

Analog amplifier module

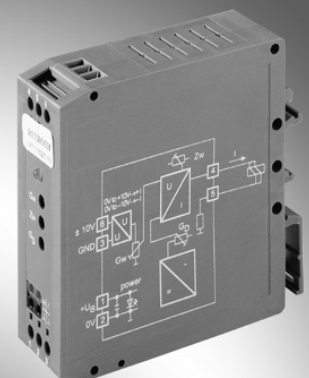
RE 29743-02/07.10

1/4

Replaces: 04.08

Type VT 11021-1X/V001

Component series 1X



H6507_d

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Features

- Suitable for controlling servo-valves with mechanical feedback, type 4WS2EM... (sizes 6 and 10)
- Changes when compared with the basic device:
 - Maximum current ± 20 mA
- Differential input ± 10 V
- Dither signal generator
- U/I converter (short-circuit-proof against 0 V)
- DC/DC converter
- Reverse polarity protection
- Internal supply voltage is signaled by LED

Ordering code

Type VT 11021-1X/V001

Mat. no. R901167581

Functional description

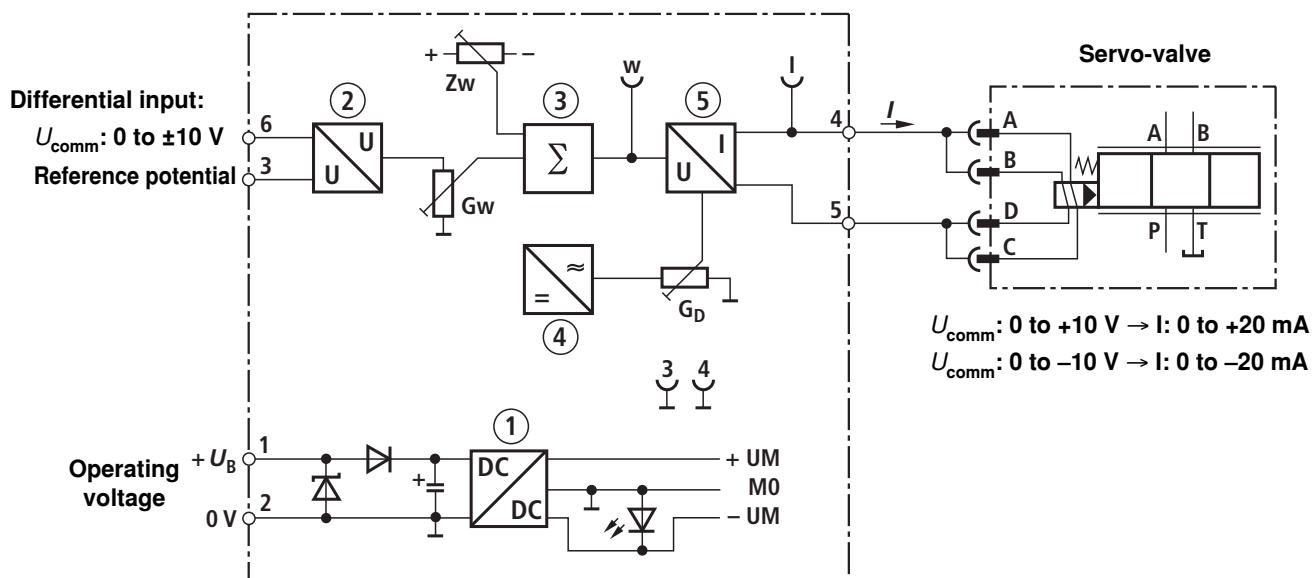
The amplifier module is to be snapped onto hat rails in accordance with EN 60715. The electrical connection is made by means of screw-type terminals. The module is operated with 24V DC voltage.

The command value of ± 10 V is applied to the differential input. The output current of the downstream U/I converter controls the servo-valve.

The following parameters can be adjusted externally by means of trimming potentiometers G_w , Z_w and G_D :

- Max. output current by means of “ G_w ” from ca. 10 % to 110 %
- Offset current by means of “ Z_w ” between +10 % and –10 % of max. output current
- Amplitude of the dither signal by means of “ G_D ” between 0 % and 10 % of max. output current

Block circuit diagram / pinout



- | | | | |
|---|-------------------------|-------|-------------------------|
| 1 | Power supply unit | G_w | Max. output current |
| 2 | Differential amplifier | Z_w | Offset current |
| 3 | Summator | G_D | Dither signal amplitude |
| 4 | Dither signal generator | | |
| 5 | U/I converter | | |

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

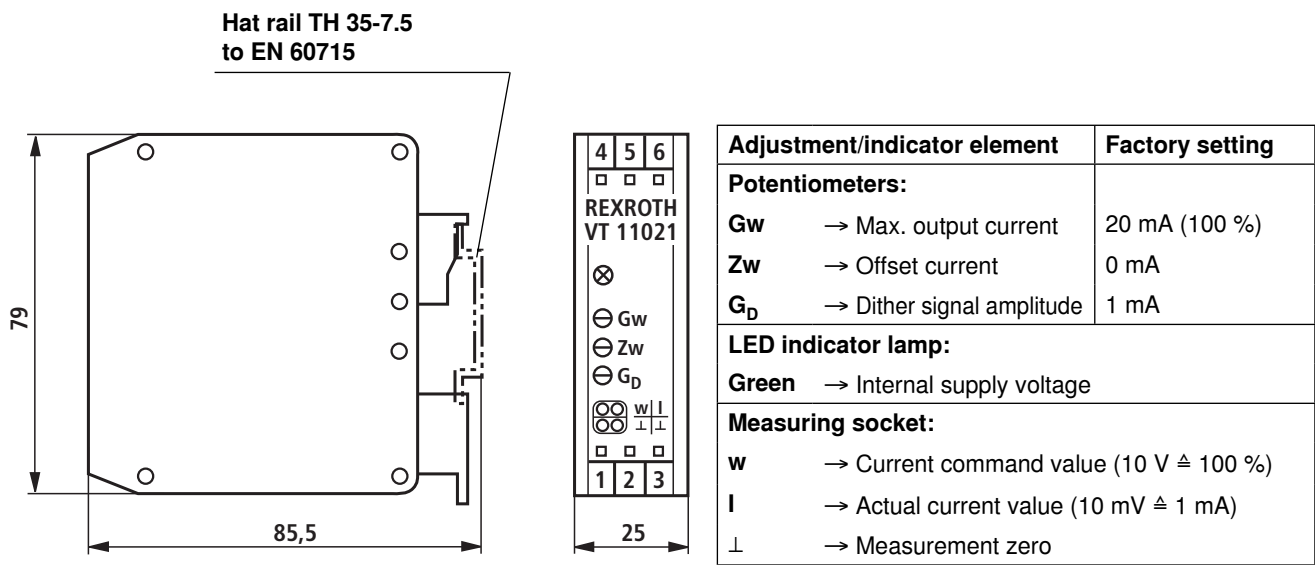
Operating voltage	U_B	24 VDC +40 % –10 %
Operating range:		
– Upper limit value	$u_B(t)_{\max}$	35 V
– Lower limit value	$u_B(t)_{\min}$	21 V
Current consumption (without valve) at $U_B = \pm 24$ V	$I_{\max}$	300 mA
Power consumption	P_S	ca. 8 VA
Fuse		Thermal overload protection (with reclosing when temperature falls below the threshold)
Inputs:		
– Command value	U_{comm}	0 to ± 10 V ($R_i \geq 20$ k Ω)
Outputs:		
– Valve current	$I_{\max}$	± 20 mA +10 %
– Measuring sockets		
• Current command value “w”	U_w	0 to ± 10 V
• Actual current value “I”	U_{act}	0 to ± 200 mV (10 mV $\triangleq$ 1 mA)
Dither signal:		
– Frequency	f	100 Hz ± 10 %
– Amplitude	I_{SS}	0 to 2 mA (factory setting 1 mA)
Type of connection		6 screw-type terminals
Type of mounting		Hat rails TH 35-7.5 to EN 60715
Type of protection		IP 20 to EN 60529
Dimensions (W x H x D)		25 x 79 x 85.5 mm
Permissible operating temperature range	ϑ	0 to +50 °C
Storage temperature range	ϑ	–20 to +70 °C
Weight	m	0.13 kg

Terminal assignment

Operating voltage	$+U_B$	1	4	Servo-valve	Connection A, B
	0 V	2	5	Servo-valve	Connection C, D
	Reference potential	3	6	$\pm U_{\text{comm}}$	

Terminals 3 and 6: Differential input

Unit dimensions



Engineering / maintenance notes / supplementary information

- The amplifier module may only be wired when disconnected from the power supply!
 - The distance to radio equipment must be sufficient (>> 1m)!
 - Shield command value cables, do **not** install command value cables near power cables!
 - Do not use free-wheeling diodes in solenoid cables!
 - In the case of a strongly fluctuating operating voltage, it may be required to install an external smoothing capacitor having a capacitance of at least 2200 μ.
- Recommendation: Capacitor module VT 11110 (see RE 30750); sufficient for up to 3 amplifier modules