Technical Information
Memosens CPL57E

pH measurement for laboratory measurements
and random sampling

Digital with Memosens 2.0 technology
pH sensor for pure and ultrapure water

Application

Measurements in low-conductivity media, such as boiler feedwater, pure and
ultrapure water

Your benefits

- Memosens gel compact pH sensor with easy-to-clean glass body
- Reference system with salt packing for drift-free measurement in low-conductivity media
- Integrated NTC 30K temperature sensor for effective temperature compensation
- Suitable for use with Liquiline Mobile, Liquiline To Go and Memobase Plus

Other advantages of Memosens technology

- Maximum analysis safety with non-contact, inductive signal transmission
- Data security thanks to digital data transmission
- Very easy to use as sensor data saved in the sensor

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# Function and system design

Measuring principle	**pH measurement**

The pH value is used as a unit of measurement for the acidity or alkalinity of a medium. The membrane glass of the electrode delivers an electrochemical potential that depends on the pH value of the medium. This potential is generated by the selective accumulation of H^+ ions on the outer layer of the membrane. As a result, an electrochemical boundary layer with an electrical potential difference forms at this point. An integrated Ag/AgCl reference system serves as the required reference electrode.

The measured voltage is converted to the corresponding pH value using the Nernst equation.

Measuring system

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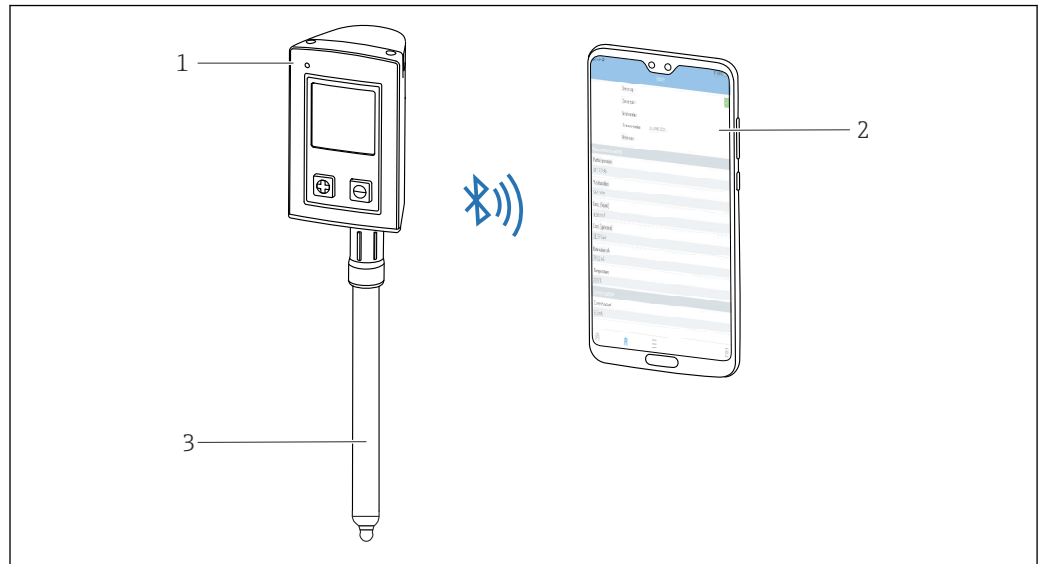
🔲 *1   Measuring system*

1   Transmitter CML18
2   Smartphone with Smartblue app (optional)
3   Memosens CPL57E

Communication and data processing

Communication with the handheld device

ℹ️ Always connect digital laboratory sensors with Memosens technology to a handheld device with Memosens technology, e.g. CML18.

Digital laboratory sensors can store measuring system data in the sensor, including:
- Manufacturer data
  - Serial number
  - Order code
  - Date of manufacture
- Calibration data
  - Calibration date
  - Number of calibrations
  - Serial number of the handheld device used to perform the last calibration or adjustment
- Application data
  - Temperature application range
  - pH application range
  - Date of initial commissioning

Input

Measured variable	pH value
	Temperature

| Measuring range | • pH value: 0 to 14 pH (1 to 12 pH application range)
• Temperature: –5 to 100 ℃ (23 to 212 ℉) (0 to 80 ℃ (32 to 176 ℉) application range) |

Performance characteristics

| Reference system | Ag/AgCl lead, bridging electrolyte: gel KCl, 3M, AgCl-free |

Environment

| Ambient temperature range | **NOTICE**
Risk of damage from frost!
▸ Do not use the sensor at temperatures below –15 ℃ (5 ℉) . |
Storage temperature	0 to 50 ℃ (32 to 122 ℉), non-freezing
Degree of protection	IP 68 (10 m (33 ft) water column, 25 ℃ (77 ℉), 45 days, 1 M KCl)
Electromagnetic compatibility (EMC)	Interference emission and interference immunity as per EN 61326-1: 2013

Process

| Process temperature range | 0 to 80 ℃ (32 to 176 ℉) |

Mechanical construction

| Design, dimensions | |
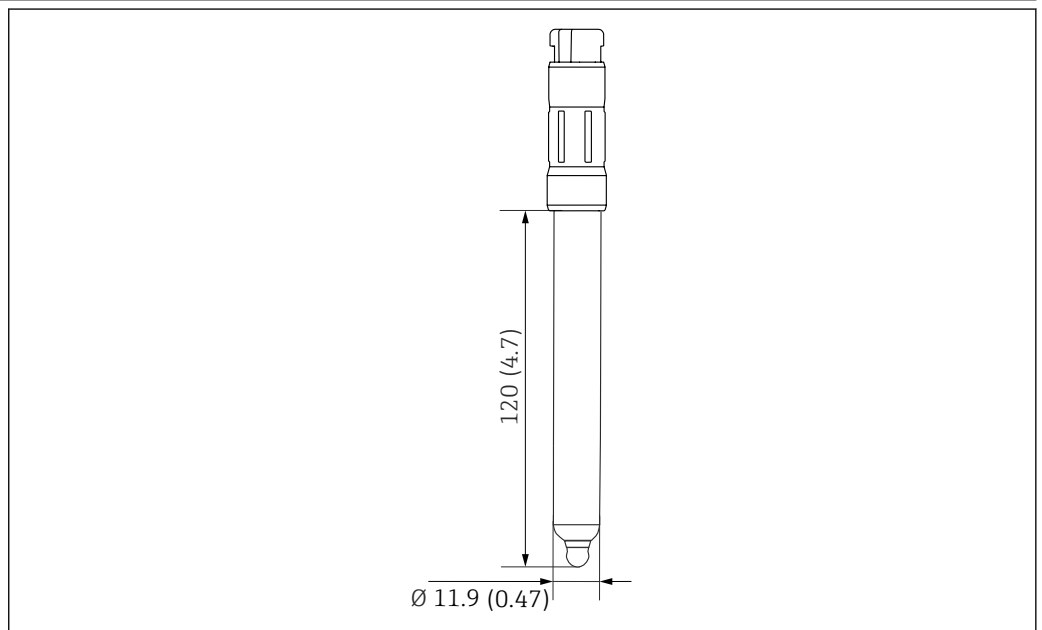
⊠ *2   Engineering unit: mm (in)*

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Weight	40 g (1.4 oz)	
Materials	Sensor shaft	Glass
	Metal lead	Ag/AgCl
	Nameplate	Ceramic metal oxide
	Junction	PTFE
Temperature sensor	NTC 30K	
Plug-in head	Memosens laboratory plug-in head for digital, non-contact data transmission	
Process connections	Pg 13.5	

Accessories

The following are the most important accessories available at the time this documentation was issued.

▶ For accessories not listed here, please contact your Service or Sales Center.

Device-specific accessories	**Memosens data cable CYK10**

Memosens data cable CYK10
- For digital sensors with Memosens technology
- Product Configurator on the product page: www.endress.com/cyk10

📖 Technical Information TI00118C

Memosens laboratory cable CYK20
- For digital sensors with Memosens technology
- Product Configurator on the product page: www.endress.com/cyk20

Liquiline Mobile CML18
- Multiparameter mobile device for laboratory and field
- Reliable transmitter with display and app connection
- Product Configurator on the product page: www.endress.com/CML18

📖 Operating Instructions BA02002C

Memobase Plus CYZ71D
- PC software to support laboratory calibration
- Visualization and documentation of sensor management
- Sensor calibrations stored in database
- Product Configurator on the product page: www.endress.com/cyz71d

📖 Technical Information TI00502C

High-quality buffer solutions from Endress+Hauser - CPY20
The secondary buffer solutions have been referenced to primary reference material of the PTB (German Federal Physico-technical Institute) or to standard reference material of NIST (National Institute of Standards and Technology) according to DIN 19266 by a laboratory accredited by the DAkkS (German accreditation body) according to DIN 17025.
Product Configurator on the product page: www.endress.com/cpy20

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