

2.3.3 Gel and Referid® electrodes

Gel and Referid® electrodes are suitable for measurement e.g. in chemical processes, dyes, detergents and many water applications.

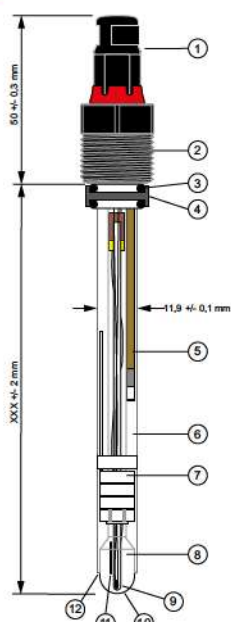
With annular gap or ceramic junctions, gel or Referid electrolyte, these electrodes also meet the application requirements and feature high quality, reliability and a long sensor life.

ATEX sensors in the SI Analytics program

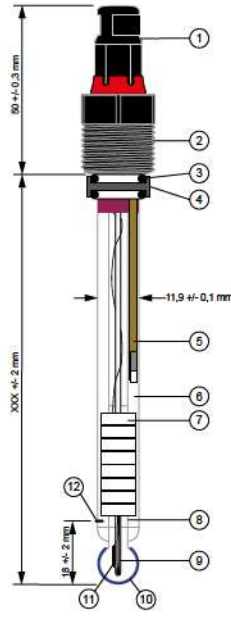
You can select from a large range of process sensors as per the ATEX directive 94/9/EG. The approval of these ATEX sensors was conducted with PTB in Braunschweig and documented by means of the type examination certificate PTB 08ATEX2021. ATEX sensors are certified as per the device group II for zones 0 and 1 with gaseous atmospheres. They are classified as intrinsically safe as per spark protection type "ia" and can be used in the most common temperature classes.

No.	Description H 8281-xxx NMSN
1	Screw plug head with Memosens® connection (Alternatively, analog electrodes with VP or cone plug head (for versions without integrated temperature sensor))
2	Screw-in thread Pg 13.5 (material PPS)
3	O-Ring 11-2.5 (material Viton®)
4	HD joint ring 18.8/12.7/6.5 (Material stainless steel 1.4571)
5	Reference element (Silenti®)
6	Referid®-Polymer electrolyte (KCl saturated) of the reference electrode
7	KCl storage tablets of the reference electrode
8	Inner buffer of the pH glass electrode
9	Temperature sensor (NTC 30 kOhm)
10	Glass membrane (H-glass)
11	Internal conduction element of the pH glass electrode
12	Junction (KPG® annular gap)

H8281-xxx NMSN



A7781-xxx NMSN



Electrodes with Memosens® plug head

Our Memosens® program contains pH and ORP electrodes. These sensors are compatible with all Memosens® transmitters and meters available on the market.

What is the difference between Memosens® and other plug systems?

- Memosens® is a digital plug system.
- The sensor data is stored in the measuring head.
- The measuring signals are digitalized and transmitted inductively, i.e. contact-free.
- Absolutely waterproof and resistant against environmental influences.

Which advantages does Memosens® offer?

- Memosens® is an open system, i.e. it is supported by different manufacturers.
- High process safety.
- Preventive maintenance.
- Perfect galvanized separation.

No.	Description A 7781-xxx NMSN
1	Screw plug head with Memosens® connection (Alternatively, analog electrodes with VP or cone plug head (for versions without integrated temperature sensor))
2	Screw-in thread Pg 13.5 (material PPS)
3	O-Ring 11-2.5 (material Viton®)
4	HD joint ring 18.8/12.7/6.5 (Material stainless steel 1.4571)
5	Reference element (Silenti®)
6	Gel electrolyte (KCl saturated) of the reference electrode
7	KCl storage tablets of the reference electrode
8	Inner buffer of the pH glass electrode
9	Temperature sensor (NTC 30 kOhm)
10	Glass membrane (A-glass)
11	Internal conduction element of the pH glass electrode
12	Junction (3 x ceramic)

Note:

All low maintenance Memosens® electrodes are approved as per the ATEX directive 94/9/EG. The testing took place at the EXAM in Bochum and was documented by means of the type examination certificate BVS 12 ATEX E 037 x.

Gel and Referid® electrodes

Type No.	Order number	Description	Parameter	pH range	Temperature range [°C]	Pressure range (bar)
A 7781 HD	285118130	Low maintenance, glass shaft, 3 x ceramic junction, gel electrolyte, Silenti®-reference system, sphere membrane, Ag-glass, length 120 mm, 12 mm Ø, 5...+80 °C, 0...14 pH	pH	0.14	-5...80	1..12
A 7781-225 HD	285114760	Low maintenance, glass shaft, 3 x ceramic junction, gel electrolyte, Silenti®-reference system, sphere membrane, Ag-glass, length 225 mm, 12 mm Ø, 5...+80 °C, 0...14 pH	pH	0.14	-5...80	1..12
A 7781-T1000 VP HD	285114790	Low maintenance with Pt 1000, glass shaft, 3 x ceramic junction, gel electrolyte, Silenti®-reference system, sphere membrane, Ag-glass, VP screw plug head, length 120 mm, 12 mm Ø, 5...+80 °C, 0...14 pH	pH + T	0.14	-5...80	1..12
A 7771-T1000VP	285114800	Low maintenance with Pt 1000, glass shaft, 3 x ceramic junction, gel electrolyte, Silenti®-reference system, sphere membrane, Ag-glass, VP screw plug head, length 120 mm, 12 mm Ø, 5...+80 °C, 0...14 pH	pH + T	0.14	-5...80	1..12
A 7781-120 NMSN	285114765	Low maintenance pH combination electrode with NTC 30k, glass shaft, 3 x ceramic junction, gel electrolyte, Silenti®-reference system, sphere membrane, Ag-glass, Memosens® screw plug head, length 120 mm, 12 mm Ø, 5...+80 °C, 0...14 pH	pH + T	0.14	-5...80	1..12
A 7781-225 NMSN	285114770	Low maintenance pH combination electrode with NTC 30k, glass shaft, 3 x ceramic junction, gel electrolyte, Silenti®-reference system, sphere membrane, Ag-glass, Memosens® screw plug head, length 225 mm, 12 mm Ø, 5...+80 °C, 0...14 pH	pH + T	0.14	-5...80	1..12
AgS 8281 HD	285118836	Low maintenance, glass shaft, KPG annular gap junction, Referid®-electrolyte, Silenti®-reference system, sensor silver pin 2 mm Ø, sulphurized, screw plug head, length 120 mm, 12 mm Ø, 5...+100 °C	ORP	n.a.	-5...100	1..12
H 7381 HD	285090077	Low maintenance, glass shaft, triple ceramic junction, gel electrolyte, Silenti®-reference system, cylinder membrane, H-glass, length 120 mm, 12 mm Ø, 5...+100 °C, 2...13 pH	pH	2..13	-5...100	1..12
H 7381-120 T1000 VP	285090155	Low maintenance, with temp-sensor Pt 1000, glass shaft, triple ceramic junction, gel electrolyte, Silenti®-reference system, cylinder membrane, H-glass, VP screw plug head, length 120 mm, 12 mm Ø, 5...+100 °C, 2...13 pH	pH + T	2..13	-5...100	1..12
H 7381-425 T1000 VP	285130215	Low maintenance, with temp-sensor Pt 1000, glass shaft, triple ceramic junction, gel electrolyte, Silenti®-reference system, cylinder membrane, H-glass, VP screw plug head, length 425 mm, 12 mm Ø, 5...+100 °C, 2...13 pH	pH + T	2..13	-5...100	1..12
H 8181 HD	285110007	Low maintenance, glass shaft, KPG annular gap junction, Referid®-electrolyte, Silenti®-reference system, dome membrane, H-glass, plug head, length 170 mm, 12 mm Ø, 5...+100 °C, 2...13 pH	pH	2..13	0..100	1..12
H 8281 HD	285110115	Low maintenance, glass shaft, KPG annular gap junction, Referid®-electrolyte, Silenti®-reference system, dome membrane, H-glass, plug head, length 120 mm, 12 mm Ø, 5...+100 °C, 2...13 pH	pH	2..13	0..100	1..12
H 8281-120 T1000 VP	285094780	Low maintenance, with temperature sensor Pt 1000, glass shaft, KPG annular gap junction, Referid®-electrolyte, Silenti®-reference system, dome membrane, H-glass, VP plug head, length 120 mm, 12 mm Ø, 5...+100 °C, 2...13 pH	pH + T	2..13	0..100	1..12

Membrane glass or sensor	Membrane resistance [MΩ]	Zero-point [pH]	Junction	Electrolyte	Shaft material	Shaft diameter [mm]	Length [mm]	Temperature sensor	Connection head
A	200	7	3 ceramic	gel	glass	12	120		S8
A	200	7	3 ceramic	gel	glass	12	225		S8
A	200	7	3 ceramic	gel	glass	12	120	Pt1000	VP
A	200	4.6	3 ceramic	gel	glass	12	120	Pt100	VP
A	200	7	3 ceramic	gel	glass	12	120	NTC30	Memosens®
A	200	7	3 ceramic	gel	glass	12	225	NTC30	Memosens®
n.a.	n.a.	n.a.	KPG annular gap	Referid	glass	12	120		S8
H	300	7	3 ceramic	gel	glass	12	120		S8
H	300	7	3 ceramic	gel	glass	12	120	Pt1000	VP
H	300	7	3 ceramic	gel	glass	12	425	Pt1000	VP
H	400	7	KPG annular gap	Referid	glass	12	170		S8
H	400	7	KPG annular gap	Referid	glass	12	120		S8
H	400	7	KPG annular gap	Referid	glass	12	120	Pt1000	VP

Gel and Referid® electrodes

Type No.	Order number	Description	Parameter	pH range	Temperature range [°C]	Pressure range [bar]
H 8281-120 NMSN	285111020	Low maintenance pH combination electrode, glass shaft, KPG annular gap junction, Referid®-electrolyte, Silamid®-reference system, dome membrane, H-glass, Memosens® screw plug head, length 120 mm, 12 mm Ø, 0...+100 °C, 2...13 pH	pH + T	2...13	0...100	1...12
H 8281-225 NMSN	285111040	Low maintenance pH combination electrode, glass shaft, KPG annular gap junction, Referid®-electrolyte, Silamid®-reference system, dome membrane, H-glass, Memosens® screw plug head, length 225 mm, 12 mm Ø, 0...+100 °C, 2...13 pH	pH + T	2...13	0...100	1...12
H 8281-325 NMSN	285111050	Low maintenance pH combination electrode, glass shaft, KPG annular gap junction, Referid®-electrolyte, Silamid®-reference system, dome membrane, H-glass, Memosens® screw plug head, length 325 mm, 12 mm Ø, 0...+100 °C, 2...13 pH	pH + T	2...13	0...100	1...12
H 8281-360 NMSN	285111030	Low maintenance pH combination electrode, glass shaft, KPG annular gap junction, Referid®-electrolyte, Silamid®-reference system, dome membrane, H-glass, Memosens® screw plug head, length 360 mm, 12 mm Ø, 0...+100 °C, 2...13 pH	pH + T	2...13	0...100	1...12
H 8281-425 NMSN	285111060	Low maintenance pH combination electrode, glass shaft, KPG annular gap junction, Referid®-electrolyte, Silamid®-reference system, dome membrane, H-glass, Memosens® screw plug head, length 425 mm, 12 mm Ø, 0...+100 °C, 2...13 pH	pH + T	2...13	0...100	1...12
H 8381 HD	285111023	Low maintenance, glass shaft, KPG annular gap junction, Referid®-electrolyte, Silamid®-reference system, dome membrane, H-glass, length 320 mm, 12 mm Ø, 0...+100 °C, 2...13 pH	pH	2...13	0...100	1...12
H 8481 HD	285111072	Low maintenance, glass shaft, KPG annular gap junction, Referid®-electrolyte, Silamid®-reference system, dome membrane, H-glass, plug head, length 225 mm, 12 mm Ø, 0...+100 °C, 2...13 pH	pH	2...13	0...100	1...12
L 7761 HD	285110808	Low maintenance, glass shaft, ceramic junction, gel electrolyte, Silamid®-reference system, sphere membrane, A-glass, length 120 mm, 12 mm Ø, -5...+80 °C, 2...12 pH	pH	2...12	-5...80	1...12
L 8281 HD	285111418	Low maintenance, glass shaft, KPG annular gap junction, Referid®-electrolyte, Silamid®-reference system, dome membrane, A-glass, plug head, length 120 mm, 12 mm Ø, -5...+80 °C, 2...12 pH	pH	2...12	-5...80	1...12
Pl 7781 HD	285110754	Low maintenance, glass shaft, ceramic junction, gel electrolyte, Ag/AgCl-reference system, sensor platinum pin 1 mm Ø, screw plug head, length 120 mm, 12 mm Ø, -5...+60 °C	ORP	n.a.	-5...60	1...12
Pl 7781-225 HD	285108000	Low maintenance, glass shaft, ceramic junction, gel electrolyte, Ag/AgCl-reference system, sensor platinum pin 1 mm Ø, screw plug head, length 225 mm, 12 mm Ø, -5...+60 °C	ORP	n.a.	-5...60	1...12
Pl 8281 HD	285112414	Low maintenance ORP-combination electrode, glass shaft, KPG annular gap junction, Referid®-electrolyte, Silamid®-reference system, sensor platinum disk 6 mm Ø, screw plug head, length 120 mm, 12 mm Ø, -5...+100 °C	ORP	n.a.	-5...100	1...12
Pl 8281-120 NMSN	285111070	Low maintenance ORP-combination electrode with NTC 30K, glass shaft, KPG annular gap junction, Referid®-electrolyte, Silamid®-reference system, sensor platinum disk 6 mm Ø, Memosens® screw plug head, length 120 mm, 12 mm Ø, -5...+100 °C	ORP + T	n.a.	-5...100	1...12
Pl 8281-225 NMSN	285111110	Low maintenance ORP-combination electrode with NTC 30K, glass shaft, KPG annular gap junction, Referid®-electrolyte, Silamid®-reference system, sensor platinum disk 6 mm Ø, Memosens® screw plug head, length 225 mm, 12 mm Ø, -5...+100 °C	ORP + T	n.a.	-5...100	1...12