

# pH combination electrodes with liquid electrolyte and screw plug head

	H 6181 HD	H 6281	H 6381	H 6481	H 6191 HD	H 6291	H 6391	S 6181 HD
membrane glass	H	H	H	H	H	H	H	S
membrane resistance (25°C) [MΩ]	300	300	300	300	300	300	300	400
temperature range [°C]	0...135	0...135	0...135	0...135	0...135	0...135	0...135	10...135
pH range [°C]	0...14	0...14	0...14	0...14	0...14	0...14	0...14	2...14
pressure range p/Δp [bar]	10/3	6/3	6/3	6/3	10/3	6/3	6/3	10/3
length L [mm]	170	120	320	170	170	120	320	170
diaphragm	ceramic	•	•	•				•
	platinum				•	•	•	
	ground joint			•				
certified press. and temp. consistency <sup>1)</sup>	•				•			•
design corresponding illustration	A	A	A	B	A	A	A	A

<sup>1)</sup> These types are supplied in series with Works Certificate 2.1 according to DIN EN 10204 regarding resistance to pressure and temperature.



	S 6281	S 6381	S 6481	S 6191 HD	S 6291	S 6391	L 6191
membrane glass	S	S	S	S	S	S	L
membrane resistance (25°C) [MΩ]	400	400	400	400	400	400	30
temperature range [°C]	10...135	10...135	10...135	10...135	10...135	10...135	-30...+80
pH range [°C]	2...14	2...14	2...14	2...14	2...14	2...14	0...12
pressure range p/Δp [bar]	6/3	6/3	6/3	10/3	6/3	6/3	6/3
length L [mm]	120	320	170	170	120	320	170
diaphragm	•	•					
				•	•	•	• (triple)
			•				
certified press. and temp. consistency <sup>1)</sup>				•			
design corresponding illustration	A	A	B	A	A	A	A

pH combination electrodes with liquid electrolyte and screw plug head  
For high sophisticated pH measurements in chemical processes.

#### Electrolyte:

▶ 3 mol/l KCl (Type L 300), refillable  
except L 6191: low temperature electrolyte  
type L 200

#### Zero point:

▶ pH = 7.0

#### Shaft diameter:

▶ 12 mm

#### Connection:

▶ screw plug head coaxial  
with thread Pg 13.5

The use of these electrodes is chiefly intended in combination with the miniature pressure probe assembly 9921/51 HD and suitable pressure hose type 9961/09. This assembly reduces the stated installation length by 50 mm. The side support with screw fitting serves for application of counter pressure.

#### Supply:

▶ HD version: HD sealing type 9980/51  
▶ standard: washer 9980/52,  
O-ring type 9932/07

#### Connecting cable:

▶ e.g. type 9902/05 (length 5 m with free end)  
For additional connecting cables, see under  
Accessories on page 50.

#### Note:

▶ at temperatures above 100 °C sufficient over-pressure must counteract the boiling of the reference electrolyte, e.g. 3.2 bar at 135 °C.

# pH combination electrodes with liquid electrolyte and hose olive

	L 9080	L 9180	L 9090	H 9080	H 9180	H 9090	S 9080
membrane glass	L	L	L	H	H	H	S
membrane resistance (25°C) [MΩ]	30	30	30	300	300	300	400
temperature range [°C]	-30...+80	-30...+80	-30...+80	0...135	0...135	0...135	10...135
pH range	0...12	0...12	0...12	0...14	0...14	0...14	2...14
pressure range p/Δp [bar]	6/3	6/3	6/3	6/3	6/3	6/3	6/3
length L [mm]	120	120	120	120	120	120	120
diaphragm	ceramic	● (triple)		●			●
	platinum		●			●	
	ground joint	●			●		
design corresponding illustration	A	B	A	A	B	A	A

S 9180	S 9090
S	S
400	400
10...135	10...135
2...14	2...14
6/3	6/3
120	120
	●
●	
B	A

pH combination electrodes with liquid electrolyte and hose olive  
For high sophisticated pH measurements in chemical processes.

**Electrolyte:**

▶ 3 mol/l KCl (type L 300), refillable – except L 9080, L 9180, L 9090: low temperature electrolyte type L 200

**Zero point:**

▶ pH = 7.0

**Shaft diameter:**

▶ 12 mm

**Connection:**

▶ plug head coaxial

**Design:**

- ▶ refilling opening as hose olive
- ▶ shaft constriction

**Supply:**

- ▶ pressure screw type 9980/55 with thread Pg 13.5
- ▶ washer 9980/52
- ▶ O-ring type 9932/06

**Connecting cable:**

▶ e.g. type 9902/05 (length 5 m with free end)

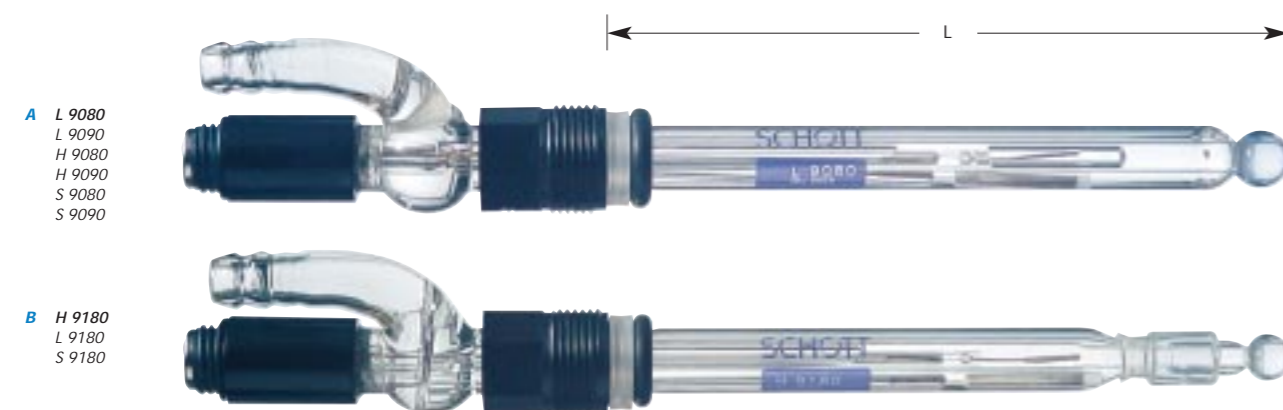
For additional connecting cables, see under Accessories on page 50.

**Note:**

▶ at temperatures above 100 °C sufficient overpressure must counteract the boiling of the reference electrolyte, e.g. 3.2 bar at 135 °C

The use of these electrodes is effected usually with electrolyte reservoir (e.g. type 9955/00).

This vessel is connected by means of silicone tube (e.g. type 9980/00) with the electrode.



**A** L 9080  
L 9090  
H 9080  
H 9090  
S 9080  
S 9090

**B** H 9180  
L 9180  
S 9180

## pH combination electrodes with liquid electrolyte

	9582/85	9583/85	9582/95	9182/85	9183/85	9182/95
membrane glass	H	H	H	S	S	S
membrane resistance (25°C) [MΩ]	300	300	300	400	400	400
temperature range [°C]	0...135	0...135	0...135	10...135	10...135	10...135
pH range	0...14	0...14	0...14	2...14	2...14	2...14
pressure range p/Δp [bar]	6/3	6/3	6/3	6/3	6/3	6/3
length L [mm]	120	120	120	120	120	120
diaphragm	ceramic					
	platinum					
	ground joint					
design corresponding illustration	A	B	A	A	B	A



pH combination electrodes with liquid electrolyte  
 For high sophisticated pH measurements in chemical processes. Specially for installation in immersion probe assembly.

**Electrolyte:**  
 ▶ 3 mol/l KCl (type L 300), refillable  
**Zero point:**  
 ▶ pH = 7.0

**Shaft diameter:**  
 ▶ 12 mm  
**Design:**  
 ▶ refilling opening, double, at the side  
 ▶ shaft constriction and fixed cable 5 m  
**Note:**  
 ▶ at temperatures above 100 °C sufficient overpressure must counteract the boiling of the reference electrolyte, e.g. 3.2 bar at 135 °C

## Low maintenance pH combination electrodes

	L 7781	L 8281 HD	H 8181 HD	H 8281 HD	H 8381	H 8481 HD
membrane glass	L	L	H	H	H	H
membrane resistance (25°C) [MΩ]	30	50	400	400	400	400
temperature range [°C]	-5...+80	-5...+80	0...100	0...100	0...100	0...100
pH range	2...12	2...12	2...13	2...13	2...13	2...13
pressure range p/Δp [bar]	0,5	10	10	10	10	10
length L [mm]	120	120	170	120	360	225
electrolyte	gel	Referid®	Referid®	Referid®	Referid®	Referid®
diaphragm	ceramic					
	KPG® annular gap					
certified pressure and temperature consistency <sup>1)</sup>						
design corresponding illustration	A	B	B	B	B	B

<sup>1)</sup> These types are supplied in series with Works Certificate 2.1 according to DIN EN 10204 regarding resistance to pressure and temperature.



Low-maintenance pH combination electrodes  
 For uncomplicated pH measurement in the water industry and for process chemistry.

**Electrolyte:**  
 ▶ gel with visible KCl reserves, not refillable  
 ▶ Referid® (polymer with visible KCl reserves), not refillable  
**Zero point:**  
 ▶ pH = 7.0

**Shaft diameter:**  
 ▶ 12 mm  
**Connection:**  
 ▶ screw plug head coaxial with thread Pg 13.5  
**Supply:**  
 ▶ HD version: HD sealing type 9980/51  
 ▶ standard: washer 9980/52, O-ring type 9932/07  
**Connecting cable:**  
 ▶ e.g. type 9902/05 (length 5 m with free end)  
 For additional connecting cables, see under Accessories on page 50.