

Plug-in amplifier

RE 30264/07.12
Replaces: 03.10

1/8

Type VT-SSPA1

Component series 2X

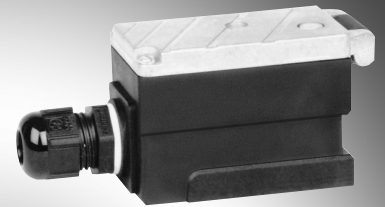


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Features

- Analog amplifier for controlling proportional valves (pressure and directional valves) without position control
- Differential input
- Ramp time adjustable (60 ms...5 s)
- Sensitivity, valve zero point, dither frequency adjustable
- Operating voltage 24 V

Notice:

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

Ordering code, accessories

VT		S	S	P	A	1	-	-2X/V0/	
Design									
Plug-in amplifier		= S							Control
Hydraulic component for valves without electrical feedback		= S							Voltage 0...10 V
Valve type									Current 4...20 mA
Proportional valve				= P					Customer version
Control									0 =
Analog					= A				I =
Output stages									V0 =
1 output stage					= 1				2X =
									508 =
									525 =

Control
Voltage 0...10 V
Current 4...20 mA

Customer version
Catalog version

Component series 20 to 29
(20 to 29: Unchanged technical data
and pin assignment)

Serial number for types
0.8 A solenoid
2.5 A solenoid

Preferred types

Amplifier type	Material number	For proportional valves, without position control
VT-SSPA1-525-20/V0/0	0811405143	DBETX-1X...-25...
		DBE6X-1X...-25...
		3(2)FREX...-1X...-25...
VT-SSPA1-525-20/V0/I	0811405145	DBETX-1X...-25...
		DBE6X-1X...-25...
		3(2)FREX...-1X...-25...
VT-SSPA1-508-20/V0/0	0811405144	DBETX-1X...-8...
		DRE10Z-1X...-8...
		DRE6X-1X...-8...
		DBE6X...1X...-8...
		DBE10Z-1X...-8...
VT-SSPA1-508-20/V0/I	0811405162	DBETX-1X...-8...
		DRE10Z-1X...-8...
		DRE6X-1X...-8...
		DBE6X...1X...-8...
		DBE10Z-1X...-8...

Test and service device

– Current measurement adapter VT-PA-5 (see data sheet 30073).

Function

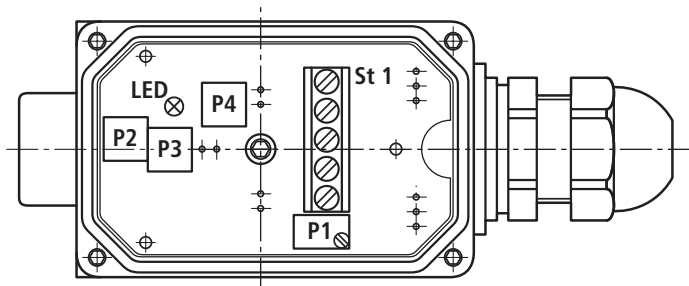
The active connector is used for **controlling** proportional valves without position control. It is directly attached to the solenoid plug of the valve. The **connection cable** on the control side (U_B , command value) is led through a gland fitting and connected. An **LED** signals the available supply voltage. Depending on the type of the active connector, the **command value is specified** as voltage 0...10 V or as current 4...20 mA.

The command value can be adjusted with regard to **zero point** and **sensitivity**. In case of voltage specification, a **differential input** is available.

Apart from that, the command value can be led via a **ramp**. In order to allow for adjustment to special applications, the **dither amplitude** was designed variably.

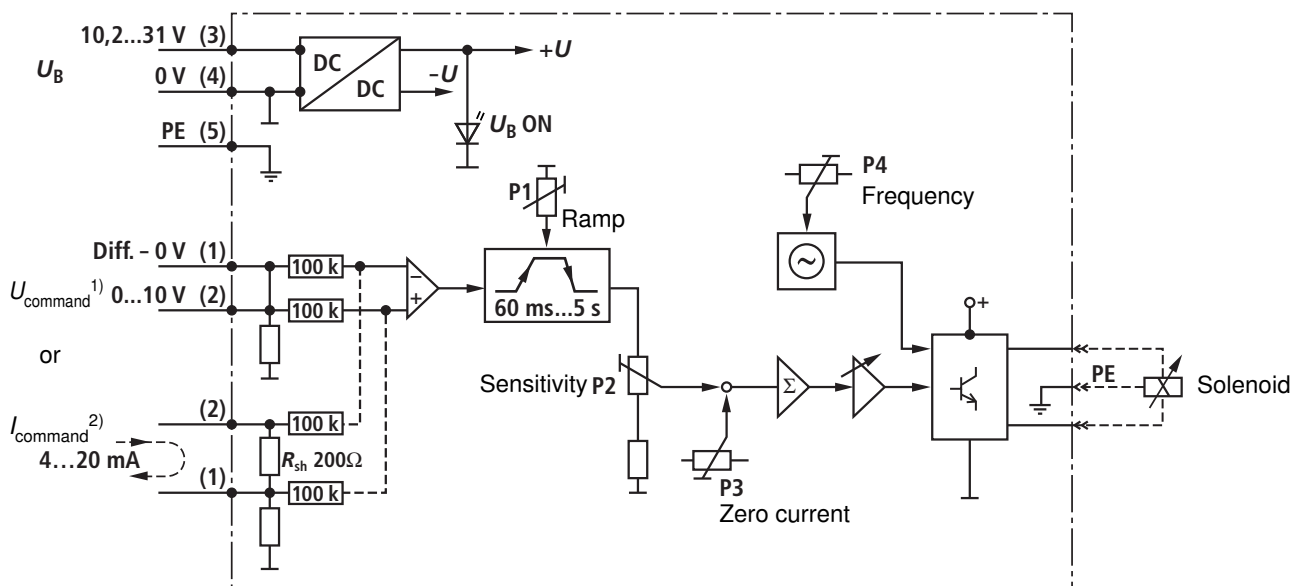
Upon delivery, the dither amplitude has already been set to a perfect value so that another adjustment is only necessary in the above-mentioned special cases.

Connections and adjustment



- P1 – Ramp time
- P2 – Sensitivity
- P3 – Zero point
- P4 – Dither frequency
- St 1 – Connection terminal
- LED – Display U_B

Block diagram and pin assignment



¹⁾ 0811 405 143; 0811 405 144

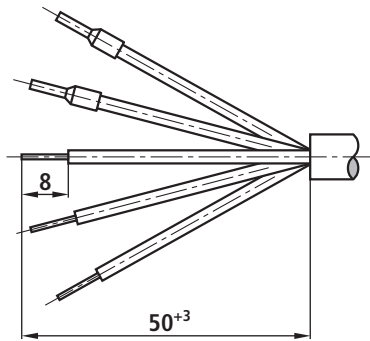
²⁾ 0811 405 145; 0811 405 162

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

Supply voltage nom. 24 V =		
	Solenoid 2.5 A	Battery voltage 10.2...31 V Rectified voltage 10.2...27 V
	Solenoid 0.8 A	Battery voltage 21...31 V Rectified voltage 21...27 V
	Residual ripple	< 2 V _{SS}
Power consumption max.	VA	55 (see valve data)
Command value	0811 405 143 0811 405 144 0811 405 145 0811 405 162	0...10 V = 4...20 mA
Output	0811 405 145 0811 405 143 0811 405 144 0811 405 162	$I_{\max} = 2.5$ A (rectangular voltage, pulse-modulated) $I_{\max} = 0.8$ A (rectangular voltage, pulse-modulated)
Ramp time		60 ms...5 s
Dither frequency range	Hz	95...340
Zero point calibration range		See characteristic curves, page 5
Sensitivity adjustment range		
Special features		LED (green): Supply voltage is available, Clocked output stage, Fast energization for short actuating times, Adjustments via trimming potentiometer
Protection class		IP 65, in plugged condition
Electro-magnetic compatibility tested according to		EN 61000-6-2: 2002-08 EN 61000-6-3: 2002-08
Design:		Connector housing
Connections	- Solenoid - U_B , command value	DIN 43650 Cable 5x0.75 mm ² , shielded (incl. PE)
Ambient temperature	°C	-20...+70
Storage temperature range	°C	-20...+85
Weight	m	0.23 kg

Commissioning and adjustment

1. Preparation of the connection cable.



Crimp the wire end ferrules shortly (5x)

2. Lead the cable through the gland fitting and connect to terminal St 1.

Notice

Supply voltage and command value must not yet be applied to the cable!

3. Apply the supply voltage

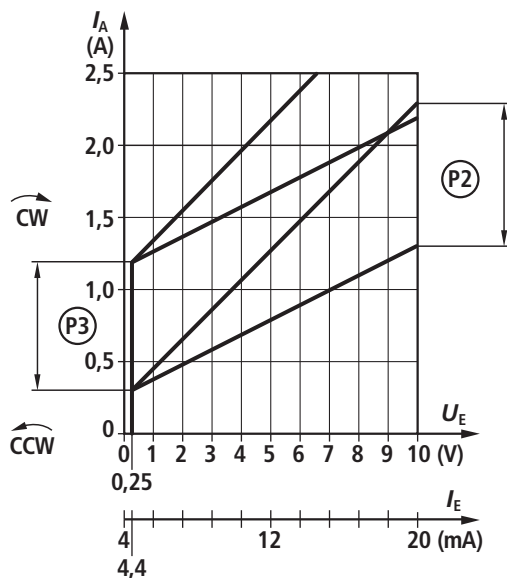


LED (green) is illuminated.

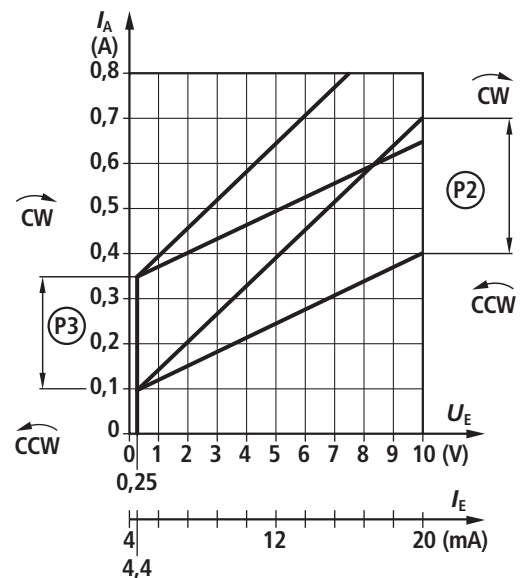
4. Zero point adjustment → Poti P3 , with minimum command value specification.

5. Sensitivity adjustment → Poti P2 , with maximum command value specification.

0811 405 143
0811 405 145



0811 405 144
0811 405 162



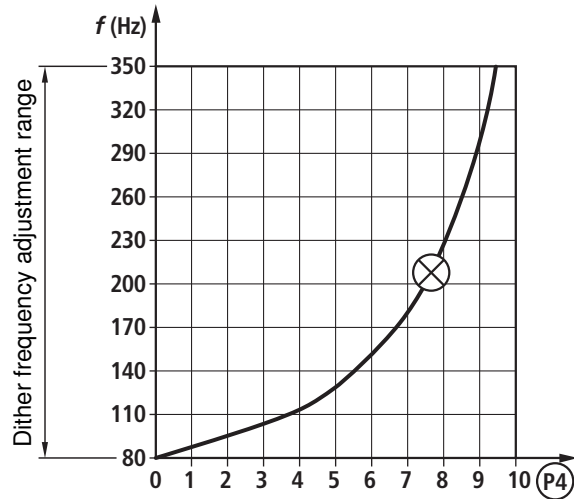
P2 Sensitivity range
 P3 Zero current range

Commissioning and adjustment

6. Dither frequency adjustment

→ Poti P4 .

The dither frequency has already been correctly adjusted upon delivery. For special applications, correction may be necessary. In this connection, please contact DC-IA/PRM12.

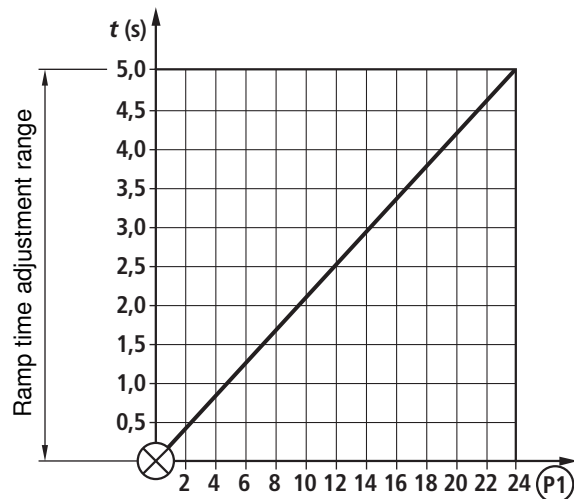


⊗ Factory setting

Ⓟ P4 Poti position

7. Ramp time adjustment (accelerations and braking)

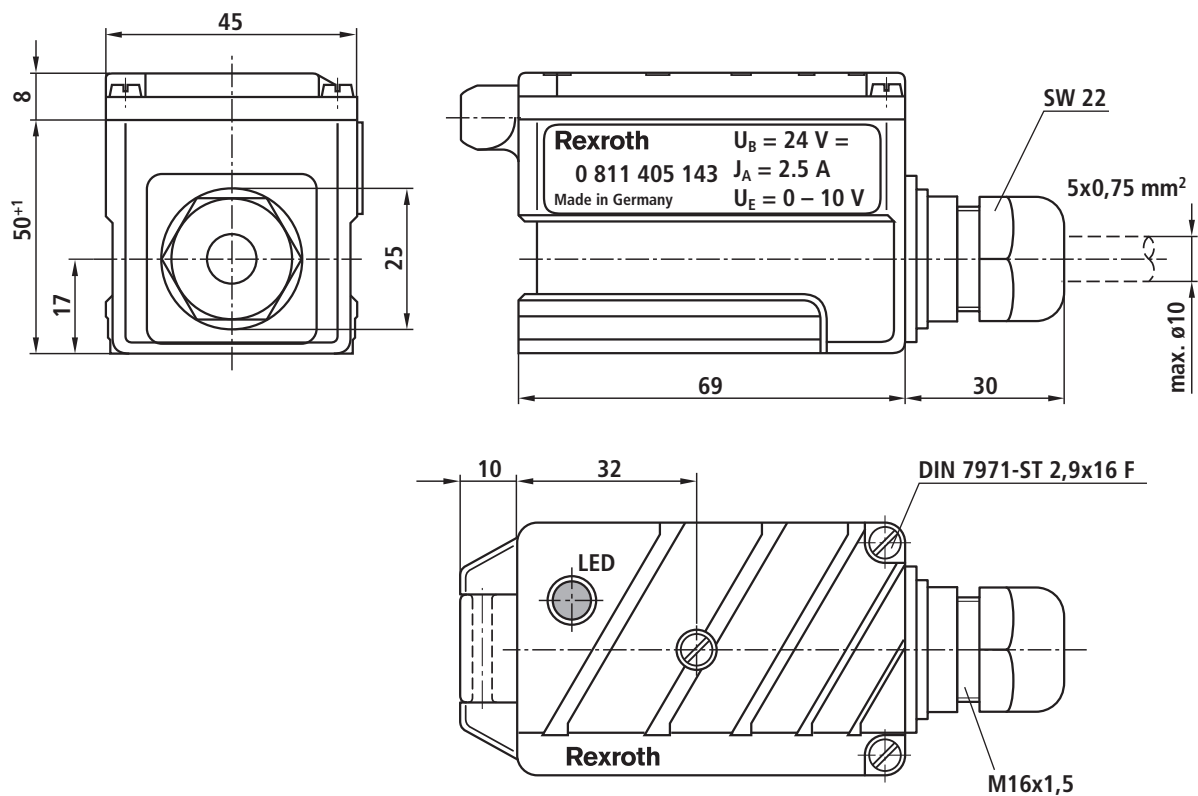
→ Poti P1 .



⊗ Factory setting

↻ P1 Poti rotation

Device dimensions (dimensions in mm)



DIN 84.8 M3x40-5.8

$M_A = 0,8...1,1 \text{ Nm}$

Project planning / maintenance instructions / additional information

- The plug-in amplifier 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.

Notes
