

# G-TRAN Series Hot Cathode Gauge (Sensor Unit SM1/Box Unit BMR2)



**BMR2**

The G-TRAN series SM1/BMR2 unit is a new hot cathode ionization vacuum gauge without a visual display. The unit provides the minimum required functions to reduce both size and cost. The SM1 sensor unit contains both a combined sensor head with a measurement electronics circuit, while the BMR2 box unit provides a separate measurement circuit and a bakable sensor head. Both units are operated with DC24V and feature an analog signal output and 2 set points. The BMR2 box unit also includes a RS-485 interface. When visual display of the pressure reading is required, a display unit (ISM1, ISM2) can be connected.

## Features

- When the pressure display is not required, the following advantages can be realized:
  - Vacuum gauge cost is reduced because the display has been eliminated
  - Smaller size frees-up system control panel space
  - Wiring is reduced
- Operated with DC24 V
- Output of analog signal and 2 set points is possible
- RS-485 communication (multi-drop compatible, 31 units max.) is possible (box unit only)
- Easy replacement of sensor heads
- Sensor baking is possible (only when used with a box unit)

## Applications

- Process control of vacuum equipment for semiconductor, optics and electronic parts manufacturing.
- Process control for industrial equipment such as vacuum-furnaces, etc.
- Process control for vacuum systems with multiple process chambers, such as in-line sputtering and single wafer processing equipment

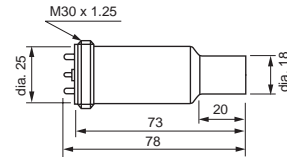
**Specifications**

		Hot cathode gauge
Type	Box unit	
Model	BMR2	
Compatible sensor head	M-11, M-12, M-13, M-14, M-15	
Measurable pressure range	5.0 x 10 <sup>-8</sup> - 9.9 x 10 <sup>0</sup> Pa	
Measurement accuracy	±20%	
Operating temperature range	10 - 40 °C	
Sampling time	Moving average of five times for 50 ms	
Measurement value output	Pseudo-logarithmic output 0 to 10 VDC 1V linear signal in each digit	
	Updating time	50 ms
	Resolution	10 mV
Set point: Monitor output for adjustment	Mantissa part linear output of 0 to 10 VDC	
Control input signal	Filament ON/OFF	
	Filament 1/2	
	DEGAS ON/OFF	
Type of control output signal	Open Collector output, negative logic	
	Pressure protection actuating signal	
Control output signal	Emission Valid	
	Set point actuating signal 1/2	
LED display	POWER, ERROR, FIL, DEGAS, RS-MODE, SET-1, SET-2	
Communication	System	RS-485
	Baud rate	9600, 19200, 38400 bps
	Mode	Mode1 :Read only Mode2 :Read/Control
Power	24VDC±2V, 1.2A	
Input/Output connector	D-sub-15P (M2.6 screw)	
Weight	800g (excluding sensor head and cable)	
Standard accessories	Connector :1	
	Instruction Manual	
	3-pin connector for power :1	

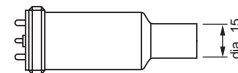
IO and analog GND are not isolated from the power GND.  
Communication connector is not included.

**Sensor Head Dimensions**  
(unit: mm)

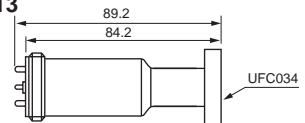
**M-11**



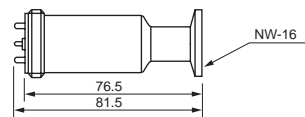
**M-12**



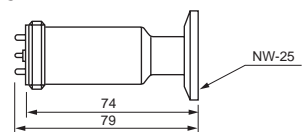
**M-13**



**M-14**



**M-15**



**External Dimension Diagram**

(unit: mm)

**BMR2 box unit**

