

Electric amplifiers

RE 30052/02.12
Replaces: 01.09

1/6

Type VT-VRPA1-5...-1X/V0/...

Component series 1X

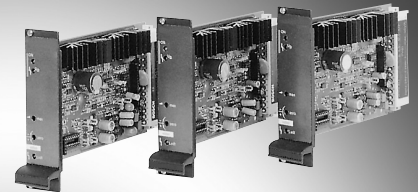


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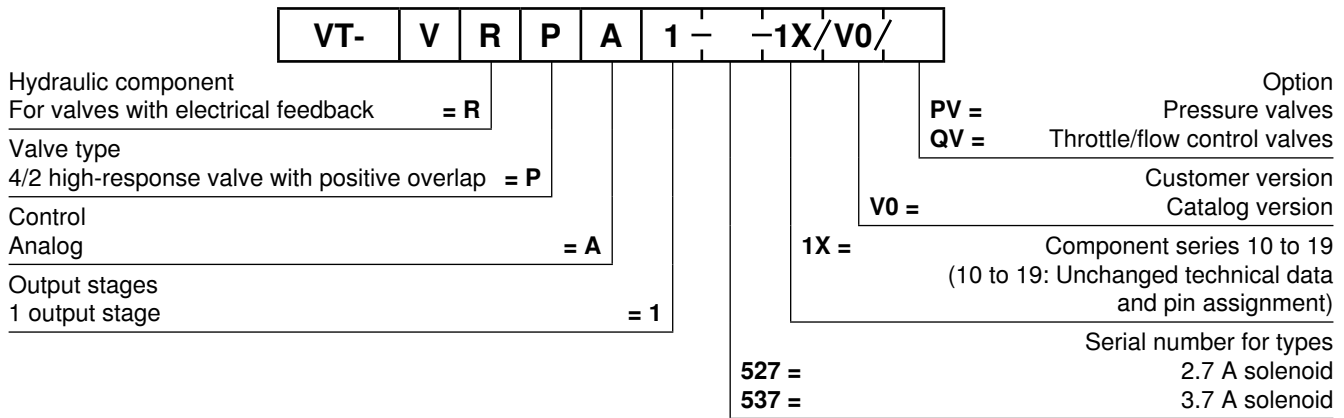
Features

Page	– Suitable for controlling proportional valves
1	– Analog amplifiers in Europe format for installation in 19" racks
2	– Controlled output stage
2	– Position control with PID behavior
3	– Fast energization and fast deletion for short actuating times
4	– Enable input
5	– Cable break detection for actual value cable
	– Inputs and outputs short-circuit-proof
5	– Adjustment possibilities for zero point and sensitivity

Notice:

The photo shows an example configuration.
The delivered product differs from the figure.

Ordering code, accessories



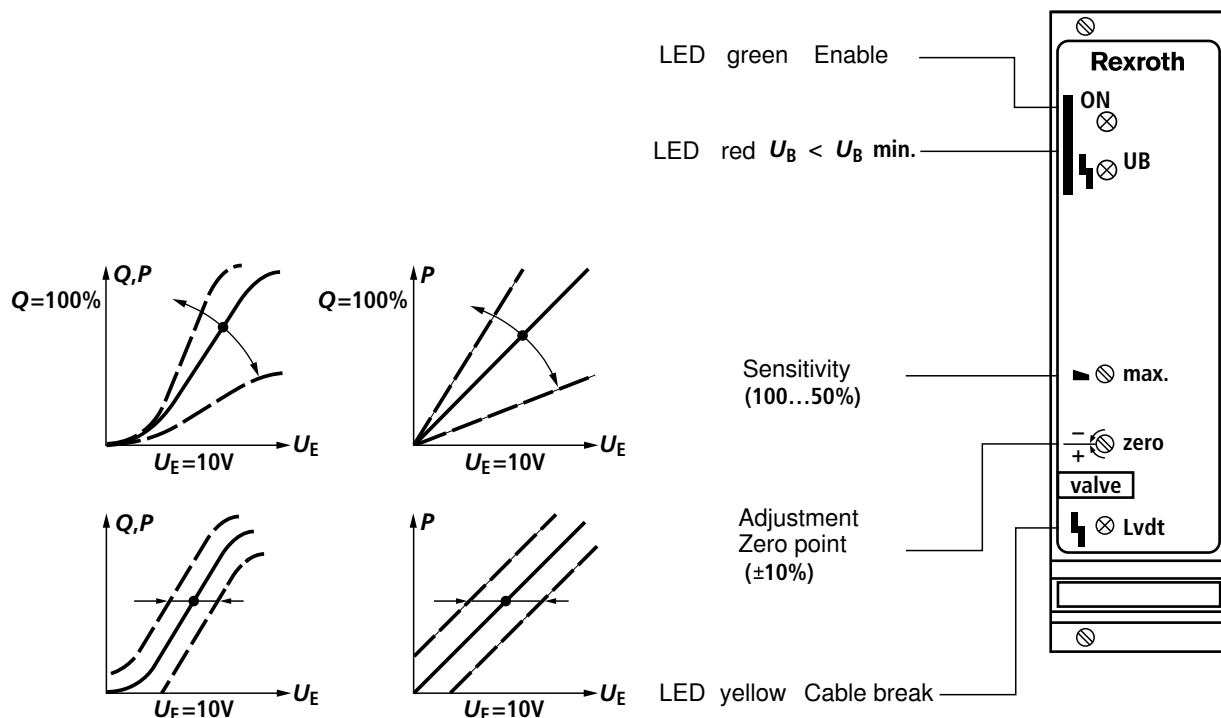
Preferred types

Type	Material number	For proportional valves
VT-VRPA1-527-10/V0	0811405095	DBETFX
VT-VRPA1-527-10/V0/PV	0811405096	DREB6X
VT-VRPA1-537-10/V0/PV	0811405097	DBEB10Z / DREB10Z / DBETBX
VT-VRPA1-527-10/V0/QV	0811405098	4WRP6EA / 3FREZ
VT-VRPA1-537-10/V0/QV	0811405099	4WRP10EA

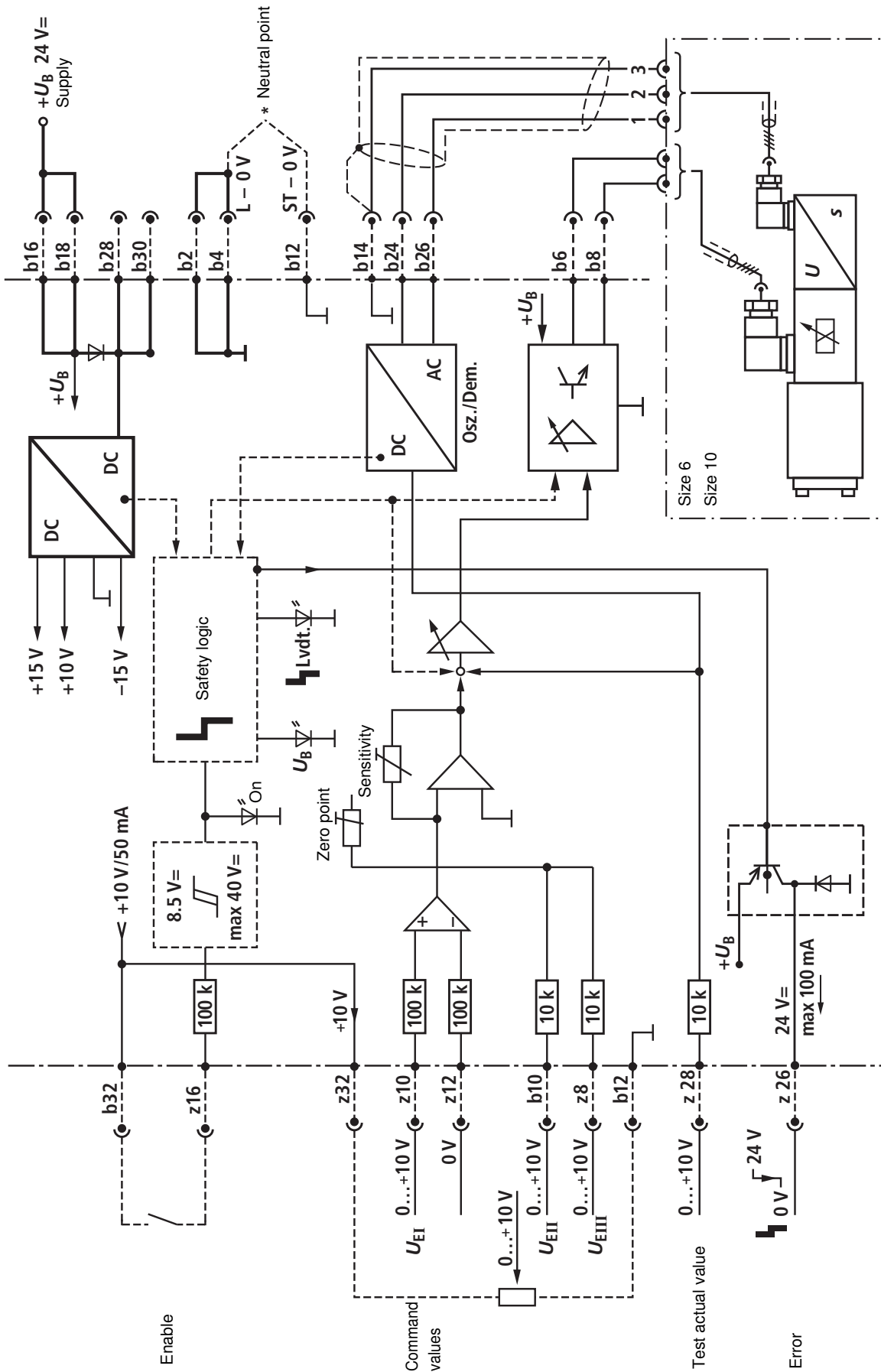
Suitable card holder:

- Open card holder VT 3002-1-2X/32F (see data sheet 29928).
Only for control cabinet installation!

Front plate



Block diagram with pin assignment



Technical data

Supply voltage U_B at b16 – b2	Nominal 24 V =, Battery voltage 21...40 V, Rectified alternating voltage $U_{\text{eff}} = 21...28$ V (one-phase, full-wave rectifier)	
Smoothing capacitor, separately at b16 – b2	Recommendation: Capacitor module VT 11110 (see data sheet 30750) (only necessary if the ripple of $U_B > 10\%$)	
Valve solenoid, max.	A/W	2.7/25 (size 6) 3.7/50 (size 10)
Power consumption, max.	W	35 60
Current consumption, max.	A	1.5 2.5
Solenoid output b6–b8	Rectangular voltage, pulse-modulated $I_{\text{max.}} = 2.7$ A $I_{\text{max.}} = 3.7$ A	
Command value	$U_{E\text{ I}}$: 0...+10 V (z10) } Difference : 0 V (z12) } input $U_{E\text{ II}}$: 0...+10 V $U_{E\text{ III}}$: 0...+10 V	
Signal source (command value)	Potentiometer $R_i = 1$ k Ω Supply with +10 V from b32 (10 mA) or external source	
Actual value feedback	Osci b26	Test point z28 ¹⁾
0811405095	10.2 V _{eff} /7.8 kHz	0...+10 V =
0811405096	10.2 V _{eff} /7.8 kHz	0...+10 V =
0811405097	10.8 V _{eff} /7.8 kHz	0...+10 V =
0811405098	10.2 V _{eff} /7.8 kHz	0...+10 V =
0811405099	10.8 V _{eff} /7.8 kHz	0...+10 V =
Enable output stage	At z16, $U = 8.5...40$ V; e.g. 10 V from z32 LED (green) on front plate lights up	
Cable lengths between amplifier and valve	Solenoid cable: < 20 m 1.5 mm ² 20 to 60 m 2.5 mm ² Position transducer: Max. 50 m with 100 pF/m Supply and capacitor 1.5 mm ²	
LED displays	green: Enable yellow: Cable break actual value red: $U_B < U_{B\text{ min.}}$ (approx. 21 V)	
Error message – Cable break actual value – U_B too low – ± 15 V stabilization	z26: Switching output No error +24 V (max. 100 mA) Error 0 V	
Short-circuit-proof outputs	Output stage to the solenoid Signal to the positional transducer Supply voltage for potentiometer	
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	
Adjustment via trimming potentiometer	1. Zero point 2. Sensitivity	
Circuit board format	mm	(100 x 160 x approx. 35) / (W x L x H) Europe format with front plate 7 TE
Plug-in connection	Connector DIN 41612 – F32	
Ambient temperature	°C	0...+70
Storage temperature range	°C	–20...+70
Weight	m	0.37 kg

Notice:

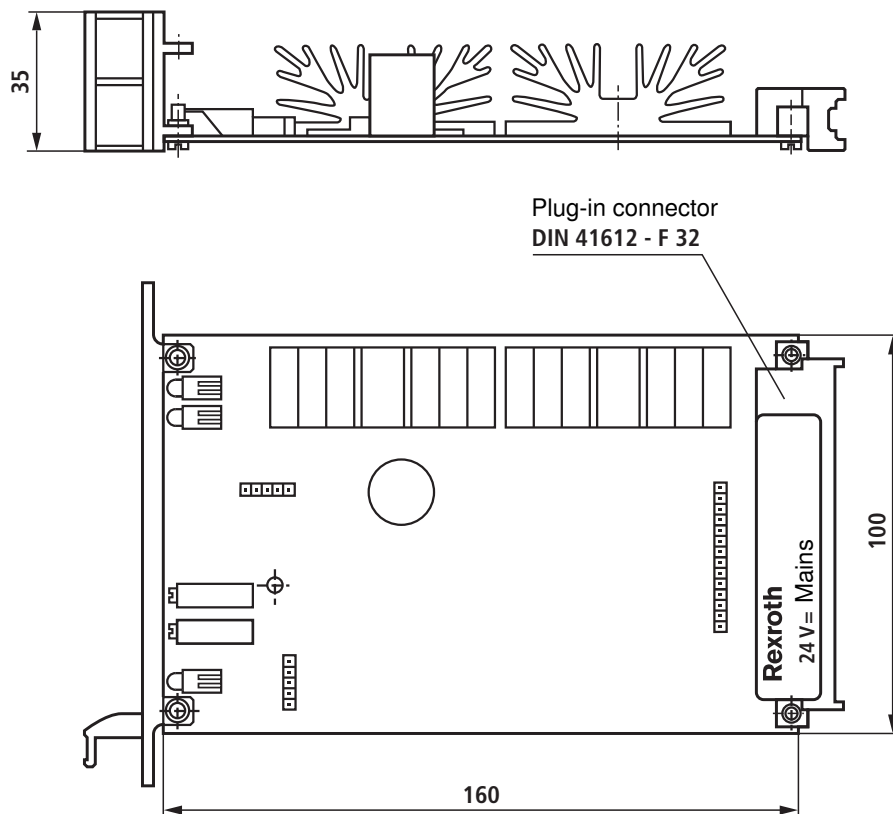
Power zero b2 and control zero b12 must be bridged. If the distance to the power supply unit is < 1 m, directly onto the DIN connector.

With larger distances, lead the control zero separately to the ground.

¹⁾ 0 V with $I_m = 0$ V (enable OFF)

+10 V with $I_m = \text{max.}$ ($U_E = 10$ V, potentiometer = c_w)

Unit dimensions (dimensions in mm)



Project planning / 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 as short as possible.
- The valve solenoid must not be connected to free-wheeling diodes or other protective circuits.
- The cable lengths and cross-sections specified on page 4 must be complied with.

Notes

Notes

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Notes
