Front view

Control module for screw compressors

Features

- For industrial compressor racks in combination with HVI-G3/G4 and FVB110B, FVB110-PAT, FVB120B, FVB120-PAT, FVB140B or FVB140-PAT
- Stepless output control (slide control by pulsed solenoid valves)
- Power regulation via intermittent CR4 operation
- One module per screw compressor
- Operating mode selected by slide switch (constant, intermittent)
- Switching display via LED

Writing conventions

Symbol	Meaning
⚠ **CAUTION!**	Avoid the described hazard: otherwise **minor** or **medium** physical injury or damage to property will result.
⚠ **WARNING!**	Avoid the described hazard: otherwise there is danger from **electric voltage** that could lead to death or **serious** physical injury.

For your safety

For safe operation and to avoid personal injury and equipment damage through operating error, always read these instructions, become familiar with the device, and follow all safety instructions on the product and in this document, as well as the safety guidelines of Wurm GmbH & Co. KG Elektronische Systeme. Keep these instructions ready to hand for quick reference and pass them on with the device if the product is sold.

Wurm GmbH & Co. KG Elektronische Systeme accepts no liability in case of improper use or use for other than the intended purpose.

Target group	These instructions are intended for "service technicians".
Intended use	The ASV001 is a control module for screw compressors.

⚠ **WARNING!**
Danger to life from electric shock and/or fire!

- Switch off the power to the entire plant when installing, wiring or removing! Otherwise a mains voltage may still be present even if the control voltage is switched off!
- The wiring of the device should be carried out only by a qualified electrician!
- Use only the correct tools for all work!
- Check all wiring after connection!
- Take note of the maximum loads on all connections!
- Never expose the device to moisture, for example due to condensation or cleaning agents!
- Take the device out of operation if it is faulty or damaged and is therefore compromising safe operation!
- Do not open the device!
- Do not repair the device yourself! If required, send it in for repair with an exact description of the fault!

Software revision and validity of documentation

Software version		
V1.1	2018-01	Documentation status

Any software versions not listed are special solutions for individual projects and are not described in detail in this document. This document automatically ceases to be valid if a new technical description is issued.
Manufacturer: Wurm GmbH & Co. KG Elektronische Systeme, Morsbachtalstraße 30, D-42857 Remscheid
For further information, see our website at www.wurm.de

Connection diagram

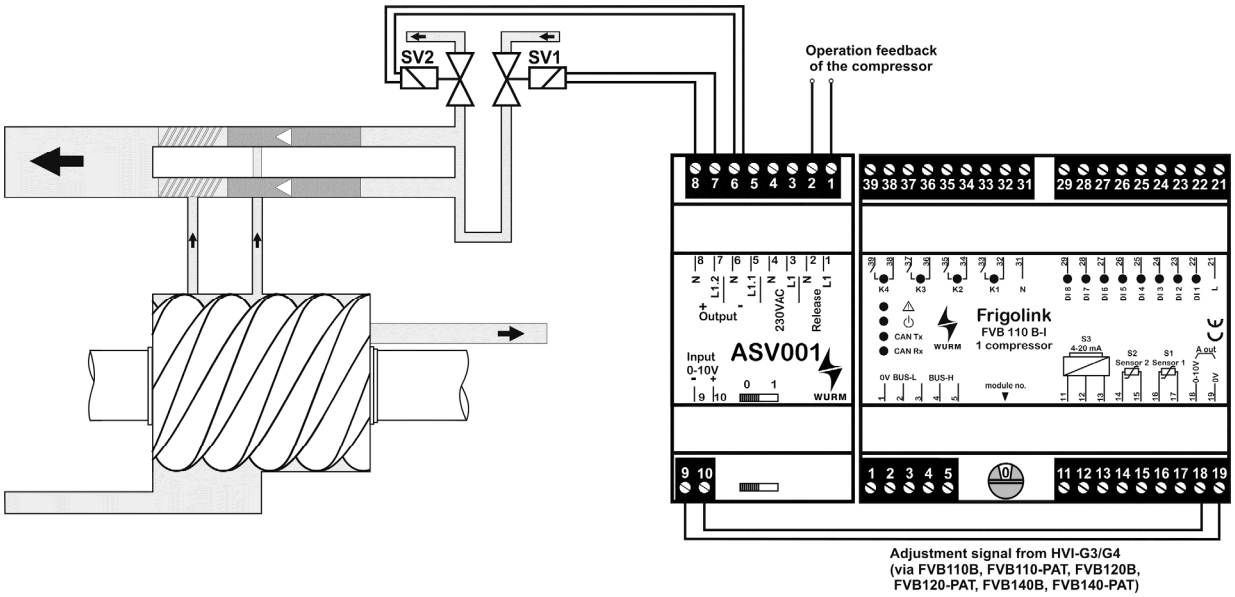


Fig. 1: ASV001 connection diagram

Function

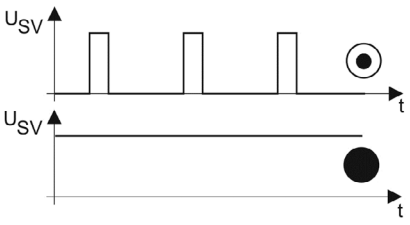
The switch outputs "+" (flow solenoid valve 1) und "-" (return flow solenoid valve 2) are released for power regulation via the release input (terminals 1-2). If there is no release, then the output "-" is set continuously and the slide returns to its home position (minimum cooling capacity).
If the enable signal is present, outputs "+" and "-" are actuated through the 0…10V control input (terminal 9-10). The adjustment signal required is sent from compound controller HVI-G3/G4 through the 0…10V outputs of the compressor field modules. The desired function is parameterised in the HVI-G3/G4:

Coding switch:

The coding switch is used to select between the operating modes "Constant slide positioning" and "Intermittent CR4 operation".

Coding switch: ON (1), default

Constant slide positioning
By outputting switching pulses on the outputs "+" and "-", the cooling capacity of the compressor is adapted by adjusting the slide position.

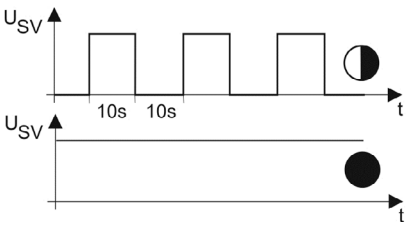


Constant slide positioning

SV1	SV2	Release	Power
○	●	OFF	MIN
◉	○	ON	⇧
○	○	ON	⇳
○	◉	ON	⇩

Coding switch: OFF (0)

Intermittent CR4 operation
If screw compressors manufactured by Bitzer are used, intermittent operation of solenoid valve "CR4" may be necessary for stepped power regulation (see the documentation from Bitzer!). In this operating mode the output "+" is switched on and off in a 10s cycle.



Intermittent CR4 operation

SV1	SV2	Release	Power
○	●	OFF	MIN
◑	○	ON	ON

Installing

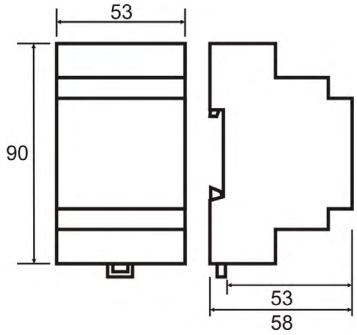


Fig. 2: ASV001 dimensions

This device is designed for top-hat rail installation. The housing has a standard size and is also suitable for installation in fuse boxes or distribution switch boxes.

The devices can be positioned immediately next to one another and without gaps.

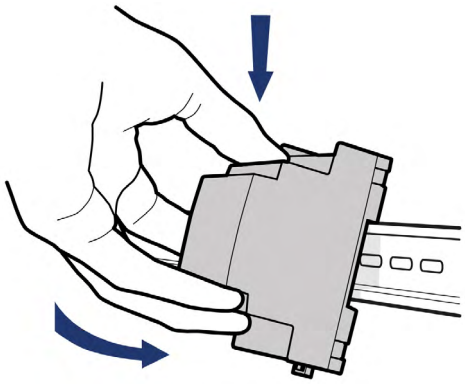


Fig. 3: ASV001 top-hat rail installation

Top-hat rail installation

Install the module close to the controlling field module.

1. Place the module with the upper guide edge on the top-hat rail.
2. Press it gently downward until it snaps into the catch on the top-hat rail.

Technical data

Power supply	230V~, +10% / -15%, approx. 3VA
Enable input	230V~, +10% / -20%
Analogue control input	0...10V=
Control outputs for the solenoid valves + and -	Electronic, 230V~, 10...30W each
Maximum continuous load	0.75A, integrated semiconductor protection (no isolator)
Connection cross-section	2.5mm²
Dimensions	(WxHxD) 53 x 90 x 58mm (DIN 43880)
Fastening	Top-hat rail TH 35-15 or TH 35-7.5 (DIN EN 60715)
Ambient temperature	Operation: 0...+55°C, storage: -25...+70°C
Weight	About 200g
CE conformity	– 2014/30/EU (EMC Directive) – 2014/35/EU (Low Voltage Directive) CE
EAC conformity	– TR CU 004/2011 – TR CU 020/2011 EAC
	RoHS II
Valid from	Version 1.1

Note!
- Please observe the detailed descriptions in the chapters of the FRIGOLINK system manual.