

# Pressurized Enclosure System F830

Use in Ex- Zone 2 and 22  
In accordance to EN 60079-2 (pz)  
TÜV 03 ATEX 2095 X

## Properties of the Ex pz / pD-system

Flexible, compact Ex pz- system with separate outlet vent, mounting in hazardous area (zone 2 or 22)

### Ex-protection

- II 3 G Ex nA nC ic [pz] IIC T6 Gc ; Ta: +40°C
  - II 3 G Ex nAC [pz] IIC T5 Gc ; Ta: +60°C
  - II 3 D, Ex tc ic [p] IIIC/IIIB T85°C Dc ; Ta: +60°C
- Mounting of the control unit FS830 and the vent LA830 directly into the cabinet wall
  - Easy and fast installation of the vent LA830 (similar to mounting of a cable gland M40)
  - Two free programmable output relay contacts (250V / 5A)
  - Solenoid valve fuse mounted inside the FS830 for easy exchange
  - Proportional pressure measurement with high overpressure safety (no membrane switches)
  - Visualization of operation status, cabinet pressure, remaining purge time and failure states vis integrated LC-display.
  - Selectable menu language: German, English, French, Spanish and Dutch.

## Description

The use of simplified pressurized enclosure allows the operation of 'non explosion protected' devices in hazardous areas inside zone 2/22.

The protection type 'pressurisation' (Ex p) is based on the principle of maintaining a constant pressure using air or protective gas, to prevent the hazardous area from entering the cabinet.

The pressurized enclosure system F830 is featured with a flexible system configuration with separate installation of the inlet valve, outlet valve and control unit.



The inlet valve (solenoid valve SVD.L) and the outlet valve (LA830) can be mounted both inside and outside the pressurized cabinet.

The compact control unit FS830 can be user-friendly integrated direct into the cabinet wall.

In case of higher flow rates during the purging phase, multiple outlet valves (LA830) can be installed to shorten the purge time.

Due to the integrated spark barrier inside the LA830, the purge air can leave the cabinet directly into the hazardous area.

The control unit FS830 can be connected from the inside of the Ex pz-housing without the need of additional cable glands or tube connections.

In some application, the Ex-protection by a simplified pressurization system allows an operation without pre-purging of the cabinet.

Thereby the solenoid valve (SVD.L) can be replaced by the adjustable leakage compensation nozzle SD840.

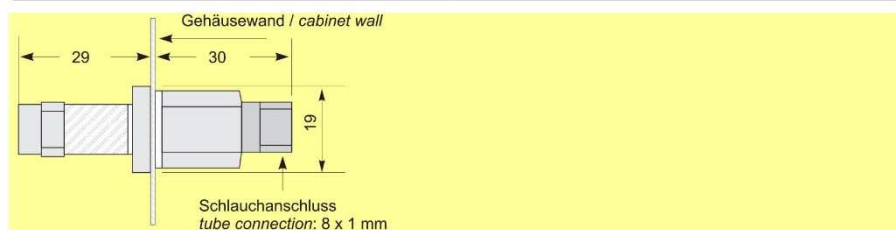
The nozzleSD840 is also used for dust-Ex. zone 22 applications.

## Technical details

		Control unit FS830
General	Mounting	Inside hazardous area
	Ex-protection class	II 3 G Ex nA nC ic [pz] IIC T6 Gc -20°C ≤ Ta ≤ +40°C II 3 G Ex nA nC ic [pz] IIC T5 Gc -20°C ≤ Ta ≤ +60°C II 3 D, Ex tc ic [p] IIIC/IIIB T85°C Dc -20°C ≤ Ta ≤ +60°C
	EC-type certificate	TÜV 03 ATEX 2095 X
	Ambient temperature	-20°C ... +40°C at T6 -20°C ... +60°C at T5
	Humidity	5-95%, non-condensing
Housing	Dimensions	H x W x D: 120mm x 122mm x90mm
	Material	Aluminium painted / RAL 7035
	Ingress protection	IP 65 (front side)
Electrical specifications	Main voltage	AC: 230V, 115V ; 48...62Hz DC: 24V
	Power consumption	~ 2 VA, without solenoid valve
	Working circuits	Um = 250VAC Im = 5A at AC1 Pm = 1500VA
	Terminal 1-4, potential free	Um = 250VAC Im = 1,2A at AC15 Pm = 300VA Um = 30DC Im = 4A at DC1 Pm = 150W
	Solenoid valve te. 5/6	Output voltage is equal to mains, protected by internal fuse
	Max. wire diameter	2,5 mm <sup>2</sup>
Pneumatic	Pressure range	0 ... 22 mbar
	Air quality	Pressurized air, class 533 according to ISO 8573-1 = partcles 40µm (class 5) / dew-ponit -20°C (class 3) / oil 1mg/m <sup>3</sup> (Class 3)
Ex p Configuration	Parameter input	LC-Display, menu guided Different languages : German, English, French, Dutch, Spanish
	Memory	EEPROM, double saved with 32-bit checksum

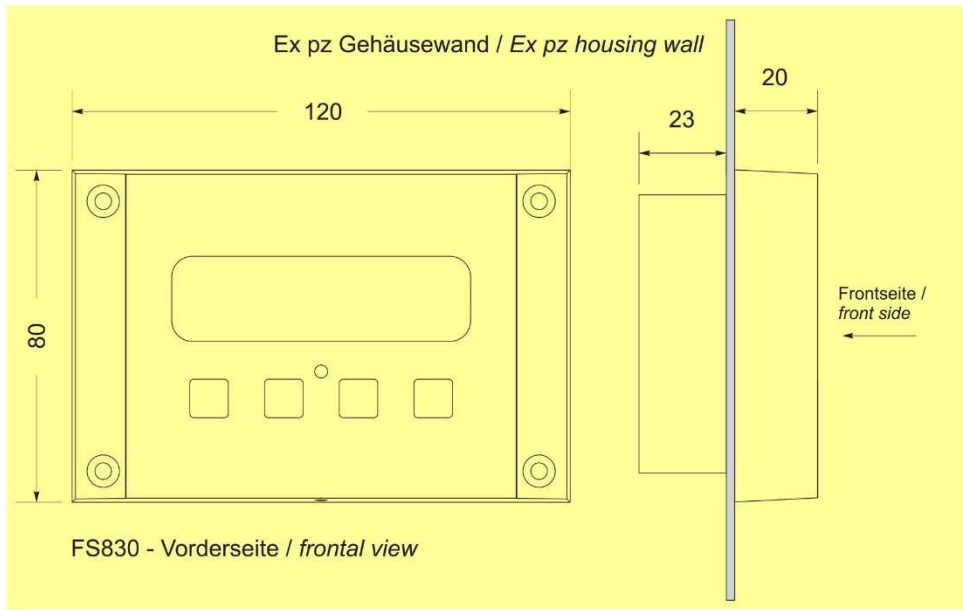
Pre pressure [bar] [10 <sup>5</sup> Pa]	Flow rate [l/s] ρ <sub>Luft</sub> = 1,293 kg/m <sup>3</sup>									
	Nozzle diameter [mm]									
	0,3	0,5	0,7	1	1,5	2	3	4	5	6
1,5	0,027	0,076	0,149	0,305	0,686	1,220	2,745	4,880	7,625	10,980
2	0,034	0,094	0,184	0,375	0,844	1,501	3,376	6,002	9,378	13,505
2,5	0,039	0,109	0,213	0,434	0,977	1,736	3,907	6,945	10,852	15,627
3	0,044	0,121	0,238	0,486	1,093	1,944	4,373	7,775	12,148	17,494
3,5	0,048	0,133	0,261	0,533	1,199	2,131	4,795	8,524	13,319	19,180
4	0,052	0,144	0,282	0,576	1,296	2,303	5,182	9,213	14,395	20,729
4,5	0,055	0,154	0,302	0,616	1,386	2,463	5,542	9,853	15,396	22,170

### Dimensions (x [mm], if not indicated differently)

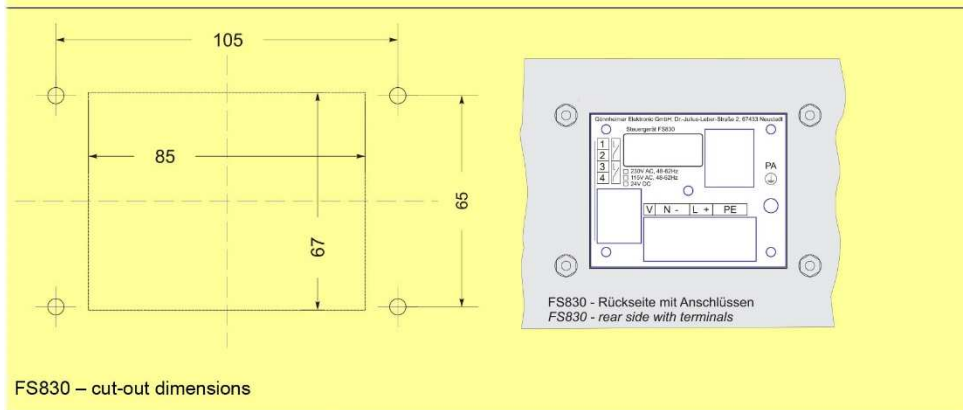


**Figure 1:**  
Sinter metal nozzle  
SD840

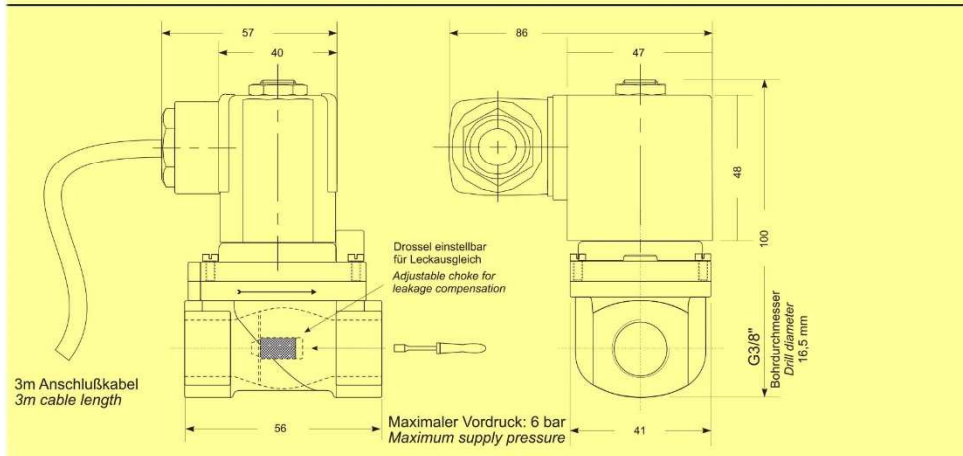




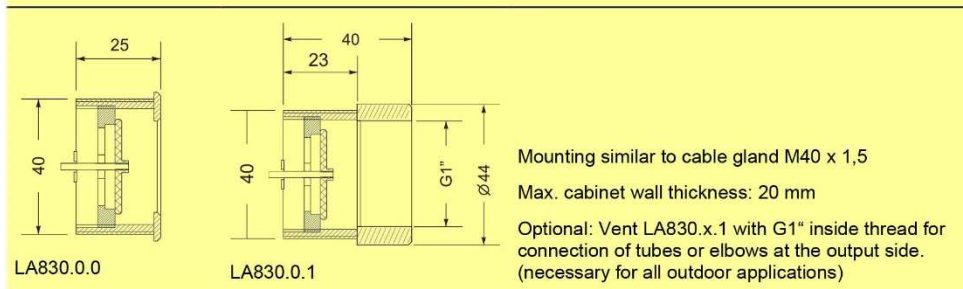
**Figure 2:**  
Dimensions FS830



**Figure 3:**  
cut out FS830



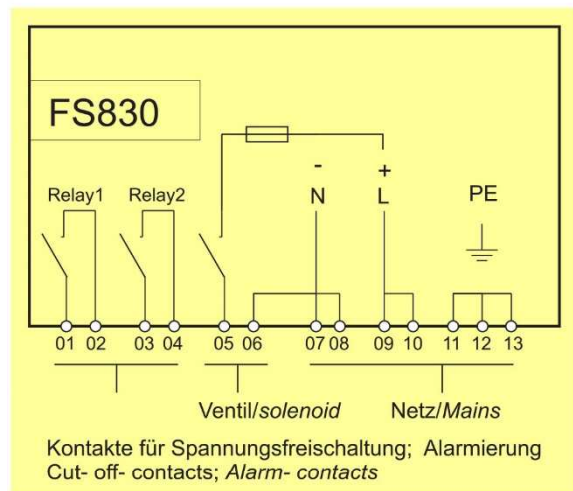
**Figure 4:**  
solenoid valve SVD.L.x



**Figure 5:**  
Dimensions Vent LA830



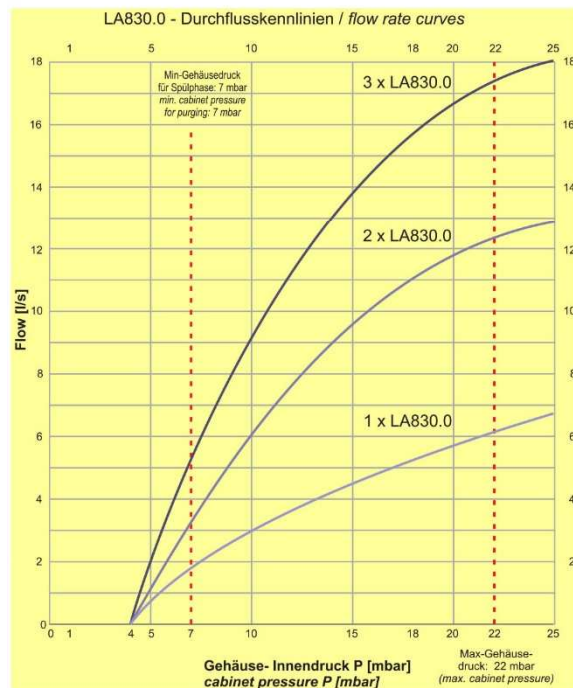
## Block diagram



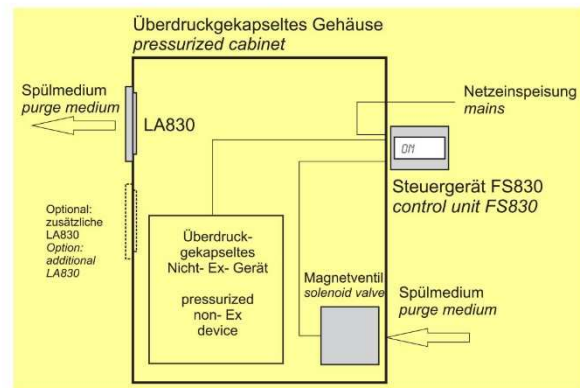
Electrical Block diagram FS830

## Flow chart

The diagram shows the relationship between the pressure inside the enclosure and the resulting flow rate. The diagram is only valid, without input or output sided reductions (like flow reducing pipes, etc.)



## Application



Simplified pressurization system **FS830 / LA830**

## Type code

- Control unit FS830

Control unit	FS830	
Mains:		
230 V AC		.0
115V AC		.2
24 V DC		.6
Pressure measuring range:		
Standard 0 - 22 mbar		.0

Further ranges on demand

- Solenoid valve SVD.L.x

Solenoid valve: SVD.L		-A		.0
Inner diameter / nozzle:				
2 mm			.2	
3 mm			.3	
4 mm			.4	
n mm			.n	
Scope				
Europe (ATEX)		-A		
Mains				
230V AC			.0	
115V AC			.2	
24 V DC			.6	

- Outlet valve / vent LA830

Vent LA830		
Size:		
Diameter 40 mm		.0
Type:		
Standard		.0
G1" inside thread (for outdoor applications e.g. with elbow pipe)		.1

Fixing nut and gasket in scope of delivery

- Adjustable sinter metal nozzle **SD840**