



General Catalogue Electrochemistry



From Tradition to Innovation

More than 125 years ago, in 1880, the English watchmaker William Ainsworth founded the company Denver Instrument in the USA. In 2002 we set the new course and started Denver Instrument GmbH in Göttingen.

Proper market observations and a high degree of innovation, results in a product portfolio which offers the right pH-meter for every demand in the field of laboratory application. It goes without saying that different customer demands have been taken into consideration so that we can divide our product spectrum into three different lines:

- Basic:** Portable and Easy-to-use instruments for simple determination of pH and Conductivity in the field and in the laboratory.
- Standard:** Safe and documented measurements of pH-values in the routine analysis in the Laboratory.
- Professional:** pH, mV, Conductivity or Ion-selective – the instruments of the professional line fulfil all demands for measurement and documentation.

Denver Instrument employs 160 people worldwide and has offices on three continents. The majority of the products are manufactured in Germany.





Colorado – Basic technology for measurements at any location

The models of the Colorado line can be used at any location due to battery operation and the compact size. The reliable electronics, sturdy structure and simple handling guarantees the user exact and reliable measuring results at every working place. The DENVER Colorado line offers precision, reliability and quality in measuring pH, mV and conductivity.



- Sturdy construction
- Huge display
- Easy handling
- Good price/performance ratio
- pH-electrode with integrated temperature sensor
- Battery included
- Conductivity cell with integrated temperature sensor
- IP-65 protected

Specification for Colorado Serie

Model	DN2101 pH/mV/Temp.
pH-range	-2.00–16.00
pH-resolution	0.01
pH-accuracy	0.01 pH
mV-range	-1999–1999
mV-resolution	1
mV-accuracy	1
Temperature range	-5.0–90.0°C
Temperature resolution	0.1°C
Temperature accuracy	0.5°C
Calibration	1–2–3 Point

Common Specs

Weight 310 g
Dimensions (LxWxH) 205 x 80 x 30 mm

CR-Meters are available in four versions:

- DN2101** includes pH-Meter and Battery.
- DN2101P** includes pH-Meter, batteries and pH-Combination electrode 301560-1 pH/Temp.
- DN2102** includes Conductivity Meter and Battery.
- DN2102P** includes Conductivity Meter, Battery and Cond. Combination cell PY-CL1 Cond/Temp.

Model	DN2102 Conductivity/Temp.
Cond. range	0.1 µS/cm–20.0 mS/cm
Resolution	1 µS/cm
Accuracy	10 µS/cm at cell constant K=1
TDS	0.0 mg/L–100.0 mg/L
Resolution	0.1 mg/L
Accuracy	1 mg/L
Salinity	1 to 70 ppt NaCl equivalent Salinity
Resolution	0.1 ppt
Temperature range	-5.0–90.0°C
Temperature resolution	0.1°C
Temperature accuracy	0.5°C
Temp. coefficient	10 to 4%/°C

Common Specs

Weight 310 g
Dimensions (LxWxH) 205 x 80 x 30 mm



The Ultra Basic pH-meter for laboratory analysis

The automatic buffer recognition in the UB range identifies the correct buffer and starts the automatic calibration of the meter – just by pressing a button. The UB range set includes a stand for the electrodes for a higher level of user comfort and a compact working place.



- Simple one button standardization
- Automatic temperature compensation
- Auto-buffer recognition from 3 sets of 16 buffers
- Easy-to-recall slope values from standardization
- Icons show meter status
- Simultaneous pH or mV and temperature displayed

Specification for UB-Meter

Model	DN2202 pH/mV/Temp.
pH-range	0.00–14.00
pH-resolution	0.01
pH-accuracy	0.005 pH
mV-range	-1800.00–1800.0
mV-resolution	0.1
mV-accuracy	0.2 mV or 0.05%
Temperature range	0.00–100.0 °C
	0.00–100.0 °C
Temperature resolution	0.1 °C
Temperature accuracy	0.2 °C
Calibration	1 – 2 – 3 Point

Common Specification

Weight 270 gr

Dimensions (LxWxH) 229x121x79 mm

The UB-Meters are available in 4 versions:

DN2202A includes meter and power supply

DN2202P includes meter, pH-Combination electrode 301423-1, base plate with arm 300401-1 and power supply.

DN2202P Deluxe Kit includes meter, pH/ATC-Combination electrode 300728-1, base plate with arm 300401-1 and power supply.

DN2202P Deluxe Bio-Kit includes meter, pH/ATC-Combination electrode 300729-1, base plate with arm 300401-1 and power supply.



The Meridian – the new Standard pH-meter for the Laboratory

The new Meridian Meter from Denver Instrument with the new Docu-clip is monitoring the pH-electrodes in compliance with GLP/GMP and ISO-standards. The innovative GLP-clip from Denver Instrument stores and displays the data from the last four calibrations as well as the initial calibration for the given electrode. Available data includes: time, date, model, meter and electrode serial number, slope efficiency, pH/mV-readings, mV-offset and calibration history.



- Clear Graphic display
- Simple menu navigation
- Easy 1 – 2 – 3 – Standardization
- Automatic buffer recognition, temperature compensation and automatic electrode test
- Calibration reminder
- Data logging of up to 500 results
- RS-232 Interface

Specification for MR-Meter

Model	DN2401 pH/mV/Temp.
pH-range	-2.000–+20.000
pH-resolution	0.001/0,01/0.1 pH
pH-accuracy	0.005 pH
mV-range	-2000.0–+2000.0
mV-resolution	0.1
mV-accuracy	± 0.2 < 1000 ± 1 > 1000
Temperature range	-5–105°C
Temperature resolution	0.1°C
Temperature accuracy	0.2°C

Common specs

Weight 1000 g
Dimension (LxWxH) 229x145x85 mm

The MR-Meters are available in 3 versions:

DN2401 includes meter and power supply.

DN2401P Deluxe Kit includes meter, pH/ATC-Combination electrode 300728-1, base plate and arm 300401-1 and power supply.

DN2401B Deluxe Bio-Kit includes meter, pH/ATC-Combination electrode 300729-1, base plate and arm 300401-1 and power supply.



The 200 series – the professional line of Denver pH-meters

The Denver 200-series offers a number of advanced features. The lines range from a pH/mV-instrument up to a pH/mV/ISE/conductivity combination meter. The 200-series offers the right instrument for all your measurements.



- Huge, backlit multifunctional graphic display
- Automatic temperature compensation
- Menu navigation with cleartext guidance
- Automatic buffer recognition of 26 Standard buffers according to NIST and DIN
- Calibration reminder
- Flexible Stability indicator
- Help function and clear error messages
- Graphical display of calibration curves
- Multi-channel measurements
- High reliability and reproducibility of measuring results
- GLP-GMP-ISO-conforming documentation of calibration data and results
- RS-232 interface

The models:

DN2301 pH-meter for measurements of pH and redox potential. High resolution guarantees a high accuracy of the analyses

DN2302 Additional to the pH-mode the 220 offers the determination of conductivity on a high level. Measuring Modes: pH, mV, relative mV, conductivity, Salinity, TDS, NaCl, electrical resistance

DN2303 ION-selective analysis is possible with the pH-225, as well as the already mentioned pH mode of the 215. Displays units in %, ppt, mg/l, µg/l and mol/l

DN2304 The pH-250 is the combination of all the instruments and so the all-rounder for the laboratory.



Specifications/Ordering information for 200 Series

Modes	pH	mV	Temperature
Range	-2,000 to 20,000	± 2400.0	- 5.0 bis 105.0 °C
Resolution	0.001/0.01/0.1	0.1/1	0.1
Accuracy	± 0.001 pH	± 0.05 mV	± 0.1 °C
Temp. Compensation	automatic and manual: -5 to 105 °C		
Slope control	automatic, 90 to 105 %; manual, 80 to 110%		
Environment	15-40 °C, from 0-90% relative humidity		
Ion Mode	(Models 225/250)		
Range	1.00 x 10 ₉ to 9.99 x 10 ₉		
Resolution	1, 2, 3 digits		
Relative accuracy	± 0.09 n%		
Conductivity	(Models 220/250)		
Conductivity range	0 to 300,000 µs/cm (depending on cell constant)		
Relative accuracy	0.5% of reading		
Salinity ranges	Autoranging, 0.01 to 70 ppt NaCl equivalent salinity Autoranging, 0.01 to 42 ppt practical salinity		
Total dissolved Solids (TDS)	0.005 to 1.5 x 10 ₅ mg/L		
Temperature coefficient	Software configurable; Off or On, 0 to 4%/°C		

Common Specs

Weight 2000 g

Dimensions (LxWxH) 200x265x100 mm

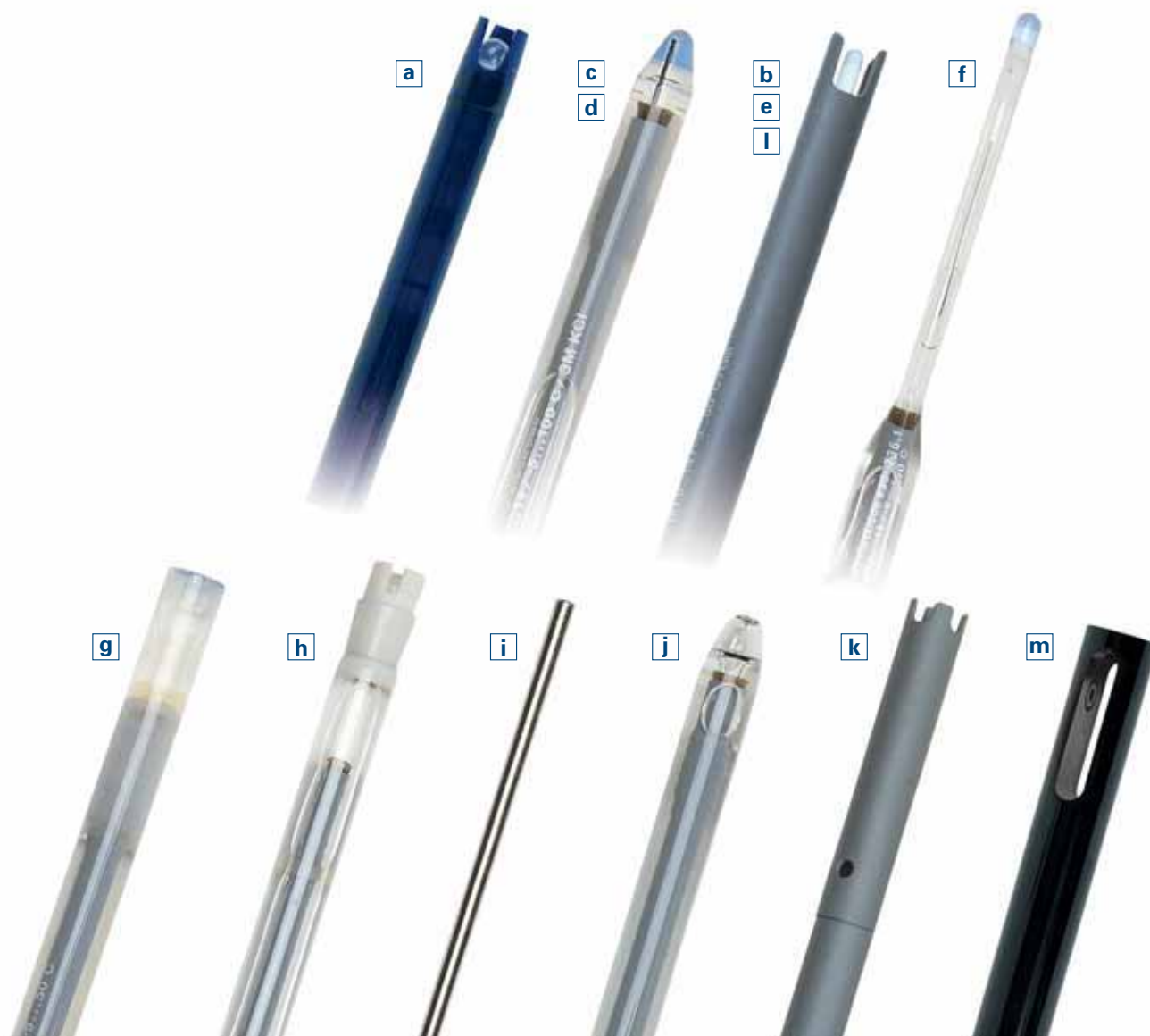
Meter kit includes: Meter, high performance glass electrode 300729-1, electrode arm 300401-1 and power supply.



Electrodes

Picture pH-Electrodes

a	301560-1 pH/ATC, plastic body, gel filled, fibre junction, pH 0–14, temperature range -5–80°C, BNC
a	301423-1 pH, plastic body, gel filled, fibre junction, pH 0–14, temperature range -5–80°C, BNC
b	300728-1 pH/ATC, plastic body, liquid filled, fibre junction, pH 0–14, temperature range -5–80°C, BNC
c	300729-1 pH/ATC, glass body, liquid filled, Platinum junction, pH 0–14, temperature range -5–100°C, BNC
d	300731-1 pH, glass body, liquid filled, Platinum junction, pH 0–14, temperature range -5–100°C, BNC
e	300735-1 pH, plastic body, gel filled, fibre junction, pH 0–14, temperature range -5–80°C, BNC
f	300736-1 pH, Micro electrode 5mm, liquid filled, platinum junction, 5 mm diameter
g	300737-1 pH, flat surface membrane, gel filled, pH 2–13, temperature range -5–50°C
h	300738-1 pH, sleeve junction, liquid filled, pH 0–14, temperature range -5–100°C
i	300733-1, Temperature sensor
j	300746-1, Redox Electrode, liquid filled, ceramic junction, BNC





Electrodes

Model, type Application	Drinking water	Waste water	Soft drinks	Juice	Distilled. Water	Yoghurt	Industrial pure water	Skin	Galvanic	Low Volumes
301560-1 pH/ATC, plastic body, gel filled		o	o						o	
301423-1 pH, plastic body, gel filled		o	o						o	
300728-1 pH/ATC, plastic body, gel filled		o	o						o	
300729-1 pH/ATC, glass body, liquid filled	o	o	o	o		o			o	
300731-1 pH, glass body, liquid filled	o	o	o	o		o			o	
300735-1 pH, plastic body, gel filled		o							o	
300736-1 pH, Micro electrode 5 mm, liquid filled										o
300737-1 pH, flat surface membrane, gel filled								o		
300738-1 pH, Sleeve junction, liquid filled	o		o	o	o	o	o			

Conductivity cells

Picture	Model	Description
k	301046-1	Four band Glass/Platinum, Cell constant 0.5 cm ⁻¹ Measuring range 0.5 μS/cm – 2000 μS/cm, built-in ATC, 0°C–60°C
k	301047-1	Four band Glass/Platinum, Cell constant 1.0 cm ⁻¹ Measuring range 10 μS/cm – 5000 μS/cm, built-in ATC, 0°C–60°C
k	301048-1	Four band Glass/Platinum, Cell constant 10 cm ⁻¹ Measuring range 1 μS/cm – 200 μS/cm, built-in ATC, 0°C–60°C
l	301058	pH/Conductivity/ATC Combi sensor, 2-pol. Cell (Platinum), Cell constant 1,0 cm ⁻¹ Measuring range 0.01 μS/cm – 5 μS/cm, pH-electrode with Gel-reference electrode, 0°C–60°C
m	VT-CTP-05	Four band Epoxid/Graphite, Cell constant 0.475 cm ⁻¹ , huge Measuring range, 1 μS/cm – 300 μS/cm, built-in ATC, 0°C–60°C
	PY-CL1	Two band Epoxy/Graphite, cell constant ca. 1 cm ⁻¹

Ion-selective Electrodes

Model	Ion	Filling solution	Type of electrode	Measuring range in ppm	Temperature- range
300739-1	Fluoride	KNO3	Solid body electrode	0.05–500	0–80°C
300740-1	Ammonia	NH4Cl	Epoxy body electrode	0.02–17,000	0–40°C
300741-1	Sodium	NH4Cl	Glas membran-electrode	0.02–saturated solution	0–80°C
300742-1	Chloride	KNO3	Solid body-electrode	1.8–35,500	0–60°C
300743-1	Nitrate	(NH4)2SO4	Solvent polymer electrode	0.4–62,000	0–40°C
300744-1	Potassium	NaCl	Solvent polymer electrode	0.04–39,000	0–40°C
300745-1	Calcium	KCl	Solvent polymer electrode	0.2–40,000	0–40°C
300762-1	Silver/Sulphide	KNO3	Solid body electrode	0.003–32,000 S2- 0.01–108,000 Ag+	0–80°C

