



## Description

The air differential pressure transmitter serie PTG is 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

<b>Medium</b>	Air, non-combustible and non-aggressive gases
<b>Measurement range</b>	See schedule
<b>Linearity and hysteresis error</b>	$\leq \pm 0,5\%$ of FS, min $\pm 1$ Pa
<b>Uncertainty (total error band w/o long-term and temperature effect)</b>	$\pm 1\%$ of FS, min $\pm 1$ Pa
<b>Response time</b>	0,2...10 s
<b>Long term stability PTGM, VTGM</b>	$< \pm 1\%$ of FS
<b>Long term stability PTGA, VTGA</b>	n.r.
<b>Supply voltage</b>	18...30 V AC / DC
<b>Output signal</b>	Digital
<b>Protocol</b>	ModBus RS-485, RTU
<b>Type, Address</b>	Slave, 1...247
<b>Baud rate</b>	9600...115200 bd
<b>Data bit, Stop bit</b>	8, 1
<b>Maximum current draw</b>	$< 230$ mA
<b>Electrical connection</b>	Screw terminal block for wires and strands up to 1,5 mm <sup>2</sup>
<b>Display</b>	LED, 4 digits
<b>Housing material</b>	ABS
<b>Housing dimensions</b>	Approx. 81x83x41 mm
<b>Weight</b>	Approx. 140 g
<b>Protection class</b>	IP65
<b>Working humidity</b>	0...95% RH, non-condensing
<b>Working and storage temperature</b>	
<b>PTGM, VTGM</b>	-20...+70°C
<b>PTGA, VTGA</b>	-10...+50°C
<b>Accessories</b>	Connection set (PVC-hose 2 m Ø 6 with 2 ABS nippels and 4 screws) <b>included</b>
<b>Installation</b>	Screw fastening
<b>Installation position</b>	Any
<b>Standards</b>	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			<b>E</b>
	-50...0...+50 Pa				<b>X</b>
	-100...0...+100 Pa				<b>W</b>
	0...50 Pa	only available as PTGA			<b>1</b>
	0...100 Pa				<b>2</b>
	0...250 Pa				<b>3</b>
	0...500 Pa				<b>4</b>
	0...1000 Pa				<b>5</b>
	0...5000 Pa				<b>7</b>
	0...10 kPa				<b>8</b>
	0...25 kPa				<b>9</b>
	0...50 kPa				<b>A</b>
	0...100 kPa				<b>B</b>

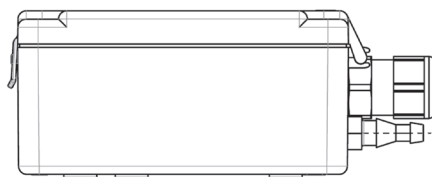
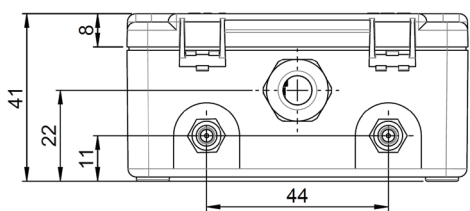
### Pressure ranges for air flow volume or air flow speed versions

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.

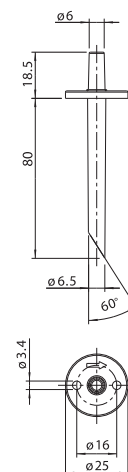
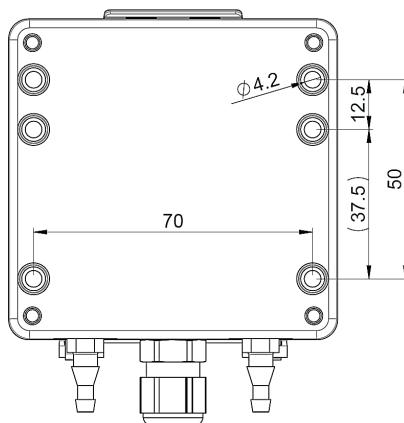
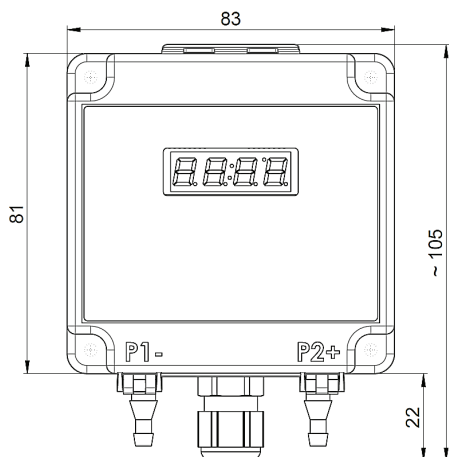
### Order matrix

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



## Dimensions (mm)



ABS nipple  
(part of connection set APA3)



## Terminal assignments

Plug-in terminals 2 x 5-pole		
		
	1 2 3 4 5	1 2 3 4 5
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