

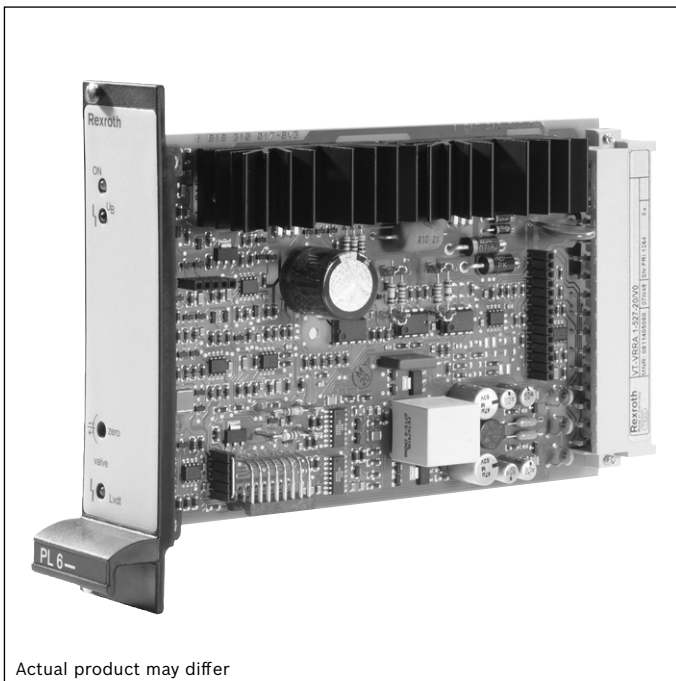
Valve amplifier for high-response valves

Type VT-VRRA1-527-2X/V0/2STV,
 VT-VRRA1-527-2X/V0/PO-IS

RE 30045

Edition: 2013-04

Replaces: 02.12



Actual product may differ

- ▶ Component series 2X
- ▶ Analog, euro-card format
- ▶ Suitable for controlling pilot operated directional control valves, progressive with linear fine control
 - 4WRL 10...35 V/V1...M-3X..,
 - 4WRL 10...35 E/W...S-3X..,
 - 4WRL 10...25 V/V1...M-3X...-750,
 - 3WRCB 25...50...M-1X...

Features

- ▶ Controlled output stage
- ▶ Enable input
- ▶ Short-circuit proof outputs
- ▶ Adjustment possibilities – zero point of valve
- ▶ Cable break detection for actual value cable
- ▶ Position control with PID behavior

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Ordering code

		01	02	03		04		05		06		07		
VT	-	V	R	R	A	1	-	527	-	2X	/	V0	/	

01	Hydraulic component for valves with electrical feedback	R
02	Valve type: Directional control valve	R
03	Control: Analog	A
04	Serial number for types: Pilot control valve, size 6	527
05	Component series 20 to 29 (20 to 29: Unchanged technical data and pin assignment)	2X
06	Catalog version	V0
07	Option: Pilot operated directional control valve, progressive with linear fine control	2STV
	Option: Block installation valve control A → X	PO-IS

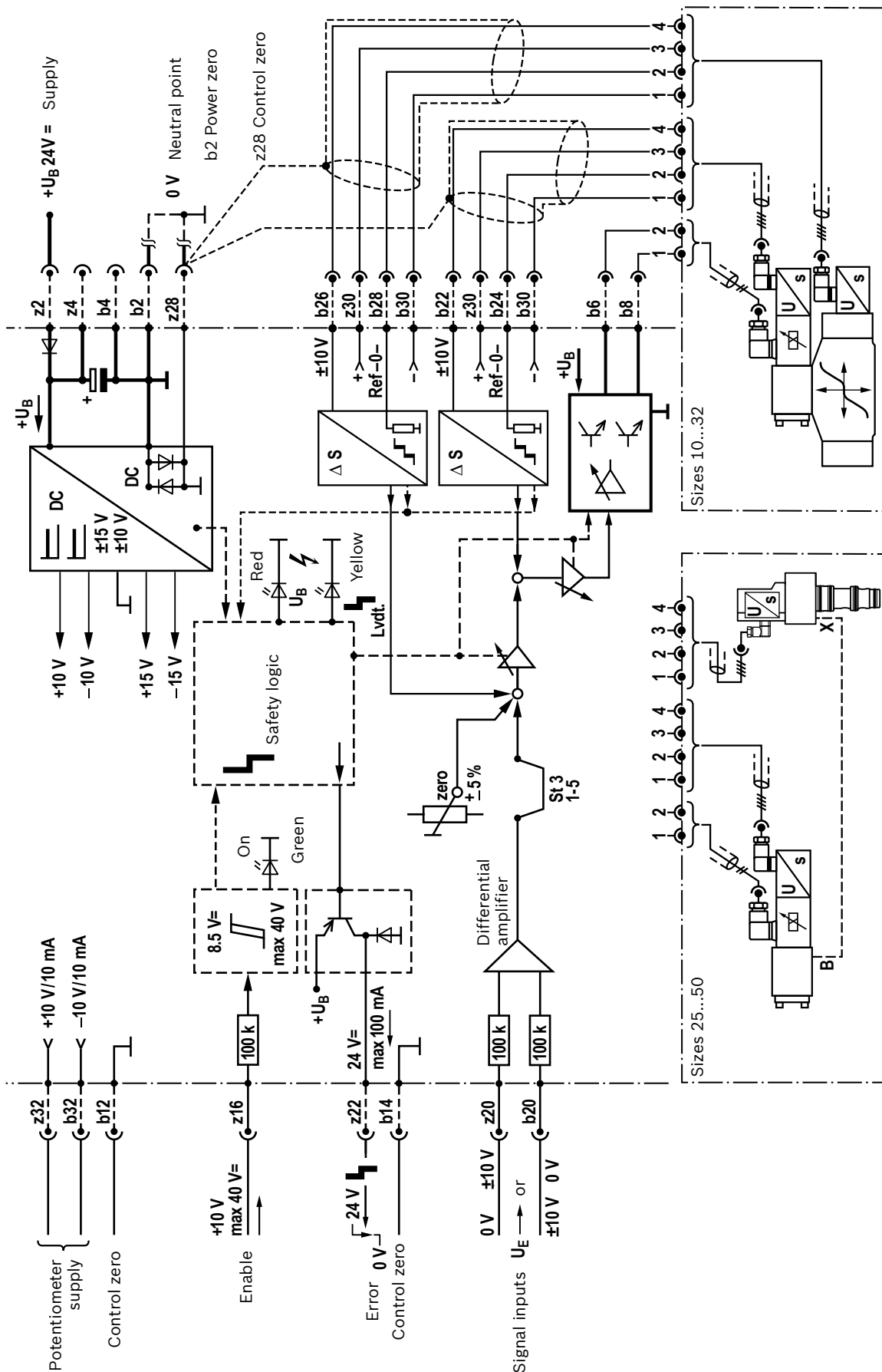
Preferred types

Amplifier type	Material number	For directional control valves, pilot operated, with electrical position feedback
VT-VRRA1-527-20/V0/2STV	0811405063	4WRL 10...35 V/V1...M-3X...
		4WRL 10...35 E/W...S-3X...
		4WRL 10...25 V/V1...M-3X...-750
		3WRCB 25...50...M-1X...
VT-VRRA1-527-20/V0/PO-IS	0811405064	3WRCB 25...50...M-1X...

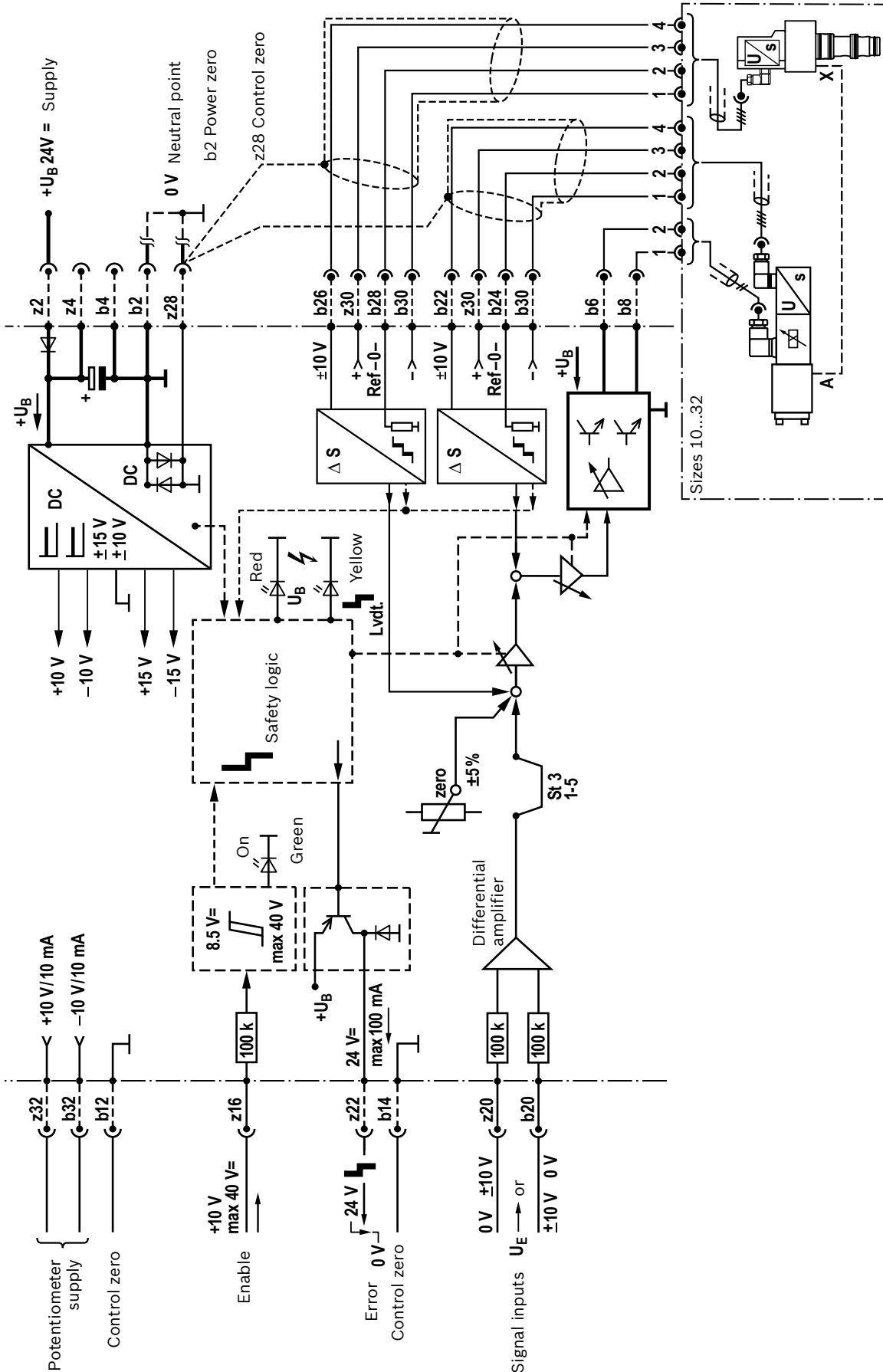
Suitable card holder:

- Open card holder T 3002-1-2X/32F
(see data sheet 29928)

Block diagram with pin assignment, option 2STV



Block diagram with pin assignment, option PO-IS



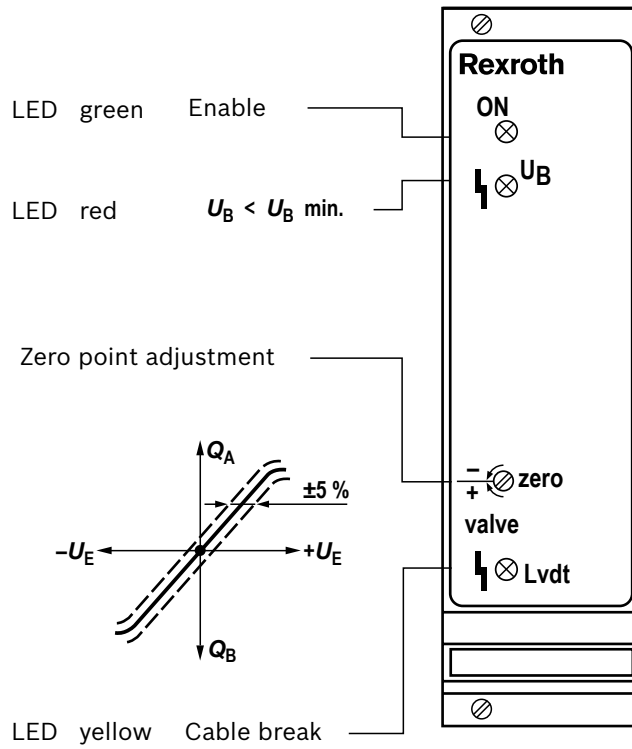
Technical data (For applications outside these parameters, please consult us)

Supply voltage U_B at z2 – b2		Nominal 24 V = battery voltage 21...40 V, rectified alternating voltage $U_{eff} = 21...28$ V (one-phase, full-wave rectifier)
Smoothing capacitor, separately at z2 – b2		Recommendation: capacitor module VT 11110 (see data sheet 30750) (only necessary if the ripple of $U_B > 10$ %)
Valve solenoid, max.	A/VA	2.7/40 (pilot control valve, size 6)
Current consumption, max.	A	1.7 Current consumption may increase with min. U_B and extreme cable lengths to the control solenoid
Power consumption (typical)	W	37
Input signal (command value)		b20: 0...±10 V } z20: 0...±10 V } Differential amplifier ($R_i = 100$ kΩ)
Signal source		Potentiometer 10 kΩ Supply with ±10 V from b32, z32 (10 mA) or external signal source
Enable output stage		At z16, $U = 8.5...40$ V, $R_i = 100$ kΩ, LED (green) on front panel
Position transducer	Supply	b30: -15 V z30: +15 V
Pilot control valve	Actual value signal	b22: 0...±10 V
	Actual value reference	b24
Main stage	Actual value signal	b26: 0...±10 V
	Actual value reference	b28
Solenoid output b6 – b8	I_{max}	Clocked current controller 2.7 A
Cable lengths between amplifier and valve		Solenoid cable: Up to 20 m 1.5 mm ² 20 to 60 m 2.5 mm ² Position transducer: 4 x 0.5 mm ² (shielded)
Special features		Cable break protection for actual value cable, Position control with PID behavior, Pulsed output stage, Fast energization and fast deletion for short actuating times, Short-circuit-proof outputs
Adjustment		Zero point via trimming potentiometer ±5 %
LED indicators		Green: Enable Yellow: Cable break actual value Red: Undervoltage (U_B too low)
Error message – Cable break actual value – U_B too low – ±15 V stabilization		z22: Open collector output to + U_B Max. 100 mA; no error: + U_B
Circuit board format	mm	(100 x 160 x approx. 35) / (W x L x H) Europe format with front panel 7 TE
Plug-in connection		Connector DIN 41612 – F32
Ambient temperature	°C	0...+70
Storage temperature range	°C	-20...+70
Weight	m	0.36 kg

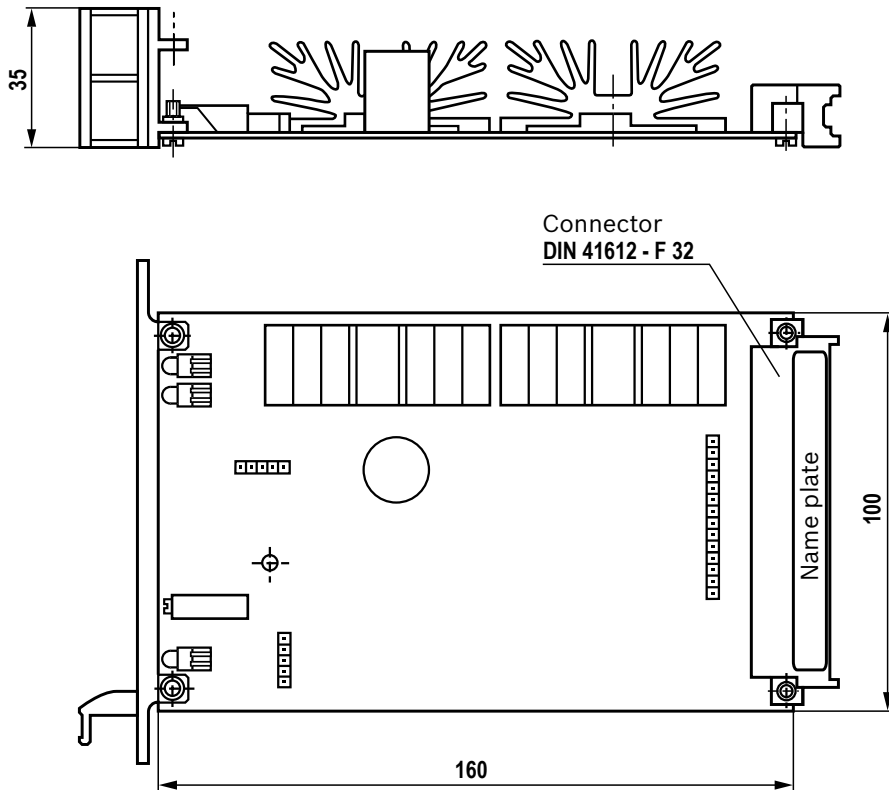
Notice:

Power zero b2 and control zero b12 or b14 or z28 must be separately led to the central ground (neutral point).

Display/adjustment elements



Dimensions (dimensions in mm)



Project planning information / maintenance instructions / additional information

- ▶ The amplifier card may only be unplugged and plugged when de-energized.
- ▶ The distance to aerial lines, radios and radar systems must be sufficient (> 1 m).
- ▶ Do not lay solenoid and signal lines near power cables.
- ▶ For signal lines and solenoid conductors, we recommend using shielded cables.
The cable shield must be connected to the control cabinet extensively and must be as short as possible.
- ▶ The valve solenoid must not be connected to free-wheeling diodes or other protection circuits.
- ▶ The cable lengths and cross-sections specified on page 5 must be complied with.

Notes

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