

pH/mV Meter BAMOPHAR 107



Panel mounting



Wall mounting



Panel mounting unit + Extension unit

- Color touch screen
- 2 existing scales:
0... 14 pH or ± 1000 mV
- Temperature compensation:
Automatic or manual
- 2 outputs 0/4-20mA (pH and T °C)
- 4 relays (Thresholds, alarm and/or regulation)
- Options:
RS 422 / J-BUS + LOGGER
Extension terminal for 2nd measuring parameter

APPLICATIONS

Measurement of pH or ORP, alarms and/or regulation for water treatments, chemical industries, industrial applications.

Example

- Electroplating industry
- Processed water treatment
- wastewater treatment (e.g. pH neutralization)
- Groundwater or runoff water survey
- Swimming pool pH regulation (or spa or fish tank)
- Alarming on cooling plant (NH_3)
- Etc.

DESCRIPTION

The device is equipped with a color touch screen for the display of a multilingual menu friendly and intuitive. It provides easy reading of measurement, temperature and state of the thresholds. It displays a menu with all parameters for configuration of analogue outputs, thresholds and regulation mode. In order to facilitate its commissioning, a programming menu can simulate the measurement, acting on the measurement analog outputs and P.I.D., as well as on the thresholds.

Analogue output reflects the measurement and may be scaled all along the range. Temperature analogue output is available as well as a 4-20 mA signal.

A complete measuring system includes:

- pH/mV-meter BAMOPHAR
- One pH or ORP electrode (data-sheet 150-01/03)
- One electrode holder (data-sheets 130- to 145-)
- Accessories: pH/ORP cable, connectors, buffers (data-sheet 160-01)
- Option: Temperature probe (Data-sheet 150-02)

For any information and special request: please contact us.

An extension terminal (wall, panel or DIN rail mounting):

- Allows a second measuring parameter (pH, flow-rate, conductivity, etc.)
Data from this blind unit are displayed on the main unit
- Connected to main unit with 4 wire shielded cable
(Cable length between both devices: max. 500 m)
- RS422 and Data Logger of main unit are shared between both units

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pH/mV Meter
BAMOPHAR 107

01-08-2018

D-107.01-EN-AE

pH

107-01 /1

TECHNICAL FEATURES

End-user interface	Color touch screen 4.3", resolution 480x272 pixels Display of measurements, menus, temperature, relay status Configuration - Keyword protected
Measuring scales	0... 14 pH as pH-meter or ± 1000 mV as mV-meter
Accuracy	± 0.03 pH or ± 3 mV
Input impedance	$>10^{13} \Omega$
Sensor signal input	For coaxial connector (9054) on panel and rail mounting devices Screw connector on wall mounting devices
Temperature compensation	
Automatic	Input for sensor Pt 100 Ω at 0 °C, range 0 to 100 °C
Manual	From 0 to 100 °C, by configuration
Relay outputs	4 contacts N.O., voltage free
Configurable thresholds	S1, independent threshold, to set up for measurement or temperature S2, independent threshold, to set up for measurement or temperature S3, independent threshold, to set up for measurement or temperature or external function S4, threshold, to set up for alarming function Too long injection - Timer exceeded pH value out of range Temperature sensor defect or electrode cleaning mode
Contact Initial resistance	100 m Ω max. (voltage drop 6 V DC 1 A)
Switching power	831 VA AC / 3 A / 277 V AC 90 W / 3 A / 30 V DC
Switching capacity (min.)	100 mA, 5 V DC (100 mA, 5 V DC (variable according to switching frequency, environmental conditions and accuracy).
ON/OFF Regulation	Adjustable cycle time from 0 to 9999 s, high and low proportional bandwidths, high and low dead zones
PID Regulation	Adjustable proportionality from 0 to 200%, Integrant and Derivative: 0 to 999 s
Calibration routine	Relay outputs inhibited, Analogue outputs on standby at latest values
Auto-cleaning menu	Settings of frequency and duration, relay outputs inhibited, analogue outputs on standby at latest values
Program Testing	Simulation through the menu on measurement, temperature, PID and relays output
Measurement output	0/4 - 20 mA (max. 600 Ω) proportional to measurement
Temperature output / PID	0/4-20 mA (max. 600 Ω), scaling 0...100 °C This output is not available when PID regulation function is operating.
Main power supply	230 V AC / 50-60 Hz (others on request) - Consumption 10 VA
Models	Panel mounting, 96x144 mm, Front IP65, rear IP40 Wall mounting, IP65, cable glands
Storage temperature	-10 ... +70 °C
Operating temperature	-5 ... +50 °C
OPTION (RS 422 + Logger)	
Interface	RS422 output, J-BUS link - Binary slave mode - 2400 to 9600 bauds
Data Logger	Record of cycle average measurement - 150 000 records max. on memory card.

EC Conformity: The instrument meets the legal requirements of the current European Directives

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pH/mV Meter
BAMOPHAR 107

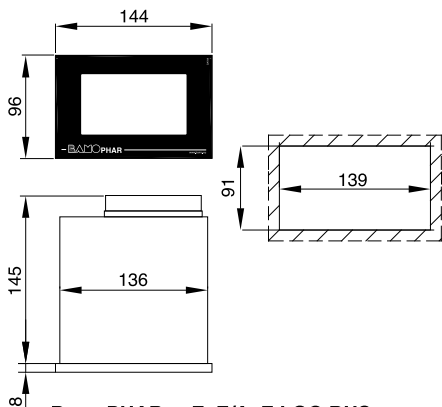
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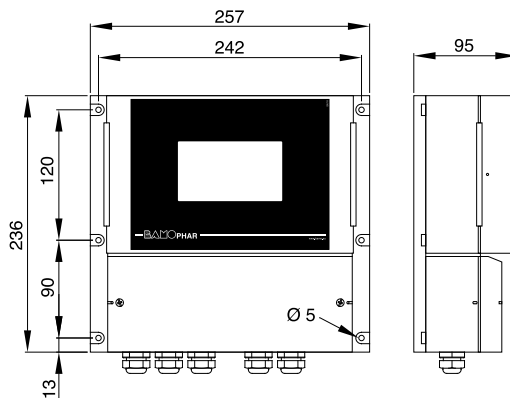
pH

107-01 /2

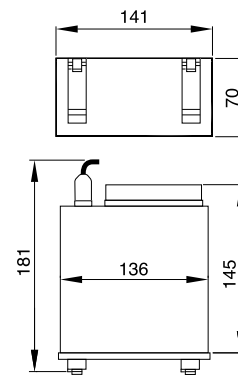
DIMENSIONS



BamoPHAR ... E, E/A, E LOG BUS



BamoPHAR ... M, M/A, M LOG BUS



BamoPHAR ... D/A

CODE NUMBERS AND REFERENCES

Code	Reference	Description
107 500	BAMOPHAR 107 E	Panel mounting 96x144 mm - Front IP 65; Rear IP 40
107 501	BAMOPHAR 107 E/A	Panel mounting 96x144 m- Extension, blind monitor / IP40
107 503	BAMOPHAR 107 D/A	Rail mounting - Extension, blind monitor / IP40
107 505	BAMOPHAR 107 E LOG BUS	Panel mounting 96x144 m - RS422 + LOGGER - Front IP 65; Rear IP 40
107 520	BAMOPHAR 107 M	Wall mounting, IP 65, cable glands
107 521	BAMOPHAR 107 M/A	Wall mounting - Extension, blind monitor - IP 65, cable glands
107 524	BAMOPHAR 107 M LOG BUS	Wall mounting - RS 422 + LOGGER - IP 65, cable glands

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pH/mV Meter
BAMOPHAR 107

01-08-2018

D-107.01-EN-AE

pH

107-01/3

ph and ORP immersion probe 9336



- Protective holder
- Simplified calibration routine
- For 1 electrode with PG 13.5 fitting
- Adjustable immersion depth
- PVC, PPH or PVDF

APPLICATIONS

- For all pH and ORP measurements in basins, open channels and tanks.

DESCRIPTION

Support 9336 insures adjustable position and protection of electrode in basins, channels and tanks. It allows an easy calibration routine without risks to break the electrode.

Standard construction is of PVC, PPH or PVDF tubes O.D. 50 mm Fastening collar or adjustable flange, allow the PVC or PPH probes to be positioned at the right height.

For the calibration routine, the electrode protection end is removable from the holder, which is perfectly adapted to our buffer flasks (9011; 9012; 9013; 9015). There is no need to hold the probe during calibration. Flask and probe are tightly assembled and they can stand on the floor. No more spilled buffer neither damaged electrode.

Associated electrodes:

Associated electrodes are to be selected from our pH - Redox data-sheet (150-01). Only electrodes with sealing PG 13.5 fit on these probes.

TECHNICAL FEATURES

Immersion height	1 m (On request from 0.3 up to 3.0 m)
Construction	PVC, PPH or PVDF
Pressure	Atmospherique pressure
Head	PBT glass fiber reinforced - IP 65
Cable output	PG 9
Fitting	PE flange 9358, adjustable height or PE collar, for diam. 50 mm
Temperature limits	0... 55 °C (PVC) 0... 100 °C (PPH or PVDF)

Options:

- PE flange 9358, adjustable height, for probes O.D. 50 mm (9336 & 9337)
- Rocking bucket in PPH

CE conformity: The instrument meets the legal requirements of the current European Directives.



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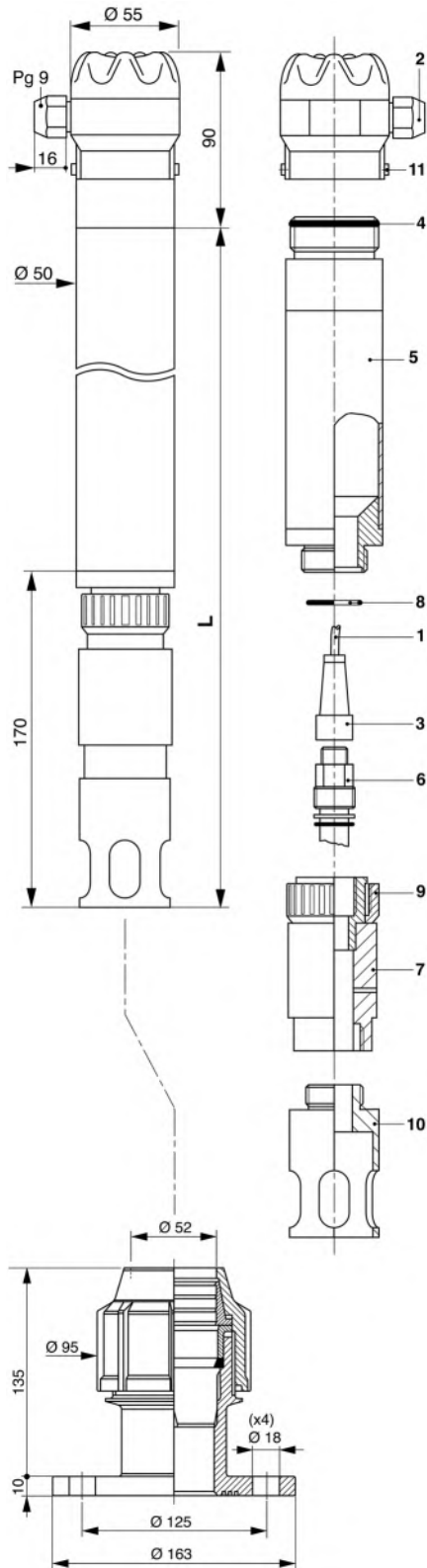
ph and ORP immersion probe
9336

22-01-2018

D-130.01-EN-AC

pH

130-01 /1



CODE NUMBERS AND REFERENCES

Code	Reference	Description
130 150	9336 PVC	Probe PVC, 1 m, for 1 electrode
130 250	9336 PPH	Probe PPH, 1 m, for 1 electrode
130 350	9336 PVDF	Probe PVDF, 1 m, for 1 electrode
130 114	9338 PVC	Probe PVC, 1 m, for 1 electrode with rocking bucket in PPH
Accessories		
130 112	9358 PE	Adjustable flange (probes 9336/9337, O.D. 50)
Spare parts		
130 113	9338 Rocking bucket	Rocking bucket in PPH with holder base (for probe 9336)
130 155	9336 PVC BDS	Holder base PVC, for 1 electrode
130 255	9336 PPH BDS	Holder base PPH for 1 electrode

Note : Holder base includes 1 electrode holder (7), 1 o-ring seal (8), 1 screw nut (9) and 1 protective end (10).

DIMENSIONS AND COMPONENTS

- 1) Coaxial cable 9060 (1) (To be ordered separately)
- 2) Cable gland on probe head
- 3) Connector 9054 (To be ordered separately)
- 4) O-ring seal for head housing
- 5) Extension tube
- 6) Electrode (To be ordered separately)
- 7) Electrode holder
- 8) O-ring seal on extension tube
- 9) Loose nut on electrode holder
- 10) Protective end
- 11) Blocking screws

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ph and ORP immersion probe
9336

22-01-2018

D-130.01-EN-AC

pH

130-01 /2

Immersion probe with built-in temperature sensor 9337

- Protective holder
- Built-in temperature sensor Pt100
- Simplified calibration routine
- For 1 electrode (PG 13.5 sealing)
- Adjustable immersion depth
- Fastening by flange or collar
- PVC construction



Pt100 connection terminal

APPLICATIONS

For all pH or ORP and temperature measurements in basins, open channels and tanks

DESCRIPTION

Support 9336 insures adjustable position and protection of electrode in basins, channels and tanks. It allows temperature measurement or automatic compensation with the Pt100 sensor built-in the bottom of probe. The probe is designed to avoid electrode damaged during calibration routine.

Standard construction is of PVC, O.D. 50 mm tube. Fastening collar or adjustable flange, allows the probe to be positioned at the right height.

For the calibration routine, the electrode protection end is removable from the holder. This one is perfectly adapted to our buffer flasks (9011; 9012; 9013; 9015). There is no need to hold the probe during calibration. Flask and probe are tightly assembled and they can stand on the floor. No more spilled buffer neither damaged electrode.

ASSOCIATED ELECTRODES

Associated electrodes for pH and ORP are described on data-sheet 150-01. Only electrodes with sealing PG 13.5 are adapted with our probe holders.

TECHNICAL FEATURES

Immersion depth	200 mm, as a minimum
Temperature sensor	Built-in Pt100 Ohm at 0 °C, 3 wires
Length probe	Standard 1 m (from 500 to 3000 mm on request)
Construction	PVC
Head housing	PBT fiber glass reinforced; IP 65
Cable output	Two PG 9
Fitting	Adjustable flange 9358 or PE collar for tube O.D. 50 mm
Operating temperature	55 °C, as a maximum
Recommended cables	Temperature, 3 wire type, shielded, 0.22 mm ² pH, coaxial cable type 9060

CODE NUMBERS AND REFERENCES

Code	Reference	Description
130 151	9337 PVC	PVC 1 m long probe with Pt100 sensor
130 112	9358 PE	Adjustable PE flange for probes 9336 & 9337
160 300	9060	Coaxial cable, specific for pH
610 010	C3B	Shielded cable, 3-wire 0.22 mm ²

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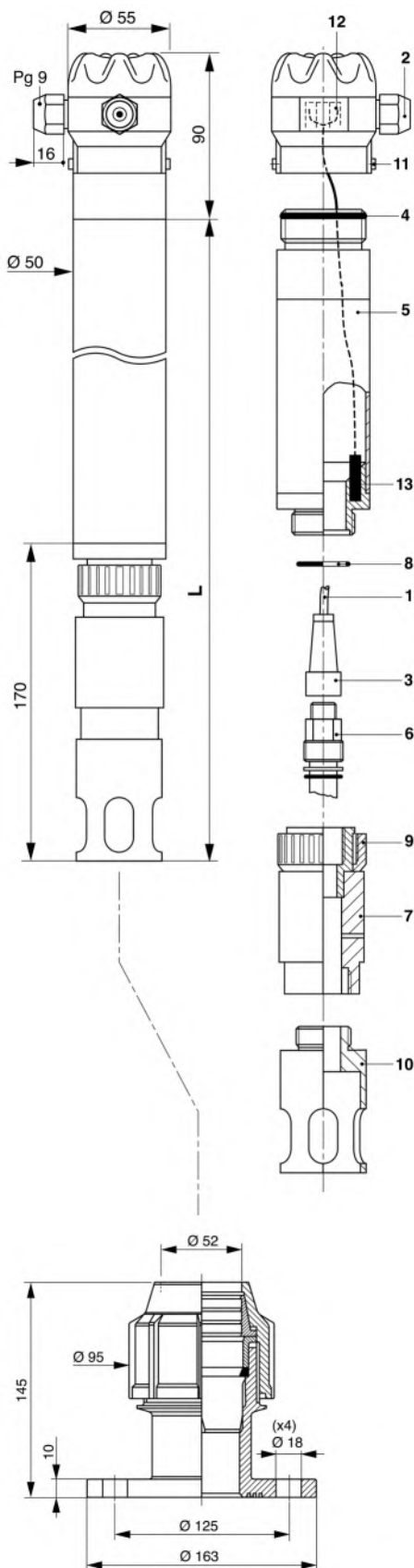
Immersion probe with built-in
temperature sensor
9337

22-01-2018

D-130.02-EN-AB

pH

130-02/1



MOUNTING THE ELECTRODE

- Introduce the temperature cable through a cable gland of head housing (2).
- Connect inside the head the 3 wires on terminal (12), already connected to Pt100 (13).
- Introduce the pH cable 9060 (1) through the cable gland of probe head (2): cable length should be of probe length plus 20 cm.
- Weld on the connector 9054 (3), see also manual msa160 (9054).
- Check the O' ring (4) is on its support and screw on the probe head (2) on extension tube (5).
- Ensure that the connector is going out of bottom of tube.
- Install the electrode (6) on the holder (7).
- Check the O' ring (8) is on its support.
- Screw tightly the connector on the electrode.
- Pull out smoothly the cable in order to have the electrode holder (7) close to the extension tube.
The cable must not be stretched inside the tube.
- Screw the nut (9) keeping the holder in its position.
Prevent the electrode holder to rotate during this operation.
- Screw on by hand the electrode protection (10).
This protective end must be kept easy to dismantle.
- Screw tightly the cable gland on the head.
- Rotate the head in the good position and block it with the two screws (11).

DISASSEMBLING THE ELECTRODE

Proceed as above on reverse steps; take care not to lose the O-ring (8).

CALIBRATING THE MEASURING SYSTEM

You may find detailed information in the instruction manuals of pH monitor.

- Unscrew the electrode protection end (10).
- Clean up the electrode with tap water.
- Adapt the buffer flask on the holder (7).
- Ending the calibration sequences, screw in the electrode protection.

This protection end should kept easy to dismantle, screw it by hand.

Holder outer diameter and electrode length are in correspondence with our buffer flasks; no risk to damage the electrode when performing calibration. The flask grips on holder; the probe can stand on the floor

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Immersion probe with built-in
 temperature sensor
9337

22-01-2018

D-130.02-EN-AB

pH

130-02/2

Immersion probe pH/ORP 9339

- Electrode protection holder
- Easy calibration routine
- For 1 electrode (fitting PG 13.5)
- Dismantable protection end
- Material: AISI 316 L



APPLICATIONS

- pH and ORP measurements in tank, vessel, etc.

DESCRIPTION

Holder 9339 insures positioning and protection of electrode in a tank; it allows an easy calibration routine with low risks to break the electrode.
Standard material is stainless steel 316 L.
Fitting on site is done with a fixed flange (AISI 316 L) welded on the extension tube.
Flange type, dimensions, distance to electrode end, other fitting type: feasibility must be confirmed by our technical department.
Cable passes through a cable gland fitted on a clamp connection, or on a head housing in aluminum alloy.

Associated electrodes:

Associated electrodes are to be selected through the data-sheets 150 -01 & -03.
Only electrodes with fitting PG 13.5 are convenient.

TECHNICAL FEATURES

Immersion height	1 000 mm <i>Other on request (From 200 up to 3000 mm)</i>
Construction	AISI 316 L
Cable output	Or 1 Cable gland M10, centered on tri-clamp fitting Or 1 Cable gland PG 16 on aluminum head, for pH and temperature signal cables
Fitting	Or ND50 fixed flange, AISI 316 L Or ND50 adjustable flange, AISI 316 L <i>(Other ND on request)</i>

OPTION *Temperature sensor Pt 100 Ω at 0 °C, 3-wire*

CE conformity: The instrument meets the legal requirements of the current European Directives

CODE NUMBERS AND REFERENCES

Code	Reference	Description
131 150	9339-PE	AISI 316 holder, 1 m, cable gland M 10
131 155	9339-T	AISI 316 holder, 1 m, cable gland PG 16 Pt 100 Ω , aluminum head, cable gland PG 16
131 200	9359-F	ND50 fixed flange, PN 10/16
131 210	9359-C	ND50 adjustable flange, PN 10/16



Welded fixed flange, ND50



Height adjustable flange

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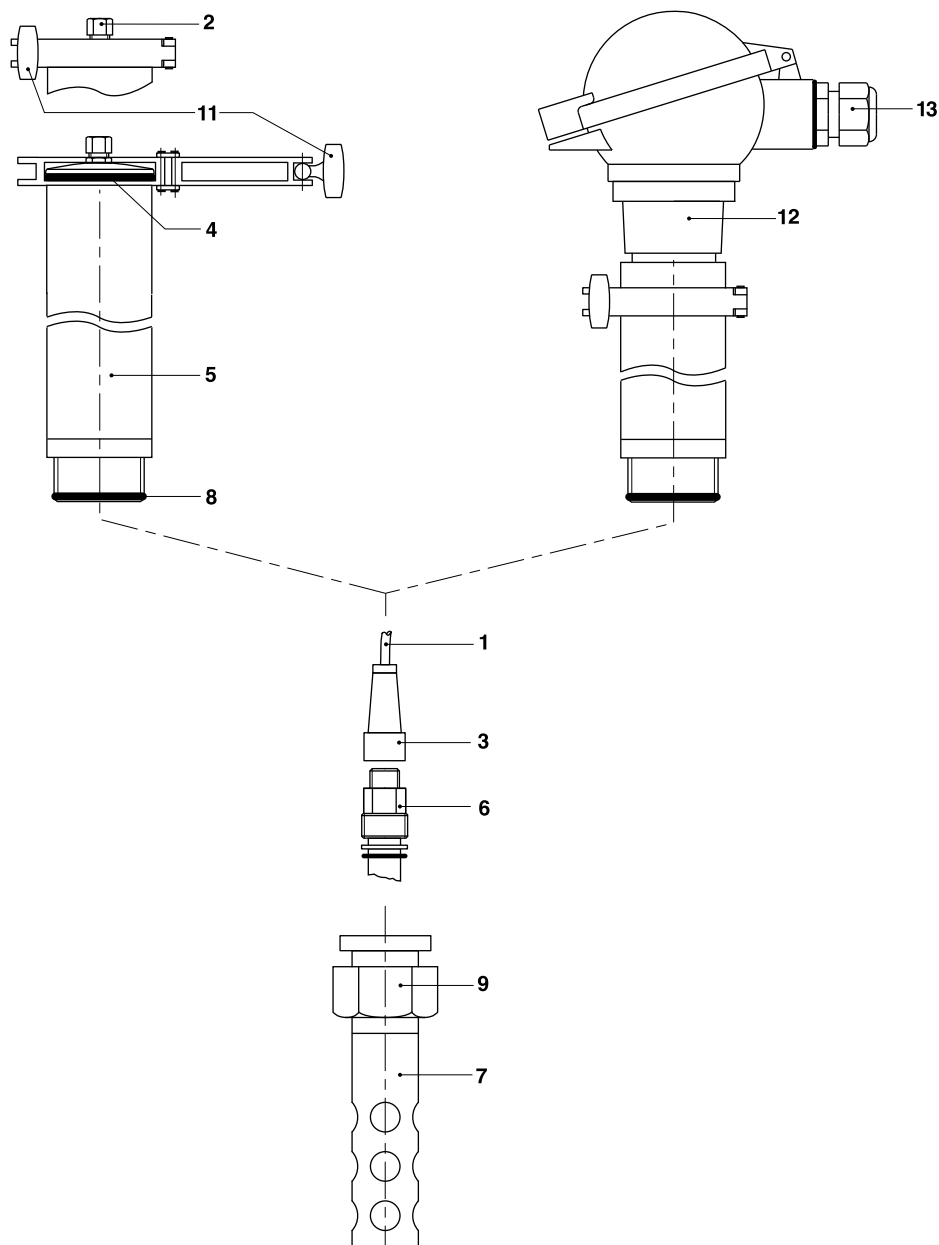
Immersion probe pH/ORP
9339

03-11-2020

D-131.01-EN-AB

pH

131-01 /1



- 1) pH measurement cable 9060
- 2) Cable gland on tri-clamp end
- 3) Connector 9054
- 4) EPDM o-ring seal for tri-clamp end
- 5) Extension tube, O.D. 42.4 mm
- 6) pH/ ORP electrode
- 7) Electrode holder on dismantable protection end
- 8) FPM o-ring seal
- 9) Loose nut
- 10) Electrode holder with fitting option for rocking bucket
- 11) Tri-clamp end cap
- 12) Aluminum head housing
- 13) Cable gland PG 16

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Immersion probe pH/ORP
9339

03-11-2020

D-131.01-EN-AB

pH

131-01 /2

Immersion probe for pH and ORP measurements 9346



- Electrode holder and protector
- Easy calibration routine
- For 2 or 3 electrodes PG 13.5
- PVC or PPH construction
- Adjustable flange or PE collar fitting
- Cables: through pressure glands
- Easy to use, easy to install

APPLICATION

For pH or ORP measurements in tank, drain, basin, open channel. With or without temperature compensation. Probes 9346 are designed to avoid electrode damaged during calibration and to protect the measuring connections from humidity.

ASSOCIATED ELECTRODES

Only electrodes with sealing by PG 13.5 thread could be mounted on our probes. Associated electrodes for pH and ORP are described on data-sheet 150-01.

TECHNICAL FEATURES

Immersion depth	1 m as standard (from 0.2 up to 3 m on request)
Construction	PVC or PPH
Fitting	Flange PE 9358 for adjustable immersion depth or PE collar for tube O.D. 75 mm
Operating temperature	+ 55 °C for PVC model (P < 1 bar) +100 °C for PPH model (P < 0 bar)

For temperature limits you may consider also limits of operating conditions of electrodes.

CODE NUMBERS AND REFERENCES

Code	Reference	Description
135 520	9346/2 PVC	Probe PVC - 2 fittings PG 13.5
135 530	9346/3 PVC	Probe PVC - 3 fittings PG 13.5
135 620	9346/2 PPH	Probe PPH - 2 fittings PG 13.5
135 630	9346/3 PPH	Probe PPH - 3 fittings PG 13.5
135 112	9358 PE	Adjustable PE flange for probes 9346
P41 576	Ø 75 PE	Collar for probes 9346

TEMPERATURE COMPENSATION

Temperature probe 9090 for automatic compensation are listed on data-sheet 150-02.

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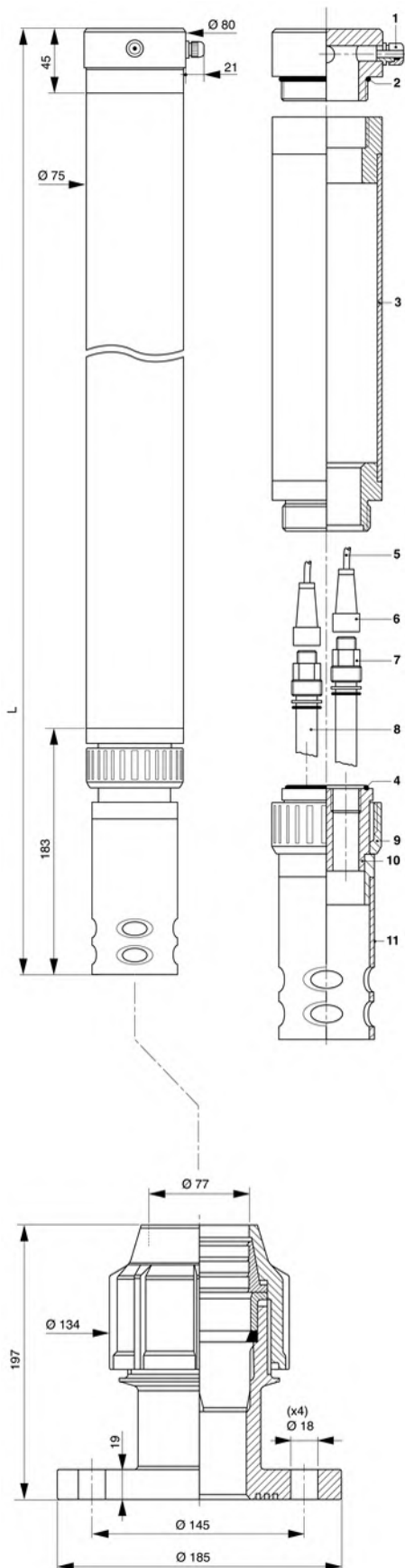
Immersion probe for pH and
ORP measurements
9346

10-03-2017

D-135.01-EN-AB

pH

135-01 /1



ELECTRODE MOUNTING

Introduce the pH cable 9060 (5)
 Through the cable gland (1).
 Cable must cover inside distance: probe length plus 20 cm.
 Mount the connector 9054 (6) to the cable (manual msa160-01).
 Check the seal (2) is on place
 Screw probe head (1) on extension tube (3).
 Ensure that connector goes out from bottom of tube.
 Install the electrode (7 and 8) on the holder (10).
 Fit the O' ring (4) on place.
 Screw tightly the connector on the electrode.
 Pull cable through cable gland in order to have
 electrode holder close to the extension tube.
 The cable must not be stretched inside the tube.
 Screw nut (9) keeping holder in its position.
 Tight firmly this nut by hand, not excessively.
 Prevent the electrode holder to rotate during this operation.
 Screw on the electrode protection end (11) by hand.
 This protective end must be easy to screw off.
 Screw on the cable gland (head housing).

ELECTRODE DISMANTLING

Proceed as above on reverse steps; Be careful not to lose the O-ring (4)

CALIBRATION

You may find detailed information in the instruction manuals of pH monitor.
 Rinse the electrode with water.
 Unscrew the electrode protection end.
 Insert the electrode end in the buffer.
 Ending the calibration sequences, screw gently by hand, the electrode protection
 back in place.

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Immersion probe for pH and
 ORP measurements

9346

10-03-2017

D-135.01-EN-AB

pH

135-01/2

In-line holders for 1 to 3 electrodes, pH or ORP

9200 series

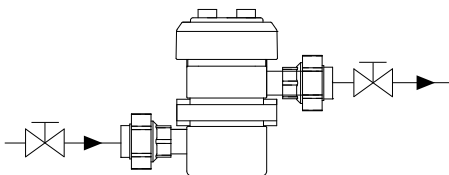
- Holder for 1, 2 or 3 electrodes
- Construction: PVC or PPH
- Process fitting: Union ND 20, diam. 25 mm



Holder 9223



Holder 9222



Installation example

APPLICATIONS

In-line or by-pass holder for up to 3 sensors on pH, ORP, temperature monitoring.

DESCRIPTION

9200 series holders allows pH, ORP and/or temperature in-line measurements (flow through cells). They are designed to receive measuring electrodes with a fitting PG 13.5 (data-sheet 150-01 and 150-02). Choice of materials should consider chemical compatibilities and operating conditions of the application.

Mounting: The inlet of fluid is lower than the outlet in order to maintain the electrode in immersion in the liquid.

For pipes with a diameter greater than 25 mm, installation must be done as a bypass, adding a pressure drop (restriction, elbow, valve, etc.) in order to ensure a correct circulation of liquid around the electrodes. It is recommended to provide valves, upstream and downstream, to have at any time, comfortable calibration and maintenance routines.

TECHNICAL FEATURES

Materials	Body: PVC - Unions ND 20, diam. 25 mm, for solvent welding Body: PPH - Unions DN 20, diam. 25 mm, for welding (Flanged fittings on request)
Seals	FPM
Temperature	PVC: 0 ... 50 °C PPH: 0 ... 90 °C
Pressure limit	6 bar

CODE NUMBERS AND REFERENCES

Standard supply: Holder delivered with 2 stoppers PG 13.5 and 1 mounting collar

Code	Reference	Description
140 301	9222	PVC Holder for 1 to 3 electrodes PG 13.5
140 351	9223	PPH Holder for 1 to 3 electrodes PG 13.5

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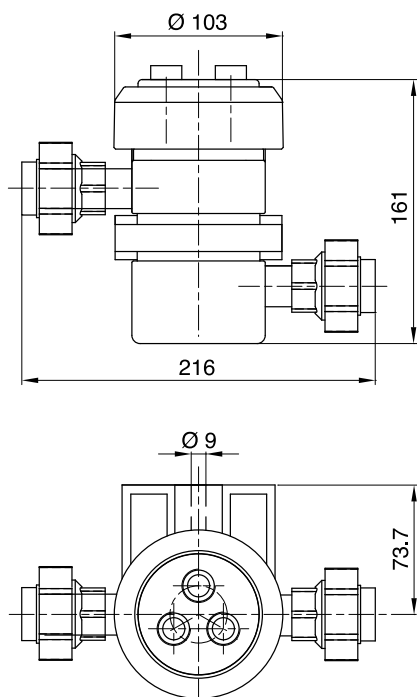
In-line holders for 1 to 3
electrodes, pH or ORP
9200 series

15-06-2018

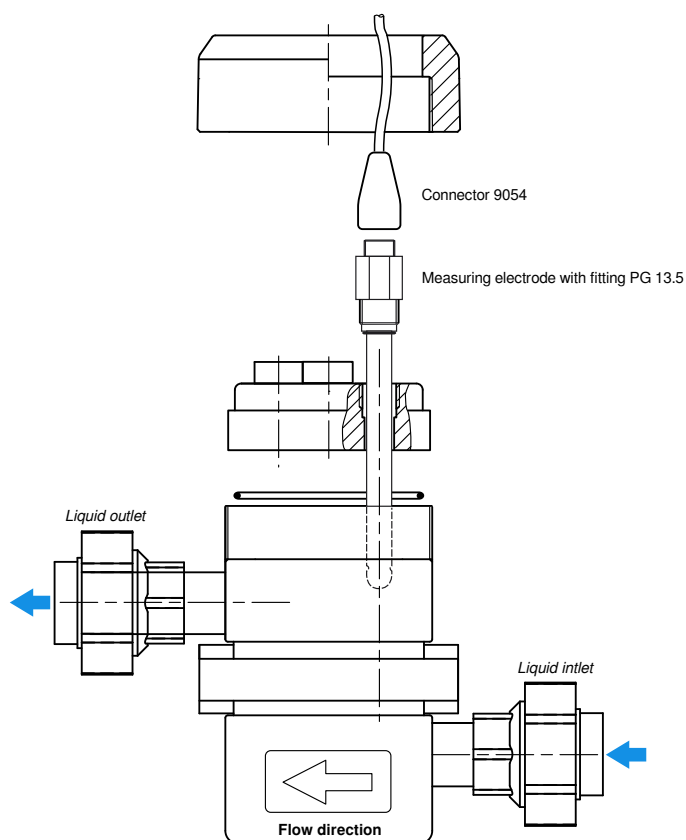
D-140.01-EN-AE

pH

140-01 /1



Overview (electrodes not included)



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In-line holders for 1 to 3
electrodes, pH or ORP
9200 series

15-06-2018

D-140.01-EN-AE

pH

140-01/2

In-line electrode holder for 1 electrode, pH or ORP 9240



- Holder for 1 electrode
- Construction: in PVC
- Spigot ends Ø 25 mm for solvent welding

APPLICATIONS

Holder for pH or ORP electrodes to install in line or as a by-pass.

DESCRIPTION

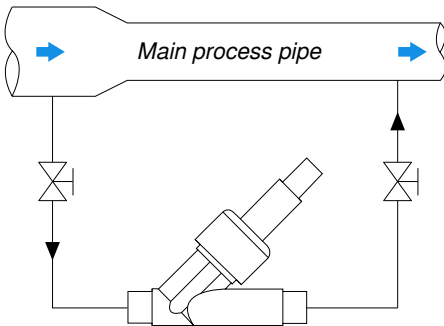
Holder 9240 with suitable electrode allows in-line measurements of pH or ORP under pressure.

Holder is suitable for electrodes with fitting PG 13.5 (see data-sheet 150-01).

For a pipe with a diameter greater than 25 mm, its installation must be done in a bypass, adding a pressure drop (restriction, elbow, valve, etc.) to ensure proper circulation of the liquid around the electrode. It is recommended to install valves, upstream and downstream of the bypass, to allow easiest calibration and maintenance routines.

For a direct on-line measurement, see the holders 9400 series (data-sheet 141.01).

Note: An average flow rate limit to respect is max. 500 l/h



Example as a bypass

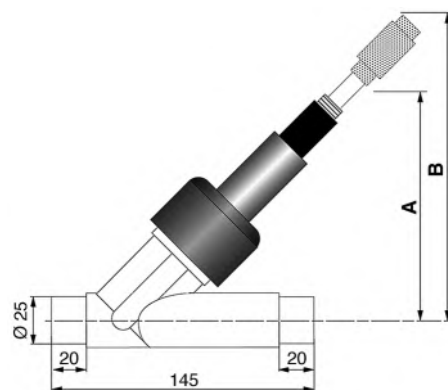
TECHNICAL FEATURES

Materials	PVC / Transparent PVC
Seal	EPDM
Temperature	0 ... +50 °C
Pressure	Max. 7 bar at 20 °C
Fittings	O.D. 25 mm spigot end, for solvent welding

CODE NUMBERS AND REFERENCES

Code	Reference	Description
140 600	9240 PVC Y	Te Holder for for 1 electrode PG 13.5

DIMENSIONS



With coaxial connector 9054:
A = 140 mm and B = 280 mm

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In-line electrode holder for 1
electrode, pH or ORP
9240

14-06-2019

D-140.02-EN-AC

pH

140-02/1

On-line holder for pH or ORP electrode 9400



Type 9423

- On-line holder for 1 electrode
- For full piping
- Materials: PPH or PVDF
- For inserting and removing the electrode (PG 13.5) with full pipe

APPLICATIONS

- Holder for pH/ ORP electrodes for on-line mounting, full pipe

DESCRIPTION

9420 Series holders, with pH or ORP electrodes, allow measurements directly on pipe under pressure. Holders 9423 and 9424 allow assembly and disassembly of the electrode even on full pipe, for calibration.

Note: Assembly or disassembly only when the pipe is not under pressure.

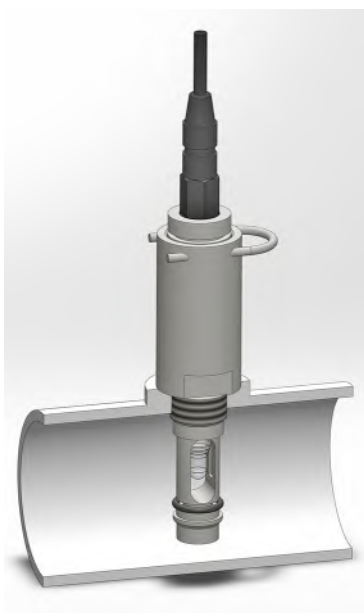
Associated electrodes:

9420 series holders are compatible with combined electrodes (fitting PG 13.5).
Caution: Conductivity cells BF1200 are not compatible with holders 9400 series.
Please contact us for more information and solutions according your operating conditions.

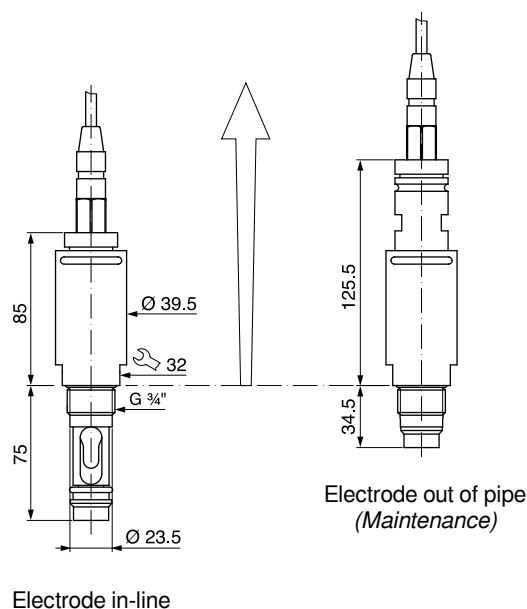
CODE NUMBERS AND REFERENCES

Code	Reference	Materials	Temperature vs. pressure
141 425	9423	PPH / FPM	Max. 70 °C (Atm), Max. 50 °C at 5 bar
141 426	9424	PVDF / FPM	Max. 100 °C at 5 bar

DIMENSIONS



- Fitted on full pipeline



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On-line holder for pH or ORP
electrode
9400

04-03-2020

D-141.01-EN-AC

pH

141-01 /1

On-line holder for pH and ORP electrodes 9410



- Holder for 1 electrode
- For stainless steel piping
- Pipe from ND 50 mm
- Wet parts: AISI 316 L; FPM
- Fitting: Adaptor to weld on pipe

APPLICATIONS

Holder for pH or ORP electrodes PG 13.5, on-line, with full pipe.

DESCRIPTION

9410 holder with pH or ORP electrodes PG 13.5 allows measurements on-line with full pipe under pressure; for Nominal Diameter of 50 mm or larger.

The fastening system facilitates removal of the measuring electrode for maintenance.

Caution: Pipeline must not be under pressure during removal of electrode for calibration routine.

Associated electrodes:

The holder is convenient for combined electrodes with standard fitting PG 13.5. We may help you on choosing the right type of electrode according operating conditions; See also data-sheet 150-01.

TECHNICAL FEATURES

Construction	AISI 316 L
Sealing	FPM
Fitting	Ø 41.9 mm; To weld on pipe
Temperature limit	110 °C Max.
Pressure limit	16 bar Max.

CODE NUMBER AND REFERENCE

Code	Reference	Description
141 410	9410	AISI 316 L holder, adaptor to weld on pipe

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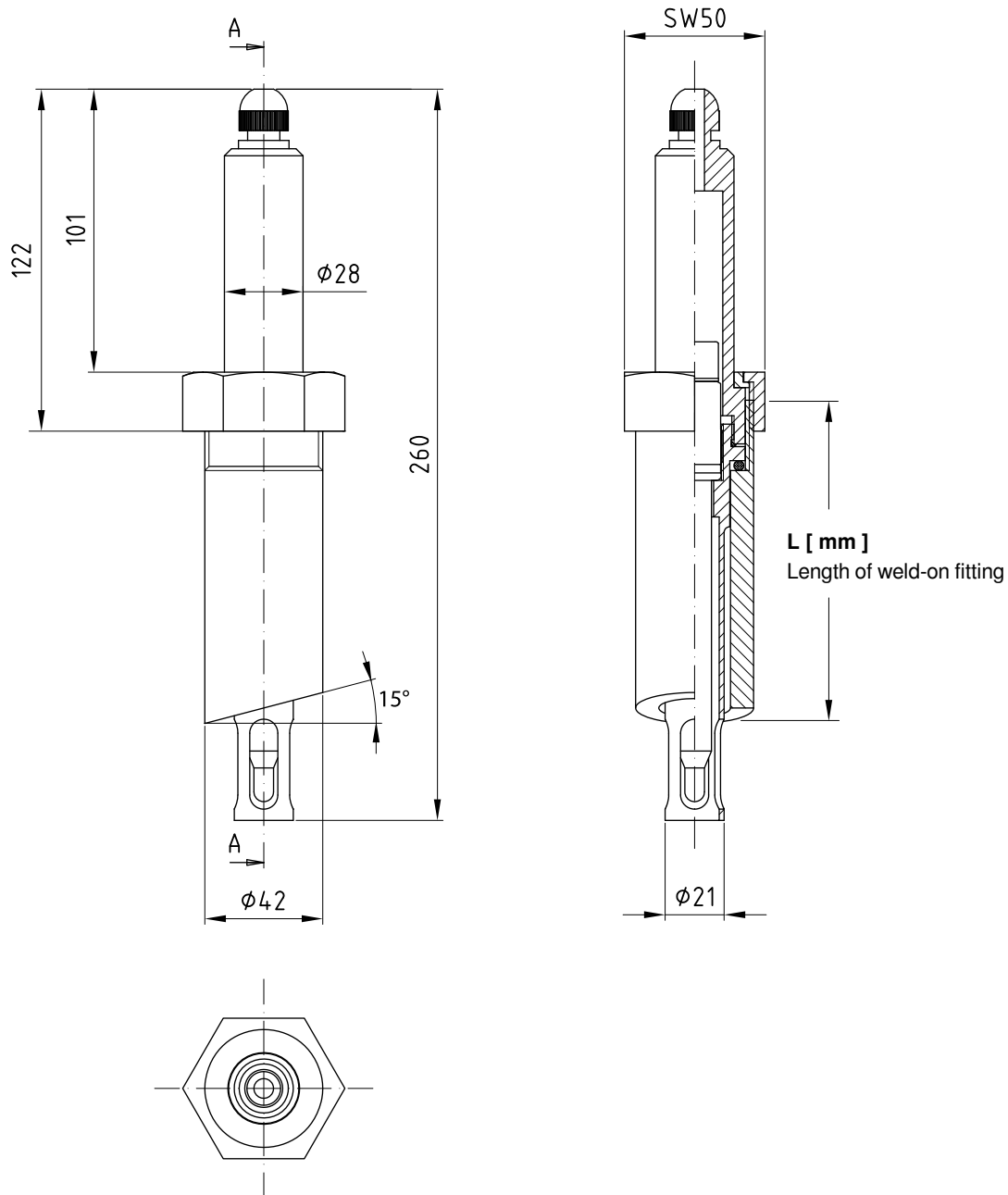
On-line holder for pH and ORP
electrodes
9410

17-05-2019

D-141.02-EN-AD

pH

141-02/1



	DN 50	DN 65	DN 80	DN 100	DN 110	DN 125	DN 150	DN 200	DN > 200
L [mm]	115	108	100	90	85	78	65	40	40

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On-line holder for pH and ORP electrodes
9410

17-05-2019

D-141.02-EN-AD

pH
141-02/2

In-line electrode holders under pressure

9500



- pH or ORP measurement
- Construction: AISI 316 L
- Pressure max. 16 bar
- Temperature max. 110 °C
- Fittings PG13.5 or BSP 1/2"
- For electrodes with fitting PG 13.5
- Process connections ND 15 to 32 mm

DESCRIPTION

This electrode holder series is designed for pH/ ORP in-line measurements under pressure. Electrodes are described on data-sheet 150-01. It is possible to fit up to 3 sensors, pH and/ or ORP electrodes, temperature sensor. These holders are made of AISI 316 L with seals of EPDM. For an easy start up and operation, the lid is locked with a tri-clamp, to ensure a perfect water tightness and pressure resistance.



TECHNICAL FEATURES

Construction AISI 316 L
 Pressure max. 16 bar at 20 °C
 Temperature max. 110 °C
 Fittings For weld-on ends, flanges or unions
 Option FPM seal

CODIFICATION



FITTINGS

- 1 Flanges
- 2 Threaded ends
- 3 To weld-on ends
- 4 Unions, spigot ends (male, to weld-on)
- 5 Unions, sockets (female, for thread)

NUMBER OF SENSORS

- 1 One
- 2 Two
- 3 Three

DIAMETER [mm]

- 1 ND 15
- 2 ND 20
- 3 ND 25
- 4 ND 32

142	-	-	-
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In-line electrode holders
under pressure
9500

05-04-2017

D-142.01-EN-AA

pH

142-01 /1

Probe holder poles 8306



- For immersion probes 9336, 9337 or 9346
- Totally modular
- All stainless steel and aluminum
- Protecting roof for monitor
- Rotation on 360°
- Translation on both axes
- Quick installation

DESCRIPTION

This holder is designed for pH, ORP or dissolved oxygen sensors mounted on immersion probe holders beside a tank, a basin or an open channel (See data-sheets 130-01, 135-01 & 451-01).

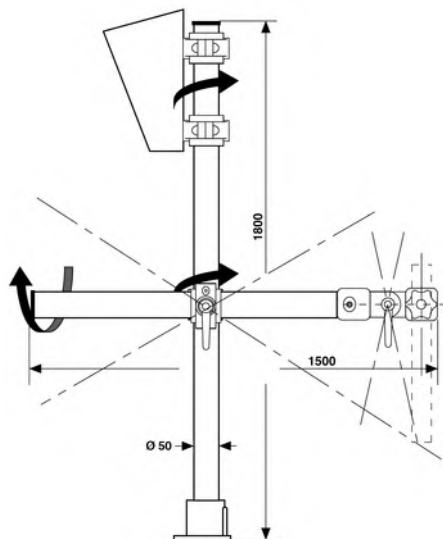
It allows adjustable distances and orientation on 360° to clear of barrier, post, border.

Equipped with a protecting roof, the mounted monitor is accessible for reading and configuration.

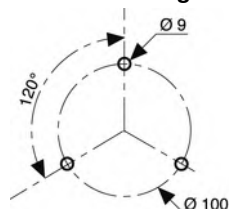
Tubes are made of stainless steel, there are oblong holes to pass through the cables. Base and junction devices are made of aluminum.

CODE NUMBERS AND REFERENCES

Code	Reference	Description
143 052	8306P	Base of holder 8306 + vertical pole
143 061	8306AUV1	Protecting roof for 1 BAMOPHAR
143 062	8306AUV2	Protecting roof for 2 BAMOPHAR
143 071	8306BS36	Arm holder for 1 probe (9336, 9337 and O.D.O.)
143 072	8306BS46	Arm holder for 1 probe 9346
143 073	8306BD36	Twin arm holders for 2 probes (9336 and/or 9337)



Ground fittings:



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Probe holder poles
8306

10-03-2017

D-143.01-EN-AA

pH

143-01 /1

FLOATING HOLDERS



(a)



(b)

- Floating holders for varying levels
- Type a: for pH immersion probe
- Type b: for hydrocarbons layer probe
- Construction: AISI 316 L float
- With fastening rings

APPLICATIONS

Floating holders allow measurement or detection (pH, hydrocarbons layer thickness) on varying level of fluids, even with great amplitudes. They may be secured by two fastening rings and accept slow stream in rivers, basins, lagoons, lakes.

Examples

- Rainwater retention
- Underground reservoir

PRINCIPLE

Floating holder for pH is annular, in stainless steel, with a great stability. Adjustable (sliding flange) fitting allows adjustment of immersion depth of 9336 pH probe.

For hydrocarbon layer detector, the floating holder is based on 3 stainless steel floats, allowing free movement of hydrocarbon fluids.

Immersion depth of probe is adjusted through the fitting.

On each type there are 2 rings to secure the complete system.

Design is a robust construction for no necessary maintenance.

(a): Floating holder for pH

(b): Floating holder for hydrocarbon fluids survey

Contact us for any specific application.

CODE NUMBERS AND REFERENCES

Code	Description
143 510	Floating holder for pH immersion probe
143 500	Floating holder for hydrocarbon layer probe

(Probes are not included in the supply, to order separately).

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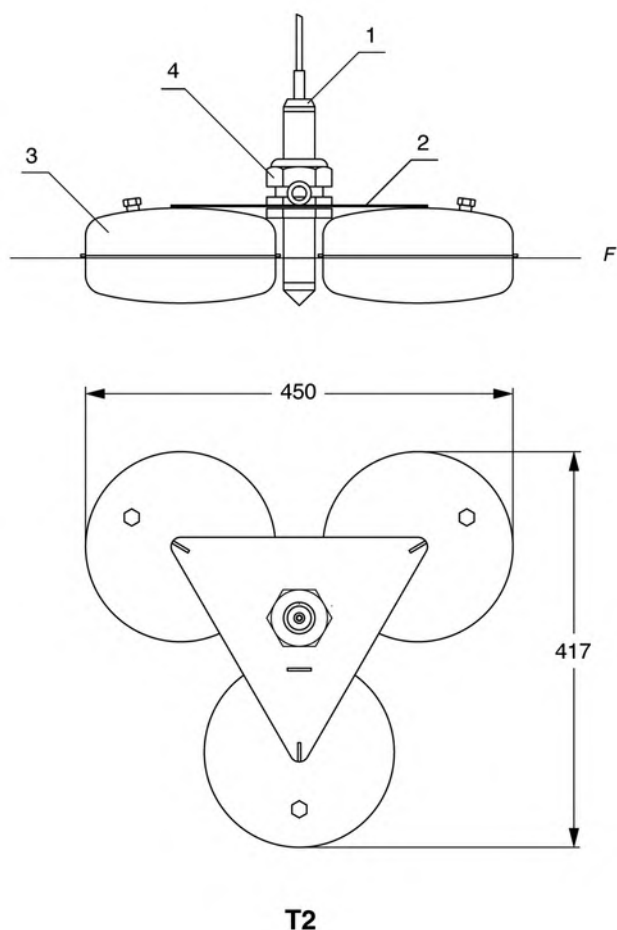
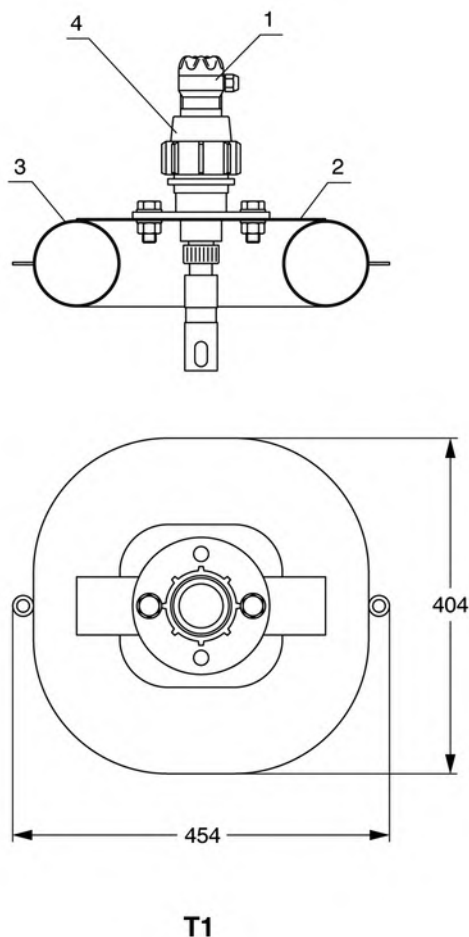
FLOATING HOLDERS

15-03-2017

D-143.02-EN-AC

pH

143-02/1



Type a: Floating holder for pH immersion probe

- (1): Immersion probe 9336, height max. 1 m
 - (2): Plate
 - (3): Float AISI 316 L, Ø 100 mm
 - (4): Adjustable fitting
- The probe is not included.

Type b: Floating holder for hydrocarbons layer probe

- (1): Hydrocarbon layer probe
 - (2): Plate
 - (3): Floats AISI 316 L, Ø 200 mm, 3 pieces
 - (4): Adjustable fitting, PG M50 x 1,5
- F: Water line
- The probe is not included.

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FLOATING HOLDERS

pH

143-02/2

15-03-2017

D-143.02-EN-AC

Auto-cleaning probe 9360



Probe 9360 completes an immersion probe 9336

- Chemical and mechanical cleaning
- For one pH electrode PG 13.5
- Easy to install
- Installation at any time on existing 9336 probe

APPLICATIONS

Where pH is measured, there is a risk of electrode fouling; result is a drift of measured value. To be free of this, it is necessary to clean carefully the electrode. For this purpose, we designed the auto cleaning probe 9360 to inject pressurized cleaning liquid on the electrode to remove impurities.
For instance: injection of hydrochloric acid to remove sodium carbonate.

DESCRIPTION

The probe 9360 accepts our electrode holder "probe 9336" (data-sheet 130-01). The tubing for cleaner liquid is all inside the probe body. The auto-cleaning probe may be adapted at anytime on existing pH immersion probe 9336. The cleaner fluid, water or acid + water, is projected through 3 nozzles around the electrode, 2 mm close to the bulb. Fitting of the probe consist of an adjustable flange. The sliding ND 65 mm flange, allows adjustment of immersion depth. Only the immersion probe 9336 may be used with the system 9360. The cleaning sequence is set up by our BAMOPHAR or BAMOPHOX. During the cleaning, the regulation is switched on "STAND-BY", not to interfere with the process.

CODE NUMBERS AND REFERENCES

Code	Reference	Description
145 700	9360	PCV Auto cleaning probe, 1 meter
135 112	9358 PE	Adjustable flange, PE, ND 65 mm



Close view on 9360 bottom end

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Auto-cleaning probe
9360

10-03-2017

D-145.01-EN-AA

pH

145-01 /1

Industrial applications electrodes

pH - ORP



9308 RP2

9308 RP



9318 RD

9312 OR

All types = Ø 12 mm,
length 120 mm, PG 13.5

- Suitable with mainly all pH-meters
- Combined electrodes (measurement + reference)
- For connectors type S7
- Gel electrolyte

DESIGN

Reference system:

When no specific mention applies, our electrodes use a reference system as Ag/AgCl with a porous reference junction in ceramic: theoretical zero is at pH 7 (0 mV). Theoretical gain is close to 58 mV per pH units (at 20 °C). Fluid conductivity must be over 50 µS/cm

pH combined electrodes:

Glass and reference electrodes are always as a combination system. The measuring electrode is totally protected by the surrounding low resistive electrolyte from the reference electrode. The measuring area corresponds to special glass bulb end.

ORP combined electrodes:

For these electrodes, the glass bulb is replaced by a metallic element, in platinum or gold. Gold is mainly used for ORP measurement in liquids containing cyanides.

DIMENSIONS - MOUNTING

All our electrodes have a S8 plug to receive a coaxial connector ref. 9054. Safe fitting and water tightness is ensured with a threaded connector type Pg 13.5. Our industrial electrodes fit on adapted electrode holders, in order to protect them and for optimized measurements.

For immersion in tank please see the data-sheets 130-01, 135-01 and 145-01. For in-line flow through cells see the data-sheets: 140-01, 140-02, 141-01 and 142-01.

CODE NUMBERS AND FEATURES

Code	Type	Parameter	Range	Element
150 210	9321	pH	0...12 pH	Glass
150 112	9308 RP	pH	0...14 pH	Glass
150 113	9308 RP2	pH	0...14 pH	Glass
150 342	9387	pH	0...14 pH	Glass
150 117	9318 RD	ORP	±2000 mV	Platinum
150 120	9312 OR	ORP	± 1500 mV	Gold (ring)
150 125	9326 F	pH	0...12 pH	Glass

Code	P max.	T° max.	Junction	PG 13.5
150 210	6 bar	-30...+30 °C	Ceramic (x3)	Fixed
150 112	6 bar	-5...+60 °C	Ceramic (x1)	Fixed
150 113	10 bar	-5...+70 °C	PTFE	Rotating
150 342	10 bar	-5...+100 °C	Ceramic (x1)	Fixed
150 117	6 bar	-5...+80 °C	Ceramic (x1)	Fixed
150 120	2 bar	-5...+70 °C	Ceramic (x1)	Rotating
150 125	6 bar	-5...+60 °C	PTFE	Fixed

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Industrial applications
 electrodes
 pH - ORP

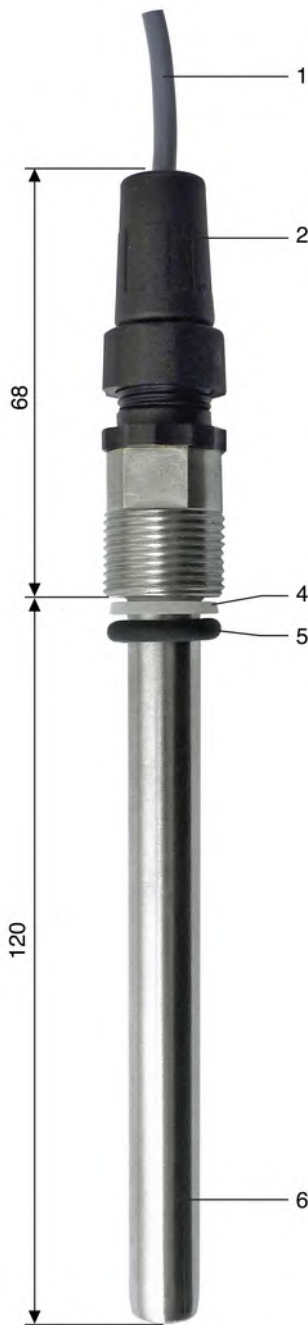
10-03-2017

D-150.01-EN-AA

pH

150-01 /1

Temperature compensation probe 9094 probe



9094

- For mounting on holders 9200, 9500 et 9346
- Sensor Pt 100 Ω at 0 °C
- Versions: Simplex or Duplex
- Fitting PG 13.5

APPLICATION

9090 probes with sensor Pt 100 Ω are designed for temperature measurement in the range -20 et +150 °C for pH monitoring systems. Built-in sensor is a Pt resistor, 100 Ω at 0 °C; probe is or simplex or duplex construction. Probes 9090 are in conformity with standard DIN 43760. They are used in particular on pH monitoring systems for automatic compensation of temperature.

DESCRIPTION

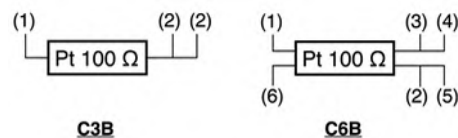
The sensor is a Pt100 resistor, built-in a stem. The stem is mounted on holder with its own fitting PG 13.5 or with an additional pressure gland \varnothing 12 mm (not provided). Connection: specific connector with a low contact resistance. The connector is molded on the cable to protect wires against humidity. Connector is for shielded cable, 3 or 6 wires (0,22 mm²).

9094 probe: (1)= Shielded cable; (2)= Connector; (3)= PG 13.5; (4)= Nylon seal; (5)= O-ring seal; (6)= Stem \varnothing 12 mm

TEMPERATURE LIMITS

PVC 0 ... +45 °C
PVDF -20 ... +140 °C
Stainless steel -20 ... +150 °C

ELECTRICAL CONNECTION



(1)= White; (2)= Red; (3)= Yellow, (4)= Blue;
(5)= Black, (6)= Green

CODE NUMBERS AND REFERENCES

Code	Reference	Description
150 903	9093	Temperature probe in PVDF - L = 120 mm
150 904	9094	Temperature probe in AISI 316 L - L = 120 mm
150 906	C3B/10/CO	Connector with C3B cable, 10 m long
150 907	C3B/20/CO	Connector with C3B cable, 20 m long
150 908	C6B/10/CO	Connector (Duplex) with C6B cable, 10 m long
150 912	C6B/20/CO	Connector (Duplex) with C6B cable, 20 m long
150 917	9096	Temperature probe in PVC, L= 120 mm - Duplex
150 918	9097	Temperature probe in PVDF, L= 120 mm - Duplex

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Temperature compensation
probe
9094 probe

10-03-2017

D-150.02-EN-AB

pH

150-02/1

pH heavy duty electrodes 2000 series



- **Pressure limit: up to 30 bar**
- **High chemical resistance**
- **Long lifetime**
- **No KCl leaking**

SPECIFIC REFERENCE SYSTEM

Our reference system includes a cell Ag/AgCl type, built in a conductive polyester jacket, which external surface is used as electrolyte and junction.

So, 2000 series electrodes are free of trouble from porous junction. Complete ionic conduction is through the interface in polyester, therefore the reference protection is optimum. Reference is protected against toxic salts and pollutants.

APPLICATIONS

- Ultrapure water
- Chlorinated water
- Polluted fluids
- WWTP
- Fluids contaminated with sulphides or proteins
- Measurements in fluids with suspended solids and emulsions

TECHNICAL FEATURES

Type	: Combined electrode
Reference junction	: Non porous and solid interface with ionic conductivity Ag/AgCl in KCl 2.8 mol/L
Measuring range	: 0 ... 13 pH
Impedance Glass pH/Reference	: < 400 MΩ / 1 MΩ
Pressure	: 0 ... 30 bar (increasing slowly)
Temperature	: 0 ... 100 °C
Dimensions	: 12 x 120 mm
Connector	: S8 type
Fitting	: PG 13.5

CODE NUMBERS AND REFERENCES

Code	Reference	Measurement	Range	Pressure	T° max.
150 370	2001	pH	0...13	0...30 bar	100 °C

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pH heavy duty electrodes
2000 series

05-10-2016

D-150.03-EN-AA

pH

150-03/1

pH and ORP accessories



Coaxial connectors (DIN)

(1) & (2): To connect cable 9060 type on any pH/ mV-meters or electrodes with head S7 type.

This patented connector allows connection with cables below, on site with only a soldering iron thin pane and a wire stripper.

Code	Reference	Description
160 200	9054	Coaxial connector (to electrode or pH-meter)
160 100	9050	DIN connector, metal for pH-meter

DIN molded connector 9054 on cable 9060 for pH

(3): Connection electrode / pH-meter. Convenient distances from power supply cables and process signals must be respected.

Code	Description
160 205	DIN molded connector 9054 on 5 m long cable 9060 type
160 210	DIN molded connector 9054 on 10 m long cable 9060 type
160 220	DIN molded connector 9054 on 20 m long cable 9060 type
160 230	DIN molded connector 9054 on 30 m long cable 9060 type

Cable 9060 special for pH - Triple coaxial cable 9061 (double shield)

9060: Connection electrode / pH-meter for distances less than 30 m. Convenient distances from power supply cables and process signals must be respected.

9061: Connection electrode / pH-meter for distances over 30 m and/or areas where electrical interferences exist.

This cable 9061 has a second shield to protect the measuring signal.

The second shield (external) must be connected to ground and only on monitor side.

Convenient distances from power supply cables and process signals must be respected.

9059: Workshop mounting of any connector 9054, 9050, BNC, etc. on the cable of your choice (Code 160 400)

Code	Reference	Description
160 300	9060	Coaxial cable for pH
160 310	9061	Triple coaxial cable (double shield)

Junction box 9055

(4): IP 55, case, 2 plugs S7, shielded inside

Code	Reference	Description
160 250	9055	Junction box

(5) : Buffer solutions

Code	Reference	Description
160 500	9005	KCl electrolyte, 500 ml
160 607	9011	pH 7 buffer, 100 ml
160 604	9012	pH 4 buffer, 100 ml
160 609	9013	pH 10 buffer, 100 ml
160 616	9016	rH 200 mV solution, 100 ml

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pH and ORP accessories

10-03-2017

D-160.01-EN-AA

pH

160-01 /1