PURE WATER CONDUCTIVITY MEASUREMENTS

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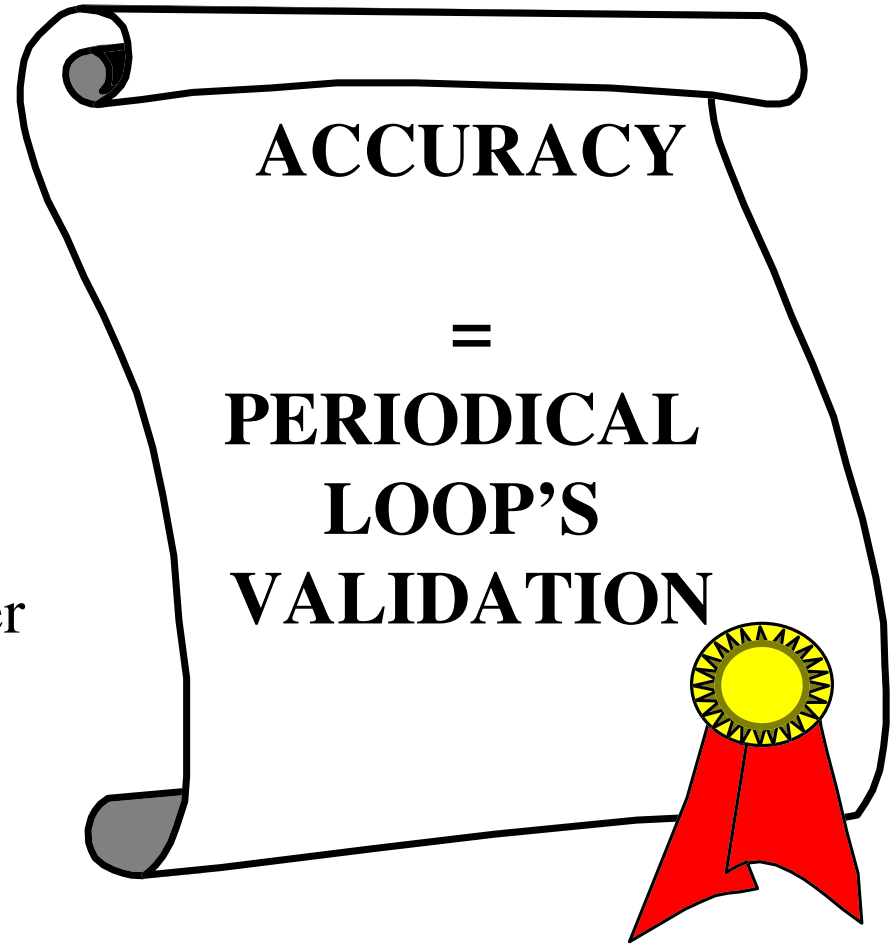
APPLICATIONS

QUALITY PERFORMANCE

- demineralisation plants
- boiler feed water
- condensates
- microelectronics rinse water
- pharmaceutical process water

REQUIREMENTS



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PURE WATER CONDUCTIVITY MEASUREMENTS

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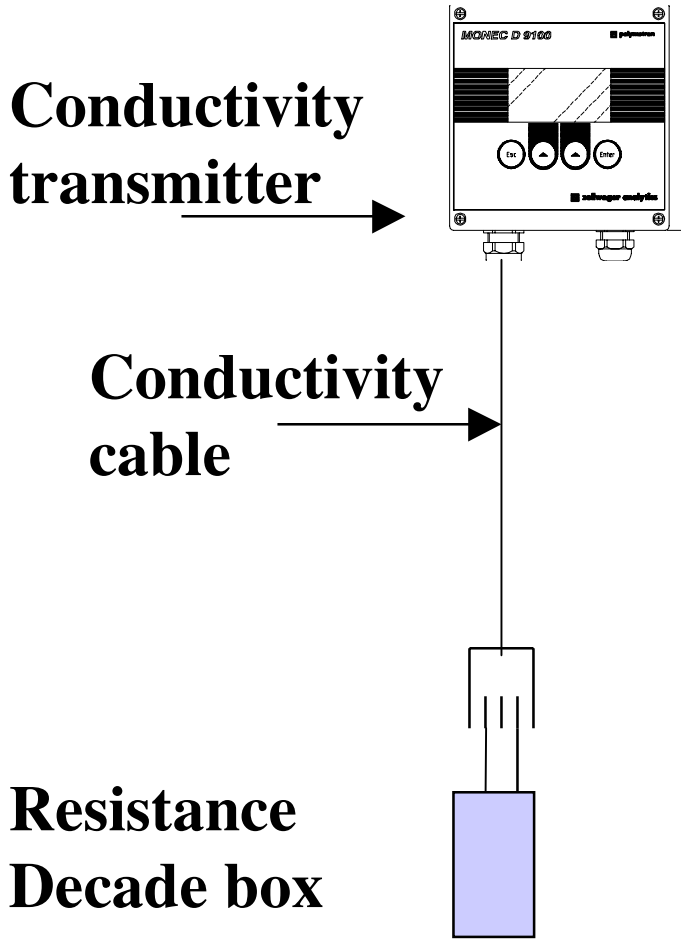
HOW TO CALIBRATE THE TRANSMITTER?

- Use of NIST traceable resistor devices within +/- 0.1% accuracy for calibrating temperature and conductivity inputs

- Preferentially, calibration is carried out at the end of the cable for compensating the cable effects



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PURE WATER CONDUCTIVITY MEASUREMENTS

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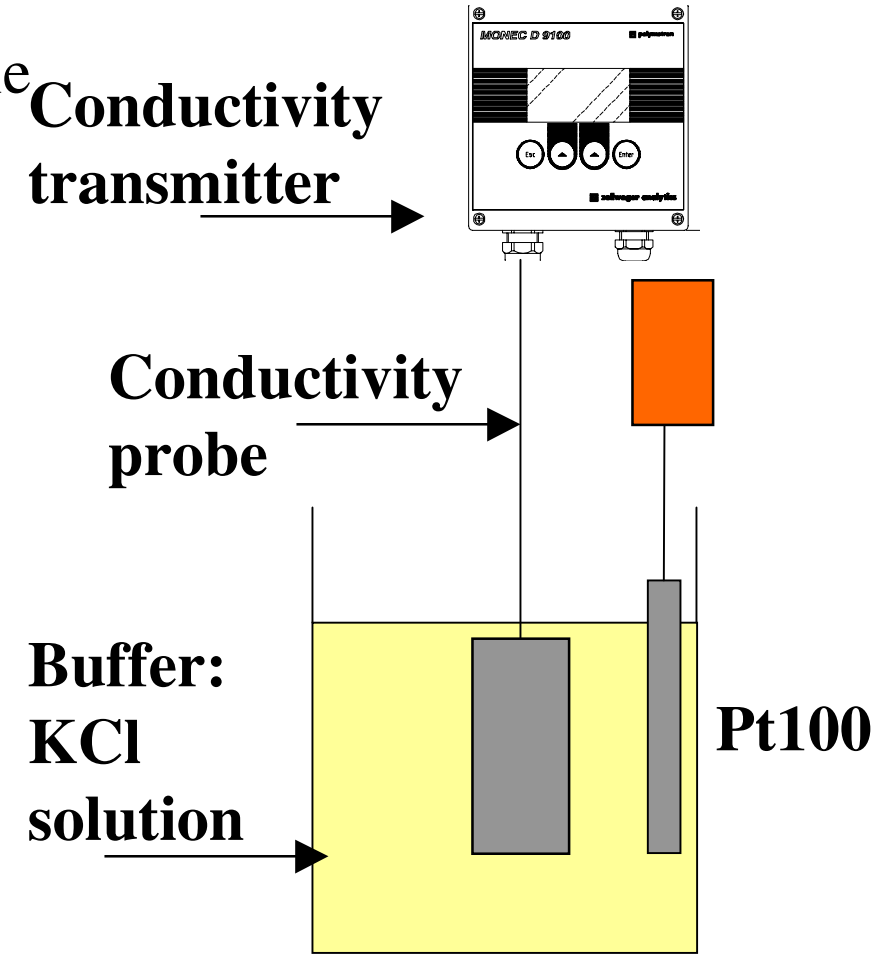
HOW TO CALIBRATE THE CELL CONSTANT?

- Generally: use of NIST traceable KCl standard solution at 25°C+/-0.1°C whose conductivity is near the process values

- BUT there is NO accurate and stable low conductivity standards < 10 µS/cm
- The lowest accepted stable one is100 µS/cm +/- 0.25%.

NOT suitable for pure water!!



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WHAT IS THE SOLUTION?

INTERNATIONAL REGULATIONS

ASTM: American Society for Testing and Materials
USP: US Pharmacopeia

DEMAND

TO USE A **SECONDARY STANDARD CONDUCTIVITY LOOP** FOR VALIDATING THE TRANSMITTER and THE CONDUCTIVITY PROBE ON-LINE.

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PURE WATER CONDUCTIVITY MEASUREMENTS

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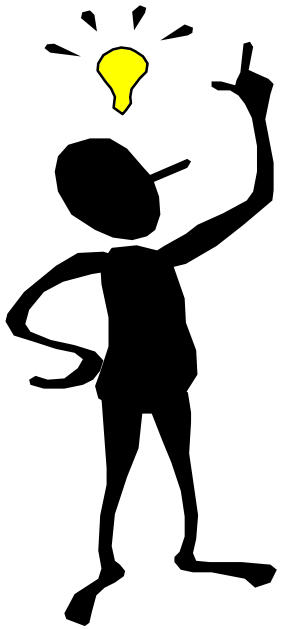
ASTM AND USP require:

- Electrical calibration of the transmitter

+

- redefinition of the cell constant on-line

BY
a certified conductivity calibration bench



OUR SOLUTION:

PURECAL 9126 model

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PURE WATER CONDUCTIVITY MEASUREMENTS

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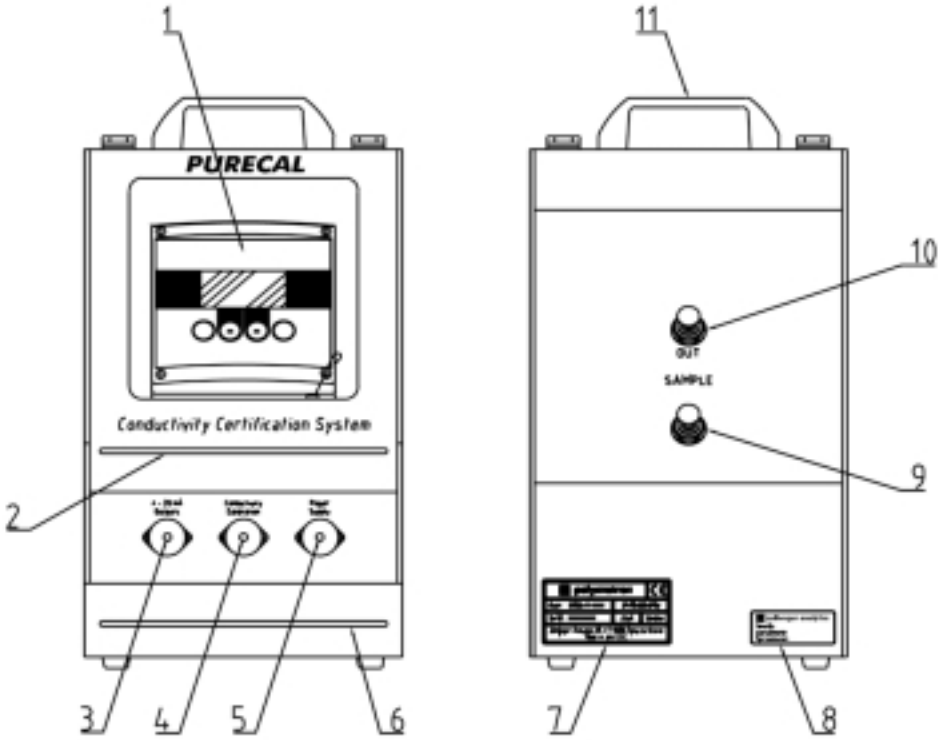

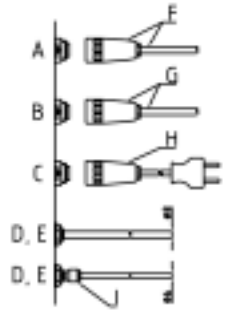

1) Conductivity transmitter
2) Protective lid
3/A) Plug for 4-20 mA analog outputs
4/B) Plug for conductivity calibration
5/C) Power supply
6) Drawer for accessories
7) Product specifications sticker
8) Reference calibration data sticker

9/D) Sample inlet for DN8 or 5/16" tubing
10/E) Sample outlet for DN8 or 5/16" tubing, atmospheric pressure
11) Handle
F) Analog output 8319 cable
G) Conductivity calibration 8319 cable
H) Waterproof female connector (cable not supplied)
I) Conversion fittings (DN8 to DN6)

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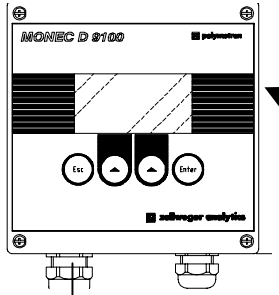
PURECAL BENEFITS

VALIDATION OF THE CONDUCTIVITY LOOP CONFORMS TO ASTMD5391



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Customer's Transmitter

Customer's Conductivity probe

Process water

PROCESS CALIBRATION (1 point)
or
REQUALIFICATION OF
THE CELL CONSTANT
(an electrical calibration of
the transmitter was performed beforehand)

OUT

IN

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PURECAL BENEFITS

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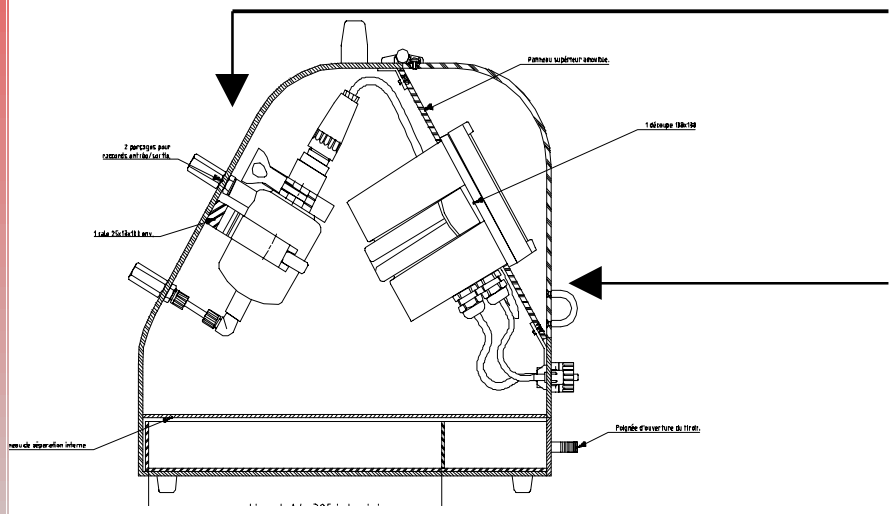
ACCURACY
RELIABILITY
OF
PURE WATER
CONDUCTIVITY
MEASUREMENTS



CERTIFICATION TRACEABILITY TO ASTM D5391

Conductivity probe:

Its cell constant is defined by comparison with 8314 reference probe .
This reference probe is determined by ASTMD1125.

9125 transmitter:

calibrated in temperature and conductivity within 0.1% accurate certified resistance devices

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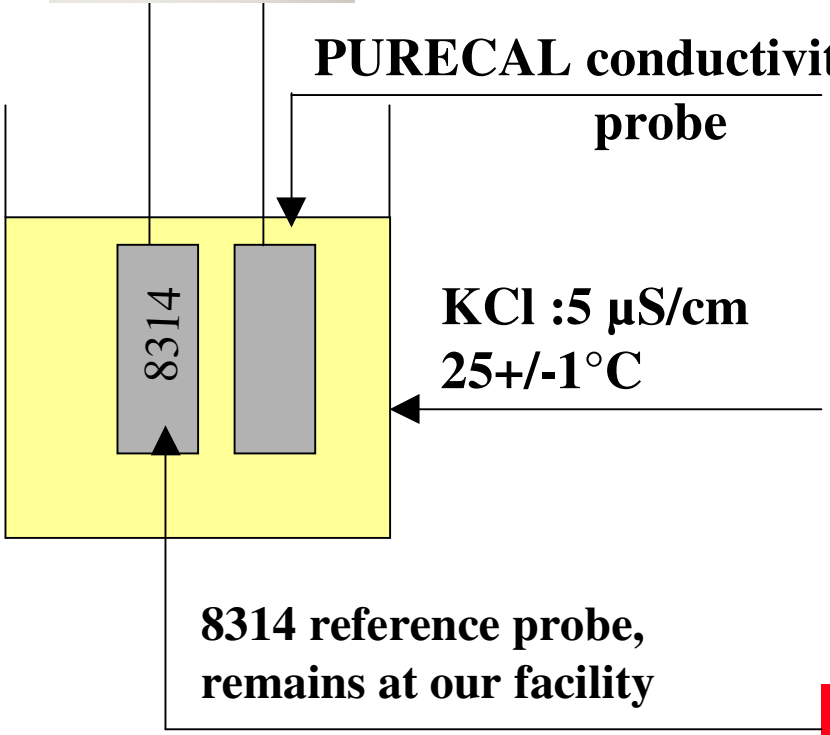
PURECAL conductivity probe

Determination of the cell constant by comparison with a reference probe

8920 transmitter



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CERTIFICATION

TRACEABILITY

TO

ASTM D5391

$$K_{purecal} = K_{8314} \times \frac{Cond._{purecal}}{Cond._{8314}}$$

$K_{8314} = 0.0098$

$Cond._{8314} = 5.010\ \mu S/cm$

$Cond._{purecal} = 5.060\ \mu S/cm$

$K_{purecal} = 0.0099$

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8314 reference conductivity probe

Determination of the cell constant by measuring its resistance in a KCL standardised solution

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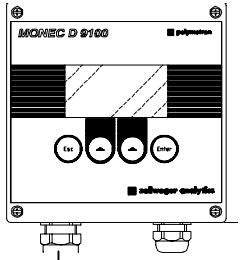
CERTIFICATION

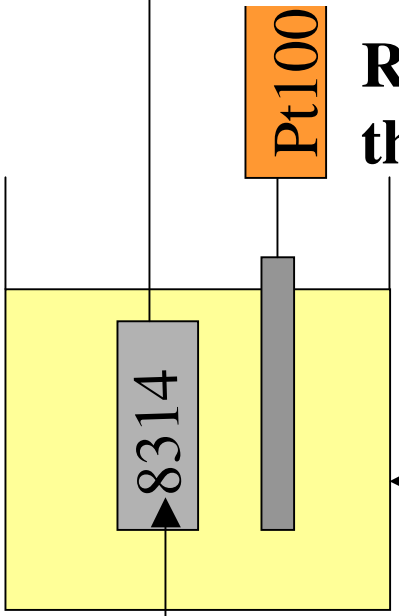
TRACEABILITY

TO

ASTM D1125



9125 reference transmitter



Reference thermometer

Calibrated with 0.1% certified resistances

KCl :
100 µS/cm
25+/-0.1°C

Certified Pt100 thermometer 0.1°C accuracy

NIST traceable KCl solution

Environmental conditions must be very accurate.

8314 reference probe, is checked once a year

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PURECAL BENEFITS

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COMPACT and PORTABLE
USER-FRIENDLY

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PURECAL BENEFITS

COMPLETELY PROTECTED

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PURECAL BENEFITS

PLUG AND PLAY

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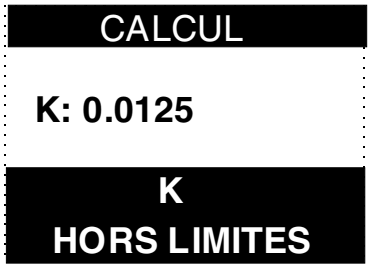
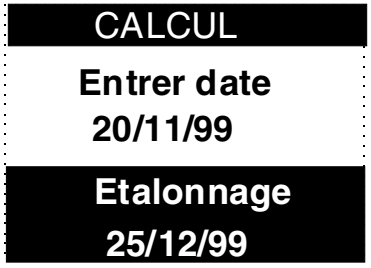
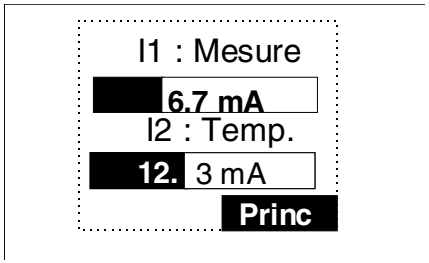
PURECAL BENEFITS







SPECIFIC ALARM MESSAGES:

- if new cell constant > or < 10% than designed cell constant(0.01)
- if date of PURECAL calibration is out of limits

SMART OUTPUTS FREELY PROGRAMMABLE

- 2x 0/4-20mA +/- 0.1mA
- 2x alarm displays (limits or USP24)

PURECAL BENEFITS

DOCUMENTATION:

USER-MANUAL
and
QUICK PROGRAMMING
PLASTIFIED GUIDE

DELIVERED IN STANDARD