Leybold

PENNINGVAC PTR
Stability for your process

Whatever your
application:

We have the right gauge to perfectly match your requirements

Industrial Applications - Vacuum measurement you can rely on

From glass coating to industrial furnaces: the presence of dust and contaminants is omnipresent in many industrial processes.
The ability to reliably measure vacuum is key for maximum uptime and efficiency!
With our robust cold cathode and filament pirani, dust and particulate contamination are no longer an issue ensuring longevity of the gauge.

Medical and Pharmaceutical - Supporting future healthcare

Reduced down time and consistency from batch to batch or from scan to scan are vital to maintain high levels of confidence from the public.
With our "fit and forget" PENNINGVAC Gauges, we can support you with consistent performance and flexibility of interfaces from early development right through to serial production.

Research and Development - Freedom of choice

The Research & Development sector covers many diverse applications: we understand how important it is for you to set up a process tailored to your needs. This is why we have expanded the portfolio to increase the options available on flange type, communication protocols and more.

Analytical Instruments - Compact without compromise

With the constant drive to reduce footprint, improve reliability, and increase functionality, having cutting edge technology is crucial.
Miniaturized gauging with reduced magnetic stray field and increased output option help you deliver increased control without compromise.

All the benefits you need from your gauges

With the extended focus on creating efficient vacuum processes, measurement and control is becoming increasingly important. As more reliance is put on the measurement system to control and realize these efficiencies, "Fit and Forget" products are needed, and that's what we provide.

Easy monitoring and control

... even in the harshest of systems
With our new range of robust cold-cathode and cold-cathode Pirani gauges, it is now easy to monitor and control even the harshest of systems across a broad measuring range, allowing you to optimize your systems by increasing throughput and decreasing downtime!

Robust

Cold cathode technology at the core!
With robustness designed in from the start, through features such as the innovative, integrated striking element (PENNINGVAC PTR 90 RN), this gauge lasts even longer making it a true "fit and forget" solution.

PENNINGVAC PTR (3610 0360 02)

Flexibility

We have the fittings you need
PTR are perfect gauges to be used within a large spectrum of diverse applications. Therefore we have created a system that gives you the choice on flange type, output, or interface. Just select (or let us help you define) your matching partner!

Easy serviceability

Key to a healthy system
The ability to easily service vacuum gauges is key to maintaining a healthy system.
With our RN series completing maintenance is easy. Simply pull out the pin until it stops: the two halves smoothly separate, allowing you to easily replace the measuring cell or electronics.

In-house manufacturing from the expert

We have "full control"... and as a result you have it too!
Our range of RN gauges are designed and manufactured in-house, building on our many years of experience in vacuum gauging.
We can offer not only application but also post sales support: this way we ensure you get the most out of our products.
From the drawing board to manufacture this gauge has been designed to meet all your needs.

2 interfaces to choose from

Digital or analogue: you decide
You have the option of standard analogue or digital (RS232 or 485) interfaces, with no impact on gauge performance/size.
Whilst the RJ45/FCC68 connector has been popular for years, some processes prefer a "lockable" connector. That is the reason why we offer analogue variants with a choice of D-Sub or RJ45/FCC68.
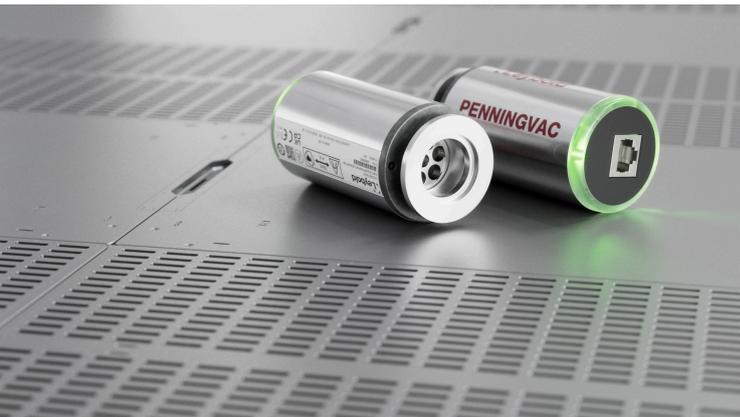

Filament technology

Our cold cathode filament Pirani will provide you with a stable, reliable solution no matter your environment or application. Due to the length of the filament they give accurate measurements across the breadth of the range.

Reduced footprint

The PENNINGVAC PTR-RN is compact in size, thus making it a great choice of gauge in those applications where space is key.
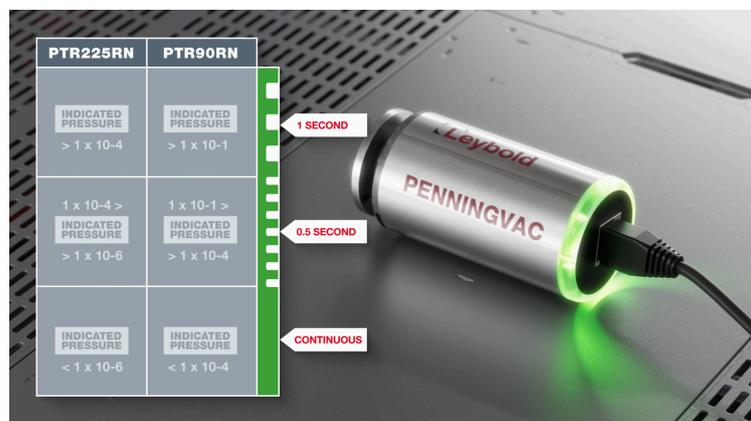
Compatibility

Save time and efforts
We appreciate the pain of qualifying new items when you have the need to upgrade or switch. Our new gauges offer full backwards compatibility, as well as common voltage scaling: we help you save time and keep to the minimum work required.

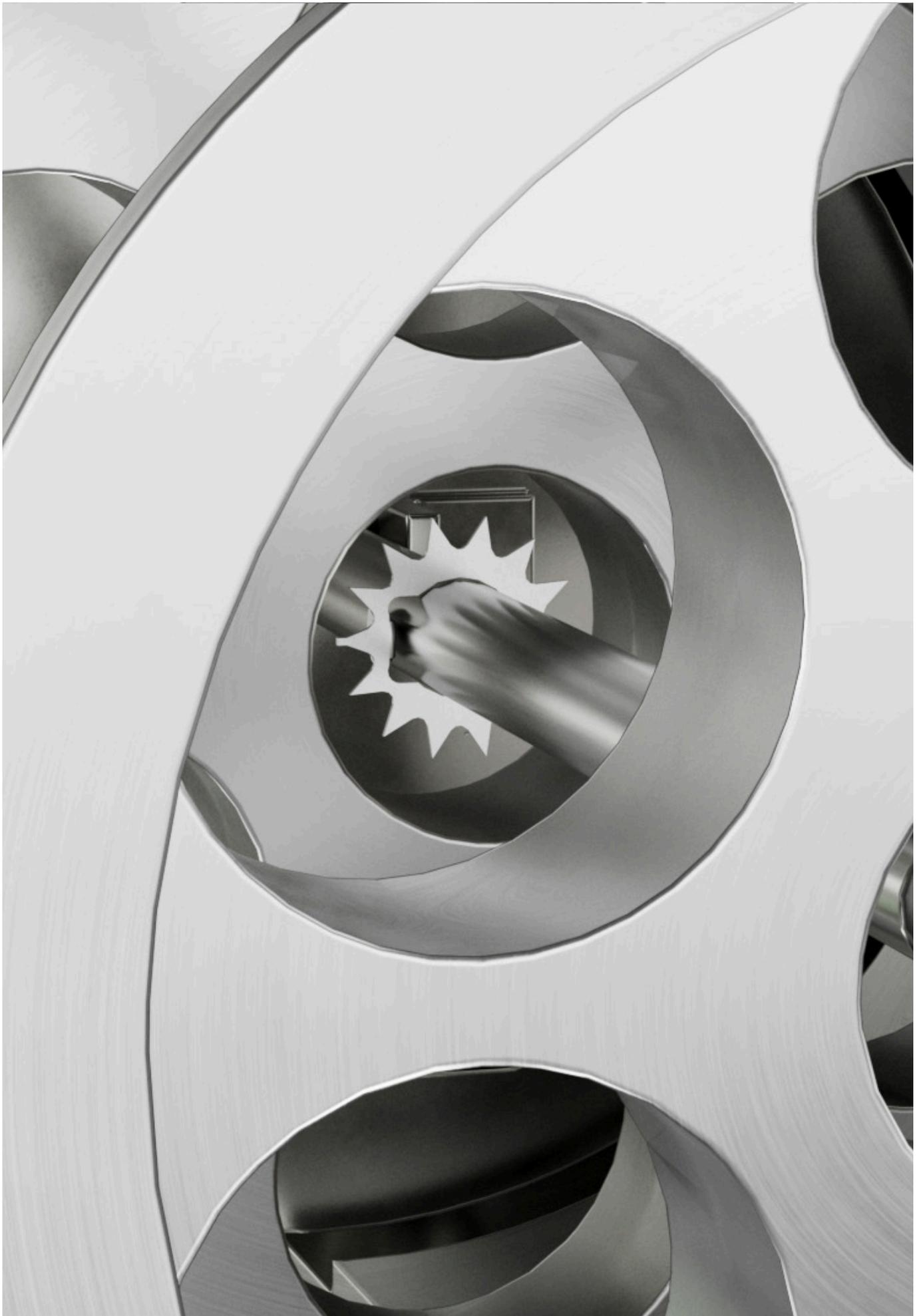## Adaptive led pressure indication

The light rings do not only display basic "working/not working" information. They also give precious pressure indication via pulsing patterns and guide you through the menu set up.

PTR225RN	PTR90RN	
INDICATED PRESSURE > 1 x 10-4	INDICATED PRESSURE > 1 x 10-1	1 SECOND
1 x 10-4 > INDICATED PRESSURE > 1 x 10-6	1 x 10-1 > INDICATED PRESSURE > 1 x 10-4	0.5 SECOND
INDICATED PRESSURE < 1 x 10-6	INDICATED PRESSURE < 1 x 10-4	CONTINUOUS

Wide range power supply

For customers integrating vacuum solutions directly, our gauges can take any power input from 15 V to 48 V.
Thus eliminating the need for multiple power supplies for the various vacuum components.

Technical data

Technical data

	PTR225RN	PTR90RN
Measurement range	$1e^{-9}$ mbar up to 1×10^{-2}	$1e^{-9}$ mbar up to 10000
Accuracy (mbar)	Less than 30% measured value from $1e^{-8}$ to $1e^{-2}$	Less than 30% measured value from $1e^{-8}$ to $1e^{-2}$ Less than 15% measured value from $1e^{-2}$ to 50 mbar
Supply voltage (V d.c.)	15 to 48	15 to 48
Electrical connection	RJ45/9 Pin D-sub	RJ45/9 Pin D-sub
Analogue output (21L***1***)	0-10 VDC	0-10 VDC
Serial output (21L***5***/21L***0***)	RS232 or RS485	RS232 or RS485
Set point	1	1
Range	$1e^{-9}$ to $1e^{-2}$ mbar	$1e^{-9}$ to 1000 mbar
Relay contact rating	48VDC MAX, 500ma	48VDC MAX, 500ma
Status indicators	360 Bright LED ring	360 Bright LED ring
Max cable length (m)	100	100
Over pressure limit (bar)	10	10
Operating temperature range (°C)	0 to 50	0 to 50
Storage temperature (°C)	-20 to 70	-20 to 70
Max bake out (electronics removed)	150C	150C
Max relative humidity	80% RH up to 31°C decreasing linearly to 50% RH at 40°C and above	80% RH up to 31°C decreasing linearly to 50% RH at 40°C and above
Dead volume (cm^3)	20 cm^3	20 cm^3
Weight (flange dependent)	350g with DN 25 KF 380g with DN 40 KF 630g with DN 40 CF	
Protection class	IP40	IP40
Certifications	CE, UKCA	CE, UKCA
Compatible controllers	DISPLAY (THREE), GRAPHIX, TURBO.CONTROLi	DISPLAY (THREE), GRAPHIX, TURBO.CONTROLi

Ordering information

Part number matrix (Gauges)

	Prefix	-	Set point	Flange	Comms	Connector	Output	other
PTR225RN	22L	0	0 = No set point 1 = 1 Set point	2 = DN 25 KF 3 = DN 40 KF 4 = DN 40 CF	1 = 0-10V 0 = RS485 5 = RS232	1 = RJ45 2 = 9 Pin DSUB	0 = Standard Leybold 3 = 1.5 to 8.5V 4 = 1.5 to 4.4375V	C = Calibrated
PTR90RN	23L	0	0 = No set point 1 = 1 Set point	2 = DN 25 KF 3 = DN 40 KF 4 = DN 40 CF	1 = 0-10V 0 = RS485 5 = RS232	1 = RJ45 2 = 9 Pin DSUB	0 = Standard Leybold 2 = 1.40 to 8.6V 4 = 1.5 to 6.9375V	C = Calibrated

Gauges - full part numbers

Part number	Product
23L0021100	PTR90RN - DN 25 KF
22L0021100	PTR225RN - DN 25 KF
23L0041100	PTR90RN - DN 40 CF
23L0031100	PTR90RN - DN 40 KF
22L0041100	PTR225RNS - DN 40 CF
23L0125200	PTR90RNS - DN 25 KF - RS232 - 9 Pin DSUB
22L0125200	PTR225RNS - DN 25 KF - RS232 - 9 Pin DSUB

Part number matrix (Spare parts)

	Prefix	Filament	Set point	Flange	Comms	Connector	Output Match	Other
PTR90RN Electronics	E22L	0	0 1	A	0 = 0 to 10V 1 = RS485 5 = RS232	0 = RJ45 1 = RJ45 2 = 9 Pin D-SUB	0 = Leybold standard 2 = 1.40 to 8.60V 4 = 1.5 to 6.9375V	C
PTR90RN Tubes	E22L	0	A	2 = NW25 3 = NW40 4 = DN40CF	A	A	A	0
PTR225RN Electronics	E23L	0	0 1	A	0 = 0 to 10V 1 = RS485 5 = RS232	0 = RJ45 1 = RJ45 2 = 9 Pin D-SUB	0 = Leybold standard 3 = 1.5 to 8.5V 4 = 1.5 to 4.4375V	C

Part number matrix (Spare parts)

	Prefix	Filament	Set point	Flange	Comms	Connector	Output Match	Other
PTR225RN Tubes	E23L	0	A	2 = NW25 3 = NW40 4 = DN40CF	A	A	A	0

Spare parts - full part numbers

Part number	Description
PTR225RN	
E22L00A1100	PODULE-PTR225RN
E22L01A1200	PODULE-PTR225RNS-9 Pin DSUB
E22L00A1130	PODULE-PTR225RN- O
E22L01A1230	PODULE-PTR225RNS-9 Pin DSUB- O
E22L00A1140	PODULE-PTR225RN- Q
E22L01A1240	PODULE-PTR225RNS-9 Pin DSUB- Q
E22L00A0200	PODULE-PTR225RN-RS485-9 Pin DSUB
E22L00A5200	PODULE-PTR225RN-RS232-9 Pin DSUB
E22L01A0200	PODULE-PTR225RNS-RS485-9 Pin DSUB
E22L01A5200	PODULE-PTR225RNS-RS232-9 Pin DSUB
E22L0A2AAA0	TUBE-PTR225RN-NW25
E22L0A3AAA0	TUBE-PTR225RN-NW40
E22L0A4AAA0	TUBE-PTR225RN-DN40CF
PTR90RN	
E23LA0A1100	PODULE-PTR90RN
E23LA1A1100	PODULE-PTR90RNS
E23LA1A1200	PODULE-PTR90RNS-9 Pin DSUB
E23LA0A1120	PODULE-PTR90RN- G
E23LA1A1120	PODULE-PTR90RNS- G
E23LA1A1220	PODULE-PTR90RNS-9 Pin DSUB- G
E23LA0A1140	PODULE-PTR90RN- Q
E23LA1A1140	PODULE-PTR90RNS- Q
E23LA1A1240	PODULE-PTR90RNS-9 Pin DSUB- Q
E23LA0A0200	PODULE-PTR90RN-RS485-9 Pin DSUB
E23LA0A5200	PODULE-PTR90RN-RS232-9 Pin DSUB
E23LA1A0200	PODULE-PTR90RNS-RS485-9 Pin DSUB
E23LA1A5200	PODULE-PTR90RNS-RS232-9 Pin DSUB
E23L0A2AAA0	TUBE-PTR90RN-NW25
E23L0A3AAA0	TUBE-PTR90RN-NW40
E23L0A4AAA0	TUBE-PTR90RN-DN40CF

PENNINGVAC PTR

Leybold

Pioneering products. Passionately applied.

www.leybold.com