Technical Information
Liquiline To Go CYM290 and Liquiline To Go CYM291

Portable multiparameter device for Memosens pH, conductivity and oxygen sensors.

Measuring device for hazardous and non-hazardous areas

Application

Liquiline To Go is a portable multiparameter handheld for pH, ORP, conductivity and oxygen measurement. The outstanding features of the device include:
- Operation in hazardous areas to Zone 0 (CYM291)
- Use of digital Memosens sensors
- The robust, high-performance polymer housing stands for excellent shock resistance and dimensional stability even with intensive impact from moisture.

Your benefits

Reliability and flexibility
- Easy commissioning
- Memosens: plug & play precalibrated sensors
- Waterproof and robust housing with IP66/67 protection

Safety
- Active indication of cable disconnect
- Approvals: IECEx, ATEX

Endress+Hauser
People for Process Automation

Function and system design

Liquiline To Go CYM290 and Liquiline To Go CYM291 are portable multiparameter handhelds for digital Memosens sensors and analog pH sensors (CYM290 only).

The devices automatically detects when a Memosens sensor is connected and switches to the appropriate measured variable. By simply plugging in a new Memosens sensor, the device can measure *conductivity*, *pH value* and *oxygen*.

Operation is simple and intuitive, and supported by info text and help.

Liquiline To Go CYM290
QVGA TFT display with white lighting

Liquiline To Go CYM291
LCD STN 7-segment display with 3 lines and icons

1 Liquiline To Go functions

1 Connections
2 Display
3 Keypad
4 Holder for pH sensors

Communication and data processing

Liquiline To Go CYM290 and CYM291 automatically detects when a Memosens sensor is connected and switches to the appropriate measured variable. Memosens is indicated on the display. Only one sensor can be connected to the measuring device at the time. Liquiline To Go CYM290 has a pH-socket according to DIN 19262 for analog pH sensors.

Dependability

Reliability

Memosens technology digitizes the measured values in the sensor and transmits the data to the transmitter using a non-contact connection that is free from potential interference. The result:
- Automatic error message if sensor fails or connection between sensor and transmitter is interrupted
- Immediate error detection increases measuring point availability

Maintainability

Easy handling
Sensors with Memosens technology have integrated electronics that allow for saving calibration data and further information such as total hours of operation and operating hours under extreme measuring conditions. Once the sensor has been connected, the sensor data are transferred automatically to the transmitter and used to calculate the current measured value. As the calibration data are stored in the sensor, the sensor can be calibrated and adjusted independently of the measuring point. The result:
- Easy calibration in the measuring lab under optimum external conditions increases the quality of the calibration.
- Pre-calibrated sensors can be replaced quickly and easily, resulting in a dramatic increase in the availability of the measuring point .
- Maintenance intervals can be defined based on all stored sensor load and calibration data and predictive maintenance is possible.
- The sensor history can be documented on external data carriers and evaluation programs at any time. Thus, the current application of the sensors can be made to depend on their previous history.

Integrity

With inductive transmission of the measured value using a non-contact connection, Memosens guarantees maximum process safety and offers the following benefits:
- All problems caused by moisture are eliminated.
  - Plug-in connection free from corrosion
  - Measured value distortion from moisture is not possible.
  - The plug-in system can even be connected under water.
- The transmitter is galvanically decoupled from the medium.
- EMC safety is guaranteed by screening measures for the digital transmission of measured values.

Input

Measured variables

→ Documentation of the connected sensor

Measuring range

→ Documentation of the connected sensor

Types of input

Connections
From right to left
- 1x micro USB-B
- 1x M8 socket, 4-pin, for Memosens laboratory cable
- 2x socket, Ø 4 mm, for separate temperature sensor
- 1x socket:
  - CYM290: DIN 19 262 for analog PH sensors
  - CYM291: M12 8-pin Memosens cable

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2 CYM290 connections

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3 CYM291 connections

Temperature inputs

2 x Ø 4 mm for integrated or separate temperature sensor

Measuring ranges
- Temperature sensor NTC30: -20 to +120 °C (-4 to 248 ° F)
- Temperature sensor Pt1000: -40 to +250 ° C(-40 to 482 ° F)

Measuring cycle
Approx. 1s

Measured error [123]
< 0.2 K (Tamb = 23 °C); TK < 25 ppm/K

1) according to DIN EN 60746-1, at rated operating conditions

2) ± 1 digit

3) plus sensor error

Sensor inputs

Cable specification
M8 socket, 4-pin, for Memosens laboratory cable CYK20

Power supply

Supply voltage

Batteries: 4x AA (Mignon) alkaline or 4x NiMH rechargeable batteries, or 1x Li-ion rechargeable battery, rechargeable via USB. Service time of up to 500 h.

Performance characteristics

Repeatability

→ Documentation of the connected sensor

Setting up the device

Options

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Protective flap
The front of the device is protected by a flap. To operate the device, the protective flap can be folded back completely and locked in place.

Hook
A fold-out hook is located on the back of the device, allowing you to suspend it. This means your hands are free for the actual measurement. The nameplate is located under the hook.

Protective flap and hook combined
The two parts can be joined to form a stand, allowing the convenient and ergonomic operation of the device on a desktop or lab bench.

Environment

Ambient temperature range

Liquiline To Go CYM290
-10 to +55 °C (+14 to +130 °F)

Liquiline To Go CYM291
- -10 to +40 °C (+14 to +104 °F) T3 Duracell MN1500
- -10 to +50 °C (+14 … +122 °F) T4 Energizer E91, Power One 4106 and Panasonic Pro Power LR6

Storage temperature

-25 to +70 °C (-13 to +158 °F)

Degree of protection

IP66/67 with pressure compensation

Electromagnetic compatibility

DIN EN 61326-1 (general requirements)
- Interference emission: Class B (residential environments)
- Interference immunity: Class A (industrial environments)
  DIN EN 61326-2-3 (special requirements for transmitters)

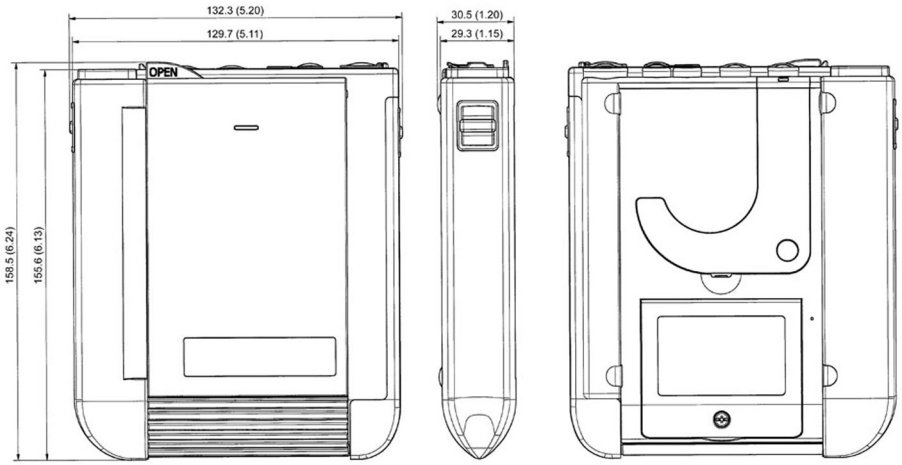
Relative humidity

0 to 95 %, condensation permitted for short periods

Mechanical construction

Dimensions

Approx. (132 x 156 x 30) mm



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4 *Dimensions in mm/inch*

Weight

Approx. 500 g (1.1 lbs)

Materials

PA12 GF30 (silver-gray RAL 7001) + TPE (black)

Operability

Operating concept

Clear menu navigation with graphic symbols and detailed plain-text operating instructions

Languages
German, English, French, Spanish, Italian, Portuguese, Russian

Display

Displayable data:
Manufacturer, sensor type, serial number, zero point, slope, date of calibration

Status indicators
For battery charge state, logger

Keypad
[on/off], [meas], [enter], 2 soft keys with context-dependent functions

Software

Messages
Displays all the error and device messages currently pending as well as complementary help text.

MemoLog (Memosens only)
Individually displays the calibration protocols saved. You have the option of deleting individual entries or all entries. The following is displayed:
- Sensor type
- Manufacturer
- Calibration date
- Serial number
- Zero point
- Slope
- Utilization data
- Measuring point (TAG)

Certificates and approvals

CE mark

Declaration of Conformity

The product meets the requirements of the harmonized European standards. As such, it complies with the legal specifications of the EC directives. The manufacturer confirms successful testing of the product by affixing to it the CE mark.

Ex approval

- IECEx Ex ia IIC T4/T3 Ga
- ATEX II 1 G Ex ia IIC T4/T3 Ga

Ordering information

Product page

www.endress.com/cym290

www.endress.com/cym291

Product Configurator

The navigation area is located on the right of the product page.

1. Under "Device support" click "Configure your selected product".
   ↳ The Configurator opens in a separate window.
2. Select all the options to configure the device in line with your requirements.
   ↳ In this way, you receive a valid and complete order code for the device.
3. Export the order code as a PDF or Excel file. To do so, click the appropriate button at the top of the screen.

Scope of delivery

The scope of delivery comprises:
- Measuring device including 4 batteries (AA) and pre-mounted holder
- Carry strap
- Data storage medium with detailed operating instructions
- USB cable, 1.5 m
- Safety instructions
- Brief Operating Instructions in multiple languages

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 office.

Refer to the Operating Instructions for CYM290 or CYM291 for information on the sensors that can be connected.

Measuring cable

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

www.addresses.endress.com

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