Leybold

COMBIVAC Series

Controller for passive sensors

in demanding industrial and research applications

COMBIVAC Series

Monitoring and control across the entire vacuum pressure range between 10^{-12} and 1000 mbar

By combining two principles of measurement (THERMOVAC and PENNINGVAC) the COMBIVAC CM 51 performs vacuum pressure measurements and control within the entire range of 10^{-9} and 1000 mbar.

The COMBIVAC 52 covers the entire range of vacuum pressures from 10^{-12} to 1000 mbar by combining two UHV principles of measurement (THERMOVAC and IONIVAC).

Customer Benefits

- Compact three channel measuring instruments for passive sensors
- Vacuum pressure measurement from 10^{-12} - 1000 mbar
- Automatic switchover and high voltage control from THERMOVAC to PENNING (CM 51), and from THERMOVAC to IONIVAC (CM 52)
- Connection of adjusted, temperature compensated THERMOVAC sensors
- High sensor reliability and lifetime PENNING, resp. IONIVAC vacuum gauge heads
- Cost-effective replacement sensors and electrodes
- Connection of compact, bakeable and rugged
- Compact, installable benchtop housing (1/4 19-in., 3 HU) on request
- Error message per channel, in case of a broken filament, defective sensor line or failed plasma discharge, for example
- Cable length up to 100 meters possible
- RS 232/485 and Profibus interfaces
- CE and RoHS compliant

Typical Applications

Process industry

- Rough or corrosive industrial conditions
- Universal monitoring of high vacuum pump system operation
- Annealing, melting, brazing or hardening furnaces
- Coating systems

Research applications

- Particle accelerators
- Surface analysis
- Tunnel microscopy
- Radiation-resistant and bakeable systems
- Molecular beam epitaxy (MBE)

Connectable Sensors

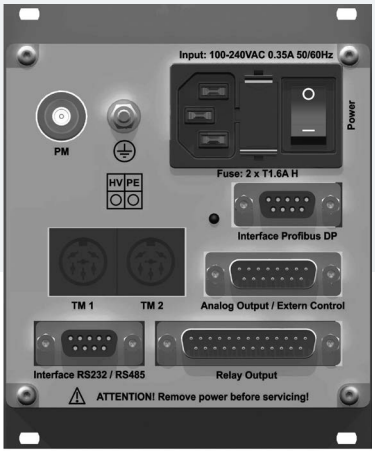
CM 51

THERMOVAC models

- TR 211 to TR 216

PENNINGVAC models (CM 51)

- PR 25 to PR 27
- PR 28, bakeable to 200 °C



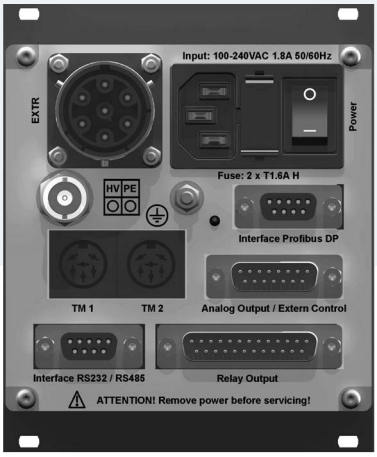
CM 52

THERMOVAC models

- TR 211 to TR 216

IONIVAC models (CM 52)

- IE 414, bakeable to 350 °C
- IE 514, bakeable to 350 °C



Technical Data

		CM 51	CM 52
Display range			
Channel 1, 2 (THERMOVAC)	mbar	$0.5 \cdot 10^{-3}$ - 1000	$0.5 \cdot 10^{-3}$ - 1000
Channel 3 (PENNINGVAC)	mbar	$1 \cdot 10^{-9}$ - 10^{-2}	-
Channel 3 (IE 414 /IE 514)	mbar	-	$2 \cdot 10^{-11}$ - $1 \cdot 10^{-2}$ / $2 \cdot 10^{-12}$ - $1 \cdot 10^{-4}$
Possible sensors			
THERMOVAC		TR 211, TR 212, TR 216	TR 211, TR 212, TR 216
PENNINGVAC		PR 25, PR 26, PR 27, PR 28	-
IONIVAC		-	IE 414, IE 514
Switching thlesholds		2 per channel	2 per channel
Operating mode		single, interval, trigger	single, interval, trigger
Adjustable Switching thresholds			
THERMOVAC	mbar	$5 \cdot 10^{-3}$ - 500	$5 \cdot 10^{-3}$ - 500
PENNINGVAC	mbar	$1 \cdot 10^{-8}$ - $9.9 \cdot 10^{-3}$	-
Bayard-Alpert (IE 414)	mbar	-	$1 \cdot 10^{-8}$ - $5 \cdot 10^{-3}$
Extractor (IE 514)	mbar	-	$1 \cdot 10^{-11}$ - $1 \cdot 10^{-4}$
Mains connection		100 - 240 V, 50/60 Hz	100 - 240 V, 50/60 Hz
Interfaces		RS 232 C, RS 485/Profibus	RS 232 C, RS 485/Profibus
Dimensions (W x H x D)	mm	106.4 X 128.5 X 164.5	106.4 X 128.5 X 164.5
Protection class		IP 40	IP 40

Ordering Information

		CM 51	CM 52
COMBIVAC controller with EURO and US mains connection cable (2 m) and Interfaces: RS 232 C/485 // or Profibus	Cat. No.	230 110 // 230 111	230115 // 230 116

Leybold

Pioneering products. Passionately applied.

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