Rexroth
Bosch Group

Command value and ramp card

RE 30289/07.12 1/6

Type VT-SWKA2-5-...

Component series 1X

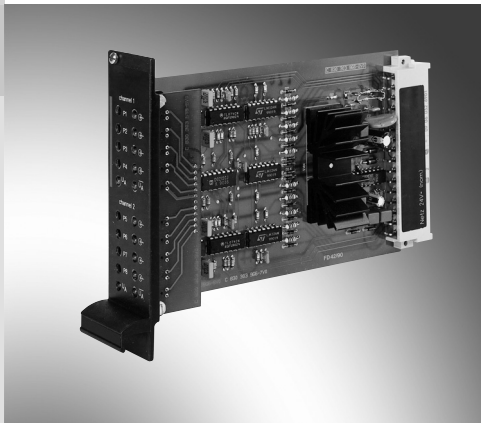


Table of contents

Features

- Analog amplifiers in Europe format
- Preparation and call-up of signal voltages
- Generation of voltage ramps via potentiometers
- Accessory card for electric amplifiers

Notice:

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

Ordering code, accessories

VT-SWKA2-5 –1X/V0/ 0

Command value and ramp card

0 = No option
Customer version
V0 = Catalog version
1X = Component series 10 to 19
(10 to 19: Unchanged technical data and pin assignment)

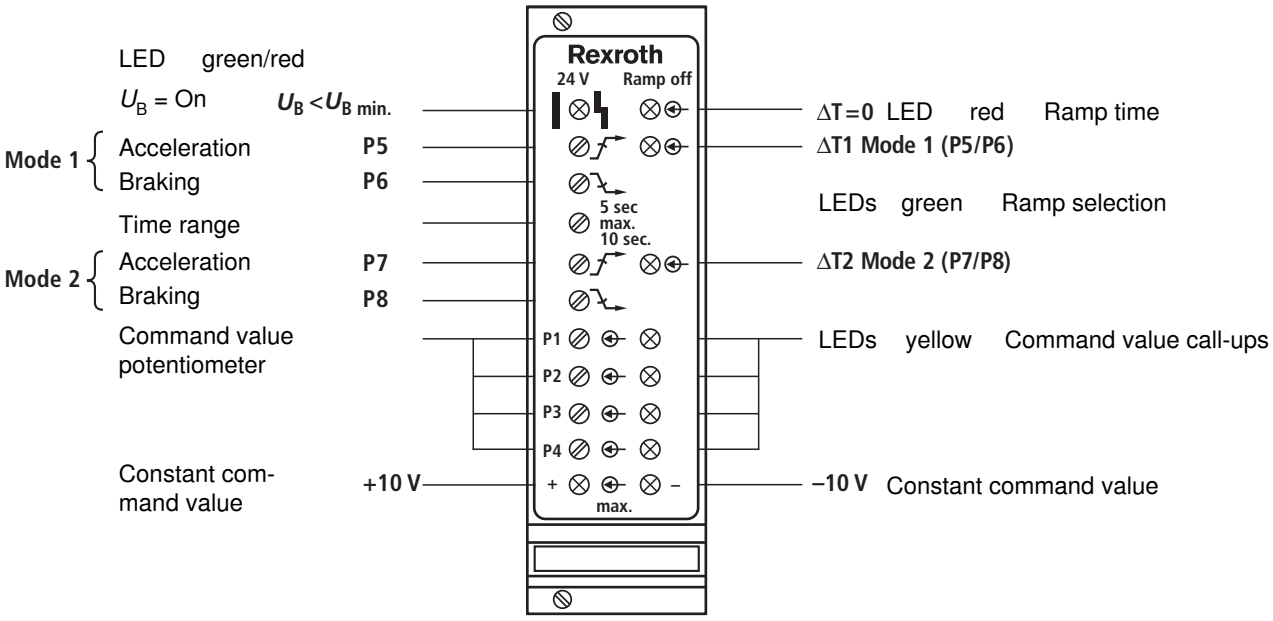
Preferred types

Amplifier type	Material number
VT-SWKA2-5-1X/V0/0	0811405094

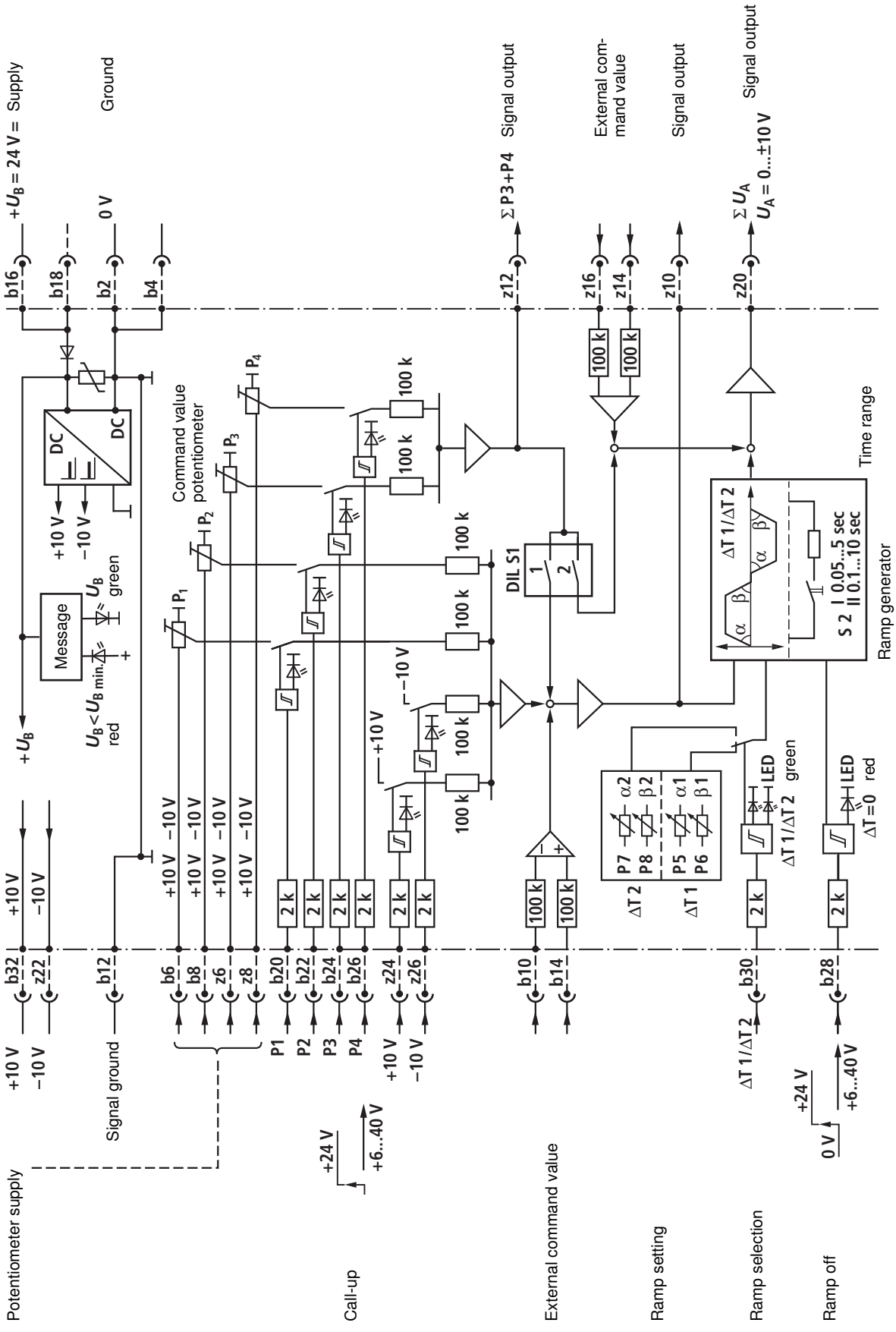
Suitable card holder:

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

Front plate



Block diagram with pin assignment



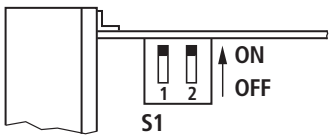
Technical data (For applications outside these parameters, please consult us!)

Supply voltage U_B at b16 – b18 and b2 – b4	Nominal 24 V = Battery voltage 21...40 V, Rectified alternating voltage U_{eff} = 21...28 V (one-phase, full-wave rectifier)
Max. current consumption mA	350
Command value preparation	– **2 internal, fixed command values:** +10 V and –10 V, can be called via digital signals (+24 V) at z24 and z26 (e.g. use as input command values) – **4 internal, variable command values:** Adjustable via potentiometers P1...P4 on the front plate Supply from internal, stabilized voltage source b32 = +10 V and/or z22 = –10 V (can in each case be loaded with 100 mA) Command value call-up via digital signals (+24 V) at the terminals b20, b22, b24 and b26 – **1 input for external command value specification:** Designed as differential amplifier Input voltage 0...±10 V at terminals b10 and b14 Input impedance R_i = 100 kΩ – **1 input for external command value specification:** Designed as differential amplifier Input voltage 0...±10 V at terminals z14 and z16 Input impedance R_i = 100 kΩ Additional command value input without ramp function, can be added to the ramp command value as bypass signal
Ramp generation	– **Selection of two ramp time ranges** t1 = 0.05...5 s, t2 = 0.1...10 s – **Separate** ramps which can be adjusted **at potentiometers** for acceleration α1, α2 (P5 and P7) and braking β1, β2 (P6 and P8) – Selection of **two ramp time combinations** α1, β1 or α2, β2. Selection via digital signal (+24 V) at terminal b30 High level (+24 V) ≙ α2, β2 (P7/P8), low level (0 V) and/or open input ≙ α1, β1 (P5/P6) – **Automatic quadrant recognition** of the ramps for positive and negative command values – **"Ramps Off" control** with digital signal (+24 V) at b28 High level (+24 V) ≙ ramp Off, low level (0 V) and/or open input ≙ with ramps
Signal outputs	– Main output (z20), signal ground (b12) – Additional output (z12) total command value from P3 and P4 without ramp control, see block diagram – Additional output (z10) total command value without ramp control. Is formed from Σ P1...P4 and external command value b10/b14. Can be measured as input signal for ramp generator – Every output can be loaded with 10 mA (load = 10 kΩ)
Digital inputs (control inputs)	– Signal voltage U_E = +6...+40 V, $U_{E\ nom.}$ = +24 V High signal ≧ +6 V, low signal ≦ +6 V Input impedance R_i = 2 kΩ (input current approx. 10...15 mA)
Displays/messages (see page 2)	– LED displays for active command values P1...P4 and/or fixed command values +10 V and –10 V – LED display for ramp combination (α1, β1) or (α2, β2) – LED display with "Ramp Off" mode – LED operating messages with 2-color LED green: Operating voltage U_B = On red: Operating voltage too small
Format of the printed circuit board mm	(100 x 160 x ca. 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*	0.33 kg

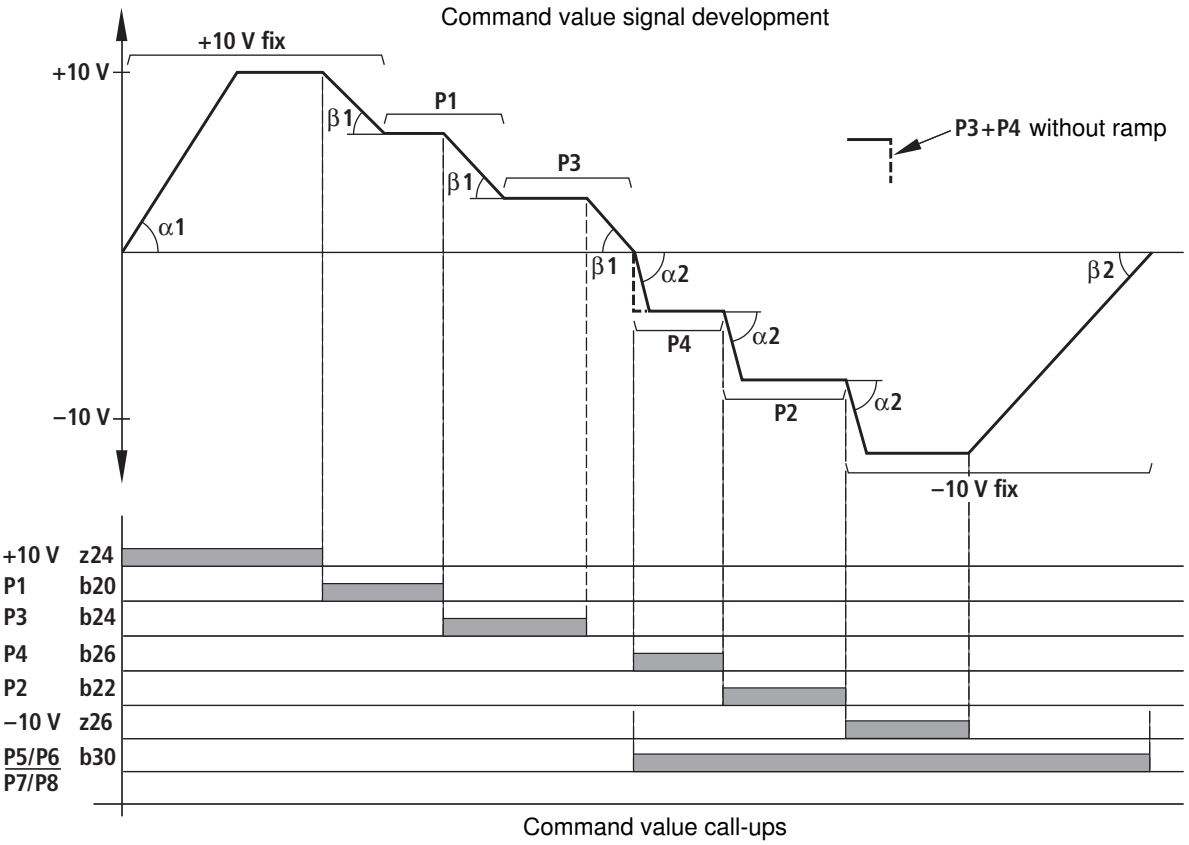
Applications

1. Preparation and call-up of signal voltages U_E = 0...±10 V.
2. Generation of voltage ramps t = 0.05...10 s via potentiometer settings on the front side.
3. By means of the DIL switch S1, the command values P3/P4 can be connected with or without ramp function.

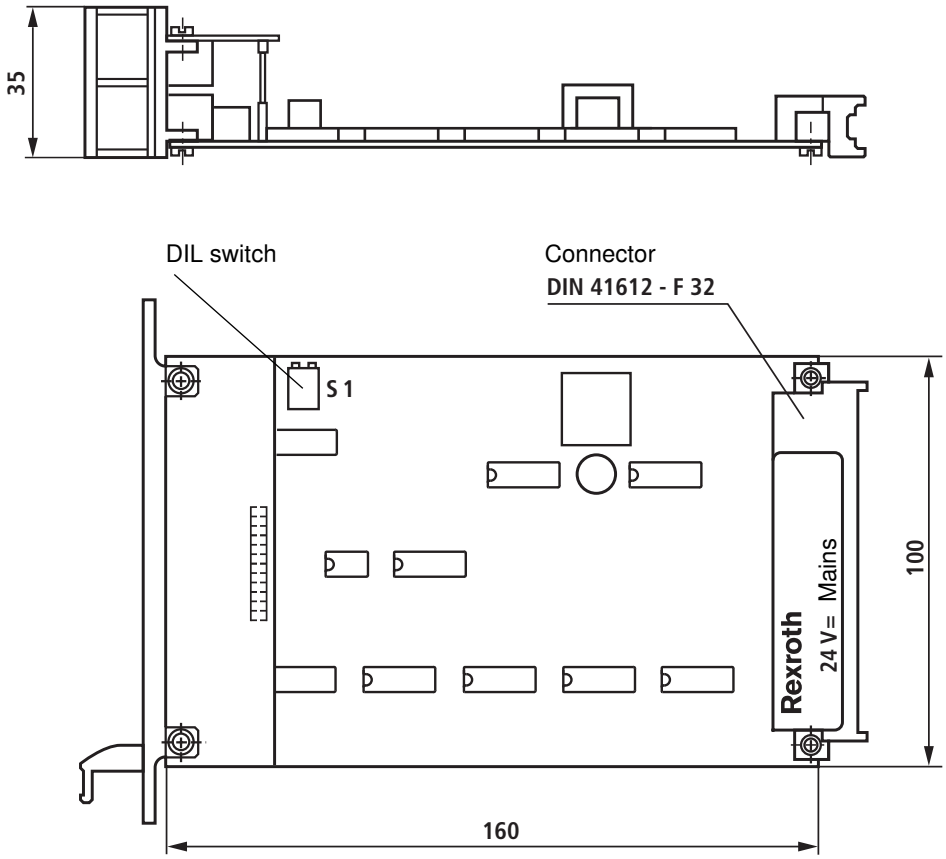
DIL S1. __		Ramp
.1	.2	.P3/P4
1	0	EIN/ON
0	1	AUS/OFF



Command value run program
Example



Device 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 protection circuits.