Rexroth
Bosch Group

Electric amplifiers

RA 30052/05.04

Model VT-VRPA1

Series 1X

Table of contents

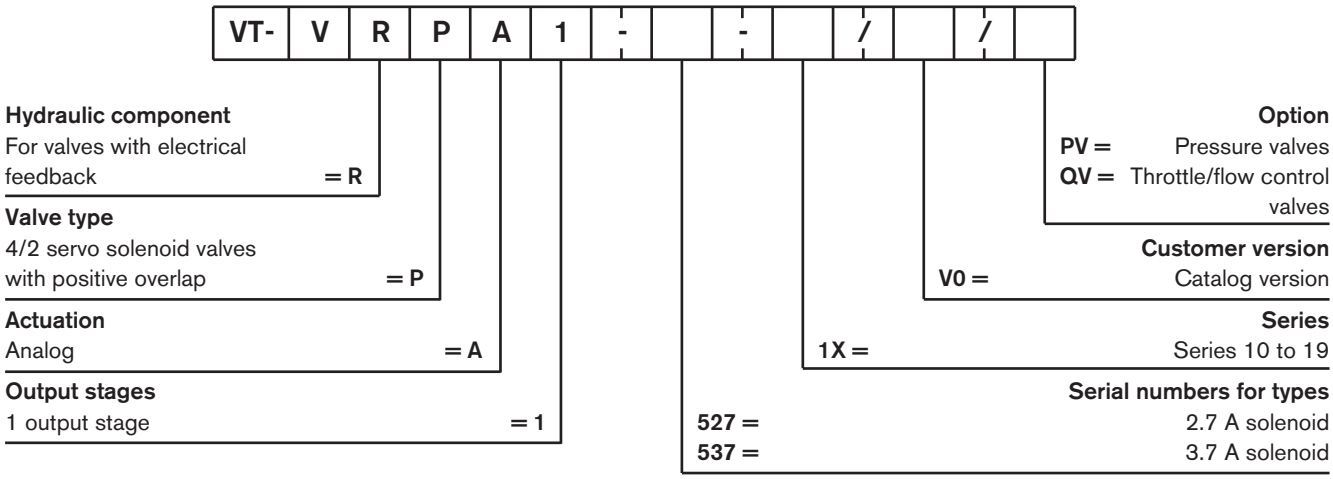
Features

- Analog amplifiers in Eurocard format for installation in 19″ rack
- Output stage with closed-loop control
- Closed-loop position control with PID action
- Rapid energizing and de-energizing for fast response times
- Enabling input
- Short-circuit-proof outputs
- Open-circuit detection for feedback signal cable (partially)
- Zero and sensitivity adjustment possibilities

Testing and service equipment

- Test box type VT-PE-TB1, see RE 30063
- Test adapter type VT-PA-3, see RE 30070

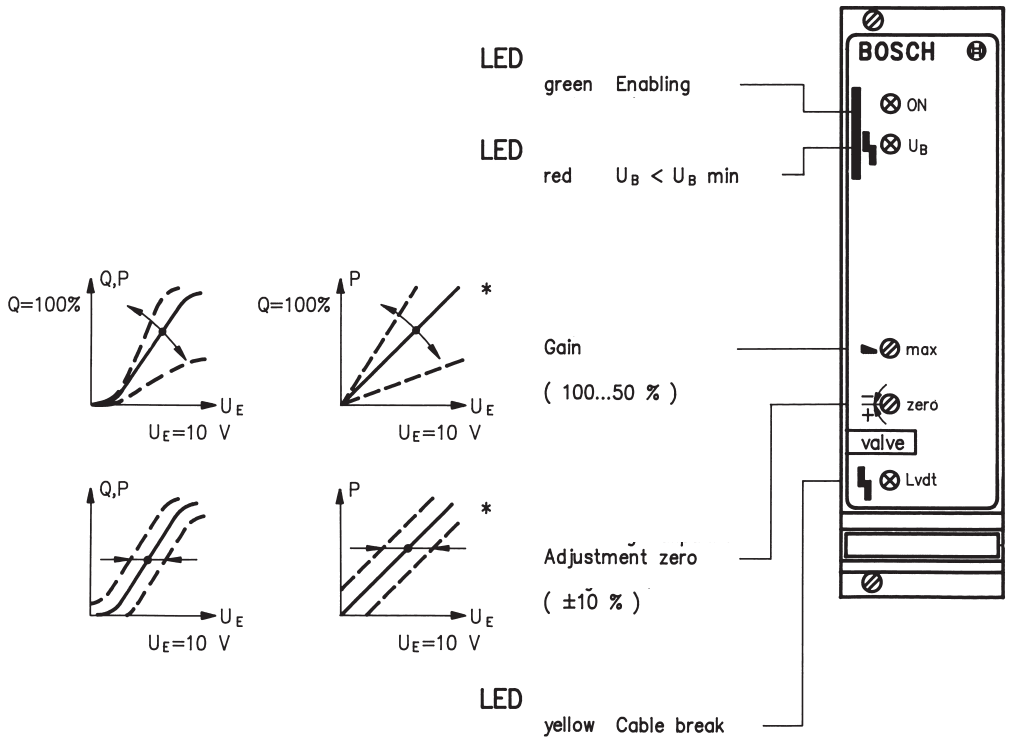
Ordering data and scope of delivery



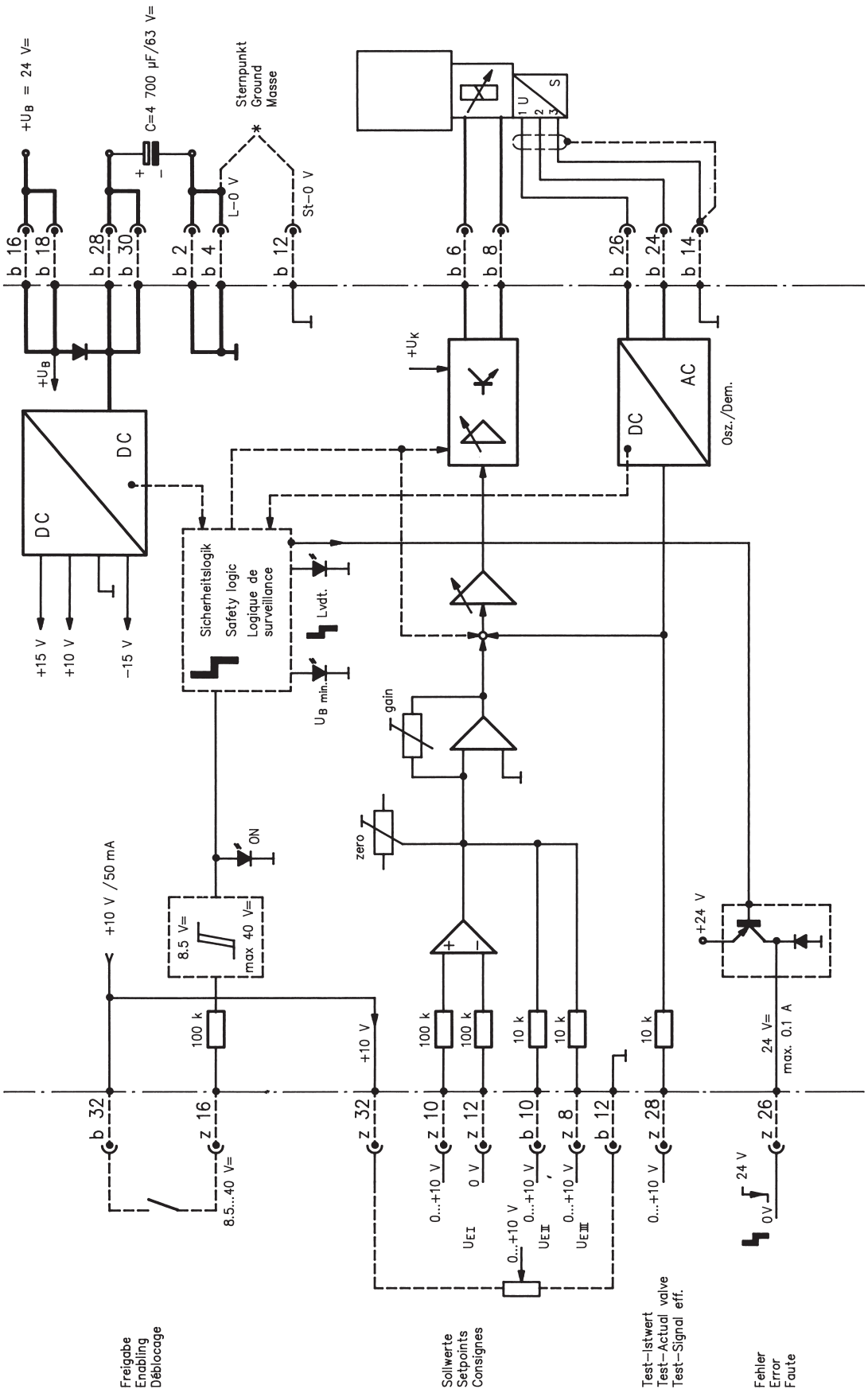
Standard types

Type	Material No.	For valve types
VT-VRPA1-527-10/V0	**0811405095**	“PDL 1” (old Bosch)
VT-VRPA1-527-10/V0/PV	**0811405096**	“PV 45” (old Bosch)
VT-VRPA1-537-10/V0/PV	**0811405097**	“PV 60” (old Bosch)
VT-VRPA1-527-10/V0/QV	**0811405098**	4WRP 6 EA
VT-VRPA1-537-10/V0/QV	**0811405099**	4WRP 10 EA

Front panel


LED
green Enabling
LED
red $U_B < U_B$ min
Q=100%
Q,P
U_E
U_E=10 V
Q=100%
P
*
U_E
U_E=10 V
Gain
(100...50 %)
Q,P
U_E
U_E=10 V
P
*
U_E
U_E=10 V
Adjustment zero
(±10 %)
LED
yellow Cable break
BOSCH
ON
U_B
max
zero
valve
Lvdt

Block diagram with terminal assignment



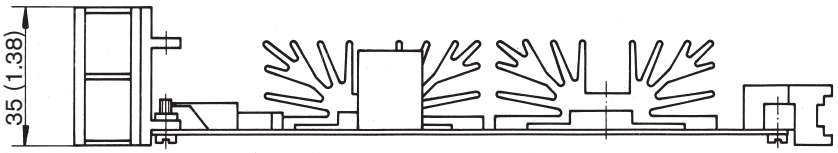
Technical data (for applications outside these parameters, please consult us!)

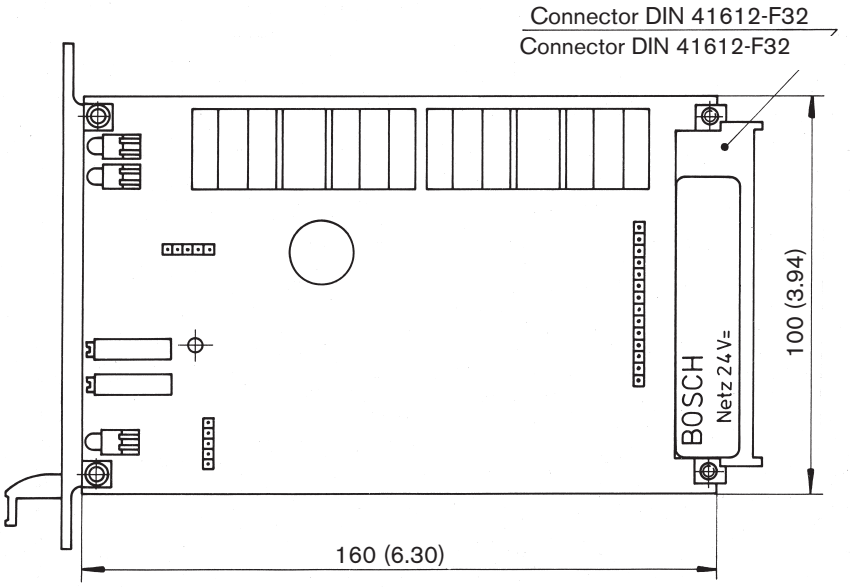
P.C.B. format		(100 x 160 x approx. 35) mm (W x L x H) Europe format with front panel (7 modular spacings)	
Plug connector		Connector DIN 41612 – F 32	
Ambient temperature	°C (°F)	–0 … +70 (–4 ... +158), storage temperature min. –20 (–4); max. +70 (+158)	
Power supply U_B to b 16/b 18 and b 2/b 4 (0 V)		24 V DC Battery voltage 21…40 V, Rectified AC voltage U_{eff} = 21…28 V (single-phase, full-wave rectification)	
Smoothing capacitor, separately to b 28/b 30 – b 2/b 4		4700 µF, 63 V (ELKO) if ripple >10 %	
Solenoid		**2.7 A/25 W**	**3.7 A/50 W**
Power consumption		max. 35 W	max. 60 W
Current rating		max. 1.5 A	max. 2.5 A
Solenoid output b 6 – b 8		Square-wave voltage, pulse-modulated $I_{max.}$ = 2.7 A	$I_{max.}$ = 3.7 A
Setpoint		$U_{E\,I}$: 0 … +10 V (z 10) } Differential 0 V (z 12) } input $U_{E\,II}$: 0 … +10 V $U_{E\,III}$: 0 … +10 V	
Signal source (setpoint)		Potentiometer R = 1 kΩ +10 V supply from b 32 (10 mA) or external source	
Actual value feedback		Oscill. b 26	Test pt. z 28 *
	0 811 405 095	10.2 V_{eff} / 7.8 kHz	0 … +10 V DC
	0 811 405 096	10.2 V_{eff} / 7.8 kHz	0 … +10 V DC
	0 811 405 097	10.8 V_{eff} / 7.8 kHz	0 … +10 V DC
	0 811 405 098	10.2 V_{eff} / 7.8 kHz	0 … +10 V DC
	0 811 405 099	10.8 V_{eff} / 7.8 kHz	0 … +10 V DC
Output stage enable		To z 16, U = 8.5 … 40 V; e.g. 10 V from z 32 LED (green) on front panel lights up	
Cable lengths and cross-sections		Solenoid: < 20 m 1.5 mm² 20 … 50 m 2.5 mm² Position transducer: max. 50 m at 100 pF/m Supply and capacitor 1.5 mm²	
LED displays		green: Enable yellow: Feedback signal open circuit red: $U_B < U_{B\,min.}$ (approx. 21 V)	
Fault indication – Feedback signal open circuit – U_B too low – ±15 V stabilization		z 26: Switching output No fault +24 V (max. 100 mA) Fault 0 V	
Short-circuit-proof outputs		Output stage to solenoid Signal to position sensor Potentiometer supply	
Special features		Open-circuit protection for feedback signal cable Closed-loop position control with PID action Clocked output stage Rapid energizing and de-energizing for fast response times	
Adjustment via trimming potentiometer		1. Zero 2. Sensitivity	

Note
Power zero b 2 and control zero b 12 must be bridged.
At a distance of < 1 m from power supply, connect directly to DIN connector.
At greater distances, connect control zero separately to ground.

* 0 V at I_m = 0 V (enable OFF)
+10 V at I_m = max. (U_E = 10 V, potentiometer = cw)

Unit dimensions – nominal dimensions in mm (inches)





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