

VAV-Universal, ready-to-connect rotary actuator fail-safe for VAV and CAV units in technical building installations

- Air damper size up to approx. 4 m<sup>2</sup>
- Torque motor 6 Nm
- Nominal voltage AC/DC 24 V
- Control communicative PP
- Running time motor 4 s


**Technical data**

<b>Electrical data</b>	Nominal voltage	AC/DC 24 V
	Nominal voltage frequency	50/60 Hz
	Nominal voltage range	AC 19.2...28.8 V / DC 21.6...28.8 V
	Power consumption in operation	11 W
	Power consumption in rest position	3 W
	Power consumption for wire sizing	22 VA
	Power consumption for wire sizing note	Imax 20 A @ 5 ms
	Connection supply / control	Cable 0.5 m with VST connector
	Parallel operation	No
<b>Functional data</b>	Torque motor	6 Nm
	Setting fail-safe position	0...100%, adjustable in increments of 10% (POP rotary knob on 0 corresponds to left end stop)
	Bridging time (PF)	0 s
	Direction of motion variable	At VRU...-BAC with Belimo Assistant App
	Direction of motion fail-safe	selectable with switch 0...100%
	Manual override	with push-button
	Running time motor	4 s / 90°
	Running time fail-safe	4 s / 90°
	Adaptation setting range variable	Triggering at VRU...-BAC, by pressing the Adaptation button or with Belimo Assistant App
	Sound power level, motor	60 dB(A)
	Sound power level, fail-safe	60 dB(A)
	Mechanical interface	Universal shaft clamp 8...26.7 mm
	Position indication	Mechanically, pluggable
<b>Safety data</b>	Protection class IEC/EN	III, Safety Extra-Low Voltage (SELV)
	Degree of protection IEC/EN	IP54
	EMC	CE according to 2014/30/EU
	Certification IEC/EN	IEC/EN 60730-1 and IEC/EN 60730-2-14
	Type of action	Type 1.AA
	Rated impulse voltage supply / control	0.8 kV
	Pollution degree	3
	Ambient humidity	Max. 95% RH, non-condensing
	Ambient temperature	-30...50°C [-22...122°F]
	Storage temperature	-40...80°C [-40...176°F]
	Servicing	maintenance-free
<b>Weight</b>	Weight	1.1 kg
<b>Terms</b>	Abbreviations	POP = Power off position / fail-safe position PF = Power fail delay time / bridging time

Safety notes



- The device must not be used outside the specified field of application, especially not in aircraft or in any other airborne means of transport.
- Outdoor application: only possible in case that no (sea) water, snow, ice, insolation or aggressive gases interfere directly with the device and that it is ensured that the ambient conditions remain within the thresholds according to the data sheet at any time.
- Only authorised specialists may carry out installation. All applicable legal or institutional installation regulations must be complied during installation.
- The device may only be opened at the manufacturer's site. It does not contain any parts that can be replaced or repaired by the user.
- Cables must not be removed from the device.
- Self adaptation is necessary when the system is commissioned and after each adjustment of the angle of rotation (press the adaptation push-button once).
- To calculate the torque required, the specifications supplied by the damper manufacturers concerning the cross-section, the design, the installation situation and the ventilation conditions must be observed.
- The device contains electrical and electronic components and must not be disposed of as household refuse. All locally valid regulations and requirements must be observed.

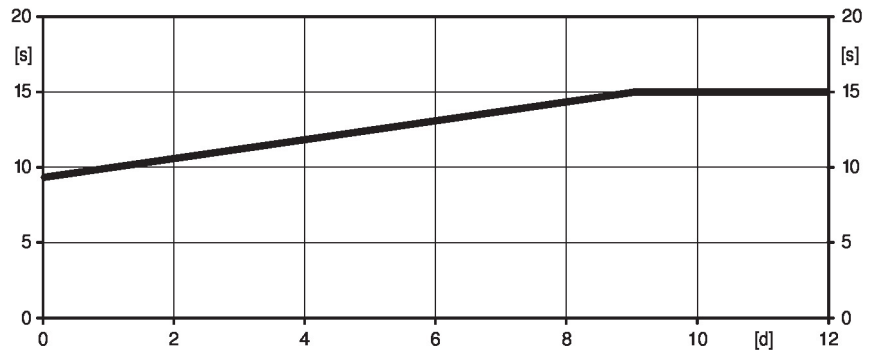
Product features

**Pre-charging time (start up)** The capacitor actuators require a pre-charging time. This time is used for charging the capacitors up to a usable voltage level. This ensures that, in the event of a power failure, the actuator can move at any time from its current position into the preset fail-safe position.

The duration of the pre-charging time depends mainly on following factors:

- Duration of the power failure
- PF delay time (bridging time)

Typical pre-charging times



[d] = Electricity interruption in days  
 [s] = Pre-charging time in seconds  
 PF[s] = Bridging time

	[d]				
	0	1	2	7	≥10
[s]	9	10	11	13	15

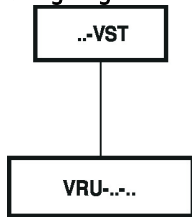
**Delivery condition (capacitors)** The actuator is completely discharged after delivery from the factory, which is why the actuator requires approximately 15 s pre-charging time before initial commissioning in order to bring the capacitors up to the required voltage level.

Accessories

Electrical accessories	Description	Type
	VAV-Universal - Volumetric flow / branch pressure controller	VRU-D3-BAC
	VAV-Universal - Volumetric flow / branch pressure controller	VRU-M1-BAC
	VAV-Universal - room pressure controller	VRU-M1R-BAC

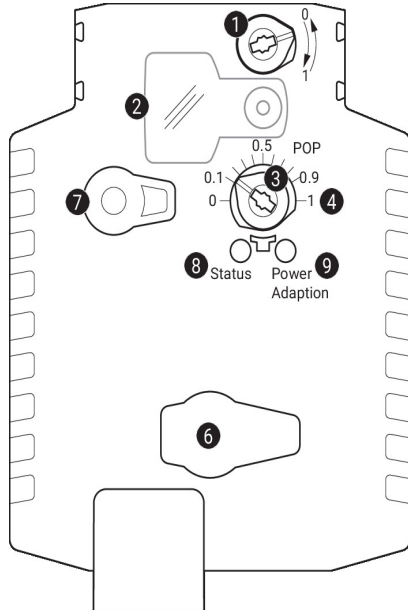
### Electrical installation

#### Wiring diagrams



Plug-in connection with pre-assembled cable-plug unit

### Operating controls and indicators



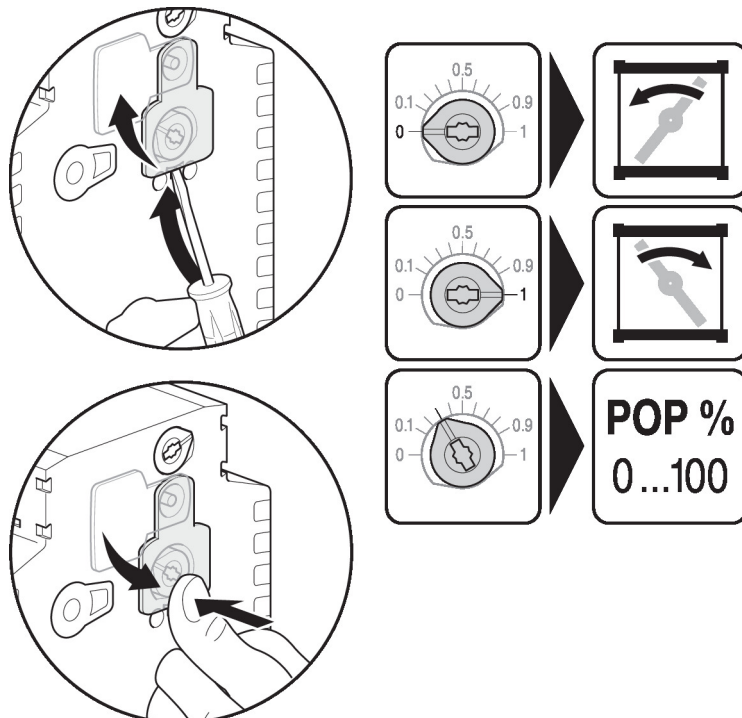
- 1 (no function)
- 2 Cover, POP button
- 3 POP button
- 4 Scale for manual adjustment
- 6 (no function, setting via VRU)
- 7 Manual override button

Press button: Gear train disengages, motor stops, manual override possible  
 Release button: Gear train engages, standard mode

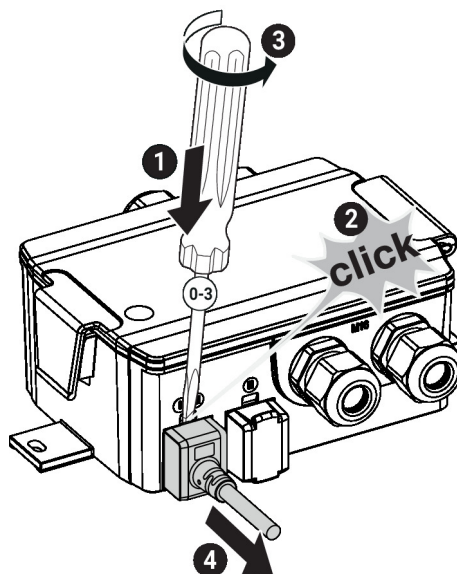
#### LED displays

yellow 8	green 9	Meaning / function
Off	On	Operation OK
Off	Flashing	POP function active
On	Off	Fault
Off	Off	Not in operation
On	On	Adaptation process active

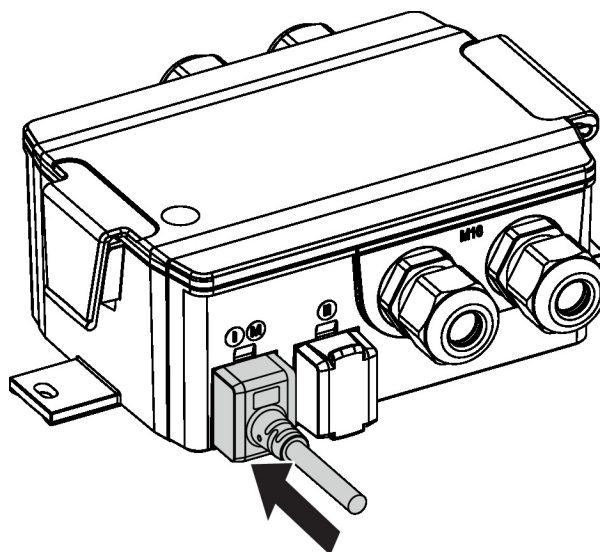
#### Setting emergency setting position (POP)



**Disconnect actuator** The connecting cable of the VST damper actuator can be removed from the VRU controller using a screwdriver (size 0...3) as shown in the illustration.








**Connect actuator** To ensure IP protection and the electrical connection, the VST plug must be fully inserted into the connector socket. For this, a certain amount of force is required.



Dimensions

Clamping range

			
	8...26.7	≥8	≤26.7
	8...20	≥8	≤20

