Air differential pressure and air flow volume and speed transmitter, IP65 with ModBus

PTG / VTG

Description

The air differential pressure transmitter serie PTG and the velocity transmitter serie VTG are used to measure differential pressure, air flow volume and air flow speed.
The measured value can be the output and the parameterization on the device can be done via Modbus RTU data interface.
Possible fields of application are building automation and air conditioning systems, overpressure measurement in clean rooms and laboratories, measurement of constant pressure in VAV applications, dynamic filter and fan monitoring.

Technical specifications

Medium	Air, non-combustible and non-aggressive gases
Measurement range	See schedule
Linearity and hysteresis error	≤ ±0,5% of FS, min ±1 Pa
Uncertainty (total error band w/o long-term and temperature effect)	±1 % of FS, min ±1 Pa
Response time	0,2...10 s
Long term stability PTGM, VTGM	< ±1% of FS
Long term stability PTGA, VTGA	n.r.
Supply voltage	18…30 V AC / DC
Output signal	Digital
Protocol	ModBus RS-485, RTU
Type, Address	Slave, 1...247
Baud rate	9600...115200 bd
Data bit, Stop bit	8, 1
Maximum current draw	< 230 mA
Electrical connection	Screw terminal block for wires and strands up to 1,5 mm²
Display	LED, 4 digits
Housing material	ABS
Housing dimensions	Approx. 81x83x41 mm
Weight	Approx. 140 g
Protection class	IP65
Working humidity	0...95% RH, non-condensing
Working and storage temperature	
PTGM, VTGM	-20...+70°C
PTGA, VTGA	-10...+50°C
Accessories	Connection set (PVC-hose 2 m Ø 6 with 2 ABS nippels and 4 screws) **included**
Installation	Screw fastening
Installation position	Any
Standards	CE-conformity, RoHS

Setup

Configuration of air flow volume or air flow speed measurement
1. Select a calculation formula and enter a k-factor. Both dependents on the type of fan or measuring sensor.
2. Or create a reference air flow volume or air flow speed, which is entered directly.
The modbus is used to set the device. Please read the exact procedure in the installation manual.

Adjustable response time
The response time of the output signal can be variably set via Modbus.

Easy offset calibration
For PTGM and VTGM press the MODE/offset button or set via Modbus in an unpressurized state to adjust the offset to zero. The versions PTGA and VTGA perform an automated zero offset compensation.

Display
A red LED display shows the pressure value, air flow volume or air flow speed.

Mounting position
Can be mounted in any position. The zero offset calibration eliminates any possible position error.

Models

Pressure ranges for air differential pressure versions

Model	Pressure range	Overload capacity	Bursting pressure	Additional uncertainty with temperature (% FS/10K)	
				PTGM	PTGA
PTGAE	-25...0...+25 Pa	60 kPa	100 kPa	-	± 0,7
PTGxX	-50...0...+50 Pa	60 kPa	100 kPa	± 1,0	± 0,5
PTGxW	-100...0...+100 Pa	60 kPa	100 kPa	± 0,7	± 0,3
PTGA1	0...50 Pa	60 kPa	100 kPa	-	± 0,7
PTGx2	0...100 Pa	60 kPa	100 kPa	± 0,7	± 0,5
PTGx3	0...250 Pa	60 kPa	100 kPa	± 0,5	± 0,3
PTGx4	0...500 Pa	75 kPa	125 kPa	± 0,3	n.r.
PTGx5	0...1000 Pa	75 kPa	135 kPa	± 0,3	n.r.
PTGx7	0...5000 Pa	85 kPa	135 kPa	± 0,3	n.r.
PTGx8	0...10 kPa	85 kPa	135 kPa	± 0,3	n.r.
PTGx9	0...25 kPa	200 kPa	400 kPa	± 0,3	n.r.
PTGxA	0...50 kPa	200 kPa	400 kPa	± 0,3	n.r.
PTGxB	0...100 kPa	200 kPa	400 kPa	± 0,3	n.r.

Order matrix

Offset calibration			manual **PTGM** automatic **PTGA**	
Configurable pressure ranges	-25...0...+25 Pa	only available as PTGA		**E**
	-50...0...+50 Pa			**X**
	-100...0...+100 Pa			**W**
	0...50 Pa	only available as PTGA		**1**
	0...100 Pa			**2**
	0...250 Pa			**3**
	0...500 Pa			**4**
	0...1000 Pa			**5**
	0...5000 Pa			**7**
	0...10 kPa			**8**
	0...25 kPa			**9**
	0...50 kPa			**A**
	0...100 kPa			**B**

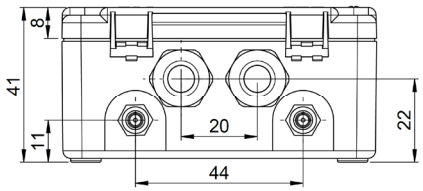
Pressure ranges for air flow volume or air flow speed versions

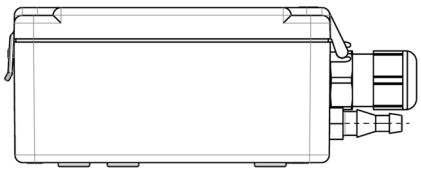
Model	Pressure range	Overload capacity	Bursting pressure	Additional uncertainty with temperature (% FS/10K)	
				VTGM	VTGA
VTGA1	0...50 Pa	60 kPa	100 kPa	-	± 0,7
VTGx2	0...100 Pa	60 kPa	100 kPa	± 1,0	± 0,5
VTGx3	0...250 Pa	60 kPa	100 kPa	± 0,7	± 0,3
VTGx4	0...500 Pa	75 kPa	125 kPa	± 0,5	n.r.
VTGx5	0...1000 Pa	75 kPa	135 kPa	± 0,3	n.r.
VTGx7	0...5000 Pa	85 kPa	135 kPa	± 0,3	n.r.
VTGx8	0...10 kPa	85 kPa	135 kPa	± 0,3	n.r.

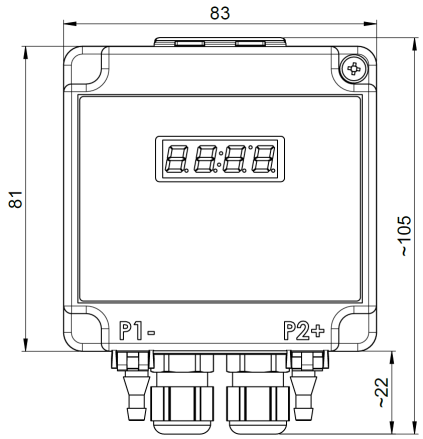
Order matrix

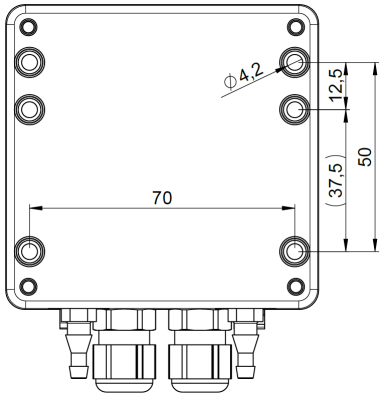
Offset calibration			manual **VTGM** automatic **VTGA**		
Configurable pressure ranges	0...50 Pa	only available as VTGA		**1**	
	0...100 Pa			**2**	
	0...250 Pa			**3**	
	0...500 Pa			**4**	
	0...1000 Pa			**5**	
	0...5000 Pa			**7**	
	0...10 kPa			**8**	
Unit of display	Air flow volume	m^3/h; m^3/s; cfm; l/s			**A**
	Air flow speed	m/s; ft/min			**B**

Dimensions (mm)

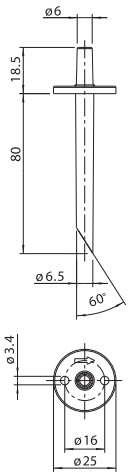








ABS nippel
(part of connection set APA3)



Terminal assignments

Plug-in terminals 2 x 5-pole		
1	in	Supply voltage (18...30 VAC / VDC)
2	in	Ground (GND) Common
3	in	A / Data + (D0)
4	in	B / Data - (D1)
5	in	Shield
1	out	Supply voltage (18...30 VAC / VDC)
2	out	Ground (GND) Common
3	out	A / Data + (D0)
4	out	B / Data - (D1)
5	out	Shield