

Analog amplifier module

RE 29743-03/07.10
Replaces: 05.10

1/4

Type VT 11021-1X/V002

Component series 1X

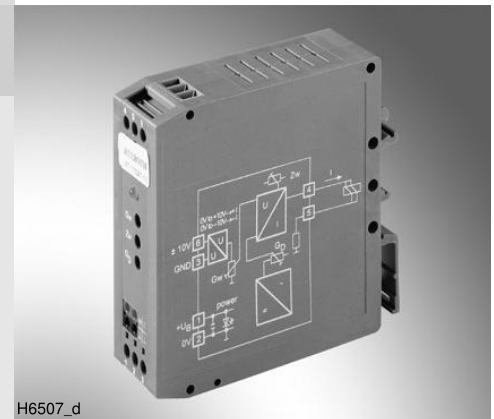


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Features

- Suitable for controlling servo-valves with mechanical feedback, type 4WS2EM... (sizes 6 and 10)
- Change as compared to the basic unit:
 - Input ± 50 mA instead of ± 10 V
- Dither signal generator
- U/I transformer (short-circuit-proof against 0 V)
- DC/DC converter
- Reverse voltage protection
- Signalling of internal supply voltage by LED

Ordering code

Type VT 11021-1X/V002

Mat. no. R901272388

Functional description

The amplifier module is to be snapped onto a hat rails according to EN 60715. It is electrically connected by means of screw terminals. The module is powered by 24V DC voltage.

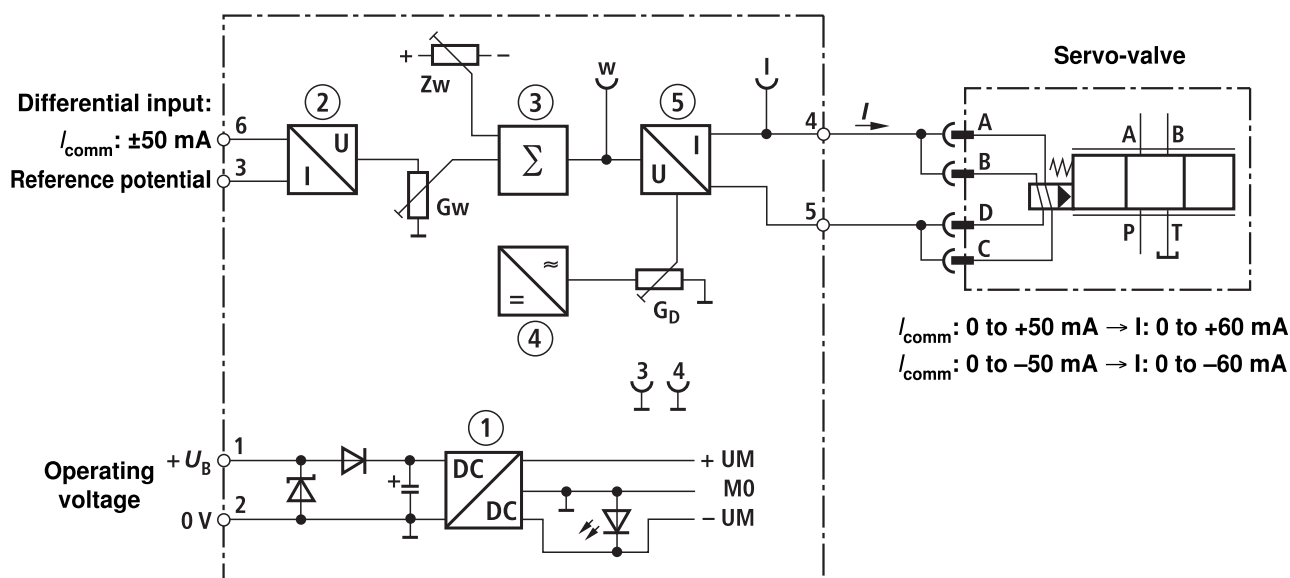
The ± 50 mA command value is applied to the differential input. The output current of the downstream U/I transformer controls the servo-valve.

The following parameters can be adjusted externally using

trimming potentiometers G_w , Z_w and G_D :

- The max. output current between approx. 10 and 110 % by means of " G_w "
- The offset current between +10 % and –10 % of the max. output current by means of " Z_w "
- The amplitude of the dither signals between 0 and 10 % of the maximum output current by means of " G_D "

Block circuit diagram / pin assignment



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

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

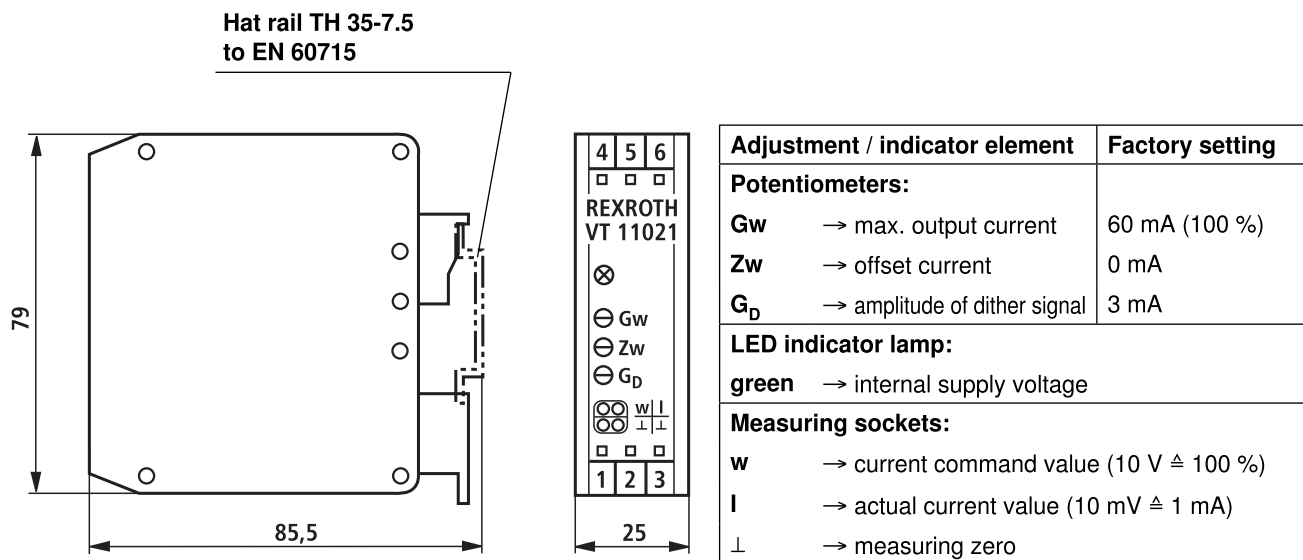
Operating voltage	U_O	24 VDC +40 % -10 %
Operating range:		
– Upper limit value	$u_O(t)_{\max}$	35 V
– Lower limit value	$u_O(t)_{\min}$	21 V
Current consumption (without valve) at $U_O = \pm 24$ V	$I_{\max}$	300 mA
Power consumption	P_S	approx. 8 VA
Fuse		Thermal overload fuse (with reactive function when temperature falls below the threshold)
Inputs:		
– Command value	I_{comm}	0 to ± 50 mA ($R_e = 100 \Omega$)
Outputs:		
– Valve current	$I_{\max}$	± 60 mA +10 %
– Measuring sockets		
• Current command value “w”	U_w	0 to ± 10 V
• Actual current value “I”	U_{act}	0 to ± 600 mV ($10 \text{ mV} \triangleq 1 \text{ mA}$)
Dither signal:		
– Frequency	f	340 Hz ± 10 %
– Amplitude	I_{SS}	0 to 6 mA (factory setting 3 mA)
Type of connection		6 screw terminals
Type of mounting		Top hat rail TH35-7.5 according 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	$+U_O$	1	4	Servo-valve	Connection A, B
	0 V	2	5	Servo-valve	Connection C, D
	Reference potential	3	6	$\pm I_{\text{comm}}$	

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 sufficiently large ($\gg 1$ m)!
- Shield command value cables; do **not** lay them near power cables!
- Do not use free-wheeling diodes in the solenoid cables!
- In the case of a strong fluctuations in the operating voltage, it may become necessary to install an external smoothing capacitor having a capacitance of at least 2200 μ F.

Recommendation: Capacitor module VT 11110 (see RE 30750); sufficient for up to 3 amplifier modules