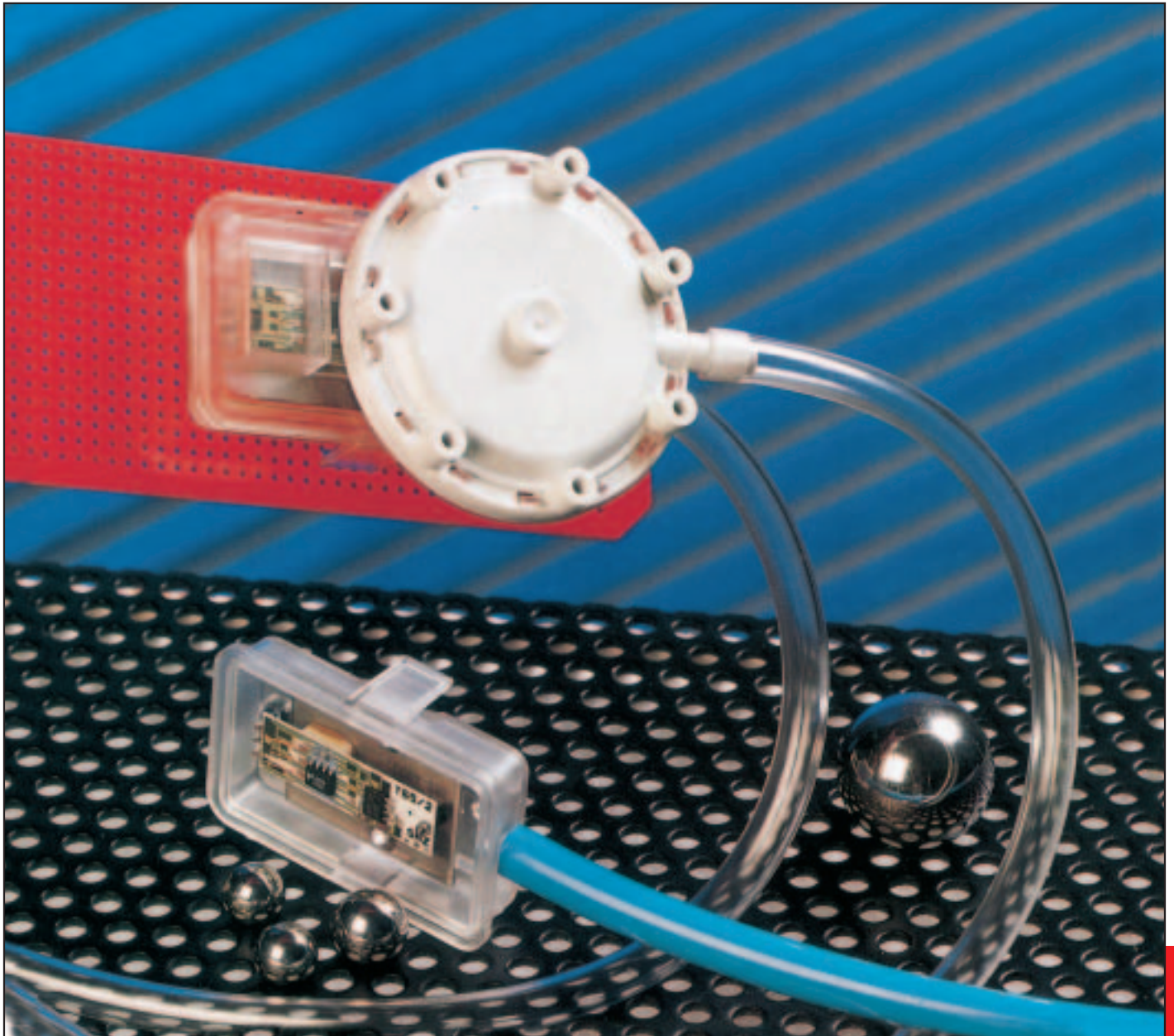


696

Pressure, vacuum and  
differential pressure  
transmitter  
0 – 3/5/10/30/50 mbar

697

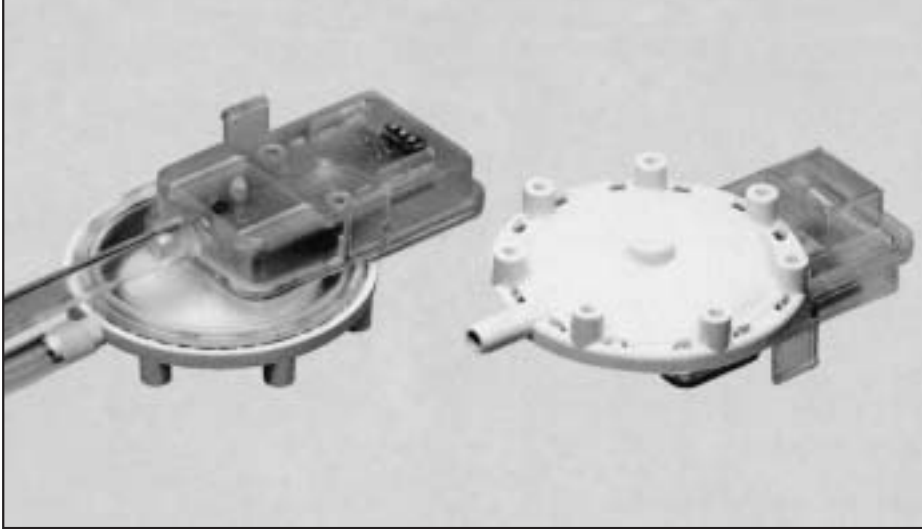


EDITION 07/2001

HUBA-REGISTERED TRADE MARK

**Huba Control**

FOR FINE PRESSURE AND FLOW MEASUREMENT

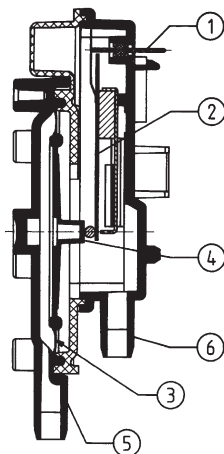


EDITION 07/2001

### Technical overview

The differential pressure transmitters of type 696/697 with their proved ceramic fulcrum lever technology have calibrated, temperature-compensated sensor signals that are available as voltage outputs.

They are ideally suitable for registering of fine air flow in air conditioning technology and for measuring fine pressures in the environmental/medical technology sectors.



### Legend to cross-section drawing

- 1 Electrical connection
- 2 Ceramic fulcrum lever with electronic circuitry
- 3 Silicon diaphragm
- 4 Diaphragm plate with connecting rod
- 5 Connection branch P1 higher pressure/lower vacuum
- 6 Connection branch P2 lower pressure/higher vacuum

### Medium

Neutral gases, air

### Pressure ranges

Pressure stages see order code selection table. Other pressure ranges on request.

### Admissible overpressure

up to 200 mbar

### Rupture pressure

500 mbar

### Case construction

Polycarbonate PC

### Diaphragm

Silicone polymer (LSR)

### Temperature influences

Medium and ambient temperature 0 – 70 °C

TC sensitivity and TC zero point see parameter table.

Storage temperature -10 °C ... +70 °C

### Dynamic response

Response time:  
< 10 msec

Load cycle:  
< 10 Hz

### Weight

approx. 35 grams

### Installation arrangement

Diaphragm vertical, pressure connections facing downward, or diaphragm horizontal, electrical connections facing downward. See order code selection table (adjusting position)

### Outputs and power supply

Type 696  
Output: 0.5 – 4.5 VCC  
Power supply: 10.5 – 35.0 VCC

Type 697  
Output: 0.5 – 4.5 VCC  
Power supply: 14.3 – 40.0 VCC  
Three-wire technology

Phase-reversal protection:  
Connector and pcb version protected mechanically

### Load

≥ 30 kOhm

### Protection class

IP 00

### Current consumption

max. 8 mA

### Electrical connections

Female connector for on-board pin connector

3-pin connector

### Packing

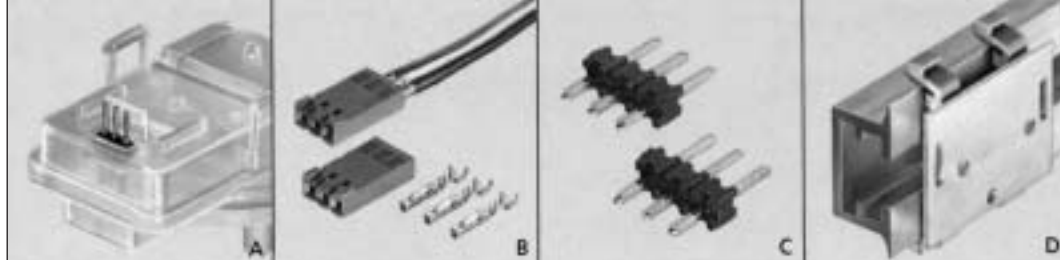
In cartons with blister inserts, returnable

### Accessories

See order code selection table (supplied loose with consignment).

### The distinct advantages

- Attractive price/performance ratio
- Excellent synergy of diaphragm technology and ceramic elements
- Special adapter for top-hat rail mounting
- Direct pcb mounting with simple snap-on system



- A – Plug connector
- B – Connector with 3 crimping contacts or connector with cable
- C – On-board pin connector
- D – Base plate for top-hat rail mounting

Versions

Parameter	Unit	Type 697						Type 696								
		0 – 3 mbar			0 – 5 mbar			0 – 10 mbar			0 – 30 mbar			0 – 50 mbar		
		min.	typ.	max.	min.	typ.	max.	min.	typ.	max.	min.	typ.	max.	min.	typ.	max.
<b>Outputs:</b>																
Zero point horizontal	V	0.475	0.500	0.525	0.475	0.500	0.525	0.475	0.500	0.525	0.475	0.500	0.525	0.475	0.500	0.525
Zero point vertical <sup>1)</sup>	V	0.475	0.500	0.525	0.475	0.500	0.525	0.475	0.500	0.525	0.475	0.500	0.525	0.475	0.500	0.525
Final value horizontal	V	4.465	4.500	4.535	4.465	4.500	4.535	4.465	4.500	4.535	4.475	4.500	4.525	4.475	4.500	4.525
Final value vertical <sup>1)</sup>	V	4.450	4.500	4.550	4.450	4.500	4.550	4.450	4.500	4.550	4.475	4.500	4.525	4.475	4.500	4.525
Linearity	% fs	-0.5	+/-0.3	+0.5	-0.5	+/-0.3	+0.5	-0.3	+/-0.2	+0.3	-0.3	+/-0.2	+0.3	-0.3	+/-0.2	+0.3
Hysteresis	% fs		0.2	+0.5		0.2	+0.4		0.2	+0.3		0.1	+0.2		0.1	+0.2
Long-term stability <sup>2)</sup> (Zero point)	% fs		0.5			0.5			0.5			0.5			0.5	
TC zero point <sup>3)</sup>	% fs/°C	-0.04	+/-0.02	+0.04	-0.04	+/-0.02	+0.04	-0.04	+/-0.02	+0.04	-0.04	+/-0.02	+0.04	-0.04	+/-0.02	+0.04
TC sensitivity <sup>3)</sup>	% fs/°C	-0.04	+/-0.02	+0.04	-0.04	+/-0.02	+0.04	-0.04	+/-0.02	+0.04	-0.04	+/-0.02	+0.04	-0.04	+/-0.02	+0.04

<sup>1)</sup> For changing diaphragm position from horizontal to vertical, approx. -11 Pascal.

Test conditions: 25 °C, 45 % RH  
TC z. p. / TC s. 0–70 °C

<sup>2)</sup> Long-term stability in % fs over 1 year.

<sup>3)</sup> TC = Temperature coefficient.

### Order code selection table

697

	9	X	X	X	X	X	X	X	X
Pressure ranges (mbar) <sup>4)</sup>		3							
		5							
Adjusting position			0						
			1						
Diaphragm				0					
Output signal					0				
Electrical connections						0			
						1			
Pressure connection								0	

### Order code selection table

696

	9	X	X	X	X	X	X	X	X
Pressure ranges (mbar) <sup>4)</sup>		2							
		4							
		5							
Adjusting position			0						
			1						
Diaphragm				0					
Output signal					0				
Electrical connections						0			
						1			
Pressure connection								0	

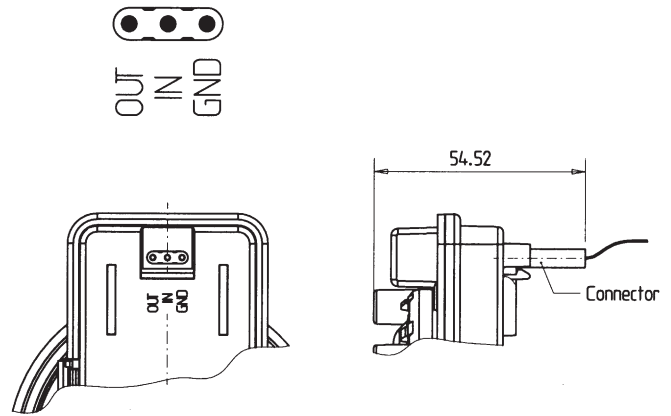
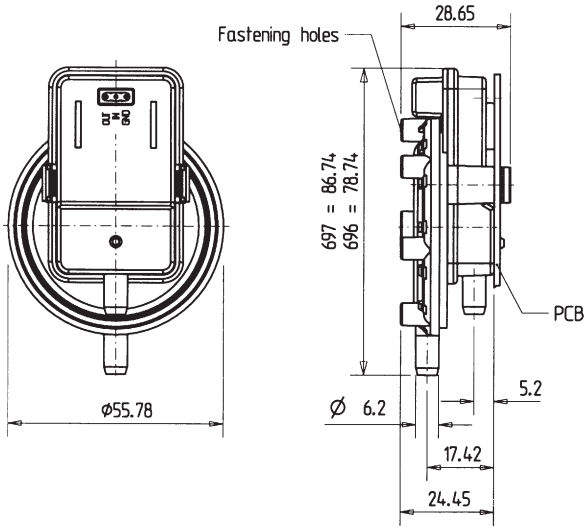
### Accessories type 696/697

Connector with 3 crimping contacts (unassembled)	1	0	2	8	4	7
Connector with cable length 50 cm	1	0	5	2	3	7
Connector with cable length 150 cm	1	0	5	2	3	8
On-board pin connector (for fitting by customer)	1	0	2	8	4	4
Base plate for top-hat rail mounting (plug-in connector version only)	1	0	2	2	3	1
Fastening screw for wall thickness:						
1 – 2 mm      Length of screw: 6 mm	1	0	2	9	7	6
2.1 – 4 mm      8 mm	1	0	2	9	7	7
4.1 – 6 mm      10 mm	1	0	2	9	7	8
6.1 – 8 mm      12 mm	1	0	2	9	7	9

<sup>4)</sup> Other pressure ranges on request.

PCB mounting version 696 / 697

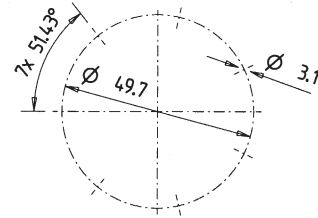
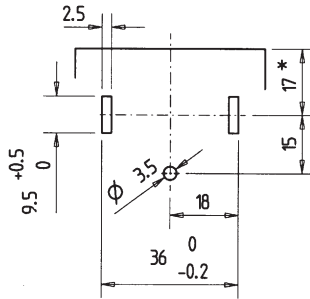
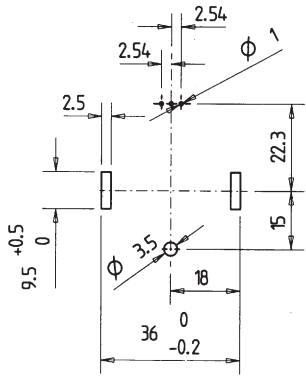
Connector version 696 / 697  
Pin assignment



Hole pattern for PCB mounting  
Thickness of PCB: 1.6mm

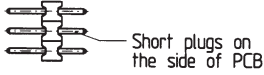
Hole pattern for crossbeam mounting (connector version)  
Wall thickness: 1.5mm

Hole pattern for fastening with PT screws



\* Max. up to edge of crossbeam

Accessories 696 / 697



Pin connector for PCB mounting



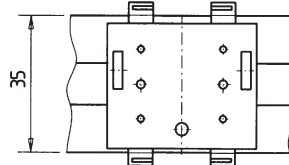
PT screw, length to match wall thickness, see order code selection table



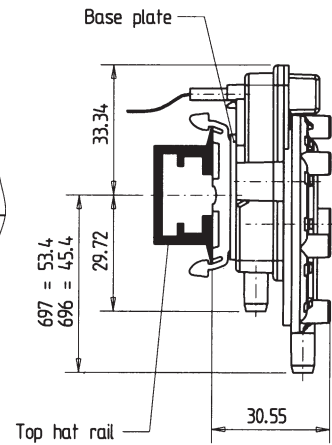
Connector with 3 crimped contacts



Connector with cable 0.5mm<sup>2</sup>  
Cable colors:  
OUT = green  
IN = brown  
GND = white



Base plate for top hat rail mounting for mounting rail 35mm according to DIN EN 50022



6986/697.07/2001.HUBA/6986/697e0404.DEP.KEW  
Technical data subject to change.

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