DigiLine

Innovative vacuum measurement for the digital age

DigiLine

The DigiLine series is designed for industrial and research applications that need wiring that is easy to install and reliable. The series covers the entire technically relevant vacuum range with measuring principles encompassing Piezo, Pirani, and hot and cold cathode vacuum gauges. All transmitters have an RS-485 interface which can be used to connect up to 16 measuring points to a controller. An additional voltage outlet that is proportional to the pressure and two switch-points as well as Profibus and DeviceNet interfaces are available as options. Protection class IP 54 and DIN M12 connector assemblies qualify these vacuum gauges for usage in heavy-duty environments.

Customer benefits

- Pressure range $5 \cdot 10^{-10}$ to 2,000 hPa covers the entire vacuum range.
- Digital outlet signal for error-free data transmission
- Transmission of numerical pressure values saves characteristics and recalculations
- Protection class IP 54 and DIN M12 connector assemblies for reliable operation in heavy-duty environments.
- Remote control for easy adjustment.
- Optional Profibus and DeviceNet fieldbus interfaces meeting industrial standards

Typical applications

- Hard disk coating
- PVD coating
- Solar cell production
- Space simulation
- Vacuum drying / Heat treatment
- Electron beam welding
- Surface coating
- Fusion technology

Space simulation

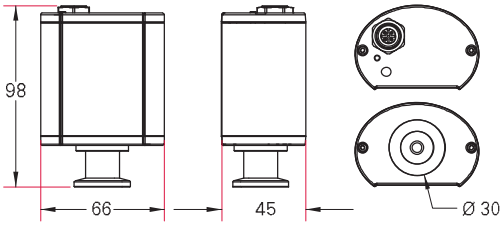
Vacuum drying

Solar cell production

Piezo-resistive Gauge CPT 200 (1 – 2000 hPa)

- 1 to 2000 hPa
- Robust sensor
- Gas type independent measurement
- Profibus DP Interface (optional)
- DeviceNet Interface (optional)
- Analog output and set points (optional)

Dimensions (in mm)



Technical data	CPT 200, DN 16 ISO-KF, RS-485	CPT 200, DN 16 ISO-KF, RS-485, analog	CPT 200, DN 16 ISO-KF, RS-485, Profibus	CPT 200, DN 16 ISO-KF, RS-485, DeviceNet
Flange (in)	DN 16 ISO-KF	DN 16 ISO-KF	DN 16 ISO-KF	DN 16 ISO-KF
Seal	FPM	FPM	FPM	FPM
Pressure max.	400 kPa	400 kPa	400 kPa	400 kPa
Full scale	2000	2000	2000	2000
Accuracy	1-1200 hPa: ± 0.1 % F.S.; >1200 hPa: ± 1 % F.S.	1-1200 hPa: ± 0.1 % F.S.; >1200 hPa: ± 1 % F.S.	1-1200 hPa: ± 0.1 % F.S.; >1200 hPa: ± 1 % F.S.	1-1200 hPa: ± 0.1 % F.S.; >1200 hPa: ± 1 % F.S.
Weight	190 g	190 g	190 g	190 g
Materials in contact with media	Ceramic, stainless steel, FPM	Ceramic, stainless steel, FPM	Ceramic, stainless steel, FPM	Ceramic, stainless steel, FPM
Measurement range max.	2000 hPa	2000 hPa	2000 hPa	2000 hPa
Measurement range min.	1 hPa	1 hPa	1 hPa	1 hPa
Sensor cable length max.	1000 m	100 m	100 m	100 m
Method of measurement	Diaphragm, piezoresistive (gas type independent)	Diaphragm, piezoresistive (gas type independent)	Diaphragm, piezoresistive (gas type independent)	Diaphragm, piezoresistive (gas type independent)
Measuring cycle	10 ms	10 ms	10 ms	10 ms
Interface: Connection	Digital RS-485 ; M12, 5-pole	Digital RS-485 ; M12, 5-pole; Analog 0-10 V; 2 SP; M12, 8-pole	Digital RS-485 , M12, 5-pole, Profibus DP, M12, 5-pole	Digital RS-485 , M12, 5-pole, DeviceNet, M12, 5-pole
Protection category	IP 54	IP 54	IP 54	IP 54
Temperature: Bakeout	70 °C	70 °C	70 °C	70 °C
Temperature: Operating	5-60 °C	5-60 °C	5-60 °C	5-60 °C
Temperature: Storage	-40-+65 °C	-40-+65 °C	-40-+65 °C	-40-+65 °C
Supply: Voltage	24 V DC	24 V DC	24 V DC	24 V DC
Supply: Power consumption max.	1.5 W	2.2 W	3.0 W	2.0 W

Order number				
CPT 200, DN 16 ISO-KF	**PT R36 130**	**PT R36 131**	**PT R36 132**	**PT R36 133**

Accessories				
Centering ring with poral filter, Pore size: 20 µm, FPM/stainless steel, DN 16 ISO-KF	**PF 117 216 -T**	**PF 117 216 -T**	**PF 117 216 -T**	**PF 117 216 -T**
Fine filter, pore size 4 µm, DN 16 ISO-KF	**PT 120 132 -T**	**PT 120 132 -T**	**PT 120 132 -T**	**PT 120 132 -T**

Further accessories see controller DPG 202

Technical data	CPT 200, G 1/4", RS-485	CPT 200, G 1/4", RS-485, analog	CPT 200, G 1/4", RS-485, Profibus	CPT 200, G 1/4", RS-485, DeviceNet
Flange (in)	G 1/4"	G 1/4"	G 1/4"	G 1/4"
Seal	FPM	FPM	FPM	FPM
Pressure max.	400 kPa	400 kPa	400 kPa	400 kPa
Full scale	2000	2000	2000	2000
Accuracy	1-1200 hPa: ± 0.1 % F.S.; >1200 hPa: ± 1 % F.S.	1-1200 hPa: ± 0.1 % F.S.; >1200 hPa: ± 1 % F.S.	1-1200 hPa: ± 0.1 % F.S.; >1200 hPa: ± 1 % F.S.	1-1200 hPa: ± 0.1 % F.S.; >1200 hPa: ± 1 % F.S.
Weight	190 g	190 g	190 g	190 g
Materials in contact with media	Ceramic, stainless steel, FPM		Ceramic, stainless steel, FPM	Ceramic, stainless steel, FPM
Measurement range max.	2000 hPa		2000 hPa	2000 hPa
Measurement range min.	1 hPa		1 hPa	1 hPa
Sensor cable length max.	100 m	100 m	100 m	100 m
Method of measurement	Diaphragm, piezoresistive (gas type independent)	Diaphragm, piezoresistive (gas type independent)	Diaphragm, piezoresistive (gas type independent)	Diaphragm, piezoresistive (gas type independent)
Measuring cycle	10 ms	10 ms	10 ms	10 ms
Interface: Connection	Digital RS-485 ; M12, 5-pole	Digital RS-485 ; M12, 5-pole; Analog 0-10 V; 2 SP; M12, 8-pole	Digital RS-485 , M12, 5-pole, Profibus DP, M12, 5-pole	Digital RS-485 , M12, 5-pole, DeviceNet, M12, 5-pole
Protection category	IP 54	IP 54	IP 54	IP 54
Temperature: Bakeout	70 °C	70 °C	70 °C	70 °C
Temperature: Operating	5-60 °C	5-60 °C	5-60 °C	5-60 °C
Temperature: Storage	-40-+65 °C	-40-+65 °C	-40-+65 °C	-40-+65 °C
Supply: Voltage	24 V DC	24 V DC	24 V DC	24 V DC
Supply: Power consumption max.	1.5 W	2.2 W	3.0 W	2.0 W

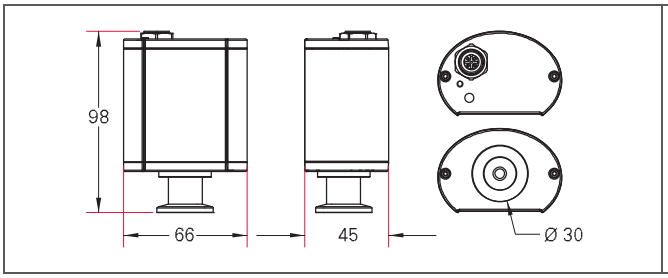
Order number				
CPT 200 , G 1/4"	**PT R36 210**	**PT R36 211**	**PT R36 212**	**PT R36 213**

Further accessories see controller DPG 202

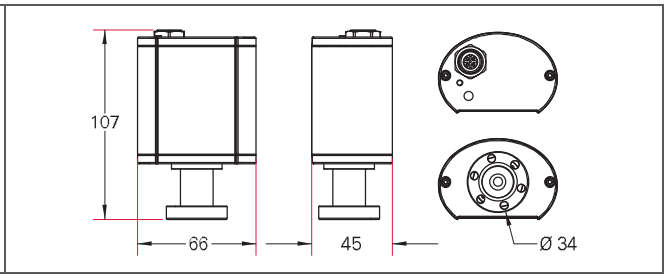
Piezo/Pirani Gauge RPT 200 (1 · 10^{-4} – 1200 hPa)

- 1 · 10^{-4} to 1200 hPa
- Combination of two sensors
- High accuracy up to atmospheric pressure
- Profibus DP Interface (optional)
- DeviceNet Interface (optional)
- Analog output and set points (optional)

Dimensions (in mm)



RPT 200, DN 16 ISO-KF



RPT 200, DN 16 CF-F

Technical data	RPT 200, DN 16 ISO-KF, RS-485	RPT 200, DN 16 ISO-KF, RS-485, analog	RPT 200, DN 16 ISO-KF, RS-485, Profibus	RPT 200, DN 16 ISO-KF, RS-485, DeviceNet
Flange (in)	DN 16 ISO-KF	DN 16 ISO-KF	DN 16 ISO-KF	DN 16 ISO-KF
Seal	Metal	Metal	Metal	Metal
Pressure max.	400 kPa	400 kPa	400 kPa	400 kPa
Full scale	1200	1200	1200	1200
Accuracy	< 2 · 10^{-3} factor 2; 2 · 10^{-3} - 10 hPa: ± 10 %; 10-1200 hPa: ± 0.3 % F.S.	< 2 · 10^{-3} factor 2; 2 · 10^{-3} - 10 hPa: ± 10 %; 10-1200 hPa: ± 0.3 % F.S.	< 2 · 10^{-3} factor 2; 2 · 10^{-3} - 10 hPa: ± 10 %; 10-1200 hPa: ± 0.3 % F.S.	< 2 · 10^{-3} factor 2; 2 · 10^{-3} - 10 hPa: ± 10 %; 10-1200 hPa: ± 0.3 % F.S.
Weight	195 g	195 g	195 g	195 g
Materials in contact with media	Stainless steel, Tungsten, gold, silicon oxide, glass	Stainless steel, Tungsten, gold, silicon oxide, glass	Stainless steel, Tungsten, gold, silicon oxide, glass	Stainless steel, Tungsten, gold, silicon oxide, glass
Measurement range max.	1200 hPa	1200 hPa	1200 hPa	1200 hPa
Measurement range min.	1 · 10^{-4} hPa	1 · 10^{-4} hPa	1 · 10^{-4} hPa	1 · 10^{-4} hPa
Sensor cable length max.	100 m	100 m	100 m	100 m
Method of measurement	Piezo/Pirani	Piezo/Pirani	Piezo/Pirani	Piezo/Pirani
Measuring cycle	10 ms	10 ms	10 ms	10 ms
Interface: Connection	Digital RS-485 ; M12, 5-pole	Digital RS-485 ; M12, 5-pole; Analog 0-10 V; 2 SP; M12, 8-pole	Digital RS-485 , M12, 5-pole, Profibus DP, M12, 5-pole	Digital RS-485 , M12, 5-pole, DeviceNet, M12, 5-pole
Protection category	IP 54	IP 54	IP 54	IP 54
Temperature: Bakeout	125 °C	125 °C	125 °C	125 °C
Temperature: Operating	+5 - +60 °C	+5 - +60 °C	+5 - +60 °C	+5 - +60 °C
Temperature: Storage	-40-+65 °C	-40-+65 °C	-40-+65 °C	-40-+65 °C
Supply: Voltage	24 V DC	24 V DC	24 V DC	24 V DC
Supply: Power consumption max.	2.5 W	3.2 W	4.0 W	2.9 W
Repeatability: % of measurement	10-1200 hPa: ± 0.1% F.S.; 1 · 10^{-3} - 1 hPa: ± 1 %	10-1200 hPa: ± 0.1% F.S.; 1 · 10^{-3} - 1 hPa: ± 1 %	10-1200 hPa: ± 0.1% F.S.; 1 · 10^{-3} - 1 hPa: ± 1 %	10-1200 hPa: ± 0.1% F.S.; 1 · 10^{-3} - 1 hPa: ± 1 %

Order number				
RPT 200, DN 16 ISO-KF	**PT R37 130**	**PT R37 131**	**PT R37 132**	**PT R37 133**

Accessories				
Centering ring with poral filter, Pore size: 20 µm, FPM/stainless steel, DN 16 ISO-KF	**PF 117 216 -T**	**PF 117 216 -T**	**PF 117 216 -T**	**PF 117 216 -T**
Fine filter, pore size 4 µm, DN 16 ISO-KF	**PT 120 132 -T**	**PT 120 132 -T**	**PT 120 132 -T**	**PT 120 132 -T**

Further accessories see controller DPG 202

Technical data	RPT 200, DN 16CF-F, RS-485	RPT 200, DN 16 CF-F, RS-485, analog	RPT 200, DN 16 CF-F, RS-485, Profibus	RPT 200, DN 16 CF-F, RS-485, DeviceNet
Flange (in)	DN 16 CF-F	DN 16 CF-F	DN 16 CF-F	DN 16 CF-F
Seal	Metal	Metal	Metal	Metal
Pressure max.	400 kPa	400 kPa	400 kPa	400 kPa
Full scale	1200	1200	1200	1200
Accuracy	< 2 · 10^{-3} factor 2; 2 · 10^{-3} - 10 hPa: ± 10 %; 10-1200 hPa: ± 0.3 % F.S.	< 2 · 10^{-3} factor 2; 2 · 10^{-3} - 10 hPa: ± 10 %; 10-1200 hPa: ± 0.3 % F.S.	< 2 · 10^{-3} factor 2; 2 · 10^{-3} - 10 hPa: ± 10 %; 10-1200 hPa: ± 0.3 % F.S.	< 2 · 10^{-3} factor 2; 2 · 10^{-3} - 10 hPa: ± 10 %; 10-1200 hPa: ± 0.3 % F.S.
Weight	225 g	225 g	225 g	225 g
Materials in contact with media	Stainless steel, Tungsten, gold, silicon oxide, glass	Stainless steel, Tungsten, gold, silicon oxide, glass	Stainless steel, Tungsten, gold, silicon oxide, glass	Stainless steel, Tungsten, gold, silicon oxide, glass
Measurement range max.	1200 hPa	1200 hPa	1200 hPa	1200 hPa
Measurement range min.	1 · 10^{-4} hPa	1 · 10^{-4} hPa	1 · 10^{-4} hPa	1 · 10^{-4} hPa
Sensor cable length max.	100 m	100 m	100 m	100 m
Method of measurement	Piezo/Pirani	Piezo/Pirani	Piezo/Pirani	Piezo/Pirani
Measuring cycle	10 ms	10 ms	10 ms	10 ms
Interface: Connection	Digital RS-485 , M12, 5-pole	Digital RS-485 ; M12, 5-pole; Analog 0-10 V; 2 SP; M12, 8-pole	Digital RS-485 , M12, 5-pole, Profibus DP, M12, 5-pole	Digital RS-485 , M12, 5-pole, DeviceNet, M12, 5-pole
Protection category	IP 54	IP 54	IP 54	IP 54
Temperature: Bakeout	125 °C	125 °C	125 °C	125 °C
Temperature: Operating	+5 - +60 °C	+5 - +60 °C	+5 - +60 °C	+5 - +60 °C
Temperature: Storage	-40-+65 °C	-40-+65 °C	-40-+65 °C	-40-+65 °C
Supply: Voltage	24 V DC	24 V DC	24 V DC	24 V DC
Supply: Power consumption max.	2.5 W	3.2 W	4.0 W	2.9 W
Repeatability: % of measurement	10-1200 hPa: ± 0.1% F.S.; 1 · 10^{-3} - 1 hPa: ± 1 %	10-1200 hPa: ± 0.1% F.S.; 1 · 10^{-3} - 1 hPa: ± 1 %	10-1200 hPa: ± 0.1% F.S.; 1 · 10^{-3} - 1 hPa: ± 1 %	10-1200 hPa: ± 0.1% F.S.; 1 · 10^{-3} - 1 hPa: ± 1 %

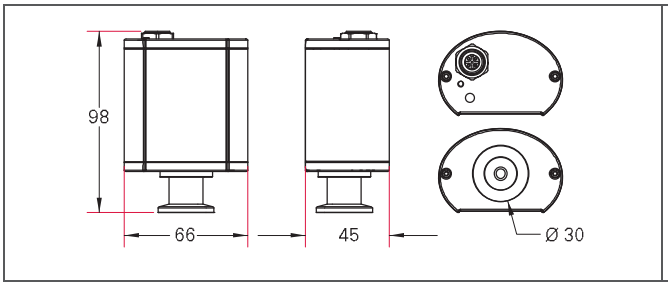
Order number				
RPT 200, DN 16 CF-F	**PT R37 310**	**PT R37 311**	**PT R37 312**	**PT R37 313**

Further accessories see controller DPG 202

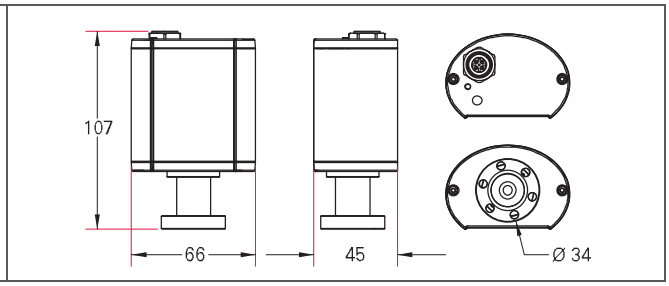
Pirani Gauge PPT 200 (1 · 10^{-4} – 1000 hPa)

- 1 · 10^{-4} to 1000 hPa
- High protection level for industrial applications
- Pulsed sensor for improved accuracy
- Profibus DP Interface (optional)
- DeviceNet Interface (optional)
- Analog output and set points (optional)

Dimensions (in mm)



PPT 200, DN 16 ISO-KF



PPT 200, DN 16 CF-F

Technical data	PPT 200, DN 16 ISO-KF, RS-485	PPT 200, DN 16 ISO-KF, RS-485, analog	PPT 200, DN 16 ISO-KF, RS-485, Profibus	PPT 200, DN 16 ISO-KF, RS-485, DeviceNet
Flange (in)	DN 16 ISO-KF	DN 16 ISO-KF	DN 16 ISO-KF	DN 16 ISO-KF
Seal	Metal	Metal	Metal	Metal
Pressure max.	400 kPa	400 kPa	400 kPa	400 kPa
Accuracy: % of measurement	< 2 · 10^{-3} hPa: < factor 2, 2 · 10^{-3} - 20 hPa: ± 10 %, 20 - 1000 hPa: ± 30 %	< 2 · 10^{-3} hPa: < factor 2, 2 · 10^{-3} - 20 hPa: ± 10 %, 20 - 1000 hPa: ± 30 %	< 2 · 10^{-3} hPa: < factor 2, 2 · 10^{-3} - 20 hPa: ± 10 %, 20 - 1000 hPa: ± 30 %	< 2 · 10^{-3} hPa: < factor 2, 2 · 10^{-3} - 20 hPa: ± 10 %, 20 - 1000 hPa: ± 30 %
Weight	190 g	190 g	190 g	190 g
Materials in contact with media	Tungsten, stainless steel, glass	Tungsten, stainless steel, glass	Tungsten, stainless steel, glass	Tungsten, stainless steel, glass
Measurement range max.	1000 hPa	1000 hPa	1000 hPa	1000 hPa
Measurement range min.	1 · 10^{-4} hPa	1 · 10^{-4} hPa	1 · 10^{-4} hPa	1 · 10^{-4} hPa
Sensor cable length max.	100 m	100 m	100 m	100 m
Method of measurement	Pirani	Pirani	Pirani	Pirani
Measuring cycle	10 ms	10 ms	10 ms	10 ms
Interface: Connection	Digital RS-485 ; M12, 5-pole	Digital RS-485 ; M12, 5-pole; Analog 0-10 V; 2 SP; M12, 8-pole	Digital RS-485 , M12, 5-pole, Profibus DP, M12, 5-pole	Digital RS-485 , M12, 5-pole, DeviceNet, M12, 5-pole
Protection category	IP 54	IP 54	IP 54	IP 54
Temperature: Bakeout	125 °C	125 °C	125 °C	125 °C
Temperature: Operating	+5 - +60 °C	+5 - +60 °C	+5 - +60 °C	+5 - +60 °C
Temperature: Storage	-40-+65 °C	-40...+70 °C	-40...+70 °C	-40...+70 °C
Supply: Voltage	24 V DC	24 V DC	24 V DC	24 V DC
Supply: Power consumption max.	2.5 W	3.2 W	4.0 W	2.9 W
Repeatability: % of measurement	2 · 10^{-3} - 10 hPa: ± 2 %	2 · 10^{-3} - 10 hPa: ± 2 %	2 · 10^{-3} - 10 hPa: ± 2 %	2 · 10^{-3} - 10 hPa: ± 2 %

Order number				
PPT 200, DN 16 ISO-KF	**PT R38 130**	**PT R38 131**	**PT R38 132**	**PT R38 133**

Accessories				
Centering ring with poral filter, Pore size: 20 µm, FPM/stainless steel, DN 16 ISO-KF	**PF 117 216 -T**	**PF 117 216 -T**	**PF 117 216 -T**	**PF 117 216 -T**
Fine filter, pore size 4 µm, DN 16 ISO-KF	**PT 120 132 -T**	**PT 120 132 -T**	**PT 120 132 -T**	**PT 120 132 -T**

Further accessories see controller DPG 202

Technical data	PPT 200, DN 16 CF-F, RS-485	PPT 200, DN 16 CF-F, RS-485, analog	PPT 200, DN 16 CF-F, RS-485, Profibus	PPT 200, DN 16 CF-F, RS-485, DeviceNet
Flange (in)	DN 16 CF-F	DN 16 CF-F	DN 16 CF-F	DN 16 CF-F
Seal	Metal	Metal	Metal	Metal
Pressure max.	400 kPa	400 kPa	400 kPa	400 kPa
Accuracy: % of measurement	< 2 · 10^{-3} hPa: < factor 2, 2 · 10^{-3} - 20 hPa: ± 10 %, 20 - 1000 hPa: ± 30 %	< 2 · 10^{-3} hPa: < factor 2, 2 · 10^{-3} - 20 hPa: ± 10 %, 20 - 1000 hPa: ± 30 %	< 2 · 10^{-3} hPa: < factor 2, 2 · 10^{-3} - 20 hPa: ± 10 %, 20 - 1000 hPa: ± 30 %	< 2 · 10^{-3} hPa: < factor 2, 2 · 10^{-3} - 20 hPa: ± 10 %, 20 - 1000 hPa: ± 30 %
Weight	220 g	220 g	220 g	220 g
Materials in contact with media	Tungsten, stainless steel, glass	Tungsten, stainless steel, glass	Tungsten, stainless steel, glass	Tungsten, stainless steel, glass
Measurement range max.	1000 hPa	1000 hPa	1000 hPa	1000 hPa
Measurement range min.	1 · 10^{-4} hPa	1 · 10^{-4} hPa	1 · 10^{-4} hPa	1 · 10^{-4} hPa
Sensor cable length max.	100 m	100 m	100 m	100 m
Method of measurement	Pirani	Pirani	Pirani	Pirani
Measuring cycle	10 ms	10 ms	10 ms	10 ms
Interface: Connection	Digital RS-485 ; M12, 5-pole	Digital RS-485 ; M12, 5-pole; Analog 0-10 V; 2 SP; M12, 8-pole	Digital RS-485 , M12, 5-pole, Profibus DP, M12, 5-pole	Digital RS-485 , M12, 5-pole, DeviceNet, M12, 5-pole
Protection category	IP 54	IP 54	IP 54	IP 54
Temperature: Bakeout	125 °C	125 °C	125 °C	125 °C
Temperature: Operating	+5 - +60 °C	+5 - +60 °C	+5 - +60 °C	+5 - +60 °C
Temperature: Storage	-40…+70 °C	-40…+70 °C	-40…+70 °C	-40…+70 °C
Supply: Voltage	24 V DC	24 V DC	24 V DC	24 V DC
Supply: Power consumption max.	2.5 W	3.2 W	4.0 W	2.9 W
Repeatability: % of measurement	2 · 10^{-3} - 10 hPa: ± 2 %	2 · 10^{-3} - 10 hPa: ± 2 %	2 · 10^{-3} - 10 hPa: ± 2 %	2 · 10^{-3} - 10 hPa: ± 2 %

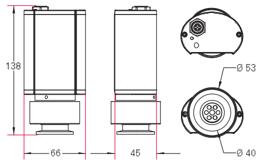
Order number				
PPT 200, DN 16 CF-F	**PT R38 310**	**PT R38 311**	**PT R38 312**	**PT R38 313**

Further accessories see controller DPG 202

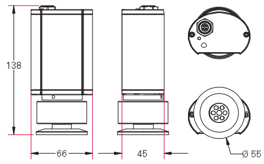
Pirani/Cold Cathode Gauge MPT 200 (5 · 10^{-9} – 1000 hPa)

- 5 · 10^{-9} to 1000 hPa
- Insensitive to gas inrush
- Customizable to vacuum application
- Profibus DP Interface (optional)
- DeviceNet Interface (optional)
- Analog output and set points (optional)

Dimensions (in mm)



MPT 200, DN 25 ISO-KF



MPT 200, DN 40 ISO-KF

Technical data	**MPT 200, DN 25 ISO-KF, RS-485**	**MPT 200, DN 25 ISO-KF, RS-485, analog**	**MPT 200, DN 25 ISO-KF, RS-485, Profibus**	**MPT 200, DN 25 ISO-KF, RS-485, DeviceNet**
Flange (in)	DN 25 ISO-KF	DN 25 ISO-KF	DN 25 ISO-KF	DN 25 ISO-KF
Seal	Metal	Metal	Metal	Metal
Pressure max.	400 kPa	400 kPa	400 kPa	400 kPa
Accuracy: % of measurement	1 · 10^{-8} - 2 · 10^{-3} hPa: ± 25 %, 2 · 10^{-3} - 10 hPa: ± 10 %, 10-100 hPa: ± 30 %; 100-1000 hPa: ± 50 %	1 · 10^{-8} - 2 · 10^{-3} hPa: ± 25 %, 2 · 10^{-3} - 10 hPa: ± 10 %, 10-100 hPa: ± 30 %; 100-1000 hPa: ± 50 %	1 · 10^{-8} - 2 · 10^{-3} hPa: ± 25 %, 2 · 10^{-3} - 10 hPa: ± 10 %, 10-100 hPa: ± 30 %; 100-1000 hPa: ± 50 %	1 · 10^{-8} - 2 · 10^{-3} hPa: ± 25 %, 2 · 10^{-3} - 10 hPa: ± 10 %, 10-100 hPa: ± 30 %; 100-1000 hPa: ± 50 %
Weight	555 g	555 g	555 g	555 g
Materials in contact with media	Tungsten, stainless steel, nickel, molybdenum, glass	Tungsten, stainless steel, nickel, molybdenum, glass	Tungsten, stainless steel, nickel, molybdenum, glass	Tungsten, stainless steel, nickel, molybdenum, glass
Measurement range max.	1000 hPa	1000 hPa	1000 hPa	1000 hPa
Measurement range min.	5 · 10^{-9} hPa	5 · 10^{-9} hPa	5 · 10^{-9} hPa	5 · 10^{-9} hPa
Sensor cable length max.	100 m	100 m	100 m	100 m
Method of measurement	Pirani/Cold cathode	Pirani/Cold cathode	Pirani/Cold cathode	Pirani/Cold cathode
Measuring cycle	10 ms	10 ms	10 ms	10 ms
Interface: Connection	RS-485, D-Sub-socket, 9-pole	Digital RS-485 ; M12, 5-pole; Analog 0-10 V; 2 SP; M12, 8-pole	Digital RS-485 , M12, 5-pole, Profibus DP, M12, 5-pole	Digital RS-485 , M12, 5-pole, DeviceNet, M12, 5-pole
Protection category	IP 54	IP 54	IP 54	IP 54
Cold cathode sensor control	Cold cathode sensor can be switched on and off via interface	Cold cathode sensor can be switched on and off via interface	Cold cathode sensor can be switched on and off via interface	Cold cathode sensor can be switched on and off via interface
Temperature: Bakeout (electronics removed)	180 °C	180 °C	180 °C	180 °C
Temperature: Operating	+5 - +60 °C	+5 - +60 °C	+5 - +60 °C	+5 - +60 °C
Temperature: Storage	-40-+65 °C	-40-+65 °C	-40-+65 °C	-40-+65 °C
Supply: Voltage	24 V DC	24 V DC	24 V DC	24 V DC
Supply: Power consumption max.	3.0 W	3.7 W	4.5 W	3.4 W
Volume	9.5 cm^3	9.5 cm^3	9.5 cm^3	9.5 cm^3
Repeatability: % of measurement	1 · 10^{-8} - 1 · 10^{-2} hPa: ± 7 %; 1 · 10^{-2} - 10 hPa: ± 2 %	1 · 10^{-8} - 1 · 10^{-2} hPa: ± 7 %; 1 · 10^{-2} - 10 hPa: ± 2 %	1 · 10^{-8} - 1 · 10^{-2} hPa: ± 7 %; 1 · 10^{-2} - 10 hPa: ± 2 %	1 · 10^{-8} - 1 · 10^{-2} hPa: ± 7 %; 1 · 10^{-2} - 10 hPa: ± 2 %

Order number				
MPT 200, DN 25 ISO-KF	**PT R40 140**	**PT R40 141**	**PT R40 142**	**PT R40 143**

Further accessories see controller DPG 202

Technical data	MPT 200, DN 40 ISO-KF, RS-485	MPT 200, DN 40 ISO-KF, RS-485, analog	MPT 200, DN 40 ISO-KF, RS-485, Profibus	MPT 200, DN 40 ISO-KF, RS-485, DeviceNet
Flange (in)	DN 40 ISO-KF	DN 40 ISO-KF	DN 40 ISO-KF	DN 40 ISO-KF
Seal	Metal	Metal	Metal	Metal
Pressure max.	400 kPa	400 kPa	400 kPa	400 kPa
Accuracy: % of measurement	$1 \cdot 10^{-8}$ - $2 \cdot 10^{-3}$ hPa: ± 25 %, $2 \cdot 10^{-3}$ - 10 hPa: ± 10 %, 10-100 hPa: ± 30 %; 100-1000 hPa: ± 50 %	$1 \cdot 10^{-8}$ - $2 \cdot 10^{-3}$ hPa: ± 25 %, $2 \cdot 10^{-3}$ - 10 hPa: ± 10 %, 10-100 hPa: ± 30 %; 100-1000 hPa: ± 50 %	$1 \cdot 10^{-8}$ - $2 \cdot 10^{-3}$ hPa: ± 25 %, $2 \cdot 10^{-3}$ - 10 hPa: ± 10 %, 10-100 hPa: ± 30 %; 100-1000 hPa: ± 50 %	$1 \cdot 10^{-8}$ - $2 \cdot 10^{-3}$ hPa: ± 25 %, $2 \cdot 10^{-3}$ - 10 hPa: ± 10 %, 10-100 hPa: ± 30 %; 100-1000 hPa: ± 50 %
Weight	580 g	580 g	580 g	580 g
Materials in contact with media	Tungsten, stainless steel, nickel, molybdenum, glass	Tungsten, stainless steel, nickel, molybdenum, glass	Tungsten, stainless steel, nickel, molybdenum, glass	Tungsten, stainless steel, nickel, molybdenum, glass
Measurement range max.	1000 hPa	1000 hPa	1000 hPa	1000 hPa
Measurement range min.	$5 \cdot 10^{-9}$ hPa	$5 \cdot 10^{-9}$ hPa	$5 \cdot 10^{-9}$ hPa	$5 \cdot 10^{-9}$ hPa
Sensor cable length max.	100 m	100 m	100 m	100 m
Method of measurement	Pirani/Cold cathode	Pirani/Cold cathode	Pirani/Cold cathode	Pirani/Cold cathode
Measuring cycle	10 ms	10 ms	10 ms	10 ms
Interface: Connection	RS-485, D-Sub-socket, 9-pole	Digital RS-485 ; M12, 5-pole; Analog 0-10 V; 2 SP; M12, 8-pole	Digital RS-485 , M12, 5-pole, Profibus DP, M12, 5-pole	Digital RS-485 , M12, 5-pole, DeviceNet, M12, 5-pole
Protection category	IP 54	IP 54	IP 54	IP 54
Cold cathode sensor control	Cold cathode sensor can be switched on and off via interface	Cold cathode sensor can be switched on and off via interface	Cold cathode sensor can be switched on and off via interface	Cold cathode sensor can be switched on and off via interface
Temperature: Bakeout (electronics removed)	180 °C	180 °C	180 °C	180 °C
Temperature: Operating	+5 - +60 °C	+5 - +60 °C	+5 - +60 °C	+5 - +60 °C
Temperature: Storage	-40-+65 °C	-40-+65 °C	-40-+65 °C	-40-+65 °C
Supply: Voltage	24 V DC	24 V DC	24 V DC	24 V DC
Supply: Power consumption max.	3.0 W	3.7 W	4.5 W	3.4 W
Volume	9.5 cm^3	9.5 cm^3	9.5 cm^3	9.5 cm^3
Repeatability: % of measurement	$1 \cdot 10^{-8}$ - $1 \cdot 10^{-2}$ hPa: ± 7 %; $1 \cdot 10^{-2}$ - 10 hPa: ± 2 %	$1 \cdot 10^{-8}$ - $1 \cdot 10^{-2}$ hPa: ± 7 %; $1 \cdot 10^{-2}$ - 10 hPa: ± 2 %	$1 \cdot 10^{-8}$ - $1 \cdot 10^{-2}$ hPa: ± 7 %; $1 \cdot 10^{-2}$ - 10 hPa: ± 2 %	$1 \cdot 10^{-8}$ - $1 \cdot 10^{-2}$ hPa: ± 7 %; $1 \cdot 10^{-2}$ - 10 hPa: ± 2 %

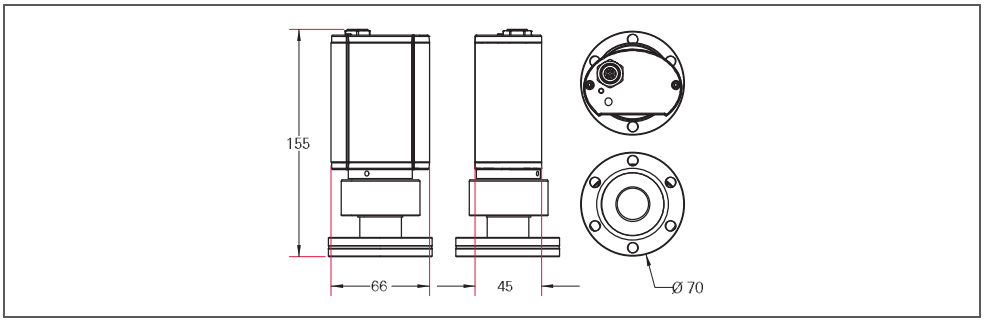
Order number				
MPT 200, DN 40 ISO-KF	**PT R40 150**	**PT R40 151**	**PT R40 152**	**PT R40 153**

Further accessories see controller DPG 202

Pirani/Cold Cathode Gauge MPT 200 (5 · 10^{-9} – 1000 hPa)

- 5 · 10^{-9} to 1000 hPa
- Insensitive to gas inrush
- Customizable to vacuum application
- Profibus DP Interface (optional)
- DeviceNet Interface (optional)
- Analog output and set points (optional)

Dimensions (in mm)



MPT 200, DN 40 CF-F

Technical data	MPT 200, DN 40 CF-F, RS-485	MPT 200, DN 40 CF-F, RS-485, analog	MPT 200, DN 40 CF-F, RS-485, Profibus	MPT 200, DN 40 CF-F, RS-485, DeviceNet
Flange (in)	DN 40 CF-F	DN 40 CF-F	DN 40 CF-F	DN 40 CF-F
Seal	Metal	Metal	Metal	Metal
Pressure max.	400 kPa	400 kPa	400 kPa	400 kPa
Accuracy: % of measurement	1 · 10^{-8} - 2 · 10^{-3} hPa: ± 25 %, 2 · 10^{-3} - 10 hPa: ± 10 %, 10-100 hPa: ± 30 %; 100-1000 hPa: ± 50 %	1 · 10^{-8} - 2 · 10^{-3} hPa: ± 25 %, 2 · 10^{-3} - 10 hPa: ± 10 %, 10-100 hPa: ± 30 %; 100-1000 hPa: ± 50 %	1 · 10^{-8} - 2 · 10^{-3} hPa: ± 25 %, 2 · 10^{-3} - 10 hPa: ± 10 %, 10-100 hPa: ± 30 %; 100-1000 hPa: ± 50 %	1 · 10^{-8} - 2 · 10^{-3} hPa: ± 25 %, 2 · 10^{-3} - 10 hPa: ± 10 %, 10-100 hPa: ± 30 %; 100-1000 hPa: ± 50 %
Weight	850 g	850 g	850 g	850 g
Materials in contact with media	Tungsten, stainless steel, nickel, molybdenum, glass	Tungsten, stainless steel, nickel, molybdenum, glass	Tungsten, stainless steel, nickel, molybdenum, glass	Tungsten, stainless steel, nickel, molybdenum, glass
Measurement range max.	1000 hPa	1000 hPa	1000 hPa	1000 hPa
Measurement range min.	5 · 10^{-9} hPa	5 · 10^{-9} hPa	5 · 10^{-9} hPa	5 · 10^{-9} hPa
Sensor cable length max.	100 m	100 m	100 m	100 m
Method of measurement	Pirani/Cold cathode	Pirani/Cold cathode	Pirani/Cold cathode	Pirani/Cold cathode
Measuring cycle	10 ms	10 ms	10 ms	10 ms
Interface: Connection	RS-485, D-Sub-socket, 9-pole	Digital RS-485 ; M12, 5-pole; Analog 0-10 V; 2 SP; M12, 8-pole	Digital RS-485 , M12, 5-pole, Profibus DP, M12, 5-pole	Digital RS-485 , M12, 5-pole, DeviceNet, M12, 5-pole
Protection category	IP 54	IP 54	IP 54	IP 54
Cold cathode sensor control	Cold cathode sensor can be switched on and off via interface	Cold cathode sensor can be switched on and off via interface	Cold cathode sensor can be switched on and off via interface	Cold cathode sensor can be switched on and off via interface
Temperature: Bakeout (electronics removed)	180 °C	180 °C	180 °C	180 °C
Temperature: Operating	+5 - +60 °C	+5 - +60 °C	+5 - +60 °C	+5 - +60 °C
Temperature: Storage	-40-+65 °C	-40-+65 °C	-40-+65 °C	-40-+65
Supply: Voltage	24 V DC	24 V DC	24 V DC	24 V DC
Supply: Power consumption max.	3.0 W	3.7 W	4.5 W	3.4 W
Volume	9.5 cm^3	9.5 cm^3	9.5 cm^3	9.5 cm^3
Repeatability: % of measurement	1 · 10^{-8} - 1 · 10^{-2} hPa: ± 7 %; 1 · 10^{-2} - 10 hPa: ± 2 %	1 · 10^{-8} - 1 · 10^{-2} hPa: ± 7 %; 1 · 10^{-2} - 10 hPa: ± 2 %	1 · 10^{-8} - 1 · 10^{-2} hPa: ± 7 %; 1 · 10^{-2} - 10 hPa: ± 2 %	1 · 10^{-8} - 1 · 10^{-2} hPa: ± 7 %; 1 · 10^{-2} - 10 hPa: ± 2 %

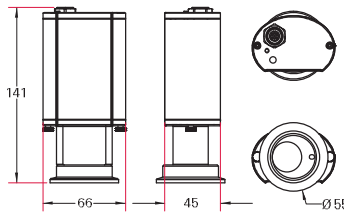
Order number				
MPT 200, DN 40 CF-F	**PT R40 350**	**PT R40 351**	**PT R40 352**	**PT R40 353**

Further accessories see controller DPG 202

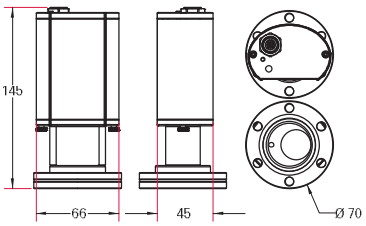
Pirani/Bayard-Alpert Gauge HPT 200 (5 · 10^{-10} – 1000 hPa)

- 5 · 10^{-10} to 1000 hPa
- High security by two filaments
- High accuracy
- Profibus DP Interface (optional)
- DeviceNet Interface (optional)
- Analog output and set points (optional)

Dimensions (in mm)



HPT 200, DN 40 ISO-KF



HPT 200, DN 40 CF-F

Technical data	HPT 200, DN 40 ISO-KF, RS-485	HPT 200, DN 40 ISO-KF, RS-485, analog	HPT 200, DN 40 ISO-KF, RS-485, Profibus	HPT 200, DN 40 ISO-KF, RS-485, DeviceNet
Flange (in)	DN 40 ISO-KF	DN 40 ISO-KF	DN 40 ISO-KF	DN 40 ISO-KF
Number of filaments	2	2	2	2
Seal	Metal	Metal	Metal	Metal
Pressure max.	400 kPa	400 kPa	400 kPa	400 kPa
Filament	Iridium yttriated, twice	Iridium yttriated, twice	Iridium yttriated, twice	Iridium yttriated, twice
Accuracy: % of measurement	1 · 10^{-8} - 1 hPa: ± 10 %, 20-1000 hPa: ± 30 %	1 · 10^{-8} - 1 hPa: ± 10 %, 20-1000 hPa: ± 30 %	1 · 10^{-8} - 1 hPa: ± 10 %, 20-1000 hPa: ± 30 %	1 · 10^{-8} - 1 hPa: ± 10 %, 20-1000 hPa: ± 30 %
Weight	475 g	475 g	475 g	475 g
Materials in contact with media	Tungsten, stainless steel, nickel, glass, ceramics	Tungsten, stainless steel, nickel, glass, ceramics	Tungsten, stainless steel, nickel, glass, ceramics	Tungsten, stainless steel, nickel, glass, ceramics
Measurement range max.	1000 hPa	1000 hPa	1000 hPa	1000 hPa
Measurement range min.	5 · 10^{-10} hPa	5 · 10^{-10} hPa	5 · 10^{-10} hPa	5 · 10^{-10} hPa
Sensor cable length max.	100 m	100 m	100 m	100 m
Method of measurement	Pirani/Bayard-Alpert	Pirani/Bayard-Alpert	Pirani/Bayard-Alpert	Pirani/Bayard-Alpert
Measuring cycle	10 ms	10 ms	10 ms	10 ms
Interface: Connection	Digital RS-485 , M12, 5-pole	Digital RS-485 ; M12, 5-pole; Analog 0-10 V; 2 SP; M12, 8-pole	Digital RS-485 , M12, 5-pole, Profibus DP, M12, 5-pole	Digital RS-485 , M12, 5-pole, DeviceNet, M12, 5-pole
Protection category	IP 54	IP 54	IP 54	IP 54
Temperature: Bakeout (electronics removed)	180 °C	180 °C	180 °C	180 °C
Temperature: Operating	+5 - +60 °C	+5 - +60 °C	+5 - +60 °C	+5 - +60 °C
Temperature: Storage	-40-+65 °C	-40-+65 °C	-40-+65 °C	-40-+65 °C
Supply: Voltage	24 V DC	24 V DC	24 V DC	24 V DC
Supply: Power consumption max.	8.0 W	8.7 W	9.5 W	8.4 W
Repeatability: % of measurement	1 · 10^{-8} - 1 · 10^{-2} hPa: ± 5%; 1 · 10^{-2} - 10 hPa: ± 2 %	1 · 10^{-8} - 1 · 10^{-2} hPa: ± 5%; 1 · 10^{-2} - 10 hPa: ± 2 %	1 · 10^{-8} - 1 · 10^{-2} hPa: ± 5%; 1 · 10^{-2} - 10 hPa: ± 2 %	1 · 10^{-8} - 1 · 10^{-2} hPa: ± 5%; 1 · 10^{-2} - 10 hPa: ± 2 %

Order number				
HPT 200, DN 40 ISO-KF	**PT R39 150**	**PT R39 151**	**PT R39 152**	**PT R39 153**

Further accessories see controller DPG 202

Technical data	HPT 200, DN 40 CF-F, RS-485	HPT 200, , DN 40 CF-F, RS-485, analog	HPT 200, DN 40 CF-F, RS-485, Profibus	HPT 200, DN 40 CF-F, RS-485, DeviceNet
Flange (in)	DN 40 CF-F	DN 40 CF-F	DN 40 CF-F	DN 40 CF-F
Number of filaments	2	2	2	2
Seal	Metal	Metal	Metal	Metal
Pressure max.	400 kPa	400 kPa	400 kPa	400 kPa
Filament	Iridium yttriated, twice	Iridium yttriated, twice	Iridium yttriated, twice	Iridium yttriated, twice
Accuracy: % of measurement	1 · 10^{-8} - 1 hPa: ± 10 %, 20-1000 hPa: ± 30 %	1 · 10^{-8} - 1 hPa: ± 10 %, 20-1000 hPa: ± 30 %	1 · 10^{-8} - 1 hPa: ± 10 %, 20-1000 hPa: ± 30 %	1 · 10^{-8} - 1 hPa: ± 10 %, 20-1000 hPa: ± 30 %
Weight	670 g	670 g	670 g	670 g
Materials in contact with media	Tungsten, stainless steel, nickel, glass, ceramics	Tungsten, stainless steel, nickel, glass, ceramics	Tungsten, stainless steel, nickel, glass, ceramics	Tungsten, stainless steel, nickel, glass, ceramics
Measurement range max.	1000 hPa	1000 hPa	1000 hPa	1000 hPa
Measurement range min.	5 · 10^{-10} hPa	5 · 10^{-10} hPa	5 · 10^{-10} hPa	5 · 10^{-10} hPa
Sensor cable length max.	100 m	100 m	100 m	100 m
Method of measurement	Pirani/Bayard-Alpert	Pirani/Bayard-Alpert	Pirani/Bayard-Alpert	Pirani/Bayard-Alpert
Measuring cycle	10 ms	10 ms	10 ms	10 ms
Interface: Connection	RS-485, D-Sub-socket, 9-pole	Digital RS-485 ; M12, 5-pole; Analog 0-10 V; 2 SP; M12, 8-pole	Digital RS-485 , M12, 5-pole, Profibus DP, M12, 5-pole	Digital RS-485 , M12, 5-pole, DeviceNet, M12, 5-pole
Protection category	IP 54	IP 54	IP 54	IP 54
Temperature: Bakeout (electronics removed)	180 °C	180 °C	180 °C	180 °C
Temperature: Operating	+5 - +60 °C	+5 - +60 °C	+5 - +60 °C	+5 - +60 °C
Temperature: Storage	-40-+65 °C	-40-+65 °C	-40-+65 °C	-40-+65 °C
Supply: Voltage	24 V DC	24 V DC	24 V DC	24 V DC
Supply: Power consumption max.	8.0 W	8.7 W	9.5 W	8.4 W
Repeatability: % of measurement	1 · 10^{-8} - 1 · 10^{-2} hPa: ± 5%; 1 · 10^{-2} - 10 hPa: ± 2 %	1 · 10^{-8} - 1 · 10^{-2} hPa: ± 5%; 1 · 10^{-2} - 10 hPa: ± 2 %	1 · 10^{-8} - 1 · 10^{-2} hPa: ± 5%; 1 · 10^{-2} - 10 hPa: ± 2 %	1 · 10^{-8} - 1 · 10^{-2} hPa: ± 5%; 1 · 10^{-2} - 10 hPa: ± 2 %

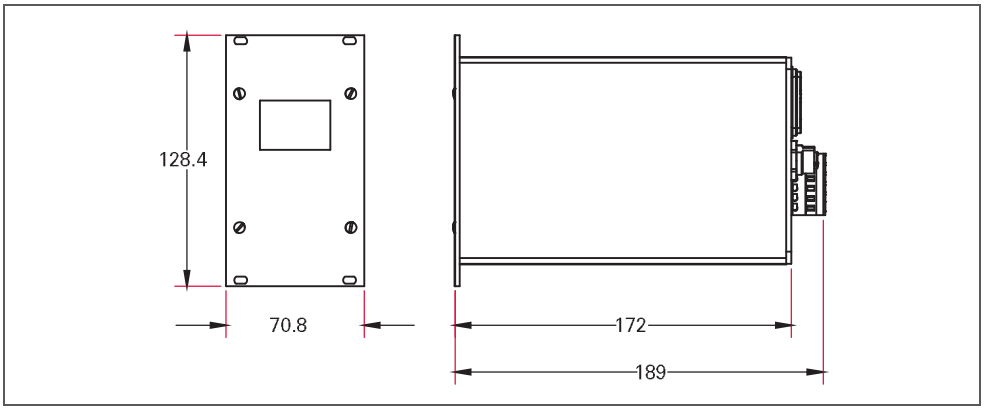
Order number				
HPT 200, DN 40 CF-F	**PT R39 350**	**PTR 39 351**	**PT R39 352**	**PT R39 353**

Further accessories see controller DPG 202

DPG 202, controller

- Simple operation
- For 2 transmitter
- Intuitive calibration
- 2 two-way contacts

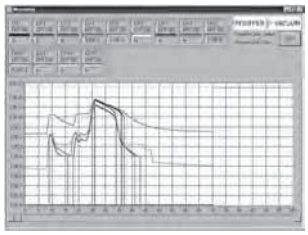
Dimensions (in mm)



Technical data	DPG 202, controller for 2 transmitter
Dimensions w x h x d	(19"-rack, 14TE/3HE) ; 71 x 128 x 178 mm
Connections for gauge	DIN M12
Display	LCD-Graphic display, backlit
Display rate	2 Hz
Weight	0.75 kg
Power consumption	max. 25 (gauges included) W
Unit of measure	mbar, bar, Pa, hPa, mTorr, Torr
Measurement rate	25 Hz
Mains requirement: frequency (range)	50/60 Hz
Mains requirement: voltage (range)	95-265 V AC
Set point: Voltage max.	250 V AC, 4 A ; 45 V DC, 2 A
Set point: Changeover contact, potential-free	2 pieces
Protection category	IP 20
Fuse	0.8 A T
Temperature: Operating	5-50 °C
Temperature: Storage	-20-+60 °C

Order number	
DPG 202, controller	**PT G12 020**

Software DokuStar



- System requirements:
- Software: Windows XP, Windows Vista, Windows 7 (requires administrator rights)
- Hardware: Pentium-PC (1000 MHz or more), 256 MB RAM (512 MB recommended), 150 MB free hard drive space, Super VGA monitor (with 1024x768 resolution), small letter adjustment), 24 Bit Tru Color, free COM or USB port, mouse
- Visualization and data storage

Technical data	Software DokuStar	Software DokuStar Plus
For	DPS 101, DPS 109 and DPG 202	DPG / DPS 109 and direct connection
Measuring channel	up to 2	up to 16
PC min.	Pentium 160 MHz	Pentium 160 MHz
RAM	64 MB	64 MB
Interface	RS-232 or USB	RS-232 or USB
Interfaces	RS-232 or USB	RS-232 or USB
Memory	15 MB free HD memory	15 MB free HD memory

Order number		
Software DokuStar	**PT 882 500**	**PT 882 501**

Further accessories

Power cords	Order number
Mains cable, US plug, 2.5 m	**P4 564 309 YX**
Mains cable, U.K. plug, 2.5 m	**P4 564 309 Y1**
Mains cable, Swiss plug, 2.5 m	**P4 564 309 YR**
Mains cable, Euro-style safety plug, 2.5 m	**P4 564 309 YU**

Interface cable	Order number
Interface cable, M12 m/M12 m, 0,7 m	**PM 061 281 -T**
Interface cable, M12 m/M12 m, 1.0 m	**PM 061 282 -T**
Interface cable, M12 m straight / M12 m straight, 3.0 m	**PM 061 283 -T**
Interface cable, M12 m/M12 m, 5.0 m	**PM 061 284 -T**
Interface cable, M12 m/M12 m, 10 m	**PM 061 285 -T**
Interface cable, M12 m/M12 m, 15 m	**PM 061 286 -T**
Interface cable, M12 m/M12 m, 20 m	**PM 061 287 -T**
Interface cable, M12 m/M12 m, 50 m	**PM 061 289 -T**

Further accessories	Order number
Connector M12 to RS-485	**PM 061 270 -X**
Plug-in bus termination for RS-485, M12 5-pole	**PT 348 105-T**
Y-Connector M12 to RS-485	**P 4723 010**
USB converter to RS-485 interface	**PM 061 207 -T**
Adapter M12/M12 (only RS-485, no power)	**PM 348 132 -T**
Gauge adapting cable RS-485, D-Sub 9-pole/M12 5-pole	**PT 348 131 -T**
Connection cable, RS-485, M12/D-sub 9-pole, 3.0 m	**PT 348 223 -T**