

Trigon™ BAG552 SingleGauge

Bayard-Alpert Hot Ion Gauge

For applications that require stand alone hot ion gauge technology, the Trigon™ family contains the single technology Bayard-Alpert Hot Ion Gauge BAG552. The BAG552 is designed for vacuum measurement of gases in the pressure range $5 \times 10^{-10} \dots 2 \times 10^{-2}$ mbar. The supported dual filament offers superior accuracy, repeatability and longevity. The removable calibration data chip, that comes along with the easy to install BAG552 spare sensor, to secure a seamless accurate process measurement, enables a higher bakeability of the sensor unit. BAG552 is available with analog output or EtherCAT interface option. Both enable easiest system integration. The Trigon™ BAG552 can also be operated in conjunction with the INFICON Vacuum Gauge Controller series VGC501, VGC502, VGC503 or with other control devices.

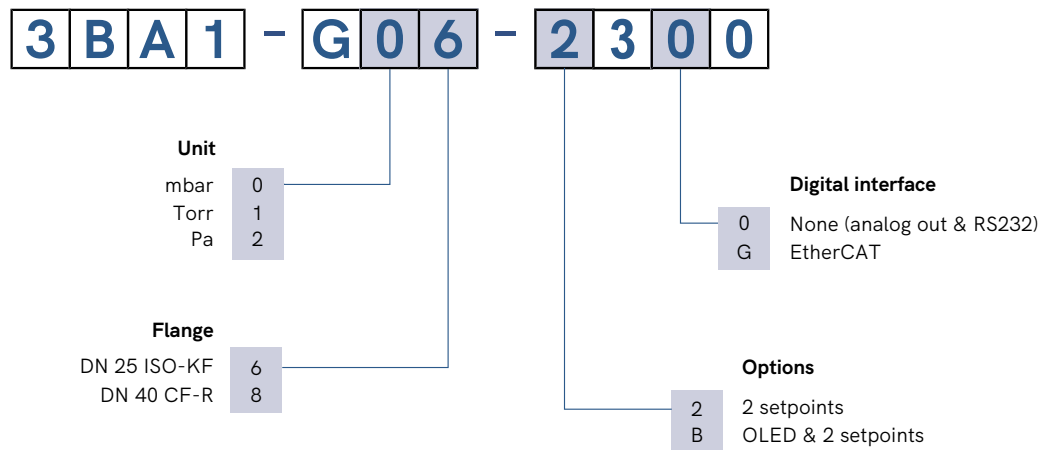


ADVANTAGES

- pure Bayard-Alpert measuring system for a wide UHV & HV measurement range
- 2 filaments for Bayard-Alpert system
- Galvanic isolated electronics to avoid electric stray current
- Sliding emission mode to avoid pressure jumps and freeze when switching the emission stream
- Extended bakeability due to removable calibration data chips
- Set point relays
- Bright & big OLED display (90° rotateable) with user interface
- Analog output, RS232C serial interface, EtherCAT®
- Usable in conjunction with VGC50x Controller series
- RoHS compliance

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ORDERING INFORMATION



Trigon™ BAG552 SingleGauge

SPECIFICATIONS

Type	BAG552
Measurement range (air, O ₂ , CO, N ₂)	5×10 ⁻¹⁰ ... 2×10 ⁻² mbar, continuous
Accuracy 1 × 10 ⁻⁸ ... 2 × 10 ⁻² mbar	±15% of reading
Repeatability	5% of reading, 10 ⁻⁸ ... 2 × 10 ⁻² mbar (after 10 min. stabilization)
Switching threshold	
on	2.4×10 ⁻² mbar
off	3.2×10 ⁻² mbar
Emission current	
Sliding mode (default)	
p ≤ 8 × 10 ⁻⁷ mbar	5 mA
p > 1 × 10 ⁻³ mbar	25 µA
Two-Point-Mode	
p ≤ 7.2 × 10 ⁻⁶ mbar	5 mA
3.0 × 10 ⁻⁵ mbar < p < 3.2 × 10 ⁻² mbar	25 µA
Emission current switching	
25 µA -> 5 mA	7.2×10 ⁻⁶ mbar
5 mA ->25 µA	3.0×10 ⁻⁵ mbar
Degas	
Emission current (p < 7.2 × 10 ⁻⁶ mbar)	≈16 mA (P _{degas} ≈4 W)
Control input signal	0 V/+24 V (dc), active high
Duration	≤3 min, followed by automatic stop. A new degas cycle can only be started after a waiting time of 30 min
Output signal	0 ... +10 V
Measuring range	+0.57 ... +8.176 V (5×10 ⁻¹⁰ ... 2×10 ⁻² mbar)
Relationship voltage-pressure	1 V/decade, logarithmic
Error signal	+0.1 V (EEPROM error) +0.3 V (BA sensor error)
Minimum load impedance	10 kΩ
Power supply	
Supply voltage at the gauge	+24 V (dc) (+20 ... +28 V (dc))
Ripple	≤2 V _{pp}
Current consumption	
Standard	≤0.5 A
Degas	≤0.9 A
Emission start (< 200 ms)	≤1.4 A
Power consumption	
BAG552	≤18 W
BAG552 with EtherCAT	≤21 W
Fuse necessary	1.25 AT

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Type	BAG552
Sensor cable connection	
Receptacle	D-sub 15-pin, male
Measuring cable	shielded, number of conductors depending on the functions used, max. 15-pin plus shielding
Cable length (supply voltage 24 V)	
Analog and fieldbus operation	≤ 35 m (0.25 mm ² / conductor) ≤ 50 m (0.34 mm ² / conductor) ≤ 100 m (1.0 mm ² / conductor)
RS232C operation	≤ 30 m
Gauge identification	42 k Ω resistor between pin 10 and pin 5
Switching functions	
Setpoints	SP1, SP2
Adjustment range	5×10^{-10} ... 2×10^{-2} mbar
Relay contact rating	≤ 60 V (dc) / 0.5 A (dc), resistive
Admissible temperature	
Storage	-2 ... +70 °C
Operation	0 ... +50 °C
Bakeout	+150 °C (at vacuum connection, without electronics unit and calibration print, horizontally mounted)
Relative humidity	$\leq 65\%$ / 85% (no condensation) year's mean / during 60 days
Interface (digital)	Diagnostic port connection, RS232C, Jack connector. 2.5 m, 3-pin
Materials exposed to vacuum	stainless steel, NiFe, nickel plated, Hastelloy, glass, iridium, yttrium oxide (Y ₂ O ₃),
Internal volume	
DN 25 ISO-KF	≈ 24 cm ³
DN 40 CF-R	≈ 34 cm ³
Weight	550 ... 760g
Pressure max.	5 bar (absolute)
Mounting orientation	any
Degree of pollution	2
Degree of protection	IP40

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SPECIFICATIONS INTERFACES

RS232C

Data rate	9600 Baud
Data format	binary, 8 data bits, one stop bit, no parity bit, no handshake

EtherCAT®

Protocol	EtherCAT®
Communication standards	Semiconductor Device Profile ETG.5003 Part 1 Common Device Profile ETG.5003 Part 2080 "Specific Device Profile - Vacuum Pressure Gauge"
Process Data	Fixed PDO mapping and configurable PDO mapping
EtherCAT connector	RJ45, 8-pin (socket), IN and OUT
Cable	Shielded Ethernet CAT5e or higher
Cable length	≤100 m (330 ft.)
Data rate	100000 Kbps

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DIMENSIONS

[mm]

