Huba Control

FOR FINE PRESSURE AND FLOW MEASUREMENT

Relative, and differential pressure transmitter type 699

Pressure range
-1 ... 1 mbar / 0 ... 0.3 – 50 mbar

The type 699 transmitters are available in switchable pressure ranges and with or without digital device. The full-version includes customer specific adjustment possibilities. Especially developed sensors for each pressure range ensure accurate long term stable measurement and the large variety of options provide the perfect platform for use in air conditioning technology as well as for fine measurement in the industrial and medical environment.

- Fast, easy mounting. Housing incorporates integral bracket for wall or ceiling mounting
- Available with or without LCD display
- Adjustable measurement range
- Switchable output signals
- Switchable response curve (linear or root-extracted)
- Resettable Zero Point (Reset button)
- Full scale adjustable
- Attractive price / performance ratio
- Application at over and low pressure range possible

Technical overview

Pressure range

Relative and differential			-1 ... 1 mbar / 0 ... 0.3 – 50 mbar

Operating conditions

Medium			Air and neutral gases
Temperature		Medium / ambient	0 ... +70 °C
		Storage	-10 ... +70 °C
		No condensation	
Tolerable overload on one side	Application at over pressure range		P1 = 100 mbar P2 = 4 mbar
	Application at low pressure range		P1 = -4 mbar P2 = -100 mbar
Rupture pressure		ambient temperature	2 x overload
		70 °C	1.5 x overload

Materials in contact with medium

Sensor	Ceramic Al_2O_3 (96%)
Diaphragm	Silicone
Housing	Polycarbonat PC

Electrical overview

	Output [1]	Power supply [1]	Load	Current consumption [2]
2 wire	4 ... 20 mA	8.0 ... 33 VDC	$< \frac{\text{supply voltage - 8 V}}{0.02\ A}$ [Ohm]	< 20 mA
3 wire	0 ... 10 V	13.5 ... 33 VDC / 24 VAC ±15%	> 10 kOhm	< 10 mA
	0 ... 20 mA	13.5 ... 33 VDC / 24 VAC ±15%	< 500 Ohm	< 30 mA
	4 ... 20 mA	13.5 ... 33 VDC / 24 VAC ±15%	< 500 Ohm	< 30 mA
	0 ... 5 V [3]	6.5 ... 33 VDC / 24 VAC ±15%	> 10 kOhm	< 10 mA
Filter			Response time switchable by	off / 0.2s / 1s / 5s / 20s
Polarity reversal protection	Short circuit proof and protected against polarity reversal. Each connection is protected against crossover up to max. supply voltage.			

Dynamic response

Response time	< 20 ms
Load cycle	< 10 Hz

Protection standard

Without cover	IP 00
With cover	IP 54
	IP 65

Display

LCD Display	Double spaced	per 8 digit alphanumeric
At additional backlight LCD-Display 30 mA current consumption		

Ranges of adjustment

The zero piont is adjustable by reset button.
The Full scale is adjustable by DIP-Switch and andditional by the turbopoti.

Adjustability

Optional version with self configurable parameters (see order code selection table)

Electrical connection

Screw terminals for wire and stranded conductors up to 1.5 mm²
Cable gland with built-in strain relief PG11

Pressure connection

Connection pipe	Ø 6.2 mm

Mounting instructions

Installation arrangement	Recommendation:	Vertical, with pressure connections downwards
Mounting		Mounting bracket (integrated in case)

Tests / Admissions

UL	
Electromagnetic compatibility	CE-conformity acc. EN 61326-2-3

Weight

Without display	~ 90 g
With display	~ 100 g

Packaging

Single packaging in cardboard

Accuracy

Parameter		Unit	±0.5 mbar	0 ... 1 mbar	0 ... 3 mbar	0 ... 5 mbar	0 ... 10 - 50 mbar
Tolerance zero point	max.	% fs	±1.0	±1.0	±0.7	±0.7	±0.7
Tolerance zero full scale	max.	% fs	±1.0	±1.0	±0.7	±0.7	±0.7
Resolution		% fs	0.2	0.2	0.1	0.1	0.1
Total of linearity, hysteresis and repeatability	max.	% fs	±1.0	±1.0	±1.0	±1.0	±0.6
Long therm stability acc. to DIN EN 60770		% fs	±1.0	±1.0	±1.0	±1.0	±1.0
TC zero point [4]	typ.	% fs/10K	±0.2	±0.2	±0.2	±0.1	±0.1
TC zero point [4]	max.	% fs/10K	±1.0	±1.0	±0.5	±0.4	±0.4
TC sensitivity [4]	typ.	% fs/10K	±0.3	±0.3	±0.2	±0.1	±0.1
TC sensitivity [4]	max.	% fs/10K	±0.6	±0.6	±0.5	±0.5	±0.2

- no additional root-extracted errors

Test conditions: 25 °C, 45% rF, Power supply 24 VDC

Order code selection table

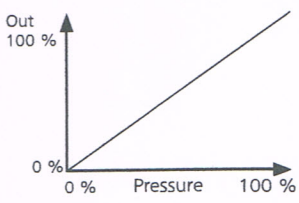
						699.	X	X	X	X	X	X	X	X	X	X
Pre-adjustment	max. range						9									
	middle range						B									
	min. range						C									
Pressure range switchable	Pressure range of 0 % bis 100% fs							1								
	Pressure range of -10 % bis 90% fs							2								
	Pressure range of -100 % bis 100% fs							3								
Pressure range (switchable)	mbar (hPa)	Pa	mmWS	inH_2O					0							
	0 ...0.3/**0.5**	30/**50**	3/**5**	0.1/**0.2**	1)				0							
	0 ... 0.3/0.5/**1**	30/50/**100**	3/5/**10**	0.1/0.2/**0.3**	2)				1							
	0 ... 0.5/1/**3**	50/100/**300**	5/10/**30**	0.3/0.5/**1**	1)				2							
	0 ... 1/3/**5**	100/300/**500**	10/30/**50**	0.5/1/**2**	1)				3							
	0 ... 3/5/**10**	300/500/**1000**	30/50/**100**	1/2/**3**	1)				4							
	0 ... 5/10/**16**	500/1000/**1600**	50/100/**160**	2/3/**5**	1)				5							
	0 ... 10/16/**25**	1000/1600/**2500**	100/160/**250**	3/5/**10**	1)				6							
	0 ... 16/25/**50**	1600/2500/**5000**	160/250/**500**	5/10/**20**	1)				7							
Pressure unit	mbar									0						
	hPa									4						
	Pa									2						
	kPa									5						
	mmWS									3						
	inH_2O									6						
– Pressure ranges in grades (version dual DIP-Switch; without Display)						***Adjustability 1***										
– Pressure ranges in grades; stepless adjustable with Turbo-Poti I output signals I Filter (off / 1s) I response curve (linear / root extracted) (Version tenfold DIP-Switch; without Display)						***Adjustability 2***										
– Pressure ranges in grades; stepless adjustable with Turbo-Poti I pressure units I pressure range character I output signals; additional 0 ... 5V Filter (off / 0.2s / 1s / 5s / 20s) I response curve (linear / root extracted) I Backlight (off / 5s / on) (Version tenfold DIP-Switch; with Display)						***Adjustability 3***										
Output signal / adjustment	Linear		without Filter			x					1		0			
	Linear		with Filter (transposable)				x				2					
	Square root extracted		without Filter			x					4		0			
	Square root extracted		with Filter (transposable)				x				3					
Output / power supply	0 ... 10 V	13.5 ... 33 VDC / 24 VAC ± 15 %										1				
	0 ... 20 mA	13.5 ... 33 VDC / 24 VAC ± 15 %										3				
	4 ... 20 mA	13.5 ... 33 VDC / 24 VAC ± 15 %										4				
	4 ... 20 mA	8.0 ... 33 VDC										5				
	Output signal complimentary selectabel, at delivery no pre-adjustment						x		9			2	6			
Display doublespaced – 8 digit	without													0		
	in pressure unit chosen above							x						1		
	in % fs							x						2		
Pressure connection / Pressure orifices	Connection pipe Ø 6.2 mm without pressure orifice														1	
	Connection pipe Ø 6.2 mm pressure orifice on P1														2	
	Connection pipe Ø 6.2 mm pressure orifice on P2														3	
	Connection pipe Ø 6.2 mm pressure orifice on P1 and P2														4	
Acessories / Connection Kit	IP 54 without															0
	IP 54 with connection kit (metal), 90° angled including tube 2 m long (Fig. 1)															1
	IP 54 with connection kit (plastic), straight including tube 2 m long (Fig. 2)															2
	IP 65 without															3
	IP 65 with connection kit (metal), 90° angled including tube 2 m long (Fig. 1)															4
	IP 65 with connection kit (plastic), straight including tube 2 m long (Fig. 2)															5
Pressure range variation	Indicate W and state range on order (e.g.: W0 ... + 8mbar/OUT1...6V)															W

Accessories [3)]

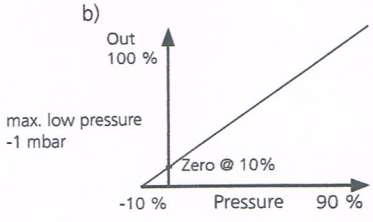
		Order number
Connection kit for vent duct (metal), 90° angled	including tube 2 m long (Fig. 1)	104312
Connection kit for vent duct (plastic), straight	including tube 2 m long (Fig. 2)	100064
DIN-rail mounting adaptor (Fig. 3)		112854
Calibration certificate		104551

Pressure range types

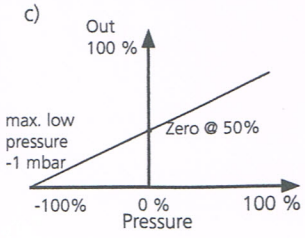
a)



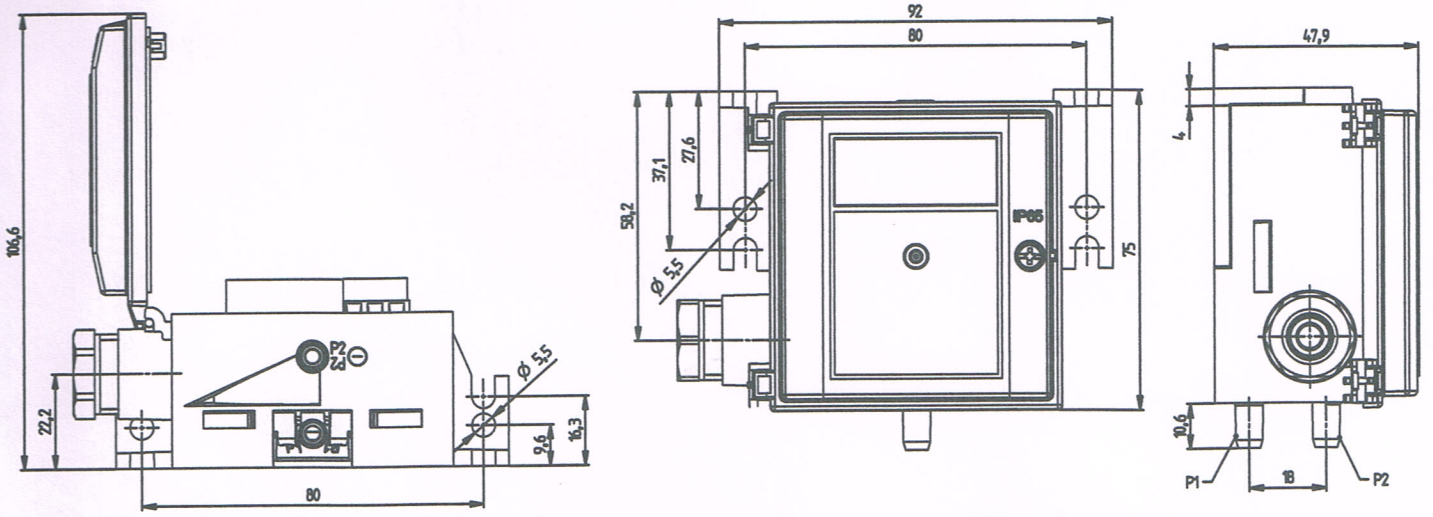
b)

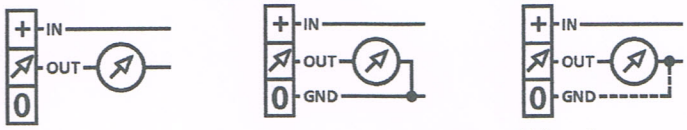


c)



Dimensions in mm / Electrical connections





2 wire | 3 wire | Universal 2 and 3 wire

Accessories

Fig. 1

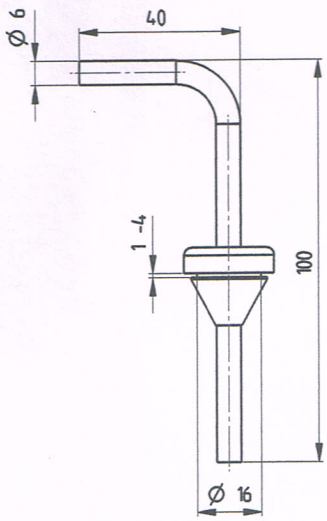


Fig. 2

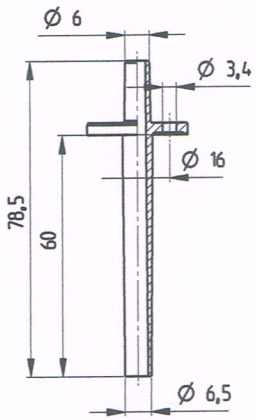


Fig. 3