position feedback	RE 29 979
	VT-SR2	Servo Analog Amplifier – Series 1X Electrohydraulic control component designed for controlling single and two-stage servo-valves without electrical position feedback.	RE 29 980
	VT-SR7	Electrical Flow Control Servo Amplifier – Series 1X Electrical amplifier for flow control with servo valves. Used to control a wide range of HS-type Rexroth axial piston units.	RE 29 993

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Components for Control Systems

Building a complete control solution for an intelligent electrohydraulic system may require various signal conditioners, relays, and other electronic devices. Rexroth provides many of these items to simplify the total system integration, as well as hydraulics applications assistance, to help you design and build your system to match your unique manufacturing requirements.

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Components for Control Systems			
Product Photo	Model	Description	Data Sheet
	VT-HACD-3	Digital Command Value and Controller – Series 2X Digital command value and controller card uses a microcontroller to control the motion sequence, make adjustments and connections and process closed control loops.	RE 30 543
	VT-HACD-DPQ	Digital Injection Axis Control for Hydraulic Molding Machines – Series 2X A digital controller card that provides a complete hydraulic injection axis control solution. Common applications include plastics injection molding, transfer molding, extrusion, broaching, rubber molding, and accumulator head blow molding.	RE 30 146
	VT-HACD-DPC	Digital Hydraulic Clamp Unit Control Card – Series 2X Digital control card for clamp control type applications.	RE 30 147

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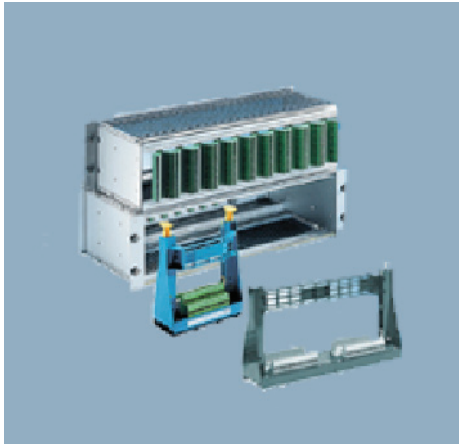
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Components for Control Systems – continued			
Product Photo	Model	Description	Data Sheet
	HNC 100	Digital Axis Control - Series 2X	RE 30 131-Z
	VT-MAC8	Digital Multi-Axis NC Control - Series 1X	RE 30 156
	VT-VARAP1	p/Q Amplifier – Series 2X Specialized hydraulic servo valve amplifier designed for actuating directly operated and pilot operated servo solenoid valves.	RE 30 058
	VT-VACAP	p/Q Controller – Series 2X Designed to control p/Q-type closed loop hydraulic motion sequences, suitable for servo solenoid valves with on-board electronics.	RE 30 134
	VT-MACAS	Analog Position Controller – Series 1X Analog position controller supports simple position or velocity control loops for hydraulic motion systems, in combination with Bosch Rexroth servo cylinders and analog position measurement systems (potentiometers).	RA 30 050
	GSC1	Valve Electronics Card Holder – Series 3X Enclosed card holder	RA 29 977
	VT-SWMA-1	Analog Command Value Module – Series 1X Suitable for controlling valves with integral electronics	RE 29 902

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Electronics for Hydraulic Valves and Pumps



Card Holders, Power Supplies and Accessories

Optimize Your Machine Performance

A complete electrohydraulic system solution isn't complete until all system components are cleanly installed by the OEM or manufacturer.

- Many Rexroth hydraulic valve amplifiers can be mounted in card racks or plugged into individual card holders for panel mounting – whatever is most efficient and functionally optimal for your machine's requirements.
- Card holders can be clipped onto 35mm DIN rail or mounted by through-holes.
- Power supplies in various sizes provide the 24 vdc or +/-15 vdc required by most electronic circuits. Transducers and other electronic accessories are also available.


Click the data sheet numbers to open the PDF file.



Card Holders			
Product Photo	Model	Description	Data Sheet
	CH32 and CH64	Valve Electronics Card Holder Card holder for mounting circuit boards of Euro card format	RA 29 921
	VT-3002	Valve Electronics Card Holder – Series 2X	RE 29 928
	VT-12302	Valve Electronics Card Holder – Series 3X Enclosed card holder	RE 30 103
	CH 64G-PH	Digital Hydraulic Clamp Unit Control Card – Series 2X Digital control card for clamp control type applications.	RA 30 108
	VT-19101, VT-19102, VT-19103, VT-19110	19" Racks – Series 1X Racks for hydraulic pump electronics	RE 29 768

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Power Supplies			
Product Photo	Model	Description	Data Sheet
		24V and $\pm 15V$ Valve Electronics Power supply	RA 30 151

Accessories			
Product Photo	Model	Description	Data Sheet
	VT-SSV-1	Switching Amplifier – Series 2X	RE 30 262
	VT-SSPA1-5	Amplifier Module – Series 2X	RE 30 264

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Test Units

Convenient and Reliable Troubleshooting

Make troubleshooting valves easier with Rexroth hydraulic valve test units. Servo valves do not have manual overrides. Servo test units provide a convenient and reliable way to verify that the servo works, without relying on the rest of the closed loop system. This can help OEMs speed machine commissioning, and help manufacturers quickly isolate and solve hydraulic circuit problems. Rexroth has combined the electronics with the hydraulic assembly in electronic valves, the tester for integrated electronics will allow these valves to operate on a stand-alone basis, too.

Click the data sheet numbers to open the PDF file.

Test Units			
Product Photo	Model	Description	Data Sheet
	VT-SVTSY-1	Hydraulic Servo Test Unit – Series 1X Service case with test unit for servo valves without integrated electronics	RE 29 681
	VT-VESYT-1	Hydraulic Valve Test Unit – Series 1X Service case with test unit for servo and proportional valves with integral electronics (OBE)	RA 29 685
	MESAP 43650	Voltage/Current Adapter Test adapter for measuring voltage and/or current	RA 29 784
		VT Patch Cord Valve Tester Component Used for connecting between a VT card faceplate test jack and an analog/digital meter.	RA 29 785

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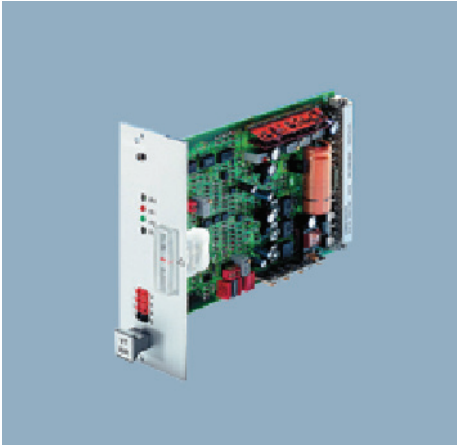
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Test Units – continued			
Product Photo	Model	Description	Data Sheet
	MDS D	<p>Valve Solenoid Driver The MDS D is a high current amplifier that controls proportional valves with one or two force solenoids.</p>	RA 29 864
	VT-PE-TB2	<p>Hydraulic Valve Tester – Test Box II Test box II is used for commissioning into service and monitoring the operation of Pilot operated proportional valves, Servo solenoid valves, Pressure control loops and their external valve amplifiers.</p>	RE 30 064
	VT-PE-TB3	<p>Hydraulic Valve Tester – Test Box III Test box III is used for commissioning into service and monitoring the operation of all valves with on-board electronics and voltage interface. The unit is provided with all the necessary signal and voltage connections, inputs and outputs and measurement taps, making it possible to design a test program which operates independently of the machine's control system.</p>	RE 30 065
	VT-PA-1	<p>Hydraulic Valve Test Adapter Test adapter (11P+PE) for OBE The test adapter is employed for testing communication signals between the system controller and the valve (supply voltage, setpoint, feedback value).</p>	RE 30 067
	VT-PA-2	<p>Hydraulic Valve Test Adapter Test adapter (6P+PE) for OBE The test adapter is employed for testing communication signals between the system controller and the valve (supply voltage, setpoint, feedback value).</p>	RE 30 068
	VT-PA-3	<p>Amplifier Test Adapter Test adapter for electric amplifiers For checking existing electrical systems and measuring and checking loads.</p>	RE 30 070

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Pump Electronics

Improve Machine Control and Productivity

Make pump monitoring and control easier and more effective with Bosch Rexroth hydraulic pump electronics. Electrical amplifiers convert low-current control signals into signals to drive solenoids or proportional pressure controllers.

Electrohydraulic regulators and monitors, including speed, temperature, and pressure sensors, help close the control loop to improve machine control and productivity. Just one more way Rexroth is realizing the vision of intelligent hydraulics.





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Pump Amplifiers			
Product Photo	Model	Description	Data Sheet
	VT-5035	Flow Control Amplifier – Series 1X Electrical amplifier for flow control with proportional valves	RE 29 955
	VT-SR7	Flow Control Amplifier – Series 1X Electrical amplifier for flow control with servo valves	RE 29 993
	VT-VPCD	Axial Piston Amplifier Digital control electronics for A4VS axial piston units with HS4 control and A2V with EO4 control Type VT-VPCD	RE 30 028
	VT-5041	SYDFE1 External Control – Series 25 External control electronics for the SYDFE1 control of A10VSO axial piston pumps analogue amplifier, configurable	RE 30 241

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Pump Amplifiers - continued			
Product Photo	Model	Description	Data Sheet
	SYDFE1	Closed Loop Control – Series 2X Closed loop pressure and flow control system	RE 30 024
	SYDFEC	Closed Loop Control – Series 2X Closed loop pressure and flow control system	RE 30 027
	SYDFEE	Closed Loop Control – Series 2X Closed loop pressure and flow control system	RE 30 030
	SYHDFEE	Closed Loop Control Sizes 125 to 355 Closed loop pressure and flow control system	RE 30 035

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