VA250.1/ VA500C.1 Ventilantrieb
VA250.1/ VA500C.1 Actuator for valves

FRAKTA

For controllers with continuous output (0...10V) or switching output (2-point or 3-point control). For operating through or three-way valves of the COMAR - Line series.
The characteristic selection (linear / equal percentage) can be set on the positioner.
Two-piece housing made of self-extinguishing plastic, lower part black and upper part turquoise (Pantone 326C), with stepper motor, control electronics and maintenance-free gear. Console made of plastic and union nut made of brass for valve attachment. Assembly with the valve is virtually automatic. Direction of action can be switched directly on the cable. Electronic force-dependent cut-off by means of stops in the device or on the valve, automatic adaptation to the valve lift. Coding switch for selection of characteristic and running time. Manual disengageable gear for positioning the valve (hexagon key included).
Connection cable 1.2 m long, 5 x 0.5 mm², vertical to horizontal, not suspended.

Typ	Regelung	Laufzeit	Hub	Schubkraft	Spannung	Gewicht
Typ	Control	Running Time s	Stroke mm	Pushing Force N	Power v	Weight kg
VA250.1	2/3-Punkt / stetig	25/40/80	5,5	250	24 VAC/DC	0,7
VA500C.1	2/3-Punkt / stetig	40/80	5,5	500	24 VAC/DC	0,7

Speisespannung Power supply	24 V AC 20%, 50-60 Hz 24V DC +20% -10%	Schutzgrad (waagrecht) Protection (horizontal)	IP 54 nach EN 60529
		Normen	24V, III nach IEC 60730 230 V, II nach IEC 60730
Leistungsaufnahme Power consumption		min. Ansprechzeit min. Response time	200 ms
VA250.1	4,8 W, 8,5 VA		
VA500C.2	5,0 W, 8,5 VA	Anschlussplan wiring type	2/3 –Punkt, 0-10 V stetig 2/3 -point
max. Mediumstemperatur max. media temperature	100 °C		
zul. Umgebungstemperatur Permissible ambient temp.	–10...55 °C		
zul. Umgebungsfeuchte Ambient humidity	5…95 %rF ohne Betauung Without condensation		
Stellungsregler			
Steuersignal	0...10 V, R_i > 100 k		
Anfangspunkt U_0	0 bzw. 10V		
Stellungsrückmeldung	0...10 V, Bürde > 10 k		
Aussteuerspanne U	10V		
Schaltbereich X_{sh}	200 mV		

Zubehör

ZVA250.S1	Hilfsumschaltkontakt 2) einfach;
ZVA250.S2	Hilfsumschaltkontakt 2) doppelt;

1) Auch für 2-Punkt oder 3-Punkt je nach Anschlussart
2) stufenlos einstellbar 0...100%, zul. Belastung 5 (2) A, 24...230V
3) Maximaler Hub des Antriebs = 8,0 mm

Position

Depending on the type of connection (see wiring diagram), the drive can be supplied as a continuous 0...10V, as a 2-point (open-closed) or 3-point actuator (open-stop-close) with intermediate position. The running time of the drive can be set according to the requirements with switches S1 and S2. The characteristic curve equal percentage or linear can be selected via switch S3. The **VA250.1 / VA500C.1** is combined with valves that have a linear basic characteristic such as the Comar valves.

Manual adjustment is performed by disengaging the gear unit (slide switch next to the connection load) and simultaneously turning by means of a hexagon key in use on the upper part of the drive. Attention: After manual adjustment, reset the slide switch (engage the gear unit).

Connection as 2-point actuator
This open/close control can be carried out via 2 cables. The drive is connected to voltage via the blue and brown cables. The normal load of the valve is opened by applying the voltage to the black cable. When this voltage is switched off, the actuator moves to the opposite end position and closes the valve. The unused red and grey conductors must not be connected or come into contact with other cables. We recommend isolating them.

Connection as 3-point actuator
By applying the voltage to the cable (brown or black), the valve is controlled to any position. The coupling rod extends and opens the valve when voltage is applied to the black cable. It retracts and closes the valve when the circuit is closed via the blue and brown cables. In the end positions (stop in the valve or when the maximum stroke is reached) or in the event of overload, the electronic motor switch-off is activated (no limit switches). Change the direction of travel by swapping the connections (BN/BK). The unused red and grey conductors must not be connected or come into contact with other cables. We recommend isolating them.

Connection for control voltage 0...10V
The built-in positioner controls the actuator depending on the controller output signal y.
Direction of operation 1 (mains voltage on brown cable):
As the control signal increases, the stem extends and opens the valve (controlled load).
Direction of operation 2 (mains voltage on black cable):
As the control signal increases, the stem retracts and closes the valve (controlled load).
The starting point and the control span are fixed. A split range unit is available for setting partial ranges (accessory). After manual adjustment or in the event of power interruption for at least 5 minutes, the Actuator automatically new, always with a running time of 35 s. After applying the supply voltage, the stepper motor moves to the lower stop, makes the connection with the valve spindle, moves to the upper stop and thus determines the closed position. The actuator now applies the 0-10V to the measured travel (The valve series Comar has a nominal travel of 5.5mm). Then, depending on the control voltage, each position can be set between 0 and 5.5 mm can be approached. Thanks to the electronics, no steps can be lost and the drive does not require periodic readjustment. Parallel operation of several drives of the same type is guaranteed. The feedback signal y 0 = 0...10V corresponds to the effective travel from 0 to 5.5 mm. If the control signal 0...10V is interrupted and direction of action 1 is connected, the valve is closed completely (0% position).
The characteristic curve of the valve can be selected with the coding switch. Characteristic curves can only be generated if the drive is used as a continuous drive. With further switches, the running times can be selected. These are applicable whether the 2-point, 3-point or the continuous function is selected.

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Design and installation notes

The penetration of condensate, dripping water, etc. along the valve spindle into the actuator must be prevented. For the electrical connection, it must be ensured that the cross-section of the supply line is adapted to the power and the length. However, in any case we recommend a minimum cross section of 0.75 mm². The actuator / valve is mounted by inserting and turning the union nut without further adjustment. The valve spindle is automatically coupled to the drive spindle, either by using the handwheel or by applying the voltage. For disassembly, first unlock the drive and valve spindles, then loosen the union nut. Delivered in the middle position. The stepper motor and electronics concept ensures parallel operation of several valve drives of the same type.

The maximum number of accessories for one drive is 1 auxiliary contact (single or double). The coding switches are accessible via a prepared opening with a black cover in the housing cover.

The auxiliary contact accessory is screwed onto the top cover of the actuator. In order to mechanical connection, the display button must first be removed. A new display can be seen on the cover of the accessories.

Attention! The housing must not be opened.

Outdoor installation.
We recommend that the units are additionally protected from the weather when installed outside buildings.

Additional technical information

The upper housing part with cover, display knob and cover knob contains the stepper motor and the Electronics. The lower part of the housing contains the maintenance-free gearbox.

Auxiliary changeover contact (ZVA250.S1, ZVA250.S2)
Switching capacity max. 230V VAC, current min. 20 mA at 20V
Switching capacity max. 4...30V VDC, current 1...100 mA

Power consumption:

Type	Running time s	Condition	Active power P W	Apparent power S VA
VA250.1	25	Operation	2,45	4,75
		Stability	0,35	0,8
VA250.1	40	Operation	4,8	8,5
VA500C.1	0	Stability	0,35	0,8
	80	Operation	2,2	4,25
		Stability	0,35	0,8

CE - Konformität

EMV Richtlinie 89/336/EWG
(II B) EN 61000-6-1
EN 61000-6-3
EN 61000-6-4

Maschinen Richtlinie 98/37/EWG
EN 1050

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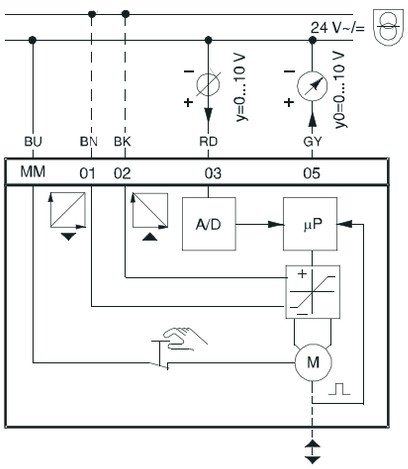
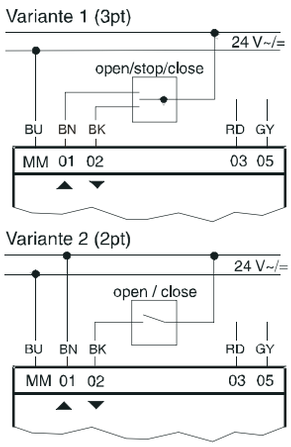
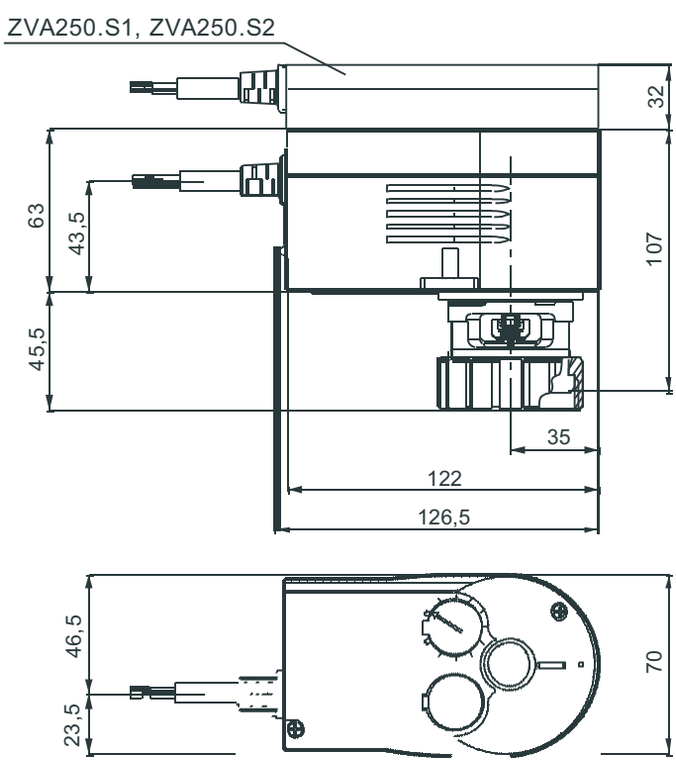




Desired character. curve	Switch coding	Characteristic curve for valve	Characteristic curve for drive	Effective on valve
Equal percentage	1 2 3 On Off	Stroke	Stroke / Signal	= % / Signal
Linear	1 2 3 On Off	Stroke	Stroke / Signal	lin / Signal
Equal percentage	1 2 3 On Off	Stroke	Stroke / Signal	= % / Signal
	= factory setting			

Run time per mm	Switch coding	Run time for 8 mm stroke
4,375 s	1 2 3 On Off	35 s ± 1
8,125 s	1 2 3 On Off	65 s ± 2
16,25 s	1 2 3 On Off / On Off	130 s ± 4
	= factory setting	



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