



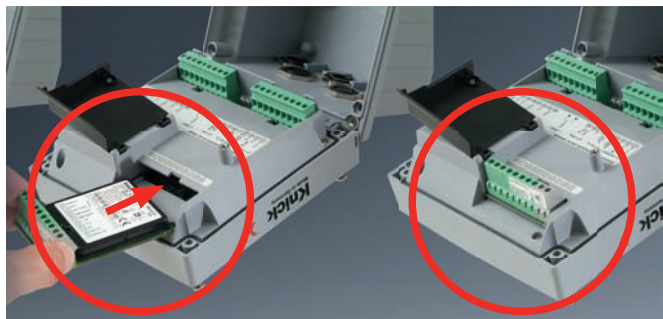


Stratos Evo Series Measuring Modules and Wiring Examples PH, OXY



PH	Measuring modules.....3	
OXY		
MSPH-MSPH	Messmodule..... 33	
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Measuring modules for connection of conventional sensors (pH, Oxy)

Measuring modules for the connection of conventional sensors are simply inserted into the module slot. Upon initial start-up, the analyzer automatically recognizes the module and adjusts the software correspondingly. When you replace the measuring module, you must select the corresponding measuring function in the "Service" menu.

Measuring module for 2nd Memosens channel

If you want to measure two process variables using Memosens sensors, you must insert a Memosens module for the second channel. See Page 27.

The operating mode for multi-channel measurement ("device type") must be selected in the Service menu.

The following combinations are possible:

Memosens pH + Memosens pH

Memosens pH + Memosens Oxy

Installation Instructions

- Installation of the device must be carried out by trained experts in accordance with this user manual and as per applicable local and national codes.
- Be sure to observe the technical specifications and input ratings during installation!
- Be sure not to notch the conductor when stripping the insulation!
- Before connecting the device to the power supply, make sure that its voltage lies within the range 80 to 230 V AC/DC or 24 to 60 V DC.
- A signal current supplied to the current input must be galvanically isolated. If not, connect an isolator module.
- All parameters must be set by a system administrator prior to commissioning.

Terminals:

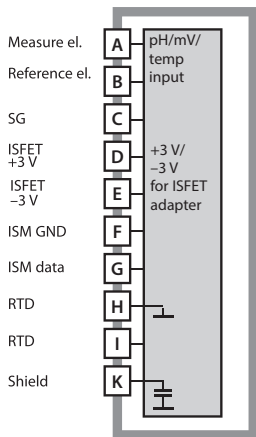
suitable for single or stranded wires up to 2.5 mm² (AWG 14)

Application in Hazardous Locations:



For use in hazardous locations, see separate "Certificates" document:

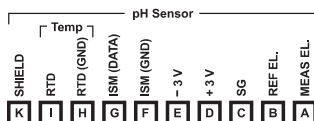
- IECEX
- ATEX



Module for pH measurement

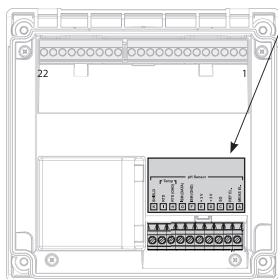
Order code MK-PH015

See the following pages for wiring examples.



Terminal plate of pH module

The terminals are suitable for single or stranded wires up to 2.5 mm² (AWG 14).



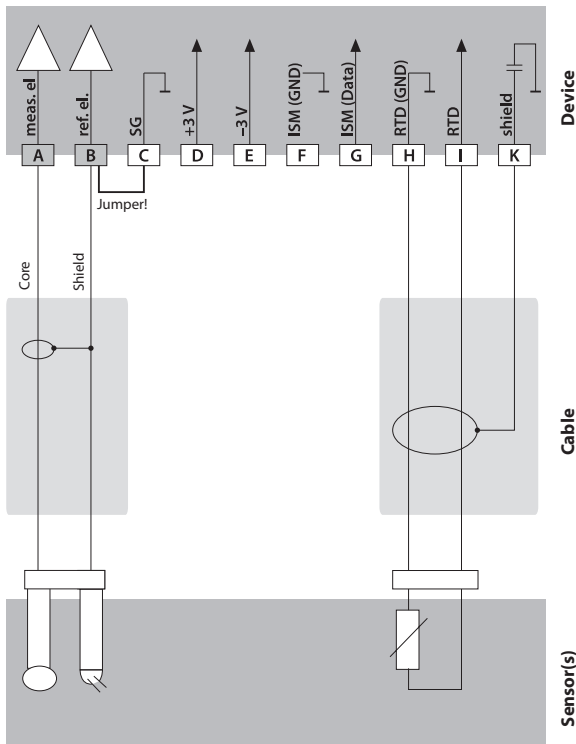
The measuring module comes with a self-adhesive label. Stick the label to the module slot on the device front. This way, you have the wiring "under control".

Example 1:

Measuring task: pH, temperature, glass impedance

Sensors (example): HA 405-DXK-58 (Mettler-Toledo)

Cable (example): AS9 ZU 0318 (Knick)



Example 2:

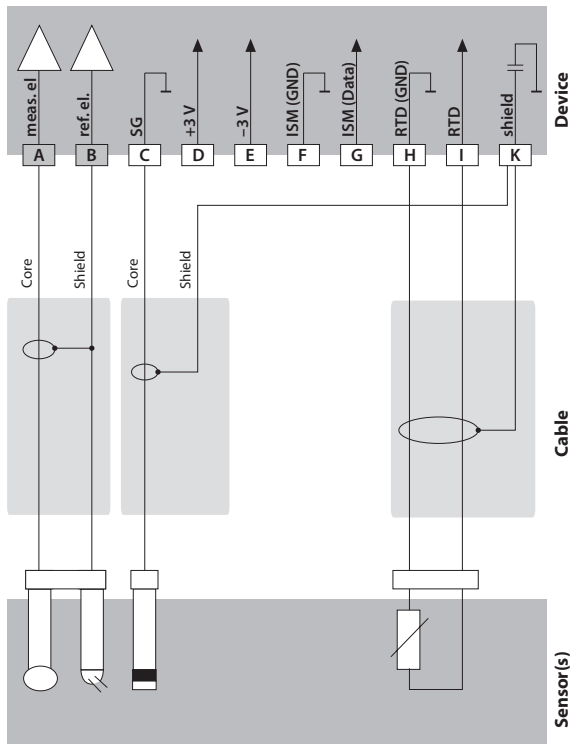
Measuring task: pH/ORP, temp, glass impedance, ref. impedance

Sensors (example): pH: HA 405-DXK-58 (Mettler-Toledo),

Pt: ZU 0073 (Knick)

Cable (example):

2x AS9 ZU 0318 (Knick)

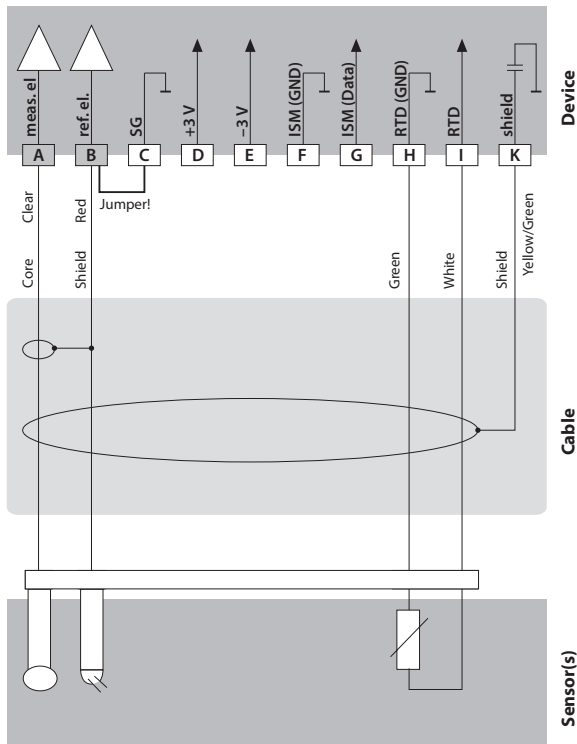


Example 3:

Measuring task: pH, temp, glass impedance

Sensors (example): SE 533 (Knick)

Cable (example): VP6 ZU 0313 (Knick)



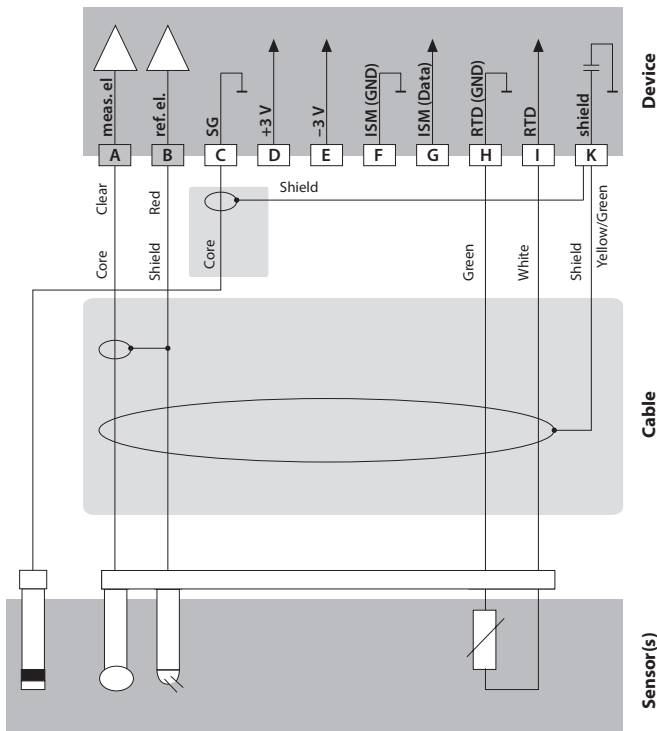
Example 4:

Measuring task: pH/ORP, temp, glass impedance, ref. impedance

Sensors (example): pH: SE 533 (Knick)

Pt: ZU 0073 (Knick)

Cable (example): VP6 ZU 0313 (Knick) or AS9 ZU 0318 (Knick)

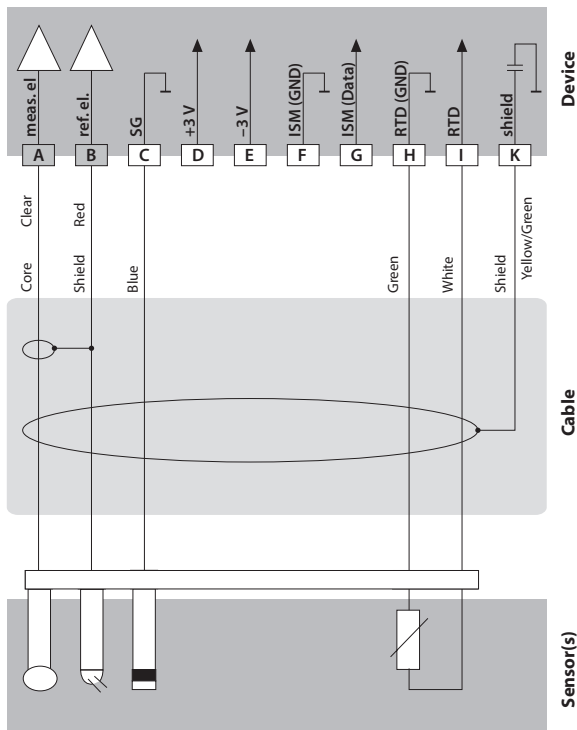


Example 5:

Measuring task: pH/ORP, temp, glass impedance, ref. impedance

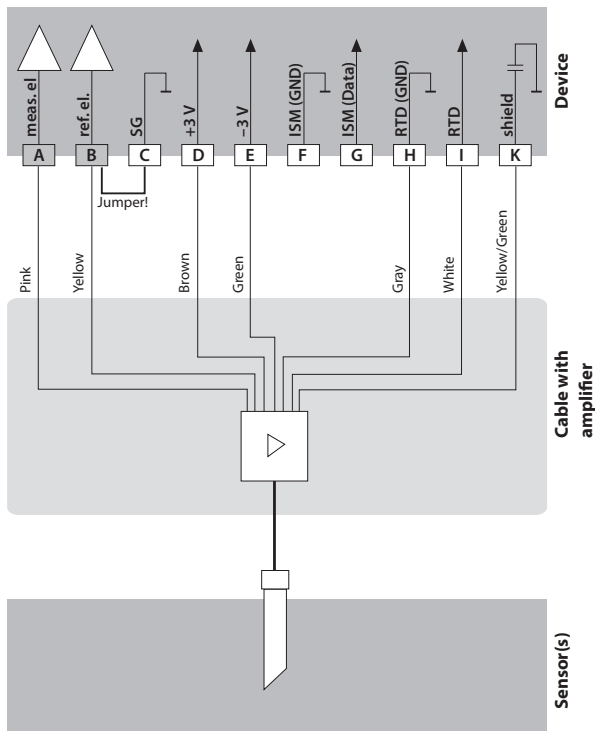
Sensors (example): InPro 4260 (Mettler-Toledo)

Cable (example): VP6 ZU 0313 (Knick)



Example 6:

Measuring task: pH, temp (safe areas only)
 Sensors (example): InPro 3300 ISFET (Mettler-Toledo)
 Cable (example): ZU 0582 (Knick)



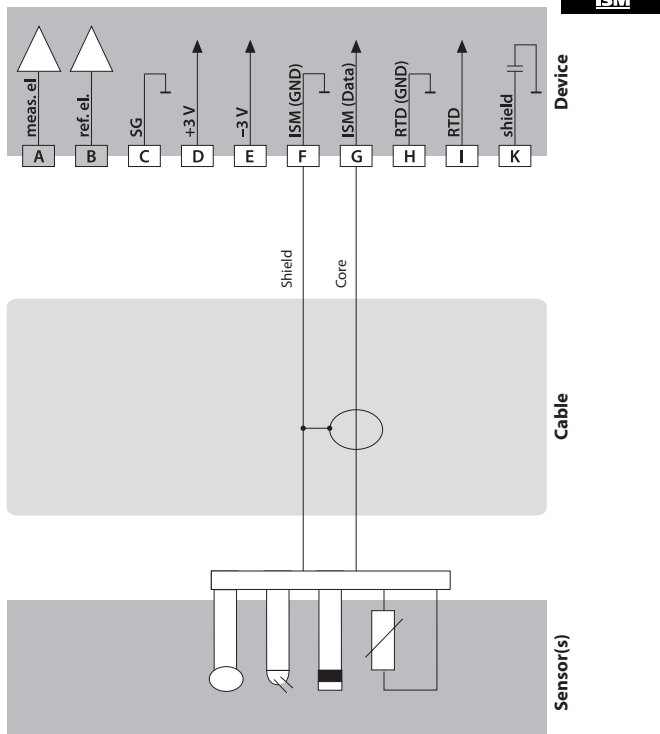
Example 7:**Caution!**

Do not connect an additional analog sensor!

Measuring task: pH/ORP, temp, glass impedance, ref. impedance

Sensors (example): ISM digital InPro 4260i (Mettler-Toledo)

Cable (example): AK9 (Mettler-Toledo)

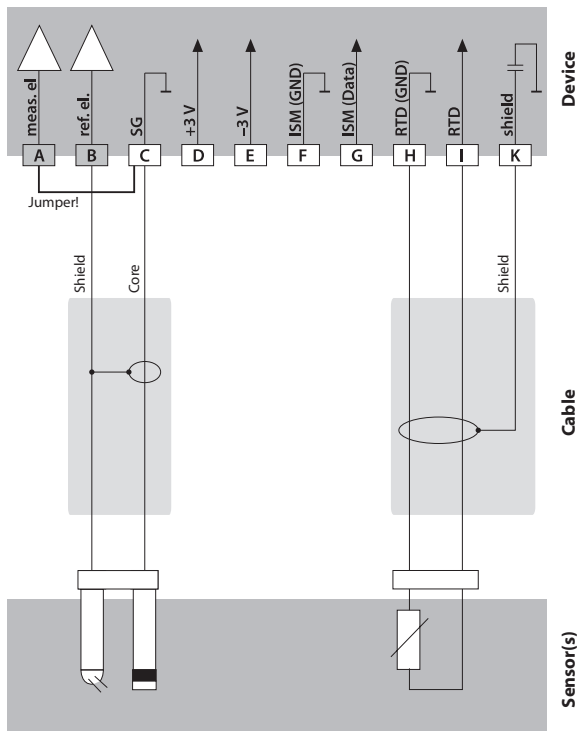


Example 8 – Note: Switch off Sensocheck!

Measuring task: ORP, temp, glass impedance, ref. impedance

Sensors (example): ORP: SE 535 (Knick)

Cable (example): AS9 ZU 0318 (Knick)

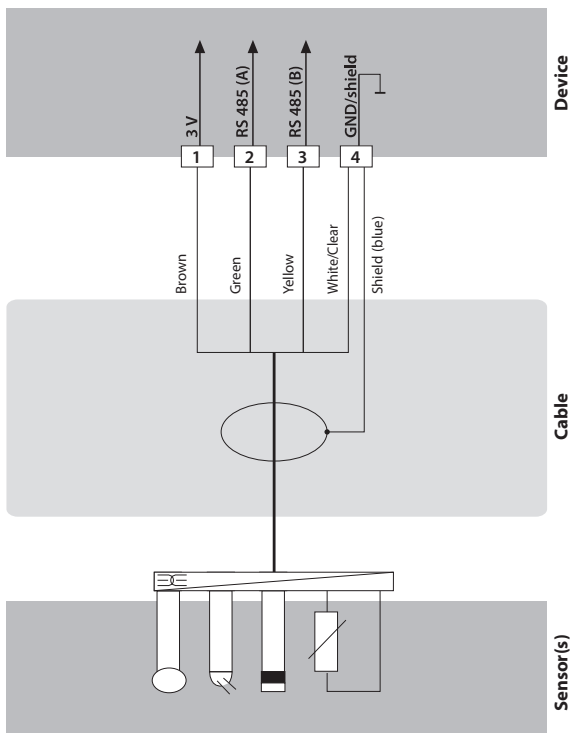


Example 9:

Measuring task: pH/ORP, temp, glass impedance, ref. impedance

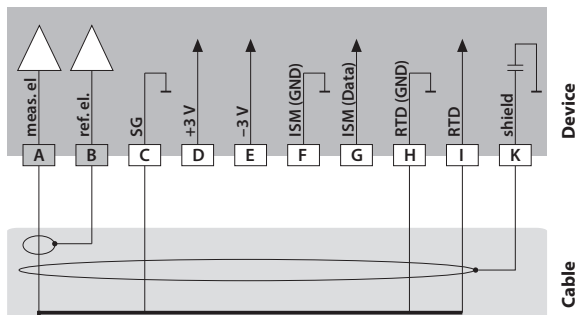
Sensors (example): SE 533-MS (Knick), Memosens

Cable (example): CA/MS-003-NAA (Knick)



Example 10:

Connecting a Pfaudler probe (requires TAN SW-A007):



Pfaudler probe

Device	pH Reiner with equip.bond., VP screw cap	Differential Models 18/40 with equip.bond.	Models 03/04 with equip. bond.	Models 03/04 without equip. bond.
A	meas	Coax core	Coax white	Coax white
B	ref	Coax shield	Coax brown	Coax brown
C	SG	Blue	Blue	Jumper B/C
D				
E				
F				
G				
H	RTD (GND)	Green	Brown	Brown
I	RTD	White	Green, Black	Green, Black
K	Shield	Green/Yellow, Gray	Orange, Violet	Orange, Violet

Configuration		Choices	Default
Sensor (SENSOR)			
SNS:		STANDARD, ISFET INDUCON, ISM MEMOSENS	STANDARD
	RTD TYPE (omitted for ISM, InduCon, Memosens)	100 PT, 1000 PT, 30 NTC, 8.55 NTC, Balco 3kOhm	100 PT
	TEMP UNIT	°C / °F	°C
	TEMP MEAS *)	AUTO, MAN, EXT (EXT only with I-input enabled via TAN)	AUTO
	MAN	-20...200 °C (-4...392 °F)	025.0 °C (077.0 °F)
	TEMP CAL	AUTO, MAN, EXT (EXT only with I-input enabled via TAN)	AUTO
	MAN	-20...200 °C (-4...392 °F)	025.0 °C (077.0 °F)
	NOM ZERO **)	0.00 ... 14.00 PH	07.00 PH
	NOM SLOPE **)	30.0 ... 60.0 mV	059.2 mV
	PH_ISO **)	0.00 ... 14.00 PH	07.00 PH
	CAL MODE	AUTO, MAN, DAT	AUTO
	AUTO BUFFER SET	-01-...-10-, -U1- Note: Pressing info displays nominal buffer values + manufacturer	-02-
	U1 (For specifiable buffer set, see Appendix: "Buffer Tables")	EDIT BUFFER 1 (NO, YES) Enter values for buffer 1	NO
		EDIT BUFFER 2 (NO, YES) Enter values for buffer 2	NO
	CAL TIMER (omitted for ISM)	OFF, FIX, ADAPT	OFF
ON	CAL-CYCLE	0...9999 h	0168 h

*) The setting TEMP MEAS: AUTO/MAN/EXT applies to all outputs: OUT1/OUT2/limit values/controller/display;

**) only with STANDARD and Pfadler option (TAN), not with Memosens Pfadler.

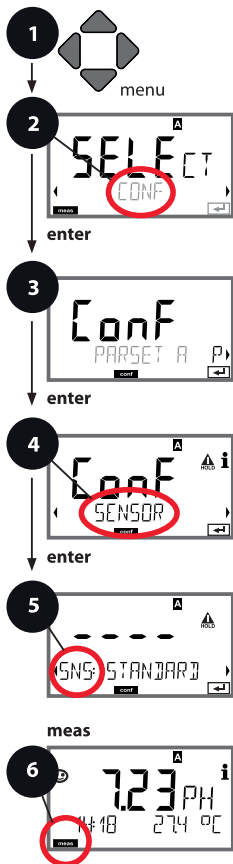
Configuration		Choices	Default		
Sensor (SENSOR)					
SNS:	ISM (for ISM sensors only)	ACT (Adaptive Calibration Timer)	OFF AUTO MAN	OFF	
		MAN ACT CYCLE	0...9999 DAY	0007 DAY	
		TTM (Time to Maintenance)	OFF AUTO MAN	OFF	
		MAN TTM CYCLE	0...9999 DAY	0030 DAY	
	Inducon, ISM	CIP COUNT		ON/OFF	OFF
		ON CIP CYCLES	0...9999 CYC	0025 CYC	
		SIP COUNT***		ON/OFF	OFF
		ON SIP CYCLES	0...9999 CYC	0025 CYC	
		AUTOCLAVE		ON/OFF	OFF
		ON AC CYCLES	0...9999 CYC	0000 CYC	

***) also for Memosens

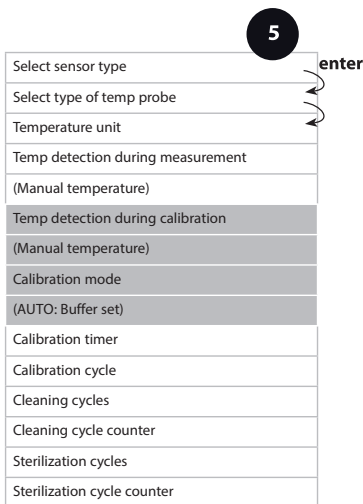
18 Selecting the Calibration Mode (pH)

Sensor

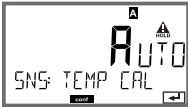
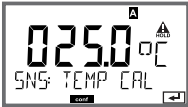


Select: Temp detection during calibration, calibration mode



- 1 Press **menu** key.
- 2 Select **CONF** using **◀ ▶** keys, press **enter**.
- 3 Select parameter set using **◀ ▶** keys, press **enter**.
- 4 Select **SENSOR** menu using **◀ ▶** keys, press **enter**.
- 5 All items of this menu group are indicated by the "SNS:" code. Press **enter** to select menu, edit using arrow keys (see next page). Confirm (and proceed) by pressing **enter**.
- 6 Exit: Press **meas** key until the [meas] mode indicator is displayed.



5

Menu item	Action	Choices
<p>Temp detection during calibration</p> 	<p>Select mode using \blacktriangle \blacktriangledown keys: AUTO: Measured by sensor MAN: Direct input of temperature, no measurement (see next step) EXT: Temperature specified via current input (only if TAN E enabled) Press enter to confirm.</p>	<p>AUTO MAN EXT</p>
<p>(Manual temperature)</p> 	<p>Modify digit using \blacktriangle \blacktriangledown keys, select next digit using \blacktriangleleft \blacktriangleright keys. Press enter to confirm.</p>	<p>-20...200 °C (-4...+392 °F)</p>
<p>Calibration Mode</p> 	<p>Select CALMODE using \blacktriangle \blacktriangledown keys: AUTO: Calibration with Calimatic buffer set recognition MAN: Manual entry of buffer solutions DAT: Input of adjustment data of premeasured sensors Press enter to confirm.</p>	<p>AUTO MAN DAT</p>
<p>(AUTO: Buffer set)</p> 	<p>Select buffer set using \blacktriangle \blacktriangledown keys (see buffer tables for nominal values) Press enter to confirm.</p>	<p>-00...-10-, (-U1-, see Appendix)</p> <p>Pressing the info key displays the manufacturer and nominal values in the lower line.</p>

pH sensor standardization	pH calibration	
Operating modes	AUTO	Calibration with Calimatic automatic buffer recognition
	MAN	Manual calibration with entry of individual buffer values
	DAT	Data entry of pre-measured electrodes
	Product calibration	
Calimatic buffer sets	-01- Mettler-Toledo	2.00/4.01/7.00/9.21
	-02- Knick CaliMat	2.00/4.00/7.00/9.00/12.00
	-03- Ciba (94)	2.06/4.00/7.00/10.00
	-04- NIST technical	1.68/4.00/7.00/10.01/12.46
	-05- NIST standard	1.679/4.006/6.865/9.180
	-06- HACH	4.01/7.00/10.01
	-07- WTW techn. buffers	2.00/4.01/7.00/10.00
	-08- Hamilton	4.01/7.00/10.01/12.00
	-09- Reagecon	2.00/4.00/7.00/9.00/12.00
	-10- DIN 19267	1.09/4.65/6.79/9.23/12.75
	-U1-	Specifiable buffer set with 2 buffer solutions

Calibration is used to adapt the device to the individual sensor characteristics, namely asymmetry potential and slope.

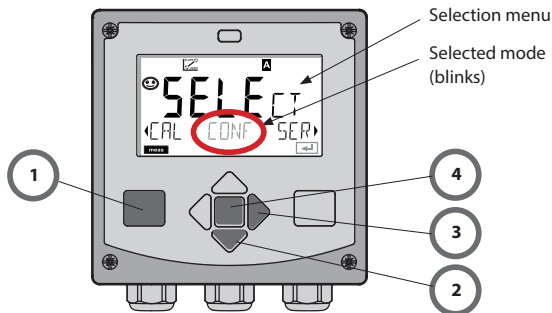
Access to calibration can be protected with a passcode (SERVICE menu).

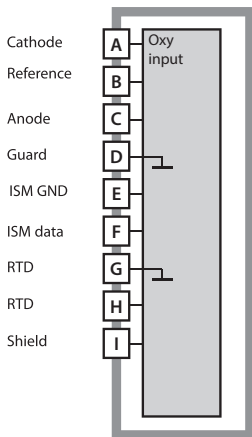
First, you open the calibration menu and select the calibration mode:

CAL_PH	Depending on configuration setting: <table border="0"> <tr> <td>AUTO</td> <td>Automatic buffer recognition (Calimatic)</td> </tr> <tr> <td>MAN</td> <td>Manual buffer input</td> </tr> <tr> <td>DAT</td> <td>Input of premeasured electrode data</td> </tr> </table>	AUTO	Automatic buffer recognition (Calimatic)	MAN	Manual buffer input	DAT	Input of premeasured electrode data
AUTO	Automatic buffer recognition (Calimatic)						
MAN	Manual buffer input						
DAT	Input of premeasured electrode data						
CAL_ORP	ORP calibration						
P_CAL	Product calibration (calibration with sampling)						
ISFET-ZERO	Zero adjustment. Required for ISFET sensors. Subsequently you can conduct either a one or a two-point calibration.						
CAL-RTD	Temperature probe adjustment						

To preset CAL_PH (CONF menu / configuration):

- 1) Hold **meas** key depressed (> 2 s) (measuring mode)
- 2) Press **menu** key: the selection menu appears
- 3) Select CONF mode using left / right arrow key
- 4) Select "SENSOR" – "CALMODE": AUTO, MAN, DAT.
Press **enter** to confirm.

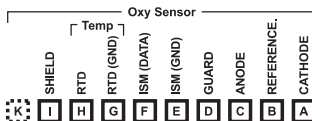




Module for dissolved-oxygen measurement

Order code MK-OXY045

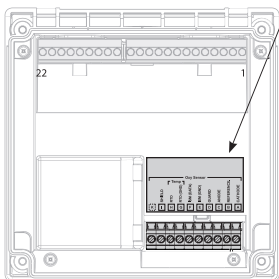
A wiring example is shown on the following page.



Terminal plate of module for dissolved-oxygen measurement

The terminals are suitable for single or stranded wires up to 2.5 mm² (AWG 14).

The measuring module comes with a self-adhesive label. Stick the label to the module slot on the device front. This way, you have the wiring "under control".



Example 1:

Measuring task:

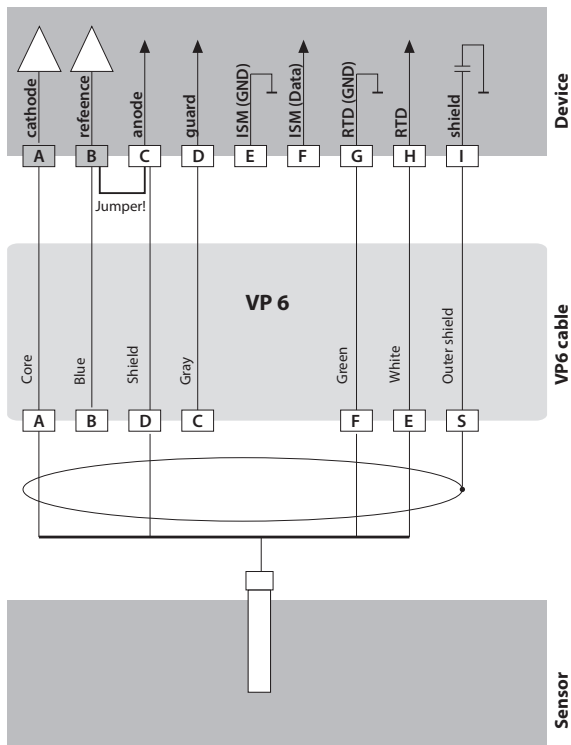
Oxygen STANDARD

Sensors (example):

"10" (e.g. SE 706, InPro 6800)

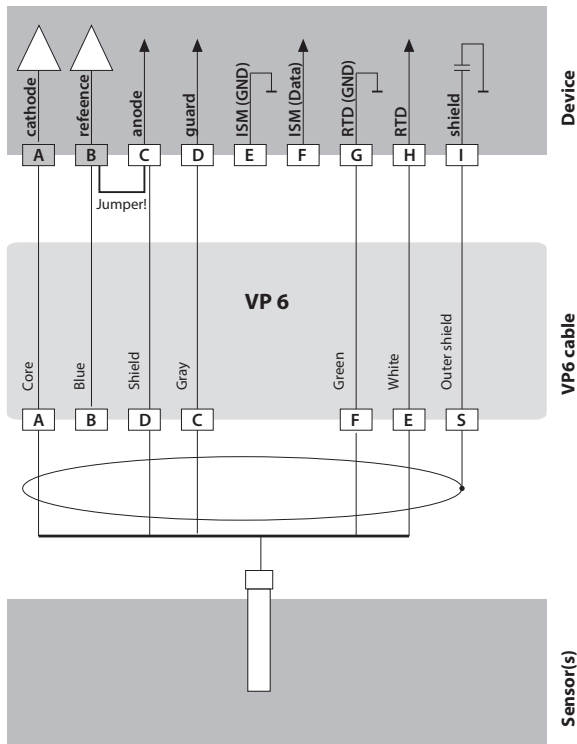
Cable (example):

VP 6 ZU 0313 (Knick)



Example 2:

Measuring task:	Oxygen TRACES (TAN required)
Sensors (example):	"01" (e.g. SE 707, InPro 6900)
Cable (example):	VP6 ZU 0313 (Knick)

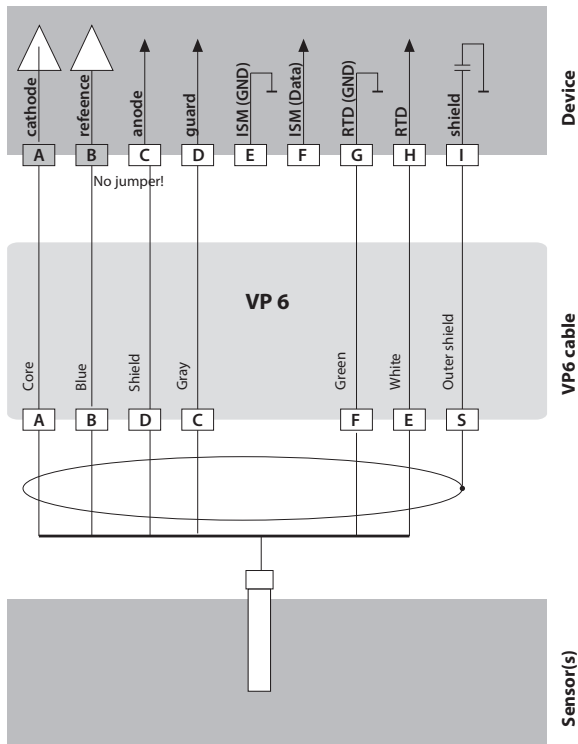


Example 3:

Measuring task: Oxygen SUBTRACES (TAN required)

Sensors (example): "001" (e.g. SE 708, InPro 6950)

Cable (example): VP6 ZU 0313 (Knick)



Example:**Optical oxygen sensor**

Measuring task:

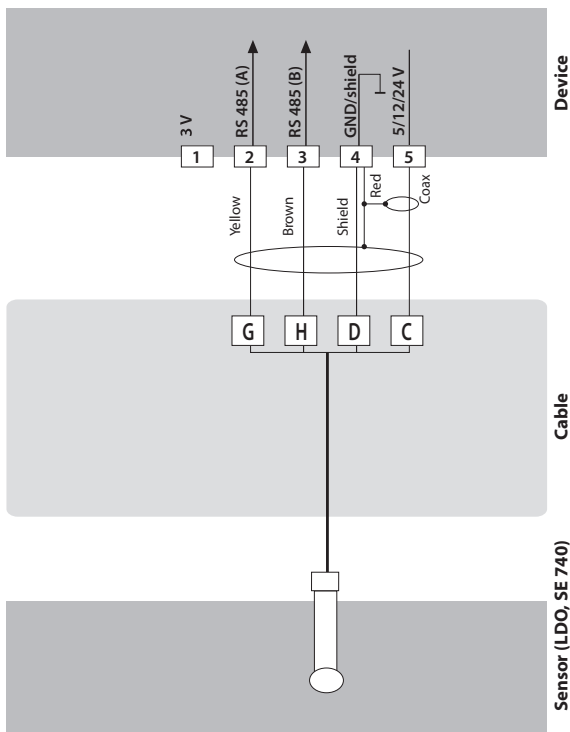
VP connection of optical sensor (LDO)

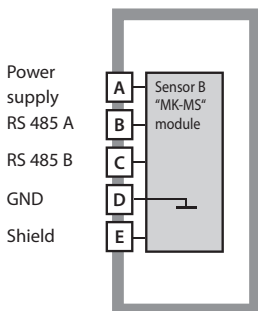
Sensors (example):

SE 740

Cable (example):

M12 (e.g. CA/M12-005NA)

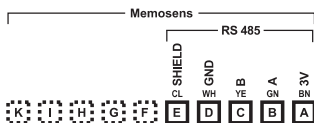




Module for 2nd Memosens channel

Order code MK-MS095

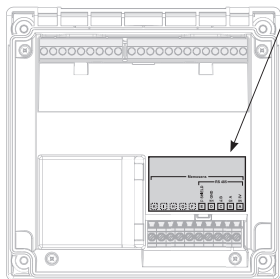
See the following pages for wiring examples.



Terminal plate of module for 2nd Memosens channel

The terminals are suitable for single or stranded wires up to 2.5 mm² (AWG 14).

The measuring module comes with a self-adhesive label. Stick the label to the module slot on the device front. This way, you have the wiring "under control".



Example 11:**Memosens**

Measuring task:

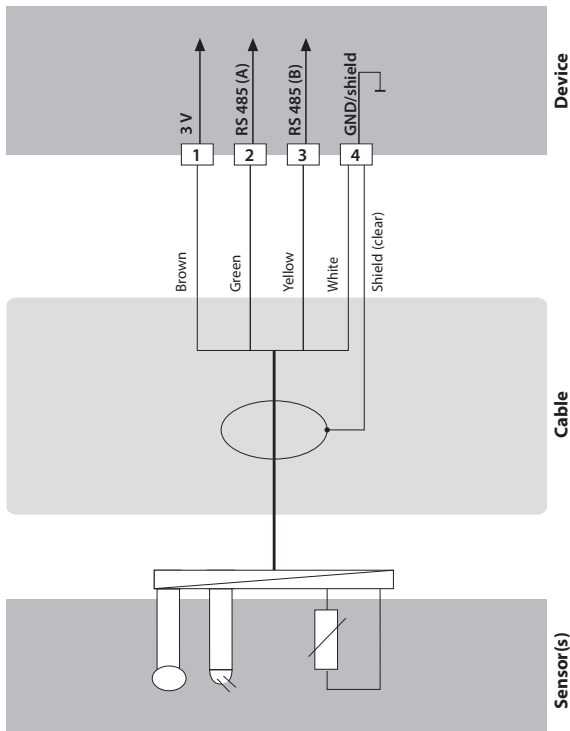
pH/ORP, temp, glass impedance, ref. impedance

Sensors (example):

Orbisint CPS 11 D Memosens

Cable (example):

CYK 10



Start-Up

When an MS sensor is connected at initial start-up, it is recognized and the corresponding measuring function is automatically selected.

Changing the Measuring Function

In the "Service" menu you can select another measuring function at any time.

Calibration and Maintenance in the Lab

The "MemoSuite" software allows calibrating Memosens sensors under reproducible conditions at a PC in the lab. The sensor parameters are registered in a database. Documenting and archiving meet the demands of FDA CFR 21 Part 11. Detailed reports can be output as csv export for Excel. MemoSuite is available as accessory and comes in the versions "Basic" and "Advanced": www.knick.de.

Settings and specifications

Currently connected sensor:
Sensor type, manufacturer,
order code and serial number

The screenshot shows the MemoSuite software interface. At the top, there is a menu bar with options: Start/Center, Calibration, Sensors, History, Statistics, and pH Buffers. The 'Sensors' option is highlighted. Below the menu bar, there are three main panels. The left panel, titled 'Measured values', displays: pH value: 7.36 pH, pH voltage: -19.4 mV, and Temperature: 23.8 °C. The middle panel, titled 'Sensor data', displays: Sensor type: pH (glass), Manufacturer: KNICK, Order code: SE 533X/1-NMSN, and Serial number: 1030550. The right panel, titled 'Adjustment data', displays: Date: 11/5/2012 07:30:24, Slope: 58.6 mV/pH, and Zero point: 7.03 pH. A red circle highlights the 'Sensors' menu item, and another red circle highlights the '7.36 pH' value in the 'Measured values' panel.

Function selection
(The selected function is highlighted.)

Parameters of currently connected sensor

Last calibration
(adjustment)

Measured values

pH value

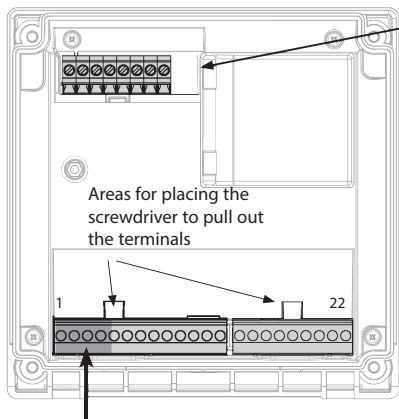
7.32 pH

pH voltage

-16.9 mV

Display size of measured values

When the cursor moves over a measured value, it changes to a magnifying glass, allowing to magnify the measured-value display at a mouse click.



For dual devices
(2 measuring channels):
(Module xxx)

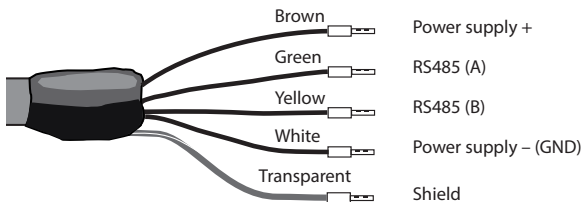
Connection of sensor B

A	Brown	supply
B	Green	RS 485 A
C	Yellow	RS 485 B
D	White	GND
E	Transp.	SHIELD

Standard connection (sensor A)

1	Brown	supply
2	Green	RS 485 A
3	Yellow	RS 485 B
4	White/Transp.	GND/shield

Memosens Cable



Connecting cable for contactless inductive digital transmission of measured signals (Memosens).

The connecting cable consists of an inductive connector for digital Memosens sensors (bayonet lock). It allows connecting the ferrule-terminated wires from the sensor loop of the transmitter. Contactless inductive digital transmission of signals and energy eliminates the influence of humidity, electromagnetic fields and corrosion.

Specifications

Material	TPE
Cable diameter	6.3 mm
Cable	2x2, twisted wire pairs
Length	up to 100 m
Process temperature	-20 °C ... 135° C
Ingress protection	IP 68

Model Code

Cable type	Cable length	Order code
Memosens cable	3 m	CA/MS-003NAA
	5 m	CA/MS-005NAA
	10 m	CA/MS-010NAA
	20 m	CA/MS-020NAA
Memosens cable, Ex*	3 m	CA/MS-003XAA
	5 m	CA/MS-005XAA
	10 m	CA/MS-010XAA
	20 m	CA/MS-020XAA
Other lengths available on request.		

*) Ex-certified, ATEX II IG Ex ia IIC T3/T4/T6

The Type-Examination Certificate is enclosed with each Ex sensor.

Start-Up

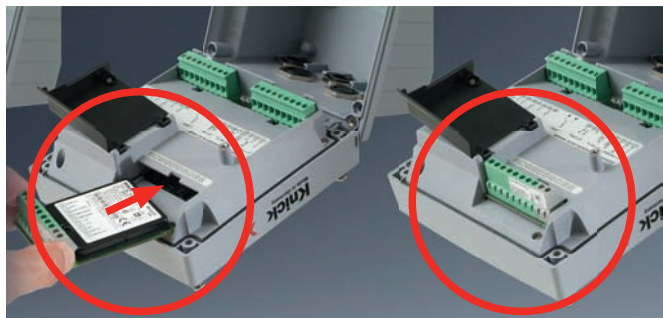
Upon initial start-up, the analyzer automatically recognizes the module and adjusts the software correspondingly. When you replace the measuring module, you must select the corresponding measuring function in the "Service" menu.

This does not apply to the multi-channel module for dual conductivity measurement. Here, you will be prompted to select the desired measuring function upon first start-up.

Changing the Measuring Function (Memosens Sensors)

Directly connected Memosens sensors (without measuring module):

In the "Service" menu you can select another measuring function at any time.



Messmodule für den Anschluss konventioneller Sensoren (pH, Oxy):

Messmodule für den Anschluss konventioneller Sensoren werden einfach in den Modulschacht gesteckt. Bei der Erstinbetriebnahme erkennt das Messgerät das gesteckte Modul automatisch, die Software wird an die ermittelte Messgröße angepasst. Wenn ein Messmodul getauscht wird, muss das Messverfahren im Menü „Service“ eingestellt werden.

Messmodul für 2. Memosens-Kanal

Wenn zwei Messgrößen mit Memosens-Sensoren erfasst werden sollen, erfordert der zweite Kanal das Stecken eines Memosens-Moduls. Siehe Seite 57.

Die Betriebsart für die Mehrkanal-Messung („Gerätetyp“) muss im Menü Service eingestellt werden.

Zur Verfügung stehen die Kombinationen:

Memosens pH + Memosens pH

Memosens pH + Memosens Oxy

Installationshinweise

- Die Installation des Geräts darf nur durch ausgebildete Fachkräfte (BGV A 3) unter Beachtung der einschlägigen Vorschriften und der Betriebsanleitung erfolgen!
- Bei der Installation müssen die technischen Daten und die Anschlusswerte beachtet werden!
- Leitungsdarmen dürfen beim Abisolieren nicht eingekerbt werden!
- Vor Anschließen des Geräts an die Hilfsenergie sicherstellen, dass deren Spannung im Bereich 80 ... 230 V AC oder 24 ... 60 V DC liegt!
- Ein in den Stromeingang eingespeister Signalstrom muss galvanisch getrennt sein. Andernfalls muss ein Trennbaustein vorgeschaltet werden.
- Bei der Inbetriebnahme muss eine vollständige Konfigurierung durch den Systemspezialisten erfolgen!

Anschlussklemmen:

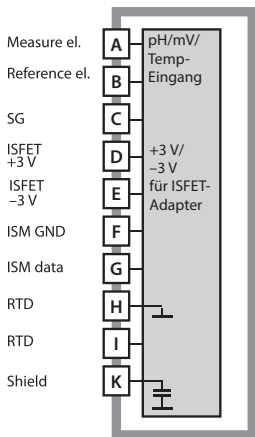
geeignet für Einzeldrähte / Litzen bis 2,5 mm²

Einsatz in explosionsgefährdeten Bereichen:



Für den Einsatz in explosionsgefährdeten Bereichen siehe separates Dokument „Zertifikate“:

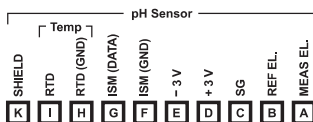
- IECEX
- ATEX



Modul pH-Messung

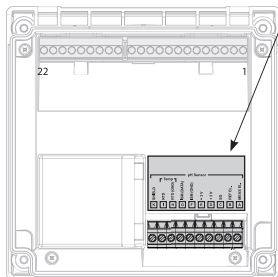
Bestellnummer MK-PH015

Beschaltungsbeispiele siehe folgende Seiten



Klemmschild Modul pH-Messung

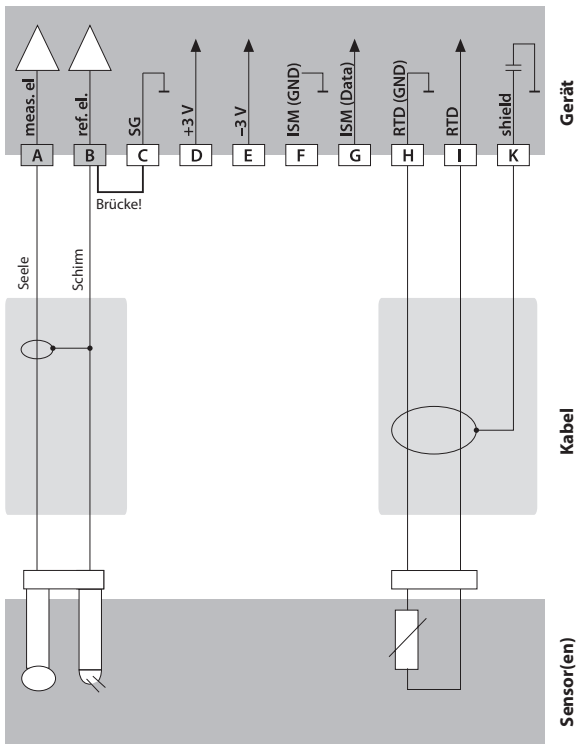
Anschlussklemmen geeignet für Einzeldrähte / Litzen bis 2,5 mm²



Dem Messmodul liegt ein selbstklebendes Label bei. Bringen Sie das Label auf dem Modulschacht der Gerätefront auf. Sie haben so die Beschaltung „sicher im Griff“.

Beispiel 1:

Messaufgabe: pH, Temperatur, Glasimpedanz
 Sensoren (Beispiel): HA 405-DXK-58 (Mettler-Toledo)
 Kabel (Beispiel): AS9 ZU 0318 (Knick)



Beispiel 2:

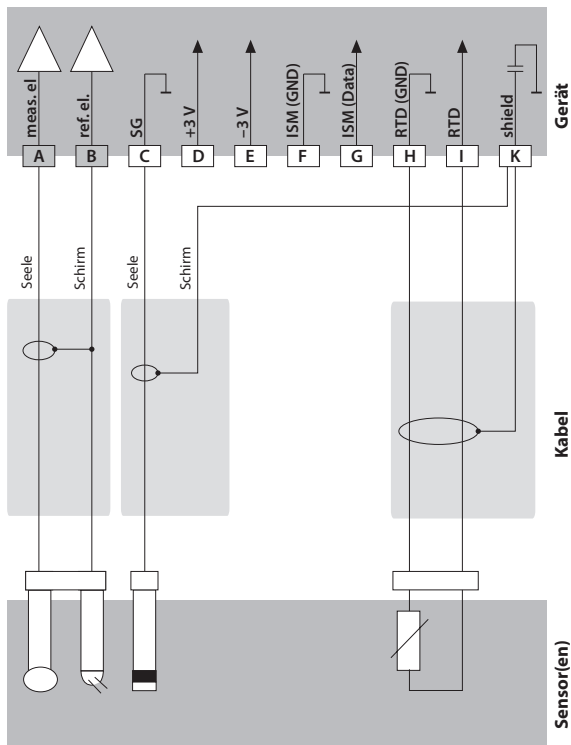
Messaufgabe: pH/ORP, Temp., Glasimpedanz, Bezugsimpedanz

Sensoren (Beispiel): pH: HA 405-DXK-58 (Mettler-Toledo),

Pt: ZU 0073 (Knick)

Kabel (Beispiel):

2x AS9 ZU 0318 (Knick)

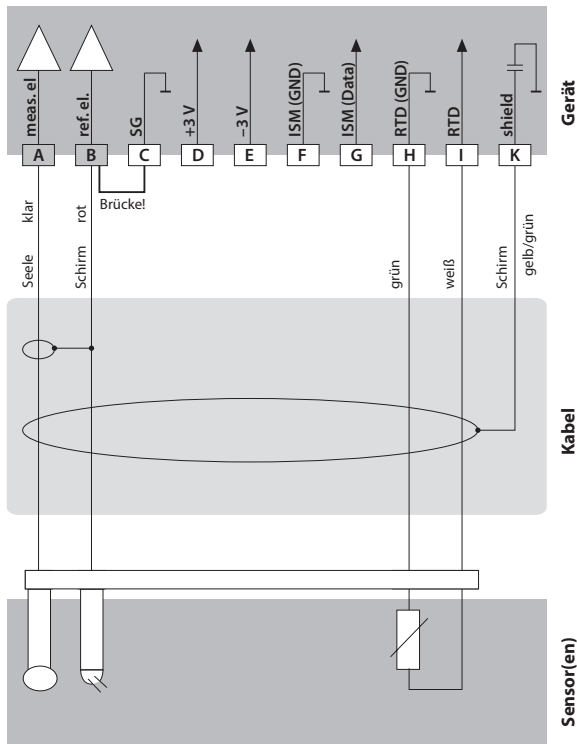


Beispiel 3:

Messaufgabe: pH, Temp., Glasimpedanz

Sensoren (Beispiel): SE 533 (Knick)

Kabel (Beispiel): VP6 ZU 0313 (Knick)

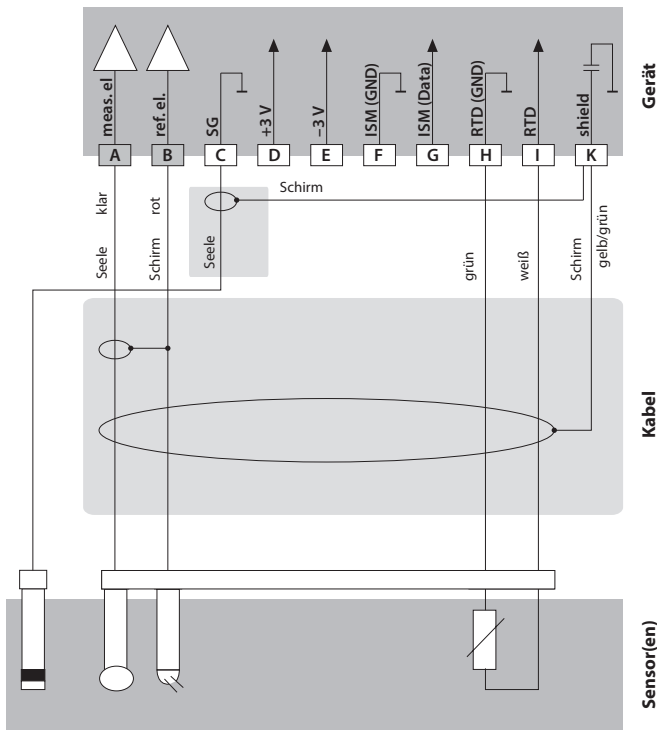


Beispiel 4:

Messaufgabe: pH/ORP, Temp., Glasimpedanz, Bezugsimpedanz

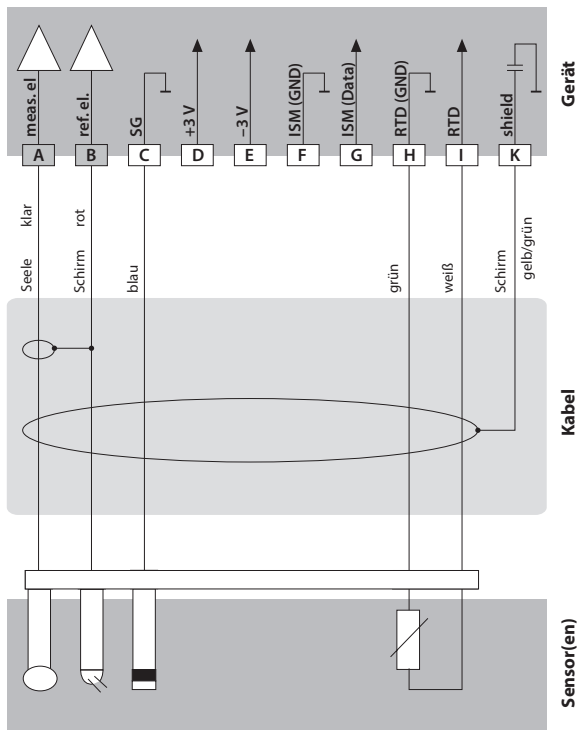
Sensoren (Beispiel): pH: SE 533 (Knick)
Pt: ZU 0073 (Knick)

Kabel (Beispiel): VP6 ZU 0313 (Knick) oder AS9 ZU 0318 (Knick)



Beispiel 5:

Messaufgabe:	pH/ORP, Temp., Glasimpedanz, Bezugsimpedanz
Sensoren (Beispiel):	InPro 4260 (Mettler-Toledo)
Kabel (Beispiel):	VP6 ZU 0313 (Knick)

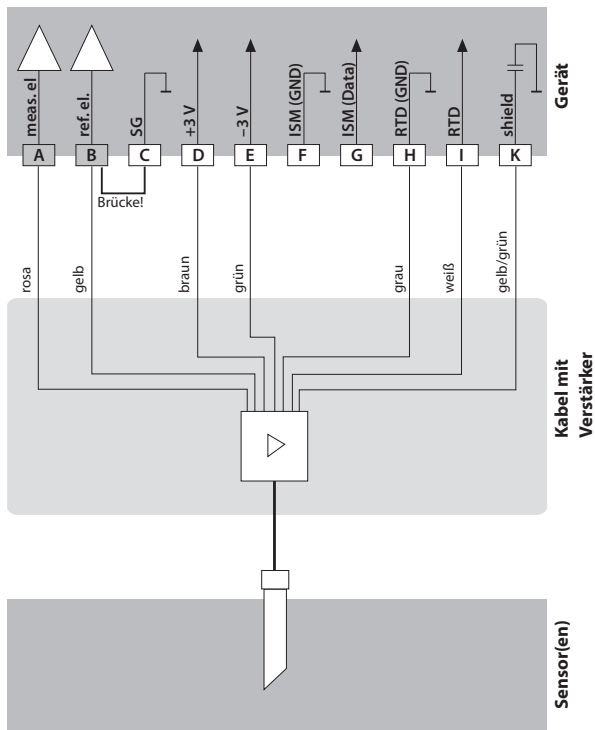


Beispiel 6:

Messaufgabe: pH, Temp. (nur in Nicht-Ex-Umgebung)

Sensoren (Beispiel): InPro 3300 ISFET (Mettler-Toledo)

Kabel (Beispiel): ZU 0582 (Knick)



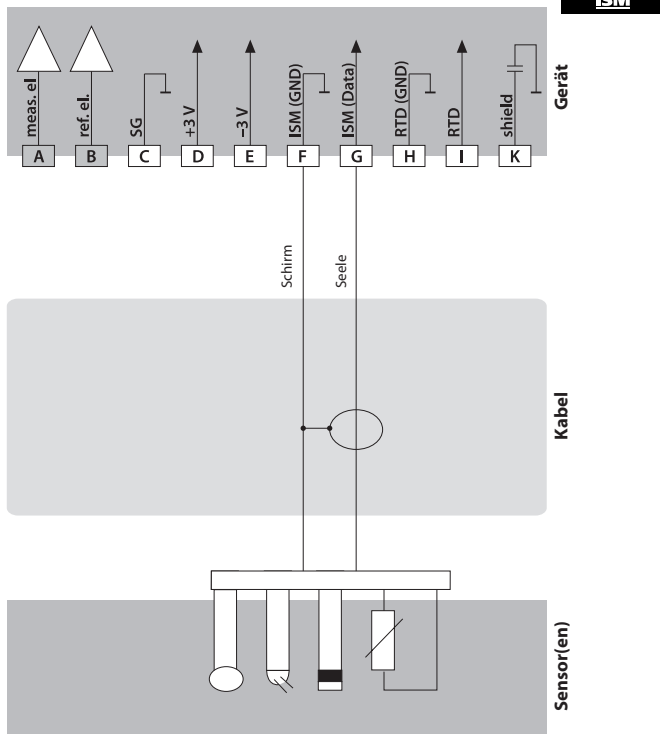
Beispiel 7:**Achtung!**

Es darf kein zusätzlicher analoger Sensor angeschlossen werden!

Messaufgabe: pH/ORP, Temp., Glasimpedanz, Bezugsimpedanz

Sensoren (Beispiel): ISM digital InPro 4260i (Mettler-Toledo)

Kabel (Beispiel): AK9 (Mettler-Toledo)

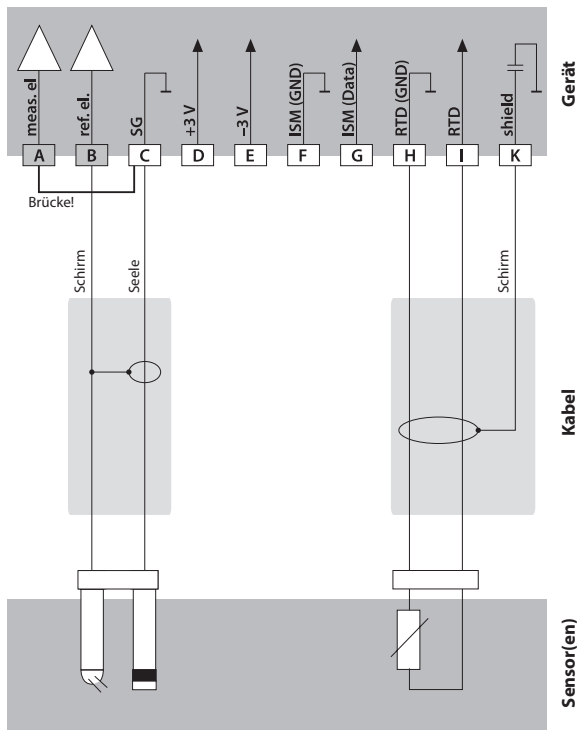


Beispiel 8; Hinweis: Sensocheck ausschalten!

Messaufgabe: ORP, Temp., Glasimpedanz, Bezugsimpedanz

Sensoren (Beispiel): ORP: SE 535 (Knick)

Kabel (Beispiel): AS9 ZU 0318 (Knick)

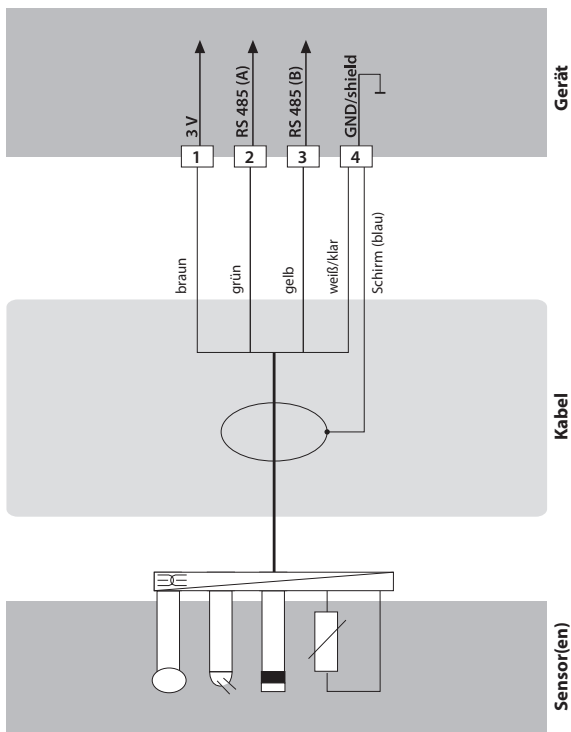


Beispiel 9:

Messaufgabe: pH/ORP, Temp., Glasimpedanz, Bezugsimpedanz

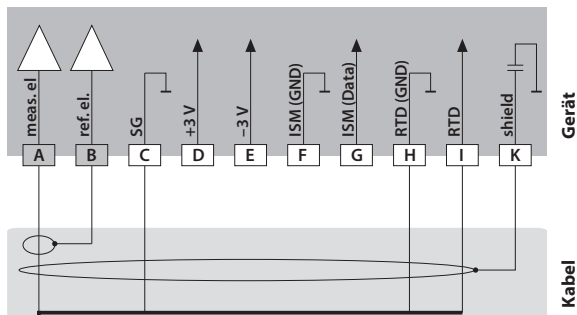
Sensoren (Beispiel): SE 533-MS (Knick), Memosens

Kabel (Beispiel): CA/MS-003-NAA (Knick)



Beispiel 10:

Anschluss von Pfaudler-Sonden (erfordert TAN SW-A007):



Pfaudler-Sonde

Gerät	pH Reiner mit PA, VP-Steckkopf	Differential Typen 18/40 mit PA	Typen 03/04 mit PA	Typen 03/04 ohne PA
A	meas	Koax Seele	Koax weiß	Koax weiß
B	ref	Koax Schirm	Koax braun	Koax braun
C	SG	blau	blau	Brücke B/C
D				
E				
F				
G				
H	RTD (GND)	grün	braun	braun
I	RTD	weiß	grün, schwarz	grün, schwarz
K	Shield	grün/gelb, grau	orange, violett	orange, violett

Konfigurierung		Auswahl	Vorgabe
Sensor (SENSOR)			
SNS:		STANDARD, ISFET INDUCON, ISM MEMOSENS	STANDARD
RTD TYPE (entfällt bei ISM, InduCon, Memosens)		100 PT, 1000 PT, 30 NTC, 8.55 NTC, Balco 3kOhm	100 PT
TEMP UNIT		°C / °F	°C
TEMP MEAS ^{*)}		AUTO, MAN, EXT (EXT nur, wenn I-Input über TAN freigeschaltet wurde)	AUTO
	MAN	-20...200 °C (-4...392 °F)	025.0 °C (077.0 °F)
TEMP CAL		AUTO, MAN, EXT (EXT nur, wenn I-Input über TAN freigeschaltet wurde)	AUTO
	MAN	-20...200 °C (-4...392 °F)	025.0 °C (077.0 °F)
NOM ZERO ^{**)}		0.00 ... 14.00 PH	07.00 PH
NOM SLOPE ^{**)}		30.0 ... 60.0 mV	059.2 mV
PH_ISO ^{**)}		0.00 ... 14.00 PH	07.00 PH
CAL MODE		AUTO, MAN, DAT	AUTO
	AUTO BUFFER SET	-01...-10-, -U1- Hinweis: Über Taste info Anzeige Puffer-Nennwerte + Hersteller	-02-
	U1 (eingebbarer Puffersatz, siehe Anhang „Puffertabellen“)	EDIT BUFFER 1 (NO, YES) Eingabe Werte Puffer 1	NO
		EDIT BUFFER 2 (NO, YES) Eingabe Werte Puffer 2	NO
CAL TIMER (entfällt bei ISM)		OFF, FIX, ADAPT	OFF
ON	CAL-CYCLE	0...9999 h	0168 h

*) Die Einstellung TEMP MEAS: AUTO/MAN/EXT gilt für alle Ausgänge: OUT1/OUT2/Grenzwerte/Regler/Display

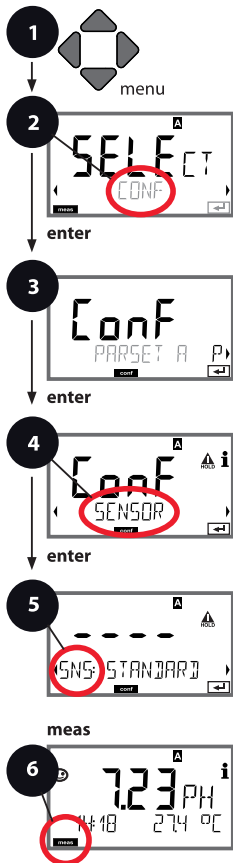
**) nur bei STANDARD und Option Pfaudler (TAN), entfällt bei Memosens Pfaudler.

Konfigurierung		Auswahl		Vorgabe	
Sensor (SENSOR)					
SNS:	ISM (nur bei ISM- Sensoren)	ACT (Adaptive Calibration Timer)		OFF AUTO MAN	OFF
		MAN	ACT CYCLE	0...9999 DAY	0007 DAY
		TTM (Time to Maintenance)		OFF AUTO MAN	OFF
		MAN	TTM CYCLE	0...9999 DAY	0030 DAY
	Inducon, ISM	CIP COUNT		ON/OFF	OFF
		ON	CIP CYCLES	0...9999 CYC	0025 CYC
		SIP COUNT***		ON/OFF	OFF
		ON	SIP CYCLES	0...9999 CYC	0025 CYC
		AUTOCLAVE		ON/OFF	OFF
		ON	AC CYCLES	0...9999 CYC	0000 CYC

***) auch bei Memosens

Sensor

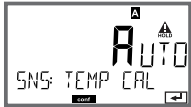
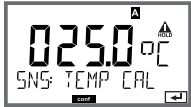


Auswahl: Temperaturerfassung bei Kalibrierung, Kalibriermodus



- 1 Taste **menu** drücken.
- 2 Mit Pfeiltasten ◀ ▶ **CONF** wählen, **enter** drücken.
- 3 Auswahl Parametersatz mit Pfeiltasten ◀ ▶, **enter** drücken.
- 4 Mit Pfeiltasten ◀ ▶ Menügruppe **SENSOR** wählen, **enter** drücken.
- 5 Für alle Menüpunkte dieser Menügruppe erscheint der Code „SNS:“ im Display. Wahl der Menüpunkte mit **enter**-Taste, ändern mit Pfeiltasten (siehe rechte Seite). Bestätigen (und weiter) mit **enter**.
- 6 Beenden: Taste **meas** drücken, bis der Statusbalken [meas] im Display erscheint.

Wahl Sensortyp	enter
Wahl Temperaturfühlerart	enter
Temperatureinheit	enter
Temperaturerfassung bei Messung	
(Manuelle Temperatur)	
Temperaturerfassung bei Kalibrierung	
(Manuelle Temperatur)	
Kalibriermodus	
(AUTO: Puffersatz)	
Kalibriertimer	
Kalibrierzyklus	
Reinigungszyklen	
Zähler Reinigungszyklen	
Sterilisierungszyklen	
Zähler Sterilisierungszyklen	

5

Menüpunkt	Aktion	Auswahl
Temperaturerfassung bei Kalibrierung 	Mit Pfeiltasten \blacktriangle \blacktriangledown Modus auswählen: AUTO: Erfassung über Sensor MAN: direkte Eingabe der Temp., keine Erfassung (s. nächster Schritt) EXT: Temperaturvorgabe über Stromeingang (nur wenn TAN E freigeschaltet) Übernehmen mit enter	AUTO MAN EXT
(Manuell Temperatur) 	Mit Pfeiltasten \blacktriangle \blacktriangledown Stelle verändern, mit Pfeiltasten \blacktriangleleft \blacktriangleright andere Stelle auswählen. Übernehmen mit enter	-20...200 °C (-4...+392 °F)
Kalibriermodus 	Mit Pfeiltasten \blacktriangle \blacktriangledown CALMODE auswählen: AUTO: Kalibrierung mit Puffersatz-Erkennung Calimatic MAN: Manuelle Vorgabe der Pufferlösungen DAT: Eingabe Justierdaten vorgemessener Sensoren Übernehmen mit enter	AUTO MAN DAT
(AUTO: Puffersatz) 	Mit Pfeiltasten \blacktriangle \blacktriangledown verwendeten Puffersatz auswählen (Nennwerte s. Tabellen) Übernehmen mit enter	-00-...-10-, -U1- (siehe Anhang) Mit Taste info werden in der unteren Zeile Hersteller und Nennwerte angezeigt.

Sensoranpassung pH	pH-Kalibrierung	
Betriebsarten	AUTO	Kalibrierung mit automatischer Pufferfindung (Calimatic)
	MAN	manuelle Kalibrierung mit Eingabe individueller Pufferwerte
	DAT	Dateneingabe vorgemessener Elektroden
Calimatic-Puffersätze	Produktkalibrierung	
	-01- Mettler-Toledo	2,00/4,01/7,00/9,21
	-02- Knick CaliMat	2,00/4,00/7,00/9,00/12,00
	-03- Ciba (94)	2,06/4,00/7,00/10,00
	-04- NIST Technisch	1,68/4,00/7,00/10,01/12,46
	-05- NIST Standard	1,679/4,006/6,865/9,180
	-06- HACH	4,01/7,00/10,01
	-07- WTW techn. Puffer	2,00/4,01/7,00/10,00
	-08- Hamilton	4,01/7,00/10,01/12,00
	-09- Reagecon	2,00/4,00/7,00/9,00/12,00
	-10- DIN 19267	1,09/4,65/6,79/9,23/12,75
-U1-	eingebbarer Puffersatz mit 2 Pufferlösungen	

Mit Hilfe der Kalibrierung passen Sie das Gerät an die individuellen Sensoreigenschaften Asymmetriepotential und Steilheit an.

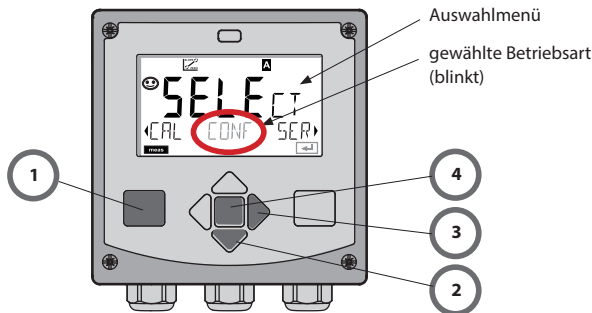
Die Kalibrierung kann durch einen Passcode geschützt werden (Menü SERVICE).

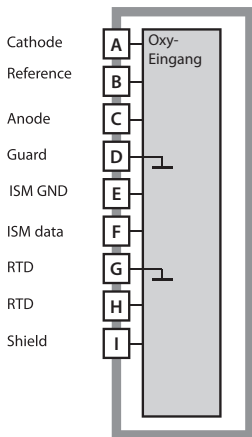
Im Kalibriermenü wählen Sie zunächst den Kalibriermodus aus:

CAL_PH	je nach Voreinstellung in der Konfiguration: AUTO automatische Puffererkennung (Calimatic) MAN manuelle Puffereingabe DAT Eingabe vorgemessener Elektroden Daten
CAL_ORP	ORP-Kalibrierung
P_CAL	Produktkalibrierung (Kal. durch Probennahme)
ISFET-ZERO	Nullpunktverschiebung. Erforderlich bei Einsatz von ISFET-Sensoren, im Anschluss kann wahlweise eine Ein- oder Zweipunktkalibrierung durchgeführt werden.
CAL-RTD	Temperaturfühlerabgleich

CAL_PH voreinstellen (Menü CONF / Konfiguration):

- 1) Taste **meas** lang (> 2 s) drücken (Betriebsart Messen)
- 2) Taste **menu** drücken – das Auswahlmenü erscheint
- 3) Betriebsart CONF mittels Pfeiltasten links / rechts wählen
- 4) Unter „SENSOR“, „CALMODE“ Modus wählen (AUTO, MAN, DAT).
Mit **enter** bestätigen

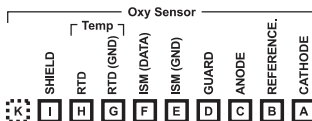




Modul Gelöstsauerstoff-Messung

Bestellnummer MK-OXY045

Beschaltungsbeispiele siehe folgende Seiten

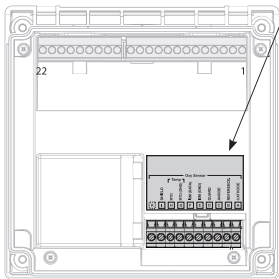


Klemmenschild

Modul Gelöstsauerstoff-Messung

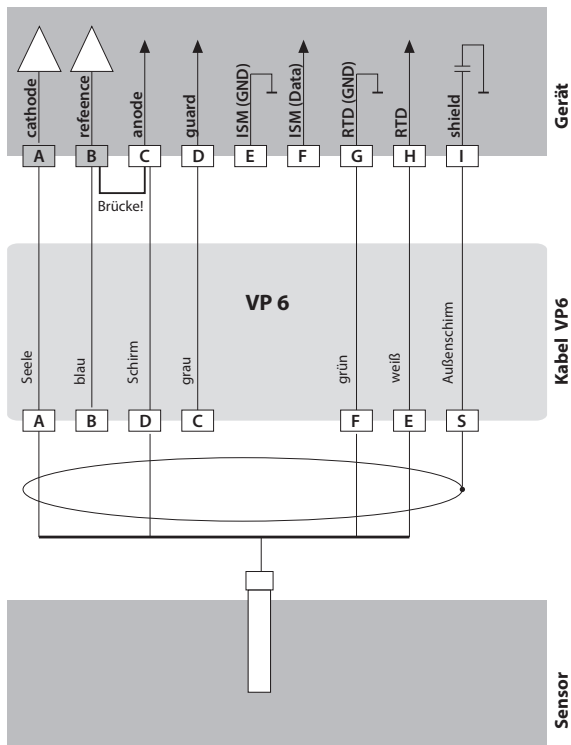
Anschlussklemmen geeignet für Einzeldrähte / Litzen bis 2,5 mm²

Dem Messmodul liegt ein selbstklebendes Label bei. Bringen Sie das Label auf dem Modulschacht der Gerätefront auf. Sie haben so die Beschaltung „sicher im Griff“.



Beispiel 1:

Messaufgabe: Sauerstoff STANDARD
 Sensoren (Beispiel): „10“ (z.B. SE 706, InPro 6800)
 Kabel (Beispiel): VP 6 ZU 0313 (Knick)

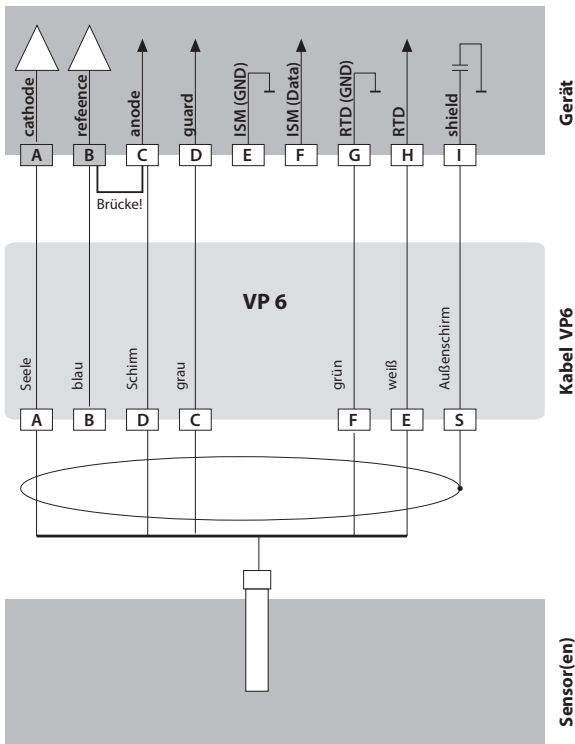


Beispiel 2:

Messaufgabe: Sauerstoff TRACES (Spuren, TAN erforderlich)

Sensoren (Beispiel): „01“ (z.B. SE 707, InPro 6900)

Kabel (Beispiel): VP6 ZU 0313 (Knick)

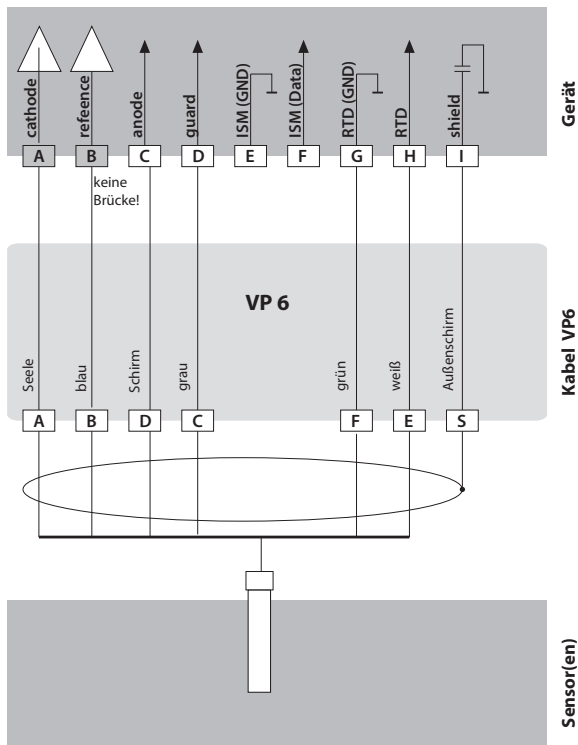


Beispiel 3:

Messaufgabe: Sauerstoff SUBTRACES (Spuren, TAN erforderlich)

Sensoren (Beispiel): „001“ (z.B. SE 708, InPro 6950)

Kabel (Beispiel): VP6 ZU 0313 (Knick)



Beispiel:**Optischer Sauerstoff-Sensor**

Messaufgabe:

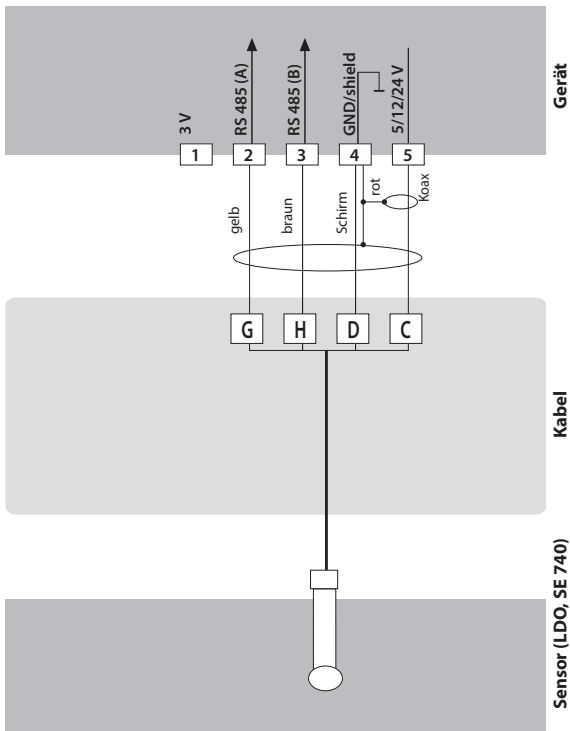
VP-Anschluss optischer Sensor (LDO)

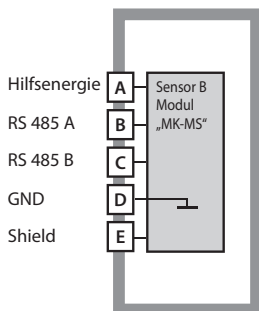
Sensoren (Beispiel):

SE 740

Kabel (Beispiel):

M12 (z.B. CA/M12-005NA)

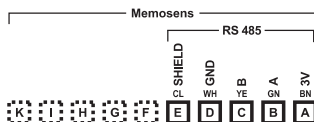




Modul 2. Kanal Memosens

Bestellnummer MK-MS095

Beschaltungsbeispiel siehe folgende Seite

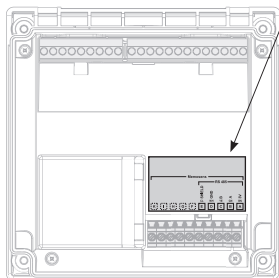


Klemmschild Modul

2. Kanal Memosens

Anschlussklemmen geeignet für Einzeldrähte / Litzen bis 2,5 mm²

Dem Messmodul liegt ein selbstklebendes Label bei. Bringen Sie das Label auf dem Modulschacht der Gerätefront auf. Sie haben so die Beschaltung „sicher im Griff“.



Beispiel 11:**Memosens**

Messaufgabe:

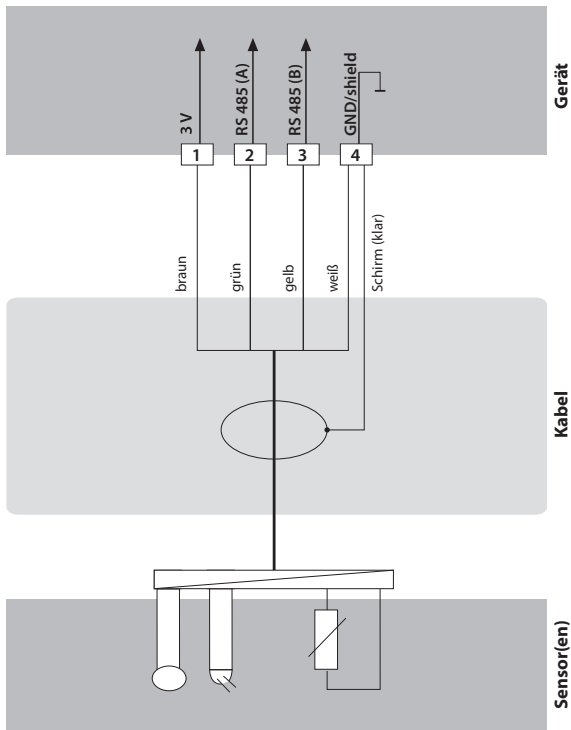
pH/ORP, Temp., Glasimpedanz, Bezugsimp.

Sensoren (Beispiel):

Orbisint CPS 11 D Memosens

Kabel (Beispiel):

CYK 10



Inbetriebnahme

Ist beim ersten Einschalten ein MS-Sensor angeschlossen, so wird dieser erkannt und das entsprechende Messverfahren geladen.

Ändern des Messverfahrens

Ein anderes Messverfahren kann jederzeit im Menü „Service“ eingestellt werden.

Kalibrierung und Wartung im Labor

Die Software „MemoSuite“ erlaubt das Kalibrieren von Memosens-Sensoren unter reproduzierbaren Bedingungen am PC im Labor. Die Sensor-Parameter werden in einer Datenbank erfasst. Dokumentation und Archivierung entsprechen Anforderungen gemäß FDA CFR 21 Part 11. Detaillierte Protokolle können als csv-Export für Excel ausgegeben werden. MemoSuite wird als Zubehör in den Versionen „Basic“ und „Advanced“ angeboten: www.knick.de.

The screenshot displays the MemoSuite software interface. At the top, there are navigation tabs: 'Startseite', 'Kalibrieren', 'Messwerte', 'Historie', 'Einstellungen', and 'pH-Funktion'. The 'Einstellungen' tab is currently selected. Below the tabs, there are two main panels. The left panel, titled 'Aktuelle Messwerte', shows three data points: 'pH-Wert' at 7,36 pH, 'pH-Spannung' at -19,4 mV, and 'Temperatur' at 23,8 °C. The right panel, titled 'Sensordaten', lists sensor information: 'Sensortyp: pH (DIN)', 'Hersteller: KNICK', 'Bestellnummer: SE 533X/1-NM3IV', and 'Seriennummer: 1030560'. Below this is the 'Justierdaten' section, showing 'Datum: 03.05.2011 17:30:00', 'Steilheit: 58,6 mV/pH', and 'Nullpunkt: 7,03 pH'. A red circle highlights the 'pH-Wert' value in the 'Aktuelle Messwerte' panel. A red arrow points from this circle to a zoomed-in view of the 'pH-Wert' field at the bottom of the screenshot, which shows the value '7,32 pH' with a magnifying glass icon over it. Red lines and boxes highlight various UI elements, with corresponding text labels on the right side of the image.

Einstellungen und Vorgaben

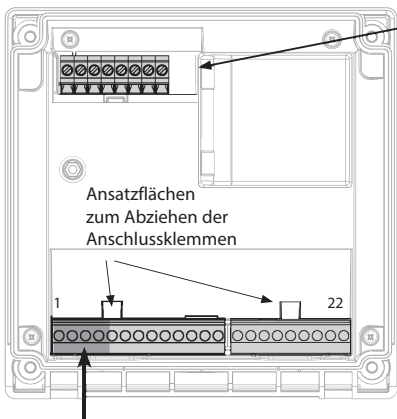
Aktuell angeschlossener Sensor: Sensortyp, Hersteller, Bestell- und Seriennummer

Funktionsauswahl (die aktuell gewählte Funktion ist hell hinterlegt)

Parameter des aktuell angeschlossenen Sensors

Letzte Kalibrierung (Justierung)

Darstellungsgröße von Messwerten
Wird der Mauszeiger über einen Messwert bewegt, wandelt er sich in ein Lupen-Symbol; per Mausklick lassen sich so Messwerte vergrößert darstellen.



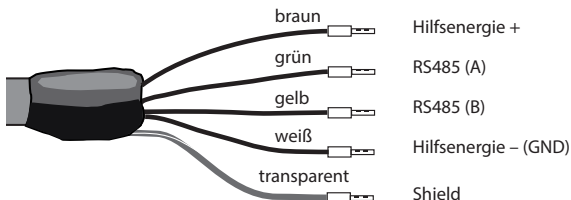
Bei Dualgeräten
(2 Messkanäle):
(Modul MK-MS095)
Anschluss Sensor B

A	braun	supply
B	grün	RS 485 A
C	gelb	RS 485 B
D	weiß	GND
E	transp.	SHIELD

Standard-Anschluss (Sensor A)

1	braun	supply
2	grün	RS 485 A
3	gelb	RS 485 B
4	weiß/transp.	GND/shield

Das Memosens-Kabel



Anschlusskabel für die kontaktlose induktive digitale Übertragung von Messsignalen (Memosens).

Das Anschlusskabel besteht aus einem induktiven Steckkopf für digitale Memosens-Sensoren (Bajonett-Verbindung) und ermöglicht den Anschluss der mit Aderendhülsen versehenen Leitungen am Sensorstromkreis des Messumformers. Durch die kontaktlose induktive digitale Messwert- und Energieübertragung wird der Einfluss von Feuchtigkeit, elektromagnetischen Feldern und Korrosion unterbunden.

Technische Daten

Material	TPE
Kabeldurchmesser	6,3 mm
Kabel	2x2, paarweise verdrehte Adern
Länge	bis zu 100 m
Prozesstemperatur	-20 °C ... 135 °C
Schutzart	IP 68

Typschlüssel

Kabeltyp	Kabellänge	Bestellnummer
Kabel Memosens	3 m	CA/MS-003NAA
	5 m	CA/MS-005NAA
	10 m	CA/MS-010NAA
	20 m	CA/MS-020NAA
Kabel Memosens Ex*	3 m	CA/MS-003XAA
	5 m	CA/MS-005XAA
	10 m	CA/MS-010XAA
	20 m	CA/MS-020XAA

Andere Kabellängen auf Anfrage lieferbar.

*) Ex-zertifiziert ATEX II IG Ex ia IIC T3/T4/T6

Die Baumusterprüfbescheinigung liegt Ex-Sensoren bei.

Inbetriebnahme

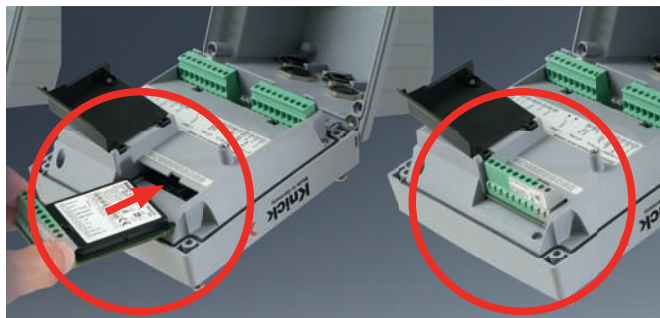
Das Messgerät erkennt ein erstmals gestecktes Modul automatisch, die Software wird an die ermittelte Messgröße angepasst. Wenn ein Messmodul getauscht wird, muss die Betriebsart im Menü „Service“ eingestellt werden.

Das gilt nicht für das Mehrkanal-Modul doppelte Leitfähigkeitsmessung; hier erfolgt beim ersten Einschalten des Gerätes eine Abfrage nach dem gewünschten Messverfahren.

Ändern des Messverfahrens (Memosens-Sensoren)

Direkt angeschlossene Memosens-Sensoren (ohne Messmodul):

Ein anderes Messverfahren kann jederzeit im Menü „Service“ eingestellt werden.



Modules de mesure pour le raccordement de capteurs conventionnels (pH, Oxy) :

Les modules de mesure pour le raccordement de capteurs conventionnels sont tout simplement à enficher dans l'emplacement prévu pour les modules. Lors de la première mise en service, l'appareil détecte automatiquement un module enfiché, le logiciel s'adapte au paramètre déterminé. Lorsqu'un module de mesure est remplacé par un autre, le type de mesure doit être spécifié dans le menu Service.

Module de mesure pour 2^e canal Memosens

Lorsque les capteurs Memosens doivent mesurer deux paramètres, il est nécessaire d'enficher un module Memosens pour le second canal. Voir page 87.

Le mode de fonctionnement («type d'appareil») pour une mesure multicanal doit être spécifié dans le menu Service.

Vous avez le choix entre les combinaisons suivantes :

Memosens pH + Memosens pH

Memosens pH + Memosens Oxy

Consignes d'installation

- L'installation de l'appareil doit être effectuée uniquement par des spécialistes qualifiés en observant les règles de sécurité en vigueur et le mode d'emploi !
- Lors de l'installation, il convient de tenir compte des caractéristiques techniques et des valeurs connectées !
- Ne pas entailler les brins des câbles en les dénudant !
- Avant de raccorder l'appareil à l'alimentation, s'assurer que la tension est comprise entre 80 et 230 V CA ou entre 24 et 60 V CC !
- Un signal électrique transmis à l'entrée de courant doit être à isolation galvanique. Si ce n'est pas le cas, un élément isolant doit être branché en amont.
- Lors de la mise en service, une configuration complète doit être effectuée par un spécialiste du système !

Bornes :

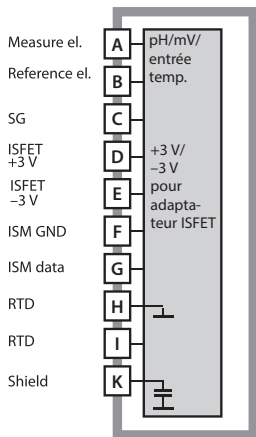
acceptent les fils monobrins et multibrins jusqu'à 2,5 mm²

Utilisation en atmosphère explosible :



Pour l'utilisation en atmosphère explosible, consulter le document séparé «Certificats» :

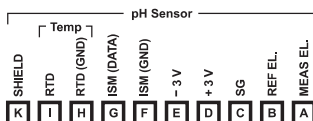
- IECEX
- ATEX



Module de mesure du pH

Référence MK-PH015

Voir pages suivantes pour les exemples de câblage.

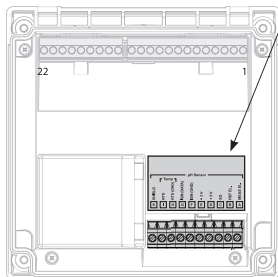


Plaque à bornes

Module de mesure du pH

Bornes de raccordement pour fils monobrisés et multibrisés jusqu'à 2,5 mm².

Une étiquette auto-collante est fournie avec le module de mesure. Collez l'étiquette sur la face avant de l'appareil, à l'emplacement prévu à cet effet. Ceci vous permettra d'effectuer le raccordement en toute sécurité.

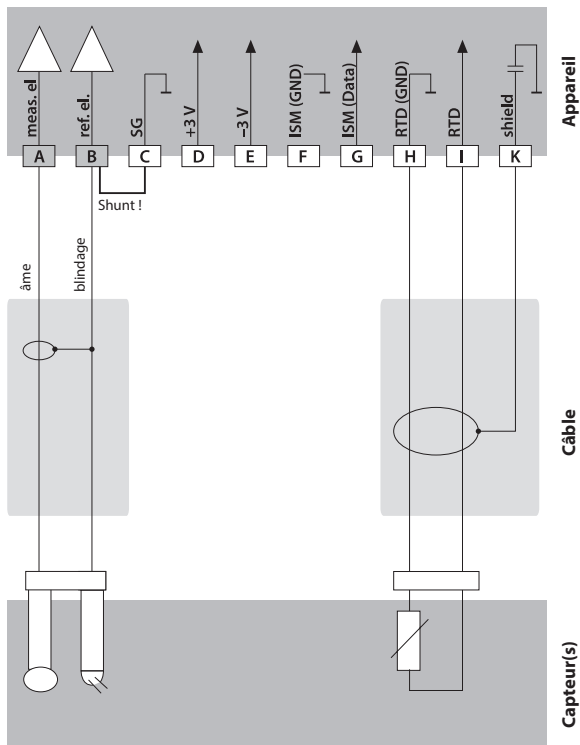


Exemple 1 :

Application : pH, température, impédance de verre

Capteurs (exemple) : HA 405-DXK-58 (Mettler-Toledo)

Câble (exemple) : AS9 ZU 0318 (Knick)



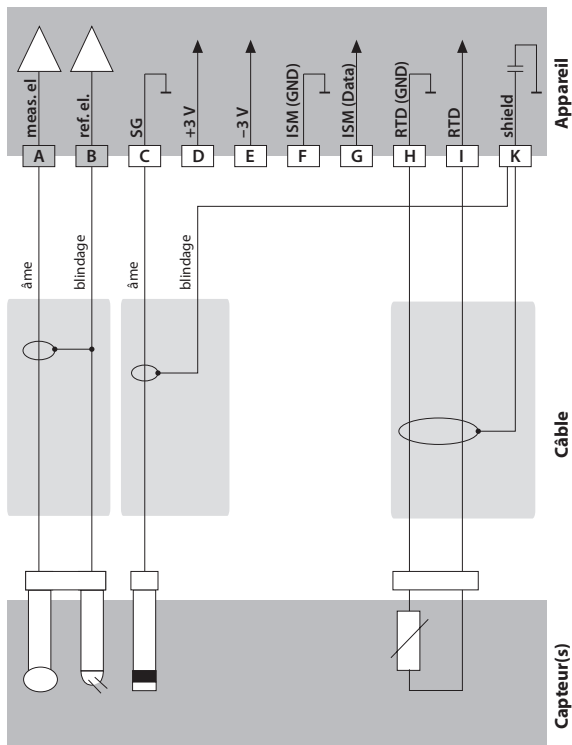
Exemple 2 :

Application : pH/ORP, temp., impédance de verre, impédance de référence

Capteurs (exemple) : pH : HA 405-DXK-58 (Mettler-Toledo),

Pt : ZU 0073 (Knick)

Câble (exemple) : 2x AS9 ZU 0318 (Knick)

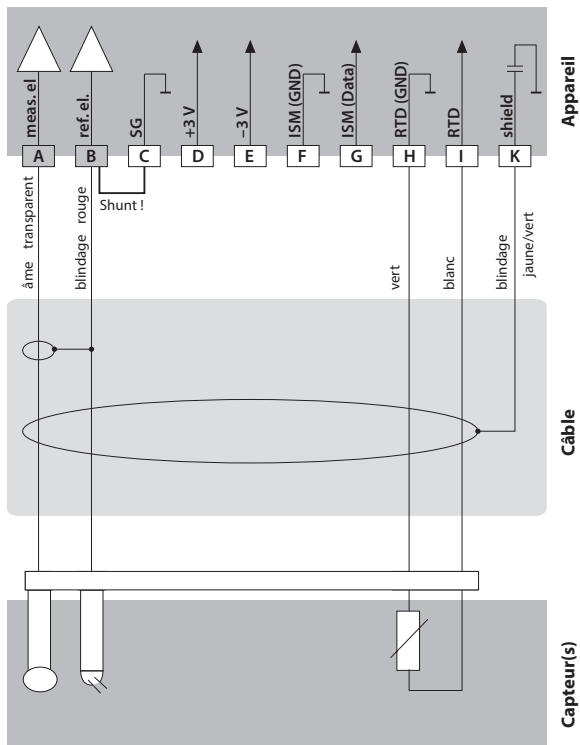


Exemple 3 :

Application : pH, temp., impédance de verre

Capteurs (exemple) : SE 533 (Knick)

Câble (exemple) : VP6 ZU 0313 (Knick)



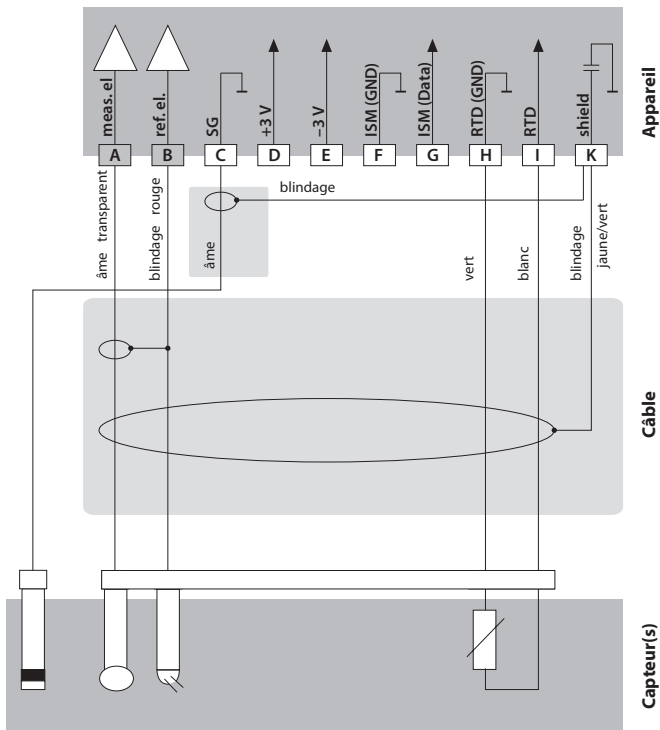
Exemple 4 :

Application : pH/ORP, temp., impédance de verre, impédance de référence

Capteurs (exemple) : pH : SE 533 (Knick)

Pt : ZU 0073 (Knick)

Câble (exemple) : VP6 ZU 0313 (Knick) ou AS9 ZU 0318 (Knick)

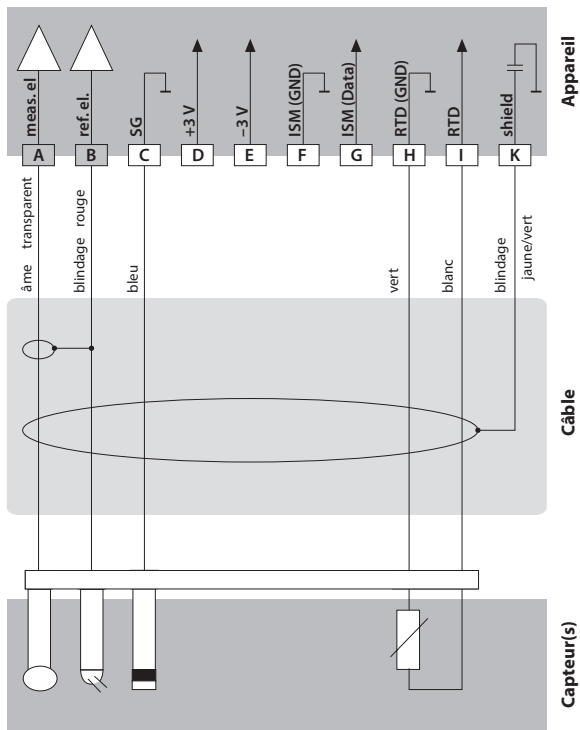


Exemple 5 :

Application : pH/ORP, temp., impédance de verre, impédance de référence

Capteurs (exemple) : InPro 4260 (Mettler-Toledo)

Câble (exemple) : VP6 ZU 0313 (Knick)

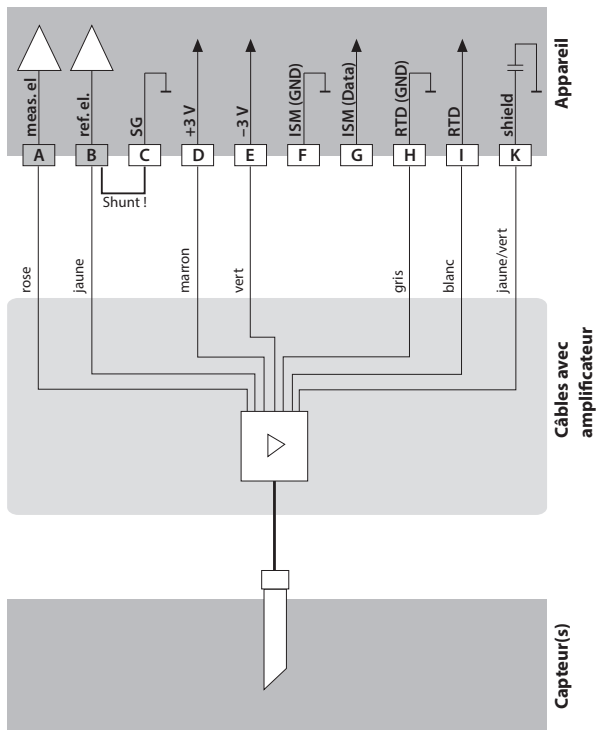


Exemple 6 :

Application : pH, temp. (dans environnement non Ex uniquement)

Capteurs (exemple) : InPro 3300 ISFET (Mettler-Toledo)

Câble (exemple) : ZU 0582 (Knick)



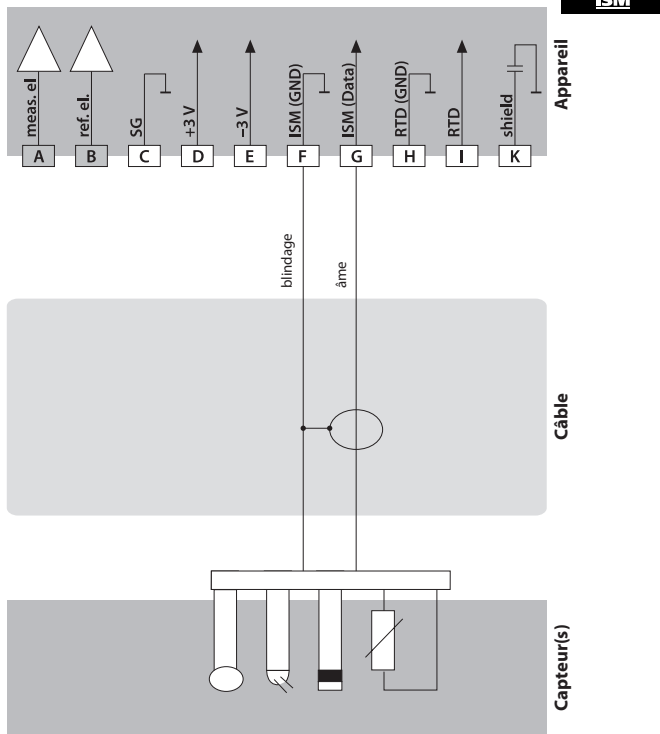
Exemple 7 :**Attention !**

Ne pas raccorder de capteur analogique supplémentaire !

Application : pH/ORP, temp., impédance de verre, impédance de référence

Capteurs (exemple) : ISM digital InPro 4260i (Mettler-Toledo)

Câble (exemple) : AK9 (Mettler-Toledo)

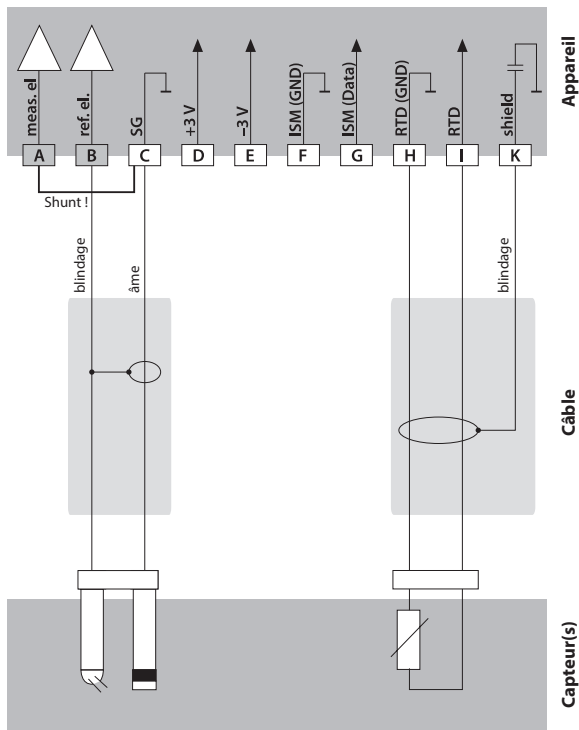


Exemple 8 ; remarque : désactiver Sensocheck !

Application : ORP, temp., impédance de verre, impédance de référence

Capteurs (exemple) : ORP : SE 535 (Knick)

Câble (exemple) : AS9 ZU 0318 (Knick)

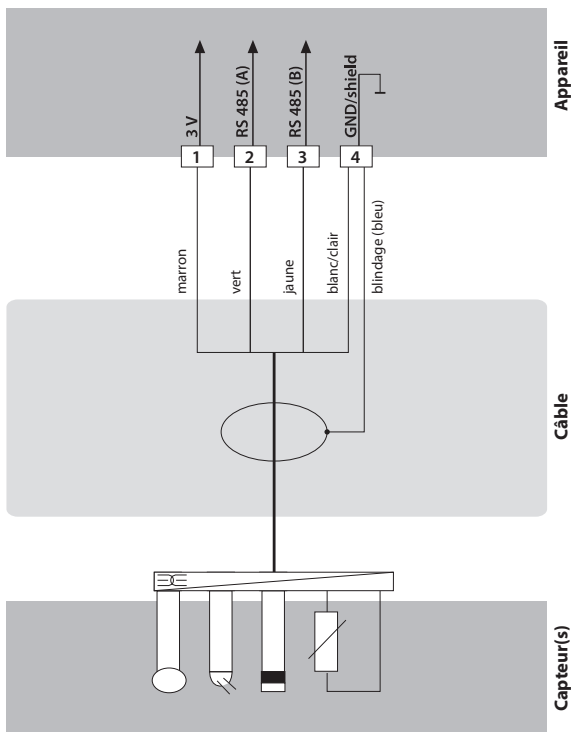


Exemple 9 :

Application : pH/ORP, temp., impédance de verre, impédance de référence

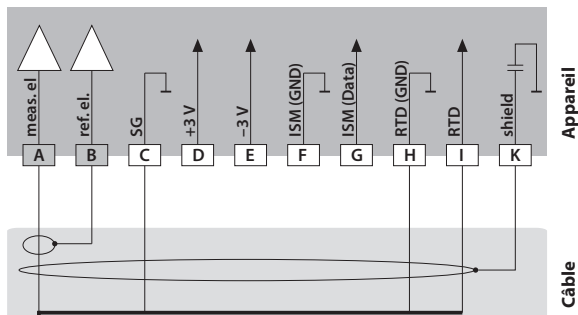
Capteurs (exemple) : SE 533-MS (Knick), Memosens

Câble (exemple) : CA/MS-003-NAA (Knick)



Exemple 10 :

Raccordement de sondes Pfaudler (TAN SW-A007 nécessaire) :



Sonde Pfaudler

Appareil	pH Reiner avec CP, Tête enfichable VP	Différentiel Types 18/40 avec CP	Types 03/04 avec CP	Types 03/04 sans CP	
A	meas	âme coax	coax blanc	coax blanc	coax blanc
B	ref	blindage coax	coax marron	coax marron	coax marron
C	SG	bleu	bleu	bleu	Shunt B/C
D					
E					
F					
G					
H	RTD (GND)	vert	marron	marron	marron
I	RTD	blanc	vert, noir	vert, noir	vert, noir
K	Shield	vert/jaune, gris	orange, violet	orange, violet	orange, violet

Configuration		Sélection	Préréglage
Capteur (SENSOR)			
SNS:		STANDARD, ISFET INDUCON, ISM MEMOSENS	STANDARD
RTD TYPE (pas pour ISM, InduCon, Memosens)		100 PT, 1000 PT, 30 NTC, 8.55 NTC, Balco 3kOhm	100 PT
TEMP UNIT		°C / °F	°C
TEMP MEAS *)		AUTO, MAN, EXT (EXT uniquement si I-Input a été activé par TAN)	AUTO
	MAN	-20...200 °C (-4...392 °F)	025.0 °C (077.0 °F)
TEMP CAL		AUTO, MAN, EXT (EXT uniquement si I-Input a été activé par TAN)	AUTO
	MAN	-20...200 °C (-4...392 °F)	025.0 °C (077.0 °F)
NOM ZERO **)		0.00 ... 14.00 PH	07.00 PH
NOM SLOPE **)		30.0 ... 60.0 mV	059.2 mV
PH_ISO **)		0.00 ... 14.00 PH	07.00 PH
CAL MODE		AUTO, MAN, DAT	AUTO
	AUTO BUFFER SET	-01-...-10-, -U1- Remarque : Via la touche info , affichage des valeurs nomi- nales tampon et du fabricant	-02-
	U1 (jeu de tampons spécifiable, voir Annexe «Tables des tampons»)	EDIT BUFFER 1 (NO, YES) Saisir les valeurs du tampon 1	NO
		EDIT BUFFER 2 (NO, YES) Saisir les valeurs du tampon 2	NO
CAL TIMER (pas pour ISM)		OFF, FIX, ADAPT	OFF
ON	CAL-CYCLE	0...9999 h	0168 h

*) Le réglage TEMP MEAS : AUTO/MAN/EXT s'applique à toutes les sorties : OUT1/OUT2/seuils/régulateur/écran;

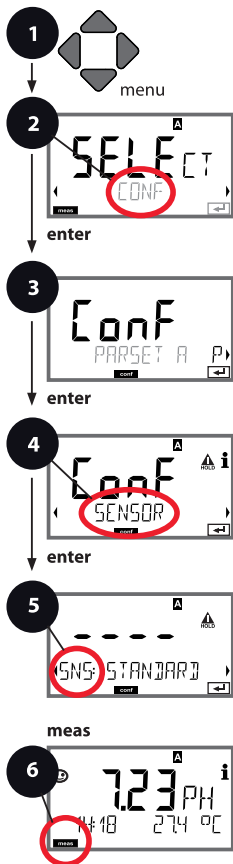
**) uniquement pour STANDARD et l'option Pfaudler (TAN), non disponible avec Memosens Pfaudler.

Configuration		Sélection		Préréglage	
Capteur (SENSOR)					
SNS:	ISM (pour capteurs ISM unique- ment)	ACT (Adaptive Calibration Timer)		OFF AUTO MAN	OFF
		MAN	ACT CYCLE	0...9999 DAY	0007 DAY
		TTM (Time to Maintenance)		OFF AUTO MAN	OFF
		MAN	TTM CYCLE	0...9999 DAY	0030 DAY
	Inducon, ISM	CIP COUNT		ON/OFF	OFF
		ON	CIP CYCLES	0...9999 CYC	0025 CYC
		SIP COUNT***		ON/OFF	OFF
		ON	SIP CYCLES	0...9999 CYC	0025 CYC
		AUTOCLAVE		ON/OFF	OFF
		ON	AC CYCLES	0...9999 CYC	0000 CYC

***) pour Memosens également

Capteur

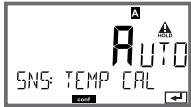
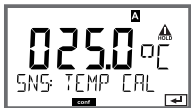


Sélection : mesure de la température pour le calibration, mode de calibration



- Appuyer sur la touche **menu**.
- A l'aide des touches **◀ ▶**, sélectionner **CONF**, puis appuyer sur **enter**.
- Sélection du jeu de paramètres à l'aide des touches **◀ ▶**, puis appuyer sur **enter**.
- A l'aide des touches **◀ ▶**, sélectionner le groupe de menus **SENSOR**, puis appuyer sur **enter**.
- Le code «**SNS**» s'affiche pour tous les points de menu de ce groupe. Sélection des points de menu avec **enter**, modification avec les touches fléchées (voir page de droite). Validation (et suite) avec **enter**.
- Quitter : appuyer sur la touche **meas** jusqu'à ce que la barre d'état [meas] apparaisse sur l'écran.

Sélection du type de capteur	enter
Sélection du type de sonde de température	↻
Unité de température	↻
Mesure de la température pour la mesure	
(Température manuelle)	
Mesure de la température pour le calibration	
(Température manuelle)	
Mode de calibration	
(AUTO : jeu de tampons)	
Minuteur de calibration	
Cycle de calibration	
Cycles de nettoyage	
Compteur de cycles de nettoyage	
Cycles de stérilisation	
Compteur de cycles de stérilisation	

5

Point de menu	Action	Sélection
Mesure de la température pour le calibrage 	A l'aide des touches ▲ ▼, sélectionner le mode : AUTO : mesure via le capteur MAN : saisie directe de la temp., pas de mesure (voir étape suivante) EXT : spécification de température via entrée de courant (uniquement si TAN E activé) Valider avec enter	AUTO MAN EXT
(Température, manuel) 	A l'aide des touches ▲ ▼, modifier la position, à l'aide des touches ◀ ▶, sélectionner une autre position. Valider avec enter	-20...200 °C (-4...+392 °F)
Mode de calibration 	A l'aide des touches ▲ ▼, sélectionner CALMODE : AUTO : calibrage avec détection du jeu de tampons Calimatic MAN : saisie manuelle des solutions tampon DAT : saisie des données d'ajustage des capteurs préalablement mesurés Valider avec enter	AUTO MAN DAT
(AUTO : jeu de tampons) 	A l'aide des touches ▲ ▼, sélectionner le jeu de tampons utilisé (voir tableaux des valeurs nominales) Valider avec enter	-00...-10-, -U1- (voir Annexe) La touche info permet d'afficher, dans la ligne du bas, le fabricant et les valeurs nominales.

Adaptation du capteur pH

Calibrage du pH

Modes de service

AUTO	Calibrage avec identification automatique des tampons (Calimatic)
MAN	Calibrage manuel avec saisie des valeurs de tampons spécifiques
DAT	Saisie de données d'électrodes préalablement mesurées

Calibrage du produit

Jeux de tampons Calimatic

-01- Mettler-Toledo	2,00/4,01/7,00/9,21
-02- Knick CaliMat	2,00/4,00/7,00/9,00/12,00
-03- Ciba (94)	2,06/4,00/7,00/10,00
-04- NIST technique	1,68/4,00/7,00/10,01/12,46
-05- NIST standard	1,679/4,006/6,865/9,180
-06- HACH	4,01/7,00/10,01
-07- tampons techn. WTW	2,00/4,01/7,00/10,00
-08- Hamilton	4,01/7,00/10,01/12,00
-09- Reagecon	2,00/4,00/7,00/9,00/12,00
-10- DIN 19267	1,09/4,65/6,79/9,23/12,75
-U1- Jeu de tampons spécifiable avec 2 solutions tampon	

Le calibrage permet d'adapter l'appareil aux caractéristiques spécifiques du capteur que sont le potentiel asymétrique et la pente.

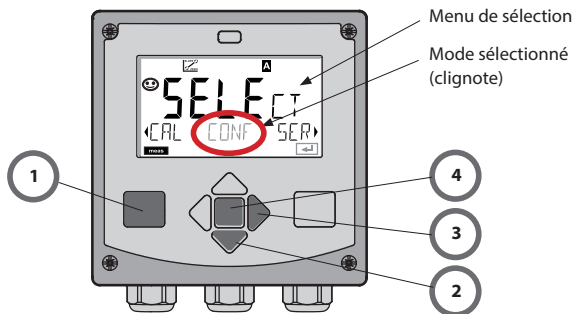
Le calibrage peut être protégé par un code d'accès (menu SERVICE).

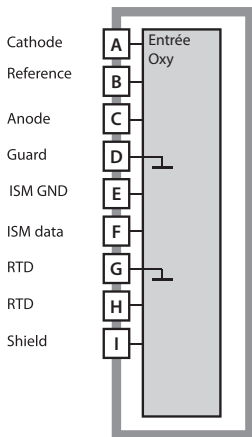
Dans le menu Calibrage, sélectionnez d'abord le mode de calibrage :

CAL_PH	selon valeur prédéfinie dans la configuration :
AUTO	Détection automatique des tampons (Calimatic)
MAN	Saisie manuelle du tampon
DAT	Saisie de données d'électrodes préalablement mesurées
CAL_ORP	Calibrage ORP
P_CAL	Calibrage du produit (cal. par prélèvement d'échantillon)
ISFET-ZERO	Réglage du zéro. Requis pour les capteurs ISFET, effectuer ensuite un calibrage en un ou deux points, au choix.
CAL-RTD	Compensation de la sonde de température

Préréglage CAL_PH (menu CONF / Configuration) :

- 1) Pression prolongée (> 2 s) sur la touche **meas** (mode Mesure)
- 2) Appuyer sur la touche **menu** pour accéder au menu de sélection
- 3) Sélectionner le mode CONF, à l'aide des touches fléchées gauche / droite
- 4) Dans «SENSOR», «CALMODE», sélectionner le mode (AUTO, MAN, DAT).
Valider avec **enter**

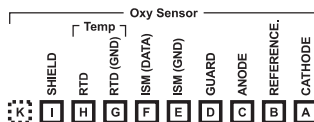




Module de mesure de l'oxygène dissout

Référence MK-OXY045

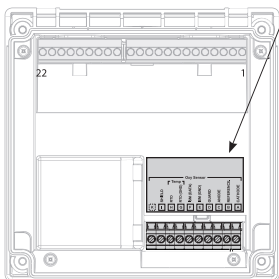
Voir pages suivantes pour les exemples de câblage.



Plaque à bornes Module de mesure de l'oxygène dissout

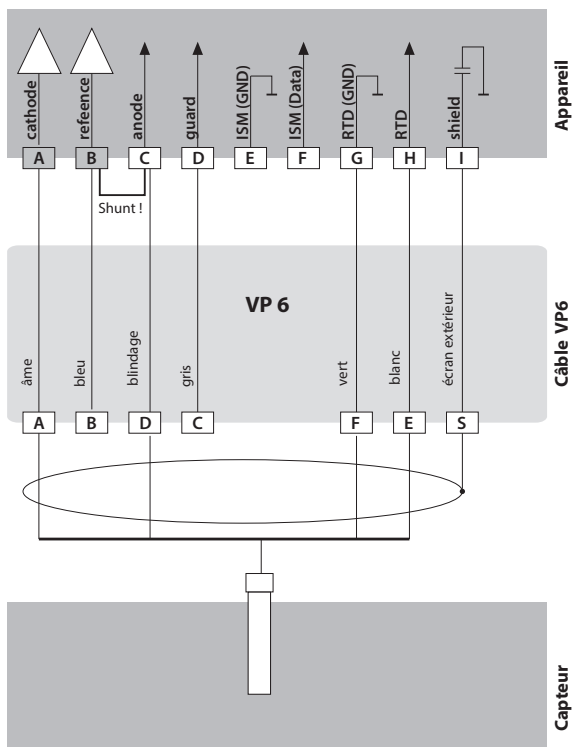
Bornes de raccordement pour fils monobrisés et multibrins jusqu'à 2,5 mm².

Une étiquette auto-collante est fournie avec le module de mesure. Collez l'étiquette sur la face avant de l'appareil, à l'emplacement prévu à cet effet. Ceci vous permettra d'effectuer le raccordement en toute sécurité.



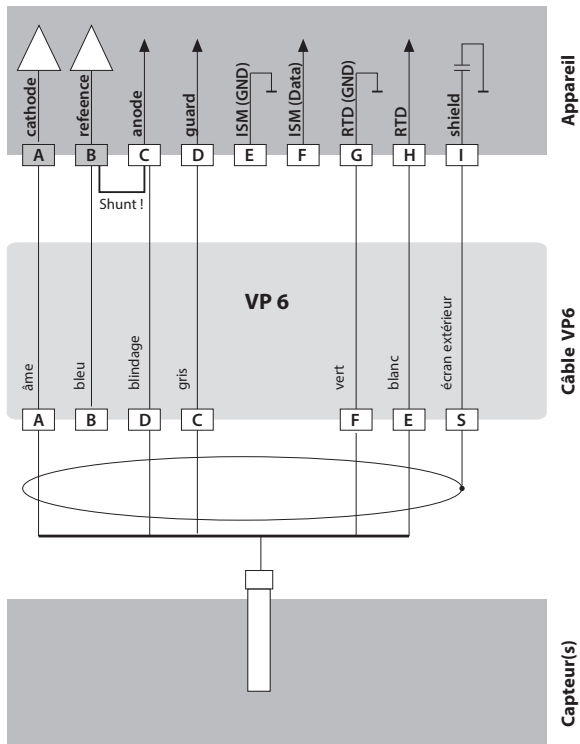
Exemple 1 :

Application : Oxygène STANDARD
 Capteurs (exemple) : «10» (ex. : SE 706, InPro 6800)
 Câble (exemple) : VP 6 ZU 0313 (Knick)



Exemple 2 :

Application : Oxygène TRACES (traces, TAN nécessaire)
 Capteurs (exemple) : «01» (ex. : SE 707, InPro 6900)
 Câble (exemple) : VP6 ZU 0313 (Knick)

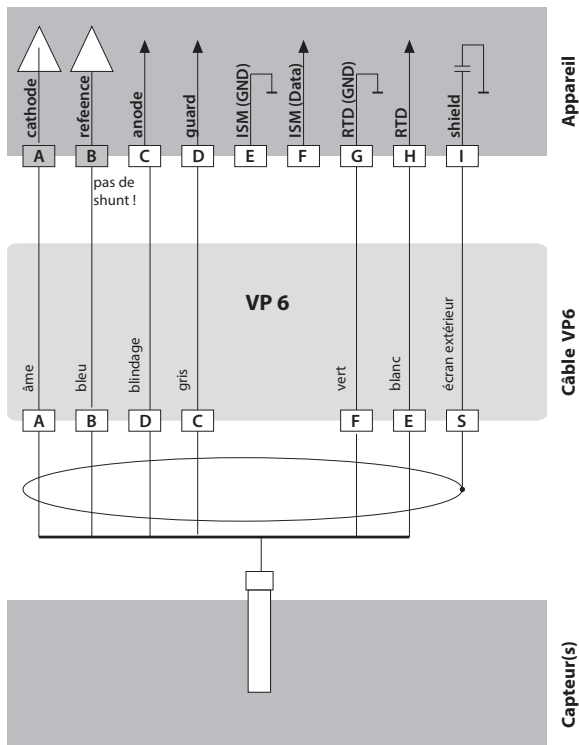


Exemple 3 :

Application : Oxygène SUBTRACES (traces, TAN nécessaire)

Capteurs (exemple) : «001» (ex. : SE 708, InPro 6950)

Câble (exemple) : VP6 ZU 0313 (Knick)



Exemple :**Capteur optique d'oxygène**

Application :

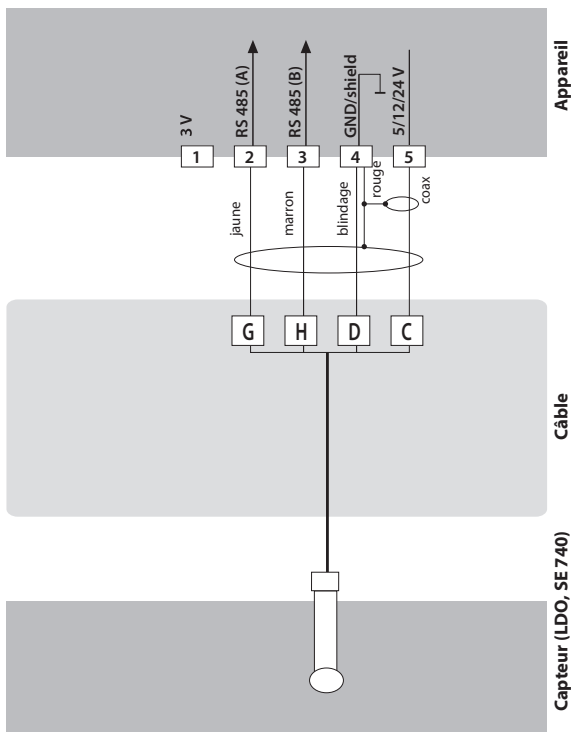
Raccordement VP capteur optique (LDO)

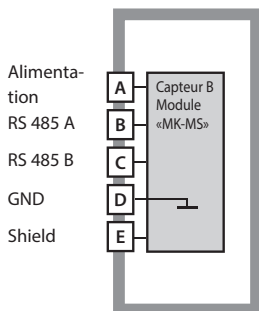
Capteurs (exemple) :

SE 740

Câble (exemple) :

M12 (par ex. CA/M12-005NA)

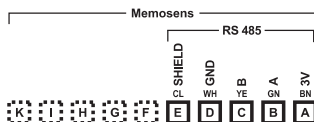




Module 2^e canal Memosens

Référence MK-MS095

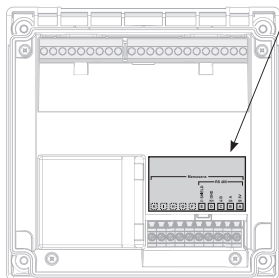
Voir page suivante pour un exemple de câblage.



Plaque à bornes module 2^e canal Memosens

Bornes de raccordement pour fils monobrins et multibrins jusqu'à 2,5 mm²

Une étiquette auto-collante est fournie avec le module de mesure. Collez l'étiquette sur la face avant de l'appareil, à l'emplacement prévu à cet effet. Ceci vous permettra d'effectuer le raccordement en toute sécurité.

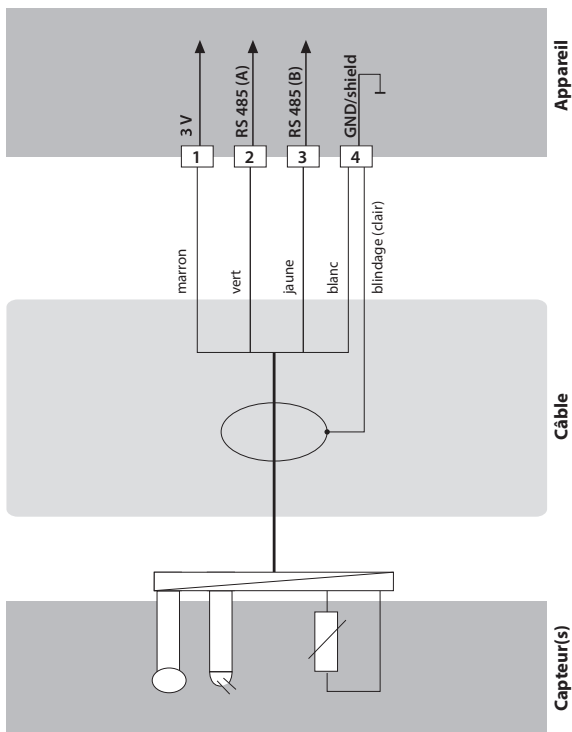


Exemple 11 : Memosens

Application : pH/ORP, temp., impédance de verre, impéd. de réf.

Capteurs (exemple) : Orbisint CPS 11 D Memosens

Câble (exemple) : CYK 10



Mise en service

Lors de la première mise en service, si un capteur MS est raccordé, celui-ci sera automatiquement détecté et le type de mesure correspondant sera sélectionné.

Changement de type de mesure

Vous pouvez à tout moment choisir un autre type de mesure dans le menu Service.

Calibrage et entretien en laboratoire

Le logiciel «MemoSuite» permet de calibrer les capteurs Memosens dans des conditions reproductibles sur un PC en laboratoire. Les paramètres des capteurs sont enregistrés dans une base de données. La documentation et l'archivage respectent les exigences de la réglementation FDA CFR 21 Part 11. Il est possible de générer des protocoles détaillés sous forme d'export csv pour Excel. Memosuite est disponible en accessoire, en version «Basic» et «Advanced» : www.knick.de

The screenshot shows the MemoSuite software interface. At the top, there is a menu bar with options: StartCenter, Calibration, Sensors, History, Statistics, and pH Buffers. The 'Sensors' menu is currently selected and highlighted in a light blue background. Below the menu bar, there are two main sections: 'Measured values' and 'Sensor data'. The 'Measured values' section displays three fields: 'pH value' (7.36 pH), 'pH voltage' (-19.4 mV), and 'Temperature' (23.8 °C). The 'Sensor data' section displays information about the connected sensor: 'Sensor type: pH (glass)', 'Manufacturer: KNICK', 'Order code: SE 533X/1-NMSN', and 'Serial number: 1030550'. Below the 'Sensor data' section, there is an 'Adjustment data' section showing 'Date: 11/5/2012 07:30:24', 'Slope: 58.6 mV/pH', and 'Zero point: 7.03 pH'. A red circle highlights the 'pH value' field in the 'Measured values' section. A red arrow points from this circle to a larger, magnified view of the 'pH value' field in the bottom section of the screenshot, which shows the value '7.32 pH'. Red lines and arrows point from text labels to various parts of the interface: 'Réglages et valeurs par défaut' points to the MemoSuite logo; 'Capteur actuellement raccordé : Type de capteur, fabricant, référence de commande et numéro de série' points to the sensor data section; 'Sélection de la fonction (la fonction actuellement sélectionnée apparaît sur fond clair)' points to the 'Sensors' menu item; 'Paramètres du capteur actuellement raccordé' points to the sensor data section; 'Dernier calibrage (Ajustage)' points to the adjustment data section; and 'Taille d'affichage des valeurs mesurées' points to the magnified view of the pH value.

Réglages et valeurs par défaut

Capteur actuellement raccordé :
Type de capteur, fabricant,
référence de commande et numéro de série

Sélection de la fonction
(la fonction actuellement
sélectionnée apparaît sur
fond clair)

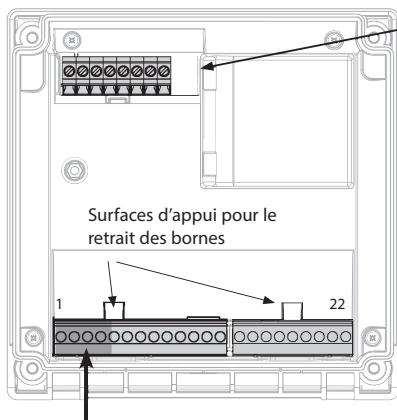
Paramètres du capteur
actuellement raccordé

Dernier calibrage
(Ajustage)

Taille d'affichage des valeurs mesurées
Lorsque le pointeur de la souris survole une
valeur mesurée, il prend la forme d'une loupe. Il
suffit ensuite de cliquer pour agrandir l'affichage
des valeurs mesurées.

Measured values		Sensor data	
pH value	7.36 pH	Sensor type:	pH (glass)
pH voltage	-19.4 mV	Manufacturer:	KNICK
Temperature	23.8 °C	Order code:	SE 533X/1-NMSN
		Serial number:	1030550
		Adjustment data	
		Date:	11/5/2012 07:30:24
		Slope:	58.6 mV/pH
		Zero point:	7.03 pH

Measured values	
pH value	7.32 pH
pH voltage	-16.9 mV



Pour appareils doubles
(2 canaux de mesure) :
(Module xxx)

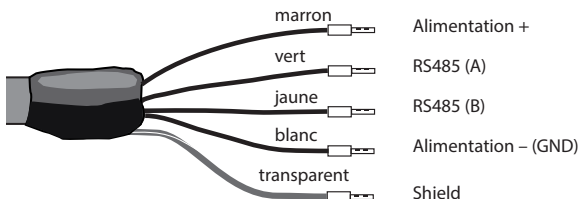
Raccordement capteur B

A	marron	supply
B	vert	RS 485 A
C	jaune	RS 485 B
D	blanc	GND
E	transp.	SHIELD

Raccordement standard (capteur A)

1	marron	supply
2	vert	RS 485 A
3	jaune	RS 485 B
4	blanc/transp.	GND/shield

Le câble Memosens



Câble de raccordement pour la transmission numérique inductive sans contact de signaux de mesure (Memosens).

Le câble de raccordement est composé d'une tête enfichable inductive pour capteurs Memosens (connecteur à baïonnette) et permet le raccordement des brins à embouts au circuit du capteur du convertisseur. Grâce à la transmission numérique inductive sans contact de la valeur mesurée et de l'énergie, l'influence de l'humidité, des champs magnétiques et de la corrosion est supprimée.

Caractéristiques techniques

Composition	TPE
Diamètre du câble	6,3 mm
Câble	2x2, paires de brins torsadés
Longueur	jusqu'à 100 m
Température du processus	-20 °C ... 135 °C
Protection	IP 68

Clé type

Type de câble	Longueur de câble	Référence
Câble Memosens	3 m	CA/MS-003NAA
	5 m	CA/MS-005NAA
	10 m	CA/MS-010NAA
	20 m	CA/MS-020NAA
Câble Memosens Ex*	3 m	CA/MS-003XAA
	5 m	CA/MS-005XAA
	10 m	CA/MS-010XAA
	20 m	CA/MS-020XAA
Autres longueurs de câble disponibles sur demande.		

*) agréé Ex ATEX II IG Ex ia IIC T3/T4/T6

Le certificat d'homologation est fourni avec les capteurs Ex.

Mise en service

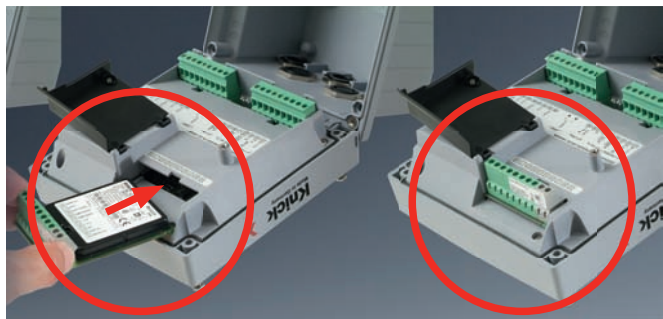
L'appareil détecte automatiquement un module enfilé pour la première fois, le logiciel s'adapte alors au paramètre déterminé. Lorsqu'un module de mesure est remplacé par un autre, le mode de fonctionnement doit être spécifié dans le menu Service.

Ce n'est pas le cas pour le module multicanal de double mesure de la conductivité. Dans ce cas, lors du premier démarrage, l'appareil vous demande de choisir le type de mesure souhaité.

Changement de type de mesure (capteurs Memosens)

Capteurs Memosens raccordés directement (sans module de mesure) :

Vous pouvez à tout moment choisir un autre type de mesure dans le menu Service.



Módulos de medição para conexão de sensores convencionais (pH, Oxy)

Para instalar um módulo de medição para conexão de sensor convencional basta inseri-lo no respectivo slot.

Na partida inicial, o analisador reconhece automaticamente o módulo e ajusta o software para ele. Ao substituir o módulo de medição, é preciso selecionar a função de medição correspondente no menu de Serviço (SERVICE).

Módulo de medição para um segundo canal Memosens

Para medir duas variáveis de processo com sensores Memosens, é preciso inserir um módulo Memosens para o segundo canal (veja a pág. 117).

O modo de operação para medição multicanal ("device type") precisa ser selecionado no menu de Serviço (SERVICE).

Pode-se fazer as seguintes combinações:

Memosens pH + Memosens pH

Memosens pH + Memosens Oxy

Instruções de Instalação

- A instalação do instrumento deverá ser executada por peritos treinados de acordo com este manual e de acordo com as leis vigentes no país.
- Não deixe de observar as especificações técnicas e o valores nominais de alimentação elétrica durante a instalação!
- Tome cuidado para não danificar o condutor ao remover sua isolação!
- Antes de conectar a alimentação do instrumento, verifique se a tensão está na faixa de 80 a 230 Vca/Vcc ou 24 a 60 Vcc.
- Um sinal de corrente fornecido à entrada de corrente deverá ter isolação galvânica, caso contrário instale um módulo isolante.
- Todos os parâmetros deverão ser configurados por um administrador de sistema antes das operações iniciais!

Terminais:

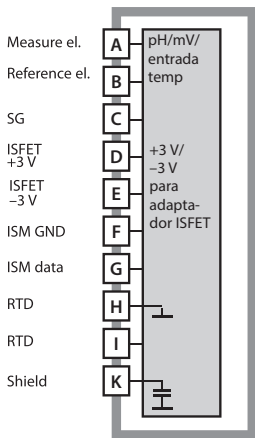
Os terminais são para fios sólidos ou múltiplos de até 2,5 mm² (AWG 14).

Aplicação em Áreas Classificadas:



Para uso em áreas classificadas, veja os "Certificates" fornecidos separadamente:

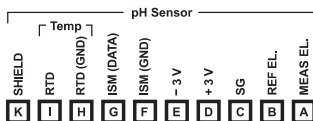
- IECEX
- ATEX



Módulo para medição de pH

Código para pedido MK-PH015

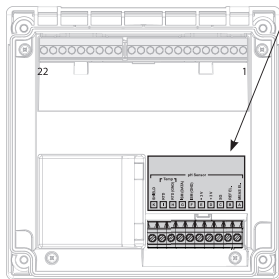
Veja exemplos de fiação nas páginas seguintes.



Arranjo de terminais do módulo para medição de pH

Os terminais são para fios sólidos ou múltiplos de até 2,5 mm² (AWG 14).

O módulo de medição vem com uma etiqueta autoadesiva. Cole-a no slot do módulo na frente do instrumento para sempre saber como são feitas as conexões.

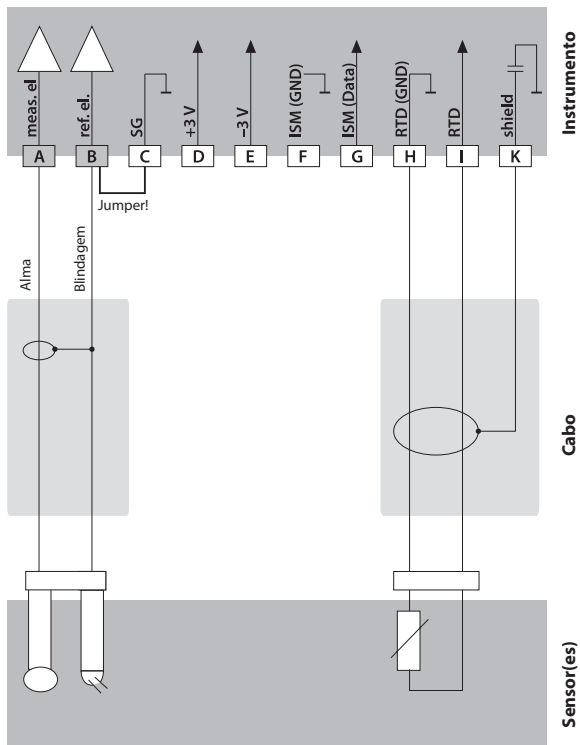


Exemplo 1:

Tarefa de medição: pH, temperatura, impedância do vidro

Sensores (exemplo): HA 405-DXK-58 (Mettler-Toledo)

Cabo (exemplo): AS9 ZU 0318 (Knick)

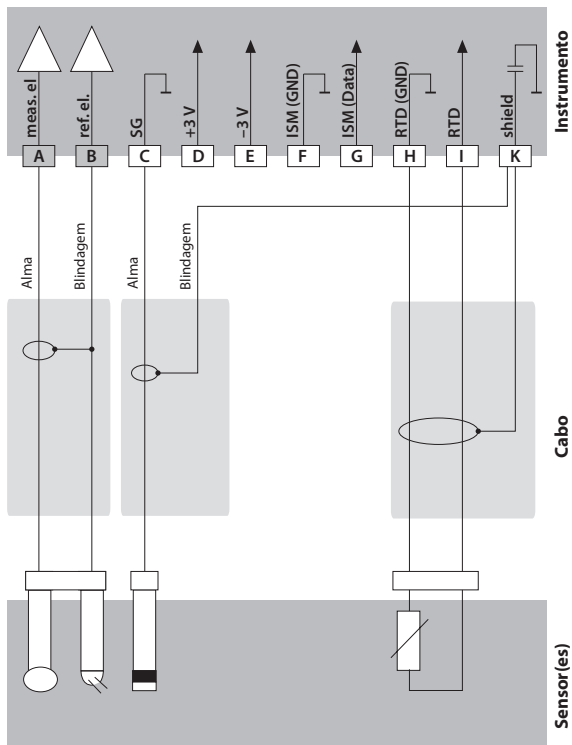


Exemplo 2:

Tarefa de medição: pH/ORP, temp., impedância vidro, imped. referência

Sensores (exemplo):
 pH: HA 405-DXK-58 (Mettler-Toledo),
 Pt: ZU 0073 (Knick)

Cabo (exemplo): 2x AS9 ZU 0318 (Knick)

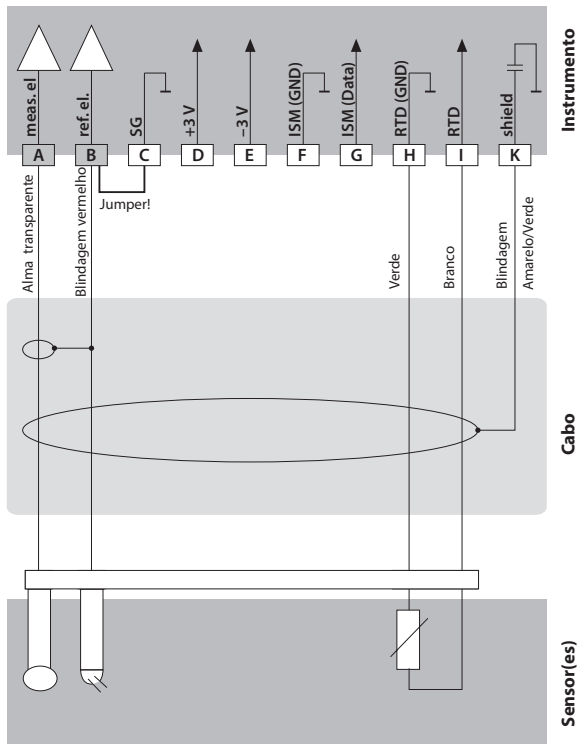


Exemplo 3:

Tarefa de medição: pH, temperatura, impedância do vidro

Sensores (exemplo): SE 533 (Knick)

Cabo (exemplo): VP6 ZU 0313 (Knick)



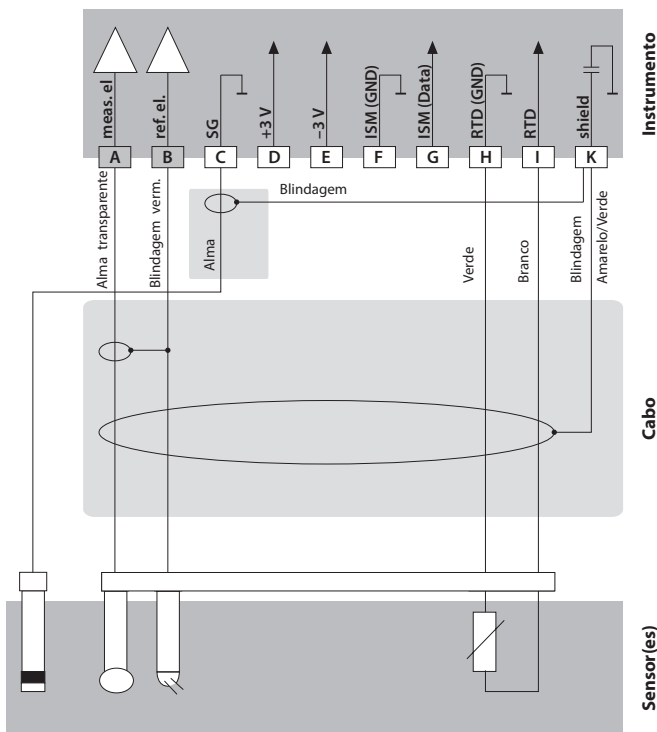
Exemplo 4:

Tarefa de medição: pH/ORP, temp., impedância vidro, imped. de referência

Sensores (exemplo): pH: SE 533 (Knick)

Pt: ZU 0073 (Knick)

Cabo (exemplo): VP6 ZU 0313 (Knick) ou AS9 ZU 0318 (Knick)

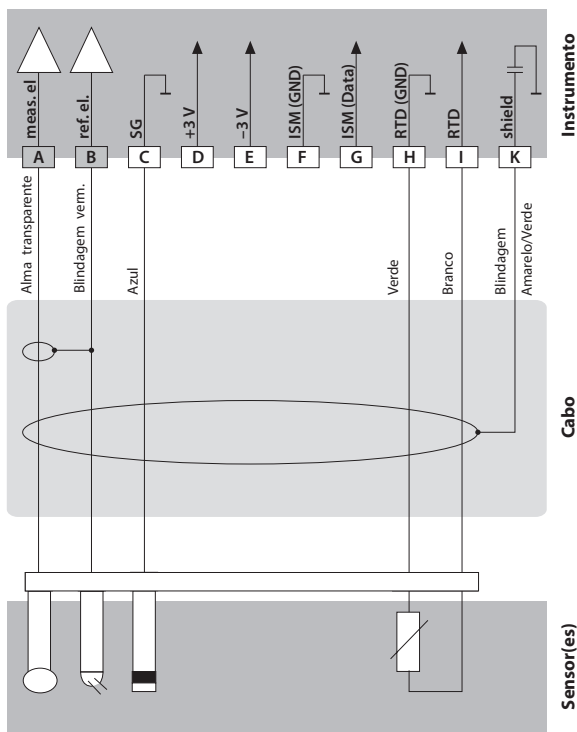


Exemplo 5:

Tarefa de medição: pH/ORP, temp., impedância vidro, imped. de referência

Sensores (exemplo): InPro 4260 (Mettler-Toledo)

Cabo (exemplo): VP6 ZU 0313 (Knick)

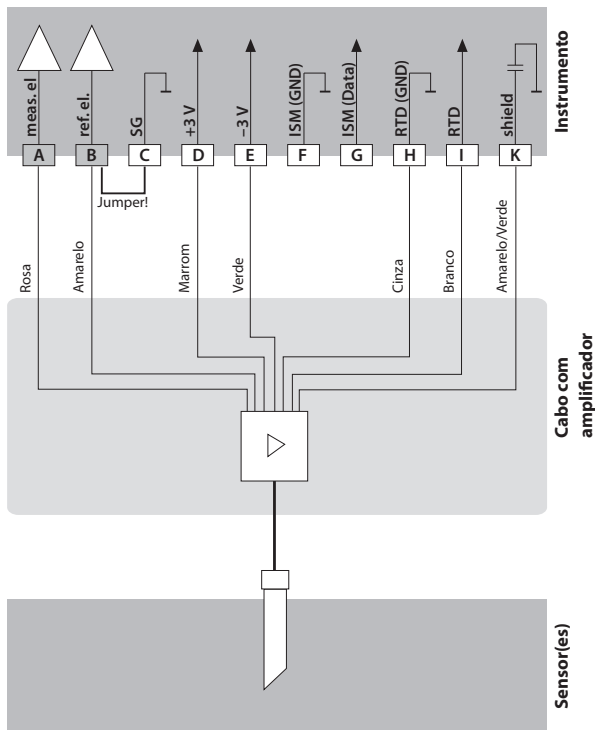


Exemplo 6:

Tarefa de medição: pH, temperatura (somente área seguras)

Sensores (exemplo): InPro 3300 ISFET (Mettler-Toledo)

Cabo (exemplo): ZU 0582 (Knick)



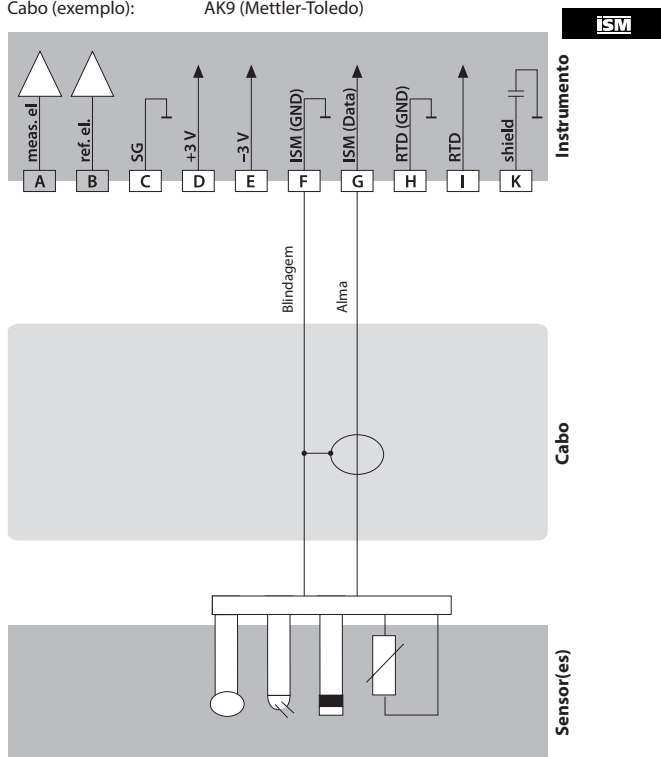
Exemplo 7:**Atenção!**

Não conectar um sensor analógico adicional!

Tarefa de medição: pH/ORP, temp., impedância vidro, impedância referência

Sensores (exemplo): ISM digital InPro 4260i (Mettler-Toledo)

Cabo (exemplo): AK9 (Mettler-Toledo)

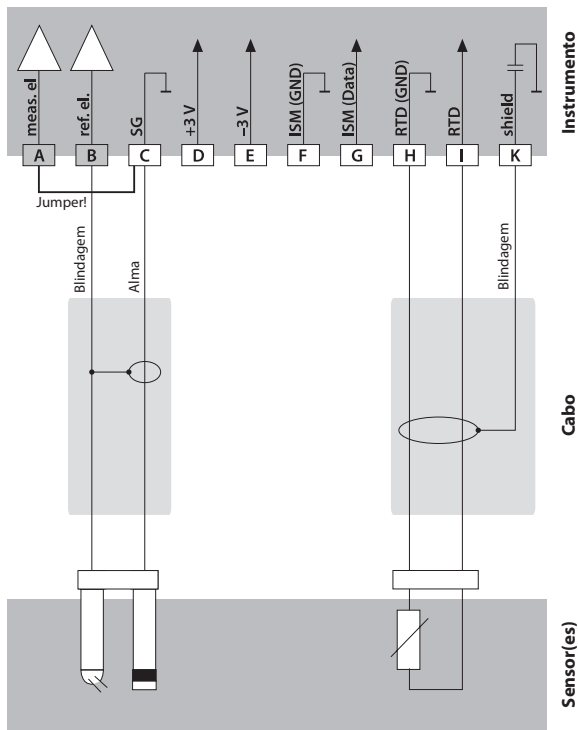


Exemplo 8 – Nota: Desligar o Sensocheck!

Tarefa de medição: ORP, temp., impedância vidro, impedância de referência

Sensores (exemplo): ORP: SE 535 (Knick)

Cabo (exemplo): AS9 ZU 0318 (Knick)

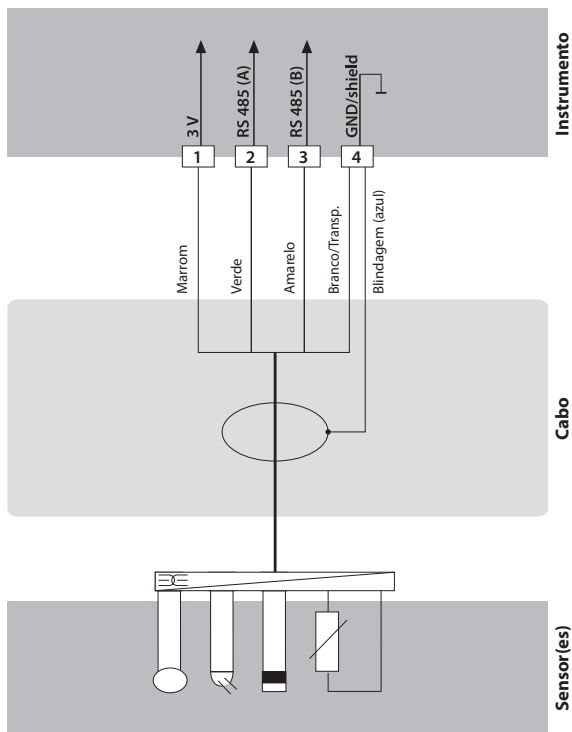


Exemplo 9:

Tarefa de medição: pH/ORP, temp., impedância vidro, impedância referência

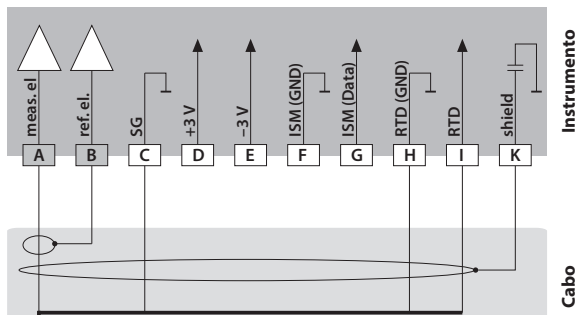
Sensores (exemplo): SE 533-MS (Knick), Memosens

Cabo (exemplo): CA/MS-003-NAA (Knick)



Exemplo 10:

Conexão de uma sonda Pfaudler (requer TAN SW-A007):



Sonda Pfaudler

Instrum.	pH Reiner c/ equal. pot, tampa rosca VP	Diferencial Modelos 18/40 c/ equal. pot.	Modelos 03/04 c/ equalização de potencial	Modelos 03/04 c/ equalização de potencial
A	meas	Alma coaxial	Branco coaxial	Branco coaxial
B	ref	Blind. coaxial	Marrom coaxial	Marrom coaxial
C	SG	Azul	Azul	Jumper B/C
D				
E				
F				
G				
H	RTD (GND)	Verde	Marrom	Marrom
I	RTD	Branco	Verde, Preto	Verde, Preto
K	Shield	Verde/Amar., Cinza	Laranja, Roxo	Laranja, Roxo

Configuração		Opções	Default
Sensor (SENSOR)			
SNS:		STANDARD, ISFET INDUCON, ISM MEMOSENS	STANDARD
	RTD TYPE (omitido p/ ISM, InduCon, Memosens)	100 PT, 1000 PT, 30 NTC, 8.55 NTC, Balco 3kOhm	100 PT
	TEMP UNIT	°C / °F	°C
	TEMP MEAS *)	AUTO, MAN, EXT (EXT só com entrada I habilitada via TAN)	AUTO
	MAN	-20...200 °C (-4...392 °F)	025.0 °C (077.0 °F)
	TEMP CAL	AUTO, MAN, EXT (EXT só com entrada I habilitada via TAN)	AUTO
	MAN	-20...200 °C (-4...392 °F)	025.0 °C (077.0 °F)
	NOM ZERO **)	0.00 ... 14.00 PH	07.00 PH
	NOM SLOPE **)	30.0 ... 60.0 mV	059.2 mV
	PH_ISO **)	0.00 ... 14.00 PH	07.00 PH
	CAL MODE	AUTO, MAN, DAT	AUTO
	AUTO BUFFER SET	-01-...-10-, -U1- Nota: Para ver os valores nominais do tampão e fabricante, pressionar a tecla info .	-02-
	U1 (Para grupo de tampões especificável, veja o Apêndice: "Tabelas de Tampões")	EDIT BUFFER 1 (NO, YES) Introduzir valores p/ tampão 1	NO
		EDIT BUFFER 2 (NO, YES) Introduzir valores p/ tampão 2	NO
	CAL TIMER (omitido para ISM)	OFF, FIX, ADAPT	OFF
ON	CAL-CYCLE	0...9999 h	0168 h

*) Parâmetro TEMP MEAS: AUTO/MAN/EXT aplica-se a todas as saídas:
OUT1/OUT2/valores limite/controlador/display;

**) Só com opção Pfaudler e STANDARD (TAN), não com Memosens Pfaudler.

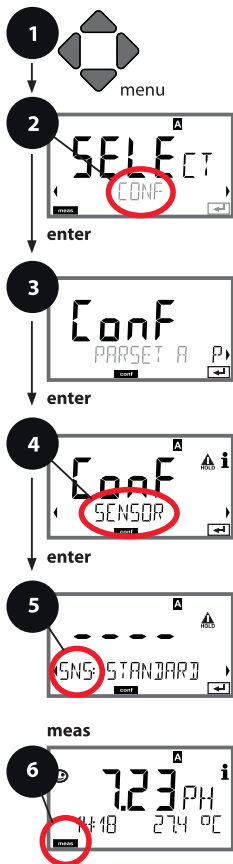
Configuração		Opções		Default	
Sensor (SENSOR)					
SNS:	ISM (só para sensores ISM)	ACT (Adaptive Calibration Timer)		OFF AUTO MAN	OFF
		MAN	ACT CYCLE	0...9999 DAY	0007 DAY
		TTM (Time to Maintenance)		OFF AUTO MAN	OFF
		MAN	TTM CYCLE	0...9999 DAY	0030 DAY
	Inducon, ISM	CIP COUNT		ON/OFF	OFF
		ON	CIP CYCLES	0...9999 CYC	0025 CYC
		SIP COUNT***		ON/OFF	OFF
		ON	SIP CYCLES	0...9999 CYC	0025 CYC
		AUTOCLAVE		ON/OFF	OFF
		ON	AC CYCLES	0...9999 CYC	0000 CYC

***) Também para Memosens

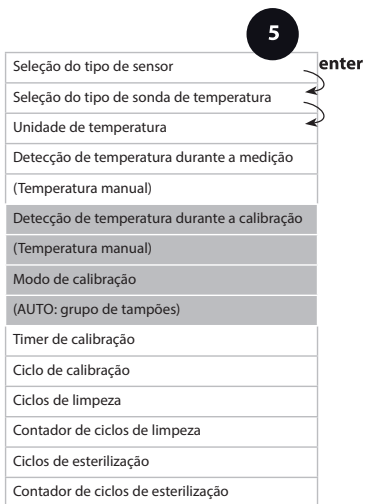
108 Seleção do Modo de Calibração (pH)

Sensor

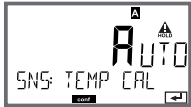
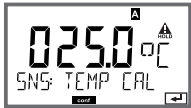


Selecionar: Detecção de temperatura durante a calibração, modo de calibração



- 1 Pressione a tecla **menu**.
- 2 Selecione **CONF** com as teclas **◀ ▶** e pressione **enter**.
- 3 Selecione o conjunto de parâmetros com as teclas **◀ ▶** e pressione **enter**.
- 4 Selecione o menu **SENSOR** com as teclas **◀ ▶** e pressione **enter**.
- 5 Todos os itens deste grupo de menus são indicados pela sigla "SNS:". Pressione **enter** para selecionar o menu, edite com as teclas de seta (veja a pág. seguinte). Confirme (e prossiga) com **enter**.
- 6 Sair: Pressione a tecla **meas** até que o indicador de modo [meas] apareça.



5

Item de Menu	Ação	Opções
<p>Detecção de temperatura durante a calibração</p> 	<p>Selecione o modo com ▲ ▼ : AUTO: Medido pelo sensor MAN: Entrada direta de temperatura, sem medição (veja o passo seguinte) EXT: Temperatura especificada via entrada de corrente (só com TAN E habilitado) Pressione enter para confirmar.</p>	<p>AUTO MAN EXT</p>
<p>(Temperatura manual)</p> 	<p>Modifique os dígitos com as teclas ▲ ▼ , selecione os dígitos seguintes com as teclas ◀ ▶ . Pressione enter para confirmar.</p>	<p>-20...200 °C (-4...+392 °F)</p>
<p>Modo de calibração</p> 	<p>Selecione CALMODE com as teclas ▲ ▼ : AUTO: Calibração com reconhecimento de grupo de tampões Calimatic MAN: Introdução manual de soluções tampão DAT: Introdução de dados de ajuste de sensores pré-medidos Pressione enter para confirmar.</p>	<p>AUTO MAN DAT</p>
<p>(AUTO: Grupo tampões)</p> 	<p>Selecione o grupo de tampões com as teclas ▲ ▼ (veja valores nominais nas tabelas de tampões) Pressione enter para confirmar.</p>	<p>-00...-10-, (-U1-, veja Apêndice)</p> <p>Para exibir o fabricante e os valores nominais na linha inferior, pressione a tecla info.</p>

Padronização de sensor de pH

Modos de operação

Calibração de pH

AUTO	Calibração com reconhecimento automático de tampões (Calimatic)
MAN	Calibração manual com Introdução de valores individuais de tampão
DAT	Introdução de dados de eletrodos pré-medidos

Calibração de produto

Grupos de tampões Calimatic

-01- Mettler-Toledo	2.00/4.01/7.00/9.21
-02- Knick CaliMat	2.00/4.00/7.00/9.00/12.00
-03- Ciba (94)	2.06/4.00/7.00/10.00
-04- NIST technical	1.68/4.00/7.00/10.01/12.46
-05- NIST standard	1.679/4.006/6.865/9.180
-06- HACH	4.01/7.00/10.01
-07- WTW techn. buffers	2.00/4.01/7.00/10.00
-08- Hamilton	4.01/7.00/10.01/12.00
-09- Reagecon	2.00/4.00/7.00/9.00/12.00
-10- DIN 19267	1.09/4.65/6.79/9.23/12.75
-U1- Grupo de tampões especificável com 2 soluções tampão	

A calibração é necessária para adaptar o instrumento às características do respectivo sensor, isto é, potencial de assimetria e rampa.

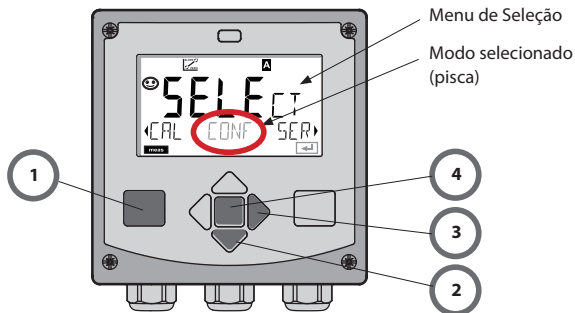
O acesso à calibração pode ser protegido por senha (menu SERVICE).

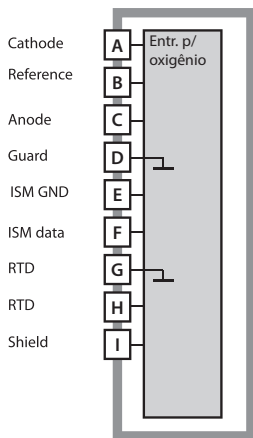
Primeiro abra o menu de Calibração (CAL) e selecione o modo calibração:

CAL_PH	Dependendo da configuração: <table border="1"> <tr> <td>AUTO</td> <td>Reconhecimento automático de tampão (Calimatic)</td> </tr> <tr> <td>MAN</td> <td>Introdução manual de tampão</td> </tr> <tr> <td>DAT</td> <td>Introdução de dados de eletrodo pré-medido</td> </tr> </table>	AUTO	Reconhecimento automático de tampão (Calimatic)	MAN	Introdução manual de tampão	DAT	Introdução de dados de eletrodo pré-medido
AUTO	Reconhecimento automático de tampão (Calimatic)						
MAN	Introdução manual de tampão						
DAT	Introdução de dados de eletrodo pré-medido						
CAL_ORP	Calibração de ORP						
P_CAL	Calibração de produto (calibração com amostragem)						
ISFET-ZERO	Ajuste de zero. Necessário para sensores ISFET. Subsequentemente pode-se fazer uma calibração de um ou dois pontos.						
CAL-RTD	Ajuste da sonda de temperatura						

Para pré-configurar CAL_PH (menu de Configuração):

- 1) Pressione e segure a tecla **meas** (> 2 s) (modo medição).
- 2) Pressione a tecla **menu**: o menu de Seleção aparece.
- 3) Selecione o modo CONF com as teclas de seta esquerda/direita.
- 4) Selecione "SENSOR" – "CALMODE": AUTO, MAN, DAT.
 Pressione **enter** para confirmar.

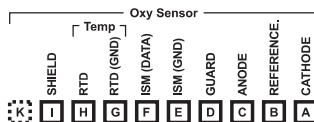




Módulo para medição de oxigênio dissolvido

Código para pedido MK-OXY045

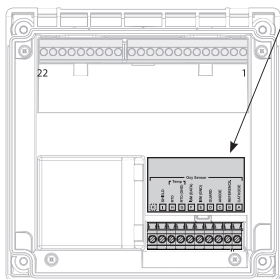
Veja exemplos de fiação nas páginas seguintes.



Arranjo de terminais do módulo para oxigênio dissolvido

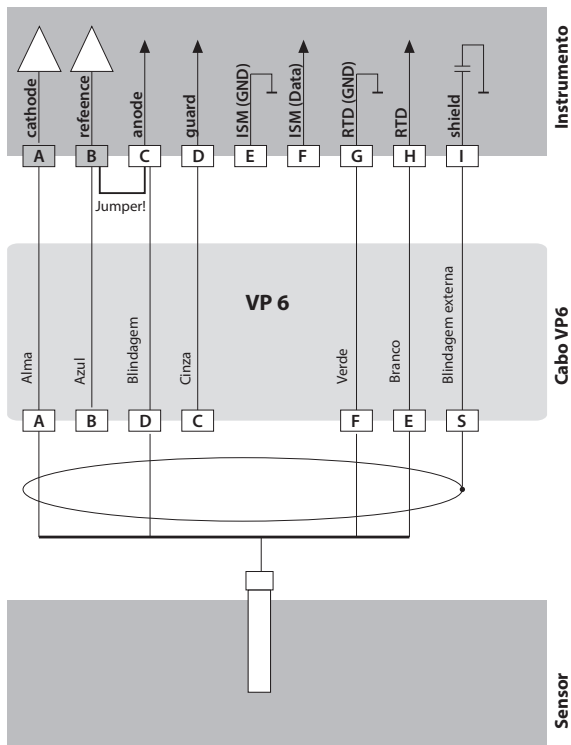
Os terminais são para fios sólidos ou múltiplos de até 2,5 mm² (AWG 14)

O módulo de medição vem com uma etiqueta autoadesiva. Cole-a no slot do módulo na frente do instrumento para sempre saber como são feitas as conexões.



Exemplo 1:

Tarefa de medição: Oxigênio STANDARD
Sensores (exemplo): "10" (p. ex., SE 706, InPro 6800)
Cabo (exemplo): VP 6 ZU 0313 (Knick)

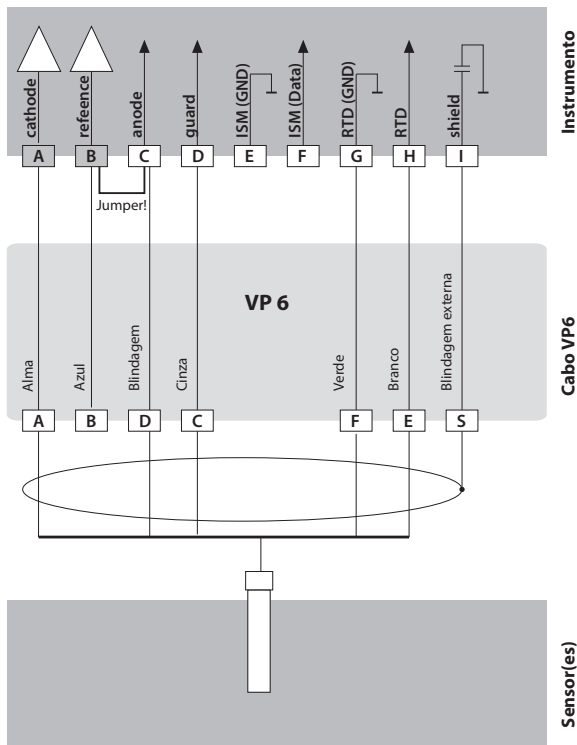


Exemplo 2:

Tarefa de medição: TRAÇOS de oxigênio (requer TAN)

Sensores (exemplo): "01" (p. ex., SE 707, InPro 6900)

Cabo (exemplo): VP6 ZU 0313 (Knick)

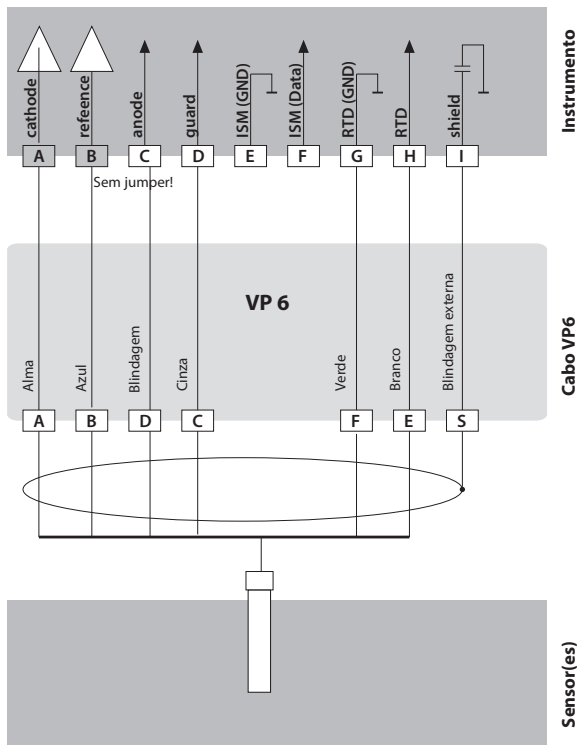


Exemplo 3:

Tarefa de medição: SUBTRAÇOS de oxigênio (requer TAN)

Sensores (exemplo): "001" (p. ex., SE 708, InPro 6950)

Cabo (exemplo): VP6 ZU 0313 (Knick)



116 Exemplo de Fiação p/ Sensor Óptico

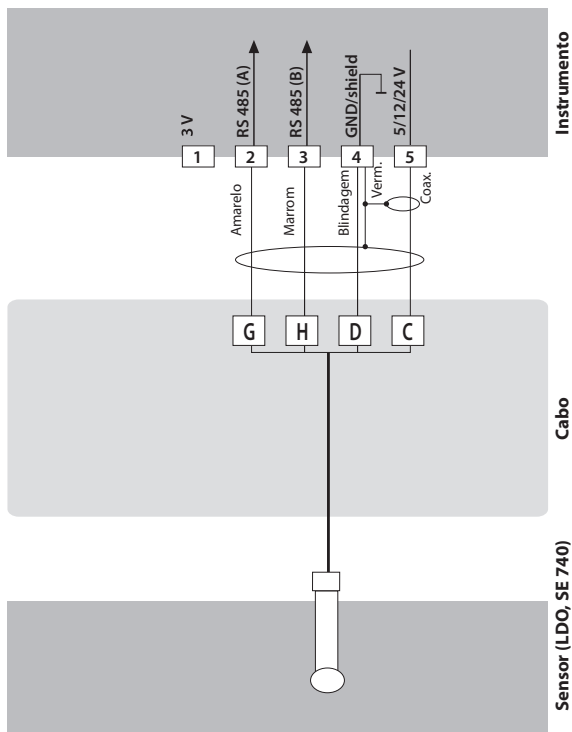
Exemplo:

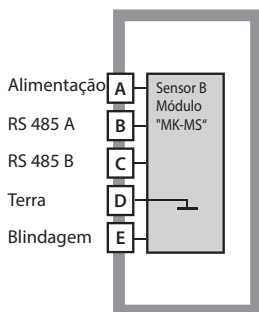
Sensor óptico de oxigênio

Tarefa de medição: Conexão VP de sensor óptico (LDO)

Sensores (exemplo): SE 740

Cabo (exemplo): M12 (p. ex., CA/M12-005NA)

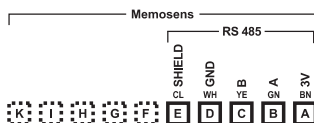




Módulo para 2.º canal Memosens

Código para pedido MK-MS095

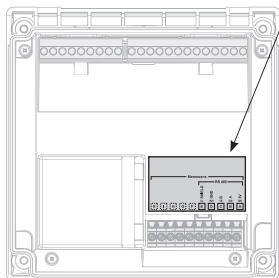
Veja exemplos de fiação nas páginas seguintes.



Arranjo de terminais do módulo para 2.º canal Memosens

Os terminais são para fios sólidos ou múltiplos de até 2,5 mm² (AWG 14).

O módulo de medição vem com uma etiqueta autoadesiva. Cole-a no slot do módulo na frente do instrumento para sempre saber como são feitas as conexões.

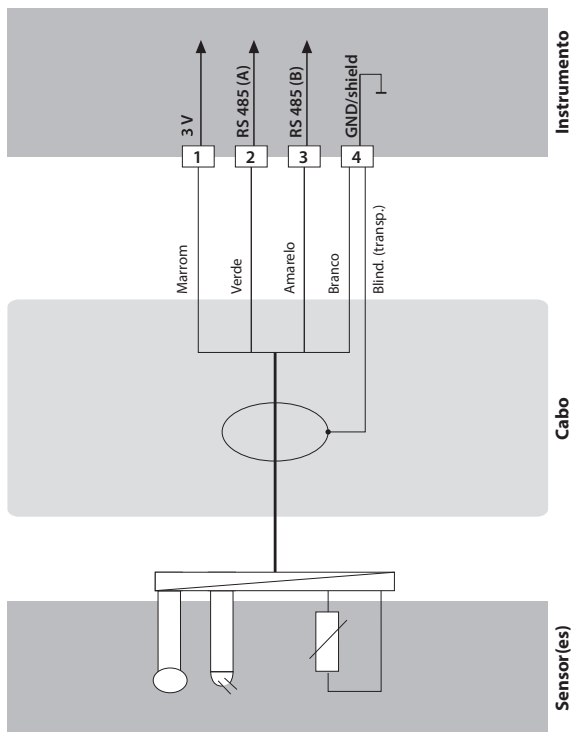


Exemplo 11:**Memosens**

Tarefa de medição: pH/ORP, temp., impedância vidro, imped. de referência

Sensores (exemplo): Orbisint CPS 11 D Memosens

Cabo (exemplo): CYK 10



Partida

Quando, na partida inicial, um sensor MS está conectado, ele é reconhecido e a função de medição correspondente é selecionada automaticamente.

Mudar a Função de Medição

No menu de Serviço (SERVICE), pode-se escolher um outro método de medição a qualquer momento.

Calibração e Manutenção em Laboratório

O software MemoSuite permite calibrar os sensores Memosens sob condições reproduzíveis em PC de laboratório. Os parâmetros do sensor são registrados numa base de dados. A documentação e o arquivamento atende as exigências CFR 21 Part 11 do FDA. Relatórios detalhados podem ser exportados em formato csv para exibição no MS Excel. O MemoSuite é disponível como acessório e vem nas versões "Basic" e "Advanced": www.knick.de.

Parametrização e especificações

Sensor conectado no momento:
Tipo de sensor, fabricante, código para pedido e número de série

Seleção de função
(A função selecionada é destacada.)

Parâmetros do sensor conectado no momento

Última calibração
(ajuste)

Ampliação de valores medidos
Quando o cursor é colocado sobre um valor medido, ele muda para uma lupa, permitindo a amplificação do valor exibido mediante um clique do mouse.

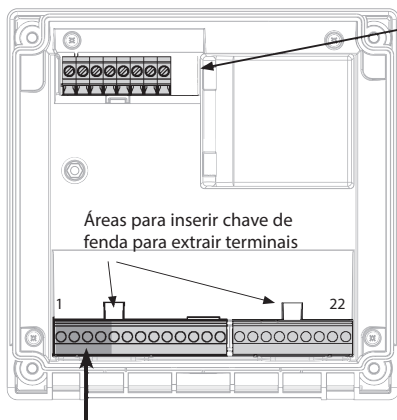
The screenshot displays the MemoSuite software interface. At the top, there is a menu bar with options: Start/Center, Calibration, Sensors, History, Statistics, and pH Buffers. The 'Sensors' menu is highlighted with a red box. Below the menu, the 'Measured values' section shows pH value (7.36 pH), pH voltage (-19.4 mV), and Temperature (23.8 °C). The 'Sensor data' section lists: Sensor type: pH (glass), Manufacturer: KNICK, Order code: SE 533X/1-NMSN, and Serial number: 1030550. The 'Adjustment data' section shows: Date: 11/5/2012 07:30:24, Slope: 58.6 mV/pH, and Zero point: 7.03 pH. A red circle highlights the '7.36 pH' value, and a red arrow points to a magnified view of this value below, showing '7.32 pH'.

Measured values	
pH value	7.36 pH
pH voltage	-19.4 mV
Temperature	23.8 °C

Sensor data	
Sensor type:	pH (glass)
Manufacturer:	KNICK
Order code:	SE 533X/1-NMSN
Serial number:	1030550

Adjustment data	
Date:	11/5/2012 07:30:24
Slope:	58.6 mV/pH
Zero point:	7.03 pH

Measured values	
pH value	7.32 pH
pH voltage	-16.9 mV



Para instrumentos duais
(2 canais de medição):
(Módulo xxx)

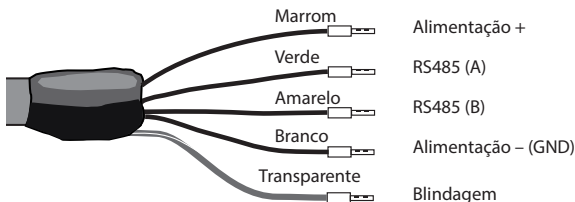
Conexão de sensor B

A	Marrom	supply
B	Verde	RS 485 A
C	Amarelo	RS 485 B
D	Branco	GND
E	Transp.	SHIELD

Conexão convencional (sensor A)

1	Marrom	supply
2	Verde	RS 485 A
3	Amarelo	RS 485 B
4	Branco/Transp.	GND/shield

Cabo Memosens



Cabo de conexão para transmissão digital indutiva (sem contato) de sinais medidos (Memosens).

O cabo de conexão possui um conector indutivo para sensores digitais Memosens (trava baioneta). Ele permite conectar os fios (com terminais) da malha do sensor do transmissor. A transmissão digital indutiva (sem contato) de sinais e energia elimina a influência de umidade, campos eletromagnéticos e corrosão.

Especificações

Material	TPE
Diâmetro do cabo	6,3 mm
Cabo	2x2, pares de fios trançados
Comprimento	até 100 m
Temperatura do processo	-20 °C ... 135° C
Nível de proteção	IP 68

Código de Modelo

Tipo de cabo	Comprimento do cabo	Código p/ pedido
Cabo Memosens	3 m	CA/MS-003NAA
	5 m	CA/MS-005NAA
	10 m	CA/MS-010NAA
	20 m	CA/MS-020NAA
Cabo Memosens, Ex*	3 m	CA/MS-003XAA
	5 m	CA/MS-005XAA
	10 m	CA/MS-010XAA
	20 m	CA/MS-020XAA

Cabos com outras medidas podem ser fornecidos por encomenda.

*) Certificado p/ área explosiva, ATEX II IG Ex ia IIC T3/T4/T6

O Certificado de Exame de Tipo é fornecido com cada sensor Ex.

Partida

Na partida inicial, o analisador reconhece automaticamente o módulo e faz os devidos ajustes no software. Ao substituir o módulo de medição, é preciso selecionar a função de medição correspondente no menu de Serviço (SERVICE). Isso não se aplica ao módulo multicanal para duas medições de condutividade. Aqui o instrumento pede para selecionar o método de medição desejado na primeira partida.

Mudança da Função de Medição (Sensores Memosens)

Mudança da Função de Medição (Sensores Memosens)

Sensores Memosens conectados diretamente (sem módulo de medição):

No menu de Serviço (SERVICE), pode-se escolher um outro método de medição a qualquer momento.

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GmbH & Co. KG



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