

### Vacuum Gauge Controller

The Vacuum Gauge Controller IM540 is a versatile ionization gauge controller offering complete vacuum measurement and control in the range between  $10^{-12}$  mbar and atmospheric pressure. Depending on the application and user's needs, IM540 is the one-stop solution as it may combine up to 4 different principles of vacuum measurement - Pirani, capacitive diaphragm, Bayard-Alpert and Extractor. This controller allows for a reliable and complete integration in complex process control systems.



#### **ADVANTAGES**

- Supports the operation of the IE414 (Bayard-Alpert) and the IE514 (extractor) hot cathode ionization gauges
- Two active gauges from the PSG5xx (Pirani) and CDG (Capacitance diaphragm) active gauge lines can be connected and operated
- Simple operation with menu guided display for parameter, sensor or general settings
- Built-in RS232 communication interface, optional Profibus DP communication card (IF 540 P)
- Two set points (optional 7) with adjustable hysteresis
- High resolution 16 bit A/D converter
- 2 programmable 0 to 10 V chart recorder outputs

#### **APPLICATIONS**

 Scientific and R&D applications requiring precise vacuum measurement from atmosphere down to ultra-high vacuum range



ORDERING INFORMATION	
Туре	IM540
Vacuum Gauge Controller	399-660

Sensors	IE414	IE514
DN 40 CF	399-661	399-663
Replacement cathode	399-676	399-677
Communication cards		
Interface and relay board, IF540P Profibus, 45 W, 75 VA	399-670	
Accessories		
Gauge head cables to IE414/514, 80 °C		
3 m	399-680	
5 m	399-681	
10 m	399-682	
50 m	399-685	
Gauge head cables to IE414/514, 200 °C		
3 m	399-686	
5 m	399-687	
10 m	399-688	
50 m	399-690	
Extension cables to IE414/514	available on request	

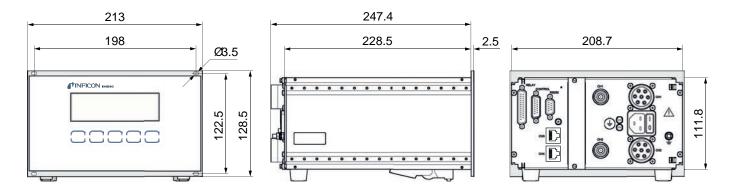


SPECIFICATIONS		
Туре	IM540	
Measurement channel	3	
Display	LCD, LED backlight	
Display rate	4 s <sup>-1</sup>	
Measurement range		
IE414 (Bayard-Alpert)	$1 \times 10^{-11} \dots 1 \times 10^{-2} \text{ mbar} \mid 0.75 \times 10^{-11} \dots 0.75 \times 10^{-2} \text{ Torr}$	
IE514 (Extractor)	$1 \times 10^{-12} \dots 1 \times 10^{-4} \text{ mbar} \mid 0.75 \times 10^{-12} \dots 0.75 \times 10^{-4} \text{ Torr}$	
Measurement unit (selectable)	mbar, Torr, Pa, hPa, Micron, V	
Measurement range switching	automatic or decade pre-select	
Trend indication	bargraph	
Emission current		
IE414 (Bayard-Alpert)	0.1 10 mA, automatic control	
IE514 (Extractor)	1.6 mA	
Emission current shutdown at	$p > 1x10^{-2}$ mbar, broken cathode, short-circuit, interruption of the electric circuit	
Degassing power		
IE414 (Bayard-Alpert)	41 W	
IE514 (Extractor)	21 W	
Gauge supply		
Anode (IE414 / IE514)	220 V / 220 V	
Cathode (IE414 / IE514)	80 V / 100 V	
Reflector (IE514)	205 V	
Sensor connections	2x IE414 or IE514 (single operation or automatic switch-over for redundant	
	operation) 2x PSG50x/PSG51x-S (Pirani) or CDG025D/045D	
Measurement system detection	automatically	
Measurement system switchover	automatically, pressure dependent, error dependent	
Chart recorder outputs	logarithmic 0 to 10 V (1 V / dec) or	
	linear 0 to 10 V	
	error indication U > 10.5 V	
Interface	RS232C, Profibus (with IF540P)	
Switching thresholds (single operation or interval)	2 with floating changeover contact	
Power supply		
Voltage	90 264 V (ac)	
Frequency	47 63 Hz	
Temperature		
Operation (ambient)	+5 +40 °C	
Storage	-20 +60 °C	
Weight	~3.0 kg   ~6.62 lb	



### **DIMENSIONS**

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