Technical
Information
TI 086C/24/ae

Conductivity Measuring Cells
ConduMax W CLS 30

Two-electrode measuring cells with cell constant k - 10/cm

Area of application

The compact conductivity measuring cells have been designed especially for measurement in high conductivities. The measuring cell includes a Pt 100 temperature sensor which is used together with transmitters with automatic temperature compensation:

- Mycom CLM 153
- Liquisys M CLM 223/253
- MyPro CLM 431

The measuring range for the CLS 30 with a constant of k = 10/cm is from 0.1 mS/cm to 200 mS/cm.

- Service water
- Wastewater treatment
- Concentrate monitoring

Benefits at a glance

- Different designs guarantee optimal adaptation to the process conditions and method of installation
- Installation in pipes or flow chambers
- Different temperature sensors allow adaptation to a variety of measuring instruments
- High chemical, thermal and mechanical stability
- Quality certificate stating the individual cell constant

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Operating principle

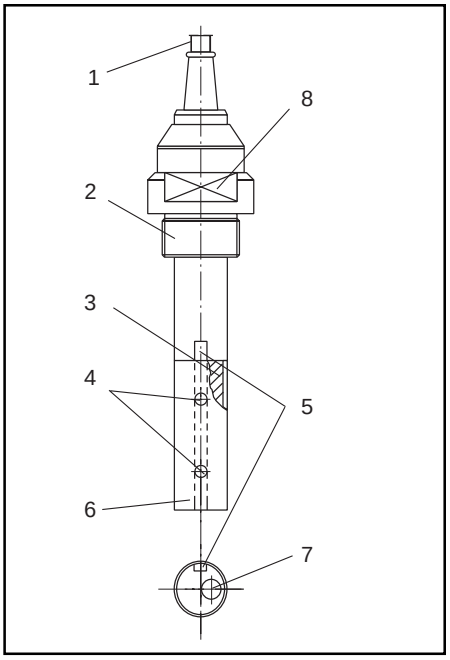
The CLS 30 high-precision cell is particularly suitable for industrial applications where elevated conductivities must be measured, e.g. for monitoring automatic tank and pipe systems in the food and beverage industry with the purpose of measuring and controlling the concentrations of alkalis and acids.

The important features of these well-proven measuring sensor is its high chemical, thermal and mechanical resistance. The measuring surfaces are made of special low-polarization graphite. The measuring electrodes are mounted in a lateral measuring duct and are protected by a Teflon® sleeve. This prevents electrical leakage and ensures consistent and accurate measurement.

All cells are equipped with a built-in Pt 100 temperature sensor for automatic temperature compensation. The special design features ensures optimal temperature adaptation. This allows exact concentration measurement over a wide range of temperature.

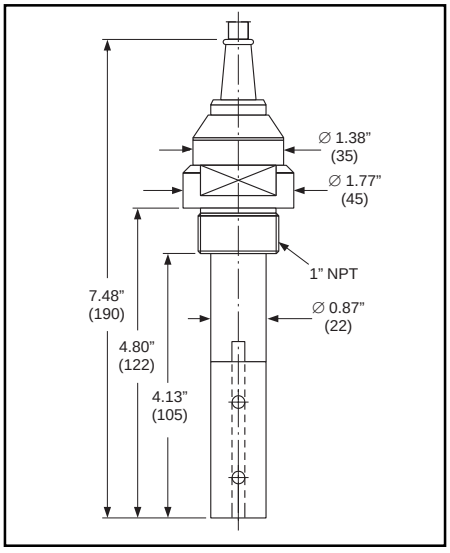
The cell shaft is made of polypropylene (PP) or PTFE and is usable at temperatures of up to 194°F (90°C) in PP or 257°F (125°C) in PTFE. Allowable pressures are up to 232 psi (16 bar) in PP or up to 87 psi (6 bar) in PTFE.

The cells can be supplied with a 1" NPT, G 1 or 3/4" NPT plus DIN dairy type process connectors.

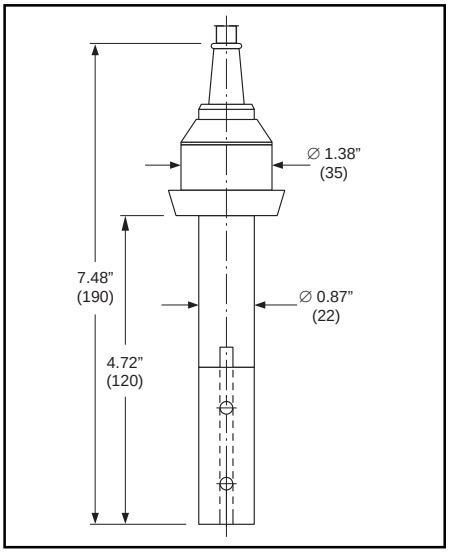


CLS 30
1 Connecting cable, shielded, 10 ft (3 m) length
2 1" NPT
3 Outer shield sleeve of PTFE, removable for cleaning
4 Electrodes, specail graphite
5 2 openings for process fluid circulation
6 Lateral measuring duct
7 Pt 100 sensor built into front end for automatic temperature compensation

Dimensions



Threaded process connection



Dairy fitting connection

Fixed cable wiring color code:

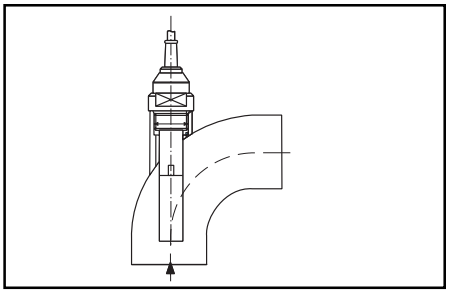
Electrode	White
	Yellow (shield)
Temperature sensor	Brown
	Green

Installation

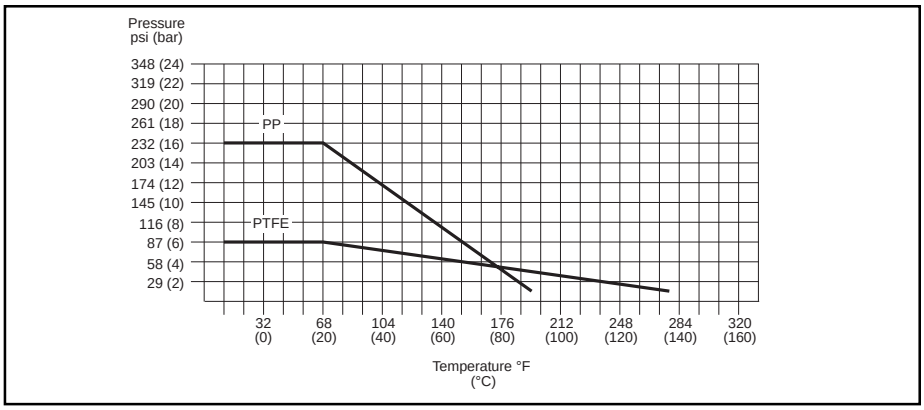
To ensure correct measurement, the cell should always be installed as follows.

Flow must always be directed into the measuring duct, filling and venting the duct completely to ensure exact measurement.

For this reason, the flow direction must be taken into account when installing the cell. Fluids must enter the cell from the front.



Pressure / temperature load diagram



Technical data

Material

Cell shaft	PTFE / PP
Electrodes	Graphite / titanium

Conductivity measurement

Cell constant k	10/cm
Measuring range	0.1 mS/cm to 200 mS/cm
Temperature sensor	PTC, Pt 100

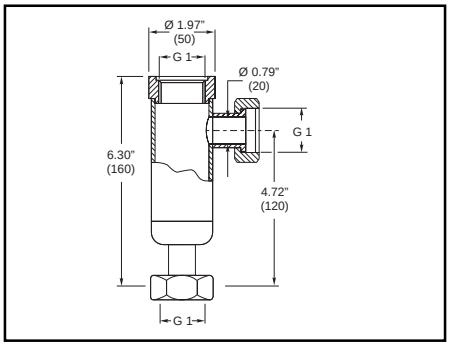
Mounting

Process connections	1” NPT (316 SS or PES), 3/4” NPT (PES), G 1 (PP or PTFE), dairy fittings (PP or PTFE)

Operation conditions

Maximum temperature	257°F (125°C) for PTFE, 194°F (90°C) for PP
Maximum pressure	87 psi (6 bar) for PTFE, 232 psi (16 bar) for PP
Ingress protection	NEMA 4 (IP 65)

Mounting accessories



CLA 751 Flow chamber

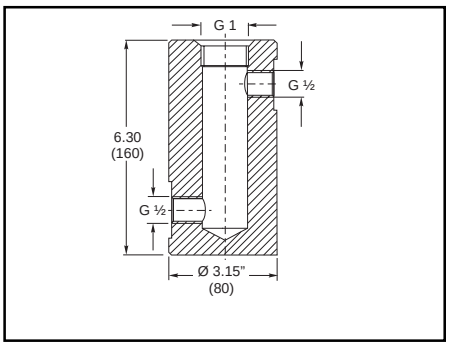
For installation of the CLS 30 with G 1 process connection. Inlet (bottom) and outlet (side) DN 20 with G 1 union nuts.

Material: 316Ti SS

Maximum temperature: 320°F (160°C)

Maximum pressure: 174 psi (12 bar) at 68°F (20°C)

Order Number: 50004201



CLA 752 Flow chamber

For installation of the CLS 30 with G 1 process connection. Inlet (bottom) and outlet (side) DN 20 with G 1/2 threads.

Material: PP

Maximum temperature: 194°F (90°C)

Maximum pressure: 87 psi (6 bar) at 68°F (20°C)

Order Number: 50033772

Ordering information

ConduMax W CLS 30

	1	2	3	4
CLS 30 -	☐	☐	☐	☐

1 Cell constant
- D 10/cm, 0.1 to 200 mS/cm measuring range

2 Process connection / material
- 1C G 1 / PP
- 1F G 1 / PTFE
- 1K 1” NPT / 316 SS
- 1M 3/4” NPT / PES (for fixed cable only)
- 1N 1” NPT / PES (for fixed cable only)
- 2G DN 25 dairy type, DIN 11851 / PP
- 2H Dairy type SMS / PP
- 2K DN 40 dairy type, DIN 11851 / PP
- 2L DN 25 dairy type, DIN 11851 / PTFE
- 2M DN 40 dairy type, DIN 11851 / PTFE

3 Cable connection
- 4 10 ft. fixed (3 m)

4 Temperature sensor
- A Integrated Pt 100
- B Integrated PTC

For application and selection assistance,
in the U.S. call 888-ENDRESS

For total support of your installed base, 24 hours
a day, in the U.S. call 800-642-8737

Visit us on our web site, www.us.endress.com

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