

Type Differential pressure transducer



FOR THE DIFFERENTIAL PRESSURE RECORDING AND CONTROL IN COMBINATION WITH EASYLAB

Differential pressure transducers based on the static measurement principle for the room or duct pressure control in combination with EASYLAB controllers TCU3 or LABCONTROL controllers TCU-LON-II

- Suitable for air and non-aggressive media
- For use in laboratories, clean rooms in the pharmaceutical and semiconductor industries, operating theatres, intensive care units, and offices with very demanding control requirements
- Constructions with calibration certificate to meet GMP requirements

APPLICATION

Application

- Differential pressure transducer for the LABCONTROL system
- For the room or duct pressure control in combination with EASYLAB controllers TCU3 or with TCU-LON-II
- For the room and duct pressure monitoring in combination with monitoring systems TPM
- For use in laboratories, clean rooms in the pharmaceutical and semiconductor industries, operating theatres, intensive care units, and offices with very demanding control requirements

DESCRIPTION

Variants

- 699: Measuring range ± 50 or ± 100 Pa
- 699-LCD: Measuring range ± 50 or ± 100 Pa, with differential pressure display
- GB404: Measuring range ± 100 Pa
- GB604-CAL: Measuring range ± 100 Pa, with calibration certificate to meet GMP requirements (Good Manufacturing Practice)
- Choose a sufficient measuring range above/below the setpoint pressure

Maintenance

- Zero point correction once per year is recommended

TECHNICAL INFORMATION

Function, Technical data, Specification text, Order code, Related products

FUNCTION

Functional description

Static differential pressure transducers function according to the static differential pressure measurement principle. The sensor is a cylinder that consists of two chambers (one for positive pressure and one for negative pressure) separated by a diaphragm. If there is equal pressure in both chambers, the diaphragm is in the middle between the chambers and is not deformed. If there is a pressure difference, the diaphragm deforms towards the chamber with the negative pressure. The degree by which the diaphragm deforms is a measure for the differential pressure. This is why the voltage signal is proportional to the differential pressure.

Principle of operation – room pressure control



① Controller EASYLAB TCU3 or LABCONTROL TCU-LON-II

In a lab, the room pressure transducer is typically linked to the supply air controller; in a clean room, it is linked to the extract air controller.

TECHNICAL DATA

Static differential pressure transducer 699

Supply voltage	24 V AC \pm 15 % or 13.5 – 33 V DC
Power rating	1 VA
Output signal	0 – 10 V DC, 1 mA max.
Media	non-aggressive gases
Measuring range	\pm 50 Pa factory set, can be changed to \pm 100 Pa
Measurement accuracy	\pm 2 % of full scale
Overload protection	for negative pressure measurement: –400 Pa at P1, for positive pressure measurement 10000 Pa at P1
Connections for tubes	\varnothing 6.2 mm (for flexible tubes 6 mm)
Operating temperature	0 – 70 °C (non-condensing)
IEC protection class	III (protective extra-low voltage)
Protection level	IP 54 (with cover)
EC conformity	EMC according to 2004/108/EC
Dimensions (B x H x T)	92 x 75 x 48 mm
Weight	0.1 kg

Static differential pressure transducer GB604

Supply voltage	24 V AC, 24 V DC \pm 10 % (switching is possible)
Power rating	1.8 VA
Output signal	0 – 10 V DC; 2 mA max.
Media	non-aggressive gases
Measuring range	\pm 100 Pa
Measurement accuracy	\pm 0.5 % of full scale
Maximum operating pressure	70 kPa
Connections for tubes	for flexible tubes 4 mm
Operating temperature	-20 to 65 °C
IEC protection class	III (protective extra-low voltage)
Protection level	IP 54
EC conformity	EMC according to 2004/108/EC
Dimensions (B x H x T)	122 x 120 x 58 mm
Weight	0.3 kg

SPECIFICATION TEXT

Differential pressure transducer for the LABCONTROL system, for the measurement of room or duct pressure.

When the transducer is connected to a room controller, the supply air or extract air flow is controlled based on the differential pressure.

ORDER CODE

Order example: PT-GB604-CAL

Measuring range	±100 Pa, with calibration certificate
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PT – GB604



1 Type

PT Differential pressure transducer

2 Variants

699 Measuring range ±50 or ±100 Pa

699-LCD Measuring range ±50 or ±100 Pa, with pressure display

GB604 Measuring range ±100 Pa

GB604-CAL Measuring range ±100 Pa, with calibration result

Variants

VARIANTS

699

Application

- Differential pressure transducer for the LABCONTROL system
- For the room or duct pressure control in combination with EASYLAB controllers TCU3 or with TCU-LON-II
- For the room and duct pressure monitoring in combination with monitoring systems TPM

Variants

- 699: Measuring range ± 50 or ± 100 Pa
- 699-LCD: Measuring range ± 50 or ± 100 Pa, with differential pressure display

Special characteristics

- Supply voltage: A.C. or D.C. voltage (ideal for EASYLAB with EM-TRF-USV)
- Adjustable measuring ranges
- Short circuit proof and with reverse voltage protection

Parts and characteristics

- Plastic casing
- Connections for tubes
- Push button for zero point reset
- Adjustable measuring ranges
- 699-LCD: Differential pressure display

Construction features

- Fixing points at the outside, for mounting to a wall or ceiling

Materials and surfaces

- Transparent plastic casing

GB604

Application

- Differential pressure transducer for the LABCONTROL system

- For the room or duct pressure control in combination with EASYLAB controllers TCU3 or with TCU-LON-II
- For the room and duct pressure monitoring in combination with monitoring systems TPM

Variants

- GB604: Measuring range ± 100 Pa
- GB604-CAL: Measuring range ± 100 Pa, with calibration certificate to meet GMP requirements (Good Manufacturing Practice)

Special characteristics

- Supply voltage: A.C. or D.C. voltage, switching between A.C. and D.C. is possible

Parts and characteristics

- Plastic casing
- Zero point potentiometer

Construction features

- Fixing points at the inside, for mounting to a wall or ceiling
- Capacitive stainless steel measuring cell

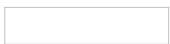
Materials and surfaces

- Plastic casing, light grey

Differential pressure transducer 699



Differential pressure transducer GB 604 MF



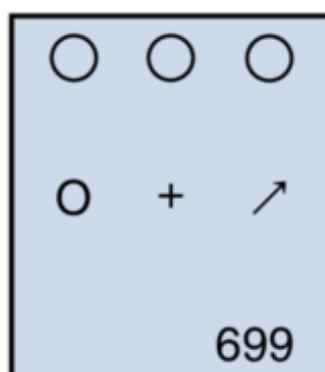
Installation details

INSTALLATION DETAILS

Installation and commissioning

- Choose a suitable installation location (reference room with stable pressure)
- Ensure sufficient cross section and careful placing of the measuring tubes
- Connect the differential pressure transducer to the controller or monitoring system
- Supply voltage from the EASYLAB TCU3 controller or TCU-LON II (supply voltage for the differential pressure transducer must be equal to the supply voltage provided by the controller)
- Consider the warm-up time of the sensor
- Do not install the sensor near sources of interference such as transformers, senders, motors, or heat sources
- Choose a stable installation location as shocks or vibration may distort the output signal
- Installation should be vertical, with connections pointing downwards; this installation position corresponds to the factory setup for calibration; it also prevents the ingress of condensate from the pressure tubes.
- Zero point correction required

699, Terminal connections



O: Ground

+: Supply voltage

↗: Actual value signal

GB604, Terminal connections



- 1 ~, +: Supply voltage
- 2 ⊥, -: Ground, neutral
- 3 +: Actual value signal
- 4 –: Actual value signal, ground

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