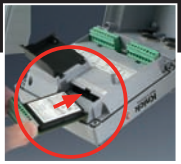
The Art of Measuring. Knick

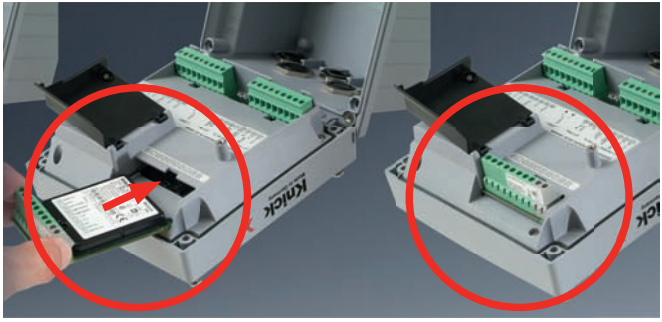
Stratos Evo Series

Measuring Modules and Wiring Examples COND, CONDI, CC



COND
CONDI
CC
Memosens

www.knick.de



Measuring modules for connection of conventional sensors (Cond, CondI, dual conductivity CC):

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.

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.

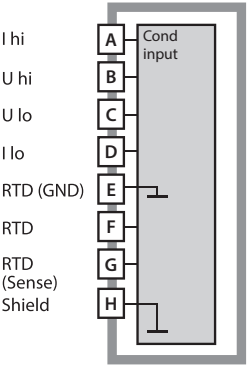
Terminals:

suitable for single or stranded wires up to 2.5 mm^2 (AWG 14)

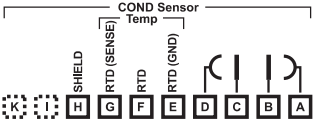
Application in Hazardous Locations:

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

- IECEx
- ATEX Zone 2

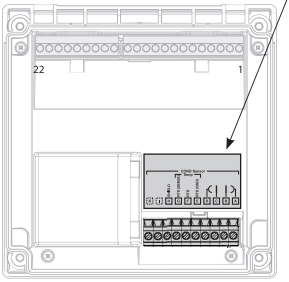


Module for contacting conductivity measurement (COND)
Order code MK-COND025
See the following pages for wiring examples.



Terminal plate of module for COND measurement
The terminals are suitable for single or stranded wires up to 2.5 mm² (AWG 14).

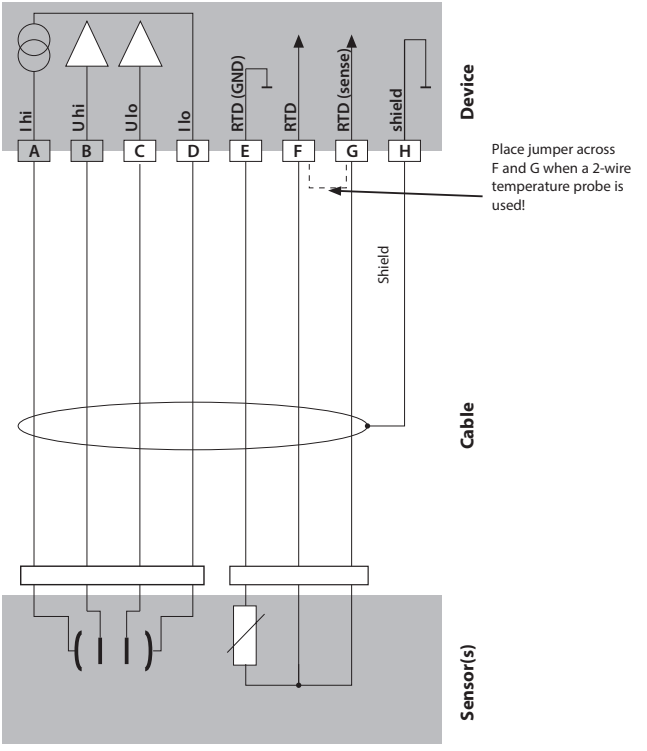
The measuring module comes with a self-adhesive label. Stick the label to the module slot on the device front. This way, you have the wiring "under control".



Example 1:

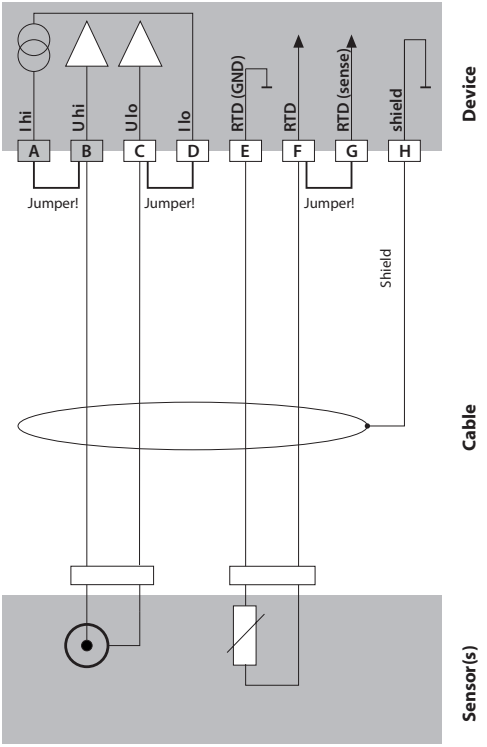
Measuring task: Conductivity, temperature

Sensors (principle): 4 electrodes



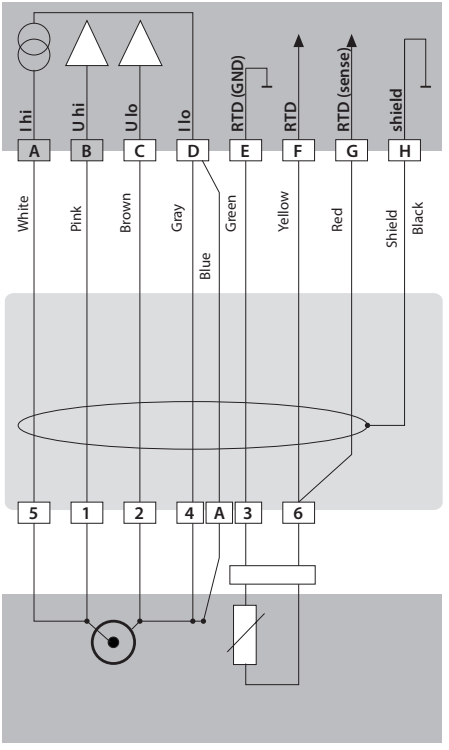
Example 2:

Measuring task: Conductivity, temperature
Sensors (principle): 2 electrodes, coaxial



Example 3:

Measuring task:	Conductivity, temperature
Sensors (example):	SE 604 (Knick)
Cable:	Schaltbau cable



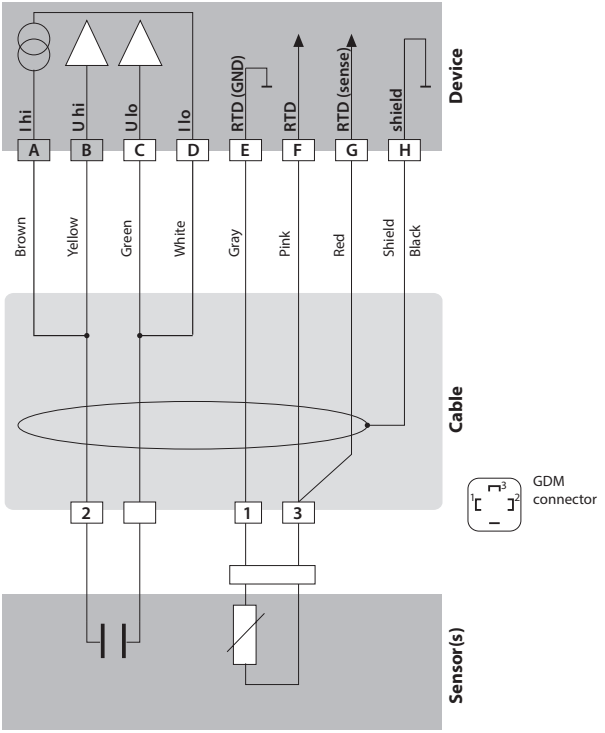
Schaltbau connector

Example 4:

Measuring task: Conductivity, temperature

Sensors (example): SE 630 (Knick)

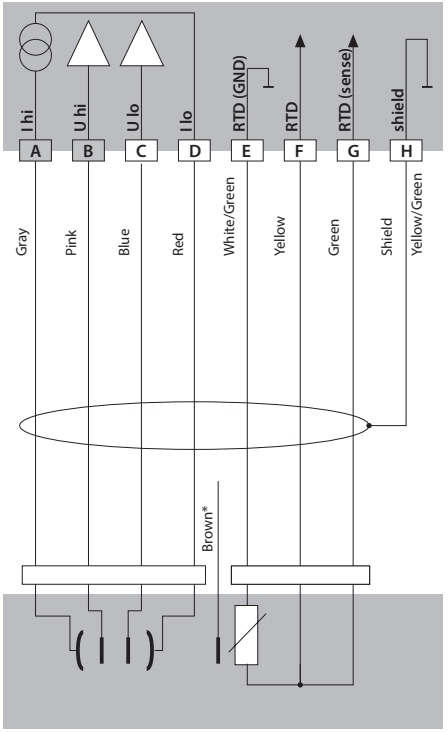
Connection via GDM connector



Example 5:

Measuring task: Conductivity, temperature

Sensors (example): SE 600 / SE 603 4-EL fringe-field sensor (Knick)

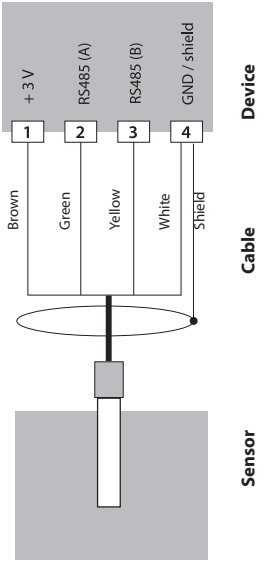


* Do not connect

Example 6:

Measuring task: Conductivity, temperature

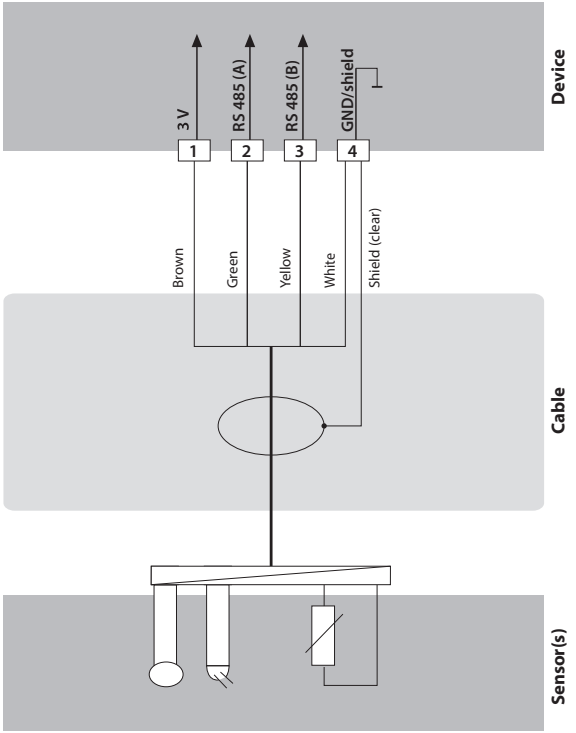
Sensor: Memosens



Connect the Memosens sensor to the RS-485 interface of the device. The connected Memosens sensor is automatically recognized during start-up of the transmitter.

12 Memosens Wiring Example

Example:	**Memosens**
Measuring task:	Conductivity, temperature
Sensors (example):	SE 604 Memosens
Cable (example):	CYK 10



Start-Up

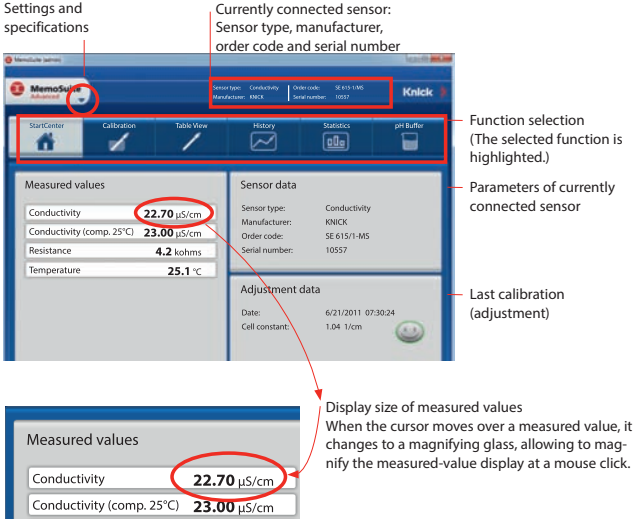
When an MS sensor is connected at initial start-up, it is recognized and the corresponding measuring function is automatically selected.

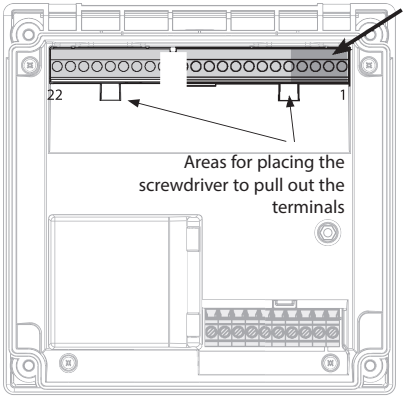
Changing the Measuring Function

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

Calibration and Maintenance in the Lab

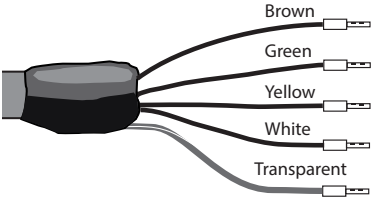
The "MemoSuite" software allows calibrating Memosens sensors under reproducible conditions at a PC in the lab. The sensor parameters are registered in a database. Documenting and archiving meet the demands of FDA CFR 21 Part 11. Detailed reports can be output as csv export for Excel. MemoSuite is available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



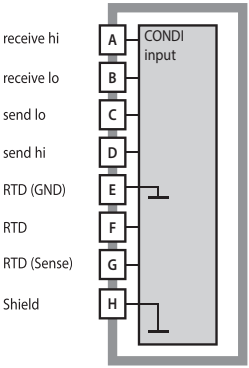


Sensor connection		
1	Brown	supply
2	Green	RS 485 A
3	Yellow	RS 485 B
4	White/ Transp.	GND/shield

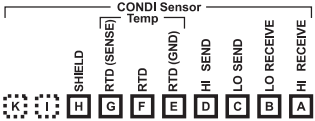
Memosens Cable



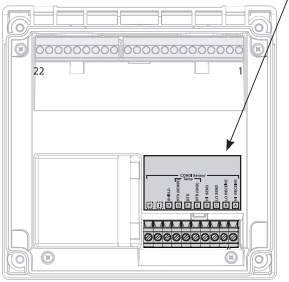
Brown	Power supply +
Green	RS485 (A)
Yellow	RS485 (B)
White	Power supply – (GND)
Transparent	Shield



Module for inductive conductivity measurement (CONDI)
Order code MK-CONDI035
See the following pages for wiring examples.



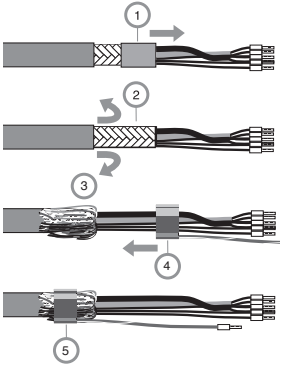
Terminal plate of CONDI module
The terminals are suitable for single or stranded wires up to 2.5 mm² (AWG 14).



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".

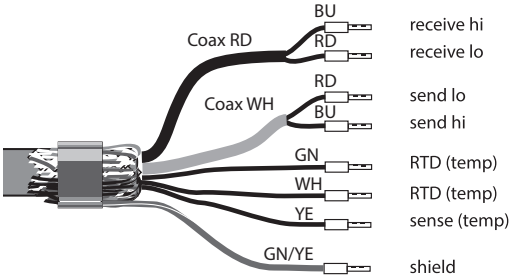
Preparing the Shield Connection

Pre-assembled special cable for SE 655 / SE 656 sensors

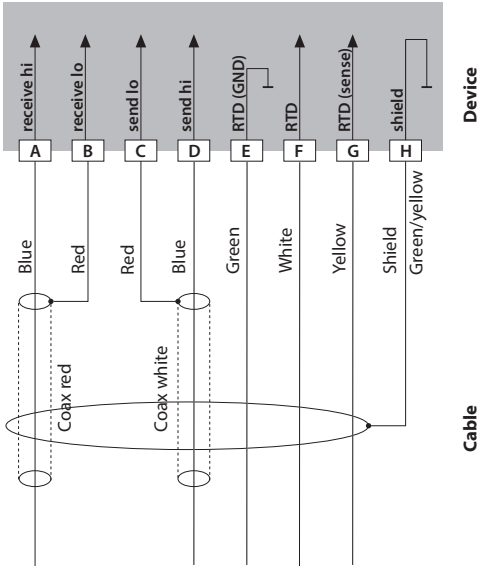


- Insert the special cable through the cable entry into the terminal compartment.
- Remove the already separated part of the cable insulation (1).
- Turn the shielding mesh (2) over the cable insulation (3).
- Then shift the crimp ring (4) over the shielding mesh and tighten it using a pince (5)

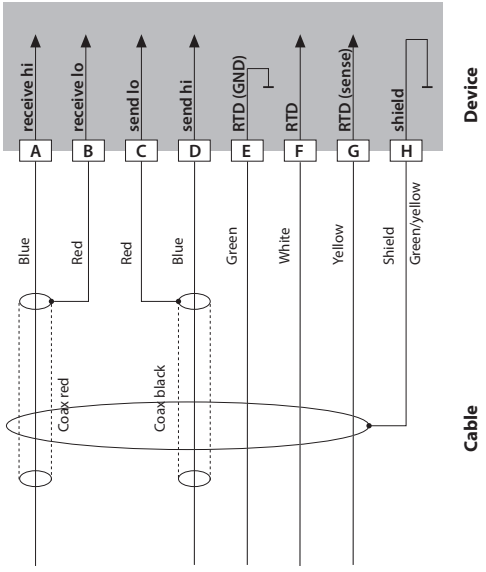
The pre-assembled special cable:



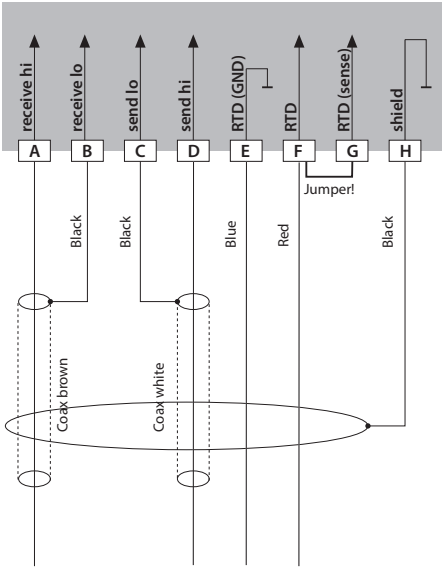
Measuring task: Conductivity, temperature
Sensors: SE 655/SE 656 sensor
Connection of pre-assembled cable



Measuring task: Conductivity, temperature
Sensor: SE 660 sensor



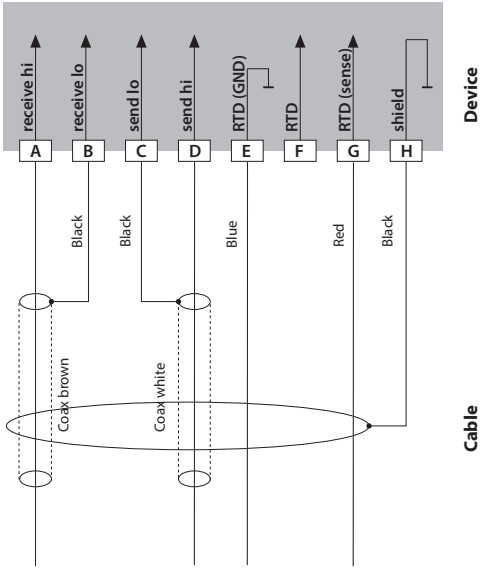
Measuring task: Conductivity, temperature
Sensor: Yokogawa ISC40 (Pt 1000)



Configuration settings for this sensor:

SENSOR	Conductivity, temperature
Sensor:	OTHER
RTD TYPE	1000Pt
CELL FACTOR	1.88
TRANS RATIO	125

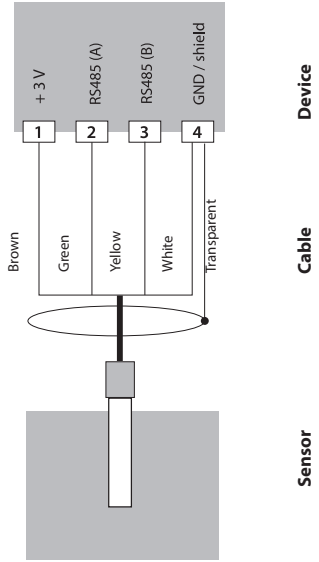
Measuring task: Conductivity, temperature
Sensor: Yokogawa IC40S (NTC 30k)



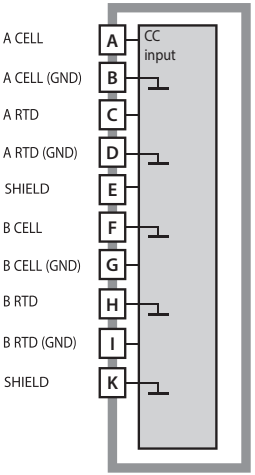
Configuration settings for this sensor:

SENSOR	Conductivity, temperature
Sensor:	OTHER
RTD TYPE	30 NTC
CELL FACTOR	approx. 1.7
TRANS RATIO	125

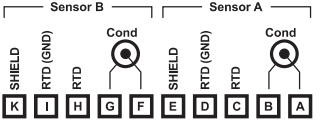
Measuring task:	Conductivity, temperature
Sensor:	SE 670, SE 680
	Caution! Connection to RS-485 interface!
	Remove the measuring module.



Connect the SE 670 sensor to the RS-485 interface of the device. When the SE 670 sensor is selected in the Configuration menu, the default values are taken as calibration data. They can then be modified by calibration.

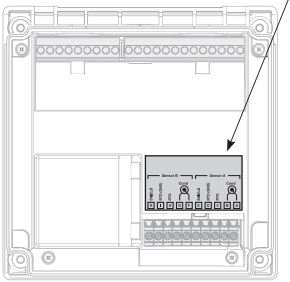


Module for
2 x conductivity measurement
Order code MK-CC065
See the following pages for wiring examples.



Terminal plate
for 2 x conductivity measurement
The terminals are suitable for single or stranded wires up to 2.5 mm² (AWG 14).

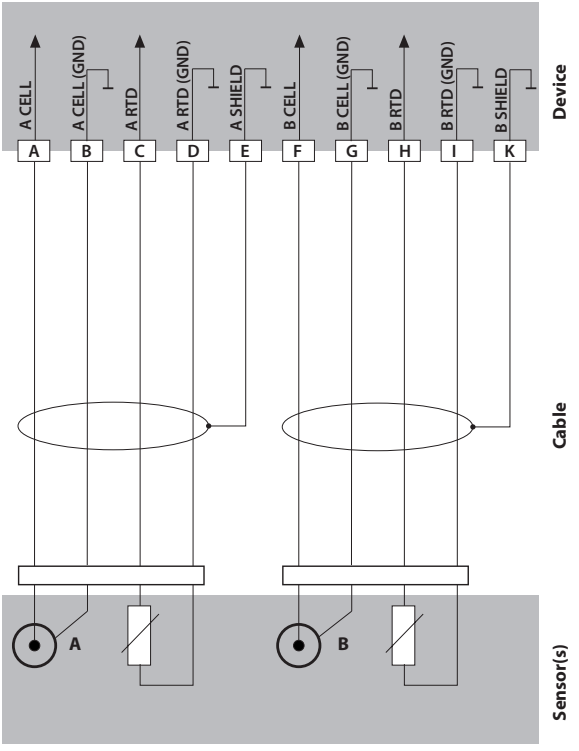
The measuring module comes with a self-adhesive label. Stick the label to the module slot on the device front. This way, you have the wiring "under control".



Example 1:

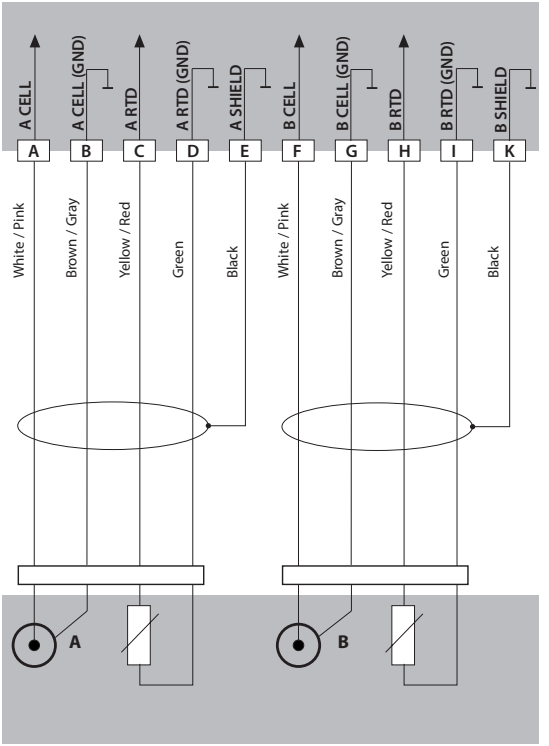
Measuring task: Dual conductivity, temperature

Sensors (principle): 2 electrodes, coaxial



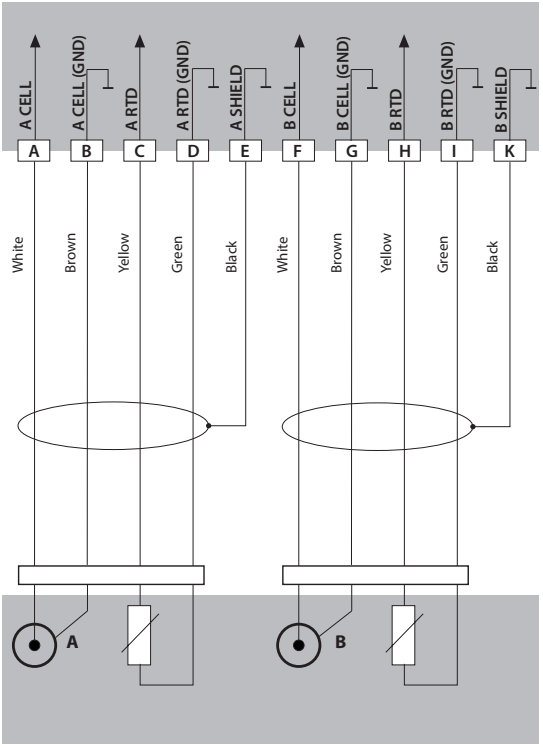
Example 2:

Measuring task: Dual conductivity, temperature
Sensors: SE 604, 2 electrodes



Example 3:

Measuring task: Dual conductivity, temperature
Sensors: SE 610, 2 electrodes



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.	

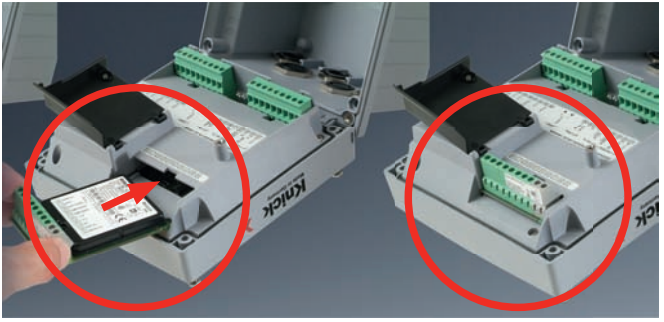
*) Ex-certified, ATEX II IG Ex ia IIC T3/T4/T6
The Type-Examination Certificate is enclosed with each Ex sensor.

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 (Cond, CondI, Doppel-Leitfähigkeit CC):

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.

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!
- Leitungsadern 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!

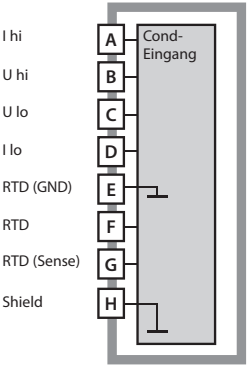
Anschlussklemmen:

geeignet für Einzeldrähte / Litzen bis 2,5 mm^2

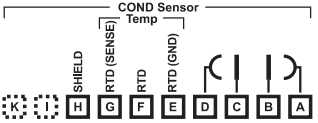
Einsatz in explosionsgefährdeten Bereichen:

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

- IECEx
- ATEX Zone 2

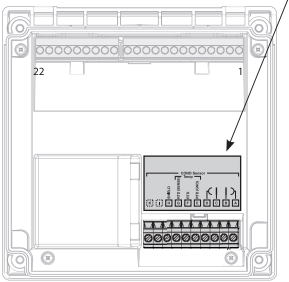


Modul Leitfähigkeitsmessung medienberührt (COND)
Bestellnummer MK-COND025
Beschaltungsbeispiele siehe folgende Seiten



Klemmenschild Modul COND-Messung
Anschlussklemmen geeignet für Einzeldrähte / Litzen bis 2,5 mm²

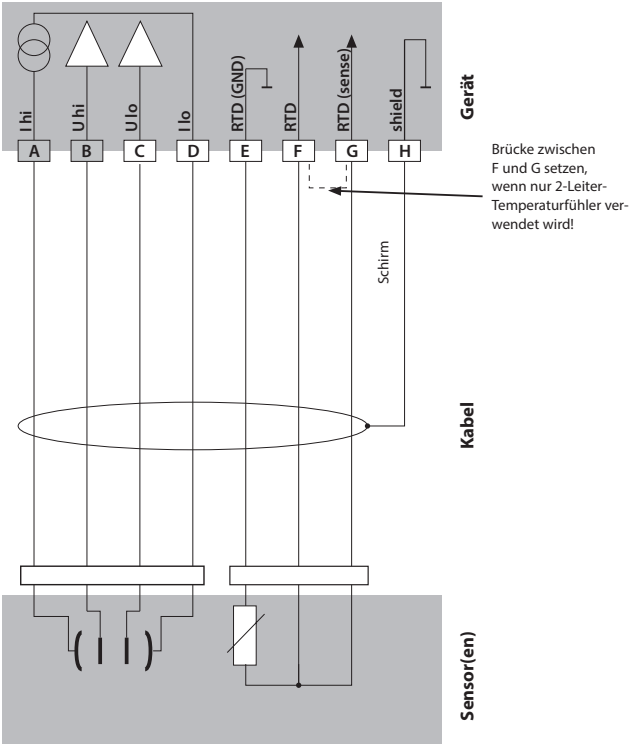
Dem Messmodul liegt ein selbstklebendes Label bei. Bringen Sie das Label auf dem Modulschacht der Gerätefront auf. Sie haben so die Beschaltung „sicher im Griff".



Beispiel 1:

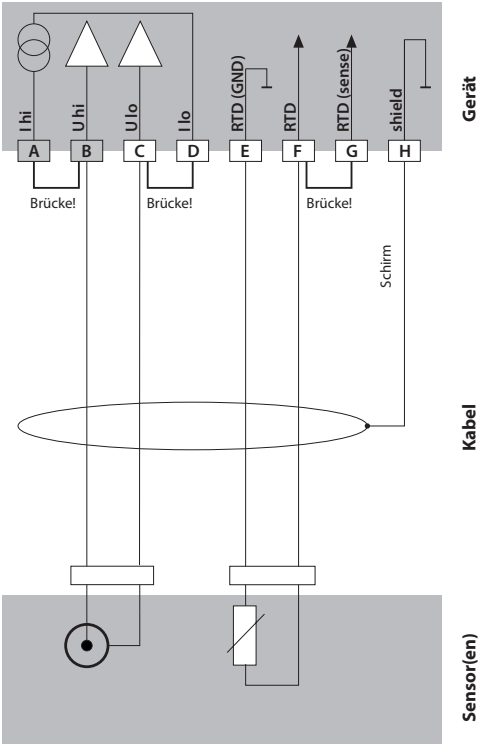
Messaufgabe: Leitfähigkeit, Temperatur

Sensoren (Prinzip): 4 Elektroden



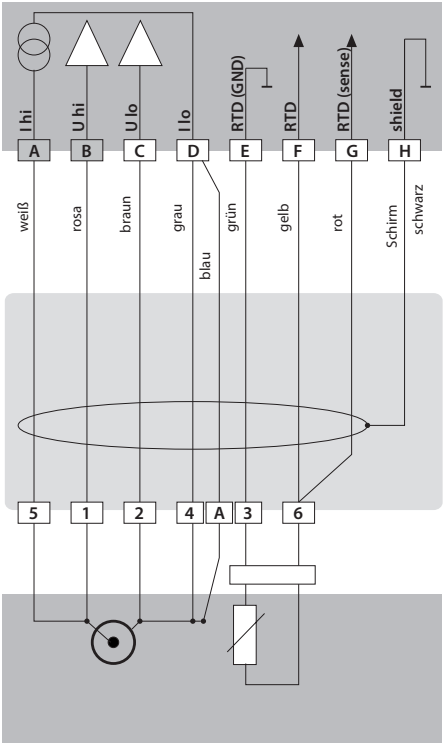
Beispiel 2:

Messaufgabe: Leitfähigkeit, Temperatur
Sensoren (Prinzip): 2 Elektroden, koaxial



Beispiel 3:

Messaufgabe:	Leitfähigkeit, Temperatur
Sensoren (Beispiel):	SE 604 (Knick)
Kabel:	Schaltbau-Kabel

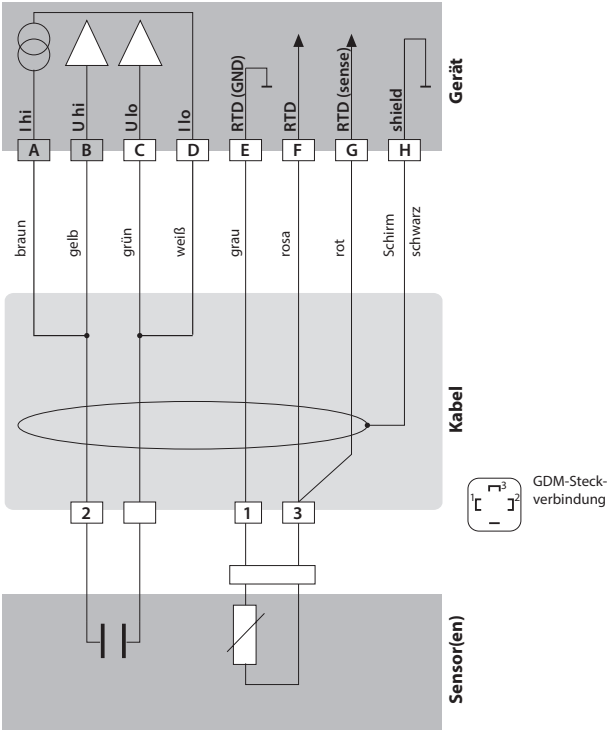


Beispiel 4:

Messaufgabe: Leitfähigkeit, Temperatur

Sensoren (Beispiel): SE 630 (Knick)

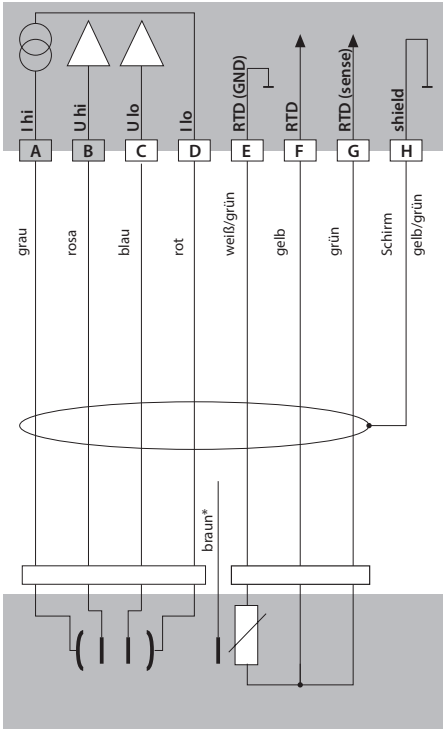
Anschluss über GDM-Steckverbinder



Beispiel 5:

Messaufgabe: Leitfähigkeit, Temperatur

Sensoren (Beispiel): 4-EL-Streufeld-Sensor SE 600 / SE 603 (Knick)

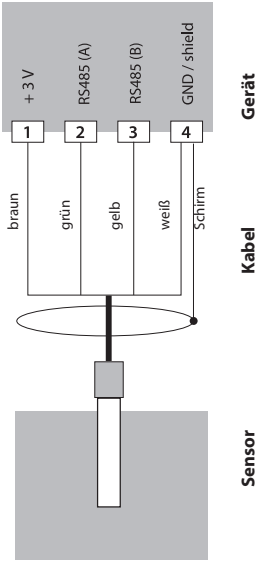


*) nicht anschließen

Beispiel 6:

Messaufgabe: Leitfähigkeit, Temperatur

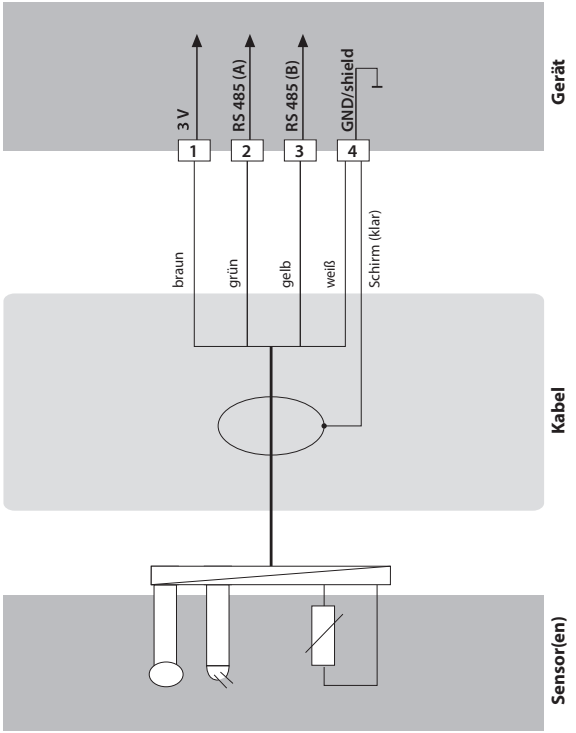
Sensor: Memosens



Der Memosens-Sensor wird an die RS-485-Schnittstelle des Messgerätes angeschlossen. Der angeschlossene Memosens-Sensor wird bei der Inbetriebnahme des Transmitters automatisch erkannt.

38 Beschaltungsbeispiel Memosens

Beispiel:	**Memosens**
Messaufgabe:	Leitfähigkeit, Temperatur
Sensoren (Beispiel):	SE 604 Memosens
Kabel (Beispiel):	CYK 10



Inbetriebnahme

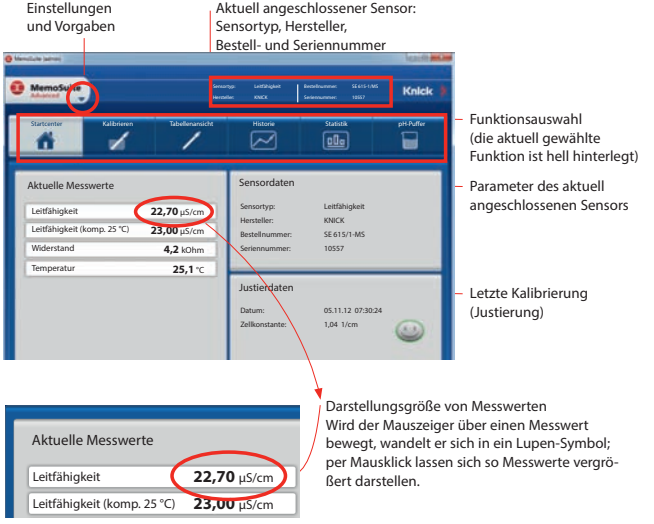
Ist beim ersten Einschalten ein MS-Sensor angeschlossen, so wird dieser erkannt und das entsprechende Messverfahren geladen.

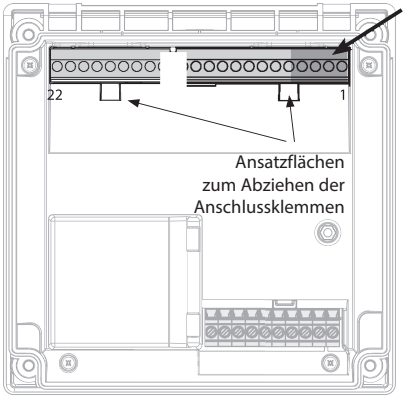
Ändern des Messverfahrens

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

Kalibrierung und Wartung im Labor

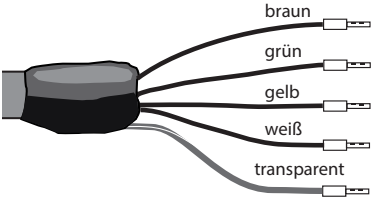
Die Software „MemoSuite“ erlaubt das Kalibrieren von Memosens-Sensoren unter reproduzierbaren Bedingungen am PC im Labor. Die Sensor-Parameter werden in einer Datenbank erfasst. Dokumentation und Archivierung entsprechen Anforderungen gemäß FDA CFR 21 Part 11. Detaillierte Protokolle können als csv-Export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

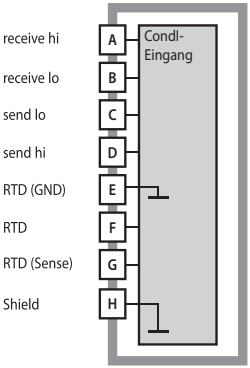




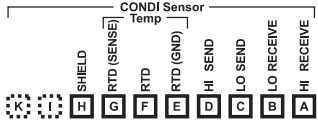
Sensor anschließen		
1	braun	supply
2	grün	RS 485 A
3	gelb	RS 485 B
4	weiß/transp.	GND/shield

Das Memosens-Kabel

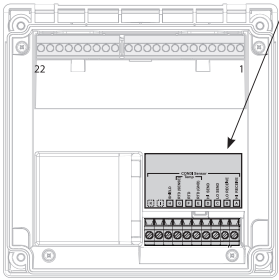




Modul Leitfähigkeitsmessung induktiv (CONDI)
Bestellnummer MK-CONDI035
Beschaltungsbeispiele siehe folgende Seiten



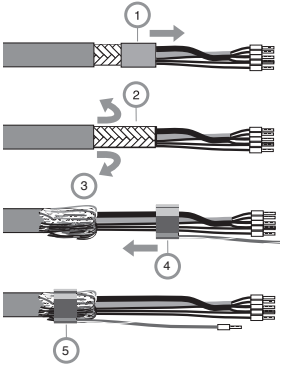
Klemmenschild Modul CONDI
Anschlussklemmen geeignet für Einzeldrähte / Litzen bis 2,5 mm²



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".

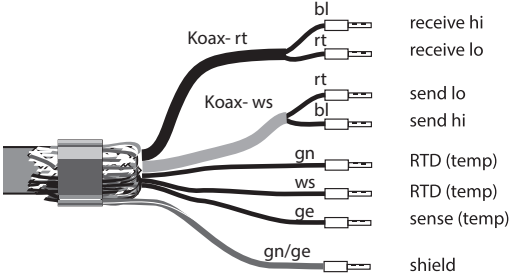
Vorbereitung Schirmanschluss

Vorkonfektioniertes Spezialmesskabel für Sensoren SE 655 / SE 656

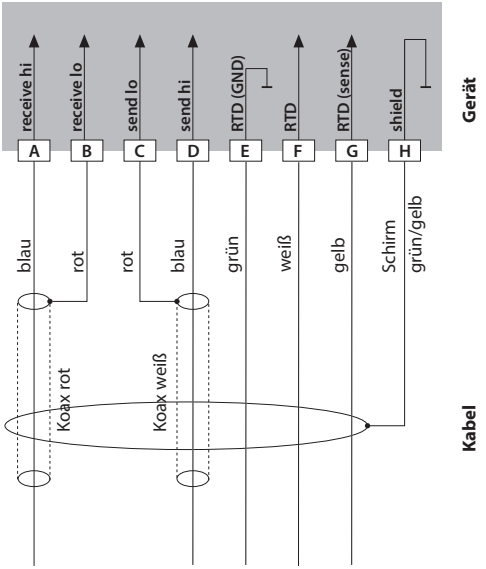


- Das Spezialmesskabel durch die Kabeldurchführung in den Anschlussraum führen.
- Den bereits abgetrennten Teil der Kabelisolierung (1) entfernen
- Abschirmgeflecht (2) nach außen über die Kabelisolierung stülpen (3).
- Anschließend Quetschring (4) über das Abschirmgeflecht führen und mit einer Zange zusammenziehen (5).

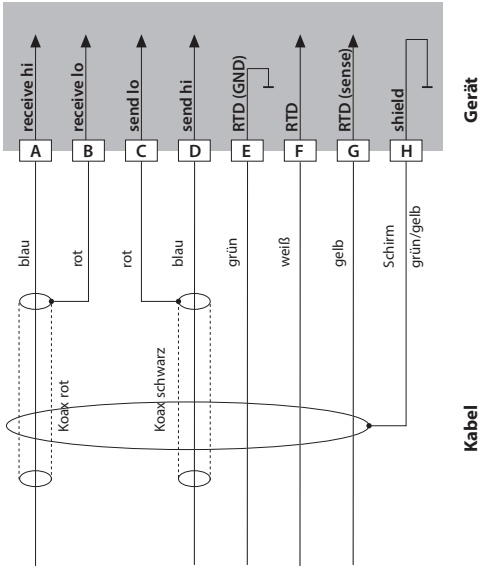
Das vorbereitete Spezialmesskabel:



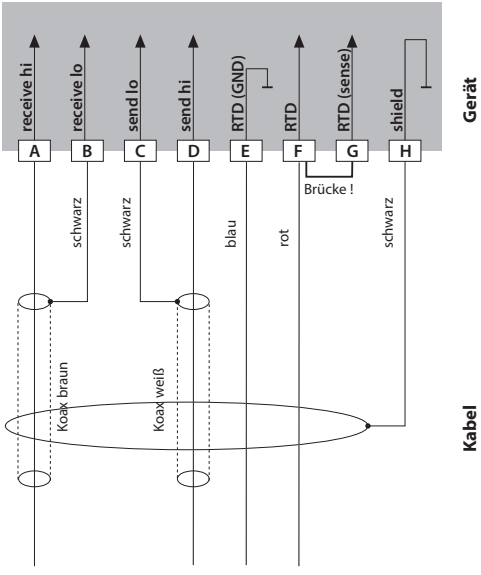
Messaufgabe: Leitfähigkeit, Temperatur
Sensoren: Sensor SE 655 / SE 656
Anschluss des vorkonfektionierten Kabels



Messaufgabe: Leitfähigkeit, Temperatur
Sensor: Sensor SE 660



Messaufgabe: Leitfähigkeit, Temperatur
Sensor: Yokogawa ISC40 (Pt 1000)

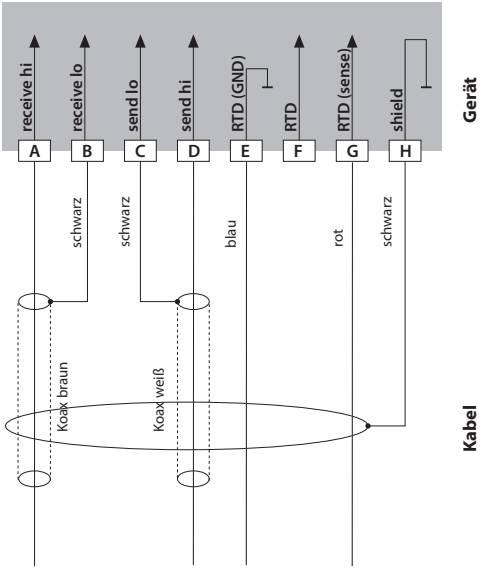


Für die Konfigurierung dieses Sensors erforderliche Eingaben:

SENSOR	Leitfähigkeit, Temperatur
Sensor:	OTHER
RTD TYPE	1000Pt
CELL FACTOR	1,88
TRANS RATIO	125

46 Beschaltung mit Yokogawa IC40S

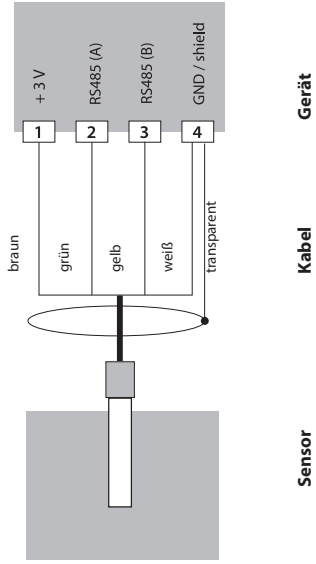
Messaufgabe: Leitfähigkeit, Temperatur
Sensor: Yokogawa IC40S (NTC 30k)



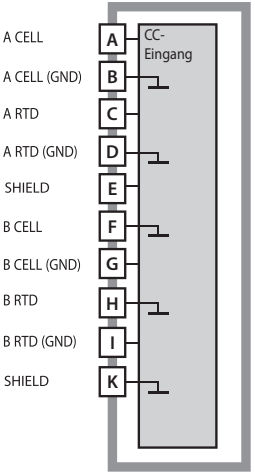
Für die Konfigurierung dieses Sensors erforderliche Eingaben:

SENSOR	Leitfähigkeit, Temperatur
Sensor:	OTHER
RTD TYPE	30 NTC
CELL FACTOR	ca. 1,7
TRANS RATIO	125

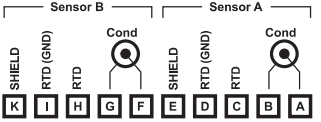
Messaufgabe:	Leitfähigkeit, Temperatur
Sensor:	SE 670, SE 680
	Achtung! Anschluss an die RS-485-Schnittstelle!
	Messmodul muss entfernt werden!



Der Sensor SE 670 wird an die RS-485-Schnittstelle des Messgerätes angeschlossen. Bei der Auswahl des Sensors SE 670 im Menü Konfiguration werden die Default-Werte als Kalibrierdaten übernommen und können anschließend durch eine Kalibrierung verändert werden.

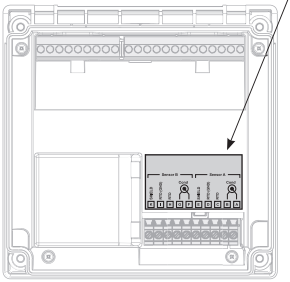


Modul 2 x Leitfähigkeitsmessung
Bestellnummer MK-CC065
Beschaltungsbeispiele siehe folgende Seiten



Klemmenschild
2 x Leitfähigkeitsmessung
Anschlussklemmen geeignet für Einzeldrähte / Litzen bis 2,5 mm²

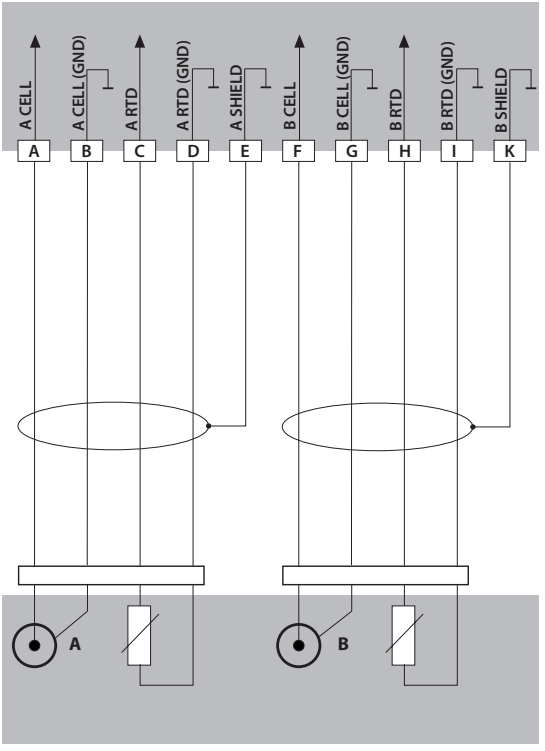
Dem Messmodul liegt ein selbstklebendes Label bei. Bringen Sie das Label auf dem Modulschacht der Gerätefront auf. Sie haben so die Beschaltung „sicher im Griff".



Beispiel 1:

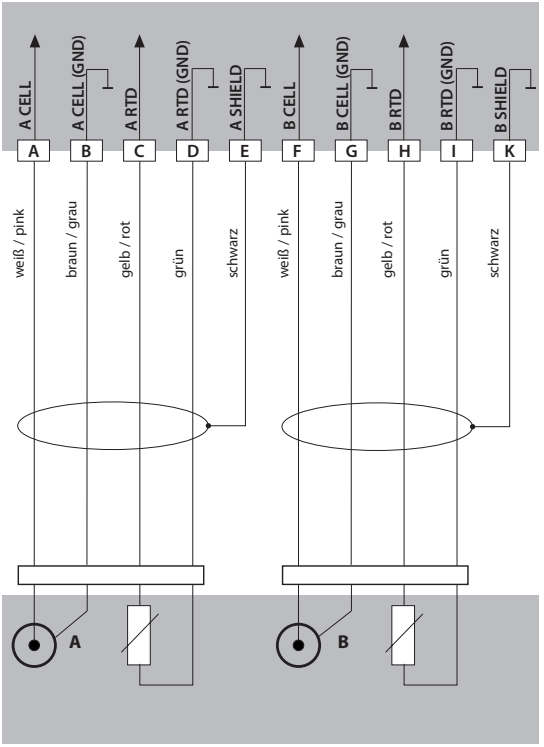
Messaufgabe: Doppel-Leitfähigkeit, Temperatur

Sensoren (Prinzip): 2 Elektroden, koaxial



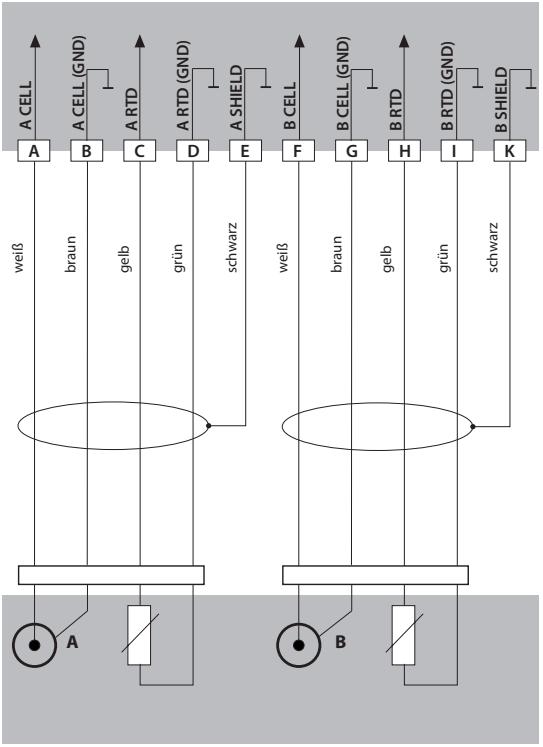
Beispiel 2:

Messaufgabe: Doppel-Leitfähigkeit, Temperatur
Sensoren: 2 Elektroden SE 604



Beispiel 3:

Messaufgabe: Doppel-Leitfähigkeit, Temperatur
Sensoren: 2 Elektroden SE 610



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 verdrillte 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.	

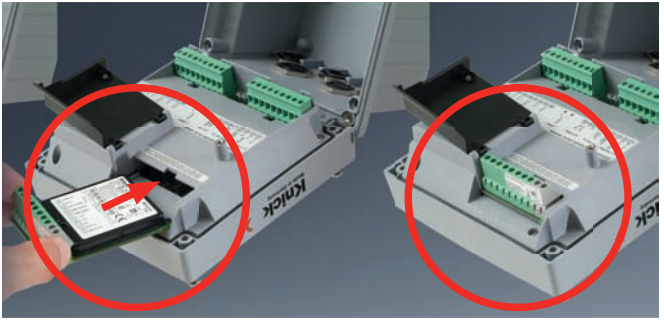
*) Ex-zertifiziert ATEX II IG Ex ia IIC T3/T4/T6
Die Baumusterprüfbescheinigung liegt Ex-Sensoren bei.

Inbetriebnahme

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.
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 (Cond, CondI, double-conductivité CC) :

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.

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 programmation complète doit être effectuée par un spécialiste du système !

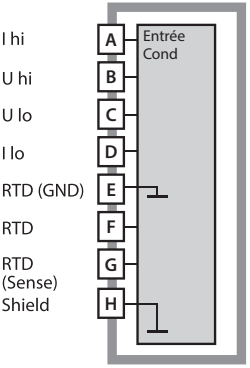
Bornes :

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

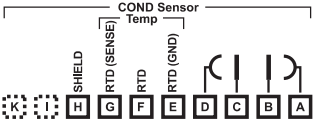
Utilisation en atmosphère explosible :

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

- IECEx
- ATEX zone 2

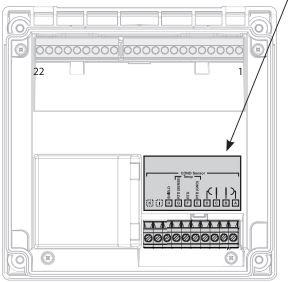


Module de mesure de la conductivité en contact avec le milieu (COND)
Référence MK-COND025
voir pages suivantes pour les exemples de câblage



Plaque à bornes Module de mesure COND
Bornes de raccordement pour fils monobrins et multibrins jusqu'à 2,5 mm²

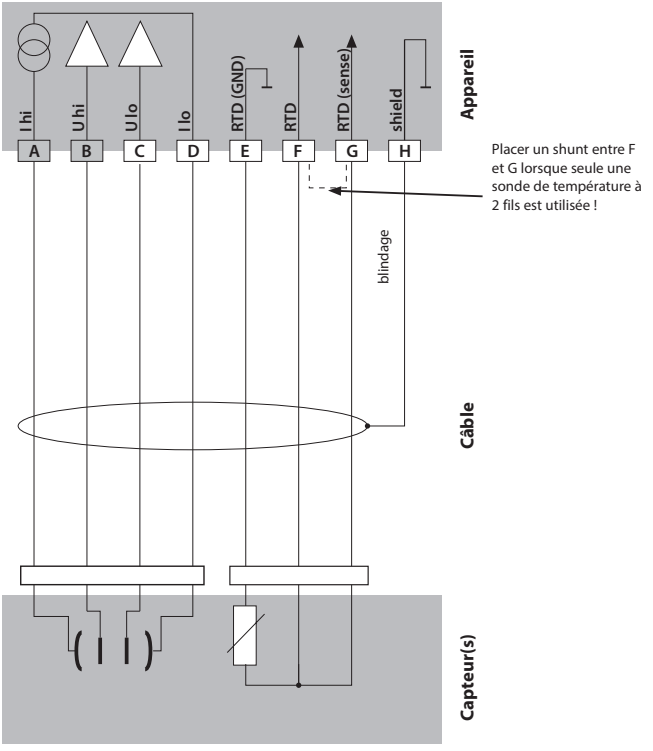
Une étiquette auto-collante est fournie avec le module de mesure. Collez l'étiquette sur la face avant de l'appareil, à l'emplacement prévu à cet effet. Ceci vous permettra d'effectuer le raccordement en toute sécurité.



Exemple 1 :

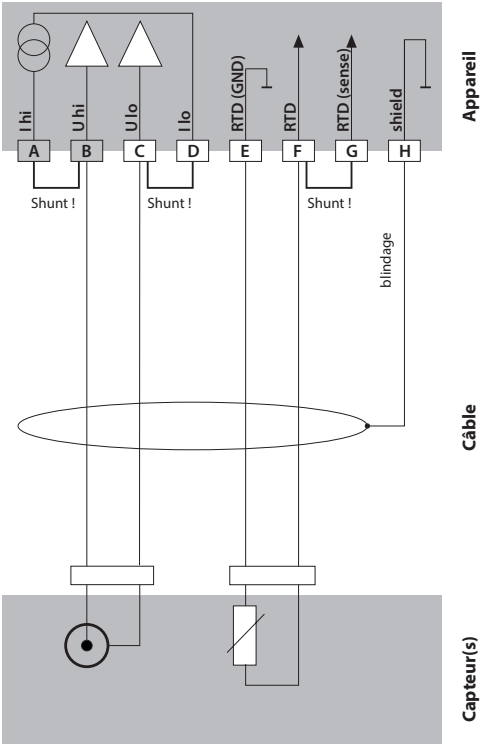
Application : Conductivité, température

Capteurs (principe) : 4 électrodes



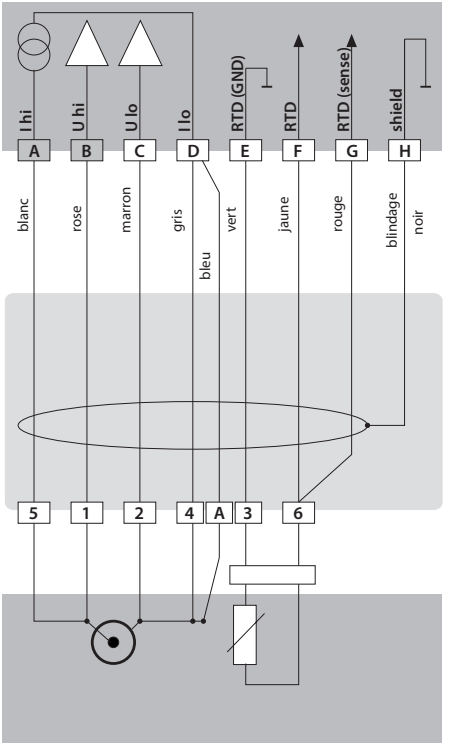
Exemple 2 :

Application : Conductivité, température
Capteurs (principe) : 2 électrodes, coaxial



Exemple 3 :

Application :	Conductivité, température
Capteurs (exemple) :	SE 604 (Knick)
Câble :	Câble Schaltbau

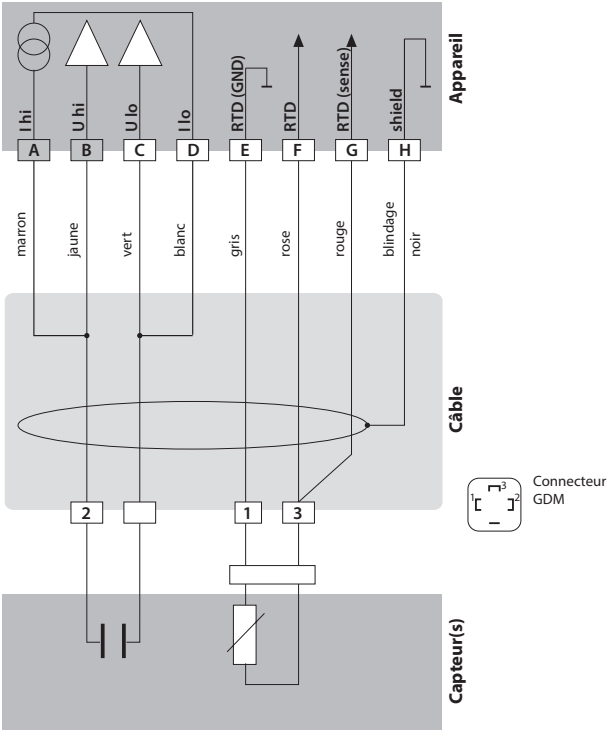


Exemple 4 :

Application : Conductivité, température

Capteurs (exemple) : SE 533 (Knick)

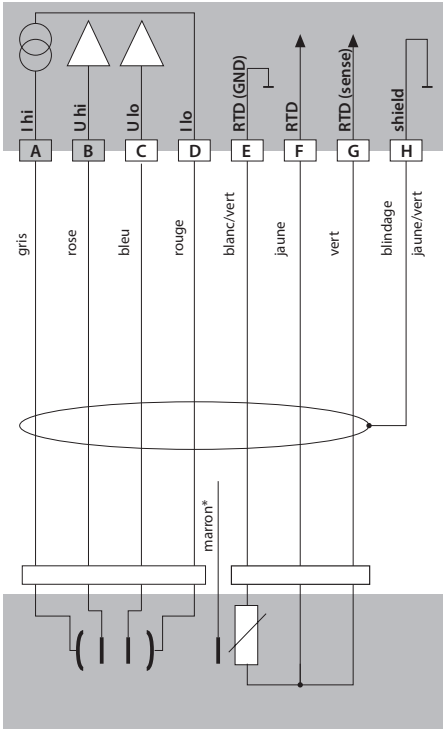
Connexion par connecteur GDM



Exemple 5 :

Application : Conductivité, température

Capteurs (exemple) : Capteur à champ de fuite 4 él. SE 600 / SE 603 (Knick)

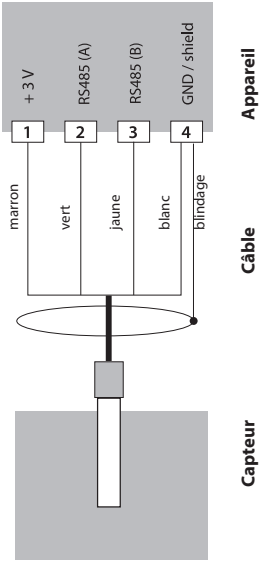


*) ne pas raccorder

Exemple 6 :

Application : Conductivité, température

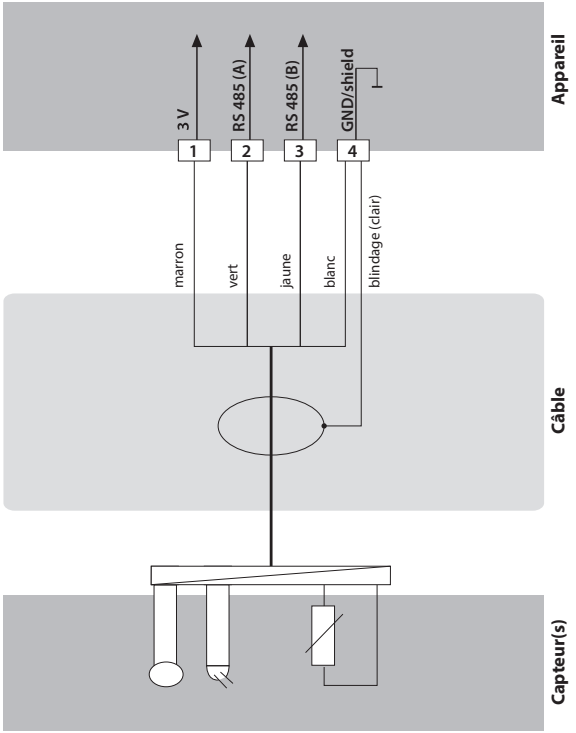
Capteur : Memosens



Le capteur Memosens est raccordé à l'interface RS-485 de l'appareil de mesure. Le capteur Memosens raccordé est reconnu automatiquement lors de la mise en service du transmetteur.

64 Exemple de câblage Memosens

Exemple :	**Memosens**
Application :	Conductivité, température
Capteurs (exemple) :	SE 604 Memosens
Câble (exemple) :	CYK 10



Mise en service

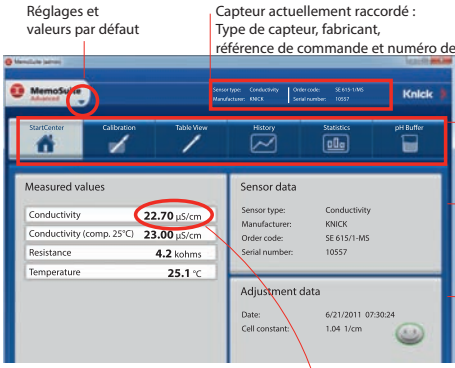
Lors de la première mise en service, si un capteur MS est raccordé, celui-ci sera automatiquement détecté et le type de mesure correspondant sera sélectionné.

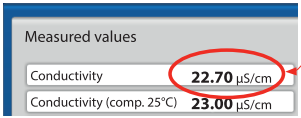
Changement de type de mesure

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

Calibrage et entretien en laboratoire

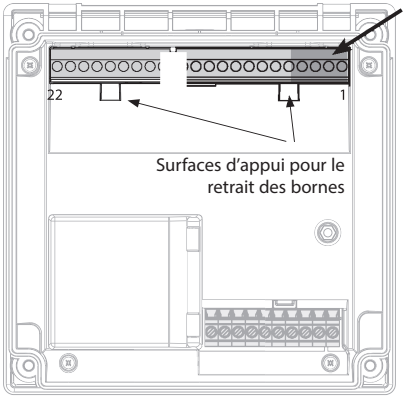
Le logiciel «MemoSuite» permet de calibrer les capteurs Memosens dans des conditions reproductibles sur un PC en laboratoire. Les paramètres des capteurs sont enregistrés dans une base de données. La documentation et l'archivage respectent les exigences de la réglementation FDA CFR 21 Part 11. Il est 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





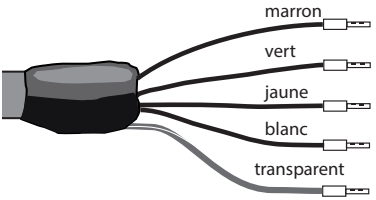
Taille d'affichage des valeurs mesurées
Lorsque le pointeur de la souris survole une valeur mesurée, il prend la forme d'une loupe. Il suffit ensuite de cliquer pour agrandir l'affichage des valeurs mesurées.

Raccordement de capteurs Memosens



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

Le câble Memosens



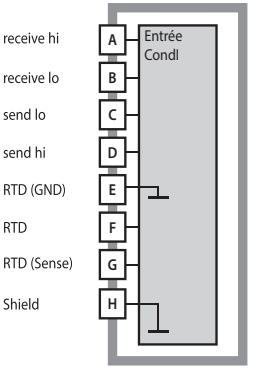
Alimentation +

RS485 (A)

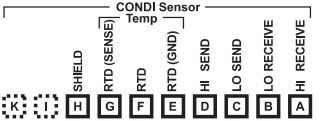
RS485 (B)

Alimentation – (GND)

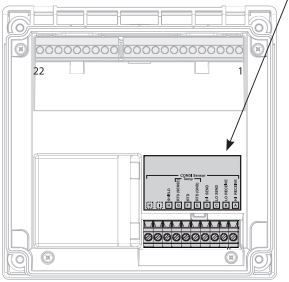
Shield



Module conductivité inductive (CONDI)
Référence MK-CONDI035
voir pages suivantes pour les exemples de câblage



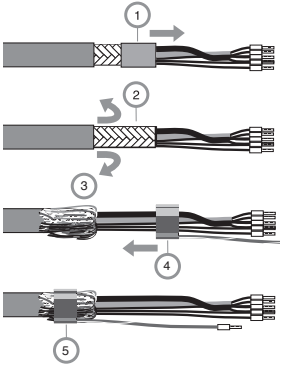
Plaque à bornes Module CONDI
Bornes de raccordement pour fils monobrins et multibrins jusqu'à 2,5 mm²



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.

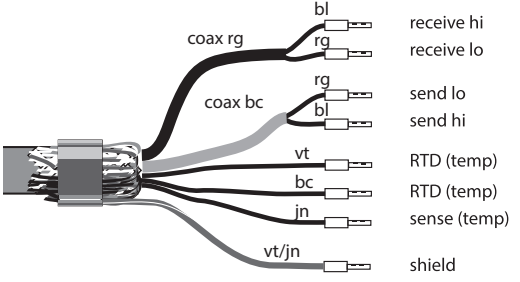
Préparation du raccordement du blindage

Câble de mesure spécial préparé pour capteurs SE 655 / SE 656

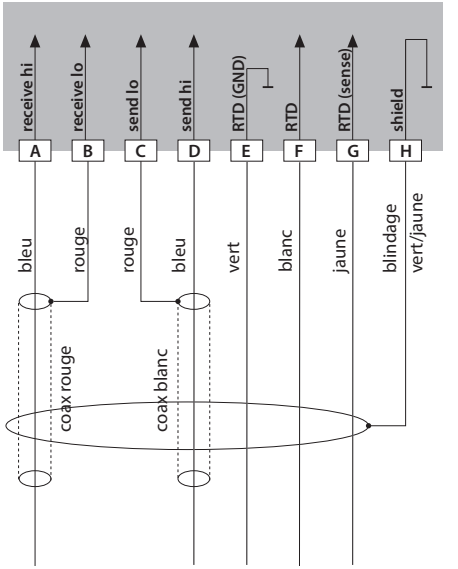


- Faire passer le câble de mesure spécial vers les connexions à travers le passage de câble.
- Retirer la partie déjà sectionnée de la gaine du câble (1).
- Retourner la tresse de blindage (2) vers l'extérieur, sur la gaine du câble (3).
- Passer ensuite la bague de serrage (4) sur la tresse de blindage et serrer avec une pince (5).

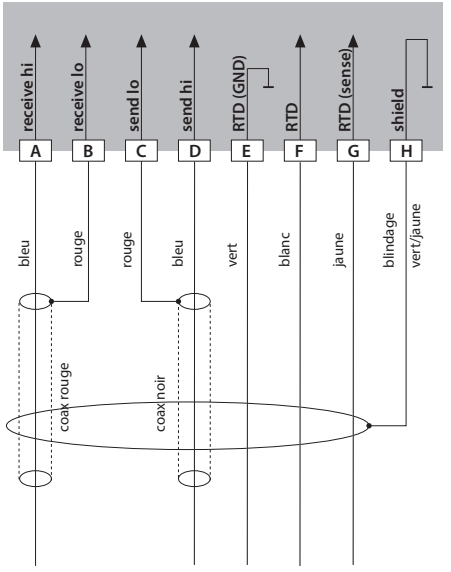
Le câble de mesure spécial préparé :



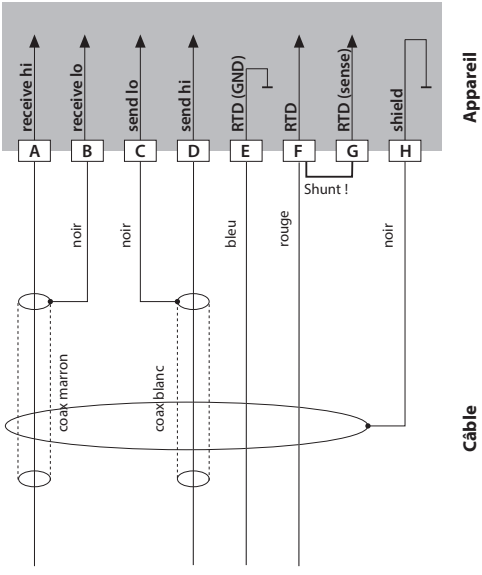
Application : Conductivité, température
Capteurs : Capteur SE 655/SE 656
Raccordement du câble pré-confectionné



Application : Conductivité, température
Capteur : Capteur SE 660



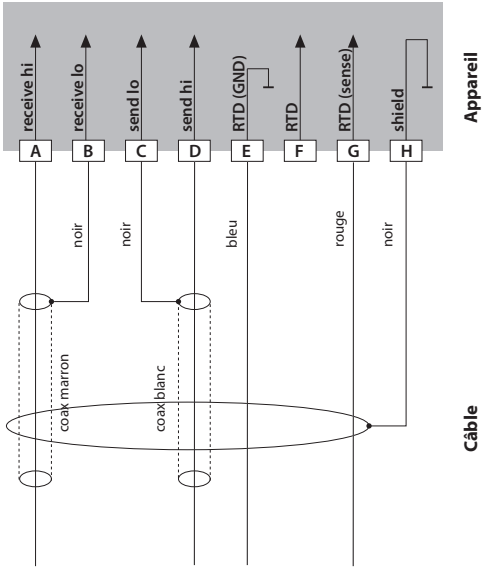
Application : Conductivité, température
Capteur : Yokogawa ISC40 (Pt 1000)



Saisies nécessaires pour la configuration de ce capteur :

SENSOR	Conductivité, température
Capteur :	OTHER
RTD TYPE	1000Pt
CELL FACTOR	1,88
TRANS RATIO	125

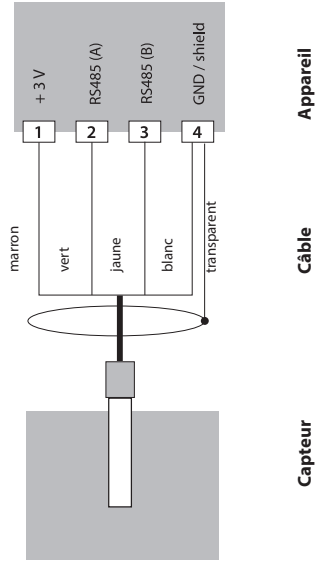
Application : Conductivité, température
Capteur : Yokogawa IC40S (NTC 30k)



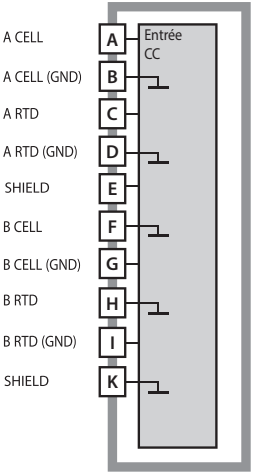
Saisies nécessaires pour la configuration de ce capteur :

SENSOR	Conductivité, température
Capteur :	OTHER
RTD TYPE	30 NTC
CELL FACTOR	env. 1,7
TRANS RATIO	125

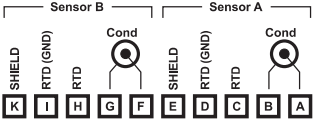
Application : Conductivité, température
Capteur : SE 670, SE 680
Attention ! Raccordement à l'interface RS-485 !
Retirer le module de mesure !



Le capteur SE 670 est raccordé à l'interface RS-485 de l'appareil de mesure. Lors de la sélection du capteur SE 670 dans le menu Configuration, les valeurs de calibrage par défaut sont automatiquement prises et peuvent ensuite être modifiées par un calibrage.

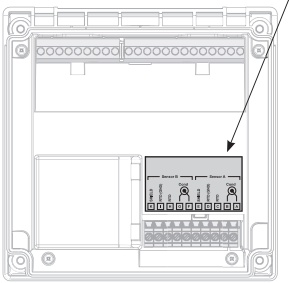


Module 2 x mesure de la conductivité
Référence MK-CC065
voir pages suivantes pour les exemples de câblage



Plaque à bornes
2 x mesure de la conductivité
Bornes de raccordement pour fils monobrins et multibrins jusqu'à 2,5 mm^2

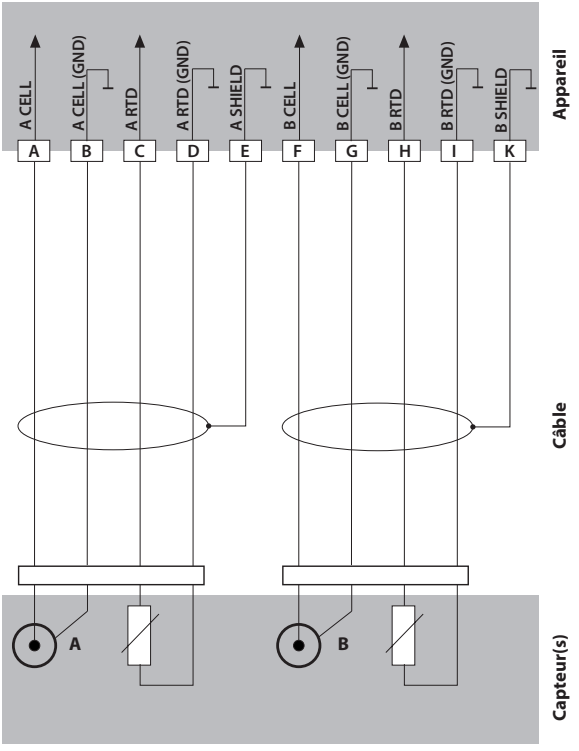
Une étiquette auto-collante est fournie avec le module de mesure. Collez l'étiquette sur la face avant de l'appareil, à l'emplacement prévu à cet effet. Ceci vous permettra d'effectuer le raccordement en toute sécurité.



Exemple 1 :

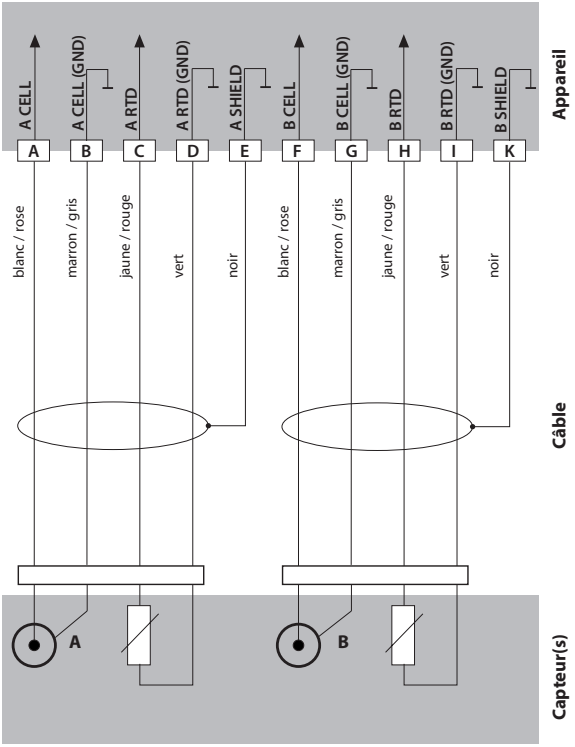
Application : Double-conductivité, température

Capteurs (principe) : 2 électrodes, coaxial



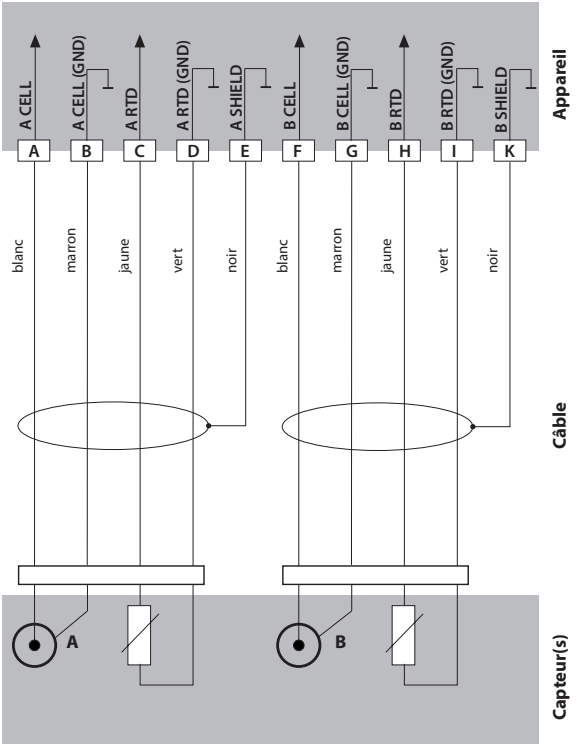
Exemple 2 :

Application : Double-conductivité, température
Capteurs : 2 électrodes SE 604



Exemple 3 :

Application : Double-conductivité, température
Capteurs : 2 électrodes SE 610



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.	

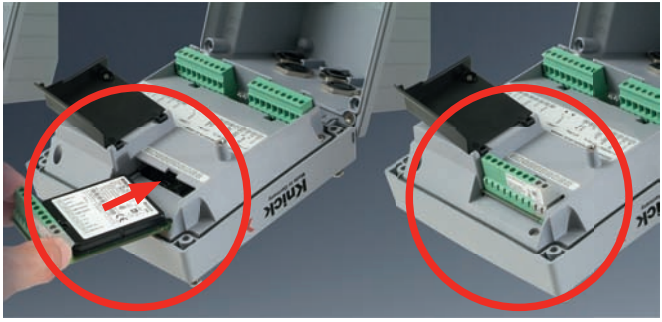
*) agréé Ex ATEX II IG Ex ia IIC T3/T4/T6
Le certificat d'homologation est fourni avec les capteurs Ex.

Mise en service

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. 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 (Cond, CondI, condutividade dual CC):

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).

Instruções de Instalação

- A instalação do instrumento deve 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!

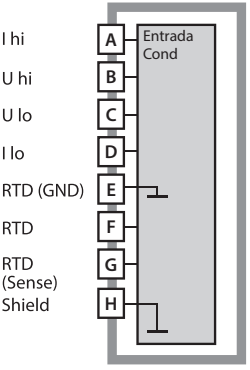
Terminais:

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

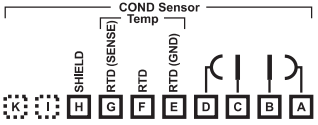
Aplicação em Áreas Classificadas:

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

- IECEx
- ATEX Zona 2

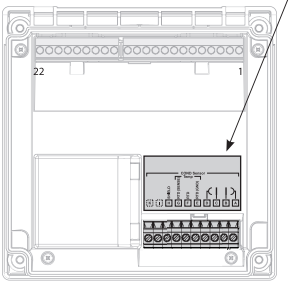


Módulo para medição de condutividade por contato
Código para pedido MK-COND025
Veja exemplos de fiação nas páginas seguintes.



Arranjo de terminais do módulo para medição de condutividade
Os terminais são para fios sólidos ou múltiplos de até 2,5 mm^2 (AWG 14).

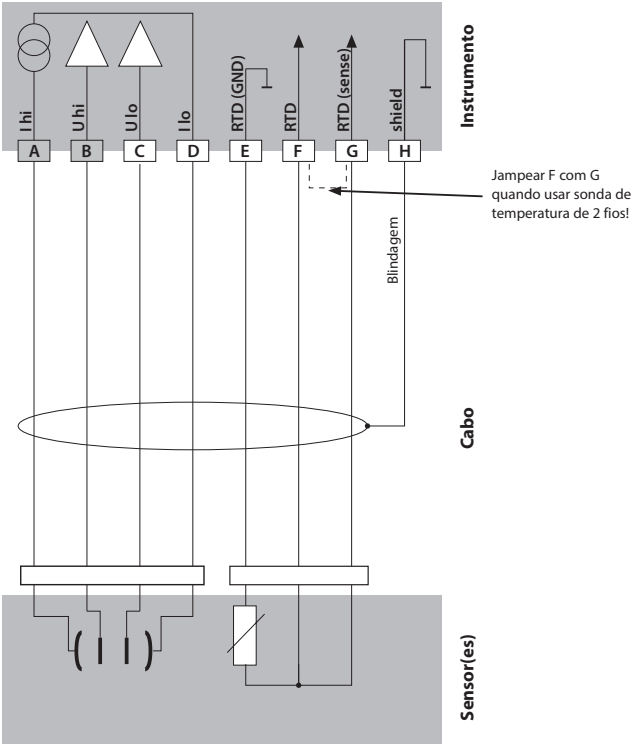
O módulo de medição vem com uma etiqueta autoadesiva. Cole a etiqueta no slot do módulo na frente do instrumento para sempre saber como são feitas as conexões.



Exemplo 1:

Tarefa de medição: Condutividade, temperatura

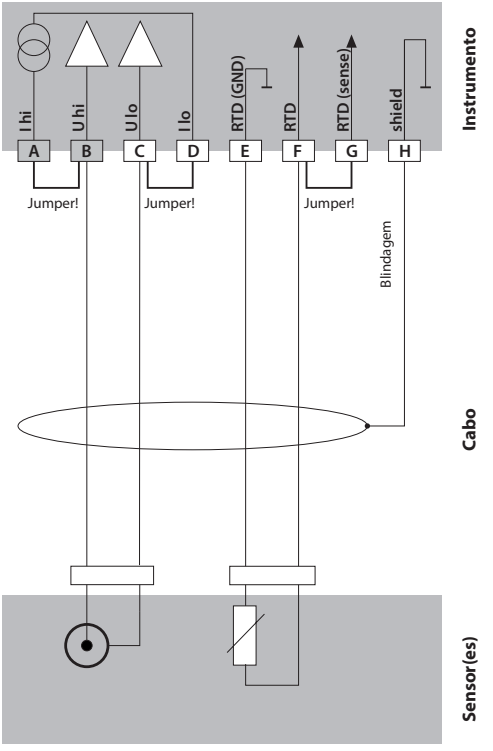
Sensores (princípio): 4 eletrodos



Exemplo 2:

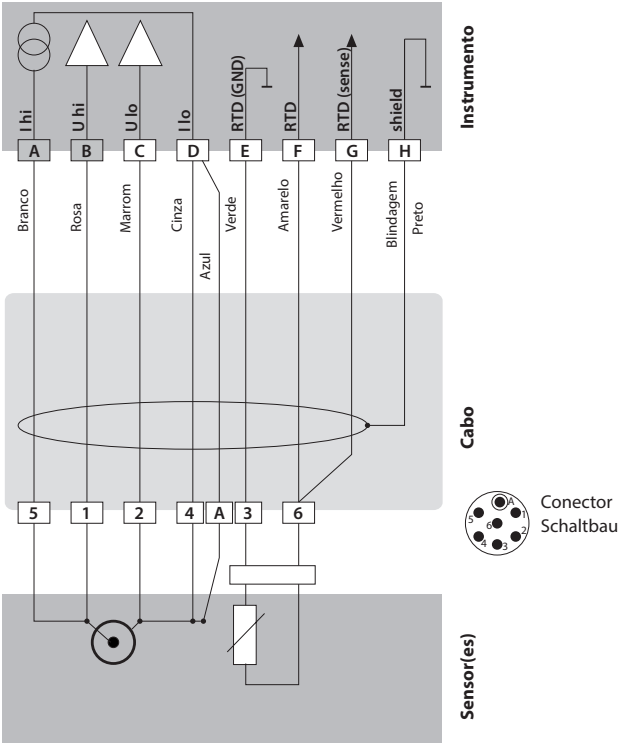
Tarefa de medição: Condutividade, temperatura

Sensores (princípio): 2 eletrodos, coaxial



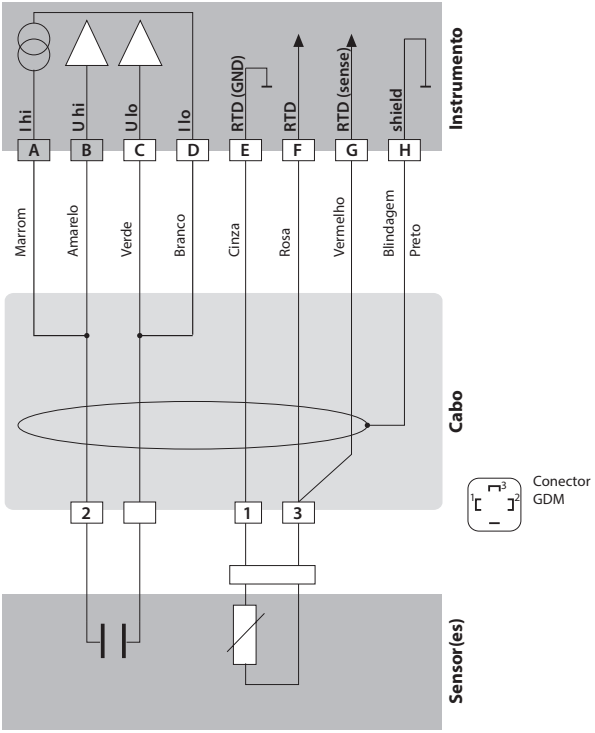
Exemplo 3:

Tarefa de medição:	Condutividade, temperatura
Sensores (exemplo):	SE 604 (Knick)
Cabo:	Cabo Schaltbau



Exemplo 4:

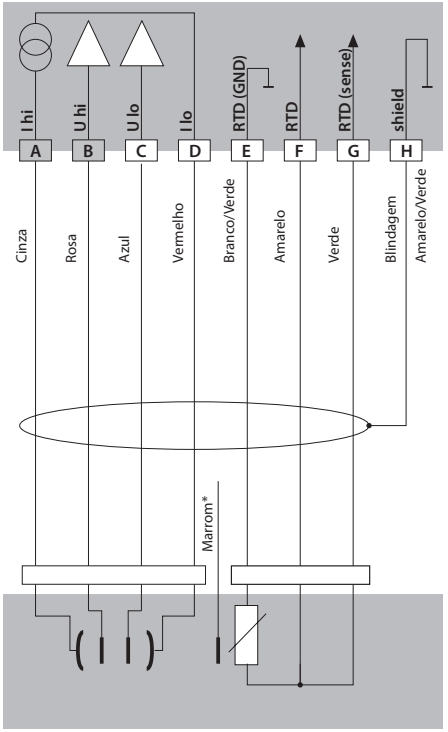
Tarefa de medição: Condutividade, temperatura
Sensores (exemplo): SE 630 (Knick)
Conexão com conector GDM



Exemplo 5:

Tarefa de medição: Condutividade, temperatura

Sensores (exemplo): Sensor de campo periférico SE 600 / SE 603 4-EL (Knick)

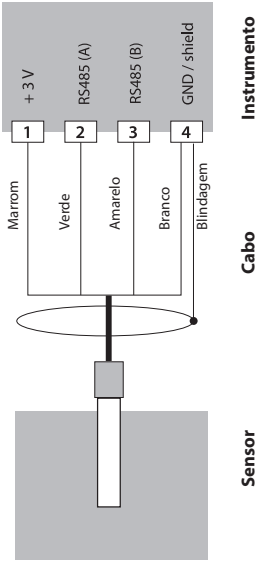


* Não conectar

Exemplo 6:

Tarefa de medição: Condutividade, temperatura

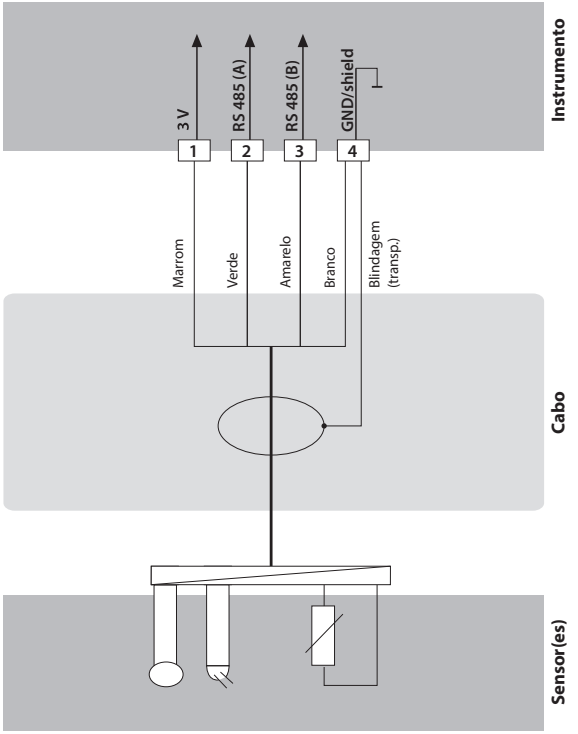
Sensor: Memosens



Conectar o sensor Memosens à interface RS-485 do instrumento. O sensor Memosens conectado é reconhecido automaticamente na partida do transmissor.

Exemplo de Fiação Memosens

Exemplo:	**Memosens**
Tarefa de medição:	Condutividade, temperatura
Sensores (exemplo):	SE 604 Memosens
Cabo (exemplo):	CYK 10



Partida

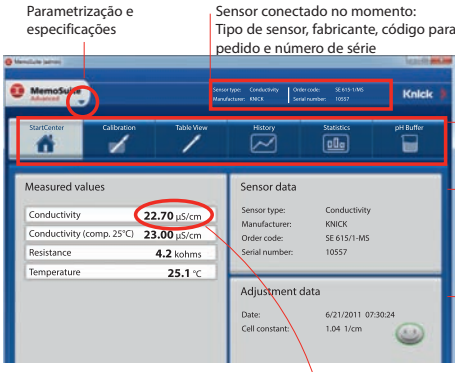
Quando, na partida inicial, um sensor MS está conectado, ele é reconhecido e a função de medição correspondente é selecionada automaticamente.

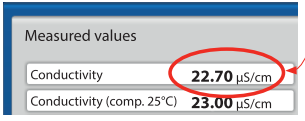
Mudar a Função de Medição

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

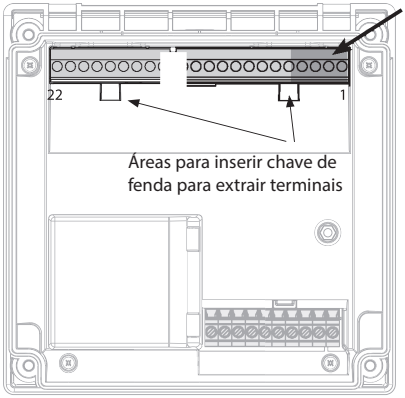
Calibração e Manutenção em Laboratório

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.



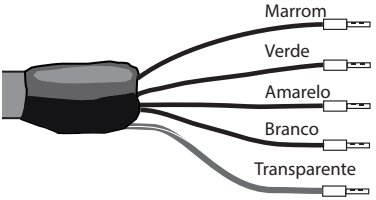


Ampliação de valores medidos
Quando o cursor é colocado sobre um valor medido, ele muda para uma lupa, permitindo a amplificação do valor exibido mediante um clique do mouse.



Conexão do sensor		
1	Marrom	Alimentação
2	Verde	RS 485 A
3	Amarelo	RS 485 B
4	Branco/ Transp.	GND/shield

Cabo Memosens



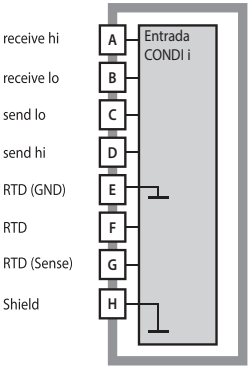
Alimentação +

RS485 (A)

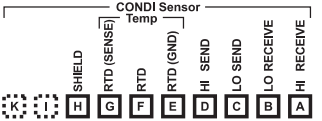
RS485 (B)

Alimentação – (GND)

Blindagem

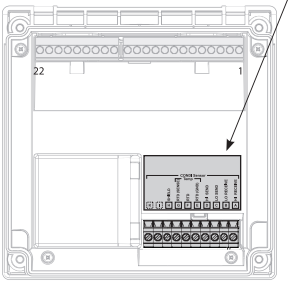


Módulo para medição de condutividade indutiva (CONDI)
Código para pedido MK-CONDI035
Veja exemplos de fiação nas páginas seguintes.



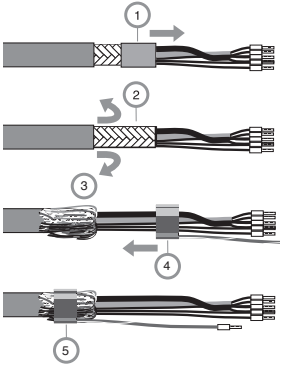
Arranjo de terminais do módulo CONDI
Os terminais são para fios sólidos ou múltiplos de até 2,5 mm^2 (AWG 14).

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.



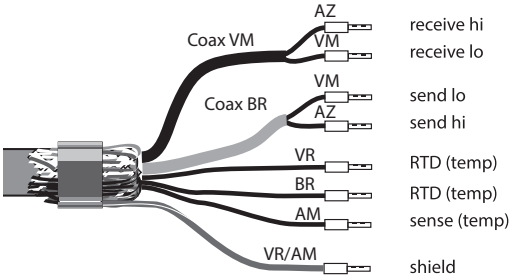
Preparação para Conexão da Blindagem

Cabo especial pré-montado para sensores SE 655 / SE 656

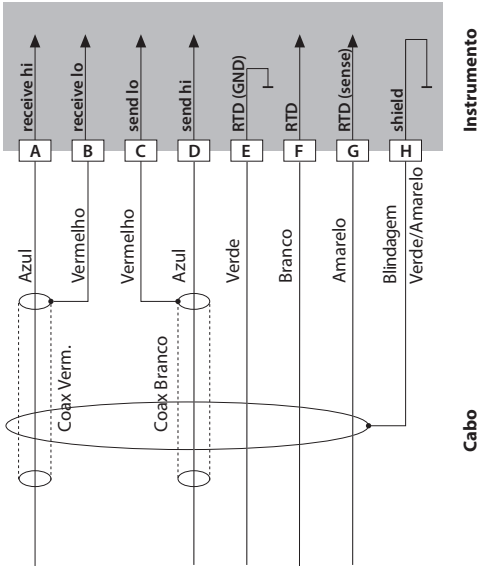


- Enfie o cabo especial no orifício até o compartimento de terminais.
- Remova a parte já separada da isolação do cabo (1).
- Vire a malha de blindagem (2) sobre a isolação do cabo (3).
- Em seguida deslize o anel de crimpagem (4) sobre a malha de blindagem e aperte-o com um alicate apropriado (5).

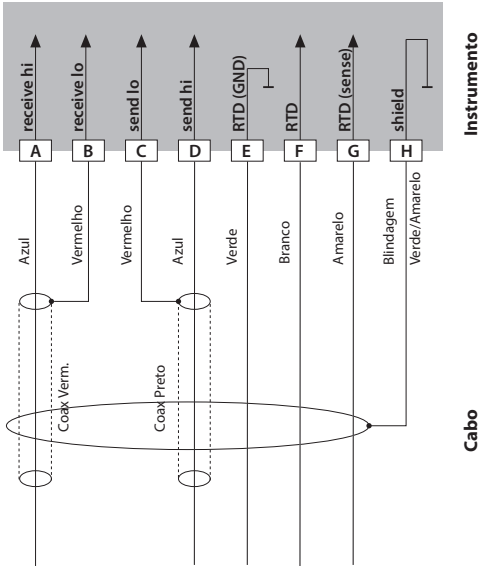
Cabo especial pré-montado:



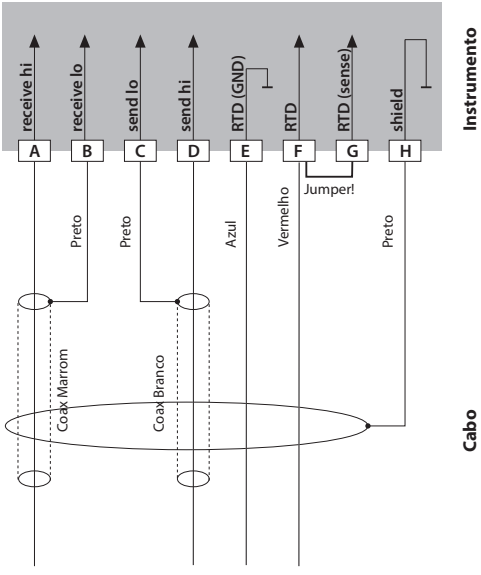
Tarefa de medição: Condutividade, temperatura
Sensores: Sensor SE 655/SE 656
Conexão do cabo pré-montado



Tarefa de medição: Condutividade, temperatura
Sensor: Sensor SE 660



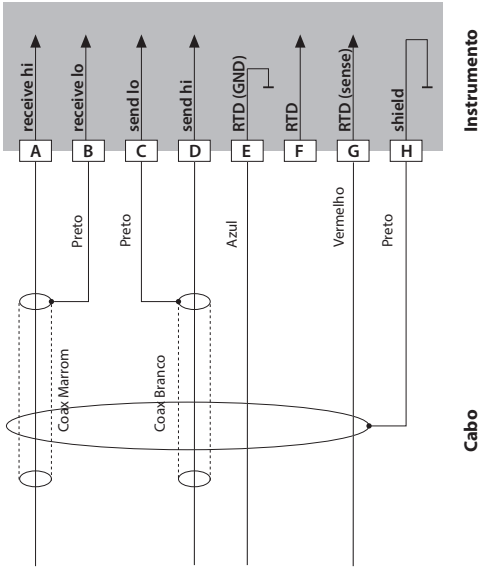
Tarefa de medição: Condutividade, temperatura
Sensor: Yokogawa ISC40 (Pt 1000)



Configuração para este sensor:

SENSOR	Condutividade, temperatura
Sensor:	OTHER
RTD TYPE	1000Pt
CELL FACTOR	1.88
TRANS RATIO	125

Tarefa de medição: Condutividade, temperatura
Sensor: Yokogawa IC40S (NTC 30k)



Configuração para este sensor:

SENSOR	Condutividade, temperatura
Sensor:	OTHER
RTD TYPE	30 NTC
CELL FACTOR	aprox. 1.7
TRANS RATIO	125

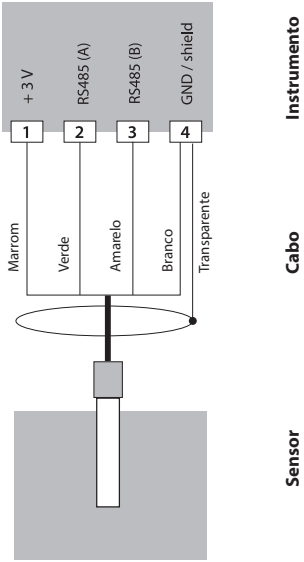
Fiação com SE 670/680 (RS-485)

Tarefa de medição: Condutividade, temperatura

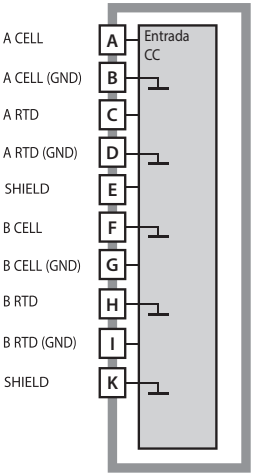
Sensor: SE 670, SE 680

Atenção! Conexão à interface RS-485!

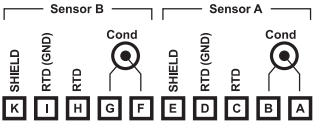
Remova o módulo de medição.



Conectar o sensor Memosens à interface RS-485 do instrumento.
Quando o sensor SE 670 é selecionado no menu de Configuração (CONF), os valores de fábrica (default) são usados como dados de calibração, mas depois podem ser modificados pela calibração.

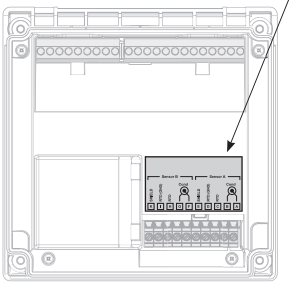


Módulo para 2 medições de condutividade
Código para pedido MK-CC065
Veja exemplos de fiação nas páginas seguintes.



Arranjo de terminais do módulo para 2 medições de condutividade
Os terminais são para fios sólidos ou múltiplos de até 2,5 mm^2 (AWG 14).

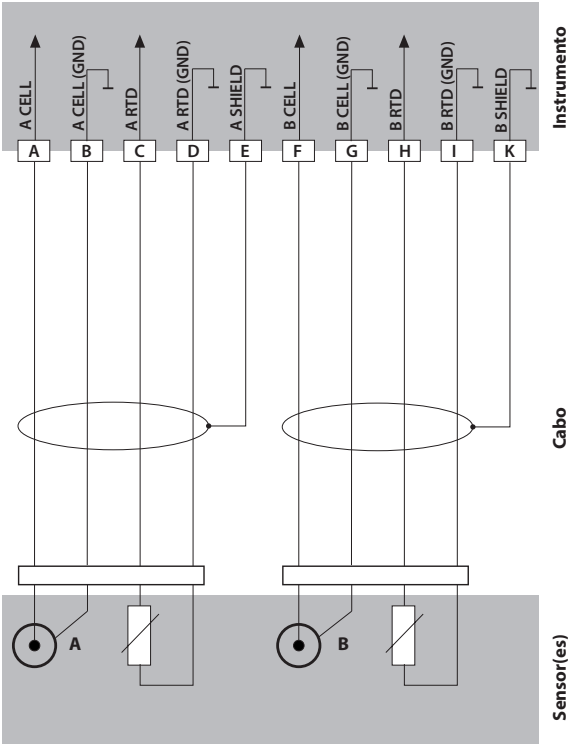
O módulo de medição vem com uma etiqueta autoadesiva. Cole-a no slot do módulo na frente do instrumento para sempre saber como são feitas as conexões.



Exemplo 1:

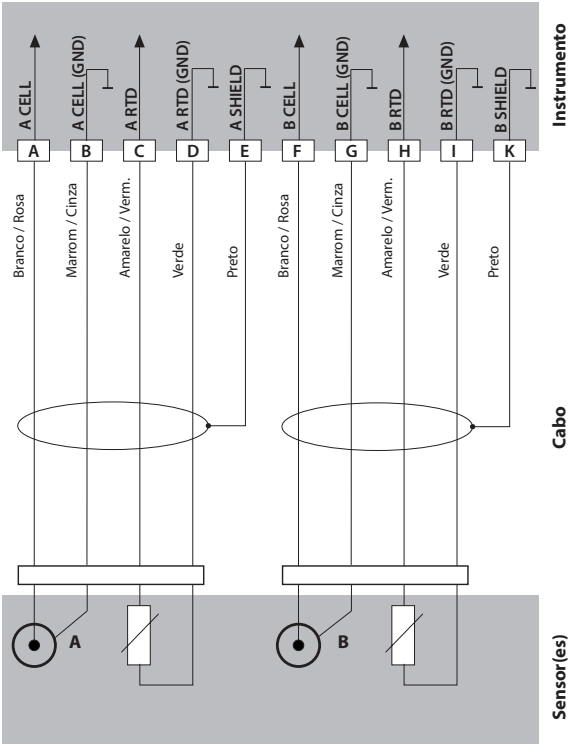
Tarefa de medição: Condutividade dual, temperatura

Sensores (princípio): 2 eletrodos, coaxiais



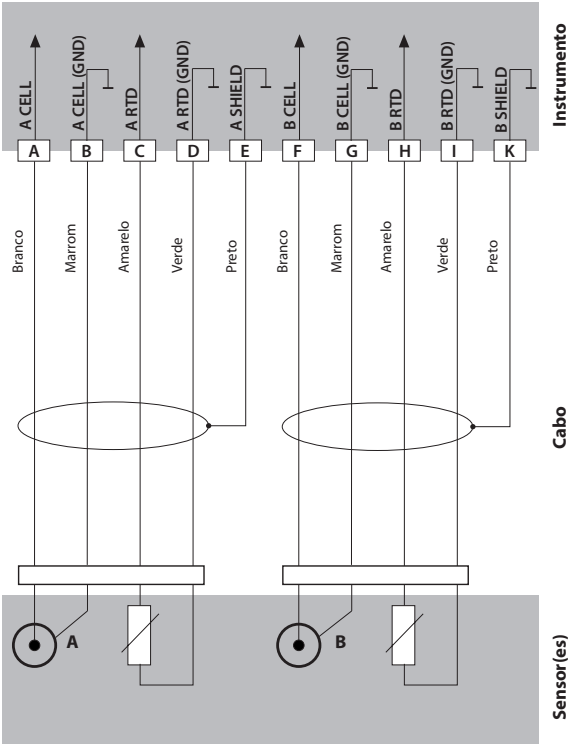
Exemplo 2:

Tarefa de medição: Condutividade dual, temperatura
Sensores: SE 604, 2 eletrodos



Exemplo 3:

Tarefa de medição: Condutividade dual, temperatura
Sensores: SE 610, 2 eletrodos



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 para 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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