VALVE CONTROLLER

- Front-programmable
- mA, V, and Ω programmable input
- Ramp times, jump values, reversal, chopper frequency, and deadband
- 3-digit LED display shows I-valve % value
- 1 or 2 channels
- Modulated current output for proportional valve

Applications:
Control and regulation of single- or double-coil hydraulic and pneumatic proportional valves. • The unit is used for accurate oil flow regulation, linear soft acceleration and deceleration, modulated output signal, and programmable deadband. • Is highly suitable for joystick regulation of A/B movements.

Technical characteristics:
The 2224 Valve Controller is a microprocessor-based unit containing ramp functions for soft start and stop and jump functions thus avoiding deadband at start and changes between A & B valves.
The user interface of the valve controller consists of three pushbuttons and a 3-digit LED display. By using these, output currents, ramp times, jump values, chopper frequency, reversal, deadband, and ON/OFF functions are changed. During operation the display shows the present output signal as a % of the I valve.
All parameters are protected against unauthorised changes with a password.
Changes between A and B valves can be made in two ways. By way of function 1, the A valve is chosen when $+V_{supply}$ is applied to terminal 2. By way of function 2, changes between A/B valves take place automatically according to the value of the input signal (no signal on terminal 2).
The output current is enabled / disabled by a digital controlling signal. Please note that the output current is disconnected until $+V_{supply}$ is applied to terminal 3.

Input:
Programmable current or voltage input for standard signals acc. to order schedule, joystick / potentiometer or a special non-programmable input. Digital inputs for external control functions.

Output:
A pulsating current output prevents the connected valve from sticking. Optional programming of the modulation frequency (PWM) between 8 and 400 Hz. The internal measuring and control circuit ensures that the mean current never exceeds the entered I-valve. If the peak current exceeds 7 A the output will be disabled.

Electrical specifications:

Specifications range:
-20°C to +60°C

Common specifications:

Supply voltage	9.6...14.4 or 19.2...28.8 VDC
Internal consumption	2 W / 24 V 1.8 W / 12 V
Communication	Front-programmable
Updating time	30 ms
Temperature coefficient	0.01%/°C
Linearity error	0.2%
EMC immunity influence	< 2% of span
Relative air humidity	< 95% RH (non-cond.)
Dimensions (HxWxD)	80.5 x 35.5 x 84.5 mm
Protection degree	IP50
Weight	130 g

Input:

Current input	0/4...20 mA / 50 Ω + PTC (54 Ω)
Voltage input	0/0.2...1 V and 0/2...10 V / 10 MΩ
Potentiometer input	0...10 V or ±10 V / 10 kΩ
External potentiometer	1 kΩ ≤ potentiometer ≤ 10 kΩ
Control signals:	
Operation / shutdown	PNP / 2.2 kΩ, 12 / 24 V
$I_{max.1}$ & $I_{max.2}$	PNP / 2.2 kΩ, 12 / 24 V
A / B channel	PNP / 2.2 kΩ, 12 / 24 V
Deadband	0...99.9% of input span

Output:

Output voltage (max.)	Supply voltage - 0.5 V
Output current (max.)	3000 mA mean
Current peak	7 A
Output power (max.)	36 W
Reference voltage	10 VDC (A valve) ±10 VDC (A & B valve)
Ramp up & down	Time 0...10.0 s
PWM frequency	8...400 Hz in steps of 1 Hz

GOST R approval:

VNIIM, Cert. no.	Ross DK.ME48.V01899

Observed authority requirements:	**Standard:**
EMC 2004/108/EC	
Emission and immunity	EN 61326-1

Of span = Of the presently selected range

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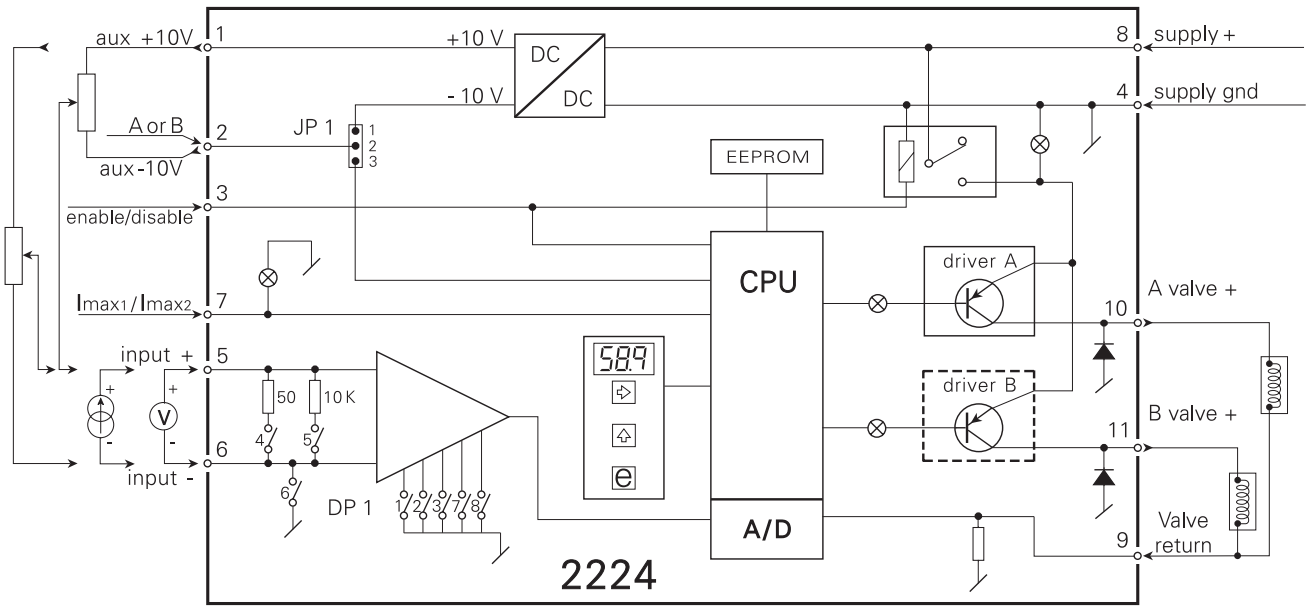
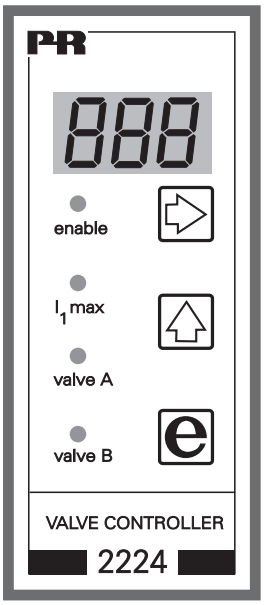
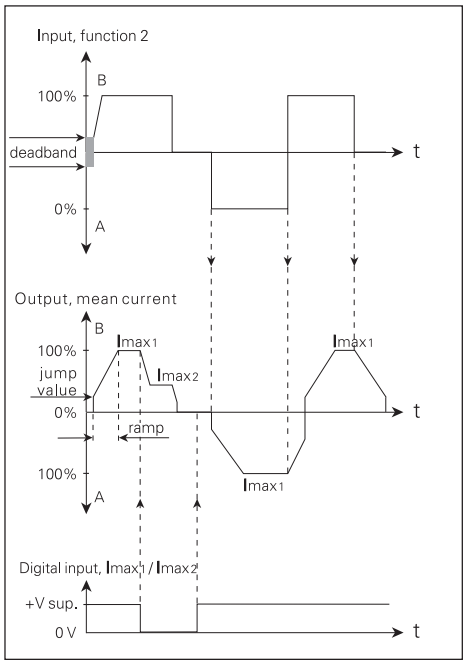
Order: 2224

Type	Input	Supply	Option
2224	0...20 mA : A 4...20 mA : B 0...1 V : C 0.2...1 V : D 0...10 V : E 2...10 V : F ±10 V potentiometer : G 0...10 V potentiometer : H	12 V : 1 24 V : 2	Single valve (A) : A Double valve (A/B) : B

Block diagram:



Front layout:



Timing diagram: