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OPERATING MANUAL

Interface level device

MIL 8130 the soloist

- Continuous measurement of the interfacial layer of two not mixable liquids
- Display of %-/ mA-/ Pulses
- Analog output 4–20 mA
- Limit value with opto- electronic coupler or relay

- MIL-Version V1.1x
- Technical specifications
- Operating
- Commissioning
- Installation

mipromex®

for the continuous ceparation of liquid/liquid interface layer

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Dear Customer

Congratulations! With this system you have chosen a high performance unit of the famous **mipromex**® line from **Aquasant-mt Switzerland**.

The interfacial layer level measuring device **MIL 8130** is using for continuous measurement of the interfacial level of two not mixable liquids. One analog output 4 - 20 mA signal is available.

Reading and carefully following the operating instructions, assures a perfect functioning of your **MIL** system.

There's something else which is important for you to know:
If any troubles should appear (opposite all our expectations), then our **Aquasant-mt Switzerland** service department will assist you even long time after you purchased your **MIL interfacial layer.**

Using this manual

Symbols and conventions

- In this document the following conventions are used at formatting to differentiate text elements.
- The names of equipment pieces are written in BOLD.
  Example: **mipromex®**

In this document the following terms and symbols are used for special program messages:

Emphasized symbols and notices and their meaning:

	Mortal Danger: The non-observance can lead to injuries or death.		Step by step: Text enhanced/marked this way, contains detailed instructions and comments
	Caution: the non-observance can lead to equipment damages or loss of information.		Actions to be carried out by user.
	Information / Notice: describes equipment characteristic features.		Read and follow instruction steps.
	A waiting time is required during which the equipment does recalibrate itself.	*mipromex® display*	Compare with the **mipromex**® display.
	Adjustment of the measuring electronic MTI (visualized by red and green LED's).		Plug in mains 230/115 V (24 V AC/DC).
	Observe and control equipment display.		Send equipment back to manufacturer.
▲▼	Button on **mipromex**® front panel		**mipromex**® Error message on display with Time/Date
▲▼	Function: change value according to displayed character set	◀▶	Button on **mipromex**® front panel
▲▼	Change line without store	◀▶	Function: select number or character
C	Button on **mipromex**® front panel, Function: back	ok	Button on **mipromex**® front panel, Functions: menu, select, next, store (press more than 2s)
"next step" in navigation bar	press **ok** button on **mipromex**®. Press less than 2 seconds to advance to the next parameter	"store" in navigation bar	Press **ok** button on **mipromex**®. Press more than 2 s to store

Chart 1 Symbol description

Index

1. Security and precautions

The following points must be considered at installation and setting up of microprocessor units 24 V AC/DC of Treina Electronics AG:

1.1. Installation

- The units are IP20 according to EN 60529 and must be protected against e.g. splash water or pollution exceeding the degree of pollution 2.
- The units must be installed outside the hazardous area.
  Maximum 7 units can be installed into a 19"-Rack. Multipoint connector type: FI32 must only be equipped with d- and z – contacts. Solder connections are to be isolated with heat shrinkable sleeves (see chapter 7)
- Single units installed with Monorack Type: MRM 2 (see chapter 7.3)
  Housings or switch cabinets must be ventilated (dissipation of heat built-up)
- Hazardous area blue line to lead separately (cable channel or joined to loom of cables)
  Equipotential bond must be installed; Hazardous area protection
  Outside installations: a corresponding lightning protection of the probe supply cables is recommended.
- Installation instructions for impedance probes l must be observed

1.2. Setup

- Verify wiring and power supply tension (chapter 7)
- Perform probe and system specific parameterization in the menu (chapter 5)
- Check max. load of the opto-electronic coupling transistor outputs (NPN) according to datasheet (chapter 7.5)
- Adjustments under tension are only allowed to be carried out by manufacturer
  Handling by user is performed only via protected film keypad
  Repair of unit only by trained personnel with manufacturer certificate

1.3. Hazardous Area protection

The EC-type examination certificate has to be respected. It is specially important to respect the contained "special conditions". Ex certification according to Directive 94/9/CE (ATEX 100 A).

Confidential test certificate no. 08-IK-0396.01 CE **1254**
EC-type examination certificate SEV09 ATEX 0132

Notification no.:	**QS 11 ATEX 2081** Ex
Ex classification:	**II (2)G [Ex ia] IIC**
	II (2)D [Ex iaD]
	II (2)GD

Please pay attention to the following documents:

- ***VEZ-SEV-ATEX-09-ISO_Certifcat-Doc.pdf*** (actually valid certificats)
- ***VED-TSS**....***probe data sheet with specific (X) Ex-relevant coat thicknesses and information regarding the application in which zone
- ***08-IK-0396.01*** the test certificate with the characteristics is submitted in strict confidence.

1.3.1. Following notices must be observed:

1. The microprocessor control unit **mipromex**® as per EN *60079-14:1997* can only be used outside of the hazardous area.
2. The highest allowed ambient temperature is 60°C (also inside a protective housing)
3. The microprocessor unit **mipromex**® is to install in a manner that at least the protection standard IP 20 as per Standard IEC 529 resp. EN 60529 is fulfilled. By corresponding mount into rack unit this condition is fulfilled.
4. At installation of the microprocessor control unit **mipromex**® a minimum distance of 50mm must be created by insertion of a separation wall between the intrinsic safe and non intrinsic safe wiring circuit or the connecting parts must be insulated (i.e. with a heat-shrinkable sleeve). The input lines are secured to the rack or the monorack with a strain relief.
5. The intrinsic safe signal wiring circuits are safe galvanic separated from the remaining wiring circuits up to a peak value of 375 V of the nominal voltage.

1.4. SIL Safety Integrity Level

The microprocessor unit **mipromex**® is produced as per the SIL standards Norm IEC 61508/61511.

1.5. Cleaning of units

The microprocessor unit **mipromex**® and the measuring electronic **MTI** built-in on the probe head are not allowed to be cleaned with water.
The cleaning of the front panel is to be done with a slightly damped, clean cloth. The printed circuit boards, to remove the dust, shall only be slightly blown-out with compressed air (low pressure 4 bar).
The bar probes must be cleaned with alcohol or a corresponding solvent.
Probes with stainless steel electrodes (SRK or SRM or probes made to measure powders/solids) are not allowed to be cleaned with water or liquids.

1.6. Maintenance

The data transmission of the microprocessor units remains stable, even over a long period of time. Therefore, a periodic adjustment or similar, is not necessary.

1.7. Warranty claims

Your measuring system had to undergo a precise final inspection at the factory. Interventions are only allowed to be carried out by a competent person. Guarantee according to Aquasant Messtechnik AG warranty.

1.8. Waste disposal of electrical and mechanical components

The disposal of the components must be carried out in compliance with the country valid regulations.

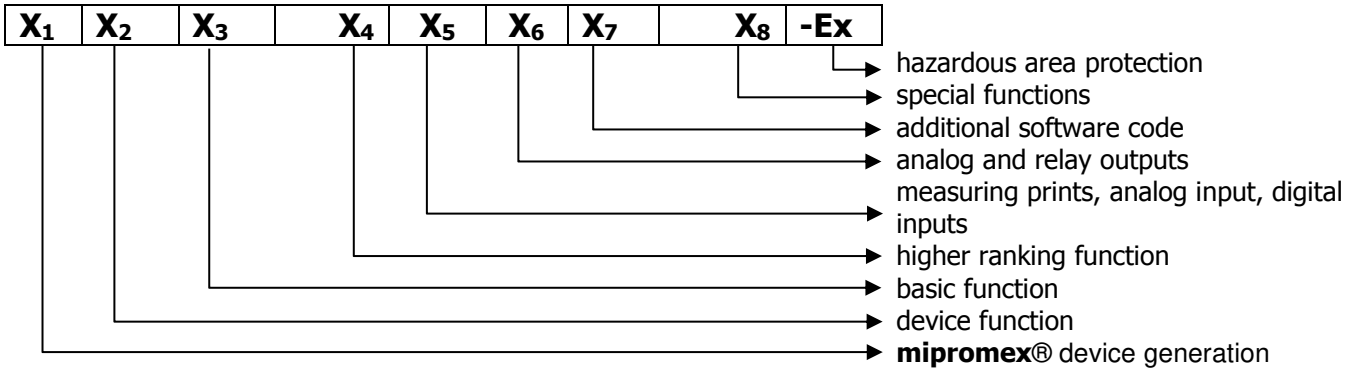
2. mipromex® type description

Pic. 1 **mipromex®**

2.1. MIL-Hardware type

MIL 8130 1 measuring circuit with 1 analog output and 2 limit value output with relay

2.1.1. mipromex®-type code:



X_1 M = **mipromex®**

X_2
A = Analog
L = Level
I = Interface
P = Product

X_3
C = Concentration
R = Recognition
L = Level
M = Monitoring
Q = Quality
U = Universal
T = Transmitter
S = Switch

X_4
1 = Limit switch
2 = Level switch empty
3 = Level switch full
4 = Analog output
5 = Universal new
6 = Filling level
7 =
8 = Interfacial layer
9 = Product (quality, type, concentration)

X_5	Meas. print	MeV of 2nd unit	analog input	digital input
1	1			3
2	2			3
3	2	1 MeV ex Rackbus		3
4	2	2 MeV ex Rackbus		3
5	1		1	3
6	2		1	3

X_6	Relay	OC	analog output	DC-converter
0	2			
1		1	1	1
2		2	2	1
3	2		1	1
4		2	2	2
5	2		2	2
6	2		2	1
7		2		
8	2 intern		1	1
9	1		1	1

One DC-converter, with potential separation, analog output toward power supply
Two DC-converter, additional potential separation, analog outputs toward each other

X_7
0 = standard - software
1 = first expansion of a standard - software

X_8
- = without
C = controller (device with control function) e.g. **MIL** 8110 **C** interfacial layer level controller
P = product compensation
S = Segment

Ex
Ex = with hazardous area protection according to ATEX II(2)G [Ex ia] IIC // II(2)D [Ex iaD]
Exd = with hazardous area protection according to ATEX II(2)GD [Ex d ia] IIC
NEx = without hazardous area protection on measuring print

2.2. Software Versions

2.2.1. Basic

The standard operating software is used for all basic hardware units. The basic functions are identical for all software versions; you can use them on all the units. Software versions are marked according to NAMUR EN53.

Example:

MIQ 8130 V1.1x 1 measuring circuit with 1 analog output and 2 limit value output with Relais

Within each software type, at cost, additional functions can be activated.
For each additional function a separate activation code is generated for each measuring circuit. The activation code is serial number depending.

The simple menu navigation (language selectable) assures a fast and accurate operation.
Input can be made via buttons and display of the device or via connection to a laptop or the process control system.

2.3. Basic functions

The **mipromex® MIL** is equipped with one measuring circuits.
The impulse signal transmitted by the measuring electronics MTI becomes in an offset compensated, filtered impulse value changed and into function of the entered measuring range for the interfacial layer level converted into 4-20 mA signals.
The output signal is displayed as pulses value, % value or as mA value.
The offset range can be set between 10 and 1000 pulses.
The measuring signal offset (zero point) can be picked up automatically and/or the stored value can be modified via the keypad buttons. The measuring span is product dependent determined and automatically stored and/or the stored value can also be modified manually via the keypad buttons. The impulses signal is converted into a 0–100% value.
Parameter input is menu-driven and device-type based. Inactive positions are hidden.
The parameters can be stored and reloaded. The device is equipped with three digital inputs which is able to dial interfacial layer level in 7 product-related parameter sets. At the interfacial level measuring the parameters are loaded from the archives.
For interfacial layer level measuring being available relay with change-over contact low and high function as well as adjustable at on-delay, drop-out delay and fail-save position. Error messages are visualized with time and date of the error. Press OK button more than 2 seconds, the error is confirmed and the display changes back to lastactive menue point.

2.4. Measuring circuit

A measuring electronics MTI in the connection head being attached to the **mipromex® - MIL** with a shielded 2 wire line. An equipotential bonding must be installed between system and scarf dream ground.

2.5. Function

A product surrounding, or filling an aquasant-mt impedance pipe or bar probe, you varied the impedance in function of the dielectrical constant and/or conductivity characteristics of organic products or aqueous solutions as, well as the immersion depth of the active part of the bar probe .

The measured impedance sum signal is converted directly by the measuring electronic MTI into a normed signal and is transmitted as pulse packages to the analog transmitter **mipromex® MIQ**.

The measured values within the normed signal range are product specific and characteristic for the different products and changing in accordance with product mixtures of interfacial layer level. This product specific measured value correspond to a value in the range of 0 – 3700. The physical impedance measured value of a product is registered in digits, designed as pulses value.

1. Parameter set TN index

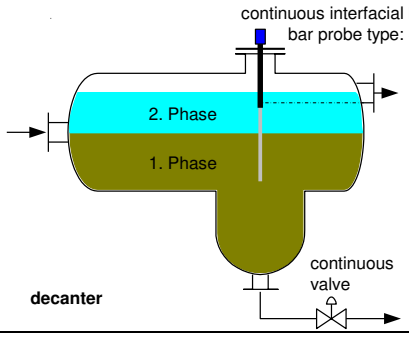
Wert		Digital-Input		
Parameter-set IN	**Description**	**D1**	**D2**	**D3**
		0	0	0
1	untere Phase/obere Phase	1	0	0
2	Wasser>300uS/Toluolphase	0	1	0
3		1	1	0
4		0	0	**1**
5		1	0	1
6		0	1	1
7		1	1	1

Chart. 2 TN Parameter set

At the interfacial layer level measuring the parameter sets of 1-7 in the archives can also externally in accordance with step 1-7 table 2 is dialed. Modification on a positive edge at the digital input D1-D3.

A modern and menu driven operation and calibration concept enables a time saving commissioning of the analog transmitter. The frontal keypad with function and graphic display assure a user friendly operation and reliable working.

2.6. Operation:

MIL 8130	**Interfacial layer level measuring** with analog output and 2 limit values for Low/High.. with relay outputs (potential-free change-over contacts) • Decanter • Reactor • Tank farm • Separator	

3. Structure of data input (parameterization)

3.1. General

To select a menu point or to go forward/ "next" step in the menu, use the **OK** button.
The function of the **OK** button is shown in the inversed bar at the bottom of the display.
The position number of the actual menu item is displayed at bottom left.
To select the desired menu item use the ▲ ▼ buttons. The selected menu item is shown inversed. To execute the shown function use the **ok** button, to delete a value or go back to the previous menu, use the **C** button.

3.2. Key functions

key	description	display	main menu	menu line	data input
▲	up	Proceeding Display	"next" menu item	1 step up	., /, 0-9, :, A-Z, -
▼	down	Next Display	"next" menu item	1 step down	., /, 9-0, :, Z-A, -
►	right	-	-	Choose right	input right
◄	left	-	-	Choose left	input left
OK	"next" / menu / select / store	(>2 s) Persistency check	select	confirm store	continue or (>2 s) store continue
C	back	back	back	back	back

Chart. 3 Key functions

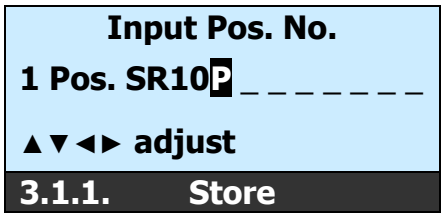
3.2.1. Input / changing of characters

Every parameter has its own input field.
The input and change of parameter values can be done using the **mipromex**® menu or via PC-Software.
For several menu configuration text input is required. Text input is done the same way in all functions.
Input via buttons on the **mipromex**® key pad is done as follows:
The first position, beginning on the left, is inverted. To change the character use the ▲ ▼ buttons.
To select the next position use the ◄ ► buttons.
With the **ok** button (press >2 sec) the new value is stored and the display changes to the next parameter.
You can reactivate the old value using the **C** button. If no input is made during an adjustable amount of time, the display changes back to measured value.

Define your position, instrument or tag-number, 11 characters max.

active key-navigation

Menu-Pos.-Nr.-Code /**ok** button function



press **ok** key more than 2s; store and advance to the next Menu item

Change and input

1. position character input using ▲▼ buttons alpha-numerical

Chart. 4 Display

3.2.2. Select language

The languages Deutsch/English/Français are available and selectable in the **mipromex**® menu. A fourth language can be programmed. The parameter text field is loaded according to language code via PC-Software. Changes of the text can not be done using only the microprocessor unit **mipromex**®!

3.3. Graphic display

The format of the display is as follows:
Every menu position, parameter and device unit can be set active or inactive (not visible) according to the function of the device. The display is also adjusted to the function of the device.

3.3.1. Display at switch-on of mipromex®

Vendor
Name of device generation
ok button function

aquasant-mt
SWITZERLAND
mipromex ®
Next

ok: forward to device type

Start information mask. The mask switches to measurement indication after 10 seconds automatically

Unit description
Device type and hardware model
ok button function

Interfacial layer
Meas. Device type
MIL 8130
Next

ok: forward to Funktionsinfo

Start information mask.

Unit description
Continuous Interfacial level (Höhe) in the detach vessel, cutter
ok button function

Interfacial layer-L
Level
Cont. seperation
Next

ok: forward to meas.value display

Information mask in accordance with program choice

Parameter sets 1-7 from archive

3.3.2. Measured value display

3.3.2.1. Unit types MIL 8130 Interfacial level

Description of the 1st measuring position
Description of the measured value
Actual calibrated meas.value display in %
Change in Menu 5.1.1.
ok button function / active keys

1 Pos. QLA12345678
Interfacial layer L
100.0 % Hi
-
Menu ▲▼

ok: change back to menu

Change and input in Menu 3.1.1

Display shows digital output 1 limit value high (Hi)
Display shows digital output 1 limit value low (Lo)

Activ Parameter set (change under 13.2)
Upper Phrase:
Lower Phrase:
(Measurements are deposited)

Parameter set 1
2 Oil
1 Water
Menu ▲▼

Information mask to the active parameter set substitute at the continuous interfacial layer measuring.

Description of the 1st measuring position
Analog output
Full/Empty sensor static (not adjustable)
Show static (stat)

1 Pos. QLA12345678
20.00 mA
1 stat - 2 stat Hi
Menu ▲▼

Change and input in Menu 3.1.1.

Display in function of the measuring range; at data disturbance display 00.50 mA and data disturbance arrow ↑ or ↓
Interfacial layer level stat
Show low (Lo) or high (Hi)

3.3.3. Menu parameter settings

After pressing the OK button the display changes to the info menu.

Menu-Information

Both functions of the **ok** button store or next

Menu Pos. No. / **ok** button function

```
=> Menu-Info <=
Press OK key
> 2s store !
< 2s next !
Info 01      Next
```

ok: change to password input

Store = Press Longer than 2 sec. on the OK-button
Next = shortly on the OK-button

After pressing the OK button the display changes to the password input.

selected character is inverted

Menu Pos. No

```
Enter Password !

0000

1.          Store
```

ok: change to the menu

1. key-in the numerical password using the ▲ ▼ ◀ ▶ -buttons
2. press **ok** button more than 2 seconds
Standard factory password 0000
Display changes to the menu
Parameters can be changed

After pressing the OK button the display changes to the menu.

selected menu item is inverted

Menu Pos. No./**ok** function/active keys

```
Basic settings
Device specs
Signal settings
Commissioning
1.          Select    ▲▼
```

ok: change to the selected menu item

▲ ▼: circulate (loop) menu items

4. Program structure with parameters of the analog transmitter

Legend: ☜ = Select / ✍ = Input / 🖇 = Display / ⌨ = only available with activation code **Menu-Code Parameter**	**Type:**	**MIL 8130 TN**	**Change**
1. Basic settings		☑	☜
1.1. Language		☑	☜
1.1.1. Deutsch		☑	☜
1.1.2. English		☑	☜
1.1.3. Français		☑	☜
1.1.4. Free language / text		-	✍
1.2. Time/Date		☑	☜
1.2.1. Time, input/correction		☑	✍
1.2.2. Date, input/correction		☑	✍
1.3. Modify Password		☑	☜
1.3.1. Password input		☑	✍
1.3.2. Modify password		☑	✍
1.4. Lighting		☑	☜
1.4.1. Lighting on/off		☑	☜
1.4.2. Duration of lighting in min. / 0 = continuous ON		☑	✍
1.5. Contact information		☑	☜
1.5.1. Contact address		☑	🖇
1.5.2. Contact Tel./E-Mail		☑	🖇
1.5.3. Contact Web		☑	🖇
1.6. Factory settings		☑	☜
1.6.1. Store parameter set		☑	☜
1.6.2. Load parameter set		☑	☜
1.6.3. Initialize device no/yes		☑	☜
1.7. Activation code		⌨	🖇
2. Device specs		☑	☜
2.1. Device type: **MIL** 8130; Software Version		☑	🖇
2.2. S/N and system verification date		☑	🖇
2.3. Quantity of measuring circuits		☑	🖇
2.7.1. Probe; Type code		☑	✍
2.7.2. Probe; S/N		☑	✍
3. Signal settings		☑	☜
3.1.1. Input position number / TAG number		☑	✍
3.1.2. Probe factor		☑	✍
Info 06: Zero adjustment for; Bar probe; empty/clean; ex-works prog ~ 60		☑	✍
3.1.3. Zero point MeV input (Offset), accept at press of OK button, store		☑	✍
3.1.4. Manual input of the zero point =MeV (Offset)		☑	✍

Legend: ☜ = Select / ✍ = Input / 🖇 = Display / ⌨ = only available with activation code **Menu-Code Parameter**	**Type:**	**MIL 8130 TN**	**Change**
Info 07: Meas. circuit 1: Dipping IL bar probe 100 % into lower layer		☑	🖇
3.1.8. Choose product -- new -- / product 1-50		☑	☜
-- new -- (store; switchover product name)		☑	☜
3.1.9. Product name (input mandatory)		☑	✍
3.1.10. Product meas. value (lower phase) accept at press of OK botton, store		☑	✍
3.1.11. Product measurement (lower phase) manual input/correction		☑	✍
Info 08 : Meas. circuit 1: Dipping IL bar probe (100 %) in upper layer		☑	🖇
3.1.12. Choose product -- new -- / product 1-50		☑	☜
-- new -- (store; switchover product name)		☑	☜
3.1.13. Product name (input mandatory)		☑	✍
3.1.14. Product meas. value (upper phase) accept at press of OK botton, store		☑	☜
3.1.15. Product meas. value (upper phase) manual input/correction		☑	✍
3.1.16. Signal filter		☑	✍
3.1.21. IL calculation (Value) Zero Point: /Meas Span: /M-Reversion: (no / yes)		☑	🖇
4. Commissioning according to device type		☑	☜
4.2. [5.1.1.] Measuring units [% / Imp]		☑	☜
4.3. [3.1.1.] Input (position number)/ TAG - No		☑	✍
4.4. [3.1.2.] Probe factor		☑	✍
Info 06: Zero adjustment for; Bar probe; empty/clean; ex-works prog ~ 60		☑	🖇
4.5. [3.1.3.] Zero point MeV input (Offset), accept at press of OK button, store		☑	✍
4.6. [3.1.4.] Manual input of the zero point =MeV (Offset)		☑	✍
Info 07: Meas. circuit 1: Dipping IL bar probe 100 % into lower layer		☑	🖇
4.7. [3.1.8.] Choose product -- new -- / product 1-50		☑	☜
4.10. [3.1.10.] Product meas. value (lower phase) accept at press of OK botton, store		☑	☜
4.12. [3.1.11.] Product measurement (lower phase) manual input/correction		☑	✍
Info 08 : Meas. circuit 1: Dipping IL bar probe (100 %) in upper layer		☑	🖇
4.13. [3.1.8.] Choose product -- new -- / product 1-50		☑	☜
4.15. [3.1.14.] Product meas. value (upper phase) accept at press of OK botton, store		☑	☜
4.16. [3.1.15.] Product meas. value (upper phase) manual input/correction		☑	✍
4.17. [3.1.16.] Signalfilter		☑	✍
4.18. [3.1.21.] IL calculation (Value) Zero Point: /Meas Span: /M-Reversion: (no / yes)		☑	🖇
4.19. [2.7.1.] Probe; Type code		☑	✍
4.20. [2.7.2.] Probe; S/N		☑	✍
Info 15 Limit value 1		☑	🖇
4.22. [6.1.2.] Limit value		☑	✍
4.23. [6.1.4.] Time delay; off		☑	✍
4.24. [6.1.5.] Time delay; on		☑	✍
4.25. [6.1.6.] FSL/FSH- Position		☑	✍

Legend: ☜ = Select / ✍ = Input / 𝒢 = Display / ⌨ = only available with activation code **Menu-Code Parameter**	**Type:**	**MIL 8130 TN**	**Change**
Info 16 Limit value 2		☑	𝒢
4.27. [6.1.2.] Limit value		☑	✍
4.28. [6.1.4.] Time delay; off		☑	✍
4.29. [6.1.5.] Time delay; on		☑	✍
4.30. [6.1.6.] FSL/FSH- Position		☑	✍
4.31. [13.1.] Storing an active operation parameter set on next free place 1-7		☑	☜
4.44. [1.6.1.] Store parameter with **ok**		☑	☜
5. Measuring range		☑	☜
5.1.1. Measuring units [% / Imp]		☑	☜
6. Limit values		☑	☜
6.1 Select limit valiue 1 / 2 Select limit value 1 Lo-Alarm; 2 Hi-Alarm static for IL (cont.) only		☑	☜
6.1.2. Limit value		☑	✍
6.1.4. Time delay; off		☑	✍
6.1.5. Time delay; on		☑	✍
6.1.6. FSL/FSH- Position		☑	☜
7. Test functions		☑	☜
7.1. **Analog output** / Limit value select		☑	☜
7.1.1.1. mA- output simulation (0.1 mA steps) beginning at 0.5 mA		☑	✍
7.2. Analog output / **Limit value** select		☑	☜
7.2.1. Select Limit value 1 / 2		☑	☜
7.2.1.1. Limit value 1 / 2; Simulation OFF / ON		☑	☜
8. Error message mA output		☑	☜
8.1. Data error, measured value underflow,<0010 pulses		☑	✍
8.2. Data error, measured value overflow, >3750 pulses		☑	✍
8.3. Technical error		☑	✍
Display actual error with time/date		☑	𝒢
13. Archiv		☑	☜
13.1. Storing an active operation parameter set on next free place 1-7		☑	𝒢
13.2. Load the select parameter set 1-7 for Interfacial layer level measuring		☑	☜
13.3. Delete product meas. value (don't store into a parameter set)		☑	☜

Display modes		
1 Tag.xxxxxxxxxx / Interfacial level analog output in % / Limit value	☑	𝒢
1 Tag.xxxxxxxxxx / Interfacial level analog output in mA / Limit value	☑	𝒢
Parameter set 1-7	☑	𝒢
Display actual error with time /date	☑	𝒢

Chart. 5 Program structure

4.1. Description of the menu, program structure General, for all mipromex® units

mipromex® display

Your TAG or Position number
Measuring position, number
Display measured value in %
Hi = High Alarm
ok button function / active keys

```
1 Tag QLA12345678
Interfacial layer L
100.0 %      Hi
             --
Menu        ▲▼
```

After pressing the **ok** button the display changes to the info menu.

Information about storing or next

```
=> Menu-Info <=
Press OK key
>2s store !
< 2s next !
Info 01   Next
```

After pressing the **ok** button, the display changes to password input.

Password

The password protects the programming level of the **mipromex®**. If you start up for the first time, the standard password is ***0000*** and is displayed. If you change the password (under point 1.3.) every user has to log-in using the new password!

Note: If you loose the new password, contact aquasant-mt to obtain an override password.

Key in your new password or accept the standard password
selected digit is inverted

```
Enter Password !

0000

1.          Store
```

1. Key-in the numerical password using the ▲▼◀▶ buttons
2. Press **ok** button more than 2 seconds; display change to the menu "change password"; the password can be change now.
3. Press **ok** button; display switch to menu.

4.1.1. [1.] Basic settings

You can set the device specific parameters in the basic settings menu. Please note that you first have to activate the password before you can make any changes.

Main menu
selected menu item is inverted
Menu-Positions-Nummer

```
Basic settings
Device specs
Signal settings
Commissioning
1.          Select   ▲▼
```

After pressing the **ok** button the display changes to the sub menu basic settings

Sub menu
Selected sub menu item is inverted
Menu-Positions-Nummer

```
Language / Sprache
Time/Date
Modify password
Lighting settings
1.1.        Select   ▲▼
```

After pressing the **ok** button the display changes to the sub menu Language / Sprache

[1.1.] Language/Sprache

Select the desired language. After you selected the language and stored your choice, the new language will be activated immediately. On the internet homepage www.aquasant-mt.com / Downloads, you can download an Excel-file. The three languages Deutsch, English and Français are listed. Replenish all text blocks in your language (max 16-characters), send it to us and we will be glad to implement your language.

selected character is inverted

```
Deutsch
English
Français

1.1.1       Store    ▲▼
```

1. select language with the ▲▼-buttons
2. press **ok** button more than 2 seconds ; The selected language is immediately activated Display changes back to menu item 1.1.

[1.2.] Time/Date

Correction of device time and date. The time is displayed in hours, minutes and seconds. Daylight saving time is not adjusted automatically! The date is displayed in day, month and year. The device time is used for the protocol logger.

current time
selected character is inverted
active key-navigation

```
Time      09:50:25
          09:50:14

▲▼◄► Adjust
1.2.1     Store
```

1. use ▲▼◄►-buttons to change the time
2. press **ok** button more than 2 seconds

Time is stored
Display changes to date 1.2.1.

current date
selected character is inverted
active key-navigation

```
Date      04.08.08
          04.08.08

▲▼◄► Adjust
1.2.1     Store
```

1. use ▲▼◄►-buttons to change the date
2. press **ok** button more than 2 seconds

Date is stored
Display changes back to menu item 1.2.

[1.3.1.] Key-in and change password

The **standard password (0000)** can be changed. The old password has to be confirmed first.

selected character is inverted

```
Enter Password!

0000

1.3.1.    Store
```

1. use ▲▼◄►-buttons to input the numerical password
2. press **ok** button more than 2 seconds

Password is stored
Display changes to modify password 1.3.2.

[1.3.2.] Modify password

The standard password (0000) can be changed. The new password has not to be confirmed.

selected character is inverted

```
Modify password

5000

1.3.2.    Store
```

1. use ▲▼◄►-buttons to input the numerical password
2. press **ok** button more than 2 seconds

New password is stored
Display changes back to menu item 1.3.

[1.4.] Lighting

The display lighting can be switched on or off. The duration of the lighting can be set in minute-steps; for continuously on choose time 00, under the menu point 1.4.2.!

selected character is inverted

```
Lighting settings

on/off

1.4.1.    Store    ◄►
```

1. use ◄►-buttons to switch the lighting on or off
2. press **ok** button more than 2 seconds

Selection is stored
Display changes to sub menu lighting duration 1.4.2.

[1.4.2.] Lighting settings

The display lighting can be switched on or off. The duration of the lighting can be set in minute-steps; for continuously on choose 00!

selected character is inverted

```
Lighting settings
ON = 00
Time in min.      02
▲▼◄► Adjust
1.4.2.    Store
```

1. use ▲▼◄►-buttons to select the lighting duration
2. press **ok** button more than 2 seconds

Lighting duration is immediately activated
Display changes back to menu item 1.4.

[1.5.] Contact

Our contact information: Address / Phone-No. / Email / Web

```
Aquasant-mt
Switzerland
Hauptstrasse 22
CH-4416 Bubendorf
1.5.1.    Next
```

After pressing the **ok** button the display changes to the next menu item.

/ Switzerland

Phone: +41(0)61 9355000 Email: info@ aquasant-mt.com
1.5.2. Next

After pressing the **ok b**utton the display changes to the next menu item.

/ info@aquasant-mt.com

Web: www. aquasant-mt.com
1.5.3. Next

After pressing the **ok b**utton the display changes back to the sub menu Contact 1.5

/ www.aquasant-mt.com

[1.6.] Factory settings

Under the ***Factory settings*** Menu Level, the programmed device parameters can also be stored, reloaded or deleted. All parameters are set back to factory settings at initialization of the device.

[1.6.1.] Store Parameter set

All keyed-in parameters are stored in the flash memory of the unit. The parameters can be reloaded afterwards.

Store parameter
ok
1.6.1. Store

1. Press **ok**-button longer than 2 sec.; the parameter will store into the flash. Old Parameter will overwrite.
2. A short ok-feeling pressure jumps further into the next mask 1.6.2.

[1.6.2.] Parameter set load

If parameters were changed unintentionally, the last protected operation parameter set can be activated again.

Load parameter
ok
1.6.2. Confirm

1. Press **ok**-button longer than 2 sec.; the parameter will store into the flash. Old Parameter will overwrite.
2. A short ok-feeling pressure jumps further into the next mask

[1.6.3.] Initialize unit no/yes

If the device is initialized, all user-programmed parameters are deleted and set back to factory settings.

Choice display is inverted

Initialize unit
no/yes
1.6.3. Confirm ◄ ►

Caution, all current parameter values are overwritten!

4.1.2. [2.] Divice specs

In the device specs you will find specific information about the **mipromex®**.

Main menu

Menu list display is inverted

Basic settings
Device specs
Signal settings
Commissioning
2. Select ▲ ▼

After pressing the **ok** button the display changes equipment data to the sub-menu

[2.1.] Divice-type MIL 8130

In the device type menu the hardware type and the software-release are displayed. Example:

MIL 8130 V1.0x - 1 measuring circuit with 1 analog output and 2 limit value output with Relais
Software versions are marked according to NAMUR EN53. (V 1.xx)

Information mask about the mipromex

Device type:
MIL 8130
Software:
V1.1x
2.1. Next

After pressing the **ok b**utton the display changes to the next menu item 2.2.

[2.2.] Serial number and date of the system verification

The serial number is fix stored in the **mipromex**® and can not be changed. The serial number is linked to the activation codes. The date of the system verification marks the QS-function control during the final function test.

Information mask about the mipromex

Serial number:
8130xxxx-08
Verification date:
10.10.08
2.2. Next

After pressing the **ok b**utton the display changes to the next menu item 2.3.

[2.3.] Number of measuring circuits (1. measuring circuit, skip 3.1/4.1)

Here is displayed if there is one or two measuring circuits activated.

Battery type

The inserted battery type is displayed. The battery has not to be charged before using the **mipromex**®. The battery lifetime of 10 years guarantees that no data loss will occur.

Information mask about the mipromex

Qty of mes. circuits
1
Battery type:
CR2032
2.3. Next

After pressing the **ok b**utton the display changes to the next menu item 2.4.

[2.7.1.] Probe model number 1/2

This is an input field. If the system is delivered with a probe, the probe type is stored here.

selected character is inversed 16-char.

Alphanumeric

Probe
Type code

▲▼◀▶ Adjust
2.7.1. Store

1. use ▲▼◀▶-buttons to input the alpha-numerical type code of the probe
2. press **ok b**utton more than 2 seconds Type code is stored Display changes to the next menu item 2.4.2.

[2.7.2.] Serie-Nr. 1 / 2

This is an input field. If the system is delivered with a probe, the serial no. of the probe is stored here.

selected character is inversed 16-char.

Max.

Probe
S/N:

▲▼◀▶ Adjust
2.7.2. Store

1. use ▲▼◀▶-buttons to input the alpha-numerical serial number of the probe
2. press **ok b**utton more than 2 seconds Serial number is stored Display changes back to menu 2.7. back with **C b**otton

4.1.3. [3.] Signal settings

In the signal adjustings all parameters which are named with the signal processing are parametrized.

Main menu

selected menu item is inverted t

Basic settings
Device specs
Signal settings
Commissioning
3. Select ▲▼

After pressing the **ok b**utton the display changes to the sub menu signal settings

[3.1.1.] Input Positions-/TAG-Number

You have the possibility of an 11 depositing-digit measuring place number of the probe in the mipromex ®.
The field is alphanumeric. (No lower case letters!)

Define your position
Tag-number, 11-characters max.

Input Tag-No.
1 Tag -----------
▲▼◀▶ Adjust
3.1.1. Store

1. use ▲▼◀▶-buttons to input the alpha-numerical position number
2. press **ok** button more than2 seconds

Pos.-No. is stored
Display changes to menu item 3.1.2.

[3.1.2.] Probe factor

The probe factor is a probe specific number which indicates the correlation to the standard probe (factor 1.00). If you replace the probe you will get a reproducible measurement with the same measured values. The probe factor has only to be changed when using a replacement probe. By changing the factor, you will get with the replacement probe, the same pulses value at 100 %

e. g. MeV old probe 2600 / 2955 MeV new probe = f 0.879

The probe factor has only to be changed
when using a replacement probe
selected character is inverted

Probe factor
1.000
▲▼◀▶ Adjust
3.1.2. Store

1. use ▲▼◀▶-buttons to define the probe factor
2. press **ok b**utton more than 2 seconds

Probe factor is stored
Display changes to the next menu item 3.1.3. After changing the probe factor the zero point must be actualized and stored 3.1.3.

[3.1.3.] Zero point acceptance at push button (Offset) OK store

The probe electronic is calibrated in the factory to 60 ±5 pulses. If the probe is installed, this value can be higher due to the environment. If the probe is installed; empty and dry, the zero point can be checked and/or manually corrected. Attention: switch-on the unit 30 minutes before the zero adjust. A measured value between 10 and 1000 pulses can be adjusted without performing an electronic calibration. ***Attention;*** *Probe must be dry and clean! At a coparison of 1000 the product measurement is limited on approx. 2700 impuls*

If the system has been into operation the zero point comparison can be renounced. (Work adjusting approx. 60)

Menu - information
furthermore process

Zero adjustment for
pipe/bar probe
empty/clean
ex-works prog.~ 60
Info 02 Next

After pressing the **ok** button the display changes the information mask to the next menu item 3.1.3.

MeV = normed measured value in pulses

actual stored zero point offset
actual raw measured value, empty probe

Zero point MeV
Take-over
Keypress: 0060
Actual MeV: 0076
3.1.3. Store

1. press **ok** button more than 2 seconds

The new zero point is immediately activated
Display changes to the next menu item 3.1.4.

[3.1.4.] Manual zero point input (offset)

The programmable probe zero point can be changed or corrected manually.
If the installation cannot be emptied for the zero point of the probe, then the zero point is manually keyed-in from the protocol

You can manually correct the
zero point of the probe
actual raw measured value of the probe
adjust zero point

Zero point MeV
Manual input
Adjust 0076
▲▼◀▶ 0087
3.1.4. Store

1. use ▲▼◀▶-buttons to define the zero point
2. press **ok b**utton more than 2 seconds

The new zero point is immediately activated
Display changes to the next menu

Menu--Information
Furthermore process
for Measuring circle 1

Dippling IL bar probe
100% into lower layer
Info 07 Next

If the active bar probe is too long, the measurement at partial filling can be lower phase projected and entered manually without separating layer. Example:
MW = 736 Impulse / Short-term one depth= 450 mm / aktive probe lengh = 1000 mm
Calculation **MW**: 736 Imp. / 450 mm x 1000 mm = **1636 Imp**

[3.1.8.] Product name entering or selecting

Under the product name the product measurement is stored. The existing measurement can be measured by an existing product name taken, changed or newly. For a new product the product name or a number must be entered mandatorily. Max. 50 product measurements can be taken and stored.

In the Archive product 1
produkt 2

Choose product
- - new - -
water 600 mS
Mechlo
3.1.8. Store ▲▼

1. use ▲▼-button the product name is entered selectly or newly to the lower phase
2. press **ok b**utton more than 2 seconds; Choice is further processed

[3.1.9.] Product name of the new products

If - - new - - is stored, the product name must be entered mandatorily

16-digit alphanumeric
(no lower case letters)

Product name
0
▲▼◄► Adjust
3.1.9. Store

1. use ▲▼◄►-buttons product name is defined
2. Pressing C back or ok button longer for 2 seconds; Name gets stored and can not be changed any more! Provided that the product is not stored in a para-mead substitute, it can be deleted in the archives 13.3 again.

[3.1.10.] Lower phase product measurement; Take-over on keypress

The active probe length is the measurement can dipped in the lower phase be taken by keypress to 100%.

Short-term measurement
(Raw measurement zero point offset)

Product meas. value
Take-over
Keypress: 2255
Actual MeV: 2255
3.1.10. Store

1. pressing ok button longer for 2 seconds; the measurement is taken and stored under the entered product name.
Display changes to menu item 3.2.11.

[3.1.11.] Lower phase Product measurement; manual input

Product measurement can be adjusted or corrected manually the described under item 3.1.8 here.

By the manual input the measuring range of the probe is corrected
Short-term measurement
Entering measurement

Product meas. value
Manual input
Adjust 0225
▲▼◄► 0255
3.1.11. Store

1. use ▲▼◄►-buttons the measuring span is defined
2. Pressing ok button longer for 2 seconds; the new measuring range immediately gets active.
Display changes information MK1 to the next menu point

Menu--Information
furthermore process for
measuring circle 1

Dippling IL bar probe
in upper layer
Info 08 Next

If the active bar probe is too long, the measurement at partial filling can be lower phase projected and entered manually without separating layer. Example:
MW = 143 impulse / Short-term one depth = 320 mm / aktive probe lengh = 1000 mm
Calculation **MW**: 143 Imp. / 320 mm x 1000 mm = **447 Imp**

[3.1.12.] Product name entering or selecting

Under the product name the product measurement is stored. The existing measurement can be measured by an existing product name taken, changed or newly. For a new product the product name or a number must be entered mandatorily. Max. 50 product measurements can be taken and stored.

Choose product
- - new - -
Water 600 mS
Mechlo
3.1.12. Store ▲▼

1. use ▲▼-button the product name is entered selectly or newly to the upper phase
2. press **ok b**utton more than 2 seconds; Choice is further processed
Display changes to menu item 3.1.13

[3.1.13.] Product name of the new products

If - - new - - is stored, the product name must be entered mandatority

Petition of new product name

16-digit alphanumeric

Product name

0

▲▼◀▶ **Adjust**

3.1.13. Store ▲▼

1. use ▲▼◀▶-buttons product name is defined
2. **C** back or press **ok b**utton more than 2 seconds; name gets stored and can not be changed any more!

Provided that the product is not stored in a parameter set substitute, it can be deleted in the archives 13.3. again.
Display changes to menu item 3.1.14.

[3.1.14.] Upper phase product measurement; Take-over on keyspress

The active probe length is the measurement can dipped in the lower phase be taken by keyspress to 100%.

Product meas. value
Take-over
Keypress: 0340
Actual MeV: 0340
3.1.14. Store

1. press **ok** button more than 2 seconds; the new measuring range is immediately calculated by the measurement automatically,

Display changes to menu item 3.1.15.

[3.1.15.] Upper phase Product measurement; manual input

Product measurement can be adjusted or corrected manually the described under item 3.1.12 here.

Product meas. value
Manual input
Adjust 0340
▲▼◀▶ 0255
3.1.15. Store

1. use ▲▼◀▶-buttons the measuring span is defined
2. Press **ok b**utton more than 2 seconds; the new measuring range is immediately aktive.
   Display changes to menu item 3.1.16.

[3.1.16.] Signal filter

With the free selectable filter time constant (max 30 seconds) you can attenuate the raw measuring signal. A way to center the displayed and power output values.

Input the filter constant

filter of the first order

actual stored filter constant

Signal filter

00.2 s

▲▼◀▶ **Adjust**

3.1.16. Store

1. use ▲▼◀▶-buttons to define the signal filter time
2. press **ok** button more than 2 seconds

The new time is immediately activated
Display changes back to menu 3.1.21.

[3.1.21.] Calculation of interfacial layer zero point, measurement range and reversal measurement range

The information mask shows the calculated measuring range, zero point and reversal measurement for the interfacial level measuring (Reversal measurement: yes = upper water phase)

IL caculation
Zero point 0340
Meas. Span 1915
M-Reversion no
3.1.21. Next

pressing ok button longer for 2 seconds
the new parameter set substitute immediately gets active,
The storage in the archives 13.1. into next free parameter set substitute (will show automatically)
Display changes back to the menu 3.1.

4.1.4. [4.] Commissioning

Chronological commissioning sequence of operations for a correct function.
You follow the INFORMATION instructions and you enter the corresponding values step by step. Masks see page 18, the menu item numbers indicated are clip into [ ].

4.1.5. [5.] Measuring range

In the measuring range menu all measuring range related parameters can be set.

Main menu

selected menu item is inverted

Device specs
Signal settings
Commissioning
Measuring range
5. Select ▲▼

After pressing the ok button the display changes to the Sub-menu measurement ranges 5.1. measuring circle choice

[5.1.1.] Measurement range unit

Choose the measurement range unit of % or impulses for the measurement indication.

Possible units change
selected character is inverted

Measuring unit
%/Imp
5.1.1. Store ◄►

1. use ▲▼-Tasten wird die Einheit definiert % oder Imp
2. Pressing ok button in the measurement indication longer for 2 seconds is the unity changed.
Display changes to menu item 5.1.2.

4.1.6. [6.] Limit value

In the limit value menu all limit values related parameters can be set.

Main menu

Selected menu item is inverted

Signal settings
Commissioning
Measuring range
Limit value
6. Select ▲▼

After pressing the **ok** button the display changes to the sub menu measuring ranges 6.1. select measuring circuit.

Sub-menu measurement ranges 6.1. Measuring circle choice

[6.1.] Select Limit value 1 or 2

Selected menu item is inverted

Limit value select 2

Select limit value
1/2
6.1. Select ◄►

1. use ◄►- buttons becomes the output relay or transistor Open collector output (NPN) 1 or 2 define
2. press shortly on the OK button.
Display changes to menu 6.1.2.

[6.1.2.] Limit value

At separating layer standard the limiting value 2 is freely programmable.

selected character is inverted

Limit value 2
080.0 %
▲▼◄► Adjust
6.1.2. Store

1. use ▲▼◄►-button the limit value will define
2. press **ok** button more than 2 seconds
The limit value is immediately activated

Display changes to the next menu item 6.1.4.

[6.1.4.] Time, drop down delay

The relay- or opto-electronic coupler- transistor- output can be activated with a drop down time delay. Input of the time delay drop, in 1 second steps from 0 - 30 minutes.

selected character is inverted

Time delay, off
00.00 mm.ss
▲▼◄► Adjust
6.1.4. Store

1. use ▲▼◄►-buttons to define the time delay off, drop
2. press **ok b**utton more than 2 seconds
The selected time delay is immediately activated

Display changes to the next menu item 6.1.5.

[6.1.5.] Time, on delay

The relay- or opto-electronic coupler- transistor- output can be activated with an on/raise time delay. Input of the time delay, of raise, in 1 second-steps from 0 - 30 minutes.

selected character is inverted

Time delay, on
00.00 mm.ss
▲▼◀▶ Adjust
6.1.5. Store

1. Use ▲▼◀▶-buttons to define the time delay on, raise
2. press **ok** button more than 2 seconds

The selected time delay is immediately activated
Display changes to the next menu item 6.1.6.

[6.1.6.] FSL/FSH -Position

Define the security settings of the Relay- or opto-electronic-coupler- transistor- outputs, ...

Active position		Measured value	Display	opto-electronic coupler
Fail Safe low:	***FSL***	is **lower** than limit value	**Lo**	de-energized
L-Alarm		is **higher** than limit value	**none**	switched on
Fail Safe hight:	***FSH***	is **lower** than limit value	**none**	switched on
H-Alarm		is **higher** than limit value	**Hi**	de-energized

Chart. 6 Fail Safe settings

selected menu item is inverted

FSL/FSH –Position
FSL/FSH
6.1.6. Store ◀ ▶

1. use ◀▶-buttons to define the opto-electronic coupler-output
2. press **ok** button more than 2 seconds
The selected definition is immediately activated

Display changes back to menu item 6.1.

4.1.7. [7.] Test functions

[7.1.] select the Test function

Choose the test function for the analog output or the limit values of the measuring circle 1.

selected menu item is inverted

Analog output
Limit value
7.1. Select ▲▼

After pressing the **ok** button the display changes to the selected measuring circuit menu (1). 7.1.1

[7.1.1.] Simulation of mA- output (in 0.1 mA steps, starting at 0.5 mA)

With this function the active current output (load 750 Ω) can be tested.
The current output can be increased in 0.1 steps starting at 0.5 mA and ending at max. 22.0 mA.
The mask becomes the measurement current output is left again actively.

Option number for the modification is inverted

mA-Output 1
Simulation 00.50 mA
▲▼◀▶ Adjust
7.1.1.1. Next

1. use ▲▼◀▶-button is the current output immediately becomes defined actively current output
2. Pressing ok button; Display changes back to menu item 7.1.1.
3. C button back on 7.1 switch over on limit value
4. Pressing ok button; Display changes to menu item 7.2.1

selected character is inverted

Select Limit value
1/2
7.2.1. Selectl ◀▶

After pressing the ok button the display changes the dialed limit value to the menu. 7.2.1.1

[7.2.3.] Relaisstellung Simulation

selected character is inverted

Limit value 1
Simulation ON / OFF
7.2.1.1 Select ◀▶

1. use ◀▶-button the output relay or transistor Opencollectorausgang (NPN) 1/2 deactivated or activated digital output immediately gets activated.
2. **C**-button back

4.1.8. [8.] Programmable mA output

All **mipromex**® microprocessor units are equipped with a diagnostic system, which makes fault-finding easier and facilitates quicker correction in case of malfunction occurrence. The error levels can be set in 0.1 mA-steps between 0.5 - 4.0 and 20.0 - 22.0 mA. Error messages are set at factory to automatically acknowledge the fault. The fault-type is displayed with time and date. By pressing > 2 seconds the **ok** button, the display changes back to the measured value. The error is displayed without measured value ---. - and an arrow up ⬆ or down ⬇ .

Main menu

selected menu item is inverted

Measuring range
Limit value
Test functions
Fault msg.
8. Store ▲▼

After pressing the **ok b**utton the display changes to the sub menu fault messages 8.1.

[8.1.] Data error measuring value underflow MeV <0010

The data transmission of the measured value, between measuring electronic MTI and the control unit **mipromex**® is faulty. The control unit **mipromex**® is unable to process the measured data.
Error level 1 see fault finding on page 30.

selected character is inverted

Data error
Meas. value 00.5 mA
Underflow
▲▼◀▶ Adjust
8.1. Store

1. use ▲▼◀▶-buttons to define the current output
2. press **ok** button more than 2 seconds

Current output is immediately activated
Display changes to the next menu item 8.2.

[8.2.] Data error measuring value overflow MeV >3750

The measured value of the measuring electronic MTI is higher than the allowed range of pulses. The control unit **mipromex**® is unable to process the measured data. Error level 2 see fault finding on page 32

Option number for the modification is inverted

Data error
Meas. value 00.5 mA
Overflow
▲▼◀▶ Adjust
8.2. Store

1. use ▲▼◀▶-buttons to define the current output
2. press **ok b**utton more than 2 seconds

Current output is immediately activated
Display changes to the next menu item 8.3.

[8.3.] Technical Error

The control unit **mipromex**® generates a periodic checksum test. If it is faulty, an error message is displayed.
Error level 3 see fault finding on page 30.

Option number for the modification is inverted

Technical
Error at 022.0 mA
▲▼◀▶ Adjust
8.3. Store

1. use ▲▼◀▶-buttons to define the current output
2. press **ok b**utton more than 2 seconds

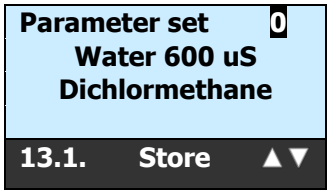
Current output is immediately activated
Display changes back to menu 8.

4.1.9. [13.] Archive

[13.1.] Active parameter set store interfacial layer level measuring IL

The next free parameter set substitute for interfacial layer seems on the right above and it can be stored. All seven parameter sentences are occupied 0 is shown. You choose one parameter set substitute which can be made over to it and you store the new parameter set substitute under this number..

Option number for the modification is inverted

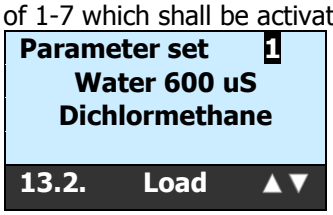


1. use ▲▼◀▶ button You choose the new parameter place (1-7) from overwrite. A number between 1 appears and the place is still 7 freely.
2. press **ok b**utton more than 2 seconds; the active parameter set substitute is stored
Display changes load to 13.2

[13.2.] Load active parameter set by continuous of interfacial layer

You choose the new parameter set of 1-7 which shall be activated.

Option number for the modification is inverted



1. (0) use ▲▼◀▶ -buttons You choose the new parameter place (1-7) from overwrite. A number between 1 appears and the place is still 7 freely.
2. press **ok b**utton more than 2 seconds; the active parameter set substitute is stored Display changes load to 13.2

[13.3.] Deleting the stored product measurements

Only product names and the corresponding measurements which are not used in a parameter set substitute can be deleted.

Option number for the modification is inverted

1. use ▲▼◀▶-button you select the new product
2. Pressing ok button longer for 2 seconds; Select product measurement is deleted.
Display changes back to 13.

5. Commissioning example

Make sure the connections in the Monorack or 19"-Rack are wired correctly and the probe is connected.
The control unit **mipromex**® is installed in the Rack and under tension.
The green or red LED inside the MTI (measuring electronic) of the probe is lit.
The vessel is empty; the probe is dry and clean.
Under **menu position 4th commissioning**, a comfortable commissioning routine can be carried out. The commissioning routine is a combination of all operation relevant parameters in a chronological order. You can also individually, however, jump at every mask one by one. Follow the steps of the commissioning:

5.1. Commissioning the mipromex® with a bar probe

This commissioning adjusting is in a separating on container for a bar probe. The adjustings are for a continuous separating layer standard measuring. You follow the most important parameter for the short commissioning. Bar probe is installed and adjusted into decanters. The vessel is empty, the bar probe is clean and dry!

Operating parameters (Settings for Final inspection and Commissioning in the plant)

Company : _____ Order No: _____

Pos./Tag-No: _____ Customer order No: _____

mipromex® **MIL 8130** S/N: _____

Measuring circuit 1

Probe, Type : _____ S/N: _____

Coax cable : _____ S/N: _____ MTI _____ S/N: _____

Operating chart for Interfacial layer measuring Level IL

Menu-Code		Meas. circuit	*Description*	Final inspection	Commissioning
Commissioning Positions	1.		***Basic settings***		
	1.1.		Language D/F/E	English	English
	1.2.1.		Time	Actual time Europe	Actual time Europe
	1.2.2.		Date	Actual date Europe	Actual date Europe
	1.3.1.		Modify password	0000	0000
	1.4.1.		Lighting settings	on	
	1.4.1.		Illumination time in minutes	5	
4.			***Commissioning***		
4.2.	5.1.1.		Measuring unit	%	
4.3.	3.1.1.		Input Tag.-No.		
4.4.	3.1.2.		Probe factor	1.000	
	Info 06		*Zero adjustment for bar probe* *empty/clean*		
4.5./6.	3.1.3./4.	MC1	Zero point meas. Value Imp		
	Info07		*Dipping IL bar probe 100% into lower layer*		
4.7.	3.1.8.	MC1	Choose product or new enter	LOWER PHASE	
4.10./12.	3.1.10.	MC1	Product meas. value Imp	3200	
	Info08		*Dipping IL bar probe 100% into upper layer*		
4.13.	3.1.8.	MC1	Select product or new enter	UPPER PHASE	
4.15./16.	3.1.14.	MC2	Product meas. value	400	
4.17.	3.1.12.	MC1	Signal filter s	00.1	
4.18.	3.1.21	MC1	IL calculation Zero point Imp Meas. Span Imp Meas. reversion	400 2800 no	
4.19.	2.7.1.	MC1	Probe type code		
4.20.	2.7.2.	MC1	Probe S/N		
	Info 15		*Limit value 1* *(digital output 1)*		
4.22.	6.1.2.	DO1	Limit value	%	
4.23.	6.1.4.	DO1	Time delay, off mm.ss	00.00	
4.24.	6.1.5.	DO1	Time delay, on mm.ss	00.00	
4.25.	6.1.6.	DO1	FSL / FSH Position	FSL	
	Info 16		*Limit value 2* *(digital output 2)*		
4.27.	6.1.2.	DO2	Limit value	%	
4.28.	6.1.4.	DO2	Time delay, off mm.ss	00.00	
4.29.	6.1.5.	DO2	Time delay, on mm.ss	00.00	
4.30.	6.1.6.	DO2	FSL / FSH Position	FSH	
4.31.	13.1.		Store parameter set	1	
4.44.	1.6.1.		Store parameter	OK	

Chart. 7 Commissioning-report MIL 8130

	8.		***Fault message***			
	8.1.	MC1	Data error (Meas. value underflow <0010)	mA	00.5	
	8.2.	MC1	Data error (Meas. value overflow >3750)	mA	00.5	
	8.3.	MC1	Technical error	mA	00.5	
	12.		***Calcul. Parameter***			
	12.1.1.	MC1	Drift max.	Imp	0100	
	12.1.2.	MC1	Drift pulses	Imp		
	12.1.3.	MC1	Drift time	s	0060	
	13.		***Archive***			
	13.1.		Store parameter set		1 UPPER PHASE LOWER PHASE	
	13.2.		Load parameter set			

5.1.1. Functions:

Probe must be attached (no disturbing report when switching on)

Store	Press **OK button** longer than 2 seconds until the display switch
Next	Press **OK button** briefly
Back to main menu	Press **C button** briefly
Control	Commissioning the menu point with **OK button** briefly
Menu test function	Analog output and limit value test Menu point [7.]

External settings for choosing the parameter set

Archive Parameter sets zero point and product names 1-50

Parameter set	Digital inputs			**Product name lower Phase**	**Meas. value [Imp]**	**Product name upper Phase**	**Meas. value [Imp]**
IL	**D1**	**D2**	**D3**				
not active	0	0	0				
1	1	0	0	LOWER PHASE	3200	UPPER PHASE	400
2	0	1	0				
3	1	1	0				
4	0	0	1				
5	1	0	1				
6	0	1	1				
7	1	1	1				

1	LOWER PHASE	3200	18			35		
2	UPPER PHASE	400	19			36		
3			20			37		
4			21			38		
5			22			39		
6			23			40		
7			24			41		
8			25			42		
9			26			43		
10			27			44		
11			28			45		
12			29			46		
13			30			47		
14			31			48		
15			32			49		
16			33			50		
17			34					

5.2. Electronic calibration MTI, basic equalization

An electronic calibration has only to be done at following occurrences:

- ☑ Probes without reference electrode, flexible- or flat-probes where the ***measured value*** inside the ***empty*** vessel is smaller than 10 or bigger than 200
- ☑ After exchange of the measuring electronic MTI, or of the coax cable, or of the probe, or after repair of the probe
- ☑ If the zero adjust is not possible: displayed measured value >2000 or <10

Tip:	Adjust the measuring electronic MTI between 60 and 80 pulses This allows the biggest possible measuring span of up to max. 3750 pulses. **Soiled or uncleaned probes should not be adjusted with an MTI calibration.**	
	Probe dry and clean, built in the vessel	Go to the menu point 3.1.3.
oder	*Calibration of MTI as follows:* Using a screwdriver size No. 1, fine adjust to switch point of the LED from red to green (red will flicker). Display between 60 and 80	

The 0-point has been stored at the system test. If the probe is built in, dry and empty the 0-point can be checked and corrected.

Menu position Number-Code

Zero point MeV	
Take-over	
Keypress:	**0060**
Actual MeV:	**0076**
3.1.3. Store	

change to the next menu item by pressing the **Ok b**utton

1. press **ok b**utton more than 2 seconds:

actual MeV is stored
Display changes to the next parameter input

Chart. 8 Electronic calibration operation sequence of operations

6. Fault finding

All **mipromex** –microprocessor units are equipped with a diagnostic system, which makes fault finding easier and facilitates quicker correction in case of malfunction occurrence

6.1. After power on

7.1.1. Technical error; Nv Init from Flash

The error message can have different origin.

1. Flash checkisums inspect has failed

Disturbance info

Technical Error
Flash Cheksum error

1. Press ok button longer than 2 seconds.
Disturbance is confirmed. The display changes to the previous active mask.
2. in pos. 1.6.1. Data of RAM loading into flash
Send renewed disturbance for repair!

2. Flash has failed

Disturbance info

Technical Error
Flash write error

Flash is faulty; Send for repair!

3. Battery is unloaded and must be replaced

Disturbance info

Technical Error
Low Battery
Nv Init from Flash

1. Press ok button longer than 2 seconds.
Disturbance is confirmed. The display changes to the previous active mask.
Battery change; Send for repair!

4. Programm memory check has failed

Disturbance info

Technical Error
Call Service

Microprocessor card faulty; Device send for repair!

Switch OFF and then switch ON the unit. If error reoccurs then:

∫ **Send unit back for repair!**

6.2. During operation

6.2.1. Data error

7.1.1. Technical error; Measured value 1 underflow

The error message can have different origin.

Date of error
Time of error
Measuring circuit 1 or 2
Error description

02.11.07
16:11:10
Data error
Meas. value 1
Underflow

1. press **ok b**utton more than 2 seconds,
the error is confirmed and
the display changes back to last active menu point

The mA output falls to the value programmed under menu point 8.3!

Description of 1st meas. circuit position
Description of 1st meas. value

Non display of meas. value
Error display
ok button-functions / active keys

1 Tag QLA12345679
Interfacial layer L
---.- **%** ↓ **L L**
Menu ▼▲▼

Press **Ok** to change to menu

Limit value low alarm is reached
Arrow down ↓ signalizes : Meas. range underflow
use the ▲▼ buttons to scroll within display mode

Discribe the first output
Discribe the 1. and 2. Measuring circuit
Current value indication current outputs

ok button-functions / active keys

1 IL
1 **00.50** mA ↓
Menu ▲▼

Press **Ok** to change to menu

use the ▲▼ buttons to scroll within display mode

LEDs on measuring electronic MTI are dark/OFF

1. Short circuit or circuit break. Change connection wires on clamp 1 / 2 of probe electronic.

∫ **Check connections of measuring electronic MTI**

∫ **Anschlussdrähte auf Klemme 1/2 in der Sondenelektronik wechseln.**

2. Hazardous area output microprocessor unit **mipromex®** or measuring electronic MTI defective

∫ **Send unit back for repair!** .

The electronic insert MTI is plugged in the blue protection housing. Loosen the two outer M4-screws and remove the electronic insert MTI laterally towards the cable gland.

LED's on measuring electronic MTI are ON

3. Range monitoring did respond, measured value <10

∫ **Check with 0-point-function at menu item 5.3. Menue 3.1.3., perform a new zero adjust. Negative driftet compensation; Drift ist greater than 0 point.**

4. Coax cable or probe defective (circuit break)

∫ **Send coax cable and probe back for repair!**

Calibration of MTI was possible, microprocessor unit mipromex® showing fault or after power cut showing measured value underflow (no measure):

5. Hazardous area data input of **mipromex®** defective;

∫ **Send mipromex® unit back for repair!**

7.1.1. Technical error; Measured value 1 overflow

The error message can have different origin.

Date of error
Time of error
Measuring circuit 1 or 2
Error description

```
02.11.07
16:11:10
Data error
Meas. value   1
Overflow
```

1. press **ok b**utton more than 2 seconds, the error is confirmed and the display changes back to last active menu point

Description of 1st meas. circuit position
Description of 1st meas. value
Non display of meas. value
Error display
ok button-functions / active keys

```
1 Tag QLA12345679
Interfacial layer L
---.-   % ↑ L
Menu  ▼▲▼
```

Press **Ok** to change to menu

Limit value high alarm is reached
Arrow up ↑ signalizes : Meas. range overflow

use the ▲▼ buttons to scroll within display mode

Description of the outputs
Description of 1. and 2, meas. value
Display of actual value of current outputs
ok button-functions / active keys

```
1 IL / 2 Level
1  00.50  mA ↑
2  11.20  mA
Menu  ▲▼
```

Press **Ok** to change to menu

use the ▲▼ buttons to scroll within display mode

∫ **Check probe, product intrusion**

LEDs on MTI measuring electronic are ON

6. Range control active, measured value >3750

∫ **Scheck with 0-point function under Menu 5.3, perform new basic calibration**

∫ Probe not covered (empty), coax cable or probe defective (coax plug wet)

∫ Fault occurs only when probe covered (full): Impedance in function of product too high:

∫ **Send probe back for repair!**

6.2.2. Display error

Faulty or no display on the LCD display

1. Restart the program after 5 seconds of mains interruption.

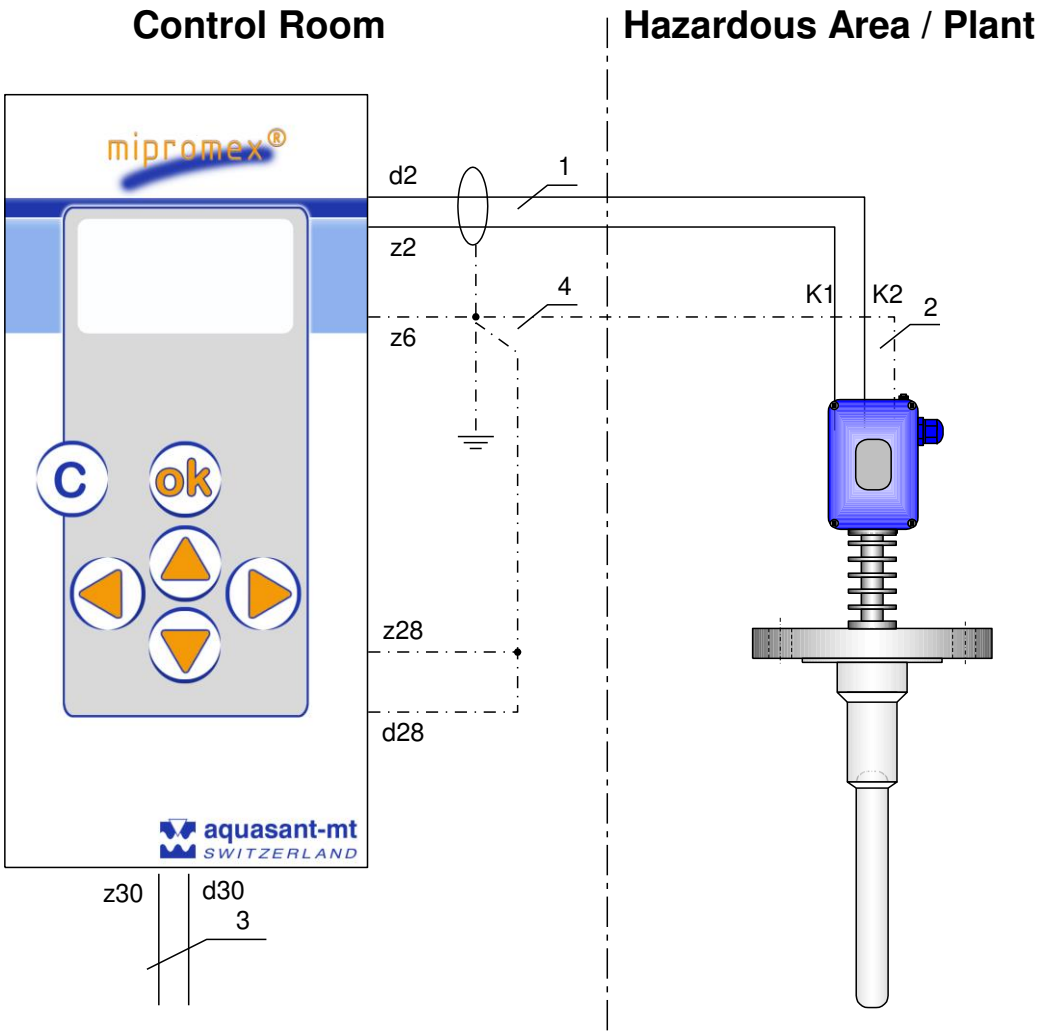
6.2.3. Radio equipment

∫ Radio/wireless equipment should not be operated in the immediate vicinity of the microprocessor unit **mipromex**®, of an open MTI measuring electronic or of the bar probe (measurements can be affected)

∫ Minimum distance 1 to 2 m

7. Wiring diagram

7.1. Measuring electronic/probe with fix connection

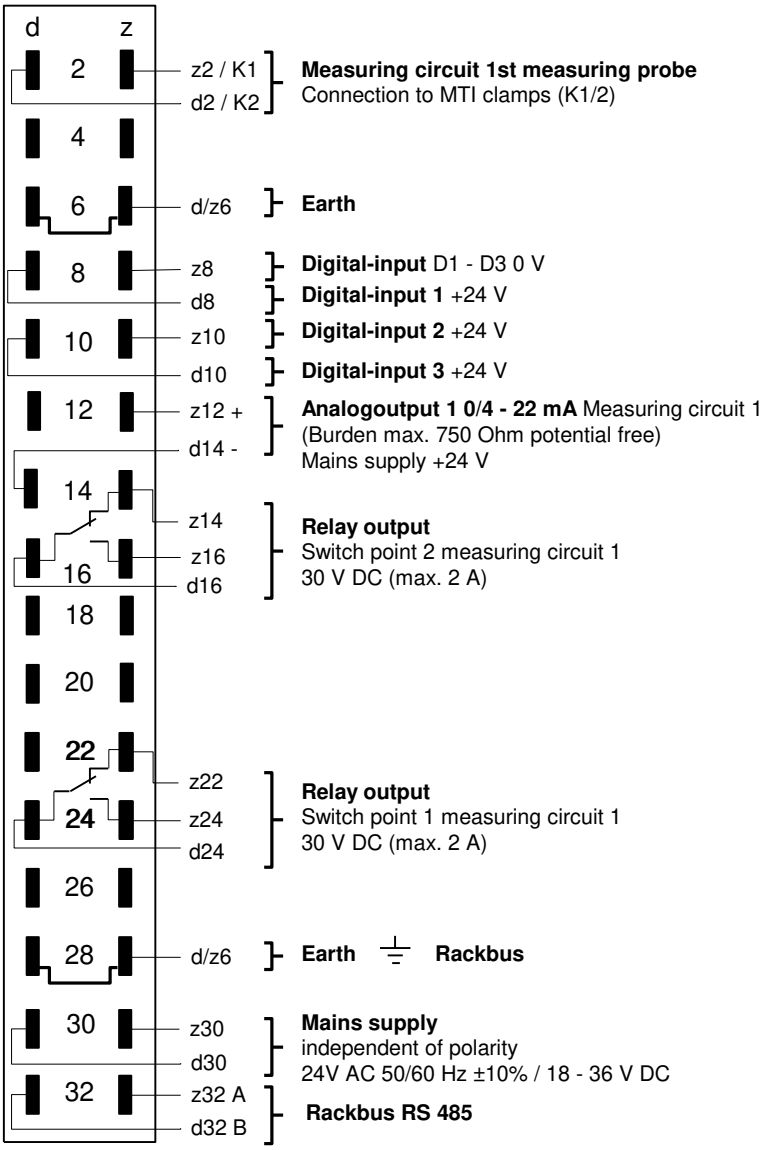


Pic. 2 Wiring diagram

1. 2 x 0.75 mm^2 shielded (both sides earthed in switch room and probe head)
2. MTI housing and probe are connected to the (factory/plant) equipment earths
3. Mains 24 V AC 50/60 Hz /DC ±10 % control voltage, polarity independent, without inductive load
4. Equipotential bond
   An equipotential bond must be fitted between the control room earth and the equipment earth (condition of hazardous area protection and for accurate data transmission)

7.2. Connections to female multipoint connector with 32 poles, type: MIL 8130

Microprocessor units with one measuring circuit input
Connections to female multipoint connector FI 32



ELECTRICAL DATA

Euro plug-in card pin assignment

24 V-Version

Error message programmable in
0.1 mA-steps;
0.5 – 3.9 / 20.1 – 22 mA

Pic. 3 FI 32 female multipoint connector to MIL 8130

Switch point 1 for measuring circuit 1 ***FSL*** (Fail Safe Lo) ***Lo-Alarm***
Relais falling (Measured value < Limit value)
Switch point 2 for measuring circuit 1 ***FSH*** (Fail Safe Hi) ***Hi-Alarm***
Relais falling (Measured value > Limit value)

Technical error level of analog output according to parameterization
Relais falling

7.3. Printed circuit board for 19"-Rack, Monorack, Wall- and Table Top housing

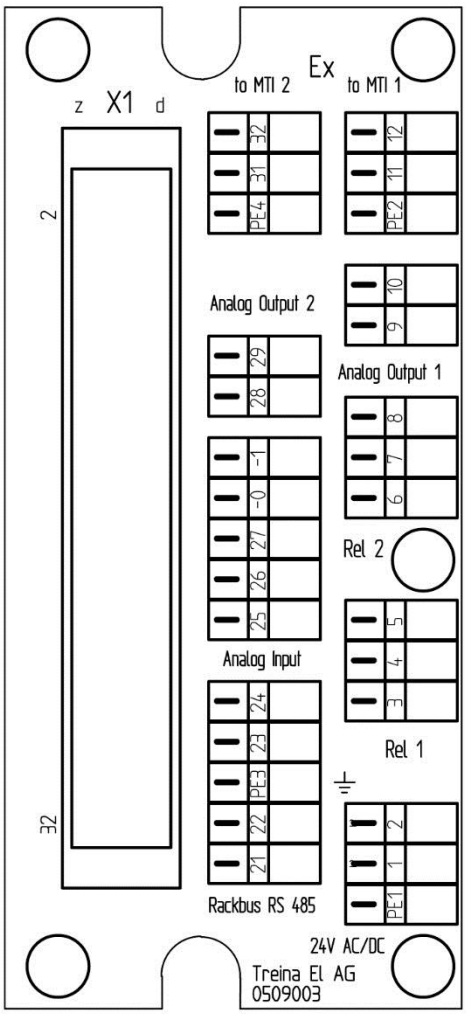
The Cage Clamp® connection clamps for cable diameter 0.08 – 2.5 mm² bared length 5 – 6 mm /0.22 in (without cable cover) are mounted with a special pre spanning tool.
Color coding:

- To the **blue** clamps: connection of the intrinsically safe field circuit. This one being allowed, with connection lines in accordance to DIN EN 60079-14, to be routed into the hazardous area.
- The **black/orange**- clamps are polarity independent current- inputs or -outputs

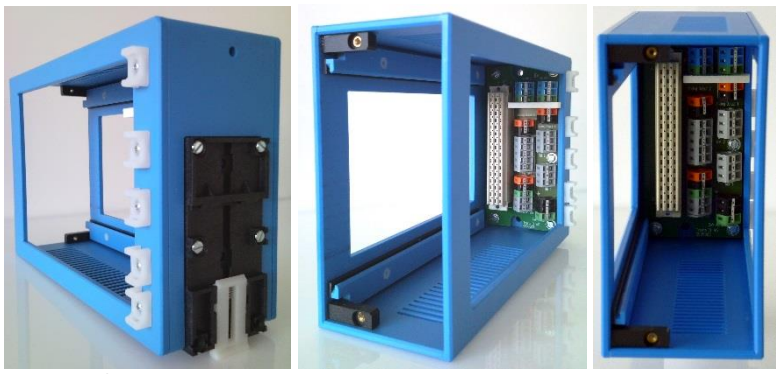
Dimension: H x B x T 137 x 77 x 210 mm / for 19“-plug in module Euro 3 HE/12TE profundity 160 mm

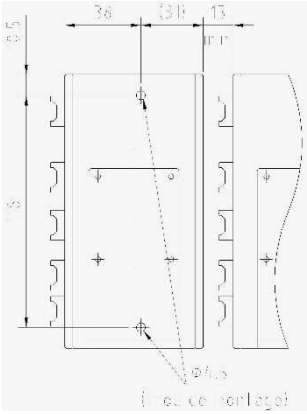
Anschluss an: Mikroprozessorgerät mipromex®

Artikel-Nr.: 02.03.18.011



PE1	Earthing		FI32: d/z6
1.	Mains 24 V AC/DC 50/60 Hz (polarity independent)		FI32: z30
2.	Mains 24 V AC/DC 50/60 Hz (polarity independent)		FI32: d30
	Relay	Opto-e. coupler	
3.	1 NO	output E-	FI32: z24
4.	1 COM	output C+	FI32: d24
5.	1 NC	-	FI32: z22
6.	2 NO	output E-	FI32: z16
7.	2 COM	output C+	FI32: d16
8.	2 NC	-	FI32: z14
9.	MC1 analog output 1 -		FI32: d14
10.	MC1 analog output 1 +		FI32: z12
11.	MC1 MTI 1 K1		FI32: z2
12.	MC1 MTI 1 K2		FI32: d2
21.	Rackbus RS 485 A		FI32: z32
22.	Rackbus RS 485 B		FI32: d32
23.	Analog input -		FI32: d18
24.	Analog input +		FI32: d12
25.	Digital input 3 (+24 V)		FI32: d10
26.	Digital input 2 (+24 V)		FI32: z10
27.	Digital input 1 (+24 V)		FI32: d8
-0	Digital input D1-3 (0 V)		FI32: z8
-1	Digital input D1-3 (0 V)		FI32: z8
28.	MC2 Analog output 2 -		FI32: d22
29	MC2 Analog output 2 +		FI32: z20
31.	MC2 MTI 2 K1		FI32: z4
32.	MC2 MTI 2 K2		FI32: d4

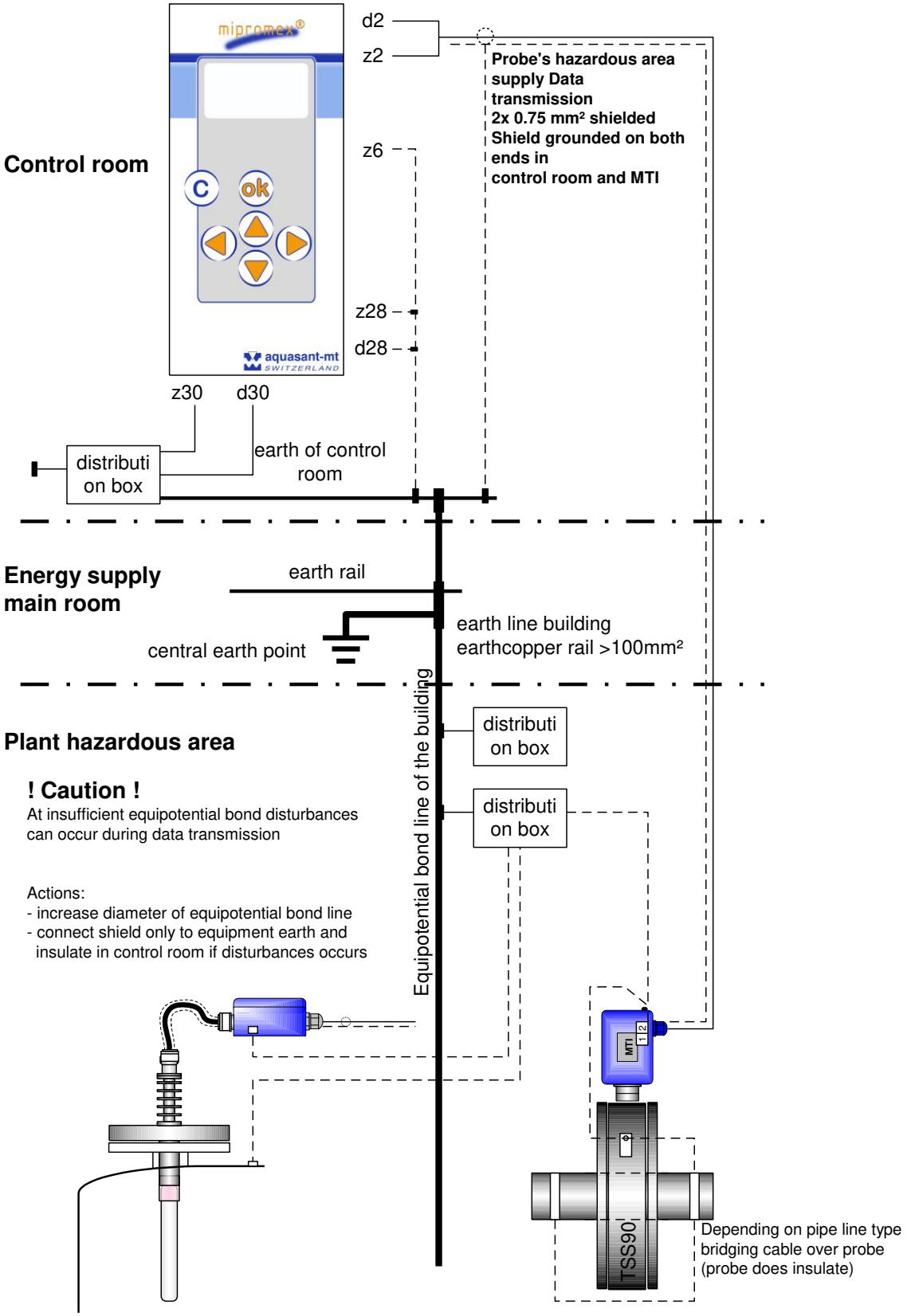




Pic. 4 Connection print to mipromex

7.4. Earthing of microprocessor units and probes

Equipotential bond and correct earthing for the hazardous area protection and against disturbances of the data transmission



Pic. 5 Earthing principle

8. Technical Data

8.1. mipromex®- interfacial layer level measuring device type: MIL 8130

Construction
19"-plug in module, with aluminum-steel housing; IP 20

Assembly
19"-Rack type MR 7; 3 HE (Europ.sizes)
Monorack type MRM2; plastic housing for DIN-rail- or wall mounting.
Front plate fitting with Bopla housing.
Compact or table top housing

Purpose
- Interfacial layer measuring unit with intrinsically safe supply for one measuring electronic MTI xxx/xx
- Continuous inerfacial layer level measurement
- Menu driven, multi language unit
- 1 analog output 4 – 20 mA and 2 digital outputs relays
- Ex supply for one measuring electronics
- shielded 19" plug in module
- Commissioning sequence of operations

Operation/Display
Film keypad-front plate with graphical LCD-display, backlit, 6 buttons for data and parameter input

Data saving during power cuts
Battery buffer max. 10 years. Parameter storage into flash at battery failure

Dimensions
Height 3 HE; Width 12 TE
Front plate: Height x width 128 x 61 mm
Plug in module: Height x width x depth 100 x 60 x 160 mm
7 units can be inserted on a 19"-rack

Weight
690 g

Mains supply
24 VAC 50/60 Hz ±10%/ 24 VDC Range 20 – 39 VDC
independent of polarity

Switch on current
momentary (1ms) approx. 1A

Power input t
ca. 3.4 VA (I = 140 mA)

Fuse
8.5 x 8.5 mm miniature fuse MST 400 mA

Hazardous area supply and signal transmission
[**Ex ia] IIC** Pulse modulated supply signal
open circuit voltage max. 18.9 V; typically 17 V
short circuit current max. 49 mA; typically 40 mA

[Ex d ia], Pulse modulated supply signal
open circuit voltage max. U ≤19.3 V; typ. 17 V
short circuit current max. I ≤75 mA; typ. 70 mA

Signal transmission
1 measuring circuit, pulse modulated supply signal

Signal line short circuit
power input max. MIQ 8130: 160 mA

Ambient temperature
0 °C ... 45 °C

Storage temperature
–20 °C ...+45 °C, ideally 20 °C

Measurement range
0 – 3700 pulses

Data display
MeV 0 – 3700

Switching hysteresis
1 pulse = 0.028 pF for the 100 pF measuring range

Connection
32 pole FI connector, coding facility

Relay outputs
2 relay per measuring point with a changeover contact for the limit value. Example: min./max. Deviation min. or max. selectable safety value. Switching voltage 30 Vdc /2 A, I/O=2kV, -40 to 85°C

Analog output
one active 4 – 20 mA output, max.working resistance/load 750 Ω, not for hazardous area, with potential separation, tech. fault 0.5 – 4 / 20 - 22 mA adjustable

Interface
RS 232 / RS 485

Monitoring
Self-monitoring detection system for: defective probe; short circuit/interruption signal supply to hazardous area (cable break security); measurement range; main power interruption
mipromex® -error messages

Test and certification
Ex II (2) G [Ex ia] IIC
II (2) D [Ex iaD]
II (2) GD

RL 94/9/EG SEV 09 ATEX 0132

Confidential test report No.: 08-IK-0396.01 with amendment 1
Unit also available without hazardous area protection

The **mipromex**® must be installed outside of the Ex-Zone
Ex-connection:

Measuring electronic MTI ... in protection housing or bar probe type S**; K**; F*

EMC-tested, STS 024 report NR. 990102WS corresponds to

EN 1127-1:2007	
EN 61241-0:2006	EN 61241-11 :2006
EN 60079-0:2006	EN 60079-11 :2007

CE

8.2. Measuring electronic MTI for measuring probes

Probes with separate or integrated measuring electronic MTI

Hotspots

- *MTI – measuring electronic in protection housing*
- *for bare-, strip- and pipe probes with and without measuring electronic in the connection head*
- *Measuring electronic slot*
- *Ex-version ATEX ExG / ExD*

MTI structure:

- Aluminium gush, Inox or Polyester-protection housing IP 65
- Cover and screw are saved
- Viton cover joint
- screwed cable gland M16 x 1.5 or M20 x 1.5

Dimension:

Aluminium gush-housing: H x B x L = 57 x 80 x 125 mm
Inox-housing: H x B x L = 85 x 82 x 142 mm
Polyester-housing: H x B x L = 55 x 80 x 110 mm

Definition:

Under value -10/+0 pF // upper value -0/+10 pF

Temperature range:

–40 bis +60 °C ambient air temperature

Connection:

For all S*K ** bar- and TSS pipe probes with HF-connection

Article-N°.: 02.24.06.0000

Example: MTI in housing	MTI	50/2	A	Gv	L	-	2		K	H
Example: MTI slot	MTI	50/2	A	E	-	E	2		K	H
Your version:	MTI									

MTI	= measuring electronic slot	MTI

Measuring range:

10	= 3000 Imp/10 pF	
15	= 2400 Imp/10 pF	
20	= 1600 Imp/10 pF	
50	= 650 Imp/10 pF	50
100	= 350 Imp/10 pF	
200	= 180 Imp/10 pF	
300	= 120 Imp/10 pF	
400	= 90 Imp/10 pF	
600	= 60 Imp/10 pF	
...	= Special range	

Base calibration range:

0	= calibration range in pF of measuring	
1...	= calibration range in pF of measuring	

Measuring technology:

A	= Analog measuring technics for interface	A

Form or housing version

E	= Slot	E
G	= Protection housing IP 65 blue powder coated angled	
Gd	= Protection housing IP 68 blue powder coated	
Gv	= Protection housing IP 68 stainless steel	Gv
Gk	= Protection housing IP 65 Polyester conductive	

Connection to the probe:

K	= UHF-connection	
L	= Lemo-connection	
S	= dual HF-connection SMA	

Slot-version:

E	= measuring electronic slot angled	E
R	= measuring electronic slot round (old)	
O	= measuring electronic slot round for ExD-head	
K	= measuring electronic slot angled for plastics-head	

Ex-version: SEV 09 ATEX 0133 X / CE 0036/049

0	= without protection for hazardous area CE	
2	= protection for hazardous area II 2G Ex ia IIC T6 / II 2D	2

Differential measuring:

2	= 2. Measuring input for compensation (Antistatic protection	

Trimmer:

K	= 20 pF Ceramic trimmer (vibrationsfest) (all MTI from 10 to 50)	K

Version:

H	= increased ESD (electrostatic) protection	H

Pic. 6 Measuring electronic

8.2.1. Technical Data MTI . . . / .

Construction/design type
Plug-in measuring electronic with stainless steel cover in protection housing, with coax connection

Installation
Protection housing with mounting holes, plug-in electronic insert, mounting with 2 screws

Function
Linear conversion of an impedance range into a digital measuring norm signal

Operation/display
One time only calibration of the coax cable and the (dry, clean, empty) probe. LED display for quick setting

Housing
Cast aluminum housing, powder coated, solvent resistant, cover and screws secured; IP 65; coax probe connector and cable gland M16, IP 65; blue color coded

Dimensions
Height x width x length 57 x 80 x 175 mm

Weight of electronic
140 g

Weight of housing
740 g incl. MTI and transmitter

Supply/connection hazardous area
Shielded 2 core cable 0.75 mm² to all TREINA microprocessor measuring and control units types VTI, LTI, FTI, QTI ... K/S and mipromex®; cable length up to (100m) or max. C= 120 nF / R = 30 Ohm line impedance.

Transmission signal
Pulse packages, superimposed to the power supply

Measuring circuit voltage/current
V ~ 11 V I ~ 13,5 mA

Nominal data of supply voltage
$U_N \leq 18{,}9$ V $I_N \leq 49$ mA
Ci_{max} 60 nF $Li_{max} \leq 0$ mH
$P_0 \leq 231$ mW

Ambient temperature
–20 . . . +60 °C

Storage temperature
–30 up to +80 °C, ideally +20 °C

Measurement range
10 / 20 / 50 / 100 / 200 / 300 corresponding to 0 to 3500 pulses, special ranges can be supplied, max. pulse range 3700 pulses

Resolution
Max. 0.003 pF/pulse

Standard measuring range for bar probes
Type STK .../100/200/300
55 pF, Type MTI 50/(0 - 16) basic calibration range (0 – 16) depending on coax cable and probe length, is determined by manufacturer

Basic calibration range
MTI .../. 0 up to 16, 0 to 500 pF

Monitoring frequency
~ 500 kHz

Linearity
Deviation < 0,1 % (without probe)

Hysteresis
1 monitoring pulse

Influence of temperature 5 – 45 °C
Type MTI .../.D digital: < ± 10 measurement pulses
Type MTI .../.A analog: < ± 3 measurement pulses

Test and certification
Ex II 2 G Ex ia IIC
II 2 D Ex iaD
II 2 GD

RL 94/9/EG SEV 09 ATEX 0133 X

confidential test report N° : 08-IK-0396-01

EN 1127-1:2007	EN 60079-26 :2007	CE 1254
EN 61241-0:2004	EN 61241-11 :2006	
EN 60079-0:2006	EN 60079-11 :2007	

Unit also available without (Ex-Zone) hazardous area protection

Only for connection to microprocessor unit .TI…. K/S and mipromex®

SEV 09 ATEX 0132 Ex II (2)G [Ex ia] IIC
EMC-tested, STS 024 test report N° : 990102WS corresponds to directive 94/9/EG CENELEC Norms
EN 50081-2: 1993
\+ EN 50082-2: 1995
+pr EN 50082-2: 1996

Feed line to probe

Version
- MTI fix mounted onto probe

- Coax cable with UHF plug on both ends

Mounting
Screw in UHF plugs and shrink heat-shrinkable sleeves

Length
0.3 m, 1 m, 2 m and 3 m

Code color brown
High temperature resistant up to 200 °C, Teflon coated, only suitable for permanent installations

Code color blue
Highly flexible, temperature resistant up to max. 80 °C
Deviation at cable move ±2 measuring pulse

Index

A

B

C

D

E

F

H

I

K

L

M

N

O

P

R

S

T

U

V

W

Tabellenverzeichnis:

Bildverzeichnis:

Notice: