MSB780 & MSB780X

Digital Barometers

Digital barometers MSB780 and MSB780X, developed and manufactured by MicroStep-MIS, are designed for use in professional meteorological and aviation applications requiring reliable and highly accurate measurement, fast dynamic response, and advanced long-term stability. Sensor is a solid-state transducer where frequency of oscillation is dependent on density of the air inside. The sensor has superior accuracy and long term stability in compare with silicon capacitive transducer based technology.

- Excellent total accuracy 0.15 hPa
- Typical long-term stability better than 0.05 hPa / year
- Fully temperature compensated
- Digital output
- 1 to 3 transducers

Performance

Barometric pressure range	500 hPa to 1100 hPa (or as specified)
Linearity	< 0.02 hPa
Hysteresis	< 0.02 hPa
Accuracy (20 °C to 25 °C)	0.10 hPa
Total accuracy	0.15 hPa (–50 °C to +80 °C)
Typical long-term stability	better than 0.05 hPa/year
Response time	2 s
Number of transducers	1 to 3

Operating environmental

Temperature range	–50 °C to +80 °C

Display operating temperature	–10 °C to +60 °C
Relative humidity	(0 to 100) %RH
Overpressure limit	4000 hPa (not affecting sensor calibration)
Burst pressure limit	7000 hPa
Enclosure	IP 66, IP 65 with display

Inputs and outputs

Supply voltage	5 to 32 V DC
Power supply current	32 mA @ 12 V DC (1 sensor, without display)
Resolution	0.001 hPa
Communication	RS-232, RS-485 (optional), SDI-12, USB (optional)
Protocol	ASCII, user defined message
Analog output (optional)	voltage, current

Factory calibration

Calibration point [hPa]	**Typical uncertainty U [hPa]**
500	0.07
560	0.07
620	0.07
680	0.07
740	0.07
800	0.07
860	0.07
900	0.07
980	0.07
1040	0.07
1100	0.07

Analog output accuracy

The accuracy of the analog output is calculated with extension factor k = 2 over the temperature range.

Range	**Accuracy**	**Value**	**Range**
0 to 1 V	< 0.13 mV	0.0080 %	0.0044 %
0 to 5 V	< 0.59 mV	0.0109 %	0.0009 %
0 to 10 V	< 1.18 mV	0.0113 %	0.0004 %
0 to 20 mA	< 0.020 mA	0.0755 %	0.0245 %
4 to 20 mA	< 0.020 mA	0.0776 %	0.0482 %

Touchscreen display

- optional

Order codes

Atmospheric pressure sensor MSB780, one transducer	MIS:MSB780.1.
Atmospheric pressure sensor MSB780, one transducer, large box	MIS:MSB780.1X.
Atmospheric pressure sensor MSB780, one transducer, large box, touchscreen display	MIS:MSB780.1XD.
Atmospheric pressure sensor MSB780, two transducers, large box	MIS:MSB780.2X.
Atmospheric pressure sensor MSB780, two transducers, large box, touchscreen display	MIS:MSB780.2XD.
Atmospheric pressure sensor MSB780, three transducers, large box	MIS:MSB780.3X.
Atmospheric pressure sensor MSB780, three transducers, large box, touchscreen display	MIS:MSB780.3XD.
RS-485 extension card for MSB780	MIS:MSB780.485
Digital electronic barometer with pressure connector, accredited calibration. 11 pressure points over the pressure range of the calibrated barometer. (minimum 500 hPa, maximum 1100 hPa), 3 cycles up-down.	KLA:P-1.1-9

Instrumentos de Medição
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ФЕДЕРАЛЬНОЕ АГЕНТСТВО
ПО ТЕХНИЧЕСКОМУ РЕГУЛИРОВАНИЮ И МЕТРОЛОГИИ

СВИДЕТЕЛЬСТВО

об утверждении типа средств измерений

ОС.С.30.001.А № 75526

Срок действия до 18 ноября 2024 г.

НАИМЕНОВАНИЕ ТИПА СРЕДСТВ ИЗМЕРЕНИЙ
Барометры цифровые MSB780, MSB780X

ИЗГОТОВИТЕЛЬ
Общество с ограниченной ответственностью "МикроСтеп-МИС" (ООО "МикроСтеп-МИС"), г. Санкт-Петербург

РЕГИСТРАЦИОННЫЙ № **76583-19**

ДОКУМЕНТ НА ПОВЕРКУ
МП 231-0068-2019

ИНТЕРВАЛ МЕЖДУ ПОВЕРКАМИ **1 год**

Тип средств измерений утвержден приказом Федерального агентства по техническому регулированию и метрологии от **18 ноября 2019 г. № 2735**

Описание типа средств измерений является обязательным приложением к настоящему свидетельству.

Заместитель Руководителя
Федерального агентства А.В.Кулешов

"25" 11 2019 г.

Серия СИ № **038702**