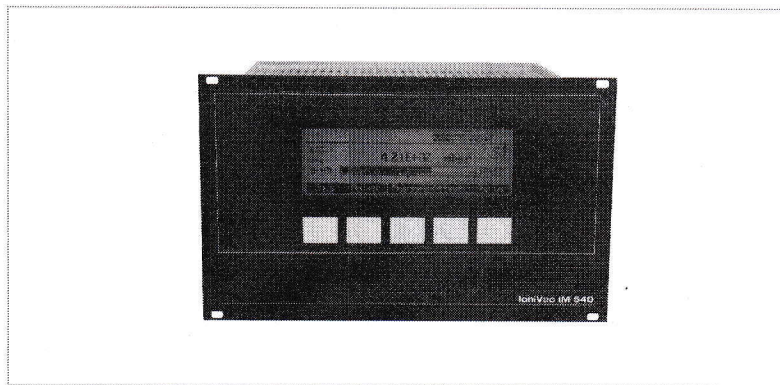


IONIVAC IM 540



The 3-channel display and operating unit IONIVAC IM 540 offers, by combination of up to 4 different principles of measurement – Pirani, capacitive, Bayard-Alpert and Extractor –, complete coverage and control of the vacuum pressure in the range between 10^{-12} mbar and atmospheric pressure.

Advantages to the User

- Precise UHV pressure measurements with the Bayard-Alpert sensor IE 414 (offering excellent longterm stability) or the Extractor sensor IE 514 (offering an extremely low X-ray limit of $< 1 \times 10^{-12}$ mbar)
- 1 measurement channel for IONIVAC sensor (Bayard-Alpert or Extractor)
- Possibility of simultaneously connecting a second IONIVAC sensor
- Degassing of the anode through electron bombardment with time-limit
- Continuous UHV measurement also during the degassing phase (up to +250 °C with bakeable gauge head cable)
- 2 measurement channels for direct connection of transmitters from the series THERMOVAC TTR and CERA VAC CTR
- Selectable pressure units (mbar, Torr, Pascal, Micron)
- Display of a single measurement channel with pressure trend through analogue bargraph or simultaneous display of all measurement channels
- Two adjustable thresholds with adjustable hysteresis and freely assignable to the measurement channels

- Compact benchtop enclosure (1/2 19", 3 HU)
- RS 232 C interface provided as standard
- Simple software updates possible through the RS 232 interface
- Profibus interface (optional)
- CE mark

Typical Applications

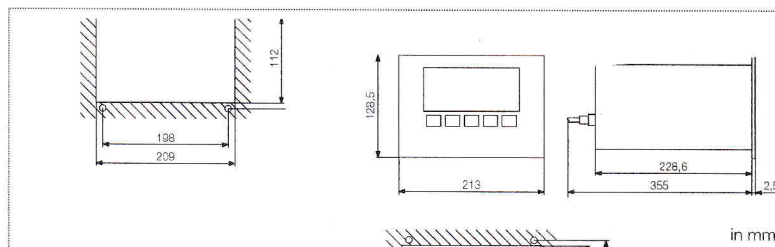
- Pressure measurement and control in the UHV range
- Measurement of ultimate pressure in UHV systems
- Checking of ultimate pressure in semiconductor production
- Total pressure measurements in the area of cryo technology
- Total pressure measurements in calibration systems

Connectable Sensors

- Bayard-Alpert sensor IE 414
 - Extractor sensor IE 514 (see Chapter "Additional Sensors")
- combined with
- THERMOVAC TTR 211, TTR 216 S, TTR 90, TTR 91 and TTR 96 S
 - CERA VAC CTR 90, CTR 91 and CTR 100 (see Chapter "Active Sensors")

Two passive sensors working with ionization technology (IE 414 and/or IE 514) could be connected simultaneously to the IONIVAC IM 540 while only one is in operation.

A pressure dependent emission control of these sensors is possible if a THERMOVAC TTR or CERA VAC CTR 100/CTR 91 of suitable range overlap is connected



Front panel cut-out (left) and dimensional drawing (right) for the IONIVAC IM 540

Technical Data
IONIVAC IM 540

Number of measurement channels		3
Bayard-Alpert / Extractor		Channel 1 or 2
THERMOVAC / CERAVAC		Channel 3 and 4
Measurement range	mbar (Torr)	1×10^{-12} to 1100 (0.75×10^{-12} to 825)
Measurement range Extractor	mbar (Torr)	1×10^{-12} to 1×10^{-4} (0.75×10^{-12} to 0.75×10^{-4})
Measurement range Bayard-Alpert	mbar (Torr)	1×10^{-11} to 1×10^{-2} (0.75×10^{-11} to 0.75×10^{-2})
Measurement range switching		automatic or decade pre-select
Units of measurement (selectable)		mbar, Torr, microns, Pa
Measurement uncertainty	%	± 10 of the value displayed
Trend indication		bargraph
Measurement value display rate		1×10^{-10} to 1×10^{-2} mbar, 5 s^{-1} 1×10^{-12} to 1×10^{-10} mbar, 0.5 s^{-1}
Emission current		
Extraktor sensor	mA	1.6
Bayard sensor	mA	0.1 to 10; automatic control
Emission current shutdown at		$p > 1 \times 10^{-2}$ mbar, broken cathode, short-circuit, interruption of the electric circuit
Bake out power		
Extractor / Bayard-Alpert	W	20 / 40
Sensor power supply, potential for		anode Extractor / Bayard-Alpert: 220 V, cathode Extractor / Bayard-Alpert: 100 V/80 V, Reflector Extractor: 205 V
Sensor connections		Bayard-Alpert and Extractor - single operation is possible 2 x Bayard-Alpert or Extractor (redundant operation)
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 Volt error indication $U > 10.5 \text{ V}$
Extractor / Bayard-Alpert ($R_a = 2,5 \text{ k}\Omega$)		
Interface (standard / optional)		RS 232 C / Profibus
Switching thresholds (single operation or interval)		2 with floating changeover contact
Mains connection	V AC / Hz	90 – 264 / 50/60
Storage temperature range	°C	-40 to +60
Nominal temperature range	°C	+5 to +50
Dimensions of the benchtop instrument, (W x H x D)	mm	213 x 128.5 x 250
Weight, approx.	kg (lbs)	3.0 (6.62)