

Technical specifications for AGRO pressure balance elements

For optimal all-weather performance of outdoor electronics.

Whether traffic control and signalling technology, street lighting, railway vehicles, distributor housings in power distribution networks, or solar energy systems: they must all be able to withstand wind and weather, heat and rain. The same applies to their electronics and electrics. Air pressure, temperature and humidity are constantly changing. Many electrotechnical housings are watertight and dust-tight (IP 68) but not gas-tight. Due to heating – for example, from solar radiation or enclosed electronics – a pressure difference can build up between the housing and the external environment, resulting in the flow of air between the internal and external areas. This allows the entry of air moisture, which begins to condense when the air temperature falls below the dew point. The water that is now present can result in corrosion and defects/malfunctions. This can be prevented by installing AGRO pressure balance elements.

AGRO Pressure balance and drainage elements prevent differences in pressure or temperature as well as reduced water condensation decisive.

Flow rate measurements

AGRO has measured in its own certified test laboratory, the effective air flow, depending on the air pressure. The measurement process was recorded using a pressure sensor.

Measured air flow:

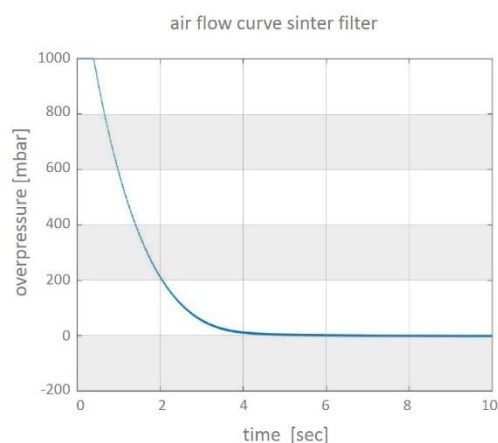
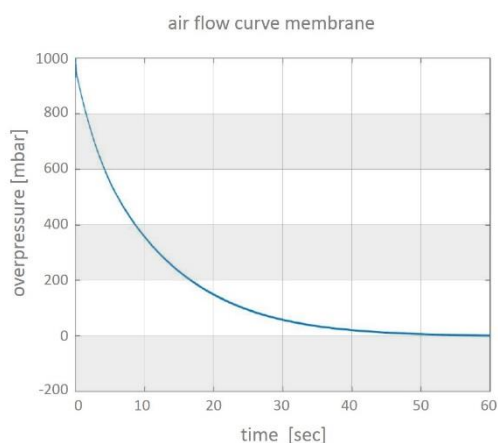
	  Brass with membrane		  Brass with sinter filter		 Synthetic with membrane	 Steel A4 with membrane
Air pressure in system	2450.12.34	2450.20.34	2450.12.32	2450.20.32	2445.12	2460.12.97.34
	2450.17.34	2450.11.34	2450.17.32	2450.11.32	2455.12	
	2450.07.34		2450.07.32			
	<i>l/min</i>	<i>l/min</i>	<i>l/min</i>	<i>l/min</i>	<i>l/min</i>	<i>l/min</i>
50 mbar	0.84	1.33	17.60	27.50	1.03	1.60
100 mbar	1.08	1.79	22.00	33.40	1.37	2.70
200 mbar	1.46	2.95	30.20	45.90	2.21	4.00
300 mbar	2.19	4.17	36.90	57.00	3.04	6.00
400 mbar	2.81	5.43	43.10	65.70	3.88	8.00
500 mbar	3.47	6.90	49.00	74.60	4.74	10.00
600 mbar	4.12	8.35	54.80	83.50	5.63	12.00
700 mbar	4.79	9.91	59.70	91.30	6.51	14.00
1000 mbar	7.07	14.75	74.80	114.80	9.73	21.00

Note

The number of pressure balance elements required to ensure adequate air flow depends on various factors, including size and shape of the housing, size of the surrounding free space, temperature conditions due to heat sources such as electronic components, and external application conditions – considering, for example, expected temperature range, solar radiation, elevation changes and pressure differences (e.g. in air transport). Please contact us for a quotation or should you require technical support in relation to your pressure balancing requirements.

Pressure balance elements with membrane:

A special membrane of PTFE (Polyterafluorethylen) free of PFOA and PFOS, has pores which are many hundreds of times bigger than water vapour molecules but thousands of times smaller than water droplets. It allows easy air exchange and thus ensures that the enclosed area remains dry. Its special structure makes this AGRO pressure balance element air-permeable but not water-permeable. The element is rated IP 68 at pressures of up to 0.5 bars (1h). The membrane is water-, oil- and dirt-repellent.



Conformity

Substances of Very High Concern (REACH). Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS2). Perfluorooctane sulfonates (PFOS) according to EU Directive 2006/122/EC (30th amendment of EU Directive 76/769/EEC or perfluorooctanoic acid (PFOA), its salts and precursors according to (EU) 2019/1021 (POPs).

Chemical Resistance for the membrane

Chemical Resistance	Resistant	Conditionally resistant	volatile
Mineral lubricants	X		
Aliphatic hydrocarbons	X		
Aromatic hydrocarbons		X	
Gasoline	X		
Weak mineral acids		X	
Strong mineral acids		X	
Weak organic acids	X		
Strong organic acids			X
Oxidizing acids			X
Weak leaches		X	
Strong leaches			X
Trichlorethylen		X	
Perchlorethylen	X		
Aceton		X	
Alcohols	X		
UV light and weathering		X	

This table is intended to serve as a guide only. Accuracy cannot be guaranteed. Users are responsible for verifying chemical compatibility under their own conditions of use. Chemical compatibility is affected by many variables including temperature, pressure, concentration, and chemical purity.

This information is provided only as a guideline and testing is recommended. This data is intended to provide expected results when filtration devices are exposed to chemicals under static conditions for 48 hours at 25 °C, unless otherwise noted.

Errors and technical changes excepted