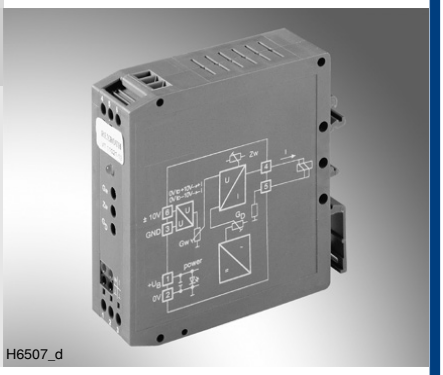
Analog amplifier module

RE 29743-03/07.10 1/4
Replaces: 05.10

Type VT 11021-1X/V002

Component series 1X


H6507_d

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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

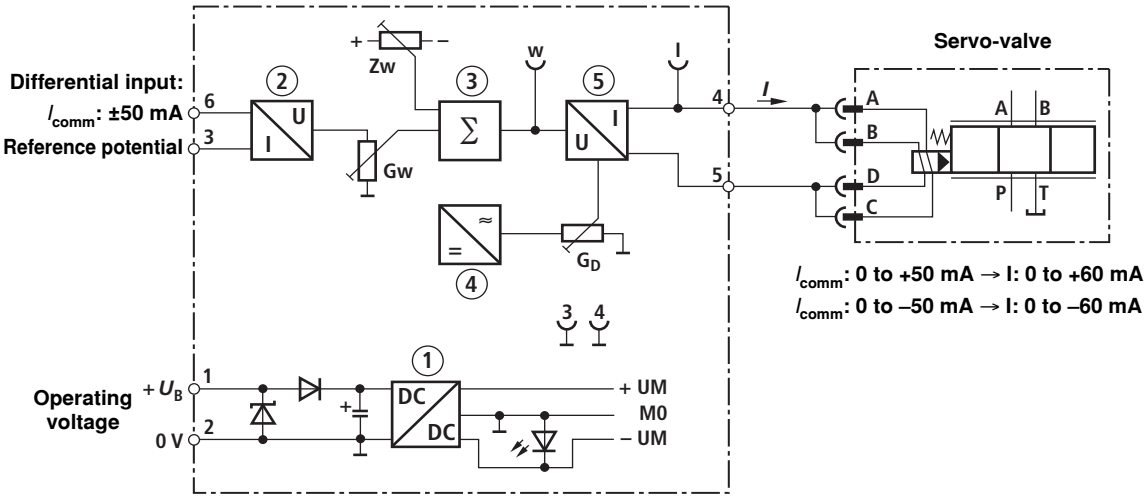
The amplifier module is to be snapped onto a hat rails according to EN 60715. It is electrically connected by means of screw terminals. The module is powered by 24V DC voltage.

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 Gw, Zw and G_D:

- The max. output current between approx. 10 and 110 % by means of “Gw“
- The offset current between +10 % and –10 % of the max. output current by means of “Zw”
- 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	**Gw**	Max. output current
2	Differential amplifier	**Zw**	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!)

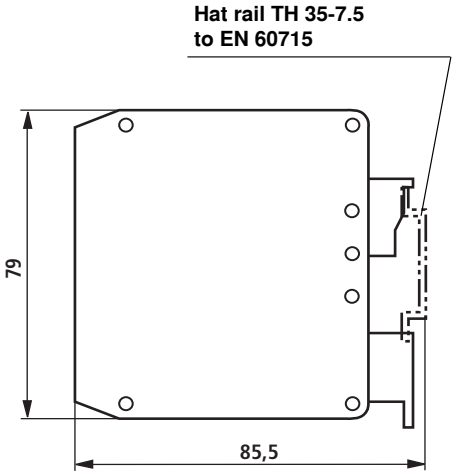
Operating voltage	U_O	24 VDC +40 % –10 %
Operating range:		
– Upper limit value	$u_O(t)_{max}$	35 V
– Lower limit value	$u_O(t)_{min}$	21 V
Current consumption (without valve) at U_O = ±24 V	I_{max}	300 mA
Power consumption	P_S	approx. 8 VA
Fuse		Thermal overload fuse (with reactive function when temperature falls below the threshold)
Inputs:		
– Command value	I_{comm}	0 to ±50 mA (R_e = 100 Ω)
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 mV ≙ 1 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

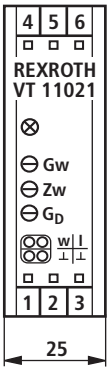
Terminal assignment

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

Terminals 3 and 6: Differential input

Unit dimensions





Adjustment / indicator element		Factory setting
Potentiometers:		
Gw	→ max. output current	60 mA (100 %)
Zw	→ offset current	0 mA
G_D	→ amplitude of dither signal	3 mA
LED indicator lamp:		
green	→ internal supply voltage	
Measuring sockets:		
w	→ current command value (10 V ≙ 100 %)	
I	→ actual current value (10 mV ≙ 1 mA)	
⊥	→ measuring zero	

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 (>> 1m)!
- 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 μF.

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